BALCO
PROPERTIES

March 11, 2014

Mr. Keith Nowell
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

RE: Focused Site Conceptual Model, Balco Properties LLC, 2855 Mandela Parkway, Oakland, California (Fuel Leak Case Number RO0000378)

Dear Mr. Nowell:

The property located 2855 Mandela Parkway in Oakland, California (the Site) has been under the jurisdiction of Alameda County Department of Environmental Health's (ACEH) Local Oversight Program (LOP) Fuel Leak Case Number RO0000378 since December 2001. Balco Properties LLC (Balco) has been working with ACEH after acquiring the Site in 2006. A brief summary of recent correspondence between Balco and the ACEH is summarized as follows:

Balco submitted a Work Plan for Additional Investigation (Work Plan; prepared by Trihydro Corporation) to ACEH on August 14, 2012. The purpose of the Work Plan was to propose additional field activities to address remaining data gaps at the Site and supplement the Feasibility Study Corrective Action Plan (FS/CAP) dated August 23, 2011. The ACEH provided an August 6, 2013, electronic mail (e-mail) stating the Site had been re-classified under the State Water Resources Control Board's Low Threat Underground Storage Tank Case Closure Policy. Trihydro Corporation and the ACEH then participated in a teleconference on October 21, 2013, to discuss the Site. The ACEH requested that Balco submit a Focused Site Conceptual Model (SCM) as detailed in an October 28, 2013, e-mail.
Please find an enclosed Focused SCM, summarizing historical data and confirming remaining data gaps at the Site. Based on the data gaps confirmed and/or identified as part of the Focused SCM, Balco requests that ACEH consider approving activities proposed in the August 2012 Work Plan. Balco appreciates ACEH's continued assistance with this project. If you have any questions regarding this Work Plan, please free to call me at (510) 763-2911 or Matt Jones (Trihydro Corporation) at (360) 312-9109.

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I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document *Focused Site Conceptual Model, 2855 Mandela Parkway, Oakland, California*, are true and correct to the best of my knowledge.

Sincerely yours,

Mollie A. Westphal
Balco Properties, LLC

21B-001-001

**CERTIFICATION STATEMENT**

**WORK PLAN FOR ADDITIONAL INVESTIGATION**

**BALCO PROPERTIES LLC**

**2855 MANDELA PARKWAY**

**OAKLAND, CALIFORNIA**

I certify that this work plan was prepared under my supervision. To the best of my knowledge, the data contained herein are true and accurate and the work plan was prepared in accordance with professional standards.


3/11/2014

David Kleesattel, PG. Date
California Registered Geologist #5136

**TABLES**

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| Geology and Hydrogeology | Regional | The geologic formation underlying the San Francisco Bay is divided into two distinct units that differ greatly in age and rock type: an older bedrock formation overlain by a younger unconsolidated sediment unit. The bedrock underlying most of the San Francisco Bay is composed of Jurassic and Cretaceous sandstone, siltstone, chert, mélange, and ultramafic rocks of the Franciscan Complex. Total thickness of the Franciscan Complex is unknown. As described by Treadwell & Rollo, Inc. (2011), the area around the Site is located within the historical margins of the San Francisco Bay in an area formerly occupied by tidal flats and marshes. The location of the Site is shown in Figure 1. Regional groundwater in the Oakland area generally follows topography, from areas of higher elevation in the east toward lower elevation in the west and southwest. The lithology encountered in the subsurface beneath the Site during drilling activities consisted predominantly of brown sandy fill material (non-native) over the native bay margin deposits. The bay margin deposits consist generally of a soft, dark gray clay matrix known locally as Bay Mud. | None | NA |
| **CSM Element** | **CSM Sub-Element** | **Description** | **Data Gap Item #** | **Resolution** |
| Geology and Hydrogeology | Site | The primary stratigraphic units at the Site are listed below, with the approximate ranges of depth below ground surface (bgs) for each unit encountered across the Site:<br>• 0 to 8 feet bgs: brown, poorly-graded, fine-grained sand (fill). Depth ranges from two to eight feet.<br>• 8 to at least 24 feet bgs: soft, dark gray clay matrix. Within the Bay Mud is a mixture of other alluvial clays (brown to olive in color), peats, and sand present in relatively thin layers and zones.<br>Groundwater was encountered in direct-push boreholes at an average depth of 8.0 feet bgs, with depths ranging from 4.5 to 14.75 feet bgs. In boreholes where the groundwater level was allowed to stabilize, the average static groundwater level was 6.5 feet bgs, with depths ranging from 2.5 to 11.75 feet bgs. The wide variation in groundwater levels at the Site is likely due to the high | None | NA |

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| | | variability of grain-size within the Bay Mud, including varying water content and stiffness, as well as thin, discrete layers of sand and peat. At the Site, perched groundwater occurs in the fill material on top of the Bay Mud. The shallow groundwater flow is predominantly to the northeast, but, because of its discontinuous nature, has had a range of measured magnitudes and directions (Figure 2), from west-southwest with a gradient of 0.025 (May 1999) to north-northeast with a gradient of 0.052 (April 2008). Groundwater flow characteristics may vary considerably on the local scale and seasonally due to the highly heterogeneous geology, underground utilities, the Site's low elevation, and proximity to the San Francisco Bay. Monitoring well TR-4 has had observed groundwater elevations significantly higher than other wells nearby, such as TR-6, which is likely due to perched groundwater. The boring log for TR-4 notes that first encountered groundwater was only 4.5 feet bgs, but after a few hours the groundwater level stabilized at 10.5 feet bgs. Cross-sections of the Site are presented in Figures 3 and 4, and boring logs for the Site are included as Appendix A. | | |
| Surface Water Bodies | | The closest surface water body is the San Francisco Bay, which is 0.6 miles northwest of the Site. | None | NA |
| Nearby Wells | | Treadwell and Rollo, Inc. (2011) conducted a review of potential water supply wells within a radius of approximately one-quarter mile of the Site, using records from the State of California (Department of Water Resources), Alameda County (Public Works Agency – Water Resources Section), historical aerial photographs, Sanborn maps and topographic maps (EDR). No water supply wells were identified within one-quarter mile of the Site. Wells identified were largely groundwater monitoring wells, as well as one cathodic protection well and ten wells at Pacific Supply Company at 1735 24$^{th}$ Street which were labeled as 19-foot deep extraction wells. A review of Geotracker regulatory files indicated the presence of shallow groundwater contamination and a number of well installations in the area, making it likely that the groundwater wells identified in the review are associated with monitoring or remediation and not water supply. | None | NA |

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| Release Source and Volume | | A 250-gallon waste oil underground storage tank (UST and 350-gallon gasoline UST, located in the southeast portion of the Site, were removed in 1991. Both USTs were observed to be in a deteriorated condition upon removal with visible stained soils in the UST footprints. Product piping leading from the gasoline UST to a concrete pump island that supported a former fuel dispenser directly inside the building was observed during excavation activities. A 1,000-gallon gasoline UST was below the Willow Street sidewalk in front of 2607 Mandela Parkway was closed in place in 1997 and was observed to be over 30 years old and in deteriorated condition. Numerous investigations were completed at the Site from 1990 through 2009. Recent studies concluded that free phase light non-aqueous phase liquid (LNAPL) exists beneath the current building footprint and adjacent areas on the southeastern perimeter of the building. Treadwell & Rollo, in their 2002 *Addendum to the 1999 Remedial Investigation Report* estimated that the residual free-phase volume was approximately 2,500 gallons. | None | NA |
| LNAPL | | LNAPL has been observed in several monitoring wells at the Site. During the most recent groundwater monitoring event (2008), LNAPL was observed in monitoring wells TR-4, TR-6, and TR-10 at various thicknesses (LNAPL has been reported up to 7.5 feet in TR-5 and 10.6 feet thick in TR-6), as shown in Table 1. LNAPL has been previously reported to be generally limited to a "peaty" zone within the Bay Mud, between six and eight feet bgs (Figure 3). No recent data (post-2008) has been collected from monitoring wells at the Site to determine current conditions. The approximate extent of LNAPL, based on observed free product and benzene concentrations over 1,800 micrograms per liter (ug/L) (10% of the effective solubility of benzene in groundwater) is shown on Figure 5.<br>Monitoring wells TR-7 and TR-8 have well screens that begin at 5 feet bgs, while the well screen in TR-9 begins at 6 feet bgs. It is possible that these well screens are not shallow enough to capture free-product during periods where the groundwater table is elevated; however, historical depths to groundwater at other monitoring wells on the Site have generally been greater than 5 feet | 1. Confirm current extent of LNAPL plume | A Work Plan for additional investigation (dated August 14, 2012) was submitted to ACEH proposing activities to further determine the extent of LNAPL and groundwater impacts. |

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| | | bgs (Table 2).<br>Monitoring wells TR-10 and TR-11 also have well screens that begin at 5 feet bgs, but historical depths to free product/groundwater have never been less than 8 feet bgs. Additionally, well TR-10 contains free product, suggesting that it is properly screened to capture free product levels. A groundwater sample from well TR-11 did not have detectable concentrations of TPH or benzene, suggesting the groundwater there is not in contact with free product. Because the limit of the LNAPL plume shown on Figure 5 is based on a conservative estimate, it is likely that the maximum extent of LNAPL has been defined. | | |
| Source Removal Activities | | The two USTs suspected as the source were removed in 1991. Product piping was removed from the gasoline UST to the exterior wall of the building. Soil excavated during the tank removal was reportedly placed back in the excavation on top of a plastic liner pending soil sampling results. The fate of the soil has not been reported. A third UST in front of 2607 Mandela Parkway was closed in place in 1997. Free product was manually removed from monitoring wells TR-4, TR-5, and TR-6 in 1999, with a total of 98.2 gallons of LNAPL removed (Treadwell & Rollo 2000). An LNAPL skimmer system was operated at the Site from October 2007 to June 2008, which removed approximately 12 gallons of free product before being shutdown based on low, asymptotic levels of product recovery. Between 1999 and 2006, and additional 39 gallons of free product were manually removed from monitoring wells (Treadwell & Rollo 2008). From 2007 through 2008, a total of 11.7 gallons was manually removed from monitoring wells, for a total manual recovery of approximately 161 gallons of LNAPL.<br>Treadwell & Rollo's *1999 Site Investigation and Remediation Activities* report mentions a 1941 construction drawing showing "what appears to be a fuel dispensing pump" in the eastern portion of the Site, near the intersection of Mandela Parkway and Willow Street. No evidence of this pump is currently visible and no information has been found regarding any tank associated with this area. Soil and groundwater samples collected from soil boring SB- | 1. Further evaluation of current extent of LNAPL and/or dissolved impacts in groundwater | A Work Plan for additional investigation (dated August 14, 2012) was submitted to ACEH proposing activities to further determine the extent of LNAPL and groundwater impacts. |

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| | | 31, located approximately 35 feet northeast of this possible former pump location showed no detections above laboratory reporting limits for TPH-g or BTEX compounds. | | |
| Contaminants of Concern | | Based on the historical investigations conducted at the Site, benzene, toluene, ethylbenzene, and xylenes (collectively known as BTEX compounds) and total petroleum hydrocarbons (TPH) represent the COCs. Soil impacts are generally limited to the former onsite UST footprint and/or defined by the extent of the LNAPL plume. BTEX, total petroleum hydrocarbons quantified as gasoline (TPH-g), and total petroleum hydrocarbons quantified as diesel (TPH-d) are present in groundwater above their respective ESLs. These contaminants of concern (COCs) are generally present above the screening levels in the southeastern portion of the Site, near the location of the former USTs. Figures showing the extent of benzene and TPH-g impacts on groundwater are presented as Figures 5 and 6, respectively. Benzene concentrations exceeding the ESLs were detected in both indoor air samples and outdoor ambient air samples, and are discussed later in this table. | None | NA |
| Petroleum Hydrocarbons in Soil | | Of the 16 samples analyzed for TPH during the various investigations, 4 samples contained petroleum hydrocarbons above the applicable screening levels. At least one of the BTEX compounds was present in concentrations above the applicable screening levels in 12 of the 29 samples analyzed for BTEX compounds. These samples were all collected in the southeastern portion of the Site near the location of the former USTs, and were all collected between 5.0 and 11.0 feet bgs. Based on the historical investigation data, BTEX and TPH-g are the contaminants present in soil at concentrations exceeding their respective screening criteria. These contaminants are mainly present in the vicinity of the former UST location, as far north as TR-6, as far east as SB-3, as far south as B-1, and as far west as SB-4. Soil sample analytical results are presented in Tables 3A, 3B, and 3C, and sample location rationale is presented in Table 4A. | 2. One soil sample has been analyzed for naphthalene. The extent of naphthalene in soil has not been determined. | Because naphthalene is a component of gasoline, it is assumed that previously defined soil impacts will contain naphthalene as well. Potential future analyses for VOCs will include naphthalene. |

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**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| | | Given the nature of the petroleum hydrocarbons (mainly light fraction gasoline), the vertical extent of contamination beneath and in close proximity to the former tanks is likely limited to the lowest level of groundwater fluctuation. | | |
| Petroleum Hydrocarbons in Groundwater | | Groundwater samples have been collected from soil borings during various investigations in 1998 and 1999, and were also collected from monitoring wells at the Site in 2008.<br>Of the 25 grab groundwater samples collected from soil borings, 7 samples exceeded the screening level for TPH-g, and 8 samples exceeded the screening level for one or more BTEX compounds. The samples exceeding their respective screening levels were mostly in the vicinity of the former USTs, with the exception of three samples collected in Willow Street (SB21 and SB-23) and Mandela Parkway (TR-2). Groundwater sample analytical results are presented in Tables 5A, 5B, 5C, and 5D. Well construction details are presented in Table 6 and sample location rationale is presented in Table 4B.<br>Of the five groundwater samples collected from monitoring wells in 2008, four samples exceeded the respective screening levels for TPH-g, TPH-d, and the BTEX compounds. Prior to collection of these groundwater samples, free product was detected in four of the five monitoring wells (TR-4, TR-5, TR-6, and TR-11).<br>Under the Low-Threat UST Closure Policy (LTCP), plume lengths are based on concentrations of benzene (5 ug/L), TPH-g (100 ug/L), and MTBE (5 ug/L). MTBE has not been detected in historical sampling at the Site. Figure 5 shows an isoconcentration map for benzene in groundwater, based on historical sampling data, and shows the approximate extent of the plume based on a concentration of benzene of 5 ug/L. Figure 6 shows an isoconcentration map for TPH-g in groundwater, based on historical sampling, and shows the approximate extent of the plume based on a concentration of 100 ug/L. As shown in the figures, the plume extent is similar whether based on benzene or TPH-g, and is somewhat larger than the extent of the LNAPL plume (discussed | 1 Further evaluation of current extent of LNAPL and/or dissolved impacts in groundwater | A Work Plan for additional investigation (dated August 14, 2012) was submitted to ACEH proposing activities to further determine the extent of LNAPL and groundwater impacts |

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| | | above). | | |
| Petroleum Hydrocarbons in Soil Vapor | Soil Gas | Since 1992, two soil gas investigations have taken place at the Site. The first soil vapor sample collection occurred in 1992 and was concentrated in the area around the location of the former USTs, while a second event in 1998 collected samples along the perimeter of the Site. Both of these events collected samples from temporary sampling points following contemporary protocols. The rationale for the selection of these sampling locations is presented in Table 4C. Samples were analyzed for BTEX compounds, and all samples were reported as having no detections above laboratory reporting limits. Analytical results from these investigations are presented in Tables 7A and 7B. No analysis for naphthalene was performed during either of these investigations, and no analysis for fixed gases was performed. The sampling methodology did not include the use of a tracer gas. These activities were reported to Alameda County Health Services following completion of field activities and analyses. | 2. Site-wide soil gas sampling events were performed based on contemporary protocols, and did not use tracer gases or analyze for naphthalene. | Sub-slab sampling in 2009 was performed under a work plan approved by ACEH, and the final report was subsequently approved by ACEH in a letter dated May 27, 2010. Soil vapor sampling in 2009 utilized updated sampling protocols including analysis of tracer gas to confirm adequate representativeness of analytical results. |
| Petroleum Hydrocarbons in Soil Vapor | Sub-slab soil vapor | Two separate sub-slab soil vapor sampling events have been conducted at the Site. A Work plan for the first event was submitted to Alameda County Health Care Services Agency (ACHCS) prior to beginning field activities. The initial sub-slab investigation took place in 2001, which included the installation of 10 permanent sub-slab vapor monitoring points. Each monitoring point was installed two to three feet bgs to correspond to the middle of the sandy fill below the slab. The rationale for the selection of these sampling locations is presented in Table 4C. No BTEX compounds were detected in any of the 10 samples collected. A second sampling event at the same permanent monitoring points was performed in 2009. A work plan for this investigation was submitted and approved by the Alameda County Department of Environmental Health (ACDEH) prior to commencing field activities. Ten samples were collected in accordance with the work plan, using helium as a | 3. Sub-slab samples were not analyzed for naphthalene, and neither sampling event analyzed fixed gases. The 2001 sampling event methodology did not include the use of a tracer gas. The permanent sub-slap sampling points were installed deeper than current protocol requires. | Sub-slab sampling in 2009 was performed under a work plan approved by ACEH, and the final report was subsequently approved by ACEH in a letter dated May 27, 2010. Vapor concentrations did not exceed appropriate soil gas screening levels. |

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| | | tracer gas, and were analyzed by modified TO-15. No VOCs were detected at concentrations above ESLs in any sample, and helium was not detected above laboratory reporting limits in any of the samples. Analytical results are presented in Tables 7A and 7B. No analysis for naphthalene was performed during either of these investigations, and no analysis for fixed gases was performed. | | Naphthalene will also be analyzed in groundwater samples as proposed in the August 2012 Work Plan. |
| Petroleum Hydrocarbons in Soil Vapor | Indoor Air | An indoor air investigation was performed in 2000, which included the collection of three indoor ambient air samples (A-1, A-2, A-3), one field duplicate indoor air sample, and two outdoor ambient air samples. The rationale for the selection of these sampling locations is presented in Table 4C. All six samples contained benzene concentrations exceeding the ESL for indoor air; however, it was noted in the report that motor vehicles were operating inside the warehouse during sample collection, and therefore the benzene concentrations were suspected to not be representative of intrusion from soil gas. This is further supported by the presence of low concentrations of MTBE in the indoor air samples, which is not present in the subsurface samples. 1,2 dichloroethane was detected at a concentration above the ESL in the field duplicate indoor air sample, but not in the parent sample, while 1,4-dioxane was detected at a concentration above the ESL in one outdoor air sample and the field duplicate sample, but not the parent sample. Analytical results are presented in Table 7C. No analysis for naphthalene was performed during this investigation. | 4. Indoor air samples were not analyzed for naphthalene. | Naphthalene will also be analyzed in groundwater samples as proposed in the August 2012 Work Plan. |
| Risk Evaluation | | The Site is a former truck assembly and sales facility that is currently occupied by several tenants conducting light industrial and commercial activities, and is covered with either asphalt or concrete building foundations. The plan for the Site is continued light industrial use.<br>Potential receptor areas near the Site include the building occupants, nearby buildings, and the green spaces along Mandela Parkway (Figure 5). Previous sub-slab vapor investigations have found concentrations of VOCs to be below ESLs at all sample locations at the Site. An indoor air investigation found concentrations of benzene, but vapor intrusion was not suspected | 1. Further evaluation of current extent of LNAPL and/or dissolved impacts in groundwater. | August 14, 2012) was submitted to ACEH proposing activities to further determine the extent of LNAPL and groundwater impacts. Proposed sampling locations are shown on Figure 7. |

**TABLE 1-1**
**SITE CONCEPTUAL MODEL**

| CSM Element | CSM Sub-Element | Description | Data Gap Item # | Resolution |
|---|---|---|---|---|
| | | as the source. | | |

**TABLE 1-2**
**DATA GAPS SUMMARY AND PROPOSED INVESTIGATION**

| Item | Data Gap Item # | Proposed Investigation | Rationale | Analyses |
|---|---|---|---|---|
| 1 | - Current LNAPL and dissolved GW extent is not confirmed.<br><br>- LNAPL was present in the subsurface during the last groundwater monitoring event. | - A Work Plan for additional investigation (dated August 14, 2012) was submitted to ACEH proposing activities to further determine the extent of LNAPL and groundwater impacts. Proposed activities include an Ultra-Violet Optical Screening Tool (UVOST) survey and collection of grab groundwater samples, as well as collection of groundwater samples from existing monitoring wells. | - The UVOST survey is a cost-efficient way to collect detailed data on free-phase impacts, and better define their extent.<br><br>- Collection of groundwater samples will provide updated information on dissolved phase impacts and extent. | - UVOST qualitatively identifies petroleum products. Grab groundwater and groundwater samples will be analyzed for VOCs by EPA Method 8260B and TPH (quantified as gasoline, diesel, and motor oil) by EPA Method 8015B. |
| 2 | - The specific extent of naphthalene in soil has not been confirmed. | - None at this time. | - The general extent of soil impacts is known and naphthalene is not a COC. | - NA |
| 3 | - The specific extent of naphthalene in soil vapor has not been confirmed. | - None at this time. | - Soil vapor impacts during previous investigations did not exceed appropriate screening levels. Naphthalene is not a current COC and will be evaluated as part of the groundwater investigation proposed in the August 2012 Work Plan. | - NA |
| 4 | - The presence/absence of naphthalene in indoor air has not been confirmed. | - None at this time. | - Soil vapor impacts during previous investigations did not exceed appropriate screening levels. Concentrations of VOCs in historical indoor air samples were generally similar to outside ambient air samples. Naphthalene is not a current COC and will be evaluated as part of the proposed groundwater investigation proposed in the August 2012 Work Plan. | - NA |

