BALCO
PROPERTIES

September 30, 2014

RECEIVED
By Alameda County Environmental Health at 11:04 am, Oct 03, 2014

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

RE: Revised Work Plan for Additional Investigation, 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:

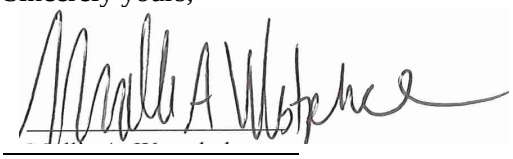
Balco submitted a Work Plan for Additional Investigation (Work Plan; prepared by Trihydro Corporation) to ACEH on August 14, 2012. The purpose of the Work Plan was to propose additional field activities to address remaining data gaps at the Site and supplement the Feasibility Study Corrective Action 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, and the SCM was submitted on March 11, 2014. On August 27, 2014, ACEH concurred with the SCM and requested a revised sample location figure from the August 2012 Work Plan and an additional Work Plan for soil gas and sub-slab vapor investigation.

Please find an enclosed Revised Work Plan, with a revised sample location figure and proposed soil gas and sub-slab vapor sampling activities. 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.

BALCO
PROPERTIES

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document *Revised Work Plan for Additional Investigation, 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

REVISED WORK PLAN FOR ADDITIONAL INVESTIGATION

BALCO PROPERTIES LLC

2855 MANDELA PARKWAY

OAKLAND, CALIFORNIA

September 30, 2014

Project #: 21B-001-001

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

PREPARED FOR: Balco Properties, LLC

1624 Franklin Street, Suite 310, Oakland CA 94612

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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.

9/30/2014

David Kleesattel, PG. Date
California Registered Geologist #5136

1.0 INTRODUCTION

The Mandela Parkway Balco Properties, LLC (Balco) site is located at 2855 Mandela Parkway in Oakland, California (the Site; Figure 1). Current corrective action activities are conducted pursuant to Alameda County Department of Environmental Health's (ACEH) Local Oversight Program (LOP) via Fuel Leak Case Number RO0000378. Balco has been working with ACEH since 2006, after acquiring the property. The nature, degree, and extent of hydrocarbons in the subsurface at the Site are generally defined. In August 2012, Trihydro Corporation, Inc. (Trihydro) submitted a Work Plan for Additional Investigation. Following a meeting on October 21, 2013, between ACEH and Trihydro, ACEH requested the Balco prepare a focused site conceptual model (SCM) to further identify potential data gaps and evaluate the Site in accordance with the State Water Resources Control Board's (SWRCB) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Balco submitted the SCM to ACEH on March 11, 2014, and ACEH concurred with the SCM via an electronic mail (e-mail) dated August 27, 2014. ACEH further requested that Balco submit a revised sample location figure from the August 2012 Work Plan and prepare an additional Work Plan to investigate current soil gas and sub-slab vapor quality. Trihydro has prepared this Revised Work Plan per ACEH's requests in the August 27, 2014 e-mail.

1.1 ORGANIZATION OF THE WORK PLAN

This section outlines the organization of the Work Plan. The following sections are summarized below:

- Section 2 Background Information
- Section 3 Proposed Field Activities
- Section 4 Quality Assurance and Quality Control
- Section 5 Reporting and Future Activities
- Section 6 References

2.0 BACKGROUND INFORMATION

Extensive activities to characterize the local geology/hydrogeology and determine the nature, degree, and extent of subsurface hydrocarbons have been performed at the Site. A brief description of the Site and previous investigation and remediation activities are summarized below.

2.1 SITE DESCRIPTION

The Site consists of an approximate 4-acre parcel, occupied by a 143,000 square foot building located in West Oakland (Figure 1). The Site is bordered by 32nd Street to the north, Mandela Parkway and Willow Street to the east and southeast, 26th Street to the southwest, and Wood Street to the northwest. Surrounding properties are predominantly light/heavy industrial and commercial (Treadwell and Rollo 2000).

2.2 SITE OWNERSHIP HISTORY

The building currently occupying the Site was constructed by International Harvester Company as the Branch House and Service Station in 1941. A construction drawing from 1941 showed a feature that included a possible fuel dispensing pump. Sometime after 1970 International Harvester vacated the premises. A property transfer document from 1982 indicated the property was still owned by International Harvester in 1982 when it was transferred to Cypress General Partnership (Cypress). In 1983 Cypress transferred the property to Wareham Property Group (Wareham), who in turn transferred the property in 1998 to 2855 Mandela Property, LLC. The property was transferred to the current owner, Balco, in late October 2006. Since the property transfer to Cypress in 1983, space at the property has been leased by the respective owners to third-party commercial tenants (Treadwell and Rollo 2000).

2.3 SUMMARY OF INVESTIGATION AND REMEDIATION HISTORY

Numerous investigation, remediation, and/or reporting activities have occurred at the site from 1990 through 2014. These activities are summarized below. Additional details are presented in the SCM, attached as Appendix A.

2.3.1 1990 PHASE I ENVIRONMENTAL SITE ASSESSMENT AND 1991 UNDERGROUND STORAGE TANK REMOVAL

In 1990, a Phase I Environmental Site Assessment (ESA) was performed at the Site by Harding Lawson Associates (HLA) on behalf of Wareham. In 1991 a 250-gallon waste oil underground storage tank (UST) and 350-gallon gasoline UST, located in the southeast portion of the Site (Figure 2), were removed by HLA. Upon removal, both

USTs were noted to be in a deteriorated condition with numerous holes and visibly stained soil observed surrounding the tank (Light, Air & Space Construction, 1997).

2.3.2 1992 SOIL AND SOIL GAS INVESTIGATION

An investigation was conducted at the site in 1992 by ATEC Environmental (ATEC) which focused on the collection of soil samples and soil vapor samples in the vicinity of the former USTs. Results of soil and soil vapor sampling showed the presence of total volatile petroleum hydrocarbons quantified as gasoline (TVPHg/TPHg) and benzene, toluene, ethyl-benzene, and xylenes (BTEX) present in shallow subsurface soil samples and soil gas samples collected from the interior of the building and from exterior locations in the yard. The highest concentrations of BTEX were detected from exterior locations, south of the former USTs (ATEC 2002).

2.3.3 1998 SUBSURFACE INVESTIGATIONS

Three additional investigations were conducted by Ceres Associates (Ceres) in 1998 which included soil vapor, soil, and groundwater sampling. A geophysical survey was also conducted to investigate the potential existence of additional USTs. Soil and groundwater sampling focused on areas south and southeast of the former USTs and included locations adjacent to the Site along Willow Street. The offsite property investigation was conducted in the vicinity of the former UST at 2607 Mandela Parkway, which had previously been closed in place, to assess the UST as a potential offsite source (Figure 2; Ceres 1998).

Soil vapor samples were collected from 20 locations and analyzed for BTEX and methyl tert-butyl ether (MTBE). Results from the soil gas survey confirmed the presence of BTEX at elevated concentrations. The highest concentrations of BTEX were detected outside the building southwest of the onsite former USTs (Treadwell and Rollo, 2000). MTBE was not detected in any of the samples. The validity of the soil vapor data collected during this investigation was later brought into question by ACEH and additional soil gas investigations were conducted in 2001 and 2008.

Soil samples were collected from 18 locations and analyzed for total petroleum hydrocarbons as gasoline (TPHg), BTEX, and MTBE. The highest hydrocarbon concentrations were detected offsite in Willow Street, southeast of the former USTs (Figure 2; Ceres 1998).

Grab groundwater samples were collected from several borings and analyzed for TPHg, BTEX, and MTBE. The highest concentrations of TPHg, benzene, toluene, ethyl-benzene, and xylenes in groundwater were detected east of the

former onsite USTs. LNAPL was observed in onsite borings SB-3, SB-3B, SB-3C, and SB-12 and offsite borings SB-8 and SB-9, located on Willow Street (Figure 2; Ceres 1998).

Ceres summarized the results of the 1998 investigations as inconclusive with respect to the former UST at 2607 Willow Street as a potential source of contamination. No additional USTs were discovered during the geophysical survey (Ceres 1998).

2.3.4 1999 SUBSURFACE INVESTIGATIONS AND LNAPL REMOVAL

Treadwell and Rollo, Inc. (T&R) submitted three separate work plans, between April 1999 and November 1999 to further define the nature, degree, and extent of subsurface hydrocarbons at the Site. The 1999 investigations included the collection of soil and groundwater samples, the installation of three temporary piezometers (TR-1 through TR-3), the installation of three 4-inch diameter monitoring wells (TR-4 through TR-6), and the extraction of LNAPL. Historical investigation locations are shown on Figure 2.

Soil samples were collected from eight onsite locations, TR-4 through TR-6, SB-25, SB-28, SB-31, SB-33A, and SB-34. Groundwater samples were collected onsite and offsite from 16 locations: TR-2 and TR-3, SB-17, SB-19 through SB-24, SB-26, SB-27, and SB-29 through SB-33. All soil and groundwater samples were submitted for analyses of TPHg, BTEX, and MTBE. In soil samples, TPHg and BTEX were detected in TR-5 (highest concentrations) and TR-6. No TPHg, BTEX, or MTBE were detected in other soil samples. MTBE was detected in TR-5, but was considered a likely false positive based on the analytical method used (Treadwell and Rollo 2000).

In groundwater, the highest concentration of TPHg, BTEX, and MTBE were detected in samples collected east of the UST on Willow Street along the perimeter of the eastern property boundary. MTBE was not detected in the groundwater samples collected.

During the 1999 investigation, LNAPL was observed in areas immediately southeast and east of the former UST (boring SB-18 and monitoring well TR-5) and within the building footprint (boring SB-34 and monitoring wells TR-4 through TR-6; Figure 2). LNAPL was sampled and analyzed for characterization and analytical results indicated the LNAPL was attributable to a leaded gasoline source. The 1999 investigation led to a LNAPL removal pilot-test to determine the potential for removal by bailing and/or passive skimming of wells TR-4 through TR-6. Between June and October 1999, a total of 98.1 gallons of LNAPL was removed from the wells and disposed offsite to a recycling facility via hazardous waste manifest protocols. Treadwell and Rollo's evaluation of results from the 1999 investigations included the following conclusions:

- The lateral extent of the plume was defined based on direct observation of LNAPL in 1998 and 1999 and where benzene concentrations in groundwater were greater than 1,800 micrograms per liter (µg/L) - an area of approximately 15,000 square feet (Figure 2).
- LNAPL was comprised of leaded gasoline without MTBE.
- LNAPL is located in a variable mud matrix but its distribution is affected by numerous thin zones of sandy and peaty soil.
- The closed in place UST across Willow Street does not appear to be the source because the only conclusively identified source is associated with the 350-gallon UST removal in 1991.

2.3.5 2000 INDOOR AIR INVESTIGATION

An indoor air investigation was conducted by SOMA Corporation (SOMA) in 2000, and consisted of collecting ambient air samples in 6-liter lab certified summa canisters from three locations inside the building and two locations outside of the building. Detectable concentrations of BTEX were measured both in indoor and outdoor samples. The BTEX numbers were compared to the Occupational Safety and Health Administration's (OSHA's) Permissible Exposure Limits (PELs) and were found to be 4 to 6 orders-of-magnitude below the PELs. Based on investigation results, it was concluded that gasoline vapors, and specifically BTEX, were not migrating in significant concentrations into the building from subsurface soil (Treadwell and Rollo 2001a).

2.3.6 2001 SUBSURFACE INVESTIGATION

A 2001 investigation, conducted by T&R, included installation of 10 permanent soil vapor probes (A through J) inside the building, and installing monitoring wells TR-7 through TR-9 (Figure 2; Treadwell and Rollo 2001b). Ten permanent soil vapor sampling wells were installed by advancing soil vapor probes (A through J) through the building floor slab to depths of approximately 2-3 feet below the bottom of the slab. Samples were collected in Summa canisters and results were reported in micrograms per meter cubed ($\mu g/m^3$) resolving issues that ACEH had brought up in response to the 1998 Ceres investigation sampling method of using Tedlar® bags instead of Summa canisters and using µg/L instead of $\mu g/m^3$ to report data. Samples collected from the vapor wells did not contain concentrations of BTEX above laboratory reporting limits.

Three monitoring wells (TR-7 through TR-9) were installed to further evaluate the lateral extent of LNAPL in the subsurface. No LNAPL or hydrocarbon sheen was observed in wells TR-7 through TR-9 and it was concluded by Treadwell and Rollo that the plume had been defined. In December 2001, ACEH issued a notice of responsibility

bringing the Site under the jurisdiction of the LOP as Fuel Leak Case Number RO0000378 (ACEH 2001) and requested a Corrective Action Plan (CAP) be developed for the Site.

2.3.7 2003 LNAPL RECOVERY PILOT STUDY

In 2003, a pilot test was performed to determine the efficacy of utilizing a free product recovery system. The pilot test included using skimmer pumps placed inside monitoring well TR-4, and later TR-6, inside the building to remove LNAPL. Twenty-two gallons of LNAPL were recovered during the six day duration of the pilot test. It was determined that a full-scale system was feasible and that a permanent system would be proposed to ACEH (Treadwell and Rollo 2004b).

2.3.8 2004 TO 2006 DRAFT INTERIM CORRECTIVE ACTION PLAN AND PERMANENT SYSTEM INSTALLATION

In January 2004, a Draft Interim Corrective Action Plan (ICAP) was submitted to ACEH outlining historical onsite investigations, the results of the 2003 pilot test, and proposal of a permanent system in recovering additional LNAPL (Treadwell and Rollo, 2004a). In February 2004, ACEH provided a written response to the ICAP, approving the proposed system installation while requesting additional monitoring wells (TR-10 and TR-11) and future verification sampling of soil and groundwater, post interim remediation.

Between 2004 and 2006, an active pneumatic LNAPL skimming system was installed at the Site. A shallow trench for appurtenant piping (6-inches deep) was installed inside the building and two deeper recovery trenches (10 foot deep by 30 foot long) were installed near the former UST area (Figure 2) for LNAPL accumulation. PVC piping in the shallow interior trench was connected to monitoring wells TR-4 and TR-6. LNAPL was actively pumped from each well, into an above ground storage tank (AST) pending offsite disposal. No trenching was installed to connect monitoring well TR-5; to the LNAPL recovery system, however, TR-5 contained a dedicated passive skimmer for active LNAPL removal. The deeper exterior trenches were backfilled, from 5 to 10 ft bgs, with coarse drain rock in an effort to facilitate LNAPL accumulation. PVC piping was laid in the base of each trench and connected with two slotted vertical PVC risers, serving as recovery wells for the removal of the accumulated LNAPL (RW-1 and RW-2, Figure 2).

During trench installation in late 2005/early 2006 the Site received heavy rainfall. The rainfall recharged a shallow perched groundwater unit that kept the water level in the trenches higher than the LNAPL in the ground. This resulted in a hydrostatic pressure that was great enough to prevent the LNAPL from flowing into the trench. In March 2006, approximately 3,600-gallons of water were pumped from the trenches to promote a drop in the water zone and to allow

the migration of LNAPL into the trenches. The attempt was unsuccessful and the trenches re-filled with water from the perched-zone almost immediately.

Seventeen gallons of LNAPL were removed from TR-4 through TR-6 between June and July 2006. By the end of July 2006 the system was temporarily shut down due to slow LNAPL recharge rates in monitoring wells TR-4 through TR-6 and corresponding inability of the pumps to recover additional LNAPL (the pumps were left in the monitoring wells pending a potential system restart). It was concluded that LNAPL may eventually continue to be removed from TR-4 through TR-6 after LNAPL levels rebounded.

Per ACEH's request, two additional offsite monitoring wells (TR-10 and TR-11) were installed to evaluate potential presence of LNAPL along Willow Street. LNAPL was observed in well TR-10, but not in well TR-11. Removal of LNAPL from TR-10, located on the eastern edge of the LNAPL plume on Willow Street was implemented using a portable pump. Approximately 4 gallons of LNAPL were removed from TR-10 during August 2006. Manual removal of LNAPL (discussed below) was performed at the site from October 2007 through June 2008. In July 2008, skimmer pumps were removed from monitoring wells TR-4 through TR-6 (Treadwell and Rollo 2008b).

2.3.9 2007 THROUGH 2008 GROUNDWATER MONITORING AND LNAPL REMOVAL

Balco resumed site-wide fluid level measurements and initiated manual removal of LNAPL (via bailing techniques) in all Site monitoring and recovery wells in 2007, shortly after the property transaction. A total of ten events were performed, and 11.68 gallons of LNAPL were removed, between October 2007 and June 2008 (Treadwell and Rollo, 2008b).

During the ten events, between October 2007 and June 2008, LNAPL was observed in monitoring wells TR-4 through TR-6, and TR-10 while LNAPL was not observed in recovery wells RW-1 and RW-2 or monitoring well TR-11. During the October 2007 event, LNAPL thicknesses ranged from 0.01 feet in TR-5 to 7.45 feet in TR-10. Recharge rates were observed to be generally slow after LNAPL removal. In June 2008 LNAPL thickness ranged from 0.01 feet in TR-4 to 0.45 feet in TR-10. Historically, LNAPL thickness has been greatest in TR-6, northwest of the former UST.

Two groundwater sampling events were conducted at the Site in October 2007 and September 2008. Groundwater samples were collected from recovery wells RW-1 and RW-2, TR-4 through TR-6 and TR-10 and TR-11, after removing LNAPL by bailing, and submitted for analyses of volatile organic compounds (VOCs) and TPHg. Hydrocarbon concentrations were typically highest in samples collected in wells in the vicinity of the former UST area

(wells TR-4 and TR-6, and well TR-10, on Willow Street). The October 2007 and September 2008 monitoring results were consistent with historical results and data (Treadwell and Rollo 2009a).

2.3.10 2008 SOIL VAPOR SURVEY

ACEH submitted a memorandum (dated June 6, 2008) that included a request for an additional soil gas survey. Soil vapor sampling activities were conducted on October 12 and 15, 2008. Samples were collected in 1-liter summa canisters resolving issues that ACEH had brought up in response to the 1998 Ceres investigation regarding the use of Summa canisters and not Tedlar® bags (as Ceres had used) to assess potential human health risk to occupants of the Site. Samples were submitted for analysis of VOCs by EPA method TO-15. Results of soil vapor sampling showed the presence of toluene, xylenes, and 15 additional VOC compounds. However, VOCs were reported below California Regional Water Quality Control Board (RWQCB) Commercial and Residential Environmental Screening Levels (ESLs). Additionally; benzene, ethyl-benzene, and MTBE were not detected above laboratory reporting limits in samples. Treadwell and Rollo concluded that the extent of LNAPL and dissolved hydrocarbons in groundwater is limited to within the property boundary and did not pose a significant risk for a human health pathway (Treadwell and Rollo 2009b).