**TABLE 2. FLUID LEVEL ELEVATION DATA**
**2855 MANDELA PARKWAY**
**OAKLAND, CALIFORNIA**

| Date | RW-1 DTP | RW-1 DTW | RW-2 DTP | RW-2 DTW | TR-4 DTP | TR-4 DTW | Corrected GW Elevation[1] | TR-5 DTP | TR-5 DTW | Corrected GW Elevation[1] | TR-6 DTP | TR-6 DTW | Corrected GW Elevation[1] | TR-10 DTP | TR-10 DTW | Corrected GW Elevation[1] | TR-11 DTP | TR-11 DTW | GW Elevation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/22/1999 | NM | NM | NM | NM | ND | 10.71 | -1.12 | NM | NM | - | 9.96 | 11.35 | -0.43 | NM | NM | - | NM | NM | - |
| 6/23/1999 | NM | NM | NM | NM | ND | 9.71 | -0.12 | ND | 11.61 | -2.32 | 7.54 | 17.38 | -0.21 | NM | NM | - | NM | NM | - |
| 6/24/1999 | NM | NM | NM | NM | ND | 9.21 | 0.38 | 8.31 | 8.83 | 0.84 | 7.12 | 18.52 | -0.19 | NM | NM | - | NM | NM | - |
| 6/25/1999 | NM | NM | NM | NM | ND | 9.26 | 0.33 | 8.29 | 9.28 | 0.74 | 8.59 | 14.51 | -0.24 | NM | NM | - | NM | NM | - |
| 6/28/1999 | NM | NM | NM | NM | ND | 9.27 | 0.32 | 8.15 | 9.81 | 0.71 | 7.54 | 17.55 | -0.25 | NM | NM | - | NM | NM | - |
| 6/29/1999 | NM | NM | NM | NM | ND | 9.32 | 0.27 | 8.27 | 9.56 | 0.68 | 8.77 | 14.17 | -0.28 | NM | NM | - | NM | NM | - |
| 7/2/1999 | NM | NM | NM | NM | ND | 9.21 | 0.38 | ND | 7.92 | 1.37 | 4.61 | 17.09 | 2.04 | NM | NM | - | NM | NM | - |
| 10/4/1999 | NM | NM | NM | NM | 8.81 | 11.49 | 0.08 | 7.58 | 15.04 | -0.23 | 7.8 | 18.37 | -0.66 | NM | NM | - | NM | NM | - |
| 10/6/1999 | NM | NM | NM | NM | 7.85 | 11.54 | 0.78 | 7.54 | 15.02 | -0.19 | 9.91 | 12.47 | -0.69 | NM | NM | - | NM | NM | - |
| 10/8/1999 | NM | NM | NM | NM | 8.84 | 11.56 | 0.04 | 7.53 | 15.04 | -0.19 | 10.44 | NM | - | NM | NM | - | NM | NM | - |
| 10/11/1999 | NM | NM | NM | NM | 8.79 | 11.56 | 0.08 | 7.45 | 15.03 | -0.13 | 10.54 | NM | - | NM | NM | - | NM | NM | - |
| 10/13/1999 | NM | NM | NM | NM | 8.77 | 11.6 | 0.08 | 7.42 | 15.04 | -0.11 | 10.53 | 10.74 | -0.69 | NM | NM | - | NM | NM | - |
| 10/20/1999 | NM | NM | NM | NM | 8.83 | 11.76 | 0.00 | 7.52 | 15.09 | -0.20 | 10.49 | 11.08 | -0.75 | NM | NM | - | NM | NM | - |
| 10/25/1999 | NM | NM | NM | NM | 9.49 | 10.06 | -0.05 | 8.31 | 12.87 | -0.21 | 10.61 | 10.81 | -0.77 | NM | NM | - | NM | NM | - |
| 10/27/1999 | NM | NM | NM | NM | 9.61 | 9.74 | -0.05 | 9.16 | 10.49 | -0.22 | 10.73 | 10.79 | -0.86 | NM | NM | - | NM | NM | - |
| 10/29/1999 | NM | NM | NM | NM | 9.56 | 9.64 | 0.01 | 9.31 | 10.36 | -0.29 | 10.65 | 10.69 | -0.77 | NM | NM | - | NM | NM | - |
| 12/23/2005 | ND | 0.60 | ND | 0.70 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 2/13/2005 | NM | NM | ND | 2.00 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 3/10/2006 | ND | 0.16 | ND | 0.16 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 3/13/2006 | ND | 0.41 | ND | 0.42 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 3/21/2006 | ND | 0.00 | ND | 0.20 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 3/29/2006 | ND | 0.00 | ND | 0.00 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 3/31/2006 | ND | 0.20 | ND | 0.25 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 4/27/2006 | ND | 1.07 | ND | 1.06 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 5/15/2006 | ND | 1.45 | ND | 1.51 | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - | NM | NM | - |
| 7/11/2006 | ND | 1.95 | ND | 2.02 | 3.82 | 6.77 | 5.00 | NM | NM | - | 7.77 | 13.35 | 0.67 | NM | NM | - | NM | NM | - |
| 7/26/2006 | NM | NM | NM | NM | NM | NM | - | NM | NM | - | 8.86 | 9.25 | 0.93 | NM | NM | - | NM | NM | - |
| 8/1/2006 | NM | NM | NM | NM | NM | NM | - | 7.58 | 10.88 | 0.85 | NM | NM | - | NM | NM | - | NM | NM | - |
| 8/4/2006 | NM | NM | NM | NM | NM | NM | - | 8.03 | 8.72 | 1.08 | NM | NM | - | NM | NM | - | NM | NM | - |
| 8/10/2006 | NM | NM | NM | NM | NM | NM | - | 8.13 | 8.82 | 0.98 | NM | NM | - | NM | NM | - | NM | NM | - |
| 8/25/2006 | NM | NM | NM | NM | NM | NM | - | ND | 8.17 | 1.12 | NM | NM | - | 9.73 | 16.30 | -1.49 | NM | NM | - |
| 9/12/2006 | ND | 2.33 | ND | 2.47 | NM | NM | - | 8.39 | 9.03 | 0.73 | NM | NM | - | NM | NM | - | NM | NM | - |
| 9/21/2006 | ND | 2.38 | ND | 2.57 | NM | NM | - | 8.48 | 9.07 | 0.66 | NM | NM | - | ND | 9.49 | - | NM | NM | - |
| 10/3/2006 | ND | 2.34 | ND | 2.55 | NM | NM | - | 8.40 | 9.11 | 0.71 | NM | NM | - | ND | 9.25 | - | NM | NM | - |
| 10/13/2006 | ND | 2.10 | ND | 2.23 | NM | NM | - | 8.38 | 9.02 | 0.74 | NM | NM | - | NM | NM | - | NM | NM | - |
| 10/20/2006 | ND | 2.23 | ND | 2.36 | NM | NM | - | 8.56 | 9.16 | 0.57 | NM | NM | - | NM | NM | - | NM | NM | - |
| 10/24/2006 | ND | 2.29 | ND | 2.41 | 5.60 | 5.95 | 3.90 | 8.58 | 9.15 | 0.56 | 9.48 | 10.05 | 0.26 | NM | NM | - | ND | 10.62 | -1.24 |
| 10/9/2007 | ND | 3.74 | ND | 2.83 | 5.66 | 5.82 | 3.89 | 8.65 | 8.66 | 0.64 | 9.46 | 10.24 | 0.23 | 8.98 | 16.43 | -0.97 | ND | 10.97 | -1.59 |
| 10/29/2007 | ND | 2.30 | ND | 2.37 | 5.37 | 5.53 | 4.18 | 8.50 | 8.90 | 0.69 | 9.31 | 9.77 | 0.46 | 10.25 | 12.83 | -0.97 | ND | 10.17 | -0.79 |
| 11/20/2007 | ND | 2.18 | ND | 2.24 | 5.30 | 5.45 | 4.25 | 8.51 | 8.71 | 0.73 | 9.31 | 9.56 | 0.52 | 10.59 | 11.6 | -0.90 | ND | 9.07 | 0.31 |
| 12/28/2007 | ND | 1.12 | ND | 0.85 | 5.15 | 5.21 | 4.42 | 8.04 | 8.22 | 1.20 | 8.96 | 9.23 | 0.86 | 9.97 | 10.8 | -0.24 | ND | 8.49 | 0.89 |
| 2/22/2008 | ND | 0.00 | ND | 0.00 | 4.44 | 4.49 | 5.14 | 7.28 | 7.47 | 1.96 | 8.54 | 8.72 | 1.30 | NM | NM | - | NM | NM | - |

**TABLE 2. FLUID LEVEL ELEVATION DATA**
**2855 MANDELA PARKWAY**
**OAKLAND, CALIFORNIA**

| Date | RW-1 DTP | RW-1 DTW | RW-2 DTP | RW-2 DTW | TR-4 DTP | TR-4 DTW | Corrected GW Elevation[1] | TR-5 DTP | TR-5 DTW | Corrected GW Elevation[1] | TR-6 DTP | TR-6 DTW | Corrected GW Elevation[1] | TR-10 DTP | TR-10 DTW | Corrected GW Elevation[1] | TR-11 DTP | TR-11 DTW | GW Elevation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/2008 | ND | 1.61 | ND | 1.71 | 4.83 | 4.85 | 4.75 | 8.25 | 8.30 | 1.03 | 9.11 | 9.31 | 0.73 | 11.14 | 11.57 | -1.30 | ND | 8.1 | 1.28 |
| 4/9/2008 | ND | 1.85 | ND | 1.96 | 4.95 | 4.96 | 4.64 | 8.42 | 8.43 | 0.87 | 9.31 | 9.47 | 0.54 | 11.88 | 12.24 | -2.02 | ND | 8.02 | 1.36 |
| 5/5/2008 | ND | 1.99 | ND | 2.11 | 5.08 | 5.09 | 4.51 | 8.57 | 8.58 | 0.72 | 9.42 | 9.53 | 0.44 | 11.70 | 12.04 | -1.84 | ND | 8.51 | 0.87 |
| 5/23/2008 | ND | 2.11 | ND | 2.24 | 5.10 | 5.11 | 4.49 | 8.40 | 8.41 | 0.89 | 9.37 | 9.48 | 0.49 | 12.02 | 12.51 | -2.20 | ND | 8.51 | 0.87 |
| 6/16/2008 | ND | 2.32 | ND | 2.46 | 5.27 | 5.28 | 4.32 | 8.68 | 8.71 | 0.60 | 9.54 | 9.70 | 0.31 | 11.59 | 12.04 | -1.76 | ND | 8.52 | 0.86 |
| 9/24/2008 | NM | NM | NM | NM | 5.38 | 5.41 | 4.20 | ND | 8.86 | 0.43 | 9.78 | 10.02 | 0.05 | 11.22 | 12.35 | -1.56 | ND | 9.25 | 0.13 |
| TOC elevation (feet above MSL) | | | | | 9.59 | | | 9.29 | | | 9.89 | | | 9.95 | | | 9.38 | | |

Notes:

DTP - depth to product

DTW - depth to groundwater

GW - groundwater

ND - not detected

NM - not measured

- insufficient data to calculate

TOC - top of casing

MSL - mean sea level

[1] - Corrected groundwater elevation = TOC - (DTW-(0.74 x product thickness))

**TABLE 3A. SOIL QUALITY SUMMARY, SELECTED VOCS AND SVOCS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

Analyte concentration (mg/kg)

| Date sampled | Sample Location | Sample depth (ft-bgs) | Benzene | Toluene | Ethylbenzene | Total Xylenes | MTBE | Naphthalene | 2-methylnapthalene | Chlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|
| 6/20/1991 | 1 | 2.5 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | NA | ND | ND | ND |
| 6/20/1991 | 2 | 2.5 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | NA | ND | ND | ND |
| 6/20/1991 | 6 | 6.5 | 0.93 | 1.3 | 0.89 | 2.5 | NA | 0.87 | 0.44 | 0.012 |
| 6/20/1991 | 7 | 2.5 | 1.1 | 0.2 | 1.8 | 5.7 | NA | NA | NA | NA |
| 6/20/1991 | 8 | [composite] | < 0.0025 | < 0.0025 | 0.5 | 3.6 | NA | NA | NA | NA |
| 6/19/1992 | B-1 | 5 | 0.77 | 0.028 | 0.28 | 0.99 | NA | NA | NA | NA |
| 6/19/1992 | B-1 | 10 | **7** | **41** | **21** | **96** | NA | NA | NA | NA |
| 6/19/1992 | B-1 | 15 | 0.056 | 0.2 | 0.055 | 0.24 | NA | NA | NA | NA |
| 6/19/1992 | B-2 | 5 | 0.57 | < 0.080 | < 0.080 | < 0.080 | NA | NA | NA | NA |
| 6/19/1992 | B-2 | 10 | **25** | **100** | **35** | **150** | NA | NA | NA | NA |
| 6/19/1992 | B-3 | 5 | **6.9** | **18** | **5.8** | **21** | NA | NA | NA | NA |
| 6/19/1992 | B-3 | 10 | **34** | **170** | **61** | **250** | NA | **15** | **11** | NA |
| 8/3/1998 | SB-1 | 5 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-1 | 10 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-2 | 5 | **1.2** | 2 | **6.3** | **13** | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-2 | 11 | **13** | **17** | 2.1 | 8.6 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-3 | 5 | **7.2** | **15** | 3 | **11** | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-3 | 10 | **9.1** | **14** | **5** | **17** | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-4 | 5 | **3.1** | 0.49 | 2.9 | 2.9 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-4 | 11 | **1.6** | 0.12 | 1.1 | 4.3 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-4 | 15 | 0.019 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-5 | 5 | 0.56 | 0.011 | 0.46 | 0.041 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-5 | 10 | 0.04 | 0.76 | 0.13 | 0.59 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-6 | 5 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | NA | NA | NA |
| 8/3/1998 | SB-7 | 5 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | NA | NA | NA |
| 6/22/1999 | TR-4 | 5.5 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | NA | NA | NA |
| 6/22/1999 | TR-5 | 5.5 | **24** | **92** | **40** | **170** | 5.1 | NA | NA | NA |
| 6/22/1999 | TR-6 | 6.0 | **2.2** | 2.9 | 1.3 | 2.6 | < 0.62 | NA | NA | NA |
| 11/16/1999 | SB-25 | 3.5 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | NA | NA | NA | NA |
| 11/16/1999 | SB-28 | 6.0 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | NA | NA | NA | NA |
| 11/16/1999 | SB-28 | 16 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | NA | NA | NA | NA |
| 11/16/1999 | SB-31 | 5.0 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | NA | NA | NA | NA |
| 12/2/1999 | SB-33A | 5.5 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | NA | NA | NA | NA |
| 12/2/1999 | SB-34 | 3.0 | < 0.0050 | < 0.0050 | < 0.0050 | < 0.0050 | NA | NA | NA | NA |
| Commercial / Industrial Direct Contact Soil Screening Level | | | 120 | -- | -- | -- | -- | 45 | -- | -- |
| Tier 1 ESLs | | | 1.2 | 9.3 | 4.7 | 11.0 | 8.4 | 4.8 | 0.250 | 1.5 |

Notes:

VOC - volatile organic compound

SVOC - semi-volatile organic compound

mg/kg - milligrams per kilogram

ESL - Environmental Screening Level

ft-bgs - feet below ground surface

MTBE - methyl tert-butyl ether

< 0.080 - Not detected above the laboratory reporting limit

NA - Not Analyzed

**bold -** value exceeding the Commercial/Industrial Environmental Screening Level

-- No ESL established

Direct Contact Screening Level from *Technical Justification for Soil Screening Levels for Direct Contact and Outdoor Air Exposure Pathways*, California State Water Resources Control Board, March 2012

Tier 1 ESL values from *Update to Environmental Screening Levels*, San Francisco Bay Regional Water Quality Control Board, December 2013, Table B (Commerical/Industrial values)

**TABLE 3B. SOIL QUALITY SUMMARY, HYDROCARBONS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte concentration (mg/kg) | | | | |
|---|---|---|---|---|---|---|---|
| Date sampled | Sample Location | Sample depth (ft-bgs) | TPH-g | TPH-d | TPH-k | TPH-mo | O&G |
| 6/20/1991 | 1 | 2.5 | < 1 | < 1 | - | 14 | 85 |
| 6/20/1991 | 2 | 2.5 | 16 | 11 | - | 32 | 370 |
| 6/20/1991 | 6 | 6.5 | 41 | 12 | - | 14 | 120 |
| 6/20/1991 | 7 | 2.5 | 240 | **1,800** | - | **2,000** | NA |
| 6/20/1991 | 8 | [composite] | 81 | **230** | - | 410 | NA |
| 6/19/1992 | B-1 | 5 | 7 | < 1 | < 1 | NA | NA |
| 6/19/1992 | B-1 | 10 | **960** | 4 | ** | NA | NA |
| 6/19/1992 | B-1 | 15 | 1 | < 1 | < 1 | NA | NA |
| 6/19/1992 | B-2 | 5 | < 20 | < 1 | < 1 | NA | NA |
| 6/19/1992 | B-2 | 10 | **1,500** | 2 | ** | NA | NA |
| 6/19/1992 | B-3 | 5 | 300 | 80 | ** | NA | NA |
| 6/19/1992 | B-3 | 10 | **2,800** | 24 | ** | NA | NA |
| 8/3/1998 | SB-1 | 5 | < 1.0 | NA | NA | NA | NA |
| 8/3/1998 | SB-1 | 10 | < 1.0 | NA | NA | NA | NA |
| 8/3/1998 | SB-2 | 5 | 130 | NA | NA | NA | NA |
| 8/3/1998 | SB-2 | 11 | 52 | NA | NA | NA | NA |
| 8/3/1998 | SB-3 | 5 | 68 | NA | NA | NA | NA |
| 8/3/1998 | SB-3 | 10 | 99 | NA | NA | NA | NA |
| 8/3/1998 | SB-4 | 5 | 21 | NA | NA | NA | NA |
| 8/3/1998 | SB-4 | 11 | 42 | NA | NA | NA | NA |
| 8/3/1998 | SB-4 | 15 | < 1.0 | NA | NA | NA | NA |
| 8/3/1998 | SB-5 | 5 | 2.7 | NA | NA | NA | NA |
| 8/3/1998 | SB-5 | 10 | 3.4 | NA | NA | NA | NA |
| 8/3/1998 | SB-6 | 5 | < 1.0 | NA | NA | NA | NA |
| 8/3/1998 | SB-7 | 5 | < 1.0 | NA | NA | NA | NA |
| 6/22/1999 | TR-4 | 5.5 | < 1.0 | NA | NA | NA | NA |
| 6/22/1999 | TR-5 | 5.5 | **2,100** | NA | NA | NA | NA |
| 6/22/1999 | TR-6 | 6 | 36 | NA | NA | NA | NA |
| 11/16/1999 | SB-25 | 3.5 | < 1.0 | NA | NA | NA | NA |
| 11/16/1999 | SB-28 | 6 | < 1.0 | NA | NA | NA | NA |
| 11/16/1999 | SB-28 | 16 | < 1.0 | NA | NA | NA | NA |
| 11/16/1999 | SB-31 | 5 | < 1.0 | NA | NA | NA | NA |
| 12/2/1999 | SB-33A | 5.5 | < 1.0 | NA | NA | NA | NA |
| 12/2/1999 | SB-34 | 3 | < 1.0 | NA | NA | NA | NA |
| Tier 1 ESLs | | | 500 | 110 | -- | 500 | -- |

Notes:

mg/kg - milligrams per kilogram

ft-bgs - feet below ground surface

TPH-g - Total Petroleum Hydrocarbons quantified as gasoline

TPH-d - Total Petroleum Hydrocarbons quantified as diesel

TPH-k - Total Petroleum Hydrocarbons quantified as kerosene

TPH-mo - Total Petroleum Hydrocarbons quantified as motor oil

O&G - total oil and grease

**bold** = value exceeding the applicable Environmental Screening Lev

< 1 - not detected above the detection limit

** - out of kerosene range, quantitated in diesel range

ESL = Environmental Screening Level

Tier 1 ESL values from *Update to Environmental Screening Levels*,
San Francisco Bay Regional Water Quality Control Board, December 2013, Table B (Commerical/Industrial values)

**TABLE 3C. SOIL QUALITY SUMMARY, METALS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte concentration (mg/kg) | | | | | |
|---|---|---|---|---|---|---|---|---|
| Date sampled | Sample Location | Sample depth (ft-bgs) | Cadmium | Chromium | Lead | Organic Lead | Nickel | Zinc |
| 6/20/1991 | 1 | 2.5 | ND | 30 | 2.9 | NA | 27 | 19 |
| 6/20/1991 | 2 | 2.5 | ND | 50 | 20 | NA | 48 | 42 |
| 6/20/1991 | 6 | 6.5 | ND | 65 | 5.1 | NA | 70 | 57 |
| 6/20/1991 | 7 | 2.5 | NA | NA | NA | NA | NA | NA |
| 6/20/1991 | 8 | [composite] | NA | NA | NA | NA | NA | NA |
| 6/19/1992 | B-1 | 5 | NA | NA | NA | NA | NA | NA |
| 6/19/1992 | B-1 | 10 | NA | NA | NA | NA | NA | NA |
| 6/19/1992 | B-1 | 15 | NA | NA | NA | NA | NA | NA |
| 6/19/1992 | B-2 | 5 | NA | NA | NA | NA | NA | NA |
| 6/19/1992 | B-2 | 10 | NA | NA | NA | NA | NA | NA |
| 6/19/1992 | B-3 | 5 | NA | NA | NA | NA | NA | NA |
| 6/19/1992 | B-3 | 10 | NA | NA | NA | 0.65 | NA | NA |
| Tier 1 ESLs | | | -- | 2,500 | 320 | 320[1] | 150 | 600 |

Notes:

mg/kg - milligrams per kilogram

ft-bgs - feet below ground surface

NA - Not analyzed

[1] - Value for lead, no value for organic lead listed

ESL - Environmental Screening Level

Tier 1 ESL values from *Update to Environmental Screening Levels*, San Francisco Bay Regional Water Quality Control Board, December 2013, Table B (Commerical/Industrial values)

**TABLE 4C. SAMPLING LOCATION RATIONALE**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| Table of Sample Location Rationale For Soil Vapor | | | |
|---|---|---|---|
| **Source Area** | **Downgradient** | **Outer Extent** | **General Investigation** |
| A-1 | SG-5 | A-6 | A-5 |
| A-2 | SG-6 | E | A-3 |
| A | SG-8 | F | A-4 |
| B | SG-10 | G | H |
| C | SG-12 | SG-3 | I |
| D | SG-13 | SG-7 | J |
| SG-4 | | | SG-1 |
| | | | SG-2 |
| | | | SG-9 |
| | | | SG-11 |
| | | | SG-14 |
| | | | SG-15 |
| | | | SG-16 |
| | | | SG-17 |
| | | | SV-1 |
| | | | SV-2 |
| | | | SV-3 |
| | | | SV-4 |
| | | | SV-5 |
| | | | SV-6 |
| | | | SV-7 |
| | | | SV-8 |
| | | | SV-9 |
| | | | SV-10 |
| | | | SV-11 |
| | | | SV-12 |
| | | | SV-13 |
| | | | SV-14 |
| | | | SV-15 |
| | | | SV-16 |
| | | | SV-17 |
| | | | SV-18 |
| | | | SV-19 |
| | | | SV-20 |

Notes:

-Samples VP-A through VP-J were collected at the same locations as Samples A-J, respectively.

**TABLE 4A. SAMPLING LOCATION RATIONALE**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| Table of Sample Location Rationale For Soil | | | |
|---|---|---|---|
| **Source Area** | **Downgradient** | **Outer Extent** | **General Investigation** |
| B-3 | B-2 | B-1 | SB-19 |
| SB-1 | SB-6 | SB-10 | SB-20 |
| SB-2 | SB-7 | SB-11 | SB-25 |
| SB-3 | | SB-12 | SB-26 |
| SB-3A | | SB-13 | SB-27 |
| SB-3B | | SB-14 | SB-28 |
| SB-3C | | SB-15 | SB-28 |
| SB-3D | | SB-16 | SB-29 |
| SB-4 | | SB-17 | SB-30 |
| SB-5 | | SB-18 | SB-31 |
| SB-8 | | SB-21 | SB-32 |
| SB-9 | | SB-22 | SB-33/33A |
| SB-17 | | SB-23 | |
| SB-18 | | | |
| SB-24 | | | |
| SB-34 | | | |

**TABLE 4B. SAMPLING LOCATION RATIONALE**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| Table of Sample Location Rationale For Groundwater | | | |
|---|---|---|---|
| **Recovery Well** | **Monitoring LNAPL** | **Monitoring Dissolved Phase** | **GW elevation** |
| RW-1 | TR-4 | TR-11 | TR-1 |
| RW-2 | TR-5 | | TR-2 |
| | TR-6 | | TR-3 |
| | TR-7 | | |
| | TR-8 | | |
| | TR-9 | | |
| | TR-10 | | |

**TABLE 5A. GROUNDWATER QUALITY SUMMARY, VOCS IN GRAB GROUNDWATER**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte concentration (ug/l) | | | | |
|---|---|---|---|---|---|---|---|
| Date sampled | Sample Location | Sample depth (ft-bgs) | Benzene | Toluene | Ethylbenzene | Total xylenes | MTBE |
| 8/3/1998 | SB-1 | 4 | 1 | 1 | < 0.5 | 1.2 | < 0.5 |
| 8/3/1998 | SB-2 | 4 | **44,000** | **38,000** | **5,900** | **24,000** | < 50 |
| 8/3/1998 | SB-4 | 7.5 | **16,000** | **12,000** | **3,200** | **11,000** | < 50 |
| 8/3/1998 | SB-5 | 7.5 | **11,000** | **17,000** | **3,600** | **20,000** | < 250 |
| 8/3/1998 | SB-6 | 8 | 3.1 | 9.0 | 3.3 | 16.0 | < 0.5 |
| 8/3/1998 | SB-7 | 6.5 | 1.1 | 2.1 | 1.9 | 6.4 | < 0.5 |
| 10/28/1998 | SB-10 | 11 | **8,400** | **10,000** | **2,800** | **13,000** | < 200 |
| 10/29/1998 | SB-11 | 7 | **81** | 1.3 | 4.9 | 18 | < 1 |
| 11/30/1998 | SB-13 | 7.5 | **88** | 100 | **85** | **160** | < 80 |
| 11/30/1998 | SB-14 | 7.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | 14 |
| 11/30/1998 | SB-15 | 7 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 5.0 |
| 11/30/1998 | SB-16 | 8 | **17,000** | **24,000** | **2,700** | **11,000** | < 1,300 |
| 11/30/1998 | SB-17 | 7.5 | **2,500** | **6,700** | **1,600** | **6,200** | < 690 |
| 11/30/1998 | SB-18 | 7 | < 0.5 | < 0.5 | 0.67 | < 0.5 | < 5.0 |
| 5/11/1999 | TR-2 | 0-12 | **340** | **630** | < 10 | **270** | < 100 |
| 5/11/1999 | TR-3 | 0-12 | < 0.50 | < 0.50 | 2.6 | < 0.50 | < 5.0 |
| 5/11/1999 | SB-17 | 0-12 | < 0.50 | 0.93 | < 0.50 | 2.7 | < 5.0 |
| 5/11/1999 | SB-19 | 0-12 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 5.0 |
| 5/11/1999 | SB-20 | 0-12 | 12 | 38 | < 0.50 | 30 | < 5.0 |
| 5/11/1999 | SB-21 | 0-12 | **40,000** | **120,000** | **57,000** | **240,000** | < 10,000 |
| 5/11/1999 | SB-22 | 0-12 | < 0.50 | 2.2 | < 0.50 | < 0.50 | < 5.0 |
| 5/11/1999 | SB-23 | 0-12 | **5,000** | **11,000** | **2,800** | **11,000** | < 500 |
| 5/11/1999 | SB-24 | 0-12 | **6,400** | **9,200** | **2,700** | **9,400** | < 1,000 |
| 11/16/1999 | SB-26 | 0-16 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| 11/16/1999 | SB-27 | 0-16 | 1.8 | < 0.50 | 1.1 | < 0.50 | NA |
| 11/16/1999 | SB-28 (F/BM) | 0-8 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| 12/2/1999 | SB-29 | 0-24 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| 12/2/1999 | SB-30 | 0-24 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| 11/16/1999 | SB-31 (F/BM) | 0-8 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| 11/16/1999 | SB-31 | 0-16 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| 12/2/1999 | SB-32 | 0-28 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| 11/16/1999 | SB-33 | 0-16 | **31** | 71 | 16 | 68 | NA |
| 12/2/1999 | SB-33A (F/BM) | 0-8 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | NA |
| Tier 1 ESLs | | | 27 | 130 | 43 | 100 | 1,800 |

Notes:
VOC - volatile organic compound
ug/L - micrograms per liter
ft-bgs - feet below ground surface
MTBE - methyl tert-butyl ether
< 0.5 - Not detected above the laboratory reporting limit
**bold** = value exceeding the Commercial/Industrial Environmental Screening Level
NA - Not Analyzed
ESL = Environmental Screening Level
Tier 1 ESL values from *Update to Environmental Screening Levels*, San Francisco Bay Regional Water Quality Control Board, December 2013, Table B (Commercial/Industrial values)

**TABLE 5B. GROUNDWATER QUALITY SUMMARY, HYDROCARBONS IN GRAB GROUNDWATER**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte concentration (ug/L) | |
|---|---|---|---|---|
| Date sampled | Sample Location | Sample depth (ft-bgs) | TPH-g | TPH-d |
| 8/3/1998 | SB-1 | 4 | < 50 | NA |
| 8/4/1998 | SB-2 | 4 | **160,000** | NA |
| 8/5/1998 | SB-4 | 7.5 | **63,000** | NA |
| 8/6/1998 | SB-5 | 7.5 | **72,000** | NA |
| 8/7/1998 | SB-6 | 8 | 63 | NA |
| 8/8/1998 | SB-7 | 6.5 | < 50 | NA |
| 10/28/1998 | SB-10 | 11 | **98,000** | NA |
| 10/29/1998 | SB-11 | 7 | **780** | NA |
| 11/30/1998 | SB-13 | 7.5 | **1,800** | NA |
| 11/30/1998 | SB-14 | 7.5 | < 50 | NA |
| 11/30/1998 | SB-15 | 7 | < 50 | NA |
| 11/30/1998 | SB-16 | 8 | **110,000** | NA |
| 11/30/1998 | SB-17 | 7.5 | **43,000** | NA |
| 11/30/1998 | SB-18 | 7 | < 50 | NA |
| 5/11/1999 | SB-17 | 0-12 | < 50 | NA |
| 5/11/1999 | SB-19 | 0-12 | < 50 | NA |
| 5/11/1999 | SB-20 | 0-12 | 160 | NA |
| 5/11/1999 | SB-21 | 0-12 | **360,000** | NA |
| 5/11/1999 | SB-22 | 0-12 | < 50 | NA |
| 5/11/1999 | SB-23 | 0-12 | **11,000** | NA |
| 5/11/1999 | SB-24 | 0-12 | **71,000** | NA |
| 11/16/1999 | SB-26 | 0-16 | < 50 | NA |
| 11/16/1999 | SB-27[1] | 0-16 | 120 | NA |
| 11/16/1999 | SB-28 (F/BM) | 0-8 | < 50 | NA |
| 12/2/1999 | SB-29 | 0-24 | < 50 | NA |
| 12/2/1999 | SB-30 | 0-24 | < 50 | NA |
| 11/16/1999 | SB-31 (F/BM) | 0-8 | < 50 | NA |
| 11/16/1999 | SB-31 | 0-16 | < 50 | NA |
| 12/2/1999 | SB-32 | 0-28 | < 50 | NA |
| 11/16/1999 | SB-33 | 0-16 | 450 | NA |
| 12/2/1999 | SB-33A (F/BM) | 0-8 | < 50 | NA |
| Tier 1 ESLs | | | 500 | 640 |

Notes:

ug/L - micrograms per liter

ft-bgs - feet below ground surface

TPH-g - Total Petroleum Hydrocarbons quantified as gasoline

TPH-d - Total Petroleum Hydrocarbons quantified as diesel

< 50 - Not detected above the laboratory reporting limit

NA - Not analyzed

**bold** = value exceeding the Commercial/Industrial Environmental Screening Level

[1] - Laboratory noted TPH-g result for SB-27 did not match the standard for gasoline

F/BM - perched water sample collected at the fill/Bay Mud interface

ESL = Environmental Screening Level

Tier 1 ESL values from *Update to Environmental Screening Levels* , San Francisco Bay Regional Water Quality Control Board, December 2013, Table D (Commercial/Industrial values)

**TABLE 5C. GROUNDWATER QUALITY SUMMARY, VOCS IN GROUNDWATER**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte concentration (ug/l) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date sampled | Sample Location | Well screen interval (ft-bgs) | Benzene | Toluene | Ethylbenzene | Total xylenes | MTBE | 1,2,4-trimethylbenzene | 1,3,5-trimethylbenzene | n-butylbenzene | n-propylbenzene | Isopropyl benzene | Naphthalene | Diisopropylether | Other VOCs |
| 5/11/1999 | TR-2 | 0-12 | **340** | **630** | < 10 | **270** | < 100 | NA | NA | NA | NA | NA | NA | NA | NA |
| 5/11/1999 | TR-3 | 0-12 | < 0.5 | < 0.5 | 2.6 | < 0.5 | < 5.0 | NA | NA | NA | NA | NA | NA | NA | NA |
| 10/9/2007 | RW-1 | - | 4.3 | < 0.5 | 2.6 | < 0.5 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 10/9/2007 | RW-2 | - | **29** | 4.3 | 13 | 3.58 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 9/24/2008 | TR-4 | 2.25-20.5 | **670** | **170** | **1,400** | **1,800** | < 50 | 2,500 | 680 | 89 | 290 | 110 | **400** | < 50 | ND |
| 9/24/2008 | TR-5 | 2.25-20.5 | **5,500** | **1,900** | **350** | **1,400** | < 100 | 1,200 | 390 | < 100 | 130 | < 100 | **150** | < 100 | ND |
| 9/24/2008 | TR-6 | 2.25-20.5 | **8,400** | **17,000** | **6,300** | **25,000** | < 500 | 4,200 | 1,100 | < 500 | < 500 | < 500 | **930** | < 500 | ND |
| 9/24/2008 | TR-10 | 5.0-20.0 | **10,000** | **13,000** | **2,500** | **13,000** | < 500 | 2,600 | 660 | < 500 | < 500 | < 500 | **660** | < 500 | ND |
| 9/24/2008 | TR-11 | 5.0-20.0 | < 0.5 | 1.0 | 0.6 | 1.4 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | 1.7 | ND |
| Tier 1 ESLs | | | 27 | 130 | 43 | 10 | 1,800 | | | | | | 24 | | |

Notes:

VOC - volatile organic compound

ug/L - micrograms per liter

ft-bgs - feet below ground surface

MTBE - methyl tert-butyl ether

< 0.5 - Not detected above the laboratory reporting limit

NA - not analyzed

ND - not detected above laboratory reporting limits

**bold** = value exceeding the Commercial/Industrial Environmental Screening Level

ESL = Environmental Screening Level

Tier 1 ESL values from *Update to Environmental Screening Levels* , San Francisco Bay Regional Water Quality Control Board, December 2013, Table D (Commercial/Industrial values)

**TABLE 5D. GROUNDWATER QUALITY SUMMARY, HYDROCARBONS IN GROUNDWATER**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte concentration (ug/L) | | |
|---|---|---|---|---|---|
| Date sampled | Sample Location | Well screen interval (ft-bgs) | TPH-g | TPH-d | Organic lead |
| 5/11/1999 | TR-2 | 0-12 | **2600** | NA | NA |
| 5/11/1999 | TR-3 | 0-12 | < 50 | NA | NA |
| 10/9/2007 | RW-1 | - | 78 | NA | < 300 |
| 10/9/2007 | RW-2 | - | 320 | NA | < 300 |
| 9/24/2008 | TR-4 | 2.25-20.5 | **39,000** | **10,000** | NA |
| 9/24/2008 | TR-5 | 2.25-20.5 | **34,000** | **8,100** | NA |
| 9/24/2008 | TR-6 | 2.25-20.5 | **290,000** | **73,000** | NA |
| 9/24/2008 | TR-10 | 5.0-20.0 | **130,000** | **26,000** | NA |
| 9/24/2008 | TR-11 | 5.0-20.0 | < 50 | < 50 | NA |
| Tier 1 ESLs | | | 500 | 640 | |

Notes:

ug/L - micrograms per liter

ft-bgs - feet below ground surface

TPH-g - total petroleum hydrocarbons quantified as gasoline

TPH-d - total petroleum hydrocarbons quantified as diesel

NA - not analyzed

< 50 - not detected above the laboratory reporting limit

**bold -** value exceeding the Commercial/Industrial Environmental Screening Level

- no screen interval data found

ESL - Environmental Screening Level

Tier 1 ESL values from *Update to Environmental Screening Levels* , San Francisco Bay Regional Water Quality Control Board, December 2013, Table D (Commercial/Industrial values)

**TABLE 6. WELL CONSTRUCTION DETAILS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| Installation date | Well ID | Abandonment date (if abandoned) | Total depth | Screened interval (ft-bgs) | TOC elevation |
|---|---|---|---|---|---|
| 5/11/1999 | TR-1 | 5/12/1999 | 12 | 2.5-12 | 7.59 |
| 5/11/1999 | TR-2 | 5/12/1999 | 12 | 2.5-12 | 9.06 |
| 5/11/1999 | TR-3 | 5/12/1999 | 12 | 0-12 | 7.34 |
| 6/22/1999 | TR-4 | - | 20.5 | 2.25-20.5 | 9.59 |
| 6/23/1999 | TR-5 | - | 20.5 | 2.25-20.5 | 9.29 |
| 6/22/1999 | TR-6 | - | 20.5 | 2.25-20.5 | 9.89 |
| 6/4/2001 | TR-7 | - | 22 | 5.0-20.0 | UNK |
| 8/10/2001 | TR-8 | - | 20 | 5.0-20.0 | UNK |
| 6/5/2001 | TR-9 | - | 16 | 6.0-16.0 | UNK |
| 7/7/2004 | TR-10[1] | - | 20 | 5.0-20.0 | 9.95 |
| 7/7/2004 | TR-11[1] | - | 20 | 5.0-20.0 | 9.38 |
| 12/23/2005 | RW-1[1] | - | 9 | UNK | UNK |
| 12/23/2005 | RW-2[1] | - | 9.4 | UNK | UNK |

Notes:

ft-bgs - feet below ground surface

TOC - top of casing

- not applicable

[1] - details estimated from field notes, no published boring log or description available

UNK - unknown

**TABLE 7A. SOIL VAPOR QUALITY SUMMARY, VOCS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte Concentration (ug/L) | | | | | | | Analyte Concentration (ug/L) | | | | | | | | Analyte Concentration (ug/L) | | | | | | | Analyte Concentration (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date sampled | Sample Location | Sample depth (ft-bgs) | Benzene | Toluene | Ethylbenzene | m,p-xylenes | o-xylenes | Total xylenes | MTBE | Acetone | Carbon Disulfide | Chloroform | Ethanol | Freon 11 | Hexane | Cyclohexane | Methyl Ethyl Ketone | 2-propanol | Tetrahydrofuran | Tetrachloroethene | 2,2,4-trimethylpentane | 1,1,1-trichloroethane | 1,2,4-trimethylbenzene | 4-ethyltoluene | Other VOCs | Helium % |
| Soil Gas Sampling Events | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6/17/1992 | SG-01 | 5 | 95.1 | 49.2 | 2.1 | NA | NA | 29.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-02 | 5 | < 0.1 | < 0.1 | < 0.1 | NA | NA | < 0.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-03 | 5 | 34.2 | 23.8 | 1.6 | NA | NA | 19.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-04 | 5 | < 0.1 | < 0.1 | < 0.1 | NA | NA | < 0.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-05 | 5 | 18.5 | 17.2 | 1.5 | NA | NA | 22.8 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-06 | 5 | 14.7 | 12.6 | 0.9 | NA | NA | 14.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-07 | 5 | 6.3 | 4.5 | < 0.1 | NA | NA | 4.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-08 | 5 | 4.9 | 2.9 | 0.2 | NA | NA | 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-09 | 5 | < 0.1 | < 0.1 | < 0.1 | NA | NA | < 0.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-10 | 5 | 13.9 | 13.0 | 1.0 | NA | NA | 16.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-11 | 5 | 6.9 | 7.4 | 0.6 | NA | NA | 13.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-12 | 5 | < 0.1 | < 0.1 | < 0.1 | NA | NA | < 0.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-13 | 5 | 13.5 | 14.9 | 1.8 | NA | NA | 26.3 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-14 | 5 | 20.9 | 18.1 | 1.4 | NA | NA | 19.8 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-15 | 5 | 4.5 | 5.6 | 0.6 | NA | NA | 8.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-16 | 5 | 2.1 | 4.1 | 0.7 | NA | NA | 12.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 6/17/1992 | SG-17 | 5 | < 0.1 | < 0.1 | < 0.1 | NA | NA | < 0.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-1 | 3 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-2 | 1 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-3 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-4 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-5 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-6 | 1.5 | 190 | 110 | 190 | NA | NA | 75 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-7 | 1.5 | 10 | 65 | 20 | NA | NA | 15 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-8 | 1.5 | 4.9 | < 1.0 | 9.2 | NA | NA | 8.6 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-9 | 1.5 | 4.8 | < 1.0 | 7.3 | NA | NA | 5.9 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-10 | 1.5 | 3.2 | < 1.0 | 5.4 | NA | NA | 4.5 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-11 | 1.5 | 1.1 | < 1.0 | 1.6 | NA | NA | 3.7 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-12 | 1.5 | < 1.0 | < 1.0 | 1.9 | NA | NA | 15 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-13 | 1.5 | 2.7 | 18 | 6.8 | NA | NA | 6.9 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-14 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-15 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-16 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-17 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-18 | 1.5 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-19 | 3 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/4/1998 | SV-20 | 3 | < 1.0 | < 1.0 | < 1.0 | NA | NA | < 1.0 | < 1.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sub-Slab Soil Vapor Sampling Events | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8/3/2001 | A | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | B | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | C | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | D | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | E | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | F | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | G | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | H | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | I | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 8/3/2001 | J | 2-3 | < 5 | < 5 | < 5 | < 10 | < 5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 10/9/2009 | VP-A | 2-3 | < 4.2 | 7.3 | < 5.7 | 7.6 | ND | NA | < 4.8 | 22 | 79 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | < 0.13 |
| 10/9/2009 | VP-B | 2-3 | < 3.9 | 8.2 | < 5.4 | 6.6 | ND | NA | < 4.4 | 21 | ND | ND | ND | ND | ND | ND | 4.2 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA |
| 10/9/2009 | VP-C | 2-3 | < 39 | ND | < 54 | ND | ND | NA | < 44 | ND | ND | ND | ND | ND | 110 | 220 | ND | ND | ND | ND | 1600 | ND | ND | ND | ND | ND | ND | ND | ND | < 0.12 |
| 10/9/2009 | VP-D | 2-3 | < 3.4 | 9.4 | < 4.7 | 6.9 | ND | NA | < 3.9 | 21 | ND | 6.7 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5.8 | 5.8 | ND | ND | < 0.25 |
| 10/9/2009 | VP-D Dup | 2-3 | < 4.0 | 7.6 | < 5.5 | 6.3 | ND | NA | < 4.6 | 16 | 4 | 7.8 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 7.2 | 7.1 | ND | ND | < 0.13 |
| 10/9/2009 | VP-E | 2-3 | < 4.0 | ND | < 5.5 | ND | ND | NA | < 4.6 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | < 0.13 |
| 10/9/2009 | VP-F | 2-3 | < 4.0 | ND | < 5.5 | ND | ND | NA | < 4.6 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | < 0.26 |
| 10/9/2009 | VP-G | 2-3 | < 4.2 | 9.1 | < 5.7 | 8.5 | ND | NA | < 4.8 | 33 | ND | ND | ND | ND | ND | ND | 5.7 | 13 | 4.1 | ND | ND | ND | 8.4 | 7.3 | ND | ND | < 0.13 |
| 10/9/2009 | VP-H | 2-3 | < 4.0 | 16 | < 5.4 | 6.8 | ND | NA | < 4.5 | 24 | ND | ND | 130 | ND | ND | ND | 5.7 | 14 | 8.1 | 9.7 | ND | 8.6 | 7.4 | ND | ND | ND | < 0.12 |
| 10/9/2009 | VP-I | 2-3 | < 4.2 | 7.3 | < 5.7 | 6.6 | ND | NA | < 4.8 | 60 | ND | ND | 16 | ND | ND | ND | 12 | 16 | ND | ND | ND | 40 | 7.9 | 7 | ND | ND | < 0.13 |
| 10/9/2009 | VP-J | 2-3 | < 3.8 | 5.7 | < 5.2 | 5.2 | ND | NA | < 4.3 | 11 | ND | ND | ND | 11 | ND | ND | ND | ND | ND | ND | ND | 60 | ND | ND | ND | ND | < 0.12 |
| Tier 1 ESLs | | | 420 | 1.30E+06 | 4900 | -- | -- | 4.40E+05 | 47000 | 1.40E+08 | -- | 2300 | -- | -- | -- | -- | 2.20E+07 | -- | -- | 2.10E+03 | -- | 1.60E+03 | -- | -- | -- | -- |

Notes:
VOC - volatile organic compound
ug/L - micrograms per liter
ft-bgs - feet below ground surface
MTBE - methyl tert-butyl ether
< 1.0 - Not detected above the laboratory reporting limit
NA - Not Analyzed
-- No ESL established
ESL = Environmental Screening Level
Tier 1 ESL values from *Update to Environmental Screening Levels* ,
San Francisco Bay Regional Water Quality Control Board,
December 2013, Table E (Commercial/Industrial values)

**TABLE 7B. SOIL VAPOR QUALITY SUMMARY, HYDROCARBONS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

| | | | Analyte concentration (ug/L) |
|---|---|---|---|
| Date Sampled | Sample Location | Sample depth (ft-bgs) | TPH-g |
| 6/17/1992 | SG-01 | 5 | 763 |
| 6/17/1992 | SG-02 | 5 | < 1.0 |
| 6/17/1992 | SG-03 | 5 | 286 |
| 6/17/1992 | SG-04 | 5 | < 1.0 |
| 6/17/1992 | SG-05 | 5 | 163 |
| 6/17/1992 | SG-06 | 5 | 123 |
| 6/17/1992 | SG-07 | 5 | 53 |
| 6/17/1992 | SG-08 | 5 | 38 |
| 6/17/1992 | SG-09 | 5 | < 1.0 |
| 6/17/1992 | SG-10 | 5 | 127 |
| 6/17/1992 | SG-11 | 5 | 66 |
| 6/17/1992 | SG-12 | 5 | < 1.0 |
| 6/17/1992 | SG-13 | 5 | 131 |
| 6/17/1992 | SG-14 | 5 | 178 |
| 6/17/1992 | SG-15 | 5 | 50 |
| 6/17/1992 | SG-16 | 5 | 28 |
| 6/17/1992 | SG-17 | 5 | < 1.0 |
| Tier 1 ESLs | | | 2.50E+06 |

Notes:

ug/L - micrograms per liter

ft-bgs - feet below ground surface

< 1.0 - Not detected above the laboratory reporting limit

ESL = Environmental Screening Level

Tier 1 ESL values from *Update to Environmental Screening Levels* , San Francisco Bay Regional Water Quality Control Board, December 2013, Table E (Commercial/Industrial values)

**TABLE 7C. INDOOR AIR QUALITY SUMMARY, VOCS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

Analyte concentration (ug/m3)

| Date Sampled | Sample Location | Freon 12 | Chloromethane | Freon 11 | Methylene Chloride | 1,1,1-trichloroethane | Benzene | 1,2-dichloroethane | Toluene | Ethylbenzene | m,p-xylene | o-xylene | Styrene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/12/2000 | A-1 | 6.6 | 2.5 | 1.2 | 2.0 | 0.82 J | **10** | < 0.61 | 56 | 4.4 | 17 | 4.3 | 0.96 |
| 11/12/2000 | A-2 | 6.1 | 1.2 | 1.2 | 2.2 | 1.1 | **8.0** | < 0.65 | 42 | 3.4 | 12 | 3.4 | < 0.68 |
| 11/12/2000 | A-3 | 6.1 | 1.4 | 1.1 | 5.8 | 1.3 | **7.4** | < 0.66 | 18 | 2.0 | 6.4 | 1.9 | < 0.70 |
| 11/12/2000 | A-4 | 5.8 | 2.2 | 1.1 | 5.5 | 1.3 | **6.5** | **0.72** | 18 | 1.8 | 8.0 | 2.4 | < 0.73 |
| 11/12/2000 | A-5 | 4.8 | 1.3 | 1.2 | 0.70 | < 0.93 | **3.7** | < 0.69 | 6.4 | 0.82 | 2.8 | 1.2 | < 0.73 |
| 11/12/2000 | A-6 | 6.0 | 1.3 | < 1.0 | 0.61 J | < 0.97 | **2.9** | < 0.72 | 4.4 | < 0.77 | 2.2 | 1.3 | < 0.76 |
| Tier 1 ESLs | | -- | 390 | -- | 26 | 2.20E+04 | 0.420 | 0.58 | 1.30E+03 | 4.9 | 440[1] | 440[1] | 3.90E+03 |

**TABLE 7C. INDOOR AIR QUALITY SUMMARY, VOCS**
**2855 MANDELA PARKWAY SITE, OAKLAND, CALIFORNIA**

Analyte concentration (ug/m3)

| 1,3,5-Trimethylbenzene | 1,2,4-trimethylbenzene | 1,2-dichlorobenzene | Acetone | 2-propanol | Methyl Ethyl Ketone | Hexane | 1,4-Dioxane | Cyclohexane | Ethanol | MTBE | Heptane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.96 | 3.5 | < 0.91 | 18 | 5.5 | < 2.2 | 11 | < 2.7 | 4.6 | 12 | 5.4 | 4.9 |
| 0.78 J | 2.8 | < 0.96 | 16 | 5.6 | < 2.4 | 9.8 | < 2.9 | 3.7 | 12 | 4.4 | 3.7 |
| < 0.80 | 0.92 | 3 | 15 | 4.4 | 3.0 | 5.2 | < 2.9 | 2.9 | 16 | 7.7 | < 0.34 |
| 0.87 | 2.8 | < 1.0 | 14 | 2.1 J | < 2.5 | 4.4 | **6.1** | < 2.9 | 14 | 6.6 | < 3.5 |
| < 0.84 | < 0.84 | < 1.0 | 11 | < 2.1 | < 2.5 | < 3.0 | < 3.1 | < 2.9 | 8.1 | < 3.1 | < 3.5 |
| < 0.87 | 1.1 | < 1.1 | 14 | < 2.2 | < 2.6 | < 3.1 | **8.6** | < 3.1 | 3.6 | < 3.2 | < 3.6 |
| -- | -- | 8.80E+02 | 1.40E+05 | -- | 2.20E+04 | -- | 1.60 | -- | -- | 47 | -- |

Notes:

ug/m3 - micrograms per cubic meter

MTBE - methyl tert-butyl ether

< 0.91 - Not detected above the laboratory reporting limit

J - estimated value

**bold** = value exceeding the Commercial/Industrial Environmental Screening Level

Sample A-4 was collected as a field duplicate of A-3. Samples A-5 and A-6 were collected outdoors as ambient background samples