2.3.11 2010 AND 2011 FEASIBILITY STUDY/CORRECTIVE ACTION PLAN REPORTING ACTIVITIES

ACEH responded with a letter on May 27, 2010, generally concurring with conclusions from the 2008 soil gas vapor survey, and requested Balco prepare an FS/CAP (ACEH 2010). Between 2010 and 2011, several iterations of a FS/CAP were submitted to ACEH, with the most recent revision submitted on August 23, 2011 (Treadwell and Rollo 2011). The ACEH has not approved the previously proposed FS/CAP activities.

2.3.12 AUGUST 2012 WORK PLAN FOR ADDITIONAL INVESTIGATION

Trihydro submitted a Work Plan proposing additional investigation to ACEH on August 14, 2012. The August 2012 Work Plan included a proposed Ultraviolet Optical Screening Tool (UVOST) survey and groundwater sampling activities to further confirm/evaluate LNAPL and groundwater impacts. Balco is providing updated UVOST survey and groundwater sampling activities as part of this Revised Work Plan.

2.3.13 MARCH 2014 FOCUSED SITE CONCEPTUAL MODEL

On October 13, 2013, ACEH requested that Balco submit an updated SCM (Appendix A) to evaluate conditions at the Site with respect to the SWRCB LTCP criteria. Balco submitted the SCM to ACEH on March 11, 2014 and ACEH

concurred with the updated SCM via an August 27, 2014, e-mail. As part of the SCM acceptance, ACEH also requested that Balco submit a revised sample location figure from the August 2012 Work Plan on or before September 30, 2014. Additionally, ACEH requested an additional Work Plan to investigate current soil gas and sub-slab vapor quality. ACEH requested that this additional Work Plan be submitted by October 14, 2014.

3.0 PROPOSED FIELD ACTIVITIES

The purpose of proposed field activities is to evaluate the current degree and extent of LNAPL, associated dissolved hydrocarbons in groundwater, and potential impacts in soil gas and sub-slab soil vapor. Proposed activities include a LNAPL baildown test, UVOST survey, grab groundwater sampling, monitoring well sampling, installation and sampling of a soil gas well, and sub-slab vapor sampling inside the building.

ACEH noted in their August 27, 2014, correspondence, that a previously conducted well survey used a one-quarter mile radius, but, since the plume extent was undefined, the one-quarter mile radius would need to adequately evaluate impacts. Balco intends to re-evaluate the well survey radius following implementation of this Work Plan to incorporate new data collected in defining the plume.

Please note that several proposed sampling locations (UVOST, groundwater monitoring wells, and sub-slab samples) are located inside the subject property. Balco will attempt, to the extent practicable, to sample every proposed interior location. However, active tenant operations may present logistical challenges that result in adjusting locations and/or deferring certain activities. If this occurs, Balco will document necessary field revisions in the pending report to ACEH. Proposed activities are presented below.

3.1 LNAPL BAILDOWN TESTS

Evaluating LNAPL mobility within the soil–groundwater system helps determine the feasibility, efficiency, and appropriate endpoints for future potential hydrocarbon-recovery systems. For the current investigation, LNAPL baildown tests will be used to assess the in situ LNAPL mobility under ambient conditions.

LNAPL baildown tests will be conducted on existing monitoring wells and/or recovery wells with appreciable LNAPL thicknesses. Historically, monitoring wells TR-4, TR-5, TR-6, and TR-10 have contained a measurable amount of LNAPL. The most recent measurements of these four wells ranged from 0.05 to 0.83 feet of LNAPL (Trihydro, 2014). To conduct the LNAPL baildown test, the depth to LNAPL and depth to water will first be gauged prior to testing with an electronic oil/water interface probe. This will be followed by removal of LNAPL from the well as instantaneously as possible, with as little water removal as possible. LNAPL recharge to the well will then be tracked by gauging the well on an approximate logarithmic scale. This gauging will be conducted until the LNAPL thickness returns to 90% of the pre-stress conditions, or 120 hours, whichever comes first.

The data collected for the LNAPL baildown test will be analyzed using API guidance (Beckett and Lyverse, 2002) to estimate the LNAPL transmissivity and conductivity under ambient conditions. LNAPL properties will be used in support of evaluation of data collected during the UVOST survey discussed below.

3.2 UVOST SURVEY PROCEDURES

Thirteen proposed locations for the UVOST investigation are shown on Figure 3. Proposed locations were selected based on evaluation of historical soil and groundwater analytical data, and are located in the previously estimated extent of the LNAPL plume as well as around the perimeter of the benzene-impacted zone.

UVOST survey technology works by utilizing a direct-push drill rig to obtain data regarding the presence/absence of non-aqueous phase hydrocarbons. As the probe is advanced through the subsurface, ultraviolet light (UV) is emitted through a sapphire window mounted in the side of the probe. LNAPL in soil exposed to the UV light will produce a response (fluorescence) when irradiated by UV light. Fiber optic cables in the probe transmit response data for every two inches the probe is advanced. The response intensity and the specific wavelength is then compared to a calibrated standard. This results in the identification of the type and vertical location of the LNAPL, which is recorded as a real-time image on a computer in the drill rig and can be produced as a hard copy color-coded log (Dakota Technologies 2012).

Each location will be marked for underground utility clearance by the public underground service alert (USA) and by a private utility locator retained by Trihydro prior to the survey. At each location, the first five feet of subsurface material will be cleared using a hand auger, and where necessary, concrete will be saw-cut in a one-foot square to allow for subsurface access. After completion of hand auguring the UVOST probe will be advanced through the subsurface until an approximate depth of 15 feet below ground surface (ft bgs) is reached; the thickness of LNAPL has been defined; or until the drill rig encounters refusal. The depth selected has been determined based on the historical shallow depths at which groundwater and free-phase product have been encountered during previous site investigations. At each location, after an adequate ultraviolet informational log has been obtained from each boring, the drill rods will be retrieved from the subsurface and decontaminated. The boring will be backfilled with bentonite (or similar) grout to approximately 6 inches below ground surface. The remaining 6 inches will be backfilled with hydrated bentonite chips (or similar) and patched with asphalt or concrete as appropriate.

3.3 GROUNDWATER INVESTIGATION PROCEDURES

Trihydro proposes collecting grab groundwater samples from borings around the perimeter of the Site, as well as from existing monitoring wells where LNAPL is not present. Groundwater sampling procedures are discussed below.

3.3.1 GRAB GROUNDWATER SAMPLING PROCEDURES

Grab groundwater samples will be collected using a direct push rig, drilling to a total depth of approximately 15-ft bgs. The proposed grab groundwater locations are shown in Figure 3, and are generally around the perimeter of the Site. In borings without observable LNAPL, a five-foot section of decontaminated ¾-inch diameter factory slotted PVC pipe will be placed inside the rods and attached to a steel point. The rods will be re-lowered to approximately 5 feet below the water table where force will be exerted on the pointed PVC end with the rods slightly retracted to expose the slotted PVC screen to groundwater that will infiltrate hydrostatically from the formation into the PVC. A clean disposable bailer will be lowered inside the PVC screen to collect groundwater. In the event groundwater does not immediately infiltrate the PVC, the rods may be removed and temporary PVC casing and screen placed down-hole to allow groundwater time to exit the formation before collection with a clean disposable bailer and/or peristaltic pump. Upon completion, the boring will be backfilled with bentonite (or similar) grout to approximately 6 inches below ground surface. The remaining 6 inches will be backfilled with hydrated bentonite chips (or similar) and patched with asphalt or concrete as appropriate.

3.3.1.1 MONITORING WELL AND RECOVERY WELL LOW FLOW GROUNDWATER SAMPLING PROCEDURES

Groundwater samples from existing monitoring wells/recovery wells where no LNAPL is present (likely wells TR-5 and TR-11) will be collected via low flow sampling procedures using a peristaltic pump (or equivalent) at pumping rates ranging from 0.1 to 0.5 liters per minute (L/m). Dedicated pump discharge tubing will be connected to a flow-through cell and equipped with a meter to measure field parameters during well preparation activities. The sample tube for each well will be lowered to approximately two-feet below the water table. The pump will be turned on and operated at a low flow rate. After approximately one liter is purged from the well, parameters consisting of pH, specific conductance, temperature, dissolved oxygen (DO), turbidity, and oxidation/reduction potential (ORP) will be measured with a field meter once every three to five minutes.

Measurements will be recorded to document stabilization of field parameters; pumping rates will also be recorded on a routine basis to maintain the water level above the pump intake. A sample will be collected after the field parameters stabilize (pH ± 0.1 pH unit, specific conductance ± 3%, ± millivolts for ORP, ± 10% for DO, and ± 10% for turbidity or maintained below 10 NTUs). The discharge tubing will then be disconnected from the flow-through cell and appropriate sample containers will be filled directly from the discharge tubing without disrupting the pump rate. Sample vials will be filled such that sample agitation is minimized. Care will be taken to prevent overfilling sample containers and to provide for proper preservation of the samples. Groundwater samples will only be collected from monitoring wells which do not contain free-phase product to determine the concentrations of VOCs, TPHg, TPHd, and

TPH as motor oil (TPHmo), if present. Groundwater sampling details will be recorded on groundwater monitoring field forms (Appendix B).

3.3.2 SAMPLE SHIPMENT AND HANDLING

Samples will be packed in a chilled container and submitted to a state-certified laboratory under chain-of-custody protocol. Each groundwater sample will be analyzed for volatile organic compounds (VOCs) by U.S.EPA Method 8260B and TPHg, TPHd, and TPHmo by EPA Method 8015B.

3.4 SOIL VAPOR WELL INSTALLATION AND SAMPLING PROCEDURES

In the August 27, 2014 e-mail, ACEH requested that the potential risk of vapor intrusion to indoor air be evaluated at 2607 Mandela Parkway near well TR-10. One soil vapor well will be installed with a target depth of five feet bgs. The location of the proposed soil vapor well is shown on Figure 4. The actual installation depth will be dependent on groundwater elevation, with the vapor sampling depth a minimum of two feet above the water table, and will not be installed shallower than three feet bgs. Installation of the soil vapor well will be performed using direct push drill methods by advancing a steel rod to the target depth. Soil will be continuously collected in acetate liners to total depth. An aliquot of each 2–foot interval will be sealed in a zip-lock bag to perform a headspace analysis for total organic vapors (TOV) using a photo-ionization detector (PID). Vapor concentrations and a description of the soil will be recorded on field boring logs in general accordance with the Unified Soil Classification System (USCS).

Upon reaching the target total depth, the drive rod and sampler will be removed. The sampler will be disconnected from the drive rods with an expendable drive point attached. The rods will be withdrawn approximately 12 inches, disengaging the expendable drive point. A ¼-inch diameter Nylaflow tube, attached to a sample port, will be inserted into an open slotted PVC pipe and set approximately 6 inches off the bottom. Number 3 washed aquarium sand or equivalent will be placed through the steel rod, concurrent with its removal, so that sand extends from approximately 6 inches below to 6 inches above the soil vapor sampling point. A diagram of the typical vapor point construction is shown on Figure 5.

Approximately 12 inches of fine dry bentonite crumble will be placed in the hole as an annular seal and hydrated. Additional bentonite crumble will be alternately placed in the hole and hydrated concurrent with the removal of the drive rod. Once the probe is installed, and the annular seal placed, the drive rods will be removed from the hole. The remaining open hole will be filled with bentonite, hydrated in intervals, to the ground surface. The tops of the Nylaflow tubes will be equipped with a ball valve. Additional sampling procedures, as described below, will be

conducted a minimum of two hours after temporary monitoring point installation to allow time for the seals to hydrate and for subsurface conditions to stabilize.

3.4.1 SOIL SAMPLE COLLECTION

The bottom 2 feet of soil in the boring will be collected in an acetate liner and capped for shipment to PTS Laboratories, Inc. located in Santa Fe Springs, California. A completed COC will accompany the samples to the laboratory. Balco will request analysis of soil bulk density, grain density, total porosity, soil moisture content, fraction organic carbon, and grain size (methods ASTM D2937, D854, D2216, D422, and Walkeley-Black).

3.4.2 PRESSURE GRADIENT TESTING

Before initiating vapor sampling activities, the static pressure or vacuum within the soil gas probe will be assessed to determine whether there are any pressure gradients that might induce soil gas flow. A digital manometer will be connected to the soil gas and the measurement recorded on the soil vapor monitoring field form (Appendix C).

3.4.3 SHUT IN TESTING

Shut-in testing will be conducted to confirm the integrity of the sample train prior to conducting soil gas purging, and collecting the final sample for laboratory analysis. Shut-in testing will be performed by closing the ball valve to the soil gas probe, inducing a vacuum on the sample equipment, then closing valves at both ends, obtaining vacuum and observing the vacuum to ensure it does not dissipate. If the vacuum dissipates, the leaky component in the sample train will be identified and repaired, or replaced (if necessary) and the shut-in test will be performed again until the sample train can hold a constant vacuum. Shut-in test results will be recorded on the soil vapor monitoring field forms.

3.4.4 PURGING

After completion of shut-in testing, the soil vapor well will be purged using an approximate 200 milliliter per minute flow controller, vacuum pump, 3-liter Tedlar bag, and lung box. After each volume of soil gas is purged (approximately 5 to 8 minutes and 1 to 1.5 liters of soil vapor) the TOV concentration will be measured using a PID. In addition, oxygen, carbon dioxide, and methane concentrations in the purged sample will be measured using a fixed gas meter. Soil gases will be purged until general stabilization of parameters (i.e., relative percent difference less than about 10%) is achieved, with a minimum of three successive purging volumes.

3.4.5 HELIUM TRACER TESTING

Helium will be used as a tracer gas for measuring the potential for leakage of ambient air through the annular seal of the soil vapor probe or connections within the sampling equipment. A shroud will be placed around the well, flow controller, summa canister, and fittings during purging. Helium gas will be added to the shroud through a small port. The concentration of helium will be recorded using a multi-gas detector to confirm that a minimum helium content of 10% was maintained beneath the shroud during purging. The range of helium maintained in the shroud will be recorded during each purge interval.

3.4.6 SOIL GAS SAMPLE COLLECTION

Upon stabilization of TOV and fixed gas concentrations over three successive intervals and confirmation of the integrity of the probe and sampling equipment using helium as a tracer gas, the soil gas sample will be collected. The sample will be collected using the same methodology for purging the soil vapor probe. Note, if groundwater is pulled through the Nylaflow tubing during purging procedures, the boring location and/or depth will be deemed inadequate for soil gas sampling collection.

Samples for VOCs and laboratory confirmation of the helium concentration will be collected in a pre-evacuated 1-liter Summa® canister with a 5-micron in-line filter and flow controller (approximately 200 milliliters per minute). The Summa® canister, in-line filter, and flow controller will be placed beneath the shroud and a helium content of at least 10% will be maintained during collection of the final soil gas sample. A residual vacuum will be maintained in the Summa® canister (between 5 and 9 inches of mercury). Following completion of sampling activities, the ball valve on the Summa® canister will be closed and capped. A typical soil gas sampling train schematic is included as Figure 6.

Samples will be submitted to a state-certified laboratory under chain-of-custody protocol. Samples will be analyzed for VOCs using USEPA Method TO-15; and helium and fixed gases using USEPA Method 3C. The soil gas samples collected in each Summa® canister will have an attached label, including the following information:

- Site Name
- Date/Time
- Unique Summa® Canister ID
- Unique Sample ID
- Sampler Name
- Requested Laboratory Analyses

- Initial Summa® Canister Vacuum Upon Receipt from the Laboratory
- Final Summa® Canister Vacuum Following Collection of the Soil Gas Sample

Note, Balco is aware that ACEH, in the August 27, 2014, e-mail, has requested that naphthalene be analyzed via Method TO-17. However, as noted in the Active Soil Gas Investigation Advisory (California EPA, April 2012); many stationary laboratories are capable of obtaining naphthalene data of high quality via Method TO-15. Trihydro has ample experience collecting soil gas samples for analyses of naphthalene and have worked with laboratories following the recommended procedures for Method TO-15 discussed in the April 2012 Active Soil Gas Investigation Advisory. Therefore, Balco intends to submit soil gas samples for all VOCs, including naphthalene, for analyses via Method TO-15.

3.4.7 PNEUMATIC TESTING

The gas permeability of geologic materials around the soil gas probe will be estimated using data collected through pneumatic testing. Pneumatic testing consists of measuring the differential pressure over increasing soil vapor extraction rates. The flow rates applied will be low enough to minimize line losses (0.1, 0.2, and 0.5 liters per minute). The soil gas permeability in each probe will be calculated per equations provided in Johnson et al. (1990). The gas permeability values are useful for assessing whether there are depth intervals within the vadose zone that might provide preferential pathways or barriers for vapor movement.

3.4.8 AMBIENT AIR SAMPLE COLLECTION

One outdoor air sample will be collected the day of soil gas sampling activities in an attempt to characterize potential site-specific outdoor air concentrations present during sampling activities. The ambient air sample will be collected in an individually clean certified 6-liter summa canister and an 8-hour flow controller. Although background ambient air sampling may not typically be necessary in conjunction with subsurface soil gas sampling, background ambient air results may be beneficial in evaluating shallow subsurface soil quality at anticipated depths as shallow as those proposed in this work plan. Shipping and COC procedures are similar to those discussed in the previous section.

3.5 SUBSLAB AIR SAMPLING PROCEDURES

In the August 27, 2014 e-mail, ACEH also requested that Balco re-sample fixed sub-slab sample ports inside the 2855 Mandela Parkway building. However, as documented in the March 2014 SCM (Appendix A) these ports were installed approximately 2 feet below the concrete slab. The previously installed sub-slab points do not represent appropriate sampling depth for sub-slab sampling (Active Soil Gas Advisory, California EPA, April 2012). Balco proposes to install and sample six sub-slab sample locations as displayed on Figure 4.

The subslab probe (SSP) will consist of ¼-inch diameter laboratory grade stainless steel tubing sealed within a 3/8-inch pilot hole installed using a rotary hammer drill. The pilot hole will be terminated at a depth coincident with the bottom of the building slab (anticipated to be no more than 6 inches). Quick-setting, hydrating (swelling) cement will be placed where the stainless steel tubing meets the slab to seal the probe to the concrete floor. The seal will be allowed to set before testing and sampling activities begin. A typical SSP completion diagram is included as Figure 7. Shut-in testing, purging, helium tracer gas sampling, and field measurements will be performed in the same manner as those proposed for soil gas sampling in Section 3.4.

3.6 DECONTAMINATION AND WASTE MANAGEMENT PROCEDURES

Equipment will be decontaminated between locations to prevent cross-contamination and ensure sample integrity. Waste generated during this investigation will be properly stored until it can be disposed of in accordance with all applicable laws. Details of the procedures for equipment decontamination and waste management are described below.