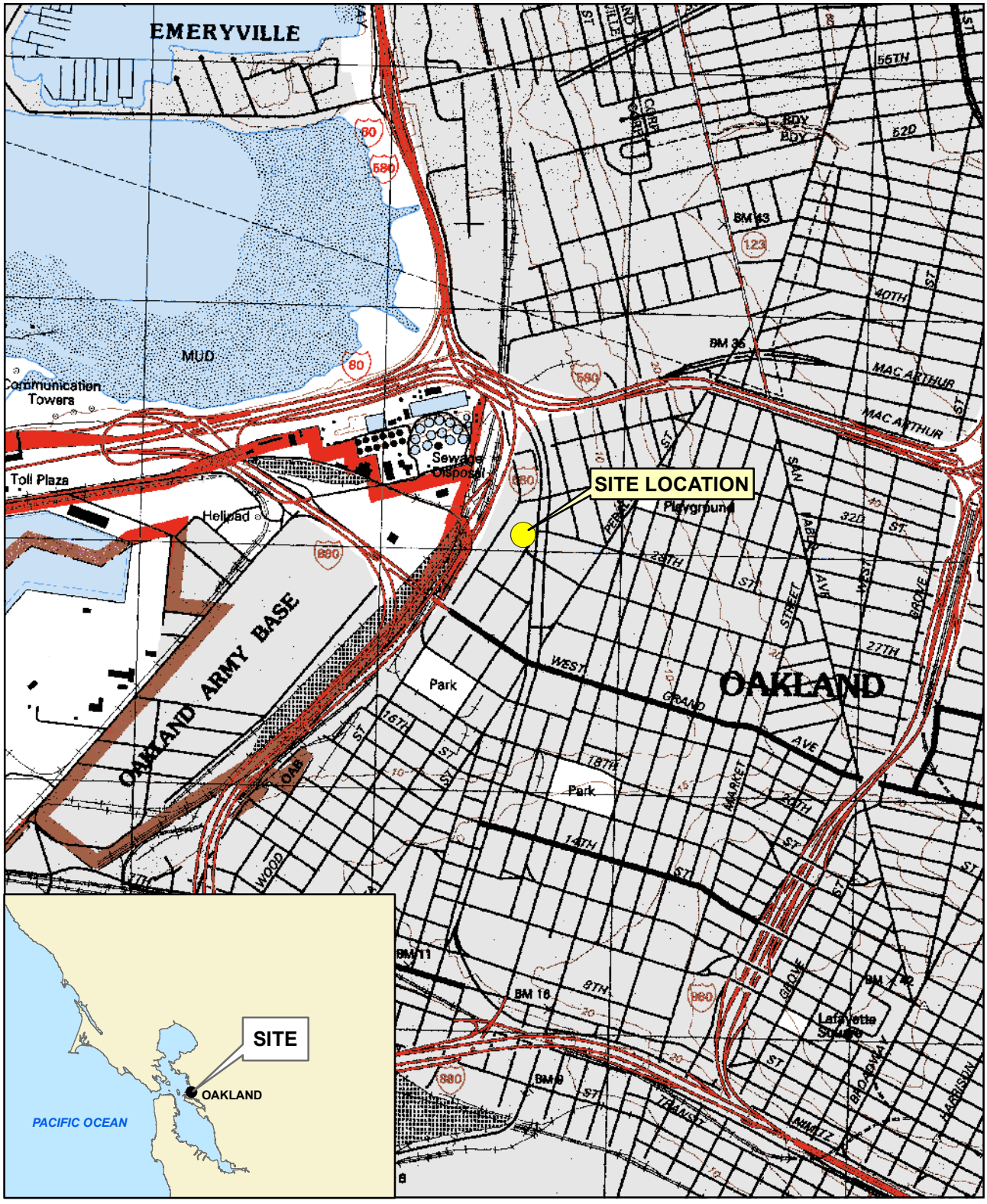
-- No ESL established

ESL = Environmental Screening Level

Tier 1 ESL values from *Update to Environmental Screening Levels* , San Francisco Bay Regional Water Quality Control Board, December 2013, Table E (Commercial/Industrial values)

[1] - ESL is for total xylenes

**FIGURES**




N

0 2,000'

SOURCE: USGS 7.5' QUAD SHEET
OAKLAND WEST, CA, 1993

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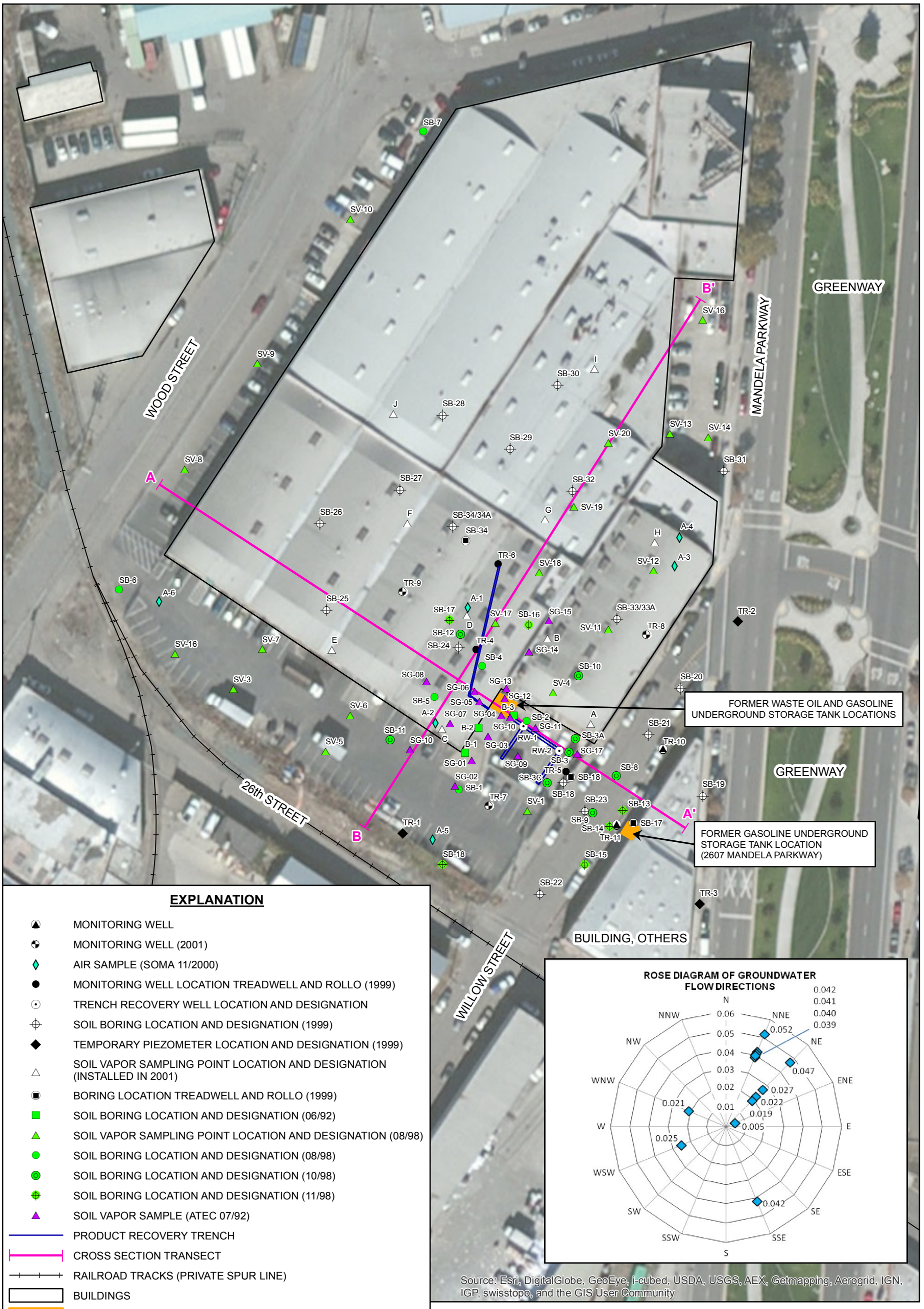
**FIGURE 1**

**SITE LOCATION**

**2855 MANDELA PARKWAY**
**OAKLAND, CALIFORNIA**

| Drawn By: DH | Checked By: LA | Scale: 1" = 2000' | Date: 7/5/11 | SFR_Fig1-1_LTA_Site_Loc.mxd |
|---|---|---|---|---|




## EXPLANATION

- MONITORING WELL
- MONITORING WELL (2001)
- AIR SAMPLE (SOMA 11/2000)
- MONITORING WELL LOCATION TREADWELL AND ROLLO (1999)
- TRENCH RECOVERY WELL LOCATION AND DESIGNATION
- SOIL BORING LOCATION AND DESIGNATION (1999)
- TEMPORARY PIEZOMETER LOCATION AND DESIGNATION (1999)
- SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION (INSTALLED IN 2001)
- BORING LOCATION TREADWELL AND ROLLO (1999)
- SOIL BORING LOCATION AND DESIGNATION (06/92)
- SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION (08/98)
- SOIL BORING LOCATION AND DESIGNATION (08/98)
- SOIL BORING LOCATION AND DESIGNATION (10/98)
- SOIL BORING LOCATION AND DESIGNATION (11/98)
- SOIL VAPOR SAMPLE (ATEC 07/92)
- PRODUCT RECOVERY TRENCH
- CROSS SECTION TRANSECT
- RAILROAD TRACKS (PRIVATE SPUR LINE)
- BUILDINGS
- KNOWN UNDERGROUND STORAGE TANK

N

0 70'

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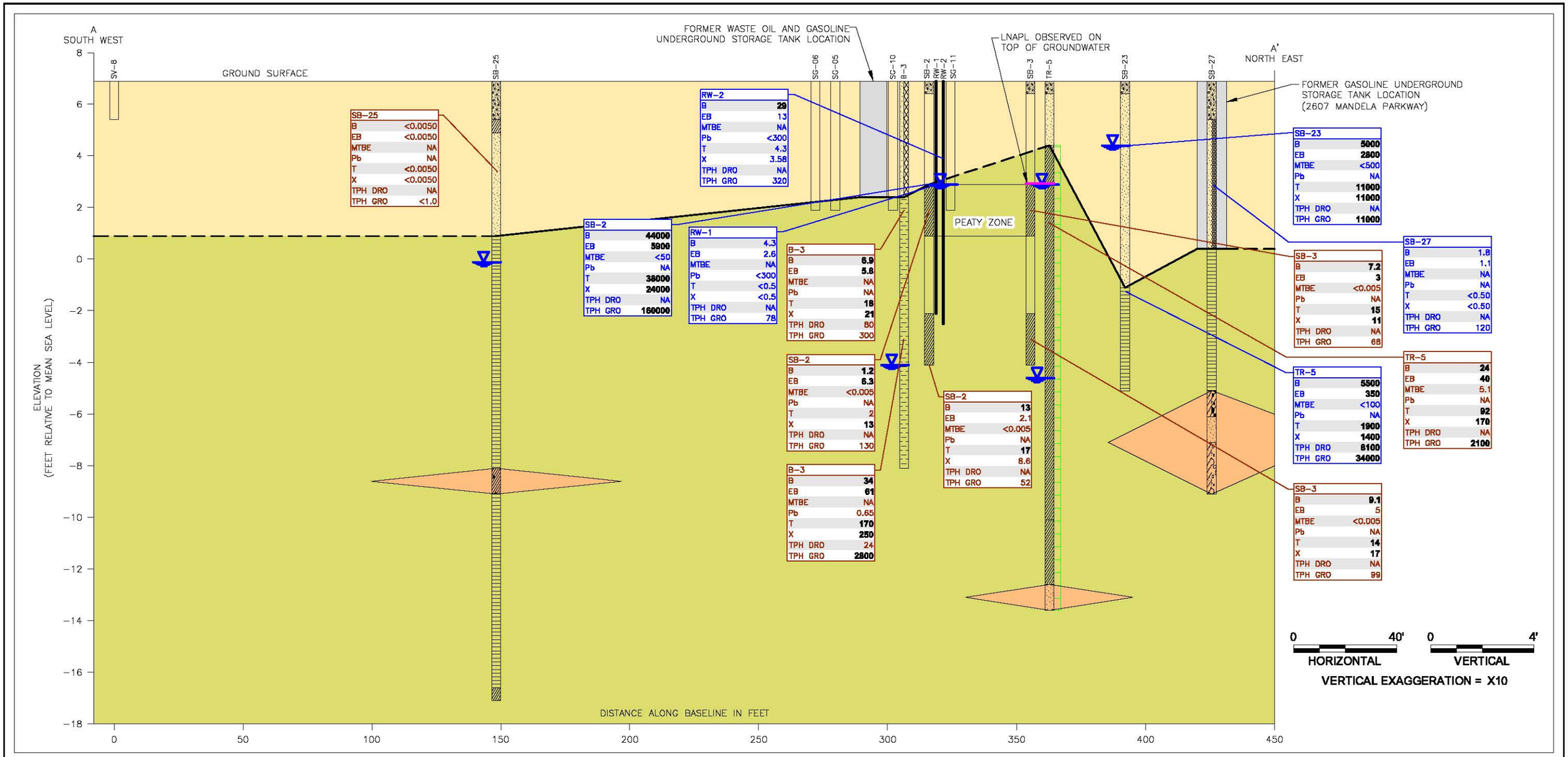
**FIGURE 2**

**SITE MAP**
**HISTORICAL SAMPLE LOCATIONS AND MONITORING WELL NETWORK**

**2855 MANDELA PARKWAY**
**OAKLAND, CALIFORNIA**

| Drawn By: DH | Checked By: LA | Scale: 1 " = 72 ' | Date: 3/5/14 | File: BalcoOaklandWP_Fig2.mxd |
|---|---|---|---|---|




## EXPLANATION

- WELL OR BORING LOCATION DESIGNATION (SB-25)
- CONCRETE
- SAND
- CLAY
- CLAY (BAY MUD)
- CLAY WITH GRAVEL
- CLAY WITH SAND AND GRAVEL (BAY MUD)
- CLAY WITH SAND AND GRAVEL
- SILTY SAND (FILL)
- SILTY CLAY (BAY MUD)
- SAND (FILL)
- NOT RECORDED
- WELL SCREEN INTERVAL
- FILL
- CLAY (BAY MUD)
- COARSE-GRAINED LENS IN-BAY MUD
- WATER LEVEL
- CONTACT BETWEEN THE FILL AND THE CLAY (DASHED WHERE INFFERD)

## CONSTITUENT TABLE EXPLANATION

| WELL DESIGNATION | RW-1 | SOIL (mg/kg) | GW (µg/L) |
|---|---|---|---|
| BENZENE | B | 1.2 | 27 |
| ETHYL BENZENE | EB | 4.7 | 43 |
| METHYL TERT-BUTYL ETHER | MTBE | 8.4 | 1800 |
| NAPHTHALENE | N | | 24 |
| ORGANIC LEAD | Pb | | |
| TOLUENE | T | 9.3 | 130 |
| XYLENES | X | 11 | 100 |
| TOTAL PETROLEUM (DIESEL RANGE ORGANICS) | TPH DRO | 110 | 640 |
| TOTAL PETROLEUM (GASOLINE RANGE ORGANICS) | TPH GRO | 500 | 500 |

VALUES SHOWN ARE ENVIRONMENTAL SCREENING LEVELS (ESL)

## NOTES:

1. BROWN BOX = SOIL SAMPLE, CONCENTRATION IN MILLIGRAMS PER KILOGRAM (mg/kg)
2. BLUE BOX = GROUNDWATER SAMPLE, CONCENTRATION IN MICROGRAMS PER LITER (µg/l)
3. **BOLD** DATA INDICATES CONSTITUENT EXCEEDS ENVIRONMENTAL SCREENING LEVELS
4. TIER 1 ESL VALUES FROM UPDATE TO ENVIRONMENTAL SCREENING LEVELS, SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD, DECEMBER 2013, TABLE B (COMMERCIAL/INDUSTRIAL VALUES).

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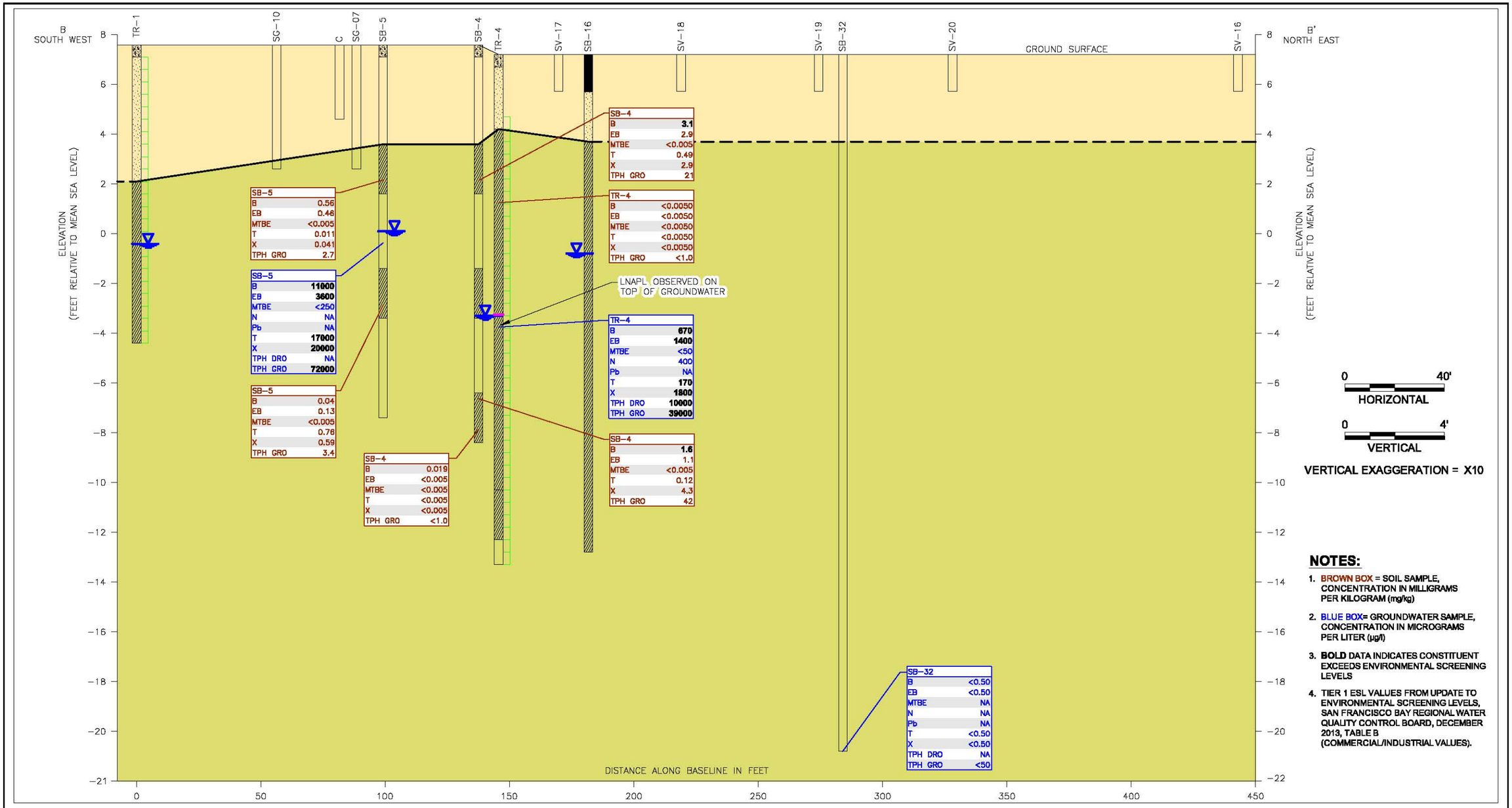
# FIGURE 3

## CROSS SECTION A-A'

## 2855 MANDELA PARKWAY OAKLAND, CALIFORNIA

| Drawn By: JLP | Checked By: LA | Scale: AS SHOWN | Date: 3/5/2014 | File: 21B_XSECTIONS-201401 |
|---|---|---|---|---|




## NOTES:

1. BROWN BOX = SOIL SAMPLE, CONCENTRATION IN MILLIGRAMS PER KILOGRAM (mg/kg)
2. BLUE BOX= GROUNDWATER SAMPLE, CONCENTRATION IN MICROGRAMS PER LITER (µg/l)
3. **BOLD** DATA INDICATES CONSTITUENT EXCEEDS ENVIRONMENTAL SCREENING LEVELS
4. TIER 1 ESL VALUES FROM UPDATE TO ENVIRONMENTAL SCREENING LEVELS, SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD, DECEMBER 2013, TABLE B (COMMERCIAL/INDUSTRIAL VALUES).

## EXPLANATION

- TR-1: WELL OR BORING LOCATION DESIGNATION
- ASPHALT/BASEROCK
- CONCRETE
- CLAY
- SAND
- LITHOLOGY NOT RECORED
- WELL SCREEN INTERVAL
- FILL
- CLAY (BAY MUD)
- WATER LEVEL
- CONTACT BETWEEN THE FILL AND THE CLAY (DASHED WHERE INFFERD)

## CONSTITUENT TABLE EXPLANATION

| WELL DESIGNATION | RW-1 | SOIL (mg/kg) | GW (µg/L) |
|---|---|---|---|
| BENZENE | B | 1.2 | 27 |
| ETHYL BENZENE | EB | 4.7 | 43 |
| METHYL TERT-BUTYL ETHER | MTBE | 8.4 | 1800 |
| NAPHTHALENE | N | | 24 |
| ORGANIC LEAD | Pb | | |
| TOLUENE | T | 9.3 | 130 |
| XYLENES | X | 11 | 100 |
| TOTAL PETROLEUM (DIESEL RANGE ORGANICS) | TPH DRO | 110 | 640 |
| TOTAL PETROLEUM (GASOLINE RANGE ORGANICS) | TPH GRO | 500 | 500 |

VALUES SHOWN ARE ENVIRONMENTAL SCREENING LEVELS (ESL)

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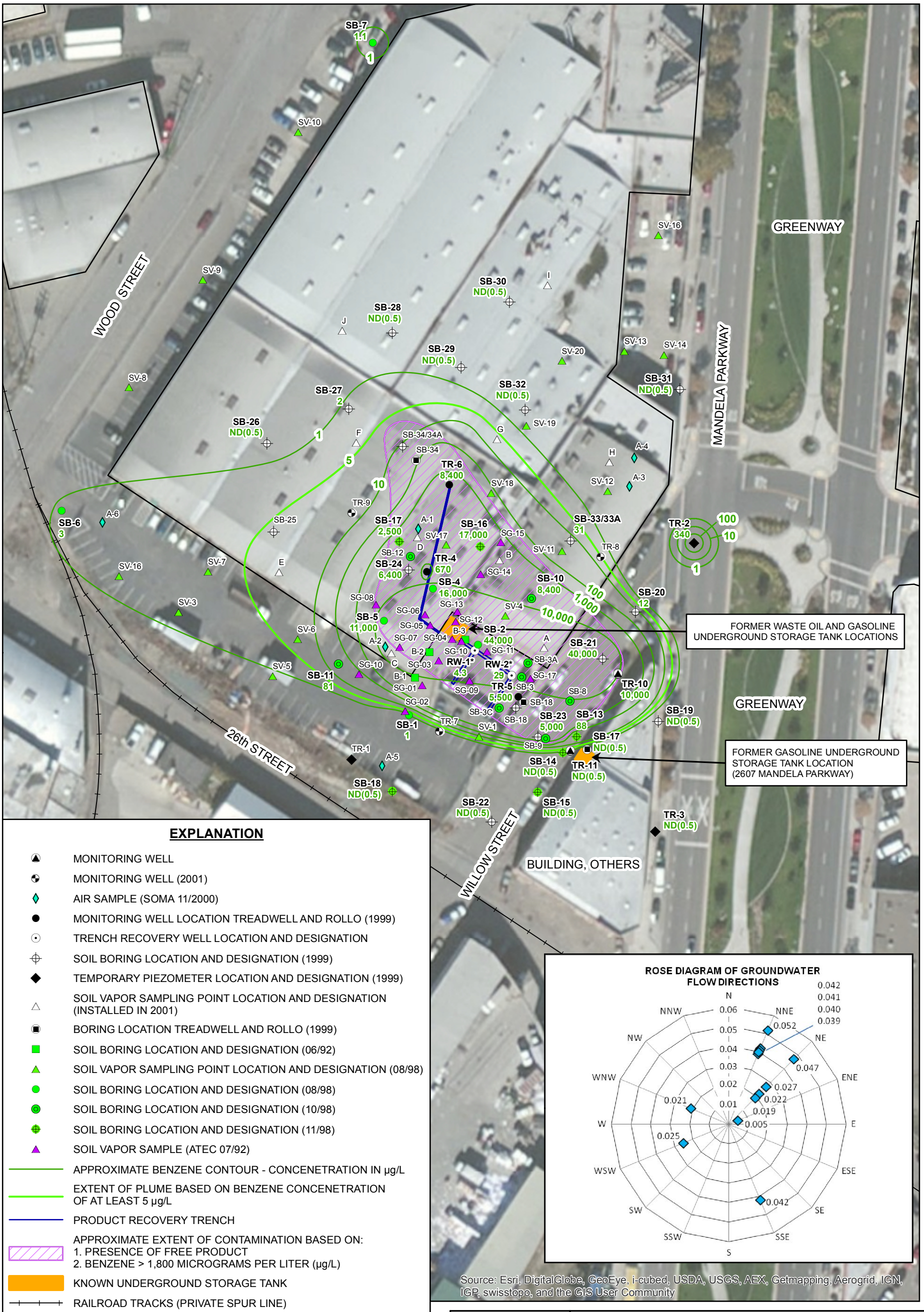
**FIGURE 4**

**CROSS SECTION B-B'**

**2855 MANDELA PARKWAY**
**OAKLAND, CALIFORNIA**

| Drawn By: JLP | Checked By: LA | Scale: AS SHOWN | Date: 3/5/2014 | File: 21B_XSECTIONS-201401 |
|---|---|---|---|---|




## EXPLANATION

- MONITORING WELL
- MONITORING WELL (2001)
- AIR SAMPLE (SOMA 11/2000)
- MONITORING WELL LOCATION TREADWELL AND ROLLO (1999)
- TRENCH RECOVERY WELL LOCATION AND DESIGNATION
- SOIL BORING LOCATION AND DESIGNATION (1999)
- TEMPORARY PIEZOMETER LOCATION AND DESIGNATION (1999)
- SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION (INSTALLED IN 2001)
- BORING LOCATION TREADWELL AND ROLLO (1999)
- SOIL BORING LOCATION AND DESIGNATION (06/92)
- SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION (08/98)
- SOIL BORING LOCATION AND DESIGNATION (08/98)
- SOIL BORING LOCATION AND DESIGNATION (10/98)
- SOIL BORING LOCATION AND DESIGNATION (11/98)
- SOIL VAPOR SAMPLE (ATEC 07/92)
- APPROXIMATE BENZENE CONTOUR - CONCENETRATION IN µg/L
- EXTENT OF PLUME BASED ON BENZENE CONCENETRATION OF AT LEAST 5 µg/L
- PRODUCT RECOVERY TRENCH
- APPROXIMATE EXTENT OF CONTAMINATION BASED ON:
  1. PRESENCE OF FREE PRODUCT
  2. BENZENE > 1,800 MICROGRAMS PER LITER (µg/L)
- KNOWN UNDERGROUND STORAGE TANK
- RAILROAD TRACKS (PRIVATE SPUR LINE)
- BUILDINGS

NOTES:
- WELLS SHOWN WITHOUT RESULTS WERE NOT ANALYZED FOR BENZENE.
- ALL ANALYTICAL RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L).
- ND(x) = NOT DETECTED AT OR ABOVE LABORATORY DETECTION LIMIT (x).
- * = NOT USED IN CONTOURING DUE TO ANOMALOUS DATA.