3.6.1 EQUIPMENT DECONTAMINATION

Prior to arriving at the site, drill rigs, tools, and accessories will be decontaminated. Downhole drilling tools and non-disposable sampling equipment will be manually washed and rinsed prior to use and between each drilling location. The decontamination procedure will include washing with non-phosphate based detergent such as Simple Green, a tap-water rinse, and a distilled (or de-ionized) water rinse. Decontamination/rinse water will be collected in buckets, and then containerized in 55-gallon drums.

3.6.2 INVESTIGATION-DERIVED WASTE MANAGEMENT

Investigation-derived waste (IDW) generated during groundwater and soil vapor sampling activities, including soil cuttings and decontamination water will be containerized in sealed and properly labeled 55-gallon drums. Drums will be stored in a secure location. Pending analytical results, the soil and water will be disposed in accordance with local, state, and federal regulations. During the advancement of the UVOST probe, soil is displaced laterally, so no soil is brought to the surface. Subsequently, no soil cuttings are produced as a result of the UVOST survey. LNAPL removed from wells will be placed either in the on-site above-ground storage tank or in a separate labeled drum, pending disposal by a licensed waste oil recycler. Trash, including personnel protective equipment (PPE) and disposable equipment generated during sampling activities, will be disposed as municipal solid waste.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

Quality assurance and quality control (QA/QC) will serve two purposes for field and laboratory sampling 1) documentation of data quality and 2) to identify areas of weakness within the measurement process that need correction. A discussion of the QA/QC elements to be implemented during the investigation for groundwater and soil gas samples is presented below.

4.1 FIELD QUALITY CONTROL SAMPLES

Field quality control samples include field duplicates and blank samples. The field quality control samples to be collected during the investigation and associated rationale are described in the following sections.

4.1.1 CANISTER PRESSURE (SOIL GAS, SUB-SLAB GAS, AMBIENT AIR)

The initial canister pressure difference from the laboratory to the field should be compared with the final canister pressure difference from the field to the laboratory. R-flags should be applied to all chemical analyses for samples where the canister vacuum varied an amount of 5 inches of mercury (in-Hg) or greater in addition to the pressure variation originally examined from the laboratory to the field. This information should be reported on the chain-of-custody (COC) forms.

4.1.2 HELIUM INTRUSION (SOIL GAS, SUB-SLAB GAS)

Typically, allowable limits are between 0 and 5 percent helium intrusion within the sample chamber. The laboratory samples will not be collected unless field helium readings are less than 5 percent of that in the sampling chamber.

4.1.3 FIELD DUPLICATES (GROUNDWATER, SOIL GAS, SUB-SLAB GAS)

Blind duplicate (field replicate) samples will be collected to evaluate precision associated with the reproducibility of sampling techniques and the homogeneity of sample matrices. For both groundwater and soil gas, replicate samples will be collected for each sample at a frequency of 10 percent or one for every 10 samples. If less than 10 samples are collected during a particular sampling event, one blind duplicate sample will be collected. Since the replicate will be "blind" to the laboratory, it will have a coded identity on its label and on the chain-of-custody record form. The actual sampling location and identification will be recorded on the daily log form and the sampling log form. Duplicate samples are collected to check sampling and laboratory analytical precision.

4.2 BLANK SAMPLES

Blank samples are collected to check for possible cross-contamination during sample collection and shipment to the laboratory. Blank samples include equipment blanks, and trip blanks. One trip blank will be included in each chilled container containing groundwater samples. Trip blanks will be provided by the laboratory. Equipment blanks will be collected at a rate of one per day of the sampling event, and will be collected by running laboratory provided deionized water through the sample equipment. Although equipment blanks and trip blanks are not applicable to soil vapor well sampling procedures proposed in this work plan, it has been proposed to collect ambient air samples to evaluate potential background air conditions that may affect vapor sampling results.

4.3 LABORATORY QUALITY CONTROL SAMPLES

Laboratories routinely perform matrix spike and matrix spike duplicate (MS/MSD) analysis to determine laboratory precision and method bias for sample matrices at the time of sample preparation and analysis. Matrix spike/matrix spike duplicates will be prepared and analyzed by the laboratory at a frequency of one per every 20 investigative samples received. MS/MSDs are samples in which compounds are added before extraction and analyses. The recoveries for spiked compounds can be used to assess how well the method for analysis recovers target compounds.

Analytes recovered below the lower recovery limit (above 30 percent) in the laboratory control samples (LCS) will be qualified in the associated samples. Analytes recovered below 30 percent in the LCS will be rejected if reported as non-detect in the associated samples and will be qualified if they are detected in the associated samples.

5.0 REPORTING AND FUTURE ACTIVITIES

Trihydro intends to submit a report summarizing activities and results to ACEH within 60 days following receipt of complete and accurate laboratory data. Groundwater results and the results of the UVOST survey will be used to confirm the estimated dissolved phase plume and LNAPL distribution. Soil gas and sub-slab vapor results will used to evaluate the risk of vapor intrusion into indoor air. Trihydro and Balco propose to discuss results of activities proposed in this Revised Work Plan with ACEH to develop potential future remediation activities.

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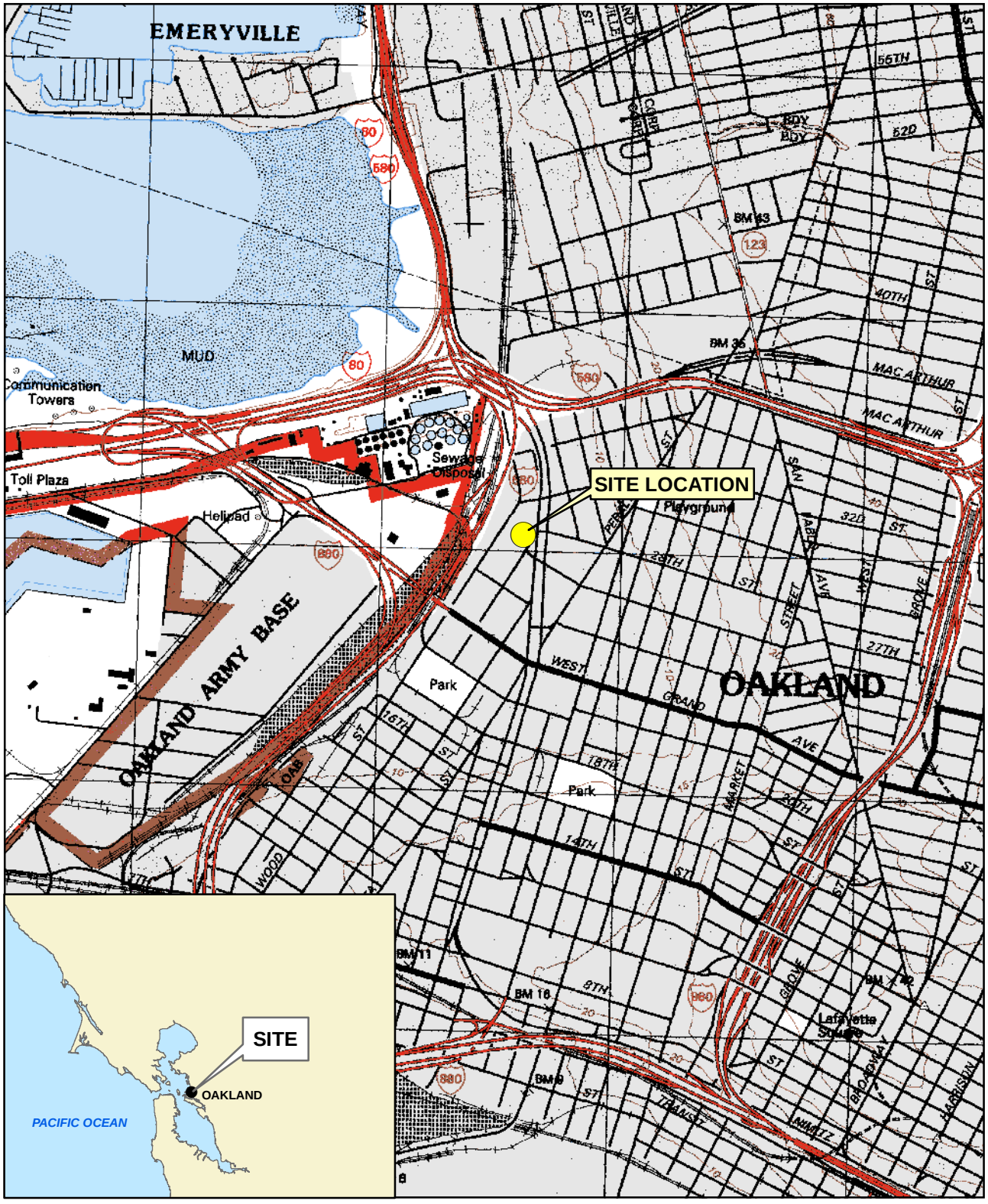
FIGURES



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0 2,000'

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

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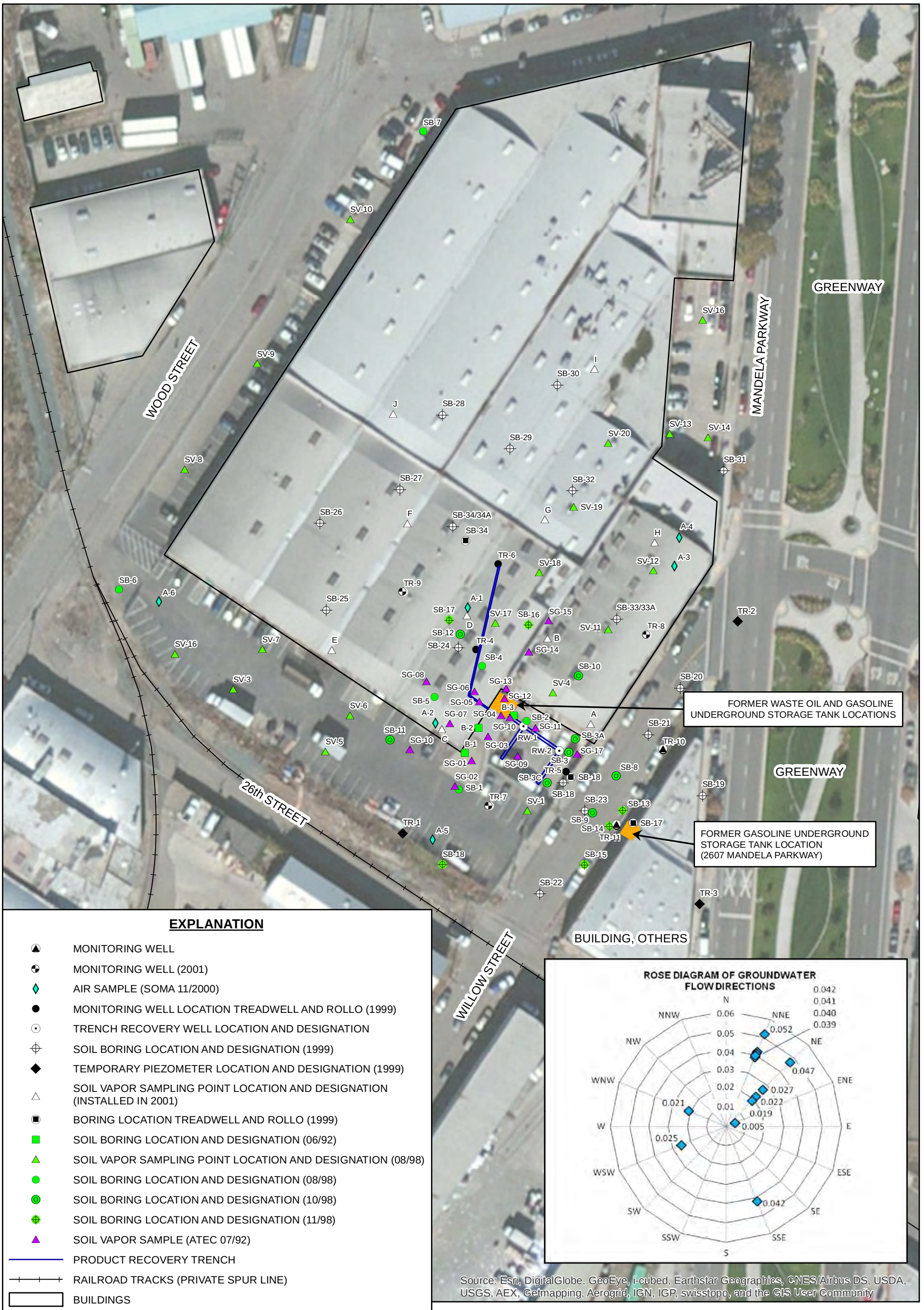
FIGURE 1

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
- RAILROAD TRACKS (PRIVATE SPUR LINE)
- BUILDINGS
- KNOWN UNDERGROUND STORAGE TANK

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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0 70'

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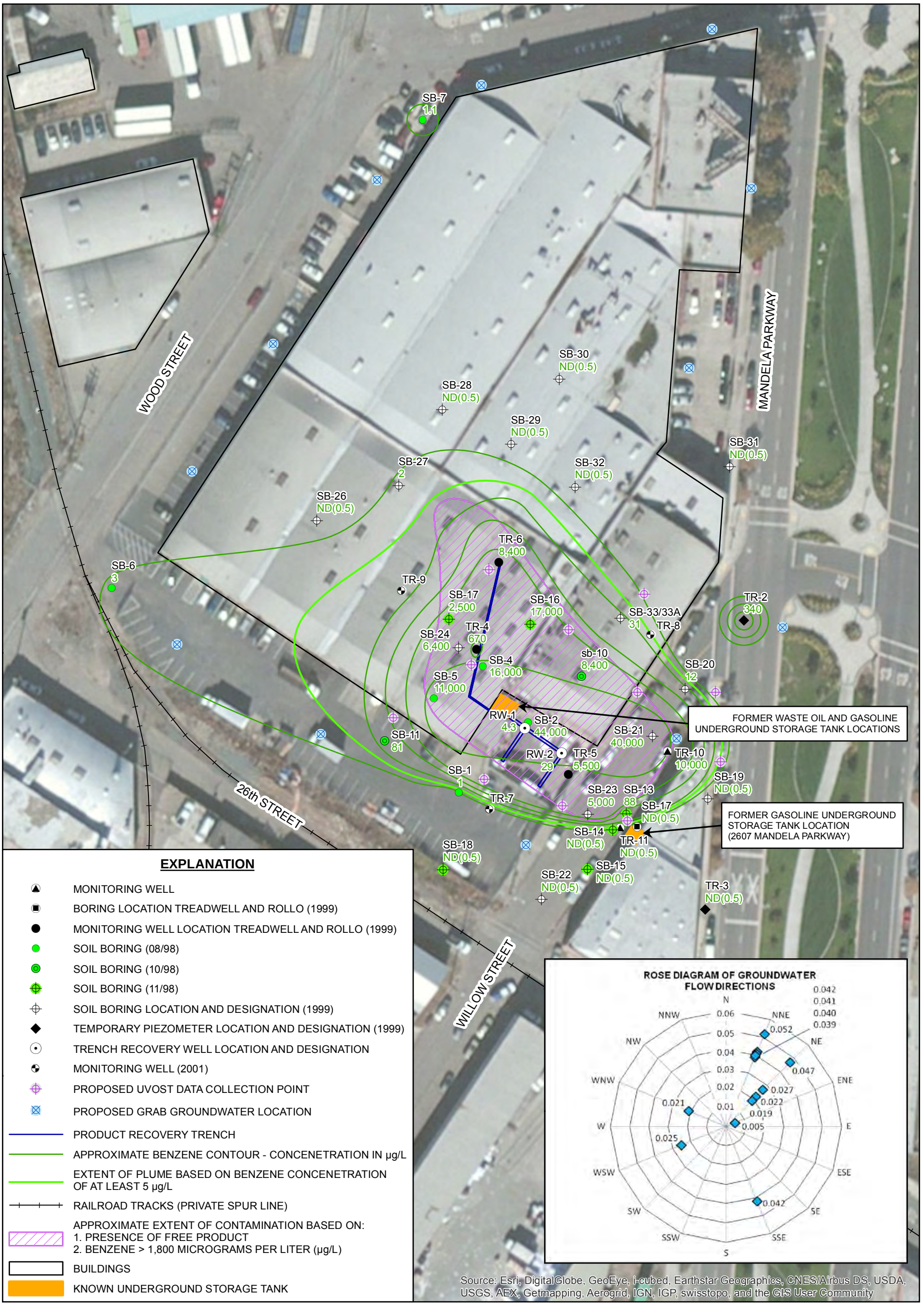
FIGURE 2

SITE MAP
HISTORICAL SAMPLE LOCATIONS AND MONITORING WELL NETWORK

2855 MANDELA PARKWAY
OAKLAND, CALIFORNIA

Drawn By: DH	Checked By: LA	Scale: 1 " = 72 '	Date: 9/17/14	File: BalcoOaklandWP_Fig2.mxd



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
- PROPOSED GRAB GROUNDWATER LOCATION
- 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

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).

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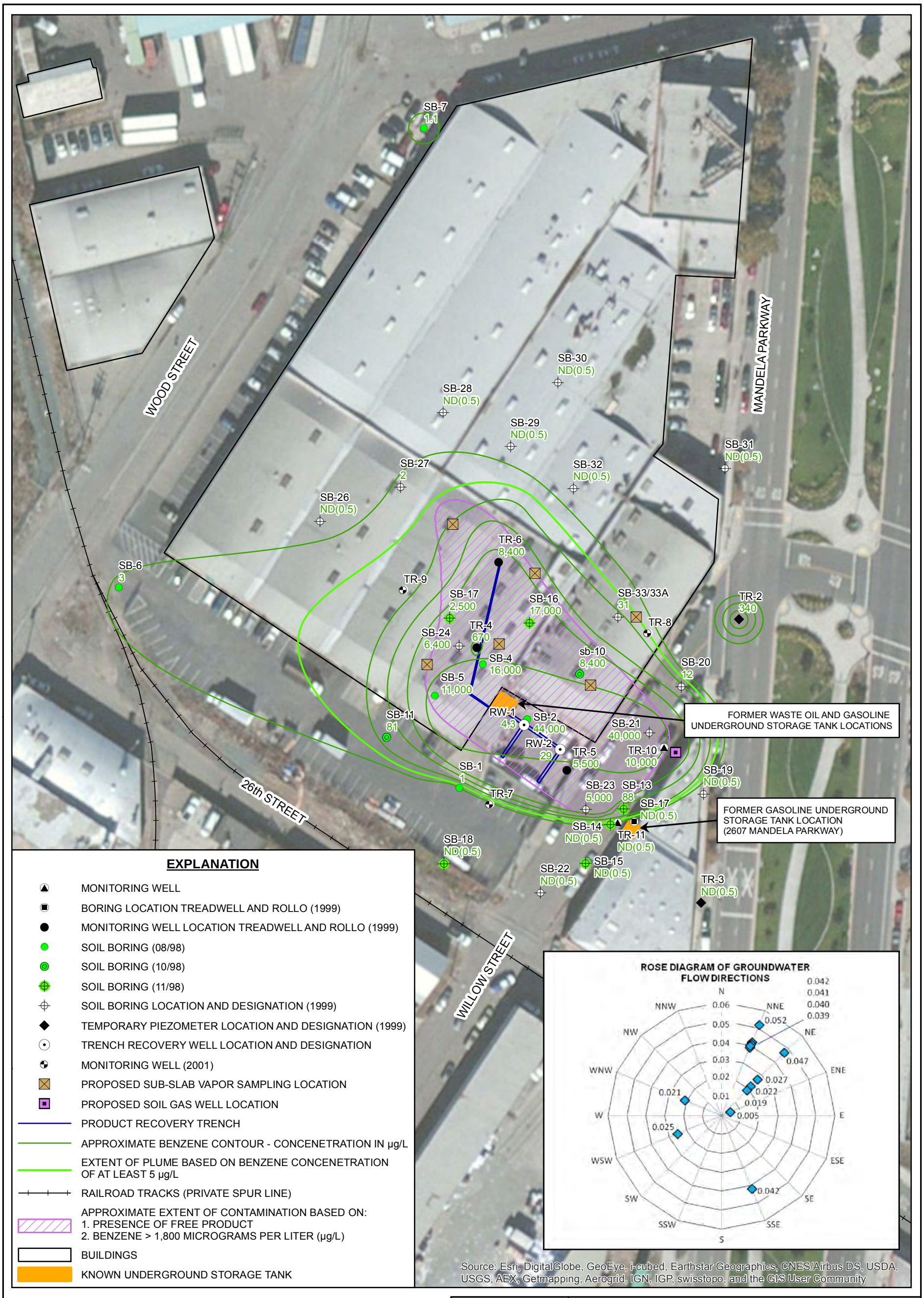
FIGURE 3

PROPOSED UVOST AND GRAB GROUNDWATER SAMPLING LOCATIONS

2855 MANDELA PARKWAY OAKLAND, CALIFORNIA

Drawn By: DH	Checked By: LA	Scale: 1 " = 70 '	Date: 9/24/14	File: BalcoWP_Samples_Fig3.mxd



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 4

PROPOSED SOIL GAS AND SUB-SLAB VAPOR SAMPLING LOCATIONS

2855 MANDELA PARKWAY
OAKLAND, CALIFORNIA

Drawn By: DH	Checked By: LA	Scale: 1 " = 70 '	Date: 9/24/14	File: BalcoWP_SoilGas_Fig4.mxd

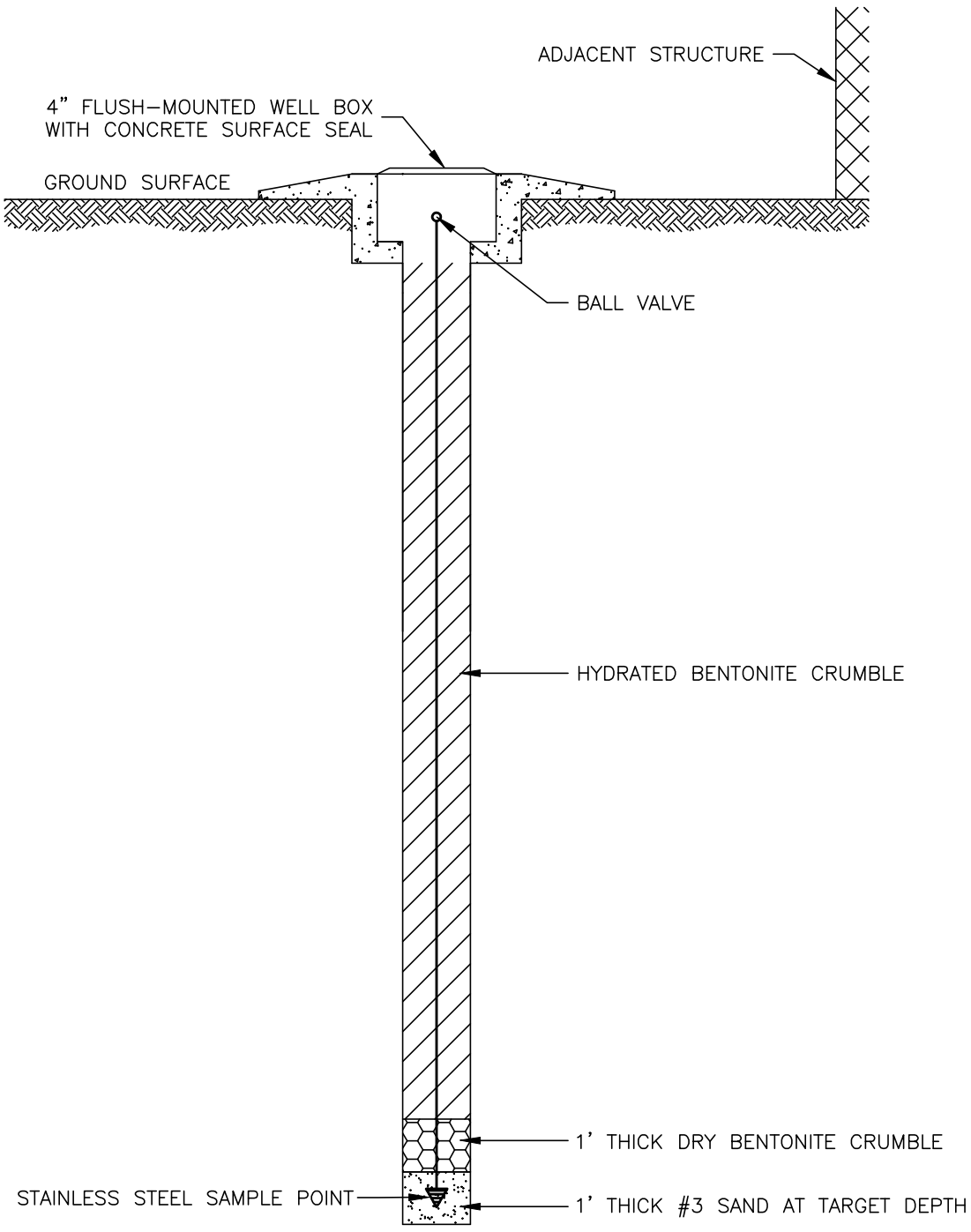

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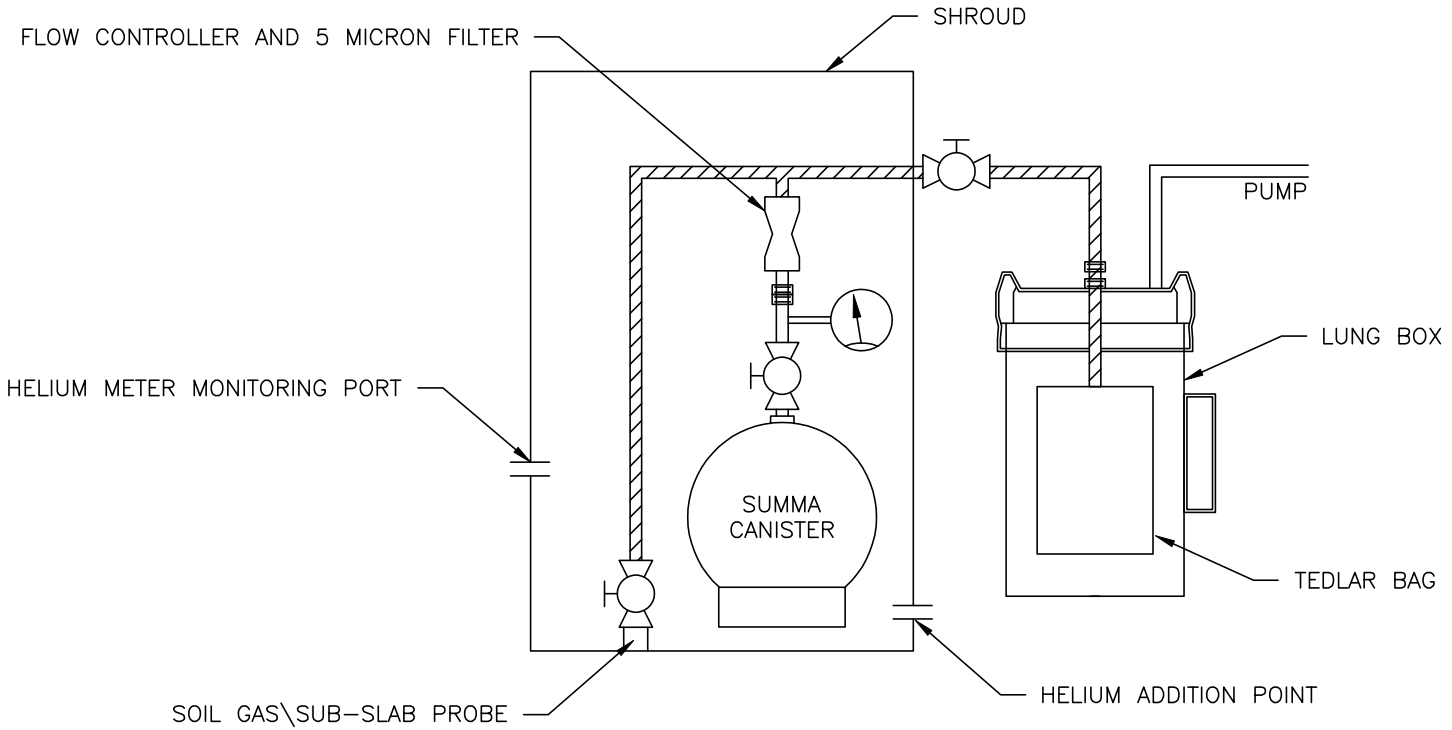
FIGURE 5

TYPICAL SOIL VAPOR WELL DIAGRAM

2855 MANDELA PARKWAY
OAKLAND, CALIFORNIA

Drawn By: JLP	Checked By: LA	Scale: NONE	Date: 9/18/2014	File: 21B_TYPSVWELL-201409



Modified From: California Environmental Protection Agency, March 2010

NOTE:

ACTUAL SAMPLE TRAIN MAY BE SLIGHTLY MODIFIED IN THE FIELD.

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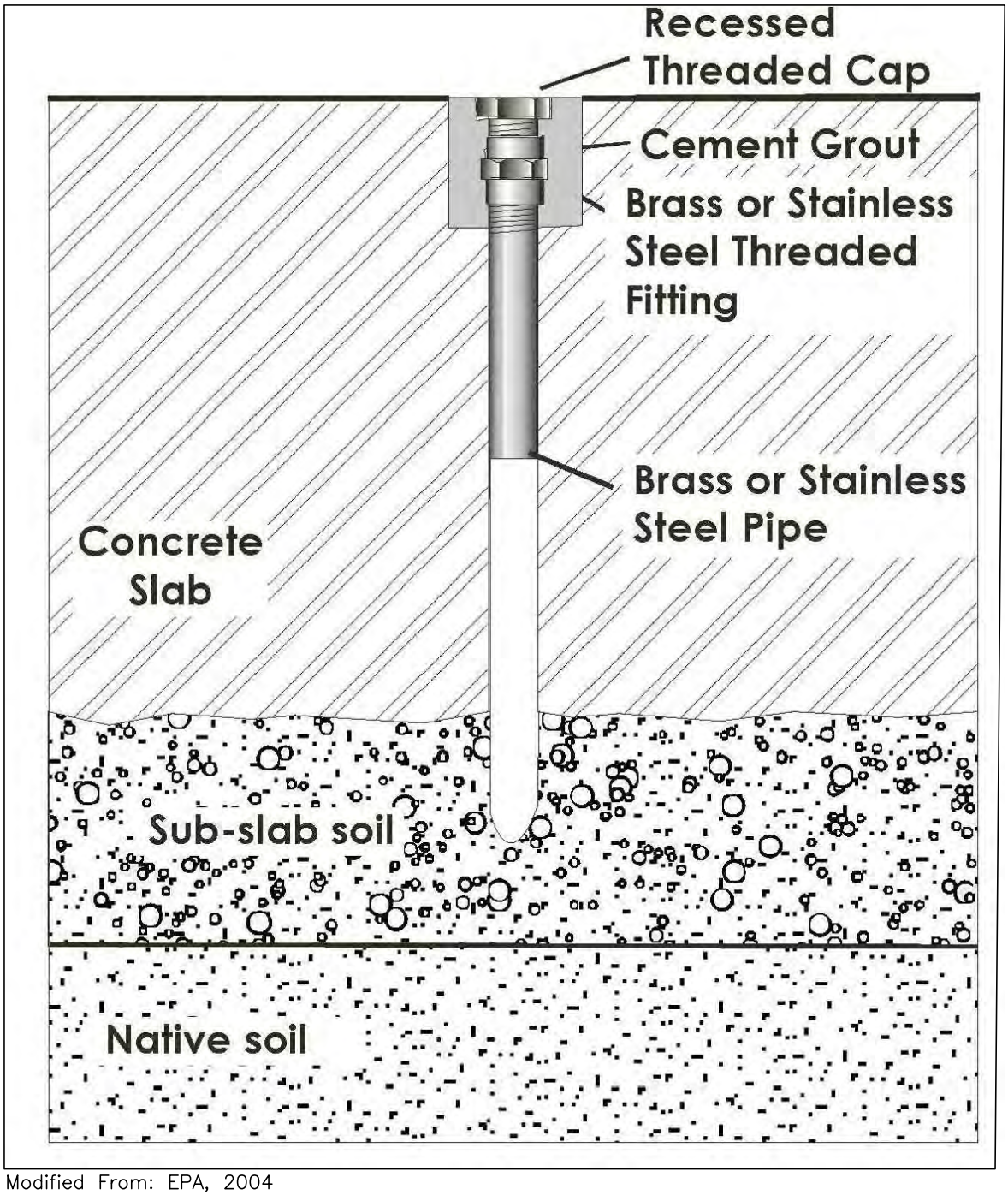
FIGURE 6

GENERAL SOIL GAS SAMPLING TRAIN SCHEMATIC

2855 MANDELA PARKWAY
OAKLAND, CALIFORNIA

Drawn By: JLP	Checked By: LA	Scale: NONE	Date: 9/18/2014	File: 21B_SG-SCHEMATIC-201409



Modified From: EPA, 2004

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FIGURE 7

SUB-SLAB SAMPLING POINT DETAIL

2855 MANDELA PARKWAY
OAKLAND, CALIFORNIA

Drawn By: JLP	Checked By: LA	Scale: NONE	Date: 9/18/2014	File: 21B-ZMONPROBE-201409

APPENDIX A

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: • 0 to 8 feet bgs: brown, poorly-graded, fine-grained sand (fill). Depth ranges from two to eight feet. • 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. 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 24th 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. 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). 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. 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.

TABLE 1-1
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. 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. 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). 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. 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. - 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. - 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