**SB-2** / **44,000** WELL ID AND BENZENE CONCENTRATION (µg/L).

N

0 70'

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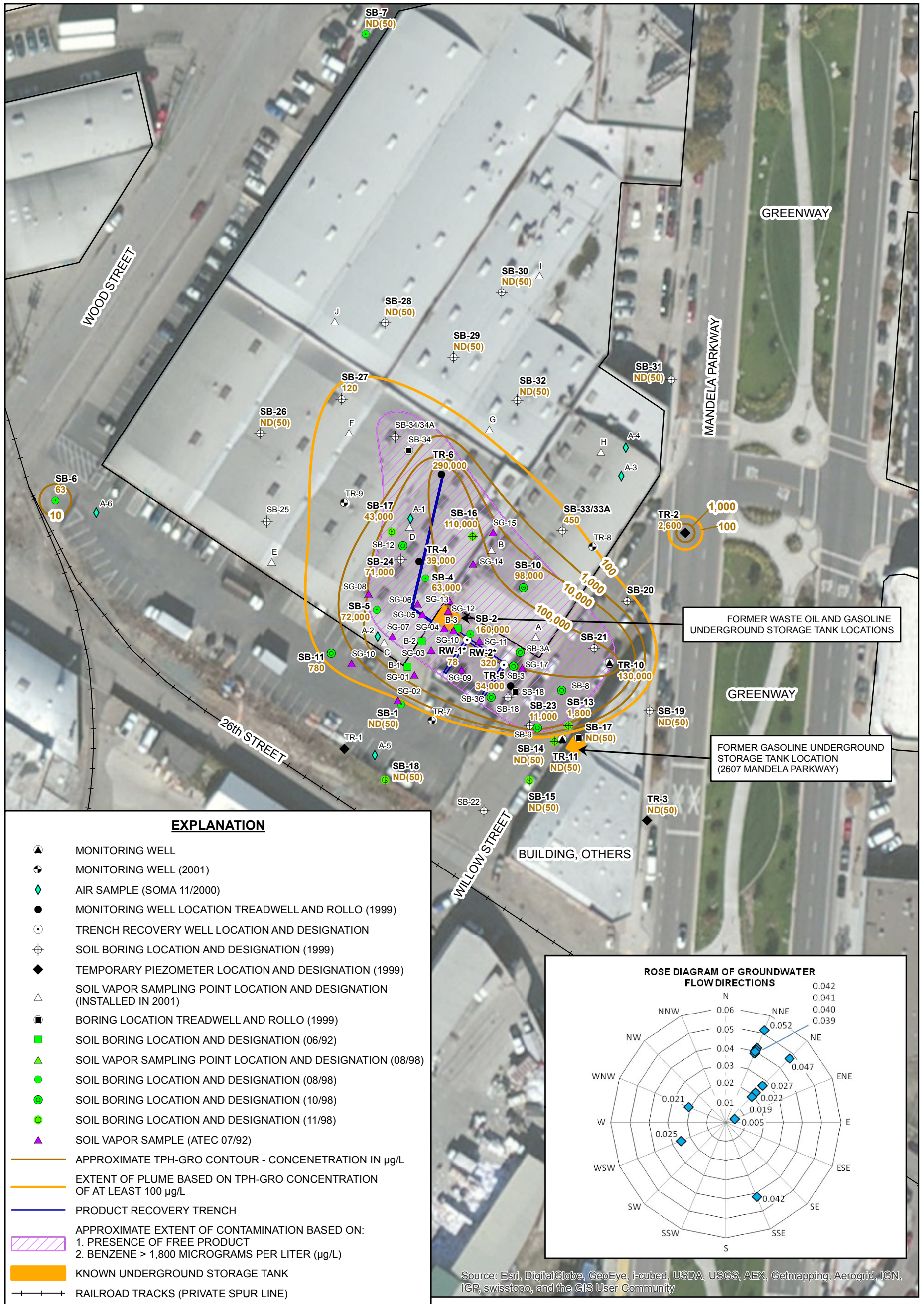
**FIGURE 5**

**SITE MAP**
**HISTORICAL SAMPLE LOCATIONS AND BENZENE IN GROUNDWATER**

**2855 MANDELA PARKWAY**
**OAKLAND, CALIFORNIA**

| Drawn By: DH | Checked By: LA | Scale: 1 " = 70 ' | Date: 3/5/14 | File: BalcoBenzene_Fig5.mxd |
|---|---|---|---|---|




## EXPLANATION

- MONITORING WELL
- MONITORING WELL (2001)
- AIR SAMPLE (SOMA 11/2000)
- MONITORING WELL LOCATION TREADWELL AND ROLLO (1999)
- TRENCH RECOVERY WELL LOCATION AND DESIGNATION
- SOIL BORING LOCATION AND DESIGNATION (1999)
- TEMPORARY PIEZOMETER LOCATION AND DESIGNATION (1999)
- SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION (INSTALLED IN 2001)
- BORING LOCATION TREADWELL AND ROLLO (1999)
- SOIL BORING LOCATION AND DESIGNATION (06/92)
- SOIL VAPOR SAMPLING POINT LOCATION AND DESIGNATION (08/98)
- SOIL BORING LOCATION AND DESIGNATION (08/98)
- SOIL BORING LOCATION AND DESIGNATION (10/98)
- SOIL BORING LOCATION AND DESIGNATION (11/98)
- SOIL VAPOR SAMPLE (ATEC 07/92)
- APPROXIMATE TPH-GRO CONTOUR - CONCENETRATION IN µg/L
- EXTENT OF PLUME BASED ON TPH-GRO CONCENTRATION OF AT LEAST 100 µg/L
- PRODUCT RECOVERY TRENCH
- APPROXIMATE EXTENT OF CONTAMINATION BASED ON:
  1. PRESENCE OF FREE PRODUCT
  2. BENZENE > 1,800 MICROGRAMS PER LITER (µg/L)
- KNOWN UNDERGROUND STORAGE TANK
- RAILROAD TRACKS (PRIVATE SPUR LINE)
- BUILDINGS

NOTES:
- TPH = TOTAL PETROLEUM HYDROCARBONS.
- GRO = GASOLINE RANGE ORGANICS.
- WELLS SHOWN WITHOUT RESULTS WERE NOT ANALYZED FOR TPH-GRO.
- ALL ANALYTICAL RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L).
- ND(x) = NOT DETECTED AT OR ABOVE LABORATORY DETECTION LIMIT (x).
- * = NOT USED IN CONTOURING DUE TO ANOMALOUS DATA.

**SB-2** / **160,000** WELL ID AND TPH-GRO CONCENTRATION (µg/L).

N

0 70'

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**FIGURE 6**

**SITE MAP**
**HISTORICAL SAMPLE LOCATIONS AND TPH-GRO IN GROUNDWATER**

**2855 MANDELA PARKWAY**
**OAKLAND, CALIFORNIA**

| Drawn By: DH | Checked By: LA | Scale: 1 " = 70 ' | Date: 3/5/14 | File: BalcoTPHg_Fig6.mxd |
|---|---|---|---|---|

SB-7
1.1

WOOD STREET

MANDELA PARKWAY

SB-30
ND(0.5)

SB-28
ND(0.5)

SB-29
ND(0.5)

SB-31
ND(0.5)

SB-27
2

SB-32
ND(0.5)

SB-26
ND(0.5)

TR-6
8,400

SB-6
3

TR-9

SB-17
2,500

SB-16
17,000

SB-33/33A
31

TR-2
340

TR-8

SB-24
6,400

TR-4
670

SB-4
16,000

sb-10
8,400

SB-20
12

SB-5
11,000

SB-2
44,000

FORMER WASTE OIL AND GASOLINE UNDERGROUND STORAGE TANK LOCATIONS

SB-11
81

RW-1
4.3

RW-2
29

SB-21
40,000

TR-5
5,500

TR-10
10,000

SB-19
ND(0.5)

SB-1
1

26th STREET

TR-7

SB-23
5,000

SB-13
88

SB-17
ND(0.5)

FORMER GASOLINE UNDERGROUND STORAGE TANK LOCATION
(2607 MANDELA PARKWAY)

SB-14
ND(0.5)

TR-11
ND(0.5)

SB-18
ND(0.5)

SB-15
ND(0.5)

SB-22
ND(0.5)

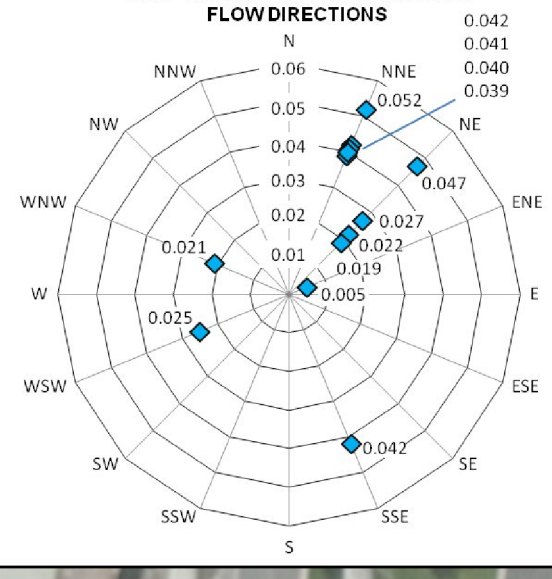
TR-3
ND(0.5)

WILLOW STREET

## EXPLANATION

- MONITORING WELL
- BORING LOCATION TREADWELL AND ROLLO (1999)
- MONITORING WELL LOCATION TREADWELL AND ROLLO (1999)
- SOIL BORING (08/98)
- SOIL BORING (10/98)
- SOIL BORING (11/98)
- SOIL BORING LOCATION AND DESIGNATION (1999)
- TEMPORARY PIEZOMETER LOCATION AND DESIGNATION (1999)
- TRENCH RECOVERY WELL LOCATION AND DESIGNATION
- MONITORING WELL (2001)
- PROPOSED UVOST DATA COLLECTION POINT
- PRODUCT RECOVERY TRENCH
- APPROXIMATE BENZENE CONTOUR - CONCENETRATION IN µg/L
- EXTENT OF PLUME BASED ON BENZENE CONCENETRATION OF AT LEAST 5 µg/L
- RAILROAD TRACKS (PRIVATE SPUR LINE)
- APPROXIMATE EXTENT OF CONTAMINATION BASED ON:
  1. PRESENCE OF FREE PRODUCT
  2. BENZENE > 1,800 MICROGRAMS PER LITER (µg/L)
- BUILDINGS
- KNOWN UNDERGROUND STORAGE TANK

**ROSE DIAGRAM OF GROUNDWATER FLOW DIRECTIONS**




Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

NOTES:
- WELLS SHOWN WITHOUT RESULTS WERE NOT ANALYZED FOR BENZENE.
- ALL ANALYTICAL RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L).
- ND(x) = NOT DETECTED AT OR ABOVE LABORATORY DETECTION LIMIT (x).
- * = NOT USED IN CONTOURING DUE TO ANOMALOUS DATA.

**SB-2**
**44,000** WELL ID AND BENZENE CONCENTRATION (µg/L).

N

0 70'


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**FIGURE 7**

**GROUNDWATER SAMPLING LOCATIONS AND PROPOSED UVOST LOCATIONS**

**2855 MANDELA PARKWAY OAKLAND, CALIFORNIA**

| Drawn By: DH | Checked By: LA | Scale: 1 " = 70 ' | Date: 3/5/14 | File: BalcoSampleLoc_Fig7.mxd |
|---|---|---|---|---|

# APPENDIX A

# BORING LOGS

# RECORD OF SUBSURFACE EXPLORATION
## B-1

| Depth (feet) | LITHOLOGY DESCRIPTION | TEST DATA Sample No. | READING (ppm) |
|---|---|---|---|
| 5 | FINE GRAINED SANDY SILT (OL), (mud) dark olive gray to dark gray, very moist, medium to low plasticity, rank organic odor. | B-1-5 | 138 |
| 10 | SANDY SILT WITH CLAY (OL), dark olive gray to dark gray, very moist, very soft, medium to low plasticity, rank organic odor. | B-1-10 | 69 |
| GROUND WATER AT 11 FEET | | | |
| 15 | CLAY (CH), greenish gray with 10% very fine grained black flecks, very soft, highly plastic. | B-1-15 | 45 |

Date Started: 6-19-92
Date Completed: 6-19-92

Approved By: [signature] RG 5149

NOTE: See Figure 2 for boring location.

CLIENT/PROJECT LOCATION: OAKLAND, CALIFORNIA

PROJECT NO: 43-07-9200385

# RECORD OF SUBSURFACE EXPLORATION B-2

| Depth (feet) | LITHOLOGY DESCRIPTION | Sample No. | READING (ppm) |
|---|---|---|---|
| | BACKFILL: FINE SAND AND SILT (SM), to 3 feet, dark brown. | | |
| 5 | FINE GRAINED SANDY SILT (OL), (mud) dark olive gray to dark gray, very moist, medium to low plasticity, rank organic odor. | B-2-5 | 114 |
| 10 | FINE GRAINED SANDY SILT (OL), (mud) dark olive gray to dark gray, very moist, medium to low plasticity, rank organic odor. | B-2-10 | 6,200 |
| 15 | | | |

GROUND WATER AT 11 FEET

Date Started: 6-19-92
Date Completed: 6-19-92

Approved By: [signature] RG 5189

NOTE: See Figure 2 for boring location.

CLIENT/PROJECT LOCATION: OAKLAND, CALIFORNIA

PROJECT NO: 43-07-9200385

# RECORD OF SUBSURFACE EXPLORATION B-3

| Depth (feet) | DESCRIPTION | Sample No. | READING (ppm) |
|---|---|---|---|
| | **LITHOLOGY** | | **TEST DATA** |
| — | BACKFILL: SAND AND SILT (SM), to 4.5 feet, dark gray, strong hydrocarbon odor. | | >10K |
| 5 | FINE GRAINED SANDY SILT (OL), (mud) dark olive gray to dark gray, very moist, medium to low plasticity, rank organic and hydrocarbon odor. | B-3-5 | 3,888 |
| 10 | FINE GRAINED SANDY SILT (OL), (mud) dark olive gray to dark gray, very moist, medium to low plasticity, rank organic and hydrocarbon odor. | B-3-10 | 7,080 |
| 15 | | | |

GROUND WATER AT 11 FEET

Date Started: 6-19-92
Date Completed: 6-19-92

Approved By: [signature] RGS 1849

NOTE: See Figure 2 for boring location.

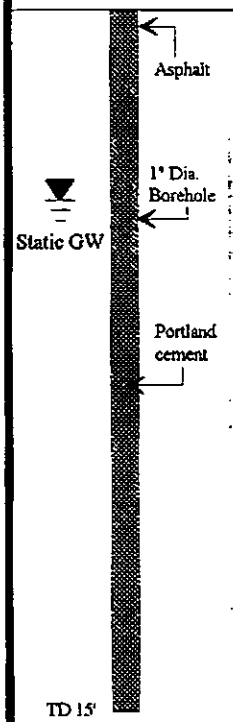
CLIENT/PROJECT LOCATION: OAKLAND, CALIFORNIA

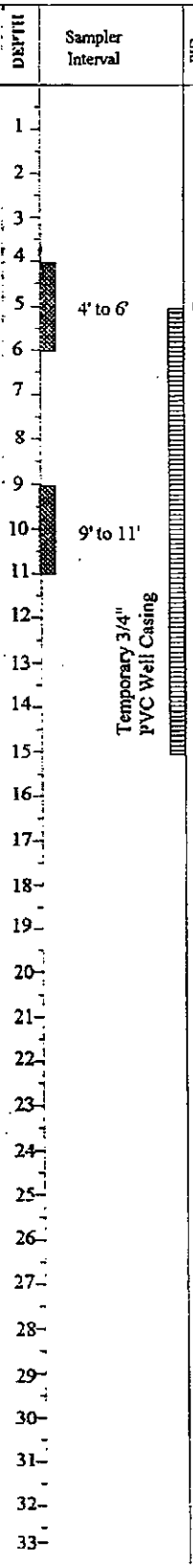
PROJECT NO: 43-07-9200385

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB–1 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | August 3, 1998 | 1 OF 1 |



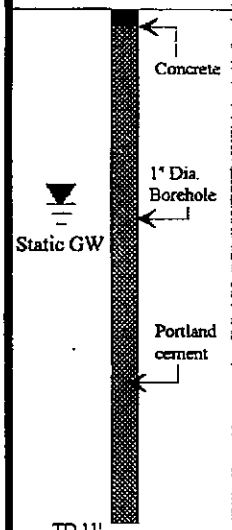



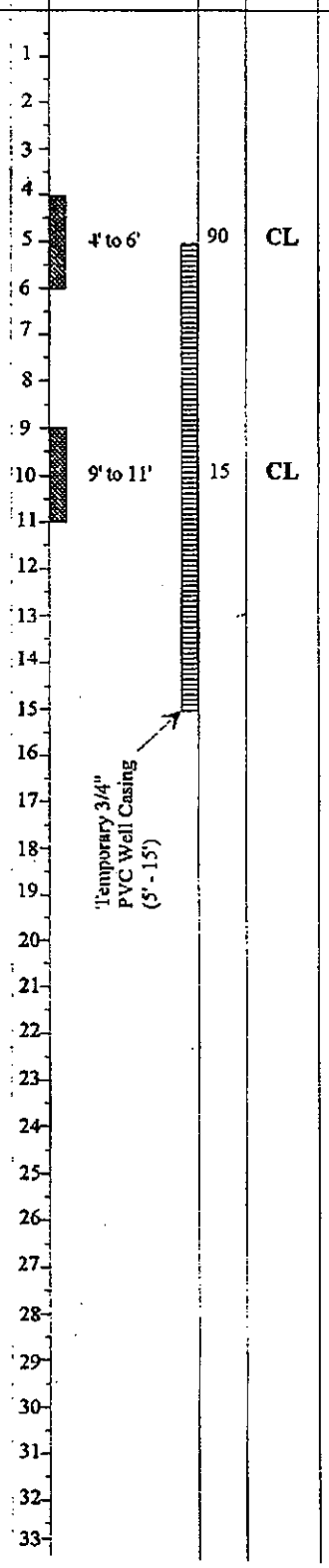

| PID Reading | USCS | LOG OF MATERIAL |
|---|---|---|
| 0.5 | CL | (4'-6') Silty Clay: Gray (7.5YR N5/0); soft; low plasticity (sticky); very moist; slight petroleum odor. |
| 0 | CL | (9'-11') Silty Clay: Gray (7.5YR N5/0); soft; low plasticity (sticky); very moist; slight; no odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET 1 OF 1 |
|---|---|---|---|---|
| SB–2 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | August 3, 1998 | |



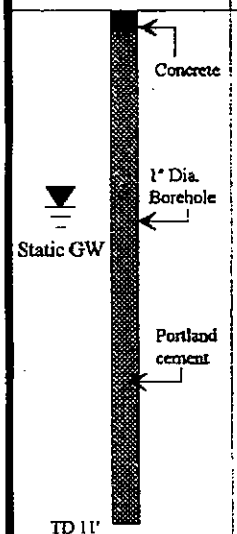



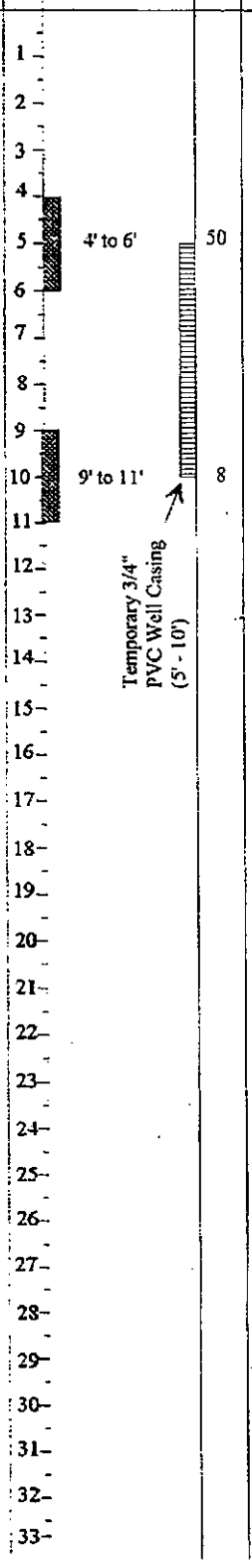

| USCS | LOG OF MATERIAL |
|---|---|
| CL | **(4'-6')** Silty Clay: very dark grayish brown (2.5Y 3/2); soft; low plasticity (sticky); some organic matter (roots, etc.); petroleum odor; moist to very moist. |
| CL | **(9'-11')** Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB–3 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | August 3, 1998 | 1 OF 1 |



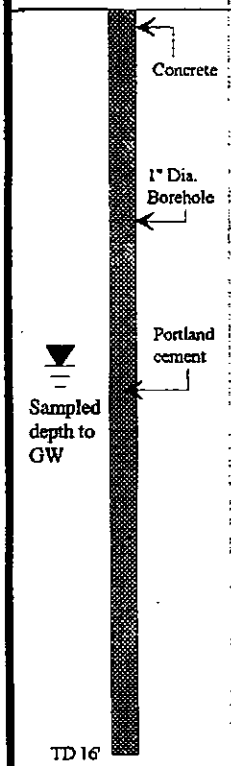



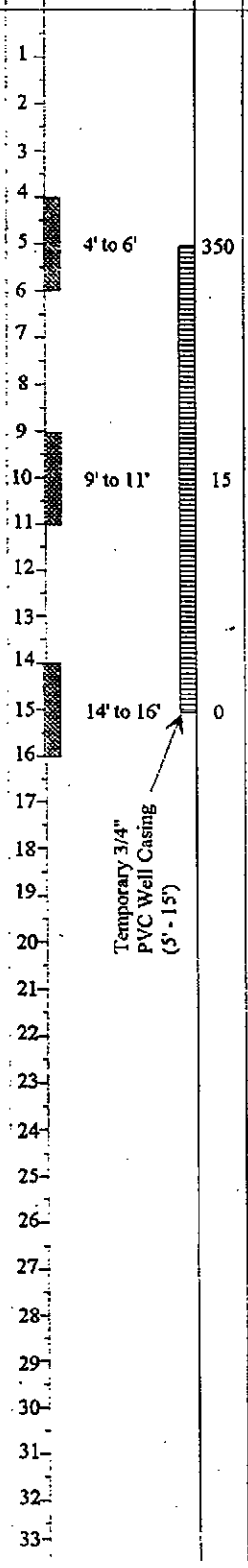

| PID Reading | USCS | LOG OF MATERIAL |
|---|---|---|
| 50 | CL | (4'-6') Silty Clay: very dark grayish brown (2.5Y 3/2); soft; low plasticity (sticky); some organic matter (roots, etc.); petroleum odor; moist to very moist. |
| 8 | CL | (9'-11') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET 1 |
|---|---|---|---|---|
| SB–4 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | August 3, 1998 | OF 1 |