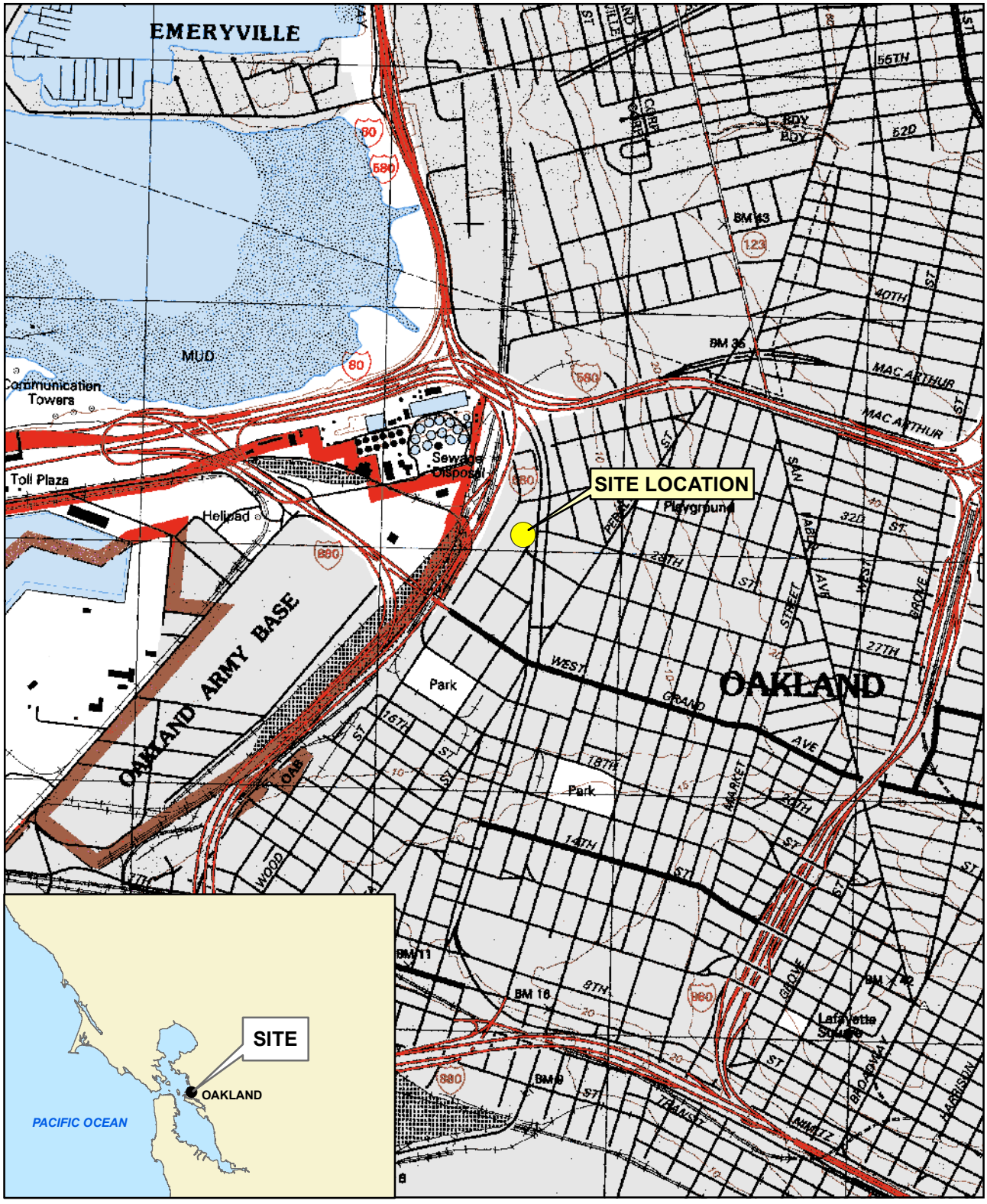
-- No ESL established

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

Trihydro CORPORATION

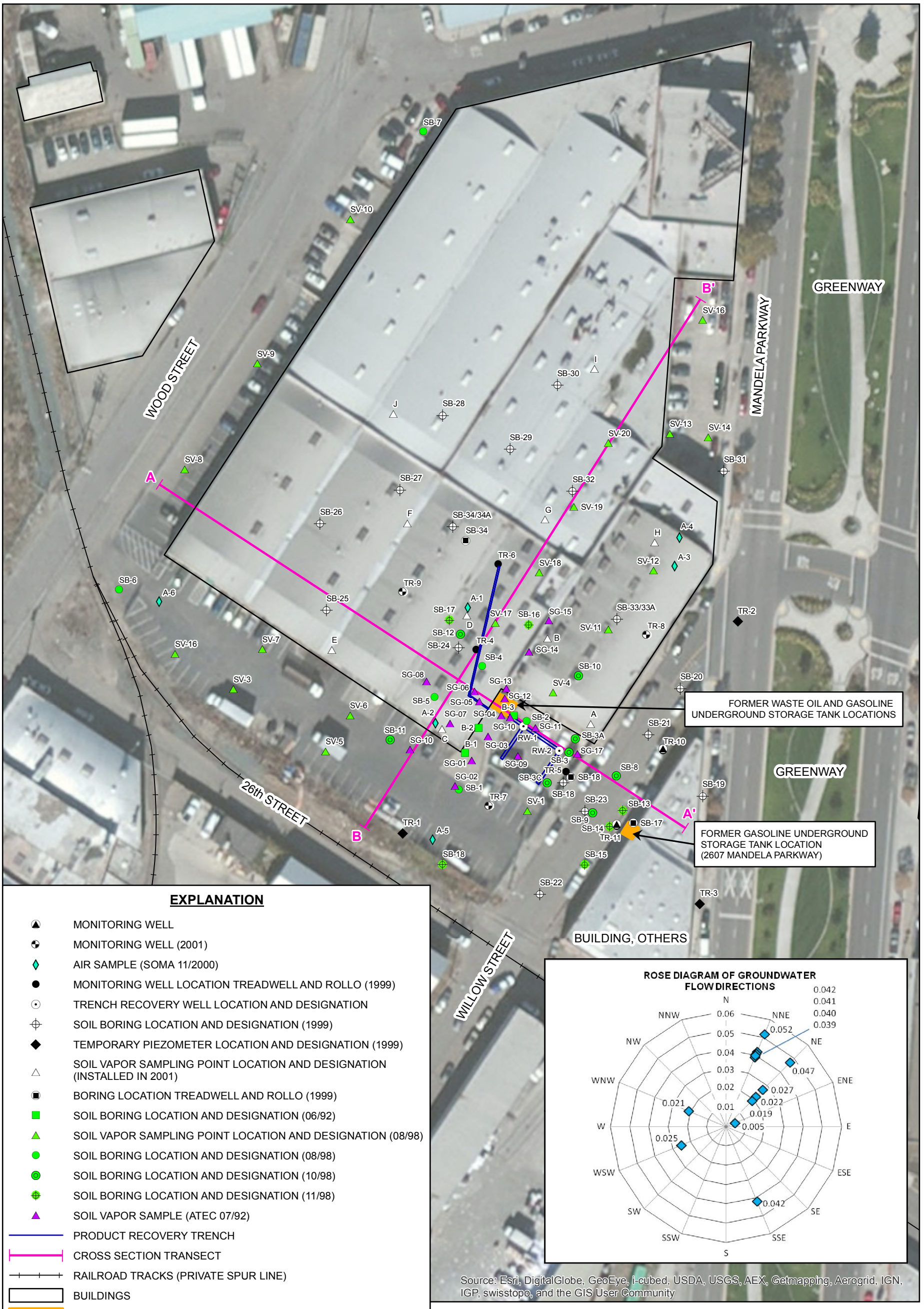
1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

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'

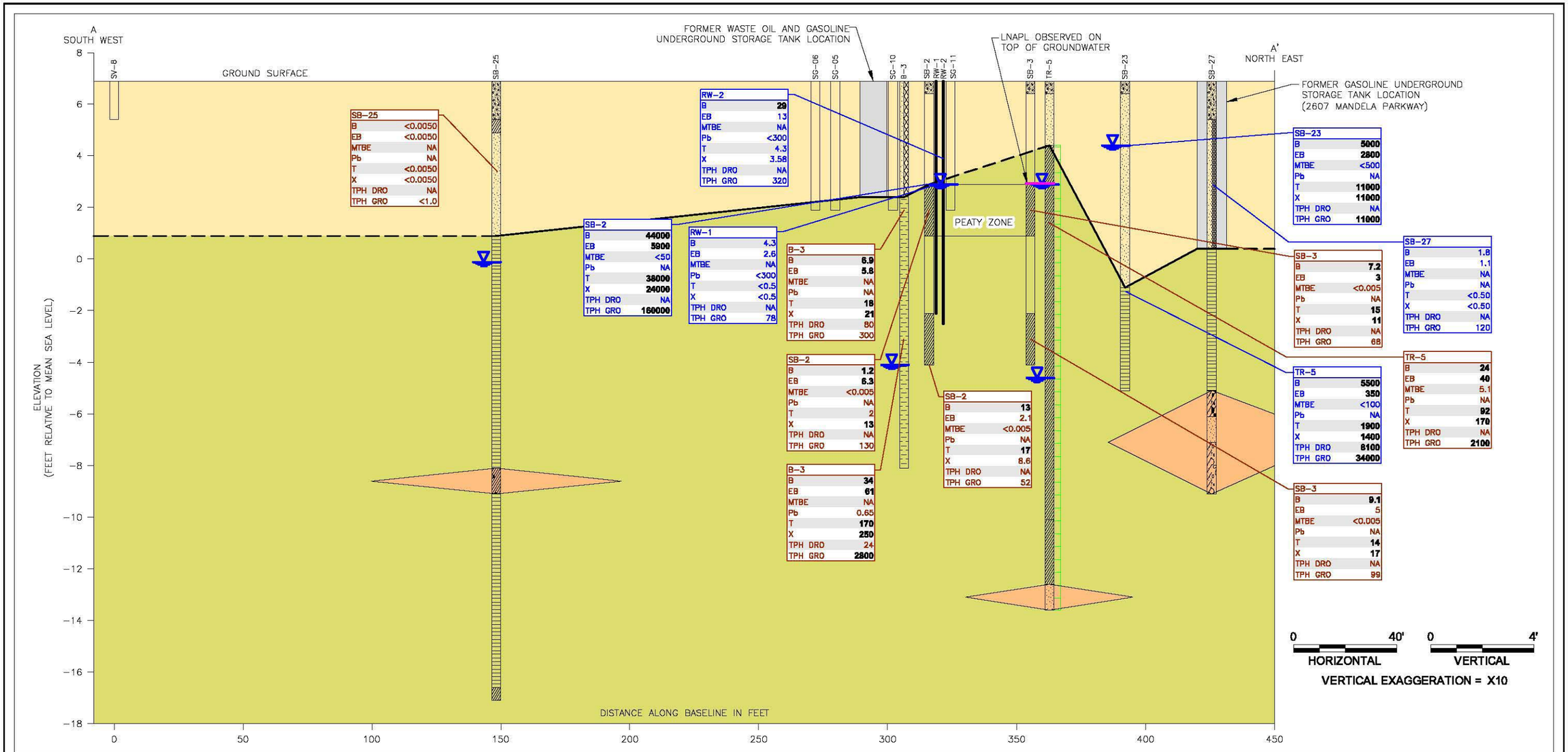
Trihydro CORPORATION
1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

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

SB-25 — WELL OR BORING LOCATION DESIGNATION

- 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	SOIL (mg/kg)	GW (µg/L)
BENZENE	1.2	27
ETHYL BENZENE	4.7	43
METHYL TERT-BUTYL ETHER	8.4	1800
NAPHTHALENE		24
ORGANIC LEAD		
TOLUENE	9.3	130
XYLENES	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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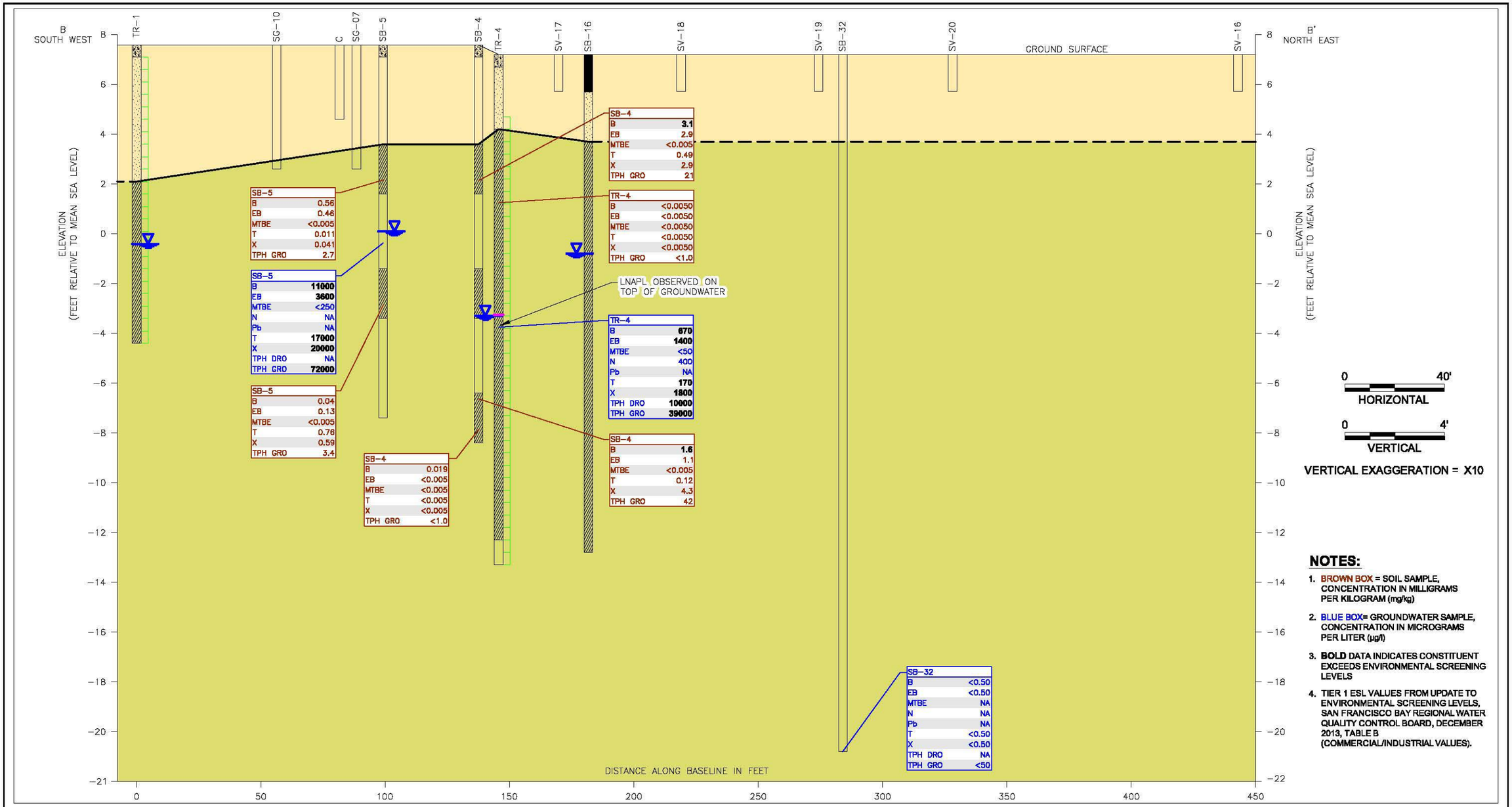
FIGURE 3

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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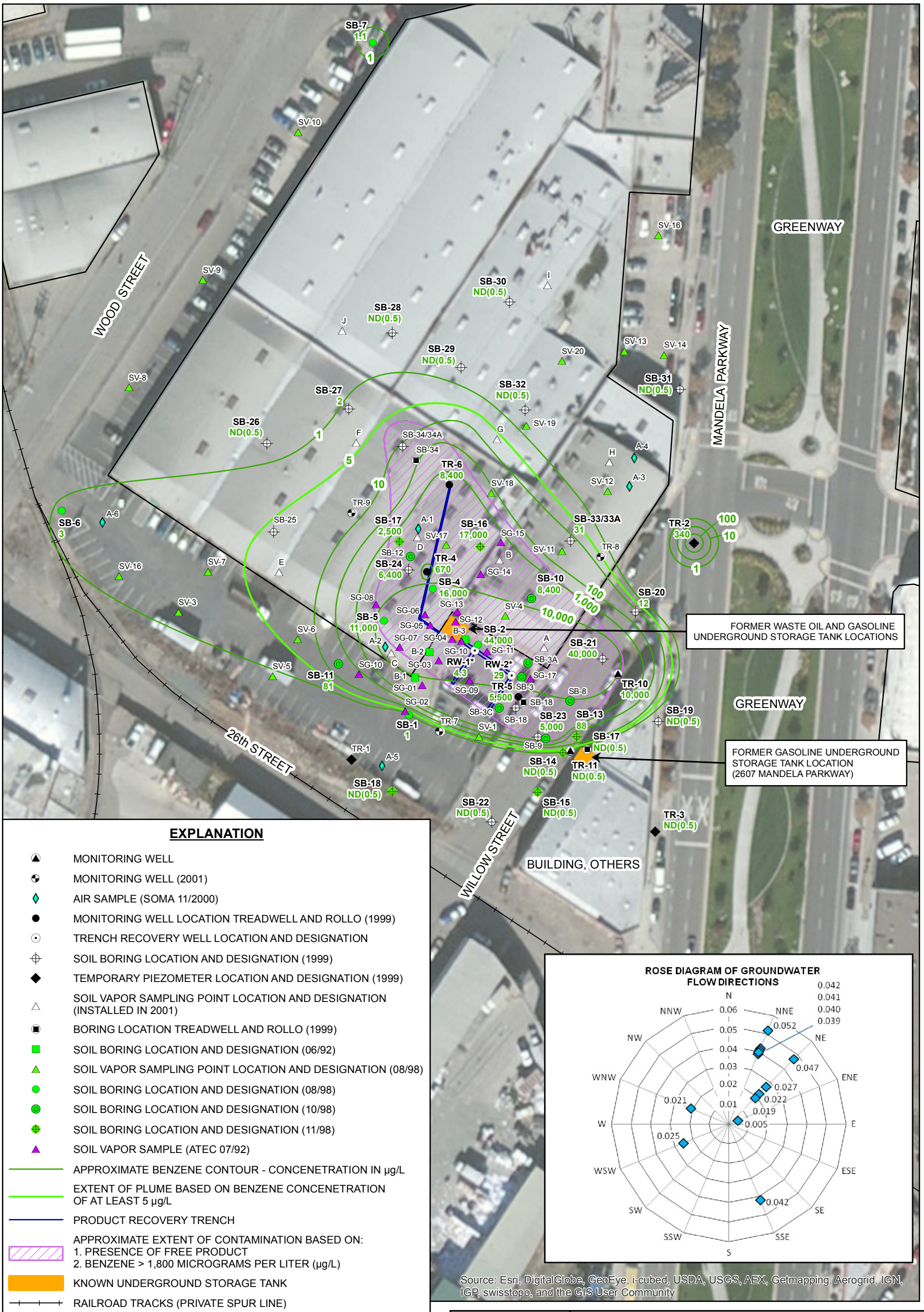
FIGURE 4

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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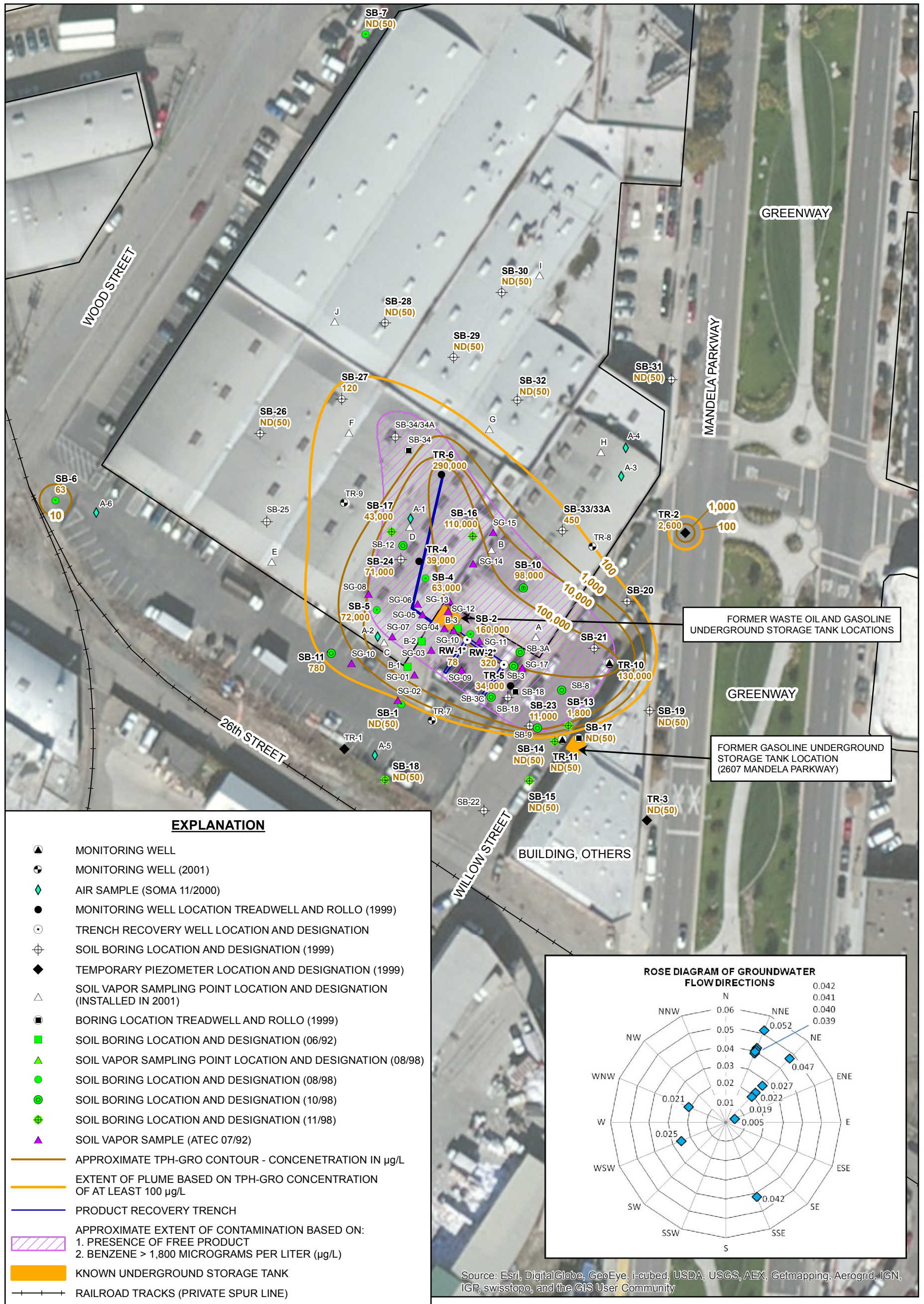
FIGURE 5

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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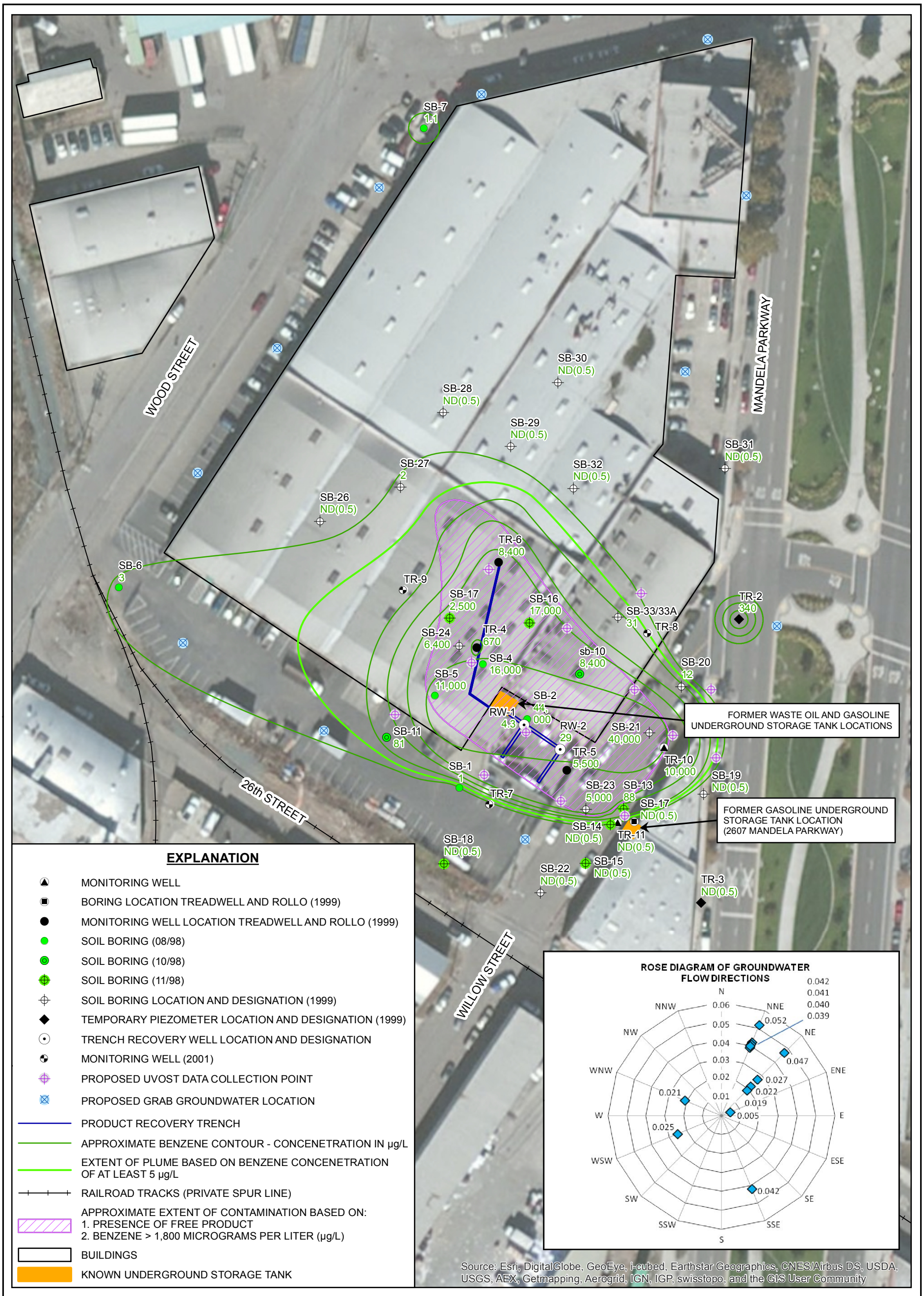
FIGURE 6

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



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
- PROPOSED GRAB GROUNDWATER LOCATION
- 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

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: 9/12/14	File: BalcoWP_Samples_Fig3.mxd

APPENDIX A

BORING LOGS

RECORD OF SUBSURFACE EXPLORATION
B-1

Depth (feet)	LITHOLOGY DESCRIPTION	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: Robert Allen 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.	TEST DATA READING (ppm)
0	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 5195

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)	LITHOLOGY DESCRIPTION	Sample No.	TEST DATA READING (ppm)
—	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.	5 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.	10 B-3-10	7,080
GROUND WATER AT 11 FEET		—	
—		—	
—		—	
—		—	
15		15	

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

Approved By: [signature] RG 5149

NOTE: See Figure 2 for boring location.

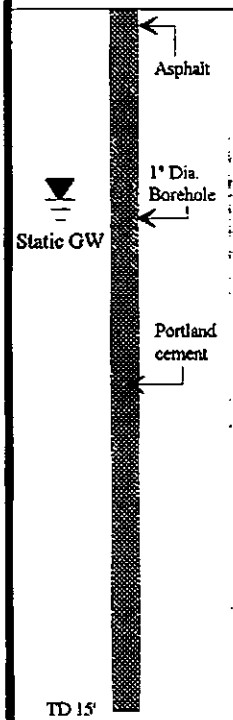
CLIENT/PROJECT LOCATION: OAKLAND, CALIFORNIA

PROJECT NO: 43-07-9200385

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



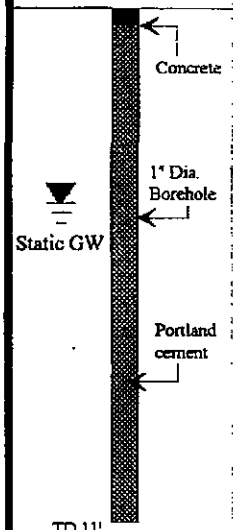
DEPTH	Sampler Interval	PID Reading	USCS	LOG OF MATERIAL
4	4' to 6'	0.5	CL	(4'-6') Silty Clay: Gray (7.5YR N5/0); soft; low plasticity (sticky); very moist; slight petroleum odor.
10	9' to 11'	0	CL	(9'-11') Silty Clay: Gray (7.5YR N5/0); soft; low plasticity (sticky); very moist; slight; no odor.

Temporary 3/4" PVC Well Casing

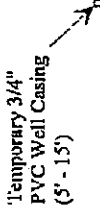
CERES ASSOCIATES

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	



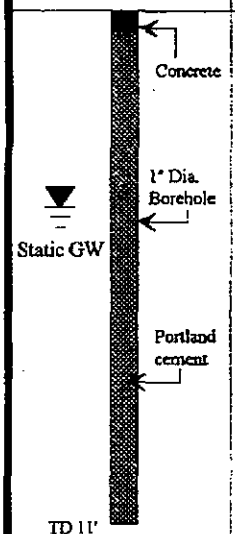
DEPTH	Sampler Interval	PID Reading	USCS	LOG OF MATERIAL
1–3				
4–6	4' to 6'	90	CL	(4'-6') Silty Clay: very dark grayish brown (2.5Y 3/2); soft; low plasticity (sticky); some organic matter (roots, etc.); petroleum odor; moist to very moist.
7–8				
9–11	9' to 11'	15	CL	(9'-11') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor.
12–33				

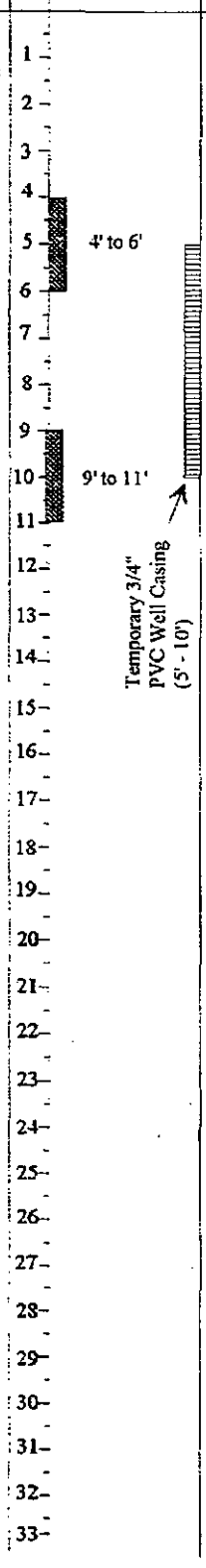


CERES ASSOCIATES

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



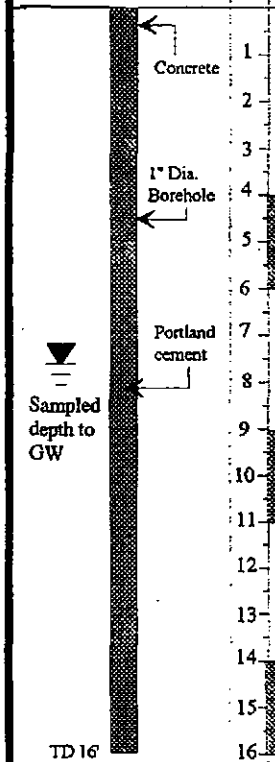


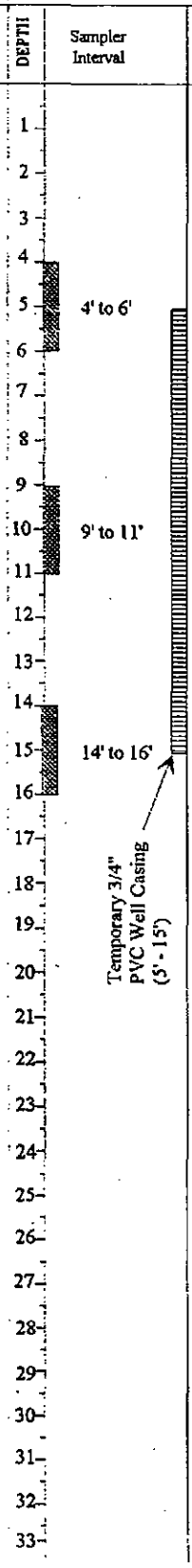
USCS	LOG OF MATERIAL
CL	(4'-6') Silty Clay: very dark grayish brown (2.5Y 3/2); soft; low plasticity (sticky); some organic matter (roots, etc.); petroleum odor; moist to very moist.
CL	(9'-11') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor.

CERES ASSOCIATES

Logged by: John Love RG 6315

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





LOG OF MATERIAL

(4'-6') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; petroleum odor.

(9'-11') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor.

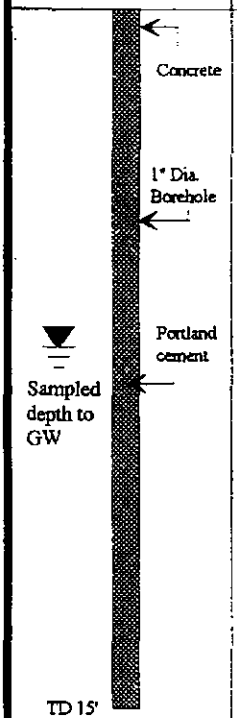
(14'-15') Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; no odor.

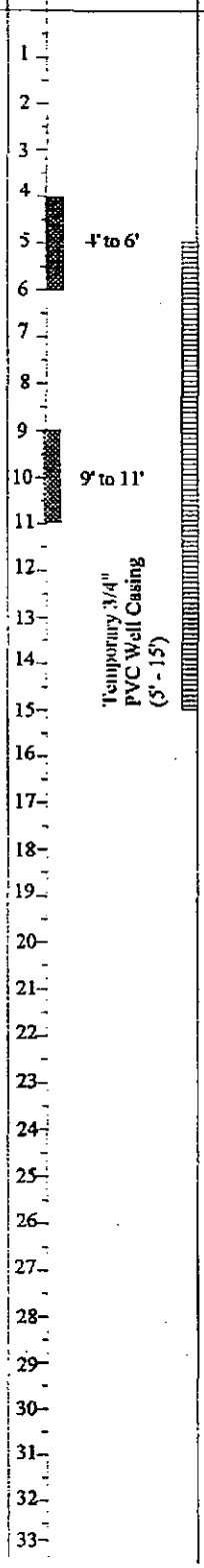
(15'-16') Silty Clay: Olive brown (2.5Y 4/4); firm; low plasticity; moist; no odor.

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



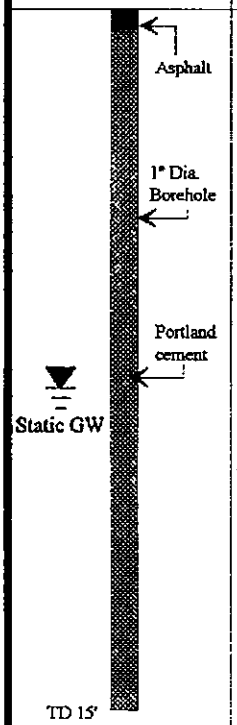


PID Reading	USCS	LOG OF MATERIAL
1.1	CL	**(4'-6')** Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; petroleum odor.
50	CL	**(9'-11')** Silty Clay: dark greenish gray (5GY 4/1); soft; low plasticity; moist to very moist; petroleum odor.

CERES ASSOCIATES

Logged by: John Love RG 6315

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

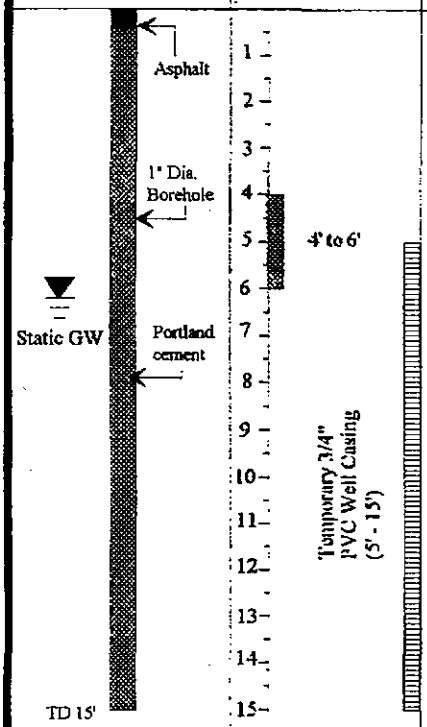


DEPTH	Sampler Interval	PID Reading	USCS	LOG OF MATERIAL
1–3				
4–6	4' to 6'	NA	CL	(4'-6') Silty Clay: gray (7.5YR N5/0): soft; low plasticity; some organic material; some silty sand @ 5'); moist to very moist; no odor.
7–15	Temporary 3/4" PVC Well Casing (5' - 15')			
16–33				

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



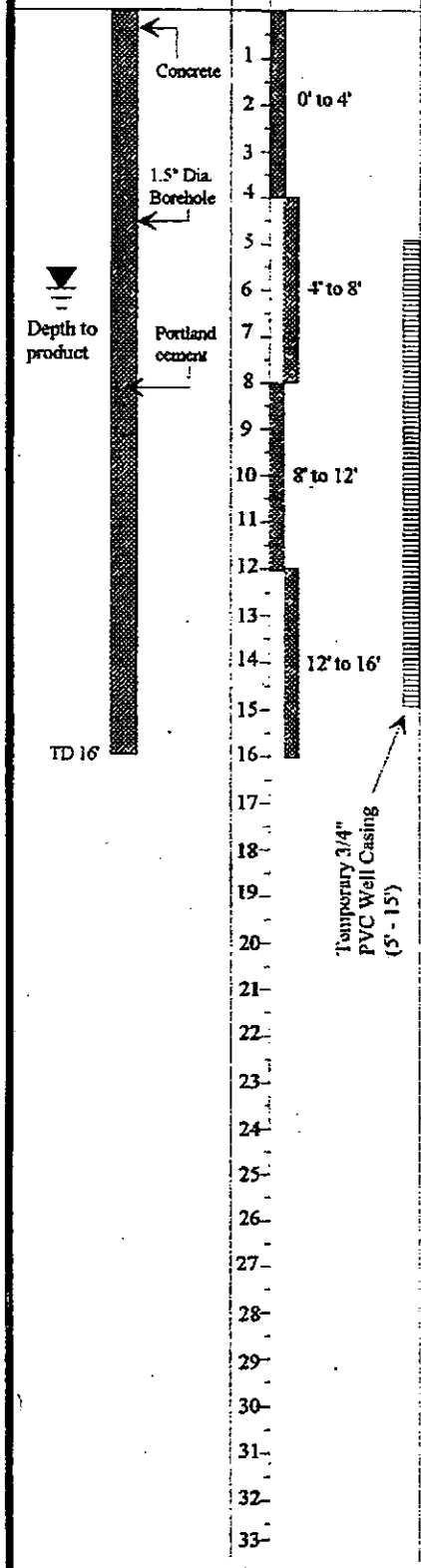
DEPTH	Sampler Interval	PID Reading	USCS	LOG OF MATERIAL
1				
2				
3				
4				
5	4' to 6'	0	CL	(4'-6') Silty Clay: gray (7.5YR N5/0); soft; low plasticity; some organic material; moist to very moist; no odor.
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				