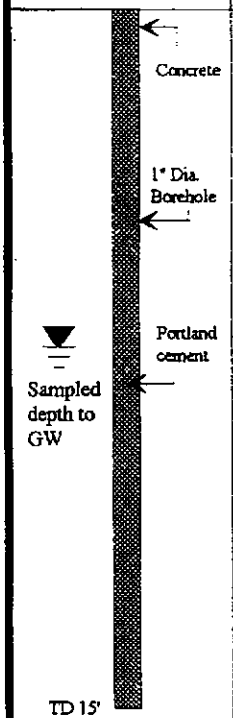



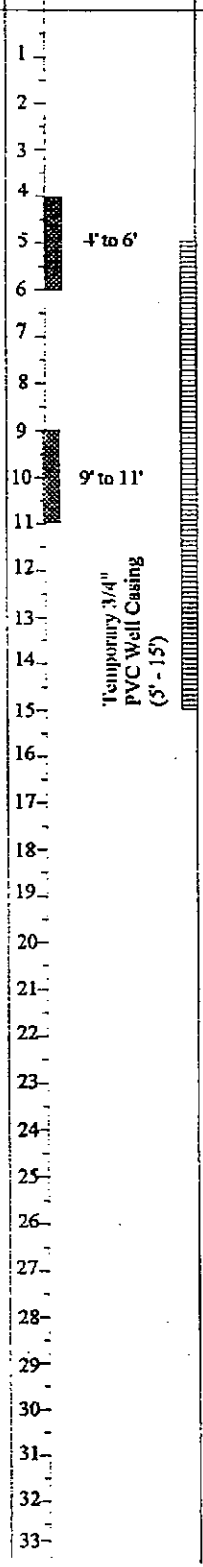

| USCS | LOG OF MATERIAL |
|---|---|
| CL | (4'-6') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; petroleum odor. |
| CL | (9'-11') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor. |
| CL | (14'-15') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor. |
| CL | (15'-16') Silty Clay: Olive brown (2.5Y 4/4); firm; low plasticity; moist; no odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB-5 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | August 3, 1998 | 1 OF 1 |



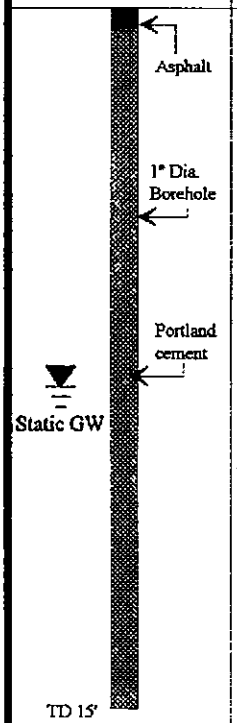




| PID Reading | USCS | LOG OF MATERIAL |
|---|---|---|
| 1.1 | CL | (4'-6') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; petroleum odor. |
| 50 | CL | (9'-11') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; petroleum odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB-6 | Commercial Property | 2853-2863 Mandela Parkway, Oakland. CA | August 3, 1998 | 1 OF 1 |

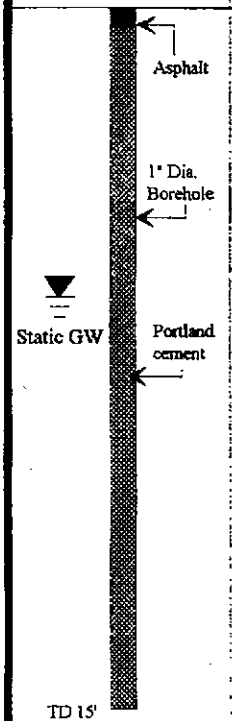



| DEPTH | Sampler Interval | PID Reading | USCS | LOG OF MATERIAL |
|---|---|---|---|---|
| 1–33 | 4' to 6' | NA | CL | (4'-6') Silty Clay: gray (7.5YR N5/0): soft; low plasticity; some organic material; some silty sand @ 5'); moist to very moist; no odor. |
| | Temporary 3/4" PVC Well Casing (5' - 15') | | | |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB-7 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | August 3, 1998 | 1 OF 1 |



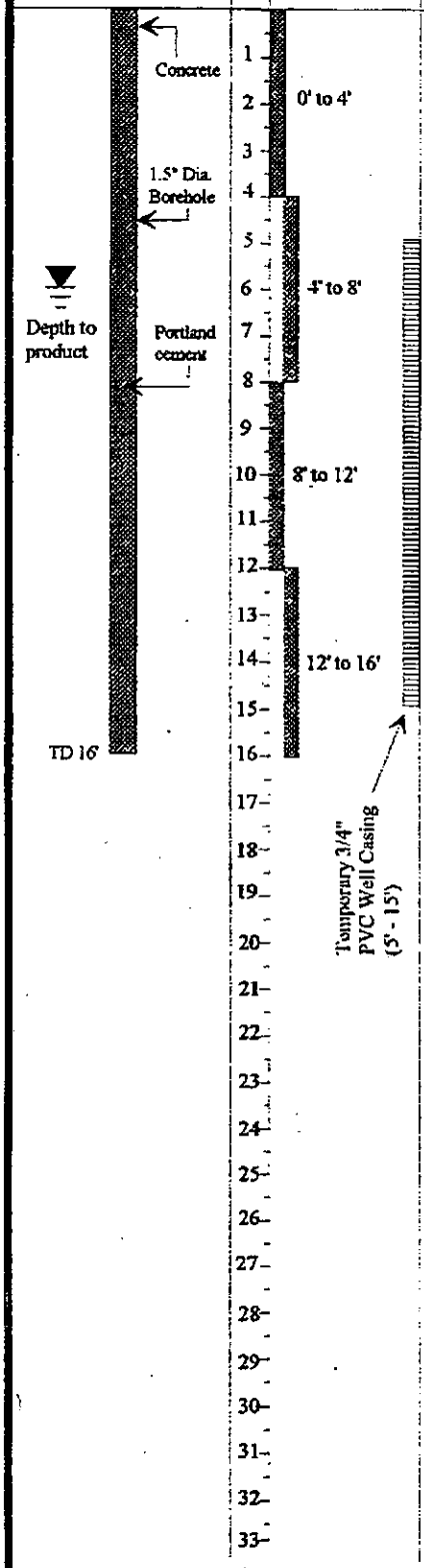

| DEPTH | Sampler Interval | PID Reading | USCS | LOG OF MATERIAL |
|---|---|---|---|---|
| 1–33 | 4' to 6' | 0 | CL | (4'-6') Silty Clay: gray (7.5YR N5/0); soft; low plasticity; some organic material; moist to very moist; no odor. |

Temporary 3/4" PVC Well Casing (5' - 15')

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB-8 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | October 28, 1998 | 1 OF 1 |

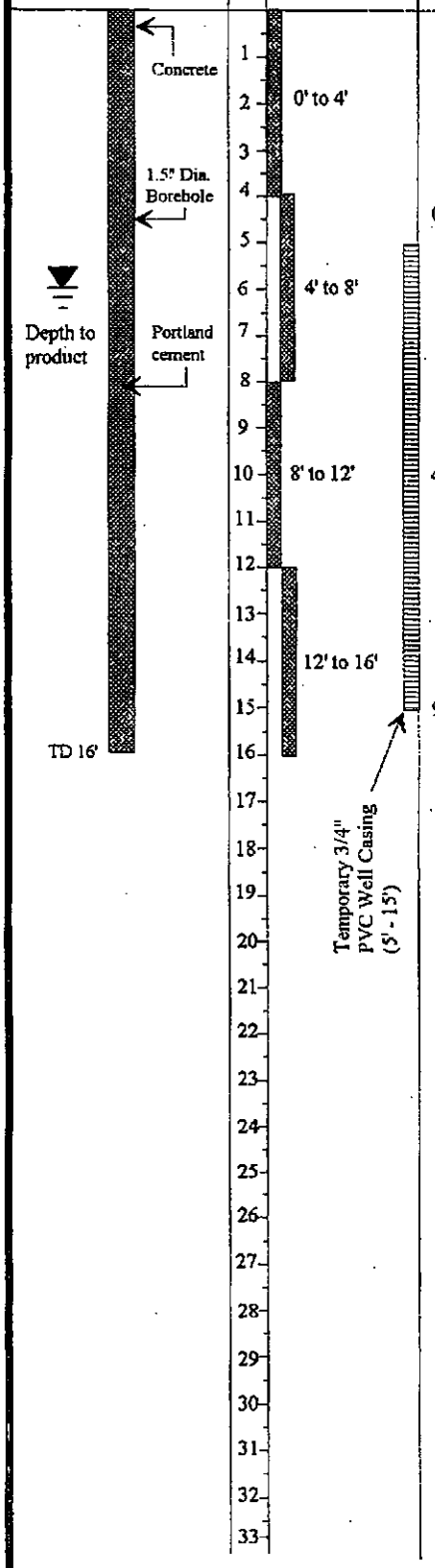



| PID Reading | USCS | LOG OF MATERIAL |
|---|---|---|
| | af | Asphalt and baserock (includes gravel, sand, silt and clay) |
| | SP | **Sand:** variegated (brownish tint); firm; fine sand; no odor. |
| 0 | CL | **Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); some orgnics and interbedded sand (SP) lenses up to 2" thick; very moist to saturated. |
| | | 8' - Petroleum odor. |
| 105 | | 12'-16' - Very little recovery. Noticable product in sample tube. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB-9 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | October 28, 1998 | 1 OF 1 |

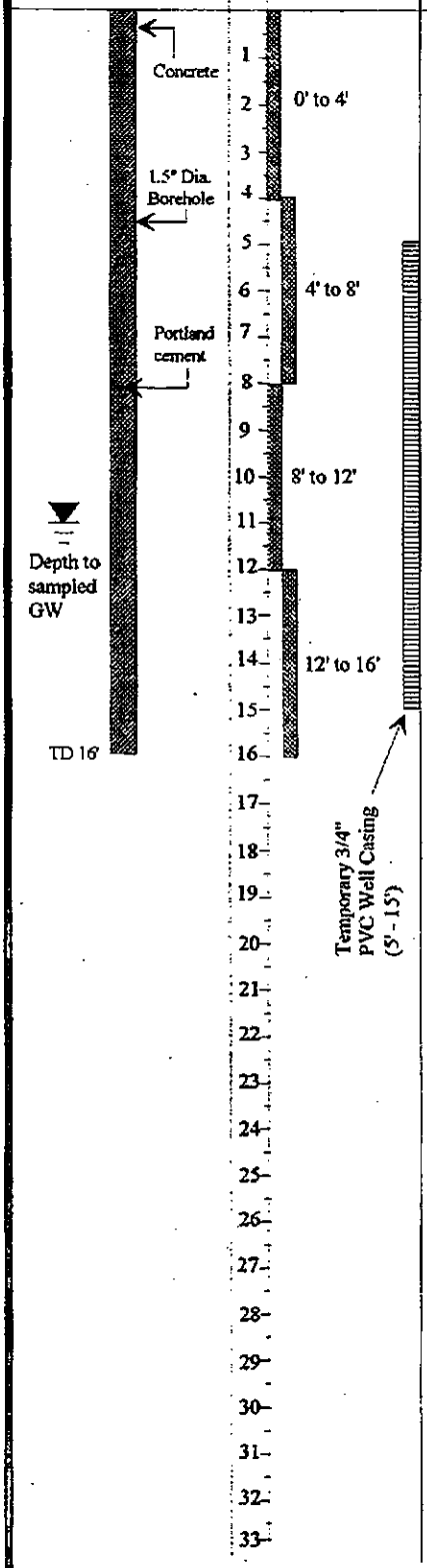



| USCS | LOG OF MATERIAL |
|---|---|
| af | Asphalt and baserock (includes gravel, sand, silt and clay) |
| SP | **Sand:** variegated (brownish tint); firm; fine sand; no odor. |
| CL | **Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); some orgnics and interbedded sand (SP) lenses up to 2" thick; very moist to saturated.<br>9' - Petroleum odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB–10 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | October 28, 1998 | 1 OF 1 |

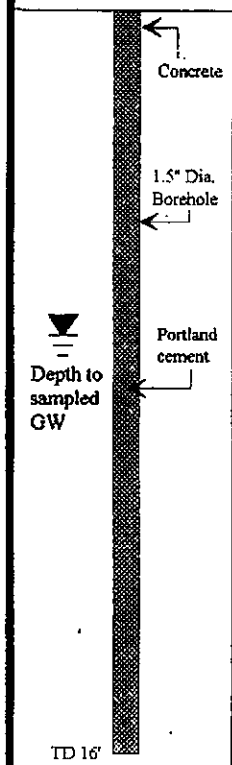


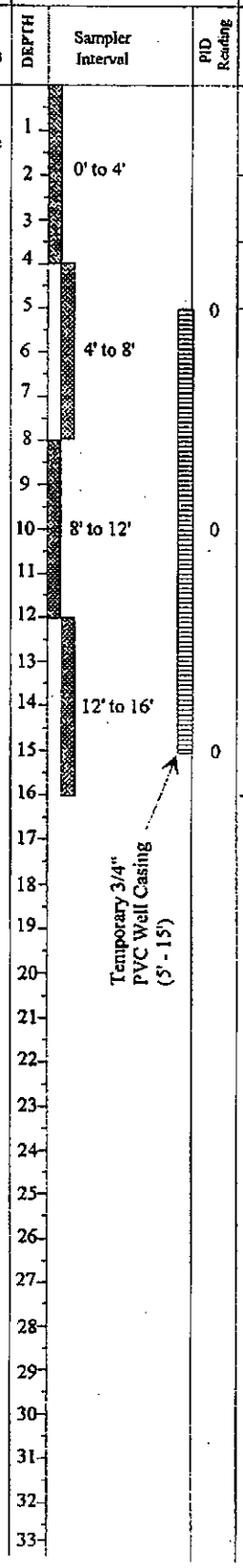

| PID Reading | USCS | LOG OF MATERIAL |
|---|---|---|
| | af | Concrete (4" thick) and baserock (includes gravel, sand, silt and clay) |
| | SP | **Sand:** variegated (brownish tint); firm; fine sand; no odor. |
| 0 | CL | **Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); some orgnics and interbedded sand (SP) lenses up to 2" thick; very moist to saturated. |
| 20 | | 10' - Petroleum odor. |
| 8 | | 15' - Slight petroleum odor. |
| | | **Sandy Clay:** Greenish gray (5GY 6/1); firm; medium plasticity; fine sand; moist; slight petroleum odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET |
|---|---|---|---|---|
| SB–11 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | October 28, 1998 | 1 OF 1 |



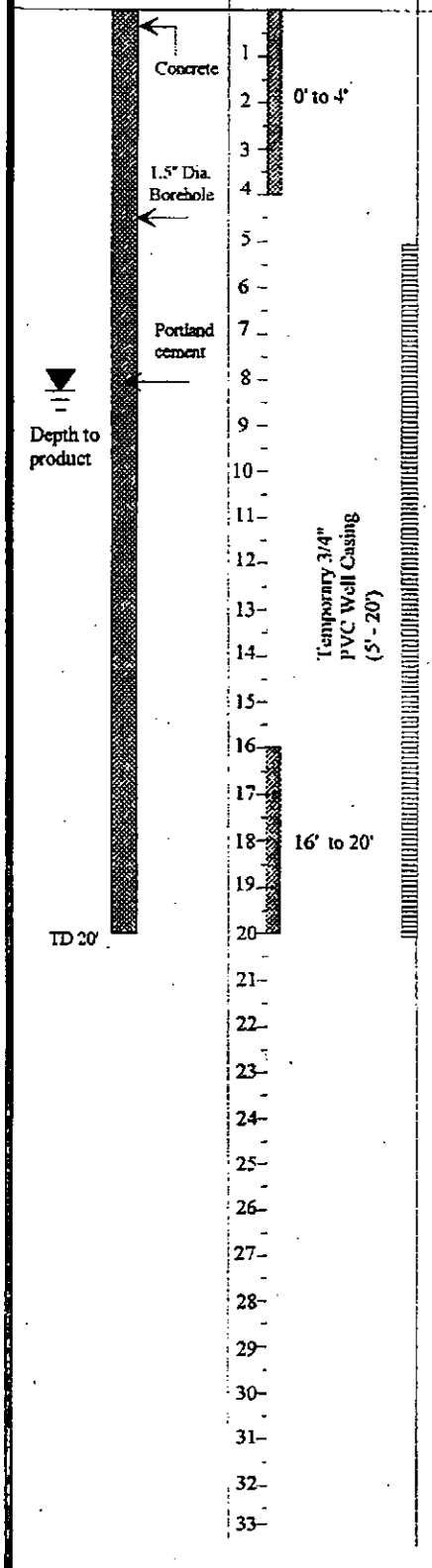




| USCS | LOG OF MATERIAL |
|---|---|
| af | Asphalt and baserock (includes gravel, sand, silt and clay) |
| CL | **Silty Clay:** Greenish gray (5GY 5/1) with light olive brown (2.5Y 5/6) and black blebs; firm; medium plasticity; moist; slight petroleum odor. |
| SP | **Sand:** variegated; firm; fine sand; moist to very moist; slight petroleum odor. |
| CL | **Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); some orgnics and interbedded sand (SP) lenses up to 2" thick; very moist; slight petroleum odor.. |
| | **Sandy Clay:** Gray (5Y 5/1) to olive (5Y 5/3); stiff; fine to coarse sand; moist; no odor. |

# CERES ASSOCIATES

*Logged by: John Love RG 6315*

| HOLE NO. | PROJECT NAME: | PROJECT ADDRESS: | DATE: | SHEET 1 |
|---|---|---|---|---|
| SB-12 | Commercial Property | 2853-2863 Mandela Parkway, Oakland, CA | October 28, 1998 | OF 1 |

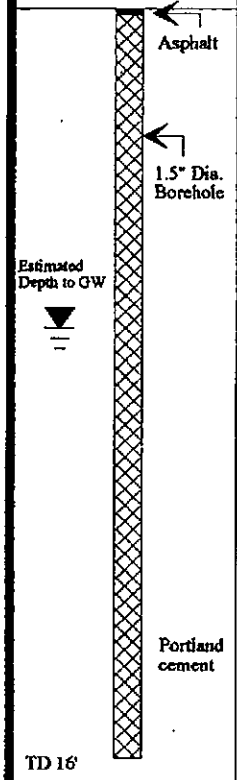



| USCS | LOG OF MATERIAL |
|---|---|
| af | Concrete (4" thick) and baserock (includes gravel, sand, silt and clay) |
| | **No sample recovery. Sample tube was driven from 4 to 16 feet bgs.** |
| CL | **Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); very moist; slight petroleum odor. |

Ceres Associates

*Logged by: Mary Holland-Ford*

| BORING NO. SB-13 | PROJECT NAME: Commercial Property | PROJECT ADDRESS: 2853-2863 Mandela Parkway, Oakland, California | DATE: November 30, 1998 | SHEET 1 OF 1 |
|---|---|---|---|---|

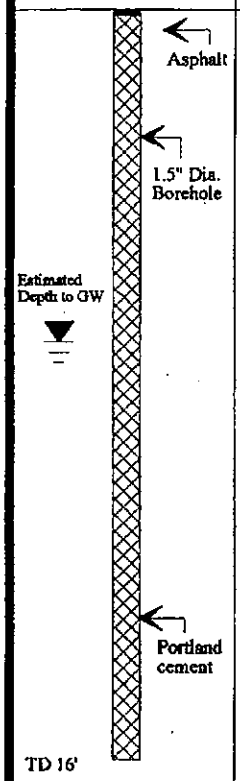



| DEPTH | Sample Interval | PID Reading | USCS | DESCRIPTION OF MATERIAL |
|---|---|---|---|---|
| 1–4 | 0' to 4' | | af | Asphalt and baserock(includes gravel, sand, silt and clay) |
| 4–8 | 4' to 8' | 0 | SP | **Sand:** brown; firm; fine sand; no odor. |
| 8–12 | 8' to 12' | 0 | CL | **Silty Clay:** Very dark gray brown; firm; low plasticity; moist; no odor. |
| 12–16 | 12' to 16' | 12 | | Olive brown; firm; low plasticity; moist; no odor. |
| | | | | low to medium plasticity; wet; petroleum odor. |

Ceres Associates

*Logged by: Mary Holland-Ford*

| BORING NO. SB-14 | PROJECT NAME: Commercial Property | PROJECT ADDRESS: 2853-2863 Mandela Parkway, Oakland, California | DATE: November 30, 1998 | SHEET 1 OF 1 |
|---|---|---|---|---|

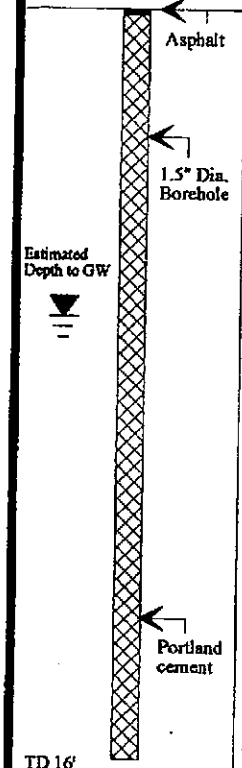


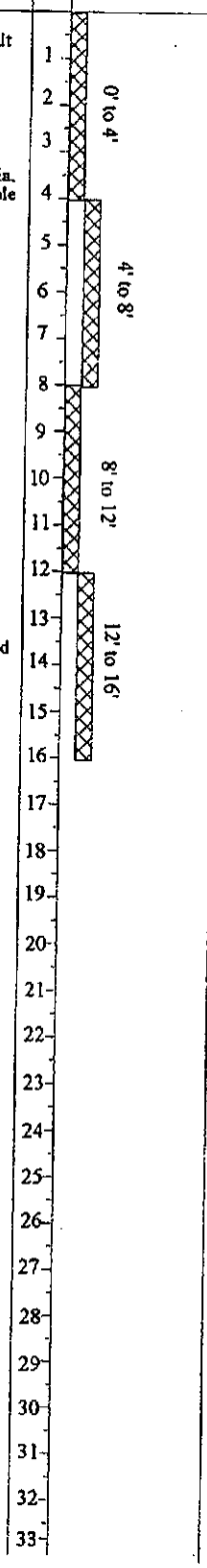

| DEPTH | Sample Interval | PID Reading | USCS | DESCRIPTION OF MATERIAL |
|---|---|---|---|---|
| 1 | 0' to 4' | | af | Asphalt and baserock(includes gravel, sand, silt and clay) |
| 2 | | | | |
| 3 | | | | |
| 4 | | | SP | **Sand:** brown; firm; fine sand; no odor. |
| 5 | 4' to 8' | 0 | | |
| 6 | | | | **Silty Clay:** Very dark gray brown; firm; low plasticity; moist; no odor. |
| 7 | | | | |
| 8 | | | | |
| 9 | 8' to 12' | | CL | Olive brown; firm; low plasticity; moist; no odor. |
| 10 | | 0 | | |
| 11 | | | | |
| 12 | | | | |
| 13 | 12' to 16' | | | |
| 14 | | | | |
| 15 | | 27 | | Olive brown; firm; low to medium plasticity; wet; petroleum odor. |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |

Ceres Associates

*Logged by: Mary Holland-Ford*

| BORING NO. SB-15 | PROJECT NAME: Commercial Property | PROJECT ADDRESS: 2853-2863 Mandela Parkway, Oakland, California | DATE: November 30, 1998 | SHEET 1 OF 1 |
|---|---|---|---|---|



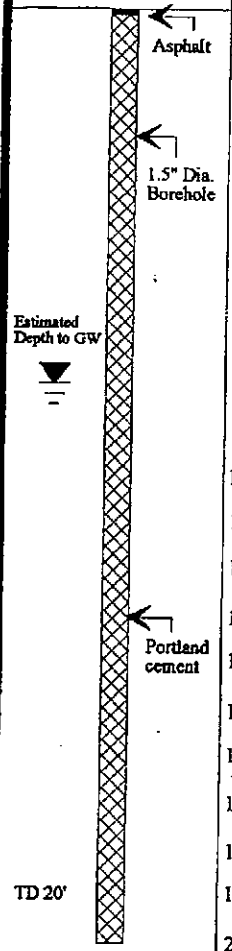




| PID Reading | USCS | DESCRIPTION OF MATERIAL |
|---|---|---|
| | af | Asphalt and baserock(includes gravel, sand, silt and clay) |
| | SP | **Sand:** brown; fimr; fine sand; no odor |
| 0 | | **Silty Clay:** Very dark gray brown; firm; low plasticity; moist; no odor. |
| | CL | |
| 0 | | Olive brown; |
| 12 | | Low to medium plasticity; wet; petroleum odor. |

Ceres Associates

*Logged by: Mary Holland-Ford*

| BORING NO. SB-16 | PROJECT NAME: Commercial Property | PROJECT ADDRESS: 2853-2863 Mandela Parkway, Oakland, California | DATE: November 30, 1998 | SHEET 1 OF 1 |
|---|---|---|---|---|

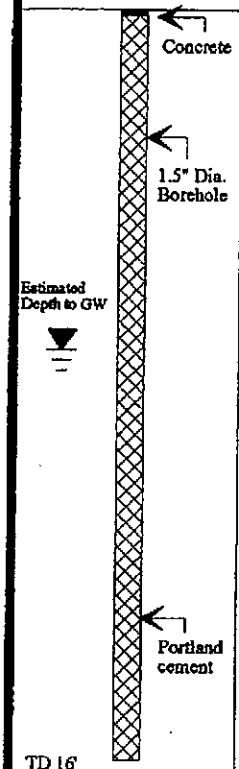



| DEPTH | Sample Interval | PID Reading | USCS | DESCRIPTION OF MATERIAL |
|---|---|---|---|---|
| 1–4 | 0' to 4' | | af | Asphalt and baserock(includes gravel, sand, silt and clay) |
| 1–4 | 0' to 4' | | SP | **Sand:** brown; firm; fine sand; no odor |
| 5–8 | 4' to 8' | 7 | | **Silty Clay**: Very dark gray brown; firm; low plasticity; moist; petroleum odor. |
| 9–12 | 8' to 12' | 19 | CL | Olive brown; wet; petroleum odor. |
| 13–16 | 12' to 16' | | | |
| 17–20 | 16' to 20' | 37 | | Low to medium plasticity. |

Ceres Associates

*Logged by: Mary Holland-Ford*

| BORING NO. SB-17 | PROJECT NAME: Commercial Property | PROJECT ADDRESS: 2853-2863 Mandela Parkway, Oakland, California | DATE: November 30, 1998 | SHEET 1 OF 1 |
|---|---|---|---|---|

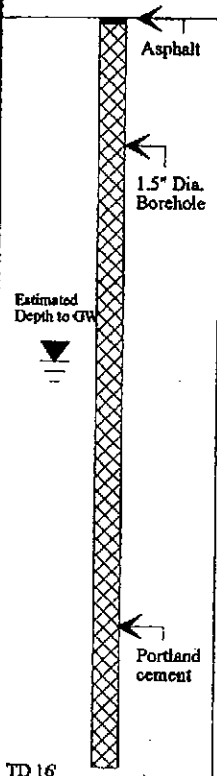



| DEPTH | Sample Interval | PID Reading | USCS | DESCRIPTION OF MATERIAL |
|---|---|---|---|---|
| 1–4 | 0' to 4' | | af | Concrete and baserock(includes gravel, sand, silt and clay) |
| 4 | | | SP | **Sand:** brown; firm; fine sand; no odor |
| 4–8 | 4' to 8' | 12 | | **Silty Clay:** Olive brown; firm; low plasticity; wet; petroleum odor. |
| 8–12 | 8' to 12' | 21 | CL | |
| 12–16 | 12' to 16' | 27 | | Low to medium plasticity; wet; petroleum odor. |

Ceres Associates

*Logged by: Mary Holland-Ford*

| BORING NO. SB-18 | PROJECT NAME: Commercial Property | PROJECT ADDRESS: 2853-2863 Mandela Parkway, Oakland, California | DATE: November 30, 1998 | SHEET 1 OF 1 |
|---|---|---|---|---|




| DEPTH | Sample Interval | PID Reading | USCS | DESCRIPTION OF MATERIAL |
|---|---|---|---|---|
| 1–4 | 0' to 4' | | af | Asphalt and baserock(includes gravel, sand, silt and clay) |
| 4–8 | 4' to 8' | 0 | SP | **Sand:** brown; fimr; fine sand; no odor |
| 8–12 | 8' to 12' | 0 | CL | **Silty Clay:** Very dark gray brown; firm; low plasticity; moist: no odor. |
| 12–16 | 12' to 16' | 0 | | Olive brown<br>Medium plasticity; wet. |

# APPENDIX B

# BORING LOGS

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-17



Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (08:40) | Date finished: 5/11/99 (08:55)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 0 | | | | | | Asphalt and baserock |
| 1–3 | | | | | SP | SAND (SP)<br>brown, moist, fine-grained, poorly graded, no odor<br>▼ 5/11/99 (16:05) |
| 4 | MC | | | 0 | | SB-17-4 |
| 5 | | | | | | ▽ wet |
| 6–11 | | | | | | NO RECOVERY |
| 12 | | | | --- | | |
| 13 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 5 feet. |
| 14–30 | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-18



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (09.20) | Date finished: 5/11/99 (09:40)

Drilling method: Direct push (DP), Veronex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| | | | | | | Concrete and baserock |
| 1–4 | | | | 0 | SP | SAND (SP)<br>brown, moist, poorly graded, slight petroleum odor |
| 3 | | | | | | ▼ 5/11/99 depth to product = 2.75 depth to water = 5.45 (13:55) |
| 5 | MC | | | | | SB-18-5 |
| 6–9 | | | | 243 | CL | CLAY (CL)<br>dark gray, moist, wet, slight petroleum odor<br>▽ wet<br>BAY MUD |
| 10 | MC | | | | | SB-18-10 |
| 11–12 | | | | 243 | | |
| 13 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 7.5 feet. |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-19



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (11:00) | Date finished: 5/11/99 (11:15)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 0 | | | | | | Concrete and baserock |
| 1 | | | | | | Crushed rock with sand, trace gravel, concrete |
| 2 | | | | | | 5/11/99 (14:49) |
| 3 | | | | | SP | SAND (SP)<br>brown, moist, poorly graded, no odor |
| 4 | | | | 0 | | CLAY (CL)<br>dark gray, moist to wet, no odor [BAY MUD] |
| 5 | MC | | | | | SB-19-5 |
| 6 | | | | | | |
| 7 | | | | | CL | wet |
| 8 | | | | 0 | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | 0 | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 7.5 feet. |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
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| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

BAY MUD

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-20



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (11:25) | Date finished: 5/11/99 (11:45)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| | | | | | | Concrete and baserock |
| 1 | | | | | SP | SAND (SP)<br>brown, moist, poorly graded, no odor |
| 2 | | | | | | |
| 3 | | | | | | CLAY (CL)<br>dark gray, moist to wet, strong petroleum odor<br>[BAY MUD]<br>5/11/99(15:19) |
| 4 | | | | 0 | | |
| 5 | MC | | | | | SB-20-5 |
| 6 | | | | | | BAY MUD |
| 7 | | | | | CL | wet |
| 8 | | | | 0 | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | 0 | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 7.5 feet. |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
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| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-21



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (11:50) | Date finished: 5/11/99 (12:05)

Drilling method: Direct push (Dp), Vironex Macrocore, truck mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| | | | | | | Concrete and baserock |
| 1–3 | | | | | SP | SAND (SP)<br>brown, moist, poorly graded, no odor<br>▼ 5/11/99 (15:44) |
| 4–5 | | | | 0 | | CLAY (CL)<br>dark gray, moist to wet, strong petroleum odor [BAY MUD] |
| 5 | MC | ⊠ | | | | SB-21-5 |
| 6–8 | | | | 237 | CL | ▽ wet |
| 8–12 | | | | --- | | BAY MUD |
| 12–30 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 7.5 feet. |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-22



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (12:12) | Date finished: 5/11/99 (12:30)

Drilling method: Direct push (DP), Vironex Microcore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 0 | | | | | | Concrete and baserock |
| 1–3 | | | | | SP | SAND (SP)<br>brown, moist, poorly graded, fine-grained, no odor |
| 4 | | | | 0 | | SB-22-4 |
| 5–7 | | | | | | NO RECOVERY<br>5/11/99 (16:20) |
| 8 | | | | | | wet |
| 9–10 | MC | | | | CL | CLAY (CL)<br>dark gray, moist to wet, strong petroleum odor [BAY MUD]<br>SB-22-10 |
| 11–12 | | | | 0 | | BAY MUD |
| 13–30 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 8 feet. |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-23



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (12:40) | Date finished: 5/11/99 (12:55)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 0 | | | | | | Concrete and baserock |
| 1–4 | | | | 0 | SP | SAND (SP)<br>gray-brown, moist, poorly graded, fine-grained, no odor<br>▼ 5/11/99 (14:12) |
| 5–7 | | | | 239 | | strong petroleum odor — NO RECOVERY |
| 8 | | | | — | | ▽ wet |
| 9–12 | MC | ⊠ | | 164 | CL | SB-23-8.5<br>CLAY (CL)<br>dark gray, wet, strong petroleum odor<br>[BAY MUD] — BAY MUD |
| 13–30 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 8 feet. |

| PROJECT: | 2855 MANDELA PARKWAY<br>Oakland, California | **Log of Boring SB-24** | PAGE 1 OF 1 |
|---|---|---|---|
| Boring location: See Site Plan, Figure 2 | | | Logged by: M. Rapoport |
| Date started: 5/11/99 (13:10) | Date finished: 5/11/99 (13:23) | | |
| Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted | | | |
| Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic | | |
| Sampler: Continuous Core | | | |

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 0 | | | | | | Concrete and baserock |
| 1 | | | | | | SAND (SP) |
| 2 | | | | | | brown, moist, fine-grained, poorly graded, no odor |
| 3 | | | | | | |
| 4 | | | | 0 | SP | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | 5/11/99 (16:40) |
| 8 | | | | 238 | | wet |
| 9 | | | | | | CLAY (CL) |
| 10 | MC | | | | CL | dark gray, wet, strong petroleum odor<br>5/12/99 (09:45)<br>SB-24-10 |
| 11 | | | | | | 5/11/99 (13:45) |
| 12 | | | | 436 | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 8 feet. |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
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| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

| Treadwell&Rollo | Project No. 2543.01 | Attachment |
|---|---|---|

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-25



Boring location: See Site Plan, Figure 2 | Logged by: C. Austin

Date started: 11/16/99 | Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | MC | | | | | Concrete<br>no recovery |
| 2 | | | | | CL | CLAY (CL)<br>brown, yellow, and black, stiff, moist |
| 3 | | | | | | SAND (SP)<br>brown, moist, fine-grained, with shell fragments |
| 4 | | | | | SP | no recovery |
| 5 | | | | | | FILL |
| 6 | | | | | | CLAY (CL)<br>gray, very soft, moist<br>saturated sand layer at 7 feet |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | BAY MUD |
| 11 | | | | | CL | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | occasional shell fragments<br>stiff |
| 15 | | | | | | |
| 16 | | | | | CL | CLAY (CL)<br>olive and yellow-brown, with gravel to 1/4-inch |
| 17 | | | | | | CLAY (CL)<br>gray, saturated, very soft |
| 18 | | | | | | |
| 19 | | | | | | drier and sandier |
| 20 | | | | | CL | BAY MUD |
| 21 | | | | | | |
| 22 | | | | | | sandy, yellow-brown and gray, fine sand and clay, very wet, liquid consistency |
| 23 | | | | | | SANDY GRAVELLY CLAY (CL)<br>yellow, red-yellow, and brown gravelly sand, gravel to 1/2-inch some layers with plasticity |
| 24 | | | | | CL | |
| 25 | | | | | | Boring terminated at a depth of 24 feet.<br>Boring tremie-grouted with a Portland cement mixture. |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-26



Boring location: See Site Plan, Figure 2 | Logged by: C. Austin

Date started: 11/16/99 | Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | | | | | | Concrete<br>no recovery |
| 2 | | | | | CL | CLAY (CL)<br>dark gray, very soft, moist |
| 3 | | | | | SP | SAND (SP)<br>gray, moist, fine-grained [FILL] |
| 4 | | | | | | |
| 5 | | | | | CL | CLAY (CL)<br>gray, very soft, moist, sand lenses<br>[BAY MUD] |
| 6 | | | | | | |
| 7 | | | | | | no recovery, saturated |
| 8 | | | | | | sand lens |
| 9 | | | | | GC | SAND and GRAVEL (GC)<br>yellow-brown and olive, saturated, gravel to 1/2-inch |
| 10 | | | | | CL | CLAY (CL)<br>gray, very soft, moist |
| 11 | | | | | | |
| 12 | | | | | | BAY MUD |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | GC | SAND and GRAVEL (GC)<br>gray and yellow-brown, moist, gravels to 1/2-inch |
| 16 | | | | | | Boring terminated at a depth of 16 feet.<br>Boring tremie-grouted with a Portland cement mixture. |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

| PROJECT: | 2855 MANDELA PARKWAY<br>Oakland, California | **Log of Boring SB-27** | PAGE 1 OF 1 |
|---|---|---|---|
| Boring location: See Site Plan, Figure 2 | | | Logged by: C. Austin |
| Date started: 11/16/99 | Date finished: 11/16/99 | | |
| Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted | | | |
| Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic | | |
| Sampler: Continuous Core | | | |

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION | |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | Concrete, no recovery | |
| 2 | | | | | SP | SAND (SP)<br>brown, gray, moist, fine-grained | FILL |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | no recovery | |
| 6 | | | | | | | |
| 7 | | | | | CL | CLAY (CL)<br>gray, very soft, moist | BAY MUD |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | CL | CLAY (CL)<br>olive-brown, moist, with coarse sand to small gravel-sized rock fragments | |
| 13 | | | | | SP | SAND (SP)<br>gray, moist, with gravels to 1/4-inch | BAY MUD |
| 14 | | | | | | | |
| 15 | | | | | CL | CLAY (CL)<br>gray, soft, moist, layers of brown, gray sand with gravels to 1/2-inch | |
| 16 | | | | | | Boring terminated at a depth of 16 feet.<br>Boring tremie-grouted with a Portland cement mixture. | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-28



Boring location: See Site Plan, Figure 2 | Logged by: C. Austin

Date started: 11/16/99 | Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | | | | | | Concrete, concrete rubble to 1-inch<br>no recovery |
| 2 | | | | | | SAND (SP)<br>gray-brown, moist, fine-grained, poorly graded |
| 3 | | | | | | |
| 4 | | | | | SP | no recovery |
| 5 | | | | | | |
| 6 | MC | | | | | SB-28-6 |
| 7 | | | | | | CLAY (CL)<br>gray, medium stiff, wet |
| 8 | | | | | | |
| 9 | | | | | | sandy, liquid consistency from 8.5 to 11 feet |
| 10 | | | | | | |
| 11 | | | | | CL | |
| 12 | | | | | | |
| 13 | | | | | | less sand<br>less gravel |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | MC | | | | CL | CLAY (CL)<br>yellow and gray, some mottling, stiff, drier |
| 17 | | | | | CL | CLAY (CL)<br>gray, very soft, wet, lenses of sand and gravel to 1/2-inch |
| 18 | | | | | | SB-28-16 |
| 19 | | | | | | CLAYEY SAND (SC)<br>mottled olive and yellow-brown, moist, fine-grained sands with gravels to 1/4-inch |
| 20 | | | | | SC | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | CL | CLAY (CL)<br>gray, very soft to liquid, wet, with gravels to 1/4-inch |
| 24 | | | | | | Boring terminated at a depth of 24 feet.<br>Boring tremie-grouted with a Portland cement mixture. |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

FILL

BAY MUD

BAY MUD

BAY MUD

| PROJECT: | 2855 MANDELA PARKWAY<br>Oakland, California | **Log of Boring SB-31** | PAGE 1 OF 1 |
|---|---|---|---|
| Boring location: See Site Plan, Figure 2 | | | Logged by: C. Austin |
| Date started: 11/16/99 | Date finished: 11/16/99 | | |
| Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted | | | |
| Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic | | |
| Sampler: Continuous Core | | | |

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | | | | | | Concrete<br>no recovery |
| 2 | | | | | | |
| 3 | | | | | SP | SAND (SP)<br>gray-brown, moist, fine-grained, poorly graded — FILL |
| 4 | | | | | | |
| 5 | MC | | | | | SB-31-5<br>no recovery |
| 6 | | | | | | CLAY (CL)<br>gray, very soft, moist — BAY MUD |
| 7 | | | | | | |
| 8 | | | | | | fine-grained sand lens from 8 to 9 feet |
| 9 | | | | | CL | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | CL | CLAY (CL)<br>olive and yellow-brown, soft, moist |
| 14 | | | | | | |
| 15 | | | | | CL | CLAY (CL)<br>yellow-brown, stiff, moist |
| 16 | | | | | | no recovery |
| 17 | | | | | | SAND (SP)<br>yellow-brown and gray, moist |
| 18 | | | | | SP | |
| 19 | | | | | CL | CLAY (CL)<br>yellow-brown, stiff, moist |
| 20 | | | | | SC | CLAYEY SAND (SC)<br>yellow-brown and gray, saturated, fine-grained sand and clay |
| 21 | | | | | | |
| 22 | | | | | CL | CLAY (CL)<br>yellow-brown, stiff, moist<br>gray and yellow brown at 21.5 feet<br>increasing stiffness, trace gravels to 1/8-inch, at 23.5 feet |
| 23 | | | | | | |
| 24 | | | | | | Boring terminated at a depth of 24 feet.<br>Boring tremie-grouted with a Portland cement mixture. |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-33A



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 12/2/99 | Date finished: 12/2/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 1–2 | DP | | | | SP | SAND (SP)<br>gray, moist to wet, fine-grained, with shell fragments<br>Concrete, no recovery |
| 2–3 | DP | | | | SP | FILL |
| 3–4 | DP | | | | SP | FILL |
| 4–5 | DP | | | 0 | SP | FILL |
| 5–6 | DP | | | 0 | SP | SB-33A-5.5<br>FILL |
| 6–7 | DP | | | 0 | CL | CLAY (CL)<br>gray, very soft, wet, high plasticity<br>BAY MUD |
| 7–8 | DP | | | 0 | CL | BAY MUD |
| 8–9 | | | | | | Boring terminated at 7.96 feet.<br>Boring tremie-grouted with a Portland cement mixture. |
| 9–10 | | | | | | |
| 10–11 | | | | | | |
| 11–12 | | | | | | |
| 12–13 | | | | | | |
| 13–14 | | | | | | |
| 14–15 | | | | | | |
| 15–16 | | | | | | |
| 16–17 | | | | | | |
| 17–18 | | | | | | |
| 18–19 | | | | | | |
| 19–20 | | | | | | |
| 20–21 | | | | | | |
| 21–22 | | | | | | |
| 22–23 | | | | | | |
| 23–24 | | | | | | |
| 24–25 | | | | | | |
| 25–26 | | | | | | |
| 26–27 | | | | | | |
| 27–28 | | | | | | |
| 28–29 | | | | | | |
| 29–30 | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-34



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 12/2/99 | Date finished: 12/2/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 1–2 | DP | | | | SP | SAND (SP)<br>gray-brown, moist, fine-grained<br>Concrete, no recovery |
| 3–4 | | | | 0 | | SB-34-4.5 |
| 5–6 | DP | | | 0 | CL | CLAY (CL)<br>gray very soft, moist |
| 7 | | | | 143 | | strong hydrocarbon odor at 7.0 feet |
| 8 | | | | | | Boring terminated at 7.5 feet.<br>Boring tremie-grouted with a Portland cement mixture. |

FILL

BAY MUD

Note:
soil sample SB-34-4.5 collected at depth interval of 3 to 3.5 feet.

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring SB-34A



Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 12/2/99 | Date finished: 12/2/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches | Hammer type: Hydraulic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 1 | DP | | | 0 | SP | SAND (SP)<br>gray-brown, moist, fine-grained<br>Concrete, no recovery — FILL |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | 0 | | |
| 5 | | | | | | Piston tip pushed to 5.5 feet. |
| 6 | | | | | | Boring terminated at 5.5 feet.<br>Boring tremie-grouted with a Portland cement mixture.<br>No groundwater encountered. |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
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| 30 | | | | | | |

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | **Log of Boring SB-35** | PAGE 1 OF 1 |
|---|---|---|---|

| | | |
|---|---|---|
| Boring location: See Site Plan | | Logged by: D. Sutherland<br>Reviewed by: |
| Date started: 6/4/01 | Date finished: 6/4/01 | |
| Drilling method: Direct push-geoprobe | | |
| Hammer weight/drop: | Hammer type: | |
| Sampler: Continuous core | | |

| DEPTH (feet) | SAMPLES: Sample Number | Sample | Blow Count | Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | Surface Conditions: concrete floor slab |
| | | | | | | | 6 inches concrete |
| 1–2–3–4 | | | | | | SW | SAND (SW), 90% recovery<br>gray-brown, dense, moist, some fine to medium gravel, shell fragments<br>wet, gray-brown to brown |
| 5–6 | | | | | | CL | SANDY CLAY (CL)<br>dark gray, soft, wet, soft to stiff, no odor |
| 7 | | | | | 86 | OH | PEATY CLAY (OH)<br>dark gray, very stiff, moist, gasoline odor |
| 8–9–10–11–12 | | | | | 227 | CL | CLAY (CL)<br>dark gray, medium stiff, moist, gasoline odor,<br>soft, shell fragments at 9.0 feet |
| 13–14–15 | | | | | 210 | CL | SANDY CLAY (CL)<br>light gray, stiff, moist, fine gravel, gasoline odor<br>gray to gray-brown, hard, increase in medium gravel |
| 16 | | | | | | SW | SAND (SW)<br>brown, dense, moist, fine to medium sand, no odor |
| 17–18–19–20–21–22–23–24–25–26–27–28–29–30 | | | | | | | |

Boring terminated at a depth of 16.0 feet.
Boring backfilled with grout.
During drilling, wet zone potentially indicating perched groundwater encountered at a depth of 3.5 feet.

**Treadwell&Rollo**

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-1 |

TEST ENVIRONMENTAL W/REVIEWED BY 254302.GPJ T&R.GDT 6/26/08

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | **Log of Boring SB-36** | PAGE 1 OF 1 |
|---|---|---|---|

| | | |
|---|---|---|
| Boring location: See Site Plan | | Logged by: D. Sutherland<br>Reviewed by: |
| Date started: 6/4/01 | Date finished: 6/4/01 | |
| Drilling method: Direct push-geoprobe | | |
| Hammer weight/drop: | Hammer type: | |
| Sampler: Continuous core | | |

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | Surface Conditions: concrete pavement |
| | | | | | | | 6 inches concrete |
| 1 | | | | | | | CLAYEY GRAVEL (GC)<br>gray, loose, moist, 15% recovery |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | 3.3 | GC | SANDY CLAY (CL)<br>dark gray, soft, moist, with some gravel and wood fragments |
| 5 | | | | | | | |
| 6 | | | | | 13.9 | | concrete debris, refusal - end of hole |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
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| 29 | | | | | | | |
| 30 | | | | | | | |

FILL

Boring terminated at a depth of 6.0 feet.
Boring backfilled with grout.
Groundwater not encountered at time of drilling.

**Treadwell&Rollo**

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-2 |

TEST ENVIRONMENTAL W/REVIEWED BY 254302.GPJ T&R.GDT 6/26/08

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring TR-1



Boring location: See Site Plan, Figure 2
Logged by: M. Rapoport
Date started: 5/11/99 (07:40) Date finished: 5/11/99 (07:52)
Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted
Hammer weight/drop: --- lbs./--- inches Hammer type: Pneumatic
Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION | WELL CONSTRUCTION DETAILS |
|---|---|---|---|---|---|---|---|
| | | | | | | Ground Surface Elevation: 7.59 feet [1] | |
| 0 | | | | | | Concrete and baserock | |
| 1–4 | MC | | | 0 | SP | SAND (SP)<br>brown, moist, poorly graded, no odor | 1-inch PVC casing, perforated with 0.01-inch slots |
| 5 | MC | | | | SP | TR-1-5 | Monterey No. 2 sand |
| 6–7 | | | | 48 | CL | CLAY (CL)<br>dark gray, moist, wet, slight petroleum odor | |
| 8 | | | | | CL | 5/11/99 (12:10) | |
| 9 | | | | | CL | wet | |
| 10 | MC | | | | | NO RECOVERY | |
| 11–12 | | | | 173 | | | |
| 13 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 8.5 feet | |
| 15 | | | | | | [1] Elevation referenced to Mean Sea Level. | |
| 16–30 | | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring TR-2



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (09:55) | Date finished: 5/11/99 (10:12)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION | WELL CONSTRUCTION DETAILS |
|---|---|---|---|---|---|---|---|
| | | | | | | Ground Surface Elevation: 9.06 feet [1] | |
| | | | | | | Concrete and baserock | |
| 1 | | | | | SP | SAND (SP)<br>brown, moist, fine-grained, poorly graded | 1-inch PVC casing, perforated with 0.01-inch slots |
| 2 | | | | | | | |
| 3 | | | | | | CLAY (CL)<br>dark gray, moist to wet, slight petroleum odor<br>5/11/99 (14:29) | |
| 4 | | | | 0 | | | |
| 5 | MC | | | | | TR-2-5 | Monterey No. 2 sand |
| 6 | | | | | | | |
| 7 | | | | | CL | | |
| 8 | | | | 0 | | wet | |
| 9 | | | | | | | |
| 10 | MC | | | | | TR-2-10 | |
| 11 | | | | | | | |
| 12 | | | | 0 | | | |
| 13 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 8 feet. | |
| 14 | | | | | | | |
| 15 | | | | | | [1] Elevation referenced to Mean Sea Level. | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
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| 20 | | | | | | | |
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| 30 | | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring TR-3



Boring location: See Site Plan, Figure 2 | Logged by: M. Rapoport

Date started: 5/11/99 (10:25) | Date finished: 5/11/99 (10:40)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION | WELL CONSTRUCTION DETAILS |
|---|---|---|---|---|---|---|---|
| | | | | | | Ground Surface Elevation: 7.34 feet [1] | |
| 0 | | | | | | Concrete and baserock | |
| 1 | | | | | SP | Crushed rock with sand, trace gravel, trace concrete | 1-inch PVC casing, perforated with 0.01-inch slots |
| 2 | | | | | | | |
| 3 | | | | | | CLAY (CL)<br>dark gray, moist to wet, slight petroleum odor<br>5/11/99 (14:05) | |
| 4 | | | | 0 | | | |
| 5 | MC | | | | | TR-3-5 | Monterey No. 2 sand |
| 6 | | | | | | | |
| 7 | | | | | CL | wet | |
| 8 | | | | 0 | | | |
| 9 | | | | | | NO RECOVERY | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | 0 | | | |
| 13 | | | | | | Boring terminated at a depth of 12 feet.<br>Boring backfilled with cement/bentonite grout.<br>Groundwater first encountered at a depth of 7 feet. | |
| 14 | | | | | | | |
| 15 | | | | | | [1] Elevation referenced to Mean Sea Level. | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
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| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |

PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring TR-4



Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 6/22/99 (13:40) | Date finished: 6/22/99 (14:55)

Drilling method: Hollow-stem auger

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: California split-barrel

Ground Surface Elevation: 7.20 feet [1]

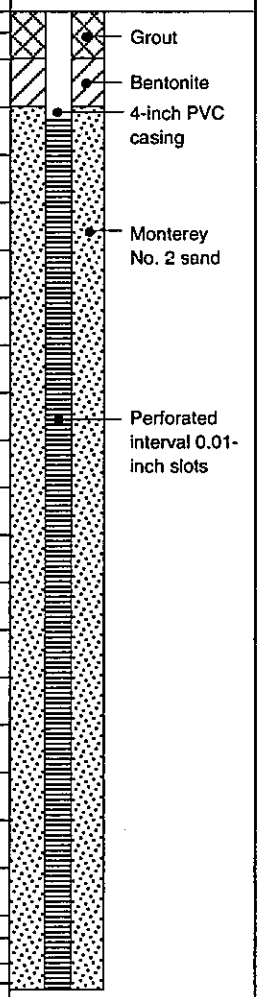
| DEPTH (feet) | Sampler Type | Sample | Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 0 | | | | | | 6 inches concrete |
| 1–2 | | | | | SP | SAND (SP)<br>tan-brown, moist, medium-grained, slight petroleum odor |
| 3–4 | | | | | | CLAY (CL)<br>dark gray, wet, strong petroleum odor<br>wet from hand auger |
| 5 | | | | 126 | | TR-4-5.5 |
| 6–9 | | | | | | |
| 10 | | | | | CL | |
| 11 | | | | 390 | | sheen<br>6/22/99 (17:10) |
| 12–15 | | | | | | |
| 16 | | | | 242 | | saturated |
| 17–18 | | | | | CL | CLAY (CL)<br>light gray, stiff, wet to moist, trace medium-grained sand, strong petroleum odor |
| 19–20 | | | | 182 | SP | SAND (SP)<br>brown, moist, medium- to coarse-grained, strong petroleum odor |
| 21–30 | | | | | | |

HAND AUGER

Boring terminated at a depth of 20.5 feet.
Groundwater first encountered at depth of 4.5 feet.

[1] Elevation referenced to Mean Sea Level.

WELL CONSTRUCTION DETAILS



PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

# Log of Boring TR-5



Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 6/23/99 (12:54) | Date finished: 6/23/99 (16:00)

Drilling method: Hollow-stem auger

Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

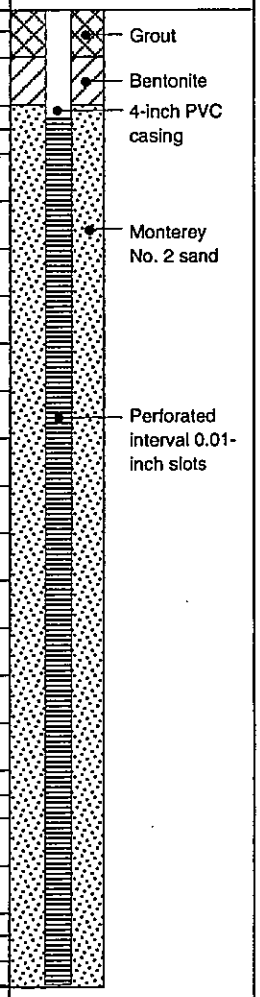
Sampler: California split-barrel

Top of Casing Elevation: 6.90 feet [1]

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| 0 | | | | | | 6 inches concrete |
| 1 | | | | | SP | SAND (SP)<br>tan-brown, moist, medium- to fine-grained, slight petroleum odor |
| 2 | | | | | | |
| 3 | | | | | | CLAY (CL)<br>dark gray, wet, strong petroleum odor |
| 4 | | | | | | wet from hand auger |
| 5 | CA | | | | | sheen |
| 6 | | | | 164 | | TR-5-5.5 |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | CL | |
| 10 | | | | | | |
| 11 | CA | | | 238 | | 6/23/99 (15:15) |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | CA | | | | | saturated<br>TR-5-15.5 (submitted to lab, not analyzed) |
| 16 | | | | | | |
| 17 | | | | | | CLAY (CL)<br>light gray, stiff, wet to moist, strong petroleum odor |
| 18 | | | | | CL | |
| 19 | | | | | | SAND with GRAVEL (SP)<br>brown, moist, medium- to coarse-grained, strong petroleum odor |
| 20 | CA | | | 189 | SP | |
| 21 | | | | | | Boring terminated at a depth of 20.5 feet.<br>Groundwater first encountered at depth of 4.5 feet. |
| 22 | | | | | | |
| 23 | | | | | | [1] Elevation referenced to Mean Sea Level. |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

HAND AUGER

WELL CONSTRUCTION DETAILS



PROJECT: **2855 MANDELA PARKWY**
Oakland, California

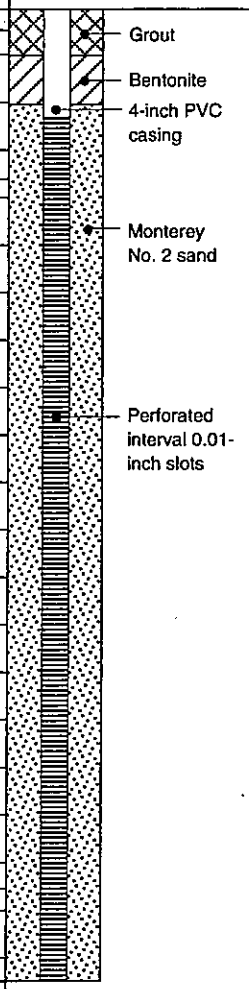
# Log of Boring TR-6



Boring location: See Site Plan, Figure 2
Logged by: M. Rapoport
Date started: 6/22/99 (08:30) Date finished: 6/22/99 (12:30)
Drilling method: Hollow-stem auger
Hammer weight/drop: --- lbs./--- inches Hammer type: Pneumatic
Sampler: California split-barrel

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/foot | OVM | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|
| | | | | | | Top of Casing Elevation: 7.30 feet [1] |
| 0 | | | | | | 6 inches concrete |
| 1–4 | | | | | SP | SAND (SP)<br>tan-brown, moist, medium-grained, slight petroleum odor<br>HAND AUGER |
| 5–6 | CA | | | 118 | | CLAY (CL)<br>dark gray, wet, strong petroleum odor<br>wet from hand auger<br>sheen<br>TR-6-6.0 |
| 7–9 | | | | | | |
| 10 | | | | | CL | 6/22/99 (13:45) depth to product = 9.96, depth to water = 11:35<br>saturated |
| 11 | CA | | | 226 | | |
| 12–15 | | | | | | |
| 16 | CA | | | 238 | | |
| 17–18 | | | | | CL | CLAY (CL)<br>light gray, stiff, wet to moist, strong petroleum odor |
| 19–20 | CA | | | 417 | SP | SAND (SP)<br>brown, moist, medium- to coarse-grained, with gravel, strong petroleum odor |
| 21 | | | | | | Boring terminated at a depth of 20.5 feet.<br>Groundwater first encountered at depth of 5.0 feet. |
| 22–30 | | | | | | [1] Elevation referenced to Mean Sea Level. |

WELL CONSTRUCTION DETAILS



| PROJECT: | MANDELA PARKWAY<br>Oakland, California | **Log of Boring TR-7** | PAGE 1 OF 1 |
|---|---|---|---|
| Boring location: See Site Plan | | | Logged by: D. Sutherland<br>Reviewed by: |
| Date started: 6/4/01 | Date finished: 6/4/01 | | |
| Drilling method: Direct push-geoprobe | | | |
| Hammer weight/drop: | Hammer type: | | |
| Sampler: Continuous core | | | |

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | Surface Conditions: concrete |
| 0 | | | | | | | 6 inches asphalt pavement |
| 1 | | | | | | GW | GRAVEL (GW)<br>gray, loose, moist, with some clay, (fill) |
| 2 | | | | | | CL | CLAY (CL)<br>dark gray, very stiff, moist, becomes interbedded with sand |
| 3 | | | | | | | |
| 4 | | | | | | SW | SAND (SW)<br>red-brown, very dense, moist, no odor |
| 5 | | | | | | | wet at 5.5 feet |
| 6 | | | | | | | |
| 7 | | | | | | OL | SILTY PEATY CLAY (OL)<br>medium stiff, wet, no odor |
| 8 | | | | | | | |
| 9 | | | | | | | CLAY (CL)<br>dark brown, moist, stiff, decrease in plant fragments, no odor |
| 10 | | | | | | | |
| 11 | | | | | | CL | |
| 12 | | | | | | | shell fragments at 12.0 feet |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | CL | GRAVELLY CLAY (CL)<br>light gray, stiff, moist, no odor |
| 16 | | | | | | | SANDY CLAY (CL)<br>light gray, very stiff, moist, very fine sand<br>decreasing sand gray to orange-brown mottling at 16.5 feet |
| 17 | | | | | | | |
| 18 | | | | | | CL | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | SC | CLAYEY SAND (SC)<br>orange-brown, medium dense sand, moist, gray mottling, no odor |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |

Boring terminated at a depth of 22.0 feet.

[1] Note: 0.010 inch slotted PVC casing with pre-pack sand.

**Treadwell&Rollo**

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-3 |

TEST ENVIRONMENTAL W/REVIEWED BY 254302.GPJ T&R.GDT 6/26/08

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | **Log of Boring TR-8** |
|---|---|---|

PAGE 1 OF 1

| | | |
|---|---|---|
| Boring location: See Site Plan | | Logged by: D. Sutherland<br>Reviewed by: |
| Date started: 8/10/01 | Date finished: 8/10/01 | |
| Drilling method: Direct push-geoprobe | | |
| Hammer weight/drop: | Hammer type: | |
| Sampler: Continuous core | | |

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | Surface Conditions: Concrete |
| | | | | | | | 6 inches concrete floor slab |
| 1–4 | | | | | | SC | 0-2 inches gravel<br>SANDY CLAY (SC) 30% recovery<br>olive-gray, stiff, moist, with some fine to medium gravel |
| | | | | | | | wet at 4.5 feet |
| 5–9 | | | | | | CL | CLAY (CL) 100% recovery<br>dark, gray, soft, wet |
| 10–13 | | | | | | SC | SANDY CLAY (SC)<br>light gray, moist, with trace fine sand, stiff<br>gray to gray-brown, odor of gasoline<br>▽ wet at 13.0 feet |
| 14–15 | | | | | | CL | CLAY (CL) 100% recovery<br>black, soft, wet, some organic matter<br>increased sand decrease in organic matter 15.5-16.5 slight odor gasoline |
| 16–18 | | | | | | SC | SANDY CLAY (SC) 100% recovery<br>light brown, hard, moist, some orange mottling |
| 19–30 | | | | | | | |

Boring terminated at a depth of 20.0 feet.
During drilling, wet zone potentially indicating groundwater encountered at a depth of 4.5 feet and 13.0 feet.

[1] Note: 0.010 inch slotted PVC casing with pre-pack sand.

Treadwell&Rollo

Project No.: 2543.02 | Figure: A-4

TEST ENVIRONMENTAL WREVIEWED BY 254302.GPJ T&R.GDT 6/26/08

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | Log of Monitoring Well TR-9<br>PAGE 1 OF 1 |
|---|---|---|

| | | |
|---|---|---|
| Boring location: See Site Plan | | Logged by: D. Sutherland<br>Reviewed by: |
| Date started: 6/5/01 | Date finished: 6/5/01 | |
| Drilling method: Direct push-geoprobe | | |
| Hammer weight/drop: | Hammer type: | |
| Sampler: Continuous core | | |

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | Surface Conditions: concrete |
| | | | | | | | 6 inches concrete floor slab |
| 1–2 | | | | | | CL | SANDY CLAY (CL)<br>gray-brown, medium dense, moist, with brick fragments, no odor<br>FILL |
| 3–4 | | | | | | SW | SAND (SW), 85% recovery<br>gray, dense, moist, fine to medium sand, with shell fragments, no odor |
| 5–6 | | | | | | CL | CLAY (CL)<br>dark gray, very soft, moist, no odor<br>wet at 5.5 feet |
| 7–9 | | | | | | OH | ORGANIC CLAY (OH)<br>dark gray, soft, moist, decomposing odor |
| 10–13 | | | | | 0.0 | CL | CLAY (CL)<br>dark gray, very soft, moist, with trace fine sand, no odor |
| 14–16 | | | | | | | ▽ wet at 14.0 to 14.5 feet<br>SANDY CLAY (CL)<br>light gray, hard, dry, with fine to medium gravel,<br>brown mottling, shell fragments<br>gray to brown at 15.5 feet |
| 17–30 | | | | | | | |

Boring terminated at a depth of 16.0 feet.
During drilling, wet zone potentially indicating groundwater encountered at a depth of 5.5 feet and 14.0 feet.

[1] Note: 0.010 inch slotted PVC casing with pre-pack sand.

Treadwell&Rollo

Project No.: 2543.02 | Figure: A-5

TEST ENVIRONMENTAL W/REVIEWED BY 254302.GPJ T&R.GDT 6/26/08

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | **Log of Monitoring Well TR-9**<br>PAGE 1 OF 1 |
|---|---|---|
| Boring location: See Site Plan | | Logged by: D. Sutherland |
| Date started: 6/5/01 | Date finished: 6/5/01 | |
| Drilling method: Direct push-geoprobe | | |
| Hammer weight/drop: | Hammer type: | |
| Sampler: Continuous core | | |

| DEPTH (feet) | SAMPLES: Sample Number | Sample | Blow Count | Recovery (feet) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION | WELL COMPLETION INFORMATION |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | 6 inches concrete floor slab | Grout From 0 To 1 Feet |
| 1–2 | | | | | | CL | SANDY CLAY (CL)<br>gray-brown, medium dense, moist, with brick fragments, no odor<br>FILL | Blank Casing From 1 To 6 Feet |
| 3–4 | | | | | | SW | SAND (SW), 85% recovery<br>gray, dense, moist, fine to medium sand, with shell fragments, no odor | Bentonite From 1 To 6 Feet |
| 5–6 | | | | | | CL | CLAY (CL)<br>dark gray, very soft, moist, no odor<br>wet at 5.5 feet | |
| 7–9 | | | | | | OH | ORGANIC CLAY (OH)<br>dark gray, soft, moist, decomposing odor | casing |
| 10 | | | | | 0.0 | | | |
| 11–13 | | | | | | CL | CLAY (CL)<br>dark gray, very soft, moist, with trace fine sand, no odor | Sand From 6 To 16 Feet |
| 14 | | | | | | | ▽ wet at 14.0 to 14.5 feet | |
| 15–16 | | | | | | | SANDY CLAY (CL)<br>light gray, hard, dry, with fine to medium gravel, brown mottling, shell fragments<br>gray to brown at 15.5 feet | |
| 17–30 | | | | | | | | |

Boring terminated at a depth of 16.0 feet.
During drilling, wet zone potentially indicating groundwater encountered at a depth of 5.5 feet and 14.0 feet.

[1] Note: 0.010 inch slotted PVC casing with pre-pack sand.

Treadwell&Rollo

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-5 |

TEST ENVIRONMENTAL WELL 254302.GPJ TR.GDT 7/2/08

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | Log of Monitoring Well TR-10<br>PAGE 1 OF 2 |
|---|---|---|
| Boring location: See Site Plan (Figure 2) | | Logged by: E. Deratzian<br>Reviewed by: Precision |
| Date started: 7/7/04 | Date finished: 7/7/04 | |
| Drilling method: Hollow Stem | | |
| Hammer weight/drop: --- | Hammer type: --- | |
| Sampler: Split Spoon | | |

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | Surface Conditions: |
| | | | | | | | Asphalt |
| 1 | | | | | | | GRAVELLY CLAY (CL)<br>brown, stiff, moist, subrounded to subangular, slightly plastic, moderately graded, no odor, 30 percent gravel, 10 percent sand, 60 percent fines |
| 2 | | | | | | CL | |
| 3 | | | | | | SP | SAND (SP)<br>gray, loose, moist, subrounded to subangular, poorly graded, weak hydrocarbon odor, 90 percent fine to medium sand, 10 percent fines |
| 4 | | | | | | CL | CLAY (CL)<br>gray, very soft, moist, extremely hard, poorly graded, no odor, 5 percent fine sand, 95 percent fines |
| 5 | | | | | | | ▽ |
| 6 | | | | | | | No recovery<br>▽ |
| 7 | | | | | | CL | CLAY (CL)<br>gray with black mottling, soft, wet, plastic, poorly graded, strong hydrocarbon odor, 10 percent fine sand, 90 percent fines |
| 8 | | | | | | | No recovery |
| 9 | | | | | | | |
| 10 | | | | | | CL | CLAY (CL)<br>gray, medium stiff, moist, very plastic, poorly graded, strong hydrocarbon odor, 10 percent sand, 90 percent fines |
| 11 | | | | | | | shell fragments at 11 to 12 feet |
| 12 | | | | | | | |

TEST ENVIRONMENTAL W/REVIEWED BY 254302_TR-10-11.GPJ T&R.GDT 6/26/08

Treadwell&Rollo

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-1a |

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | Log of Monitoring Well TR-10<br>PAGE 2 OF 2 |
|---|---|---|

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 13 | | | | | | CL | CLAY with SILT (CL)<br>gray-green, very stiff, moist, plastic, poorly graded, moderate hydrocarbon odor, 10 percent fine sand, 90 percent fines |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | CL | odor decreasing with depth<br>no odor beginning at 17 feet |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | SW | GRAVELLY SAND (SW)<br>brown, loose to medium dense, saturated, subangular, moderately graded, no odor, 30 percent gravel, 70 percent sand |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |

Boring terminated at a depth of 20 feet.
Boring backfilled with grout.
Groundwater encountered at a depth of 5 to 6.5 feet

Treadwell&Rollo

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-1b |

TEST ENVIRONMENTAL W/REVIEWED BY 254302_TR-10-11.GPJ T&R.GDT 6/26/08

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | Log of Monitoring Well TR-11<br>PAGE 1 OF 2 |
|---|---|---|

| | | |
|---|---|---|
| Boring location: See Site Plan (Figure 2) | | Logged by: E. Deratzian<br>Reviewed by: Precision |
| Date started: 7/7/04 | Date finished: 7/7/04 | |
| Drilling method: Hollow Stem | | |
| Hammer weight/drop: --- | Hammer type: --- | |
| Sampler: Split Spoon | | |

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | Surface Conditions: |
| | | | | | | | Asphalt |
| 1 | | | | | | GW | SANDY GRAVEL (GW)<br>brown, loose, moist, subangular, poorly graded, no odor, 75 percent gravel, 25 percent sand |
| | | | | | | CL | Baserock |
| 2 | | | | | | SW | GRAVELLY CLAY (CL)<br>brown, medium stiff, moist, subangular to angular, moderately graded, no odor, 25 percent gravel, 75 percent fines |
| | | | | | | | GRAVELLY SAND (SW)<br>orange-brown, medium dense, moist, subangular, moderately graded, no odor, 25 percent gravel, 70 percent fine to medium sand, 5 percent fines |
| 3 | | | | | | CL | SANDY CLAY (CL)<br>dark gray, medium stiff, moist, subrounded, plastic, moderately graded, weak hydrocarbon odor, 30 percent fine sand, 60 percent fines |
| 4 | | | | | | SP | SAND (SP)<br>gray, loose, wet, subrounded, poorly graded, weak hydrocarbon odor, 10 percent fine sand, 90 percent fines |
| 5 | | | | | | CL | CLAY (CL)<br>gray, soft, wet, very plastic, poorly graded, weak hydrocarbon odor, 10 percent fine sand, 90 percent fines |
| 6 | | | | | | | No recovery |
| 7 | | | | | | CL | CLAY (CL)<br>gray, very stiff, wet, very plastic, poorly graded, no odor, 10 percent sand, 90 percent fines |
| | | | | | | OH | PEATY CLAY (OH)<br>black, medium stiff, wet, plastic, poorly graded, weak organic odor, 20 percent fine sand, 80 percent fines<br>Peat (abundant organics) |
| 8 | | | | | | | |
| 9 | | | | | | CL | GRAVELLY CLAY (CL)<br>brown, stiff, moist, subangular, slightly plastic, well graded, no odor, 25 percent gravel, 10 percent sand, 65 percent fines |
| 10 | | | | | | CL | CLAY (CL)<br>gray, soft, wet, very plastic, poorly graded, no odor, 10 percent fine sand, 90 percent fines<br>shell fragments throughout |
| 11 | | | | | | | |
| 12 | | | | | | CL | CLAY (CL)<br>gray-green, very stiff, moist, very plastic, poorly graded, no odor, 10 percent fine |

TEST ENVIRONMENTAL WIREVIEWED BY 254302_TR-10-11.GPJ T&R.GDT 6/26/08

Treadwell&Rollo

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-2a |

| PROJECT: | MANDELA PARKWAY<br>Oakland, California | Log of Monitoring Well TR-11<br>PAGE 2 OF 2 |
|---|---|---|

| DEPTH (feet) | SAMPLES: Sample Number | SAMPLES: Sample | SAMPLES: Blow Count | SAMPLES: Recovery (inches) | OVM (ppm) | LITHOLOGY | MATERIAL DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 13 | | | | | | | to medium sand, 90 percent fines |
| 14 | | | | | | CL | |
| 15 | | | | | | | |
| 16 | | | | | | CL | SANDY CLAY with GRAVEL (CL)<br>brown, medium stiff, moist, subrounded to subangular, slightly plastic, well graded, no odor, 10 percent gravel, 25 percent sand, 65 percent fines |
| 17 | | | | | | | SILTY CLAY with SAND (CL)<br>orange-brown, very stiff, moist, subrounded, plastic, poorly graded, no odor, 20 percent fine sand, 80 percent fines |
| 18 | | | | | | CL | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |

Boring terminated at a depth of 20 feet.
Boring backfilled with grout.
Groundwater encountered at a depth of 4.5 feet.

Treadwell&Rollo

| Project No.: | Figure: |
|---|---|
| 2543.02 | A-2b |

TEST ENVIRONMENTAL WREVIEWED BY 254302_TR-10-11.GPJ T&R.GDT 6/26/08