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

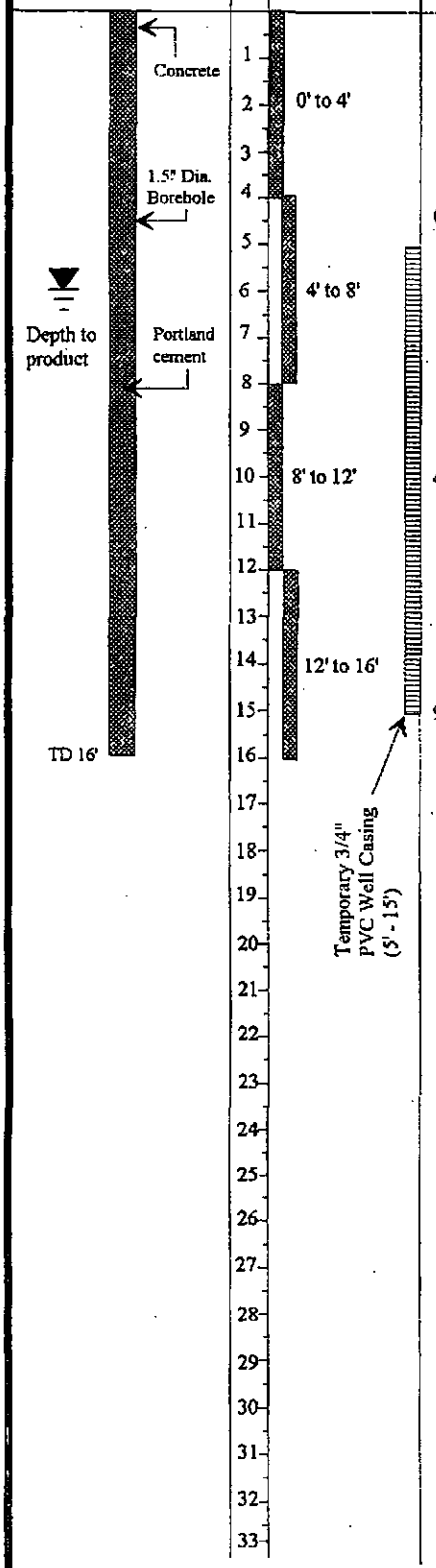


PID Reading	USCS	LOG OF MATERIAL
	af	Asphalt and baserock (includes gravel, sand, silt and clay)
	SP	**Sand:** variegated (brownish tint); firm; fine sand; no odor.
0	CL	**Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); some orgnics and interbedded sand (SP) lenses up to 2" 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

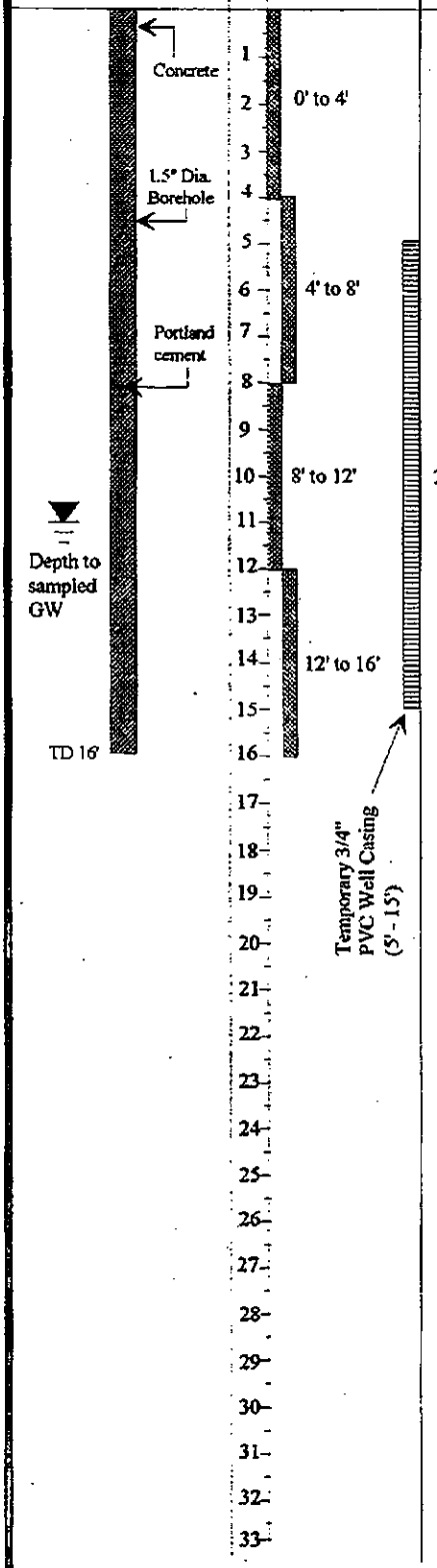


USCS	LOG OF MATERIAL
af	Asphalt and baserock (includes gravel, sand, silt and clay)
SP	**Sand:** variegated (brownish tint); firm; fine sand; no odor.
CL	**Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); some orgnics and interbedded sand (SP) lenses up to 2" thick; very moist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

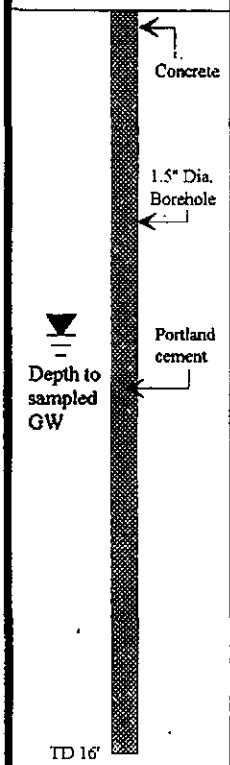


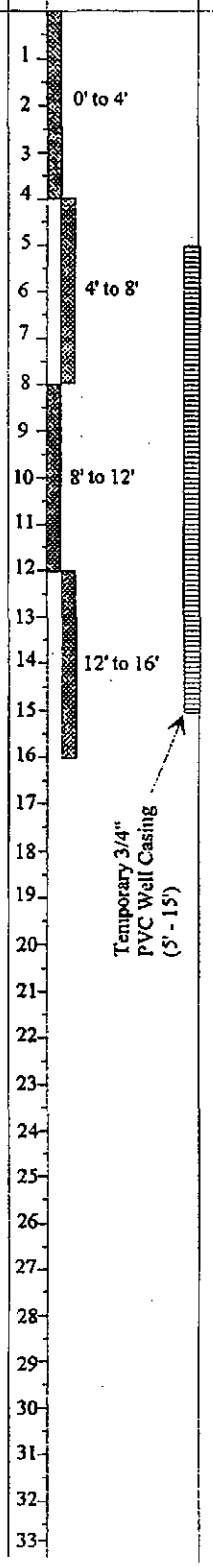
USCS	LOG OF MATERIAL
af	Concrete (4" thick) and baserock (includes gravel, sand, silt and clay)
SP	**Sand:** variegated (brownish tint); firm; fine sand; no odor.
CL	**Silty Clay:** Dark greenish gray (5GY 4/1); soft; low plasticity (sticky); some orgnics and interbedded sand (SP) lenses up to 2" thick;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



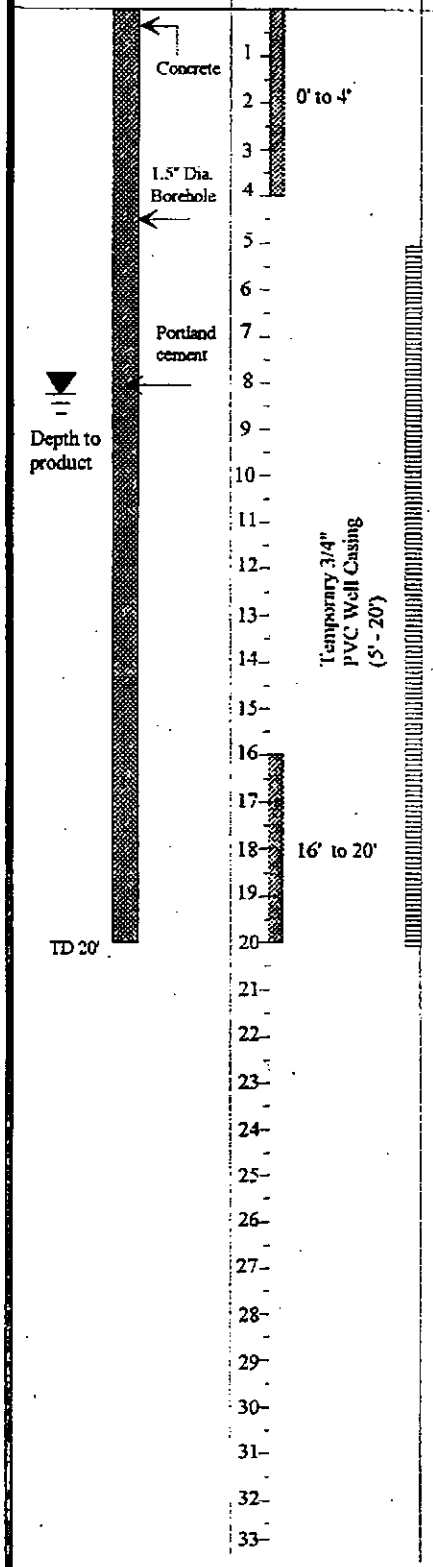


DEPTH	PID Reading	USCS	LOG OF MATERIAL
1–4		af	Asphalt and baserock (includes gravel, sand, silt and clay)
2–4		CL	**Silty Clay:** Greenish gray (5GY 5/1) with light olive brown (2.5Y 5/6) and black blebs; firm; medium plasticity; moist; slight petroleum odor.
4–5		SP	**Sand:** variegated; firm; fine sand; moist to very moist; slight petroleum odor.
5–8	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; slight petroleum odor..
8–12	0	CL	
12–15	0	CL	
15–16		CL	**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

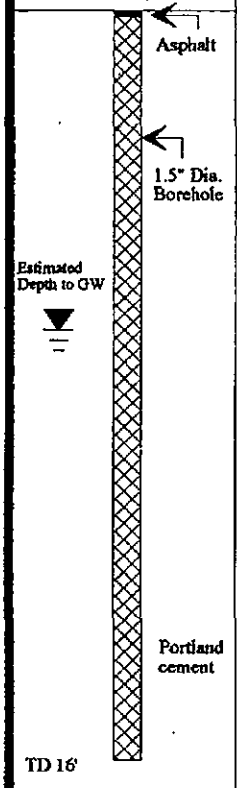
HOLE NO.	PROJECT NAME:	PROJECT ADDRESS:	DATE:	SHEET 1
SB-12	Commercial Property	2853-2863 Mandela Parkway, Oakland, CA	October 28, 1998	OF 1



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

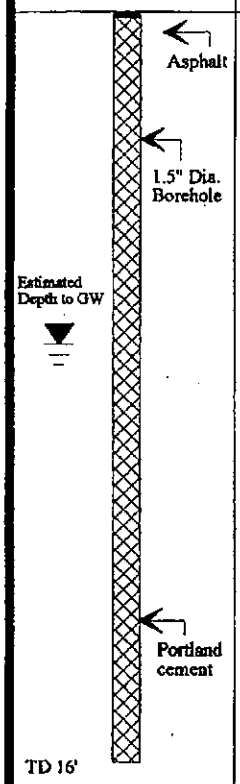


DEPTH	Sample Interval	PID Reading	USCS	DESCRIPTION OF MATERIAL
1–3	0' to 4'		af	Asphalt and baserock(includes gravel, sand, silt and clay)
4–5	0' to 4'	0	SP	**Sand:** brown; firm; fine sand; no odor.
6–8	4' to 8'		CL	**Silty Clay:** Very dark gray brown; firm; low plasticity; moist; no odor.
9–12	8' to 12'	0	CL	Olive brown; firm; low plasticity; moist; no odor.
13–16	12' to 16'	12	CL	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				
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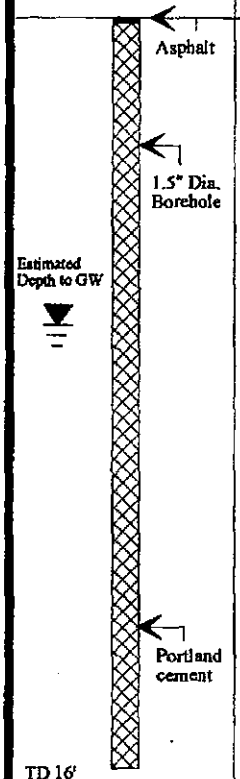
30				
31				
32				
33				

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

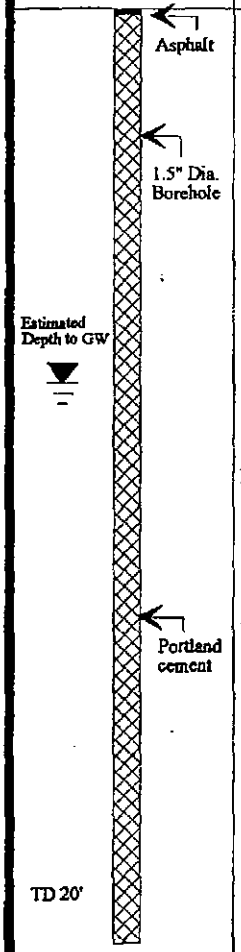


DEPTH	Sample Interval	PID Reading	USCS	DESCRIPTION OF MATERIAL
1–4	0' to 4'		af	Asphalt and baserock(includes gravel, sand, silt and clay)
1–4	0' to 4'		SP	**Sand:** brown; fimr; fine sand; no odor
4–8	4' to 8'	0	CL	**Silty Clay:** Very dark gray brown; firm; low plasticity; moist; no odor.
8–12	8' to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

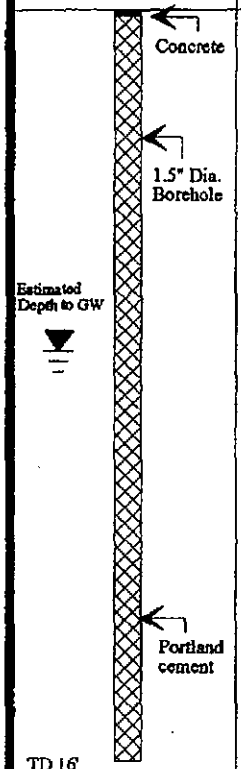


DEPTH	Sample Interval	PID Reading	USCS	DESCRIPTION OF MATERIAL
1–4	0' to 4'		af	Asphalt and baserock(includes gravel, sand, silt and clay)
1–4	0' to 4'		SP	**Sand:** brown; firm; fine sand; no odor
5–8	4' to 8'	7		**Silty Clay**: Very dark gray brown; firm; low plasticity; moist; petroleum odor.
9–12	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.
1–33				

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

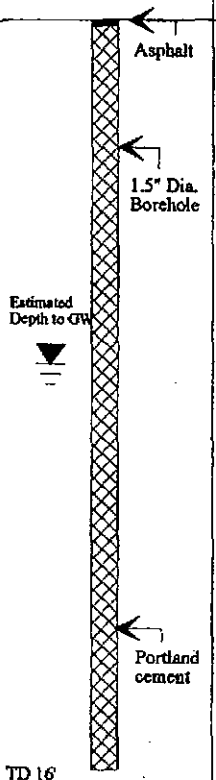


DEPTH	Sample Interval	PID Reading	USCS	DESCRIPTION OF MATERIAL
1–4	0' to 4'		af	Concrete and baserock(includes gravel, sand, silt and clay)
3–4			SP	**Sand:** brown; fimr; fine sand; no odor
4–8	4' to 8'	12		**Silty Clay:** Olive brown; firm; low plasticity; wet; petroleum odor.
8–12	8' to 12'	21	CL	
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
1–3	0' to 4'		af	Asphalt and baserock(includes gravel, sand, silt and clay)
3–4			SP	**Sand:** brown; fimr; fine sand; no odor
4–8	4' to 8'	0		**Silty Clay:** Very dark gray brown; firm; low plasticity; moist: no odor.
8–12	8' to 12'	0	CL	Olive brown
12–16	12' to 16'	0		Medium plasticity; wet.
16–33				

PROJECT:	2855 MANDELA PARKWAY Oakland, California	**Log of Boring SB-17**	PAGE 1 OF 1
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
1						Asphalt and baserock
2					SP	SAND (SP) brown, moist, fine-grained, poorly graded, no odor
3						▼ 5/11/99 (16:05)
4	MC					SB-17-4
5				0		▽ wet
6						
7						
8				---		NO RECOVERY
9						
10						
11						
12				---		
13						Boring terminated at a depth of 12 feet.
14						Boring backfilled with cement/bentonite grout.
15						Groundwater first encountered at a depth of 5 feet.
16						
17						
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27						
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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
0						Concrete and baserock
1–4				0	SP	SAND (SP) 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
6–8				243	CL	CLAY (CL) dark gray, moist, wet, slight petroleum odor ▽ wet
9–12	MC			243	CL	SB-18-10 BAY MUD
12						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. 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) brown, moist, poorly graded, no odor
4				0		CLAY (CL) 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		
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 7.5 feet.
14						
15						
16						
17						
18						
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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) brown, moist, poorly graded, no odor
2						
3						CLAY (CL) dark gray, moist to wet, strong petroleum odor [BAY MUD] 5/11/99(15:19)
4				0		
5	MC					SB-20-5
6						BAY MUD
7					CL	
8				0		wet
9						
10						
11						
12				0		Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 7.5 feet.
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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) brown, moist, poorly graded, no odor ▼ 5/11/99 (15:44)
4–12	MC	SB-21-5		0 237 ---	CL	CLAY (CL) dark gray, moist to wet, strong petroleum odor [BAY MUD] ▽ wet BAY MUD
13–30						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 7.5 feet.

PROJECT:	2855 MANDELA PARKWAY Oakland, California	**Log of Boring SB-22**	PAGE 1 OF 1
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
						Concrete and baserock
1–4				0	SP	SAND (SP) brown, moist, poorly graded, fine-grained, no odor
4						SB-22-4
5–7						NO RECOVERY 5/11/99 (16:20)
8						wet
9–12	MC			0	CL	CLAY (CL) dark gray, moist to wet, strong petroleum odor [BAY MUD] SB-22-10 BAY MUD
13–30						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. 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					SP	SAND (SP) gray-brown, moist, poorly graded, fine-grained, no odor ▼ 5/11/99 (14:12)
4				0		
5–7				239		strong petroleum odor — NO RECOVERY
8				—		▽ wet
9	MC	⊠				SB-23-8.5
9–12					CL	CLAY (CL) dark gray, wet, strong petroleum odor [BAY MUD] — BAY MUD
12				164		
13–30						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8 feet.

PROJECT:	2855 MANDELA PARKWAY 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
1–4				0	SP	SAND (SP) brown, moist, fine-grained, poorly graded, no odor
5–7						5/11/99 (16:40)
8				238		wet
9						CLAY (CL) dark gray, wet, strong petroleum odor 5/12/99 (09:45)
10	MC				CL	SB-24-10
11						5/11/99 (13:45)
12				436		Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8 feet.
13–30						

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						Concrete no recovery
2					CL	CLAY (CL) brown, yellow, and black, stiff, moist
3						SAND (SP) brown, moist, fine-grained, with shell fragments
4	MC				SP	no recovery
5						FILL
6						CLAY (CL) gray, very soft, moist saturated sand layer at 7 feet
7						
8						
9						
10						BAY MUD
11					CL	
12						
13						
14						occasional shell fragments stiff
15						
16					CL	CLAY (CL) olive and yellow-brown, with gravel to 1/4-inch
17						CLAY (CL) 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) 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. 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 no recovery
2					CL	CLAY (CL) dark gray, very soft, moist
3					SP	SAND (SP) gray, moist, fine-grained [FILL]
4						
5					CL	CLAY (CL) gray, very soft, moist, sand lenses [BAY MUD]
6						
7						no recovery, saturated
8						sand lens
9					GC	SAND and GRAVEL (GC) yellow-brown and olive, saturated, gravel to 1/2-inch
10					CL	CLAY (CL) gray, very soft, moist BAY MUD
11						
12						
13						
14						
15					GC	SAND and GRAVEL (GC) gray and yellow-brown, moist, gravels to 1/2-inch
16						Boring terminated at a depth of 16 feet. Boring tremie-grouted with a Portland cement mixture.
17						
18						
19						
20						
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PROJECT: **2855 MANDELA PARKWAY**
Oakland, California

Log of Boring SB-27

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
2–6					SP	SAND (SP) brown, gray, moist, fine-grained no recovery FILL
7–11					CL	CLAY (CL) gray, very soft, moist BAY MUD
12–13					CL	CLAY (CL) olive-brown, moist, with coarse sand to small gravel-sized rock fragments
14					SP	SAND (SP) gray, moist, with gravels to 1/4-inch
15–16					CL	CLAY (CL) gray, soft, moist, layers of brown, gray sand with gravels to 1/2-inch BAY MUD
17–30						Boring terminated at a depth of 16 feet. Boring tremie-grouted with a Portland cement mixture.

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

FILL: 0 – 6 feet

BAY MUD: 6 – 16 feet

BAY MUD: 16 – 18 feet

BAY MUD: 23 – 24 feet

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

Log of Boring SB-31

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						
3					SP	SAND (SP) gray-brown, moist, fine-grained, poorly graded — FILL
4						
5	MC					SB-31-5 no recovery
6						CLAY (CL) 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) olive and yellow-brown, soft, moist
14						
15					CL	CLAY (CL) yellow-brown, stiff, moist
16						no recovery
17						
18					SP	SAND (SP) yellow-brown and gray, moist
19					CL	CLAY (CL) yellow-brown, stiff, moist
20					SC	CLAYEY SAND (SC) yellow-brown and gray, saturated, fine-grained sand and clay
21						
22					CL	CLAY (CL) yellow-brown, stiff, moist gray and yellow brown at 21.5 feet increasing stiffness, trace gravels to 1/8-inch, at 23.5 feet
23						
24						Boring terminated at a depth of 24 feet. 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
1–3	DP				SP	SAND (SP) gray, moist to wet, fine-grained, with shell fragments Concrete, no recovery
4–5				0		FILL
5						SB-33A-5.5
6–7	DP			0	CL	CLAY (CL) gray, very soft, wet, high plasticity ▼
6–7						BAY MUD
8						Boring terminated at 7.96 feet. Boring tremie-grouted with a Portland cement mixture.

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) gray-brown, moist, fine-grained Concrete, no recovery
3				0		SB-34-4.5
4–5						CLAY (CL) gray very soft, moist
6	DP			0	CL	
7				143		strong hydrocarbon odor at 7.0 feet
8–30						Boring terminated at 7.5 feet. Boring tremie-grouted with a Portland cement mixture. Note: soil sample SB-34-4.5 collected at depth interval of 3 to 3.5 feet.

FILL

BAY MUD

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						SAND (SP)
2	DP			0	SP	gray-brown, moist, fine-grained
3						Concrete, no recovery — FILL
4				0		
5						Piston tip pushed to 5.5 feet.
6						Boring terminated at 5.5 feet.
7						Boring tremie-grouted with a Portland cement mixture.
8						No groundwater encountered.
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

PROJECT:	MANDELA PARKWAY Oakland, California	Log of Boring SB-35	PAGE 1 OF 1
Boring location: See Site Plan		Logged by: D. Sutherland 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 gray-brown, dense, moist, some fine to medium gravel, shell fragments wet, gray-brown to brown
5–6						CL	SANDY CLAY (CL) dark gray, soft, wet, soft to stiff, no odor
7					86	OH	PEATY CLAY (OH) dark gray, very stiff, moist, gasoline odor
8–9–10–11–12					227	CL	CLAY (CL) dark gray, medium stiff, moist, gasoline odor, soft, shell fragments at 9.0 feet
13–14–15					210	CL	SANDY CLAY (CL) light gray, stiff, moist, fine gravel, gasoline odor gray to gray-brown, hard, increase in medium gravel
16						SW	SAND (SW) 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.: 2543.02 | Figure: A-1

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

PROJECT:	MANDELA PARKWAY Oakland, California	Log of Boring SB-36	PAGE 1 OF 1

Boring location: See Site Plan		Logged by: D. Sutherland 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
0							6 inches concrete
1							CLAYEY GRAVEL (GC) gray, loose, moist, 15% recovery
2							
3							
4					3.3	GC	SANDY CLAY (CL) dark gray, soft, moist, with some gravel and wood fragments
5							
6					13.9		concrete debris, refusal - end of hole
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
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) brown, moist, poorly graded, no odor	1-inch PVC casing, perforated with 0.01-inch slots
5	MC					TR-1-5	Monterey No. 2 sand
6–7				48		CLAY (CL) dark gray, moist, wet, slight petroleum odor	
8						5/11/99 (12:10)	
9–10	MC				CL	wet	
10–12				173		NO RECOVERY	
12						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8.5 feet	
13–30						[1] Elevation referenced to Mean Sea Level.	

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

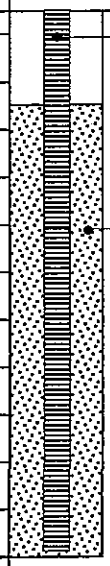
Hammer weight/drop: --- lbs./--- inches | Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/foot	OVM	LITHOLOGY	MATERIAL DESCRIPTION
						Ground Surface Elevation: 9.06 feet [1]
						Concrete and baserock
1–2					SP	SAND (SP) brown, moist, fine-grained, poorly graded
3–4				0	CL	CLAY (CL) dark gray, moist to wet, slight petroleum odor 5/11/99 (14:29)
5	MC					TR-2-5
6–7						
8				0		wet
9						
10	MC					TR-2-10
11						
12				0		
13–30						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8 feet.

[1] Elevation referenced to Mean Sea Level.

WELL CONSTRUCTION DETAILS



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) dark gray, moist to wet, slight petroleum odor 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. Boring backfilled with cement/bentonite grout. 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							
23							
24							
25							
26							
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]

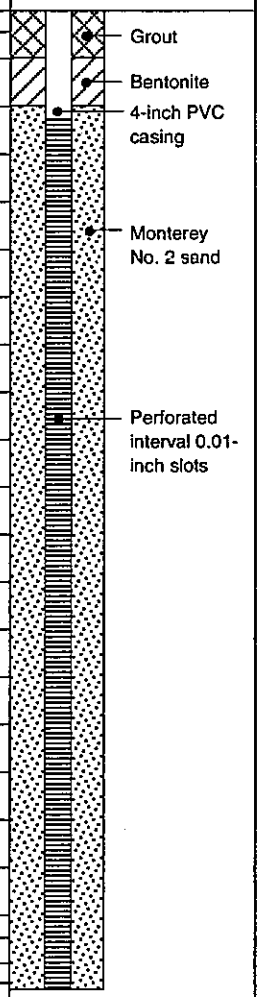
DEPTH (feet)	Sampler Type	Sample	Blows/foot	OVM	LITHOLOGY	MATERIAL DESCRIPTION
0						6 inches concrete
1–3					SP	SAND (SP) tan-brown, moist, medium-grained, slight petroleum odor
4–5		■		126	CL	CLAY (CL) dark gray, wet, strong petroleum odor ▽ wet from hand auger TR-4-5.5
6–8						
9–10		■				▼ sheen 6/22/99 (17:10)
11–15				390		
16		■		242		saturated
17–18					CL	CLAY (CL) light gray, stiff, wet to moist, trace medium-grained sand, strong petroleum odor
19–20		■		182	SP	SAND (SP) 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

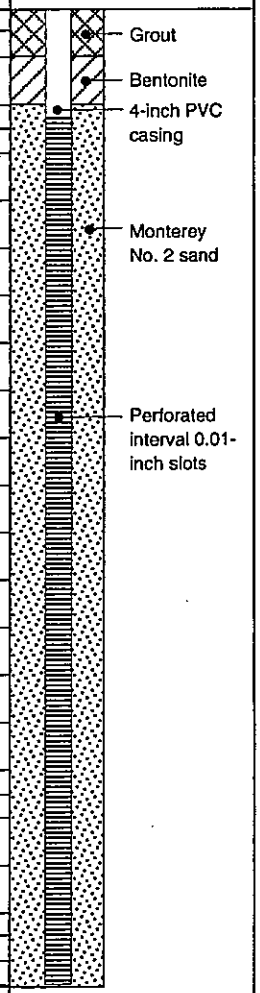
Sampler: California split-barrel

Top of Casing Elevation: 6.90 feet [1]

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

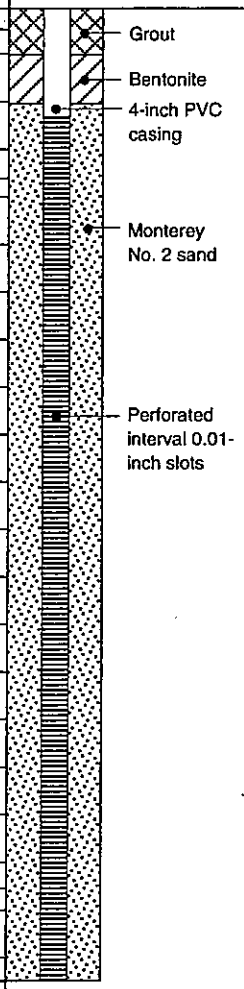
Drilling method: Hollow-stem auger

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) tan-brown, moist, medium-grained, slight petroleum odor
						HAND AUGER
4–5						CLAY (CL) dark gray, wet, strong petroleum odor
5						▽ wet from hand auger
5–6	CA			118		sheen
6						TR-6-6.0
6–9						
9						▼ 6/22/99 (13:45) depth to product = 9.96, depth to water = 11:35
10–11	CA			226	CL	saturated
11–15						
15–16	CA			238		
16–17						CLAY (CL) light gray, stiff, wet to moist, strong petroleum odor
17–19					CL	
19–20	CA			417	SP	SAND (SP) brown, moist, medium- to coarse-grained, with gravel, strong petroleum odor
20–21						Boring terminated at a depth of 20.5 feet.
						Groundwater first encountered at depth of 5.0 feet.
22–30						[1] Elevation referenced to Mean Sea Level.

WELL CONSTRUCTION DETAILS



PROJECT:	MANDELA PARKWAY Oakland, California	**Log of Boring TR-7**	PAGE 1 OF 1
Boring location: See Site Plan			Logged by: D. Sutherland 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) gray, loose, moist, with some clay, (fill)
2						CL	CLAY (CL) dark gray, very stiff, moist, becomes interbedded with sand
3							
4						SW	SAND (SW) red-brown, very dense, moist, no odor
5							wet at 5.5 feet
6							
7						OL	SILTY PEATY CLAY (OL) medium stiff, wet, no odor
8							
9							CLAY (CL) 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) light gray, stiff, moist, no odor
16							SANDY CLAY (CL) light gray, very stiff, moist, very fine sand decreasing sand gray to orange-brown mottling at 16.5 feet
17							
18						CL	
19							
20							
21							
22						SC	CLAYEY SAND (SC) 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.: 2543.02 | Figure: A-3

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

PROJECT:	MANDELA PARKWAY Oakland, California	**Log of Boring TR-8**	PAGE 1 OF 1
Boring location: See Site Plan		Logged by: D. Sutherland 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
0							6 inches concrete floor slab
1–4						SC	0-2 inches gravel SANDY CLAY (SC) 30% recovery olive-gray, stiff, moist, with some fine to medium gravel
4							wet at 4.5 feet
5–9						CL	CLAY (CL) 100% recovery dark, gray, soft, wet
10–12						SC	SANDY CLAY (SC) light gray, moist, with trace fine sand, stiff gray to gray-brown, odor of gasoline
13							▽ wet at 13.0 feet
14–15						CL	CLAY (CL) 100% recovery black, soft, wet, some organic matter increased sand decrease in organic matter 15.5-16.5 slight odor gasoline
16–18						SC	SANDY CLAY (SC) 100% recovery light brown, hard, moist, some orange mottling
20–30							

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 Oakland, California	**Log of Monitoring Well TR-9** PAGE 1 OF 1

Boring location: See Site Plan		Logged by: D. Sutherland 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) gray-brown, medium dense, moist, with brick fragments, no odor FILL
3–4						SW	SAND (SW), 85% recovery gray, dense, moist, fine to medium sand, with shell fragments, no odor
5–6						CL	CLAY (CL) dark gray, very soft, moist, no odor wet at 5.5 feet
7–8–9						OH	ORGANIC CLAY (OH) dark gray, soft, moist, decomposing odor
10					0.0		
11–12–13						CL	CLAY (CL) dark gray, very soft, moist, with trace fine sand, no odor
14							▽ wet at 14.0 to 14.5 feet
15–16							SANDY CLAY (CL) light gray, hard, dry, with fine to medium gravel, brown mottling, shell fragments gray to brown at 15.5 feet
17–18–19–20–21–22–23–24–25–26–27–28–29–30							

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

PROJECT:	MANDELA PARKWAY Oakland, California	**Log of Monitoring Well TR-9** 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
1							6 inches concrete floor slab	Grout From 0 To 1 Feet
2						CL	SANDY CLAY (CL) gray-brown, medium dense, moist, with brick fragments, no odor	FILL Blank Casing From 1 To 6 Feet
3						SW	SAND (SW), 85% recovery gray, dense, moist, fine to medium sand, with shell fragments, no odor	Bentonite From 1 To 6 Feet
5						CL	CLAY (CL) dark gray, very soft, moist, no odor wet at 5.5 feet	
7						OH	ORGANIC CLAY (OH) dark gray, soft, moist, decomposing odor	casing
10					0.0			
11						CL	CLAY (CL) 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							SANDY CLAY (CL) light gray, hard, dry, with fine to medium gravel, brown mottling, shell fragments	
16							gray to brown at 15.5 feet	

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 Oakland, California	Log of Monitoring Well TR-10 PAGE 1 OF 2
Boring location: See Site Plan (Figure 2)		Logged by: E. Deratzian 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) 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) gray, loose, moist, subrounded to subangular, poorly graded, weak hydrocarbon odor, 90 percent fine to medium sand, 10 percent fines
4						CL	CLAY (CL) gray, very soft, moist, extremely hard, poorly graded, no odor, 5 percent fine sand, 95 percent fines
5							▽
6							No recovery ▽
7						CL	CLAY (CL) 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) 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							

Treadwell&Rollo

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

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

PROJECT:	MANDELA PARKWAY Oakland, California	Log of Monitoring Well TR-10 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) 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 no odor beginning at 17 feet
17							
18							
19							
20						SW	GRAVELLY SAND (SW) 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.: 2543.02 | Figure: A-1b

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

PROJECT:	**MANDELA PARKWAY** Oakland, California	**Log of Monitoring Well TR-11** PAGE 1 OF 2

Boring location: See Site Plan (Figure 2)		Logged by: E. Deratzian 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) brown, loose, moist, subangular, poorly graded, no odor, 75 percent gravel, 25 percent sand
						CL	Baserock
2						SW	GRAVELLY CLAY (CL) brown, medium stiff, moist, subangular to angular, moderately graded, no odor, 25 percent gravel, 75 percent fines
							GRAVELLY SAND (SW) 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) dark gray, medium stiff, moist, subrounded, plastic, moderately graded, weak hydrocarbon odor, 30 percent fine sand, 60 percent fines
4						SP	SAND (SP) gray, loose, wet, subrounded, poorly graded, weak hydrocarbon odor, 10 percent fine sand, 90 percent fines
5						CL	CLAY (CL) gray, soft, wet, very plastic, poorly graded, weak hydrocarbon odor, 10 percent fine sand, 90 percent fines
6							No recovery
7						CL	CLAY (CL) gray, very stiff, wet, very plastic, poorly graded, no odor, 10 percent sand, 90 percent fines
8						OH	PEATY CLAY (OH) black, medium stiff, wet, plastic, poorly graded, weak organic odor, 20 percent fine sand, 80 percent fines Peat (abundant organics)
9						CL	GRAVELLY CLAY (CL) brown, stiff, moist, subangular, slightly plastic, well graded, no odor, 25 percent gravel, 10 percent sand, 65 percent fines
10						CL	CLAY (CL) gray, soft, wet, very plastic, poorly graded, no odor, 10 percent fine sand, 90 percent fines shell fragments throughout
11							
12						CL	CLAY (CL) 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 Oakland, California	Log of Monitoring Well TR-11 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) 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) 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

APPENDIX B

FIELD RECORD Site: Mandela Pkwy, Oakland, CA

GROUND-WATER SAMPLING Job #: 21B-001-001

1. Well Designation:_____

2. Date of Fluid Measurement_____

3. Depth to Water:_____Ft.

4. Total Depth:_____Ft.

5. Well Purge Information and Field Parameters:

Volume Purged	Time	pH +-.1	Cond +-10%	Turbidity +-10%	DO	Temp +- 1	Salinity	TDS	ORP
Sample									

6. Comments regarding physical characteristics of groundwater _____

_____

7. Post Sampling Fluid Level _____ Ft.

8. Flow Rate_____L/min.

9. Total liters purged from well:_____L.

10. Other comments affecting monitoring:

_____

_____

11. Field Personnel _____

APPENDIX C

SOIL VAPOR FIELD FORM

Well ID _____ ☐ Sub-slab Probe ☐ Nested Probe

Date:		PID (make/model/serial number):	
Project Name:		Landtech (model/serial number):	
Project Number:		Helium Detector (make/model/serial number):	
Site Location:		Manometer (make/model/serial number):	
Field Personnel:		Weather:	
Recorded by:		Air Temperature (°C/°F):	
		Atmospheric Pressure (in. Hg):	

Surface Type:	☐ Concrete	☐ Asphalt	☐ Grass	☐ Other
Surface Thickness (inches):		☐ Unknown		

Initial Pressure/Vacuum (in. H_2O):	Time:	Field Tubing blank reading (ppm):	Time:

Shut-in Testing		Start of Pneumatic Testing:		
Prior to Pneumatic	OK ☐ @	Elapsed Time (min)	Pump Flow Rate (LPM)	Well Head Vacuum (in. H_2O)
Prior to Purge	OK ☐ @			
Prior to Sample Collection	OK ☐ @			

Date	Start Time	End Time	Elapsed Time (min)	Bag Volume (L)	Purge Rate (LPM)	CH_4 (%)	CO_2 (%)	O_2 (%)	Total Organic Vapors (ppmv)	Helium beneath Shroud (%)		Helium in Purge Interval (%)
										Min	Max	

Date	Time	Sample ID	Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum	Final Vacuum	Helium beneath Shroud (%)	
								Min	Max

Comments: