EAST BAY ASIAN LOCAL
DEVELOPMENT CORPORATION
BUILDING HEALTHY, VIBRANT AND SAFE NEIGHBORHOODS

07 March 2018
Project 750622605

Mr. Keith Nowell, PG
Alameda County Health Care Services Agency
Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Supplemental Environmental Investigation and Request for No Further Action
1110 Jackson Street
Oakland, California
Alameda County SCP Case No. RO0003232
Langan Project: 7506220604

Dear Mr. Nowell:

I have read and acknowledge the content, recommendations, and/or conclusions contained in the attached document submitted on my behalf to ACDEH's FTP server and the SWRCB's Geotracker website.

Sincerely yours,

Everett Cleveland, Jr
East Bay Asian Local Development Company

SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION AND REQUEST FOR NO FURTHER ACTION 1110 Jackson Street, Oakland, California

Prepared For:

Alameda Country Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California

Prepared By:

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7 March 2018
Langan Project 750622605

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

7 March 2018

Mr. Kieth Nowell
Alameda County Health Care Services Agency
Department of Environmental Health, Local Oversight Program
1131 Harbor Bay Parkway
Alameda, California, 94502

Subject: Supplemental Environmental Investigation and Request for No Further Action
1110 Jackson Street, Oakland, CA
Fuel Leak Case No. RO0003232 (GeoTracker Case #T10000009472)
Project No. 750622605

Dear Mr. Nowell:

Langan Engineering and Environmental Services, Inc. (Langan) is pleased to submit this *Supplemental Environmental Investigation and Request for No Further Action* report on behalf of East Bay Asian Local Development Corporation (EBALDC) related to the former petroleum underground storage tanks (USTs) at 1110 Jackson Street in Oakland, California (site). This report describes the environmental data collected to date by Langan and others to assess soil, soil gas and groundwater quality at the site related to the former USTs and presents data supporting our opinion that the site should receive a no further action determination regarding the former USTs.

The objective of our evaluation was to collect sufficient data to support regulatory closure of the former USTs, in accordance with the California State Water Resources Control Board Low-Threat Underground Storage Tank Case Closure Policy (LTCP). We believe this report presents information illustrating that subsurface conditions at the site are consistent with conditions outlined in the LTCP. On behalf of EBALDC, Langan requests that the Alameda County Department of Environmental Health (ACDEH) grant a no further action determination and regulatory closure of the former USTs for the site.

If you have any questions or wish to discuss, please do not hesitate to call.

Sincerely yours,
Langan Engineering & Environmental Services, Inc.

Noel Liner, PG
Project Geologist

Joshua Graber, CHMM
Associate

cc: Clint Loftman, Oakland Housing Authority
Emily Busch and Everett Cleveland, EBALDC

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1.0 INTRODUCTION

Langan Engineering and Environmental Services, Inc. (Langan) has prepared this *Supplemental Environmental Investigation Report and Request for No Further Action* (report), describing recent investigation activities conducted at the 1110 Jackson Street development in Oakland, California (Figure 1, site) for the East Bay Asian Local Development Corporation (EBALDC). The environmental investigation was conducted in January 2018 in accordance with our *Work Plan for Supplemental Environmental Site Assessment* (Work Plan) submitted to the Alameda County Department of Environmental Health (ACDEH) dated 12 October 2017. The purpose of the supplemental environmental investigation was to:

1. Close data gaps identified in Langan's Conceptual Site Model (CSM) (Appendix A) submitted as part of our October 2017 Work Plan; and,

2. Characterize horizontal and vertical impacts to soil and groundwater related to the former Underground Storage Tanks (USTs) and specifically UST #4.

This report summarizes data from Langan's recent environmental investigation and prior subsurface investigations and removal actions performed at the site to support a formal request for no further action related to the four former USTs previously located at the site. Remedial and investigative work at the site has included:

- Removal of four petroleum USTs and associated piping;
- Over-excavation of soil beneath the former USTs to the extent feasible;
- Installing temporary borings for collection of soil, soil gas and groundwater;
- Analyzing shallow and deep groundwater for total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), motor oil (TPHmo), volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs);
- Analyzing soil for total petroleum hydrocarbons as TPHg, TPHd, TPHmo, VOCs, PAHs and metals, including within the bioattenuation zone;

- Performing a building survey and inventory using a photo-ionization detector sensitive to the part-per-billion range for identification of potential preferential pathways and soil gas and sub-slab sample locations;

- Collecting and analyzing shallow soil gas and sub-slab soil gas samples for VOCs; and,

- Disposing groundwater and soil generated during sampling at appropriate facilities.

In addition to a summary of the activities presented above, this report also includes a summary of site background, environmental history from previous investigations conducted by others, and recent development activity. Based on the environmental data conducted to date at the site, it is Langan's opinion that the site is eligible for administrative case closure under the California State Water Resource Control Board (CSWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP). Therefore, we respectfully request a no further action and closure letter from the ACDEH with respect to the four former USTs at the site.

2.0 SITE DESCRIPTION AND BACKGROUND

2.1 Site Description

The site is located at 1110 Jackson Street in Oakland, California (Figure 1). The site is bound by 12th Street to the north, Jackson Street to the west, 11th Street to the south and multiple buildings to the east. The site is L-shaped, with long dimensions measuring approximately 190 feet by 200 feet. A 5-story mixed-use building was recently constructed over the entire footprint of the L-shaped lot. The building consists of a concrete podium constructed on grade and shallow foundations. The ground level is completely impervious and consists of a concrete slab and paved sidewalks. The majority of the ground level is openly ventilated and is used for parking. A commercial retail space currently occupied by a dentist is present in the southwestern portion of the building.

The site was first developed in 1889 with a hospital. By 1903, the hospital had been replaced by residences. Two automobile repair garages operated in the northern portion of the site (including two USTs beneath Jackson Street) between 1911 and 1946, while the southern portion of the site was developed for residential use. By 1939, the site was fully developed with two auto repair garages in the northern portion of the site, residences in the southern portion of the site, and a new commercial building at the southern corner of the site. One of the automobile repair garages was removed in 1946 and the residences were removed by 1950, when both became parking lots. The second auto repair garage was converted to a

store, a glass works business, and a parking lot through the 1950's. In the 1960's, a store was constructed in the southwest corner of the site and a small shed was constructed near the glass works facility. The site remained in this state until 2007 when the buildings were demolished (Essel Environmental Consulting, 2015).

2.2 Underground Storage Tanks

In April 2016 during construction of the current building, three USTs were discovered in the sidewalk of Jackson Street. The USTs were designated as UST #1, #2 and #3; all contained gasoline and were approximately 265-, 265- and 110-gallons, respectively. In November 2016, a fourth UST was discovered beneath the sidewalk of Jackson Street, south of the three former USTs. The UST, designated UST #4, contained diesel fuel and had a capacity of 750-gallons. UST removal and over-excavation activities are described in Section 2.7. The locations of the former USTs are presented on Figure 2.

2.3 Potential Preferential Pathways

Backfill around utility corridors and lenses of coarse fill may act as preferential pathways for contaminant migration in groundwater and/or soil gas. To identify potential preferential pathways, a building survey and inventory was completed at the site on 28 October 2016 by Langan personnel in the presence of representatives from EBALDC. The survey consisted of identifying subsurface utility locations, potential sources of VOCs present and evaluating all accessible areas with a photoionization detector (PID) capable of measuring volatile organic vapors down to the part per billion (ppb) level. Subsurface utility corridors downgradient of the former USTs include the sanitary sewer and storm water pipelines. Water supply and electrical service are provided aboveground. Groundwater at the site is found at a depth of around 20 feet below ground surface (bgs), which is significantly deeper than the utility trenches; therefore, the utility corridors would not act as preferential pathways for groundwater.

During the survey, the PID was used to assess background indoor air concentrations and possible preferential pathways for soil vapor migration such as gaps and cracks in building foundations, slab penetrations (such as piping and utility lines), floor drains, sumps, fire suppression lines, and sanitary sewer cleanouts. In general, PID readings across the building were consistent with an active construction site and no potential preferential pathways were registering elevated readings. The results of our building survey were used to develop a sampling plan to evaluate the building for vapor intrusion.

2.4 Current Surface Water/Ground Water Use and Nearby Sensitive Receptors

The site is serviced by East Bay Municipal Utility District's regional water system (EBMUD), which provides drinking water for approximately 1.4 million people in portions of Alameda County and Contra Costa County, including the city of Oakland. EBMUD has water rights for up to 325 million U.S. gallons per day, which is sourced from surface water runoff in the Sierra Nevada, and stored in a system of reservoirs. Groundwater is not used as a drinking water source at the site.

Langan contacted the California Department of Water Resources (DWR) to verify that groundwater wells supplying potable drinking water are not present downgradient of the site. The DWR well search confirmed that there are no mapped supply wells within one mile downgradient of the site. The nearest surface water body is Lake Merritt, a tidally influenced slough, approximately 1,200 feet east of the site (Figure 3). Appendix B presents the results of the well search.

2.5 Identification of Screening Levels

Screening levels for groundwater were selected from the San Francisco Bay Regional Water Quality Control Board's (RWQCB's) February 2016 Environmental Screening Levels (ESLs). The following ESLs were selected as appropriate screening values for the site:

- Soil: Tier I ESLs
- Soil Gas: Tier I ESLs
- Groundwater: ESLs for saltwater eco-toxicity. Additionally, groundwater was compared to Maximum Contaminant Level (MCL) Priority for reference.

2.6 Soil Types and Geology of Site

In general, the site's surficial geology is mapped as the Holocene and Pleistocene aged Merritt Sand, described as fine-grained, very well sorted, well-drained sand" (Graymer, 2000 – Figure 4). Based on borings advanced by Langan, the subsurface soils at the site are consistent with the geologic description, consisting of sandy fill with varying amounts of silt and clay underlain predominantly by sand and silty to clayey sand. Groundwater was generally encountered about 20 feet bgs. Groundwater flow is likely to the east, based on monitoring data for the nearby Alcoa Park parking garage (PSI, 2009).

2.7 Summary of Remedial Activities

USTs # 1, 2 and 3 were excavated and removed by Golden Gate Tank Removal (GGTR) on 15 April 2016 and UST #4 was excavated and removed on 23 November 2016. Confirmation soil samples were collected from each UST pit following removal. On 4 May 2016 and 2 December 2016, GGTR performed over-excavation of visibly stained soil to the extent practical from the tank pits and additional confirmation soil sampling. UST removal activities at the site were completed under the observation of Langan personnel and a representative from the ACDEH's Certified Unified Program Agency (CUPA). The UST removal activities are described below. Soil sample results for TPH and VOCs from over-excavation are presented on Table 1. Confirmation soil samples removed during excavation are presented in ~~strikeout~~ text on Table 1. Results for metals and PAHs in soil are presented on Tables 2 and 3.

2.7.1 UST Removal (USTs 1-3)

In April 2016, three USTs were discovered in the sidewalk of Jackson Street during site development activities. The USTs, designated as USTs #1, #2 and #3, all contained gasoline and were approximately 265-, 265- and 110-gallons, respectively. The locations of USTs #1, #2 and #3 are shown on Figure 2. Based on a review of Sanborn Fire Insurance maps, the USTs were likely in place prior to 1911. The three USTs were found to be in generally poor condition. GGTR removed the three USTs from beneath the sidewalk and conducted soil excavation and soil sampling activities on 15 April 2016. UST removal activities were completed under the observation of Langan personnel and a representative from the ACDEH's CUPA. After the USTs and associated piping were removed, GGTR collected confirmation soil samples from excavation sidewalls and bottoms. Soil samples collected from soil beneath the former USTs had elevated concentrations of TPHg, ranging between 391 and 2,480 milligrams per kilogram (mg/kg), exceeding the RWQCBs February 2016 Tier I ESLs.

Based on the elevated confirmation sample results and a recommendation by ACDEH, GGTR returned to the site on 4 May 2016 to perform over-excavation and additional confirmation sampling activities. GGTR over-excavated from the north side of UST#1 to the south side of UST#2 and UST#3 to a depth of 12 feet bgs. Following the over-excavation, additional confirmation samples were collected from the new bottom of the excavation and from the sidewalls. TPHg was detected at concentrations ranging from 6.96 to 6,320 mg/kg in soil collected from over-excavation sidewalls and bottoms; TPHd was not detected in any of the soil samples and TPHmo was detected at a maximum concentration of 135 mg/kg.

2.7.2 UST Removal (UST #4)

In November 2016, a fourth UST was discovered beneath the sidewalk of Jackson Street, south of the three former USTs removed earlier that year during construction of the sidewalk. The UST, designated as UST #4, contained diesel fuel and had a capacity of approximately 750-gallons. The top of UST #4 was approximately 5 feet bgs and the bottom was approximately 8 feet bgs. Figure 2 shows the location of the former UST. GGTR removed UST #4 from beneath the sidewalk and conducted the corresponding soil excavation and soil sampling activities on 23 November 2016. UST removal activities were completed under the observation of Langan personnel and a representative from CUPA/ACDEH. After the UST and associated piping were removed, GGTR collected two soil samples at 10 feet bgs from below the southern and northern ends of the UST (9669-S-10 and 9669-N-10, respectively), which was approximately two feet below the UST bottom. Soil samples collected from soil beneath the former UST had elevated concentrations of TPHd exceeding the Tier I ESLs.

Based on the elevated confirmation sample results and a recommendation by ACDEH, GGTR returned to the site on 2 December 2016 to perform over-excavation and additional confirmation sampling activities. GGTR over-excavated the tank pit to a depth of 14 feet bgs, as witnessed by ACDEH and Langan representatives. Following over-excavation, soil samples were collected of the sidewalls and the excavation bottom. One soil sample was collected from the excavation bottom at 14 feet bgs and two additional soil samples were collected at depths of 17.5 and 18.5 feet bgs from beneath the UST. TPHd was detected at concentrations of 10,000 and 11,000 mg/kg in the samples collected from 14 and 17.5 feet bgs beneath the former UST and TPHd was detected at a much lower concentration of 1,100 mg/kg at a depth of 18.5 mg/kg. Sidewall samples all had TPHd detected with concentrations ranging from 1.7 to 4,400 mg/kg.

2.8 Summary of Previous Environmental Investigations

Environmental investigations to evaluate soil and groundwater conditions at the site were conducted in 2005 by Tetra Tech, and in August and November of 2016 by Langan. These previous investigations are described in the following sections. Results of groundwater, soil and soil gas sampling from previous environmental investigations are presented in Tables 1 through 5. Results for TPHg, TPHd, TPHmo and benzene in groundwater are presented on Figure 5. Soil boring logs describing the materials encountered and water level measurements are presented in Appendix C.

2.8.1 January 2006 Phase II ESA

In December 2005, Tetra Tech conducted a limited Phase II Environmental Site Assessment to evaluate if petroleum impacts associated with the Alcopark Garage site were impacting the site. The Alcopark Garage site is about 260 feet to the north of the site across 12th Street.

Tetra Tech advanced three borings (SB-1, SB-2, and SB-3, Appendix C) at the site. Borings SB-1 and SB-2 were located approximately 50 to 60 feet from the former gasoline UST locations in both the northeast and southeast directions, respectively (Figure 2). Borings SB-2 and SB-3 were located approximately 45 feet east (downgradient) and 145 feet southeast of the diesel UST #4, respectively. Soil samples were collected at approximately 12 feet bgs from each boring. Groundwater was encountered at depths ranging between 20 to 22 feet bgs. One groundwater sample was collected from each boring. Soil and groundwater samples were analyzed for TPHg, TPHd, TPHmo, VOCs and metals with the following results:

- TPHg, TPHd and TPHmo were not detected in any of the samples collected. Metals results were within normal background ranges reported for Bay Area soils (Table 2).
- No VOCs were detected in any soil samples collected.
- No VOCs were detected at concentrations above their respective maximum contaminant level (RWQCB, February 2016 Maximum Contaminant Levels [MCL] Priority ESLs) in any groundwater samples collected. However, low levels of trichloroethene (TCE) and tetrachloroethene (PCE) were detected in groundwater collected from boring SB-3.

Based on the data collected, Tetra Tech recommended no further assessment of the site was necessary (Tetra Tech, 2006).

2.8.2 August 2016 Site Assessment

Following discovery and ultimate removal and over-excavation of USTs #1, #2, and #3, ACDEH requested collection of groundwater samples near the former UST locations to evaluate potential impacts of petroleum and petroleum related compounds to groundwater.

On 11 August 2016, Gregg Drilling & Testing, Inc. (Gregg Drilling) of Martinez, California, a California C-57-licensed drilling company advanced four borings (EB-1 through EB-4; Figure 2) to depths of 28 feet bgs. The borings were advanced to facilitate the collection of groundwater in order to evaluate potential impacts related to the former USTs. Soil samples were only collected from boring EB-2 at depths below the soil samples collected during UST removal.

Borings EB-1 through EB-3 were advanced within or adjacent to footprints of the former USTs #1, #2 and #3 and EB-4 was advanced approximately 12 feet east of and downgradient of former UST #2. All borings were hydraulically driven direct push boings advanced by a truck-mounted drill rig operated by Gregg Drilling and observed by Langan. Groundwater was encountered at about 20 feet bgs in each borehole and grab groundwater samples were collected through temporary 1-inch diameter polyvinyl chloride (PVC) well casings with ten feet of well screen to the bottom of each boring. The slotted screen extended above the water table and no free product or sheen was observed on any of the samples.

Langan collected three soil samples from depths of 13, 15.5 and 22.5 feet bgs from environmental boring EB-2 at the former UST #2 location. Soil samples were also collected during the removal of UST #2 at depths of 9 and 12.5 feet bgs. Samples were collected based on field observations (including visual and olfactory) and organic vapor measurement using a PID.

The results of the investigation indicated the following:

- TPHg and TPHd concentrations exceeding the Tier I ESLs were detected in soil greater than 10 feet bgs beneath former UST #2.
- Benzene was detected in the groundwater samples from EB-2 and EB-4 at concentrations of 320 and 110 micrograms per liter [µg/L]). The EB-2 concentration is above the commercial vapor intrusion RWQCB ESLs (260 µg/L), but the EB-4 sample did not exceed the commercial vapor intrusion ESL closest to the existing building.
- Concentrations of TPHg and TPHd exceeding the MCL Priority ESLs were also detected in groundwater from borings EB-1, EB-2 and EB-4. Additionally, concentrations of TPHg and TPHd exceeding the Saltwater Ecological ESLs were detected in groundwater in limited areas from borings EB-2 and EB-4, which were advanced through the UST pits or directly adjacent to them.
- TPHg, TPHd, and TPHmo were not detected above laboratory reporting limits in groundwater from boring EB-3.

2.8.3 November 2016 Site Assessment

In November 2016, Langan conducted an additional site assessment consisting of soil, groundwater, soil gas, and sub-slab vapor sample collection to determine the potential extent of petroleum impacted soil in groundwater, and evaluate the site for potential vapor intrusion risks.

Four environmental borings (EB-5 through EB-8) were advanced using direct push techniques by Gregg Drilling for soil and groundwater collection, five temporary soil gas wells (SG-1 through SG-5) were installed to collect soil gas samples, and five temporary Vapor Pins™ were installed in the slab to facilitate collection of sub-slab samples (SS-1 through SS-5). Soil gas samples were collected near subsurface utility lines and below the bottom of the elevator pit, as these were areas identified as potential preferential pathways. Sub-slab sample locations were focused along the eastern side of the site and in the retail space since this space was the only enclosed space on the ground level proposed for occupation. A sub-slab sampling point (SS-6) was added to the sampling scope, due to the discovery of UST #4. The SS-6 sub-slab sample was collected on 30 November 2016 about 15 feet east of UST #4 in the commercial space. VOCs were not detected above their respective Tier 1 ESLs in soil gas or sub-slab samples collected at the site.

The soil gas and sub-slab samples were submitted under appropriate chain-of-custody documentation to Curtis & Tompkins (now Enthalpy Analytical) of Berkeley California for the following analysis:

- VOCs by United States Environmental Protection Agency (EPA) Method TO-15, Methane by ASTM D-1946, and Helium by ASTM D-1946.

The soil samples were submitted under appropriate chain-of-custody documentation to McCampbell Analytical, for the following analyses:

- TPHg, TPHd, and TPHmo by EPA Method 8015, VOCs by EPA Method 8260, PAHs by EPA Method 8310, and leaking underground fuel tank (LUFT) 5 metals by EPA Method 6020.

The grab groundwater samples were submitted under appropriate chain-of-custody documentation to McCampbell for the following analyses:

- TPHg, TPHd, and TPHmo by EPA Method 8015, VOCs by EPA Method 8260, and PAHs by EPA Method 8310.

The results of the investigation indicated the following:

- In soil gas, eleven VOCs were detected, each below Tier I ESLs, and methane was detected in two soil gas samples, below the lower explosive limit of 5%. Soil gas concentrations were also below the LTCP criteria described in Appendix 4 of the same document.

- In soil, TPHg was not detected, TPHd was detected in only one sample at a concentration of 15 mg/kg, and TPHmo was detected in only two samples at a maximum concentration 160 mg/kg. Metals were generally detected within background ranges; lead was detected in two soil samples at 97 and 150 mg/kg.

- In groundwater, TPHg was not detected above the laboratory reporting limit of 50 µg/L in any of the four samples analyzed. TPHd was detected above the laboratory reporting limit in two of the four samples analyzed at concentrations of 70 µg/L and 290 µg/L. TPHmo was detected above the laboratory reporting limit in each of the four samples analyzed at concentrations ranging from 100 µg/L to 2,800 µg/L.

- No VOCs were detected in groundwater above their respective Tier 1 ESLs. Trace concentrations of t-butyl alcohol (TBA) and PCE were the only VOCs detected in the grab groundwater samples analyzed.

- Acenaphthylene was the only PAH detected in the grab groundwater samples at concentrations ranging from 0.133 µg/L and 0.607 µg/L.

The results of the investigation indicate that soil gas below the elevator, five feet below the slab and directly beneath the slab in areas sampled was only minimally impacted and did not exceed any Tier 1 ESLs. Therefore, the vapor intrusion risk was not considered significant. Soil samples were only minimally impacted. Groundwater beneath the site had concentrations of TPHd did not exceed aquatic habitat screening levels for saltwater eco-toxicity in any borings beneath the building, downgradient of the former USTs. TPHg was not detected in groundwater at any of the November 2016 locations.

3.0 SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION

Langan proposed a supplementary environmental investigation to collect sufficient data to support a no further action request related to the former USTs in our 12 October 2017 *Work Plan for Supplemental Environmental Assessment* (Work Plan). The work plan was conditionally approved by the ACDEH in their 16 November 2017 correspondence titled "*Conditional Work Plan Approval, Fuel Leak Case No. RO0003232 and GeoTracker Global ID T10000009472, 1110 Jackson Street, Oakland CA 94607".* Additional actions requested by ACDEH consisted of the following:

1. Update the previously submitted CSM to include DWR well search.

2. Collect additional soil samples in areas of "obvious contamination, the soil/groundwater interface, and at significant changes in lithology" to define the vertical and horizontal

extent of TPH impacts, including collection of soil samples in the 0 to 5 foot interval for direct contact.

3. Collection of the deeper groundwater sample at least ten feet below the shallow groundwater sample.

4. Advanced an additional boring east of location EB-6 at location EB-13.

Langan implemented the Work Plan between 15 to 17 January 2018. Five borings (EB-9 through EB-13) were advanced to collect soil and groundwater samples at the site. A deeper groundwater sample was attempted for collection at each location. All hydraulically-driven direct push borings were advanced using the dual tube system by a truck-mounted or track-mounted drill rig operated by Gregg Drilling and supervised by Langan. Borings were advanced to depths ranging from 27 to 38 feet bgs and soil cores were visually logged by Langan personnel in general accordance with the Unified Soil Classification System (USCS).

Subsurface conditions consisted mainly of sandy soil with varying amounts silts and clays. Groundwater was measured at each boring location at depths ranging from approximately 19 to 21 feet bgs. No petroleum odor or light non-aqueous phase liquid (LNAPL) was observed during the duration of the investigation.

Soil samples were collected from all five boring locations in accordance with the Geoprobe® DT325 Dual Tube Sampling System Standard Operating Procedure as discussed in the Work Plan. In each boring, two soil samples were collected within the first five feet, and at five foot intervals thereafter (i.e. 10, 15, 20 feet bgs) until groundwater was encountered. Vadose zone samples (i.e. soil above the water table) were collected to assess the presence of a 'bioattenuation zone', as described in the LTCP. The term 'bioattenuation zone' is defined as an area of soil with conditions that support biodegradation of petroleum hydrocarbon vapors. Soil samples were also collected at first encountered groundwater (smear zone) and any noticeable areas of soil staining. Soil samples were labeled based on their location and depth (i.e. a sample collected from EB-9 at 2.5-feet bgs would be labeled "EB-9-2.5").

Groundwater samples were collected from four of the five borings at two discrete depths (shallow and deep). Shallow groundwater was collected from the zone of first encountered groundwater by setting 1-inch temporary pre-packed PVC casing with a 10-foot 0.010-inch milled slotted screen approximately five feet below first encountered groundwater. Shallow groundwater was sampled using a low flow sampling pump. Deep groundwater samples were collected using a hydro-punch groundwater sampler. The hydropunch sampler was advanced

10-feet below the depth of the shallow groundwater sample in collocated boreholes for locations EB-9 and EB-10 and in the same boreholes for locations EB-11 and EB-13. Due to unforeseen difficulties during drilling, Langan was unable to collect a deep groundwater sample at the EB-12 location. Deep groundwater was collected using a disposable bailer through the center of the drill pipe after exposing the screen of the hydropunch at the desired depth. Groundwater samples were labeled based on their location and bottom of sample depth (i.e. a groundwater sample from EB-9 at 28-feet bgs was labeled "EB-9-GW-28").

To avoid cross contamination, all sampling equipment used during the investigation activities was thoroughly cleaned between sample locations and disposable equipment was replaced with new, clean equipment. All borings were backfilled with neat cement grout under the supervision of an Alameda County Public Works grouting inspector and the surface cover was restored in accordance with the Alameda County Public Works Agency's requirements. Surface restoration for EB-10 included the replacement of a section of sidewalk adjacent to the building where drilling had been performed.

Soil cuttings and decontamination rinseate were placed in a 55-gallon drum, sealed and labeled. The drum was stored onsite, pending analytical profiling and proper disposal. After classification, the drum will be transported and disposed of at an appropriate facility..

3.1 Analytical Results

Immediately following collection, groundwater and soil samples were placed in an ice-cooled chest pending delivery to McCampbell Analytical Laboratory (McCampbell), a California-certified laboratory in Pittsburg, California. Soil and groundwater samples were submitted to McCampbell and were analyzed for the following:

- TPHg, TPHd and TPHmo by EPA Modified Method 8015B; and
- VOCs by EPA Method 8260.

The analytical results are presented in Tables 1 and 3 and analytical reports are included as Appendix D.

3.1.1 Soil Results

Soil analytical results were compared to RWQCB 2016 Tier 1 and residential shallow soil ESLs and to LTCP Criteria, Appendix 3, Scenario 3. A summary of the soil analytical results are presented below.

- TPHg was not detected above the laboratory reporting limit in the 34 samples analyzed.
- TPHd was detected in two of 34 samples analyzed at low concentrations of 1.6 and 1.9 mg/kg.
- TPHmo was detected in five of 34 samples at concentrations ranging from 6.8 to 23 mg/kg.
- Detected concentrations of TPHd and TPHmo were below Tier 1 ESLs.
- VOCs were not detected above the laboratory reporting limit in any soil samples collected from EB-9 through EB-13.

Analytical results for soil are presented on Table 1.

3.1.2 Groundwater Results

Groundwater analytical results were compared to RWQCB 2016 ecological ESLs for saltwater eco-toxicity, MCL Priority ESLs, residential and commercial vapor intrusion ESLs and LTCP Groundwater-Specific Criteria, Appendix 3, Scenario 3.

- TPHg was not detected above laboratory reporting limits in any of the 10 samples analyzed.
- TPHd was detected above laboratory reporting limits in seven of 10 samples analyzed at detected concentrations ranging from 67 to 250 µg/L.
- TPHmo was detected above laboratory reporting limits in five of 10 samples analyzed at detected concentrations ranging from 340 to 580 µg/L.
- None of the detected concentrations of TPHd exceed the ecological ESLs for saltwater eco-toxicity screening criteria. Concentrations of TPHd and TPHmo did exceed MCL Priority ESLs in six groundwater samples.
- Low levels of the VOCs chloroform, cis-1,2-dichloroethene, TBA, PCE and TCE were detected above laboratory reporting limits but did not exceed any of the screening criteria.

Analytical results for groundwater are presented on Table 3 and TPHg, TPHd, TPHmo and benzene concentrations are presented on Figure 5.

3.2 Waste Removal and Disposal

All investigation-derived waste was collected in drums pending analysis and proper disposal. A drum sample of soil was collected on 17 January, 2018, and submitted for analysis of TPHg, TPHd, TPHmo, benzene, toluene, ethylbenzene and xylenes (BTEX), and California Title-22 Metals (CAM 17). The waste profile data indicated the soils were non-hazardous waste. The drum was removed under manifest on 22 February 2018 for disposal at the Soil Safe facility in Adelanto, California as non-hazardous waste. Waste disposal documentation is provided in Appendix E.

4.0 CLOSURE REQUIREMENTS UNDER LTCP

The CSWRCB developed a set of guidelines for closure of sites with petroleum impacts deemed to be low risk. These closure criteria are presented in the LTCP (CSWRCB, 2012). These low-threat underground storage tank closure guidelines indicate that closure is appropriate for a site if the following can be demonstrated:

- The unauthorized release is within the service area of a public water system (i.e.; untreated groundwater is not a municipal resource or the community relies on surface water imports);
- The unauthorized release consists only of petroleum chemicals (including oxygenates);
- The unauthorized release has been stopped;
- Free product has been removed to the maximum extent practicable;
- A CSM has been developed;
- Secondary source has been removed to the extent practicable;
- Soil and groundwater have been tested for methyl tert-butyl ether (MTBE), and results have been reported in accordance with Health and Safety Code Section 25296.15 (indicates that results of MTBE tests are known to the RWQCB); and
- Nuisance as defined by Water Code section 13050 does not exist at the site (indicates no nuisance odors or threat to public health and safety).

Additionally, LTCP has media-specific criteria for groundwater, which includes the following minimum criteria:

- The contaminant plume that exceeds water quality objectives is less than 250 feet in length;
- There is no free product;
- The nearest existing water supply or surface water body is greater than 1,000 feet from the from the defined plume boundary; and
- The dissolved concentration of benzene is less than 3,000 µg/L and dissolved concentration of MTBE is less than 1,000 µg/L.

For sites where a release originated and impacted an existing building that is occupied, additional criteria associated with the LTCP are required to be met. Four potential exposure scenarios are described in Appendices 1 through 4 of the LTCP. Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air and be considered low-threat for the vapor-intrusion-to-indoor-air pathway, if site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, or all of the characteristics and criteria of scenarios 4 as applicable.

A bioattenuation zone is defined by the LTCP as an "area of soil with conditions that support biodegradation of petroleum hydrocarbons" (CSWRCB, 2012). Where the characteristics of a bioattenuation zone at a site meet certain criteria, the LTCP specifies a bioattenuation zone factor of 1,000. In other words, petroleum concentrations are conservatively assumed to reduce 1,000-fold when a bioattenuation zone is aerobic and consists of a minimum depth of clean soil. Specifically, the LTCP applies a bioattenuation factor of 1,000 where:

1. There is a minimum of five feet of soil between the soil vapor sample location and the building foundation or site grade;
2. The concentration of TPH (sum of TPHg and TPHd) is less than 100 mg/kg in soil within the bioattenuation zone; and
3. Oxygen in soil vapor in the bioattenuation zone is greater than or equal to 4 percent.

The LTCP also applies a bioattenuation factor where:

1. There is a minimum of five feet of soil between groundwater (i.e., the source of petroleum concentrations to soil vapor) and the proposed or existing building foundation or site grade; and

2. The concentration of TPH (sum of TPHg and TPHd) is less than 100 mg/kg in soil within the bioattenuation zone.

Oxygen concentration data for soil vapor is not necessary in the LTCP when the depth of the column of clean soil between petroleum impacted groundwater and the building foundation is at least five feet and dissolved phase benzene is less than 100 µg/L. The following sections discuss how the site data supports closure under the LTCP.

4.1 Interpretation of Data Supporting NFA

Soil and groundwater samples collected during this and previous environmental explorations indicate that petroleum hydrocarbons and petroleum hydrocarbon related compounds are present in subsurface soil and groundwater at the site. However, only relatively low concentrations appear present beneath the building. Detected concentrations of contaminants do not exceed criteria set forth by the LTCP for both groundwater-specific (Scenario 4) and bioattenuation zone requirements (Scenario 3). Additionally, since light non-aqueous phase liquid (LNAPL) is not present, Scenarios 1 and 2 are also met.

Data collected from explorations conducted at the site since December 2005 indicate that site conditions satisfy the groundwater-specific requirements for LTCP. Groundwater chemical data in downgradient borings (EB-7, EB-8, EB-11 and EB-12) indicate that the TPH plume does not extend beyond the boundary of the site at concentrations above water quality goals, and subsequently is less than 250 feet in length (Figure 5). As noted above, no LNAPL (weathered or unweathered) was observed during drilling and sampling activities. A one mile radius well search was requested and conducted by the DWR indicating that no existing water supply wells are located within a 1,000 foot radius of the boundary of the plume. The DWR well search results are available in Appendix B. Additionally, Lake Merritt, the nearest surface water body, is greater than 1,000 feet downgradient of the boundary of the plume (Figure 3). As shown in Table 2, groundwater samples collected since December 2005 indicate concentrations of benzene and MTBE have not exceeded the LTCP criteria (3,000 and 1,000 µg/L, respectively). Benzene was not detected in any groundwater samples collected beneath the building footprint and was only detected in two samples advanced adjacent or directly through the former UST pits at concentrations of 110 and 320 µg/L. MTBE has not been detected in any soil or groundwater samples collected at the site, which is expected given the age of the former USTs.

Because an existing building lies above the delineated TPH plume at the site, low-threat closure requires the presence of a bioattenuation zone to reduce the potential for vapor intrusion into the building. During our explorations, groundwater was generally observed between 20 and 22 feet bgs. Based on the soil data collected beneath the building between the ground surface and the water table, a bioattenuation zone of up to 20 feet is present beneath the building. Benzene was not detected above the laboratory's reporting limit of 0.5 µg/L in any groundwater samples collected beneath the building and therefore, benzene concentrations do not exceed the LTCP criteria of 3,000 µg/L. Based on the benzene concentrations near the former USTs (110 and 320 µg/L in borings EB-2 and EB-4, respectively), conservatively, a minimum five foot bioattenuation zone beneath the slab of the existing building is required (LTCP, Appendix 3, Scenario 3). Bioattenuation zone samples collected between November 2016 and January 2018 (Table 1) indicate that the sum of TPHg and TPHd detections in vadose zone soil (zero to 20 feet bgs) do not exceed the limit of 100 mg/kg in any soil samples collected beneath the building.

4.2 Justification for Closure

The four former USTs that released TPH into the subsurface have been physically removed from the site. Remedial over-excavations were completed following each UST removal to the extent feasible, without compromising the integrity of the building. Groundwater impacts related to the USTs have been delineated in borings advanced downgradient of the former USTs. The extent of the plume exceeding ESLs for ecological toxicity is less than 250 feet in length. Additionally, soil impacts are limited to the locations of the former USTs, and soil gas and sub-slab samples indicate that there is no significant risk of vapor intrusion to site users or residents. Furthermore, the presence of a bioattenuation zone has been confirmed beneath the building and will attenuate potential petroleum hydrocarbon vapors present in the former UST area.

The remedial activities have successfully removed the primary source of petroleum hydrocarbons to groundwater (the former USTs). The sampling data indicate that no VOCs, TPHg, TPHmo, or PAH concentrations were detected in groundwater exceeding ecological screening levels beyond 250 feet downgradient of the former USTs.

The following table summarizes the LTCP guidelines and describes how the soil and groundwater data collected at the site and analytical results support closure under the LTCP guidelines.

LTCP Guidelines	
Guideline	**Justification for Site Closure**
The unauthorized release is within the service area of a public water system.	The unauthorized release is within the downtown of Oakland, which is served by the East Bay Municipal Utility District water system.
The unauthorized release consists only of petroleum (including oxygenates).	Former USTs #1, #2, and #3 all contained gasoline and UST #4 contained diesel fuel. Therefore, the only releases at the site have been related to petroleum hydrocarbons.
The unauthorized release has been stopped.	The unauthorized releases have been stopped through the physical removal of the four USTs.
Free product has been removed to the maximum extent possible.	Free product has not been detected at the site.
A CSM has been developed.	A conceptual site model has been prepared and is provided in Appendix A.
Secondary source has been removed to the extent practicable.	Secondary sources include residual impacts in soil and shallow groundwater. Soil immediately around and beneath the former USTs was removed to the extent practical when the USTs were removed. Given the age of the former USTs (likely over 100 years old) groundwater concentrations are likely stable or attenuating naturally. Therefore additional source removal action beyond natural attenuation is not necessary.
Soil and groundwater have been tested for MTBE, and results have been reported in accordance with Health and Safety Code section 25296.15 (indicates that results of MTBE tests are known to the Regional Water Board).	Soil and groundwater has been tested for MTBE. MTBE was not detected in any soil or groundwater samples (Tables 1 and 4).
Nuisance as defined by Water Code section 13050 does not exist at the site (indicates no nuisance odors or threat to public health and safety).	Groundwater impacts are not considered to be a nuisance due to the lack of contact with human or other ecological receptors.
The contaminant plume that exceeds water quality objectives is less than 1,000 feet in length.	The contaminant plume that exceeds water quality objectives is less than 250 feet in length. Figure5 present TPHg, TPHd, TPHmo, and benzene groundwater results.
The nearest existing water supply or surface water body is greater than 1,000 feet from the from the defined plume boundary.	The nearest surface water body (Lake Merritt) is 1,200 feet east of the plume boundary. No groundwater resources are currently used or anticipated to be used as a drinking water supply within 1,000 feet of the plume boundary.

LTCP Guidelines	
Guideline	**Justification for Site Closure**
The dissolved concentration of benzene is less than 3,000 µg/L and dissolved concentration of MTBE is less than 1,000 µg/L.	Benzene was not detected in any groundwater samples collected beneath the building. Benzene was only detected in groundwater in borings EB-2 and EB-4 at concentrations of 110 and 320 µg/L, respectively. Borings EB-2 and EB-4 were advanced through the former UST pit and directly adjacent to a former UST. MTBE has not been detected in any of the groundwater samples collected at the site to date.

The LTCP describes conditions, including bioattenuation zones, required to be met to assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks. Where benzene concentrations are less than 100 µg/L in groundwater, the following guidelines for a bioattenuation zone were evaluated:

Guideline	**Justification for Site Closure**
The bioattenuation zone shall be a continuous zone that provides a separation of at least five vertical feet between the dissolved phase benzene and the foundation of the existing building.	Table 1 summarizes soil samples collected within the proposed bioattenuation zone (zero to fifteen feet below the foundation of the building). Benzene has not been detected in soil samples collected within the bioattenuation zone above the laboratory reporting limit of 0.0050 mg/kg.
The bioattenuation zone shall contain Total TPH (TPHg and TPHd combined) less than 100 mg/kg throughout the entire depth of the bioattenuation zone.	Table 1 summarized soil samples collected with the proposed bioattenuation zone (zero to fifteen feet below the foundation of the building). The maximum concentration of Total TPH (TPHg and TPHd combined) detected within the proposed bioattenuation zone was from boring EB-6 at a depth of 4.5 feet bgs and at a concentration of 15 mg/kg.

Based on the results of our recent investigations and the preceding environmental investigations at the site, it is Langan's opinion that the residual petroleum and VOC contamination at the site is attributable to the former USTs, which were removed in 2016. The residual hydrocarbon contamination exceeding the ESLs in soil and groundwater appear to be limited in extent on the following basis:

1. The former USTs and to the extent practical the secondary source of petroleum were removed from the site by excavation; effectively stopping any further release of petroleum to the environment.

2. The results of the grab groundwater sampling indicate that TPH and VOC concentrations exceeding ecological saltwater toxicity ESLs are limited to within the former UST vicinity. TPH and VOCs exceeding drinking water standards as MCLs rapidly decrease in concentrations across the site, suggesting high rates of bioattenuation. The predominantly sandy soils would facilitate to a well oxygenated environment, consistent with conditions that promote biodegradation of TPH.

3. The results of the confirmation soil sampling also indicates that TPH,VOC and PAH concentrations exceeding Tier I ESLs in soil are limited to the immediate vicinity of the former USTs.

4. Soil gas and sub-slab soil gas sampling indicates that vapor intrusion is not a significant risk.

In our opinion, the data collected during our investigations support a no further action determination for the site with regards to the former USTs under the LTCP. Langan therefore respectfully requests administrative case closure be granted under the Water Board LTCP from ACDEH.

6.0 LIMITATIONS

Activities undertaken as part of this report were conducted solely on behalf of EBALDC to assess and address the presence of known contaminants of concern, and no other party should rely on this information without the express, written permission of Langan. Langan assumes no responsibility or liability for errors in the information used or statements from sources other than those of Langan. Unless otherwise referenced, conclusions and recommendations in this report concerning the site are those professional opinions of the Langan personnel involved with the project, and this report should not be considered a legal interpretation of existing environmental regulations. Opinions presented herein apply to site conditions existing at the time of Langan's assessment, and cannot necessarily be taken to apply to site changes or conditions of which we are not aware and have not had the opportunity to evaluate.

7.0 REFERENCES

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TABLES

Table 1
Total Petroleum Hydrocarbon and Volatile Organic Compounds Analytical Results in Soil
1110 Jackson Street
Oakland, California

Sample ID	Depth	Date Sampled	Sample Type	Sample Location	TPHg	TPHd	TPHmo	VOCs														
								Benzene	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	Isopropyl-benzene	p-Isopropyl-toulune	Methylene chloride	Naph-thalene	n-Propyl-benzene	PCE	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Toulene	Xylenes	MTBE	All Other VOCs
	(feet)				(mg/kg)																		
Tank Pit Samples																							
~~9669-T1-C-9~~	~~9~~	~~04/15/16~~	~~Confirmation~~	~~T1 Bottom~~	**394**	**3.24**	~~6.90~~	~~<4.6~~	~~0.479~~	~~<4.6~~	~~<4.6~~	~~<4.6~~	~~<4.6~~	~~<4.6~~	~~<4.6~~	~~0.532~~	~~<4.6~~	~~<4.6~~	~~<4.6~~	~~<4.6~~	~~<9.20~~	~~<4.6~~	~~<4.6 <37~~
9669-T1-C-12	12	05/04/16	Confirmation	T1 Bottom	**315**	<3.3	41.80	<2.7	<2.7	0.273	0.293	0.350	<2.7	<11	0.900	0.559	0.32	0.735	<2.7	0.449	1.33	<2.7	<0.270-<5.6
9669-T1-EW-8	8	05/04/16	Confirmation	T1 Sidewall	**370**	<1.70	8.98	<3	0.318	<3	0.624	<3	<3	<12	<3	0.362	<3	0.758	<3	0.805	3.05	<3	<0.300-<6
9669-T1-WW-8	8	05/04/16	Confirmation	T1 Sidewall	**471**	<6.6	26.0	0.643	<2.8	0.417	0.392	<2.8	0.555	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	0.75	1.46	<2.8	<0.280 -<2.8
9669-T1-NW-8	8	05/04/16	Confirmation	T1 Sidewall	**661**	<13	135	<4.7	0.530	0.744	<4.7	<4.7	<4.7	<19	<4.7	0.659	<4.7	<4.7	<4.7	<4.7	<9.4	<4.7	<4.7-<38
9669-P1-4	4	04/22/16	Confirmation	T1 Pipe Trench	<0.10	<3.3	<6.6	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050-<0.100
~~9669-T2-C-9~~	~~9~~	~~04/15/16~~	~~Confirmation~~	~~T2 Bottom~~	**491**	~~19.0~~	~~4.04~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<9.20~~	~~<18~~	~~<9.20~~	~~<9.20 <73~~
9669-T2-C-12.5	12.5	05/04/16	Confirmation	T2 Bottom	**6,320**	<3.3	34.4	<23	5.64	6.25	<23	10.7	2.62	<91	7.77	13	<23	5.41	<23	<23	<46	<23	<23-<180
9669-T2-EW-6	6	05/04/16	Confirmation	T2 Sidewall	**788**	<3.3	<6.6	<2.30	0.244	<2.3	<2.3	<2.3	<2.3	<9.2	0.626	<2.3	<2.3	<2.3	<2.3	<2.3	<4.6	<2.3	<2.3-<4.6
9669-T2-WW-8	8	05/04/16	Confirmation	T2 Sidewall	**178**	<3.3	<6.6	<2.20	<2.20	<2.20	<2.20	<2.20	<2.20	<8.8	<2.20	0.261	<2.20	<2.20	<2.20	<2.20	<4.4	<2.20	<2.2 - <18
9669-T2-SW-8	8	05/04/16	Confirmation	T2 Sidewall	**144**	<3.3	4.19	<2.30	<2.30	<2.30	<2.30	<2.30	<2.30	<9.3	<2.30	0.236	<2.30	<2.30	<2.30	<2.30	<4.6	<2.30	<2.3 - <19
9669-P2-3.3	3.3	04/22/16	Confirmation	T2 Pipe Trench	<0.099	<3.3	<6.6	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0065	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050 - <0.040
~~9669-T3-C-8~~	~~8~~	~~04/15/16~~	~~Confirmation~~	~~T3 Bottom~~	**2,480**	~~<66~~	~~<130~~	~~<22~~	~~4.03~~	~~<22~~	~~2.50~~	~~<22~~	~~2.87~~	~~<90~~	~~4.59~~	~~3.54~~	~~<22~~	~~<22~~	~~6.17~~	~~<22~~	~~9.28~~	~~<22~~	~~<22 - <180~~
9669-T3-C-12	12	05/04/16	Confirmation	T3 Bottom	67.80	<3.3	<6.6	<0.240	<0.240	0.0639	<0.240	<0.240	0.0868	<0.960	0.0743	0.0361	<0.240	0.106	0.157	<0.240	0.062	<0.240	<0.240 - <19
9669-T3-WW-8	8	05/04/16	Confirmation	T3 Sidewall	<4.90	<3.3	<6.6	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.980	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.490	<0.250	<0.250 - <2
9669-T3-SW-6.5	6.5	05/04/16	Confirmation	T3 Sidewall	**1,330**	<330	<670	<23	<23	10.1	<23	2.55	18.6	<91	9.0	5.4	<23	78.6	36.9	<23	6.64	<23	<23 - <180
9669-T3-NW-8	8	05/04/16	Confirmation	T3 Sidewall	6.96	<3.3	<6.6	<0.210	0.0243	<0.210	<0.210	<0.210	<0.210	<0.860	<0.210	<0.210	<0.210	0.0617	<0.210	<0.210	<0.430	<0.210	<0.21 - <1.7
9669-T3-EW-9	9	05/04/16	Confirmation	T3 Sidewall	<4.5	<3.3	<6.6	<0.230	<0.230	<0.230	<0.230	<0.230	<0.0230	<0.910	<0.0230	<0.0230	<0.0230	<0.0230	<0.0230	<0.0230	<0.450	<0.0230	<0.0230 - <18
9669-P3-4	4	04/22/16	Confirmation	T3 Pipe Trench	<0.10	<3.3	<6.70	<40	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0060	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050 - <0.040
~~9669-S-10~~	~~10~~	~~11/23/16~~	~~Confirmation~~	~~T4 Bottom~~	--	**2,800**	--	~~<0.250~~	--	--	~~<0.250~~	--	--	--	~~3.1~~	--	--	--	--	~~<.250~~	~~<0.250-<0.30~~	~~<0.250~~	--
~~9669-N-10~~	~~10~~	~~11/23/16~~	~~Confirmation~~	~~T4 Bottom~~	--	**1,400**	--	~~<0.046~~	--	--	~~<.046~~	--	--	--	~~0.71~~	--	--	--	--	~~<.046~~	~~<0.046~~	~~<0.046~~	--
9669-C-14	14	12/02/16	Confirmation	T4 Bottom	--	**10,000**	--	<.5	--	--	<0.500	--	--	--	6.9	--	--	--	--	<.5	<0.500 - <0.580	<0.500	--
9669-C-17.5	17.5	12/02/16	Confirmation	T4 Bottom	--	**11,000**	--	<0.0097	--	--	<0.0097	--	--	--	<0.010	--	--	--	--	<0.0097	<0.0097	<0.0097	--
9669-C-18.5	18.5	12/02/16	Confirmation	T4 Bottom	--	**1,100**	--	<0.0097	--	--	<0.0097	--	--	--	<0.340	--	--	--	--	<0.0097	<0.0097	<0.0097	--
9669-SW-9	9	12/02/16	Confirmation	T4 Sidewall	--	8.9	--	<0.0049	--	--	<0.0049	--	--	--	<0.0049	--	--	--	--	<.0049	<0.0049	<0.0049	--
9669-EW-9	9	12/02/16	Confirmation	T4 Sidewall	--	1.7	--	<0.0049	--	--	<0.0049	--	--	--	<0.0049	--	--	--	--	<.0049	<0.0049	<0.0049	--
9669-WW-8.5	8.5	12/02/16	Confirmation	T4 Sidewall	--	**610**	--	<0.500	--	--	<0.500	--	--	--	6.4	--	--	--	--	<0.500	<0.500 - <0.530	<0.500	--
9669-NW-9	9	12/02/16	Confirmation	T4 Sidewall	--	**4,400**	--	<1	--	--	<1	--	--	--	16	--	--	--	--	<1	<1-<1.2	<1	--
Boring Samples																							
SB-1-12	12	12/30/05	BZ	Boring	<10	<10	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 - <0.002	<0.005	<0.002 - <0.020
SB-2-12	12	12/30/05	BZ	Boring	<10	<10	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 - <0.002	<0.005	<0.002 - <0.020
SB-3-12	12	12/30/05	BZ	Boring	<10	<10	<10	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004 - <0.002	<0.005	<0.002 - <0.020
EB-2-13	13	08/11/16	TZ	Boring	**200**	**18**	5.50	<0.10	0.14	0.13	<0.10	0.14	--	<0.10	0.39	0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
EB-2-15.5	15.5	08/11/16	TZ	Boring	**5,000**	**830**	13.0	<2.0	2.3	2.5	<2.0	4.2	--	<2.0	5.3	5.1	<2.0	<2.0	<2.0	<2	<2.0	<2	<2
EB-2-22.5	22.5	08/11/16	TZ/SZ	Boring	**2,100**	**370**	14.0	<0.10	0.12	0.18	0.52	0.33	--	<0.10	0.12	0.33	<0.10	0.55	0.25	<0.10	0.31	<0.10	<0.10
EB-5-4.5	4.5	11/16/16	BZ	Boring	< 1.0	< 1.0	< 5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-5-8.5	8.5	11/16/16	BZ	Boring	< 1.0	< 1.0	< 5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-6-4.5	4.5	11/16/16	BZ	Boring	< 1.0	15	160	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-6-8.5	8.5	11/16/16	BZ	Boring	< 1.0	< 1.0	< 5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-7-4.5	4.5	11/16/16	BZ	Boring	< 1.0	< 1.0	< 5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-7-8.5	8.5	11/16/16	BZ	Boring	< 1.0	< 1.0	< 5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-8-4.5	4.5	11/16/16	BZ	Boring	< 1.0	< 1.0	5.1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-8-8.5	8.5	11/16/16	BZ	Boring	< 1.0	< 1.0	< 5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10

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Table 1
Total Petroleum Hydrocarbon and Volatile Organic Compounds Analytical Results in Soil
1110 Jackson Street
Oakland, California

Sample ID	Depth	Date Sampled	Sample Type	Sample Location	TPHg	TPHd	TPHmo	VOCs														
								Benzene	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	Isopropyl-benzene	p-Isopropyl-toulune	Methylene chloride	Naph-thalene	n-Propyl-benzene	PCE	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Toulene	Xylenes	MTBE	All Other VOCs
EB-9.2.5	2.5	1/16/18	BZ	Boring	<1.0	<1.0	7.3	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-9-5	5.0	1/16/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-9-5.5	5.5	1/16/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-9-10	10.0	1/16/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-9-15	15.0	1/16/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-9-18.5	18.5	1/16/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-9-20	20.0	1/16/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-9-21	21.0	1/16/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-10-2.5	2.5	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-10-5	5.0	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-10-10	10.0	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-10-15	15.0	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-10-18.5	18.5	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-10-20	20.0	1/15/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-10-23.5	23.5	1/15/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-11-2.5	2.5	1/15/18	BZ	Boring	<1.0	<1.0	11	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-11-5	5.0	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-11-10	10.0	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-11-15	15.0	1/15/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-11-20	20.0	1/15/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-11-21.5	21.5	1/15/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-12-2.5	2.5	1/16/18	BZ	Boring	<1.0	1.9	20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-12-5	5.0	1/17/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-12-10	10.0	1/17/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-12-13	13.0	1/17/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-12-15	15.0	1/17/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-12-20	20.0	1/17/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-12-23	23.0	1/17/18	SZ	Boring	<1.0	<1.0	6.8	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-13-2.5	2.5	1/17/18	BZ	Boring	<1.0	1.6	23	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-13-5	5.0	1/17/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-13-10	10.0	1/17/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-13-15	15.0	1/17/18	BZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10

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Table 1
Total Petroleum Hydrocarbon and Volatile Organic Compounds Analytical Results in Soil
1110 Jackson Street
Oakland, California

Sample ID	Depth	Date Sampled	Sample Type	Sample Location	TPHg	TPHd	TPHmo	VOCs														
								Benzene	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	Isopropyl-benzene	p-Isopropyl-toulune	Methylene chloride	Naph-thalene	n-Propyl-benzene	PCE	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Toulene	Xylenes	MTBE	All Other VOCs
EB-13-20	20.0	1/17/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
EB-13-21	21.0	1/17/18	SZ	Boring	<1.0	<1.0	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040 - <0.10
Tier 1 ESLs					100	230	5,100	0.044	NE	NE	1.4	NE	NE	0.077	0.033	NE	0.42	NE	NE	2.9	2.3	0.023	Various
Residential ESLs					740	230	11,000	0.23	NE	NE	5.1	NE	NE	1.9	3.3	NE	0.6	NE	NE	970	560	42	Various
Bioattenuation Zone LTCP Criteria[1]					Combined 100		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Notes:
1 - Bioattenuation zone is a continuous zone of at least 5 feet vertically between the dissolved phase Benzene (i.e. groundwater) and the foundation of existing or potential building; and containing Total TPH (TPHg and TPHd combined) less than 100 mg/kg throughout the entire depth of the bioattenuation zone.
< 4.6 - Analyte was not detected above the laboratory reporting limit (4.6 mg/kg)
0.900 - Shaded detections are at or above the established Tier 1 ESL
Bold values indicate an exceedance of the Tier 1 ESL
~~394~~ - sample over-excavated
-- - Not available
BZ - Saples collected within the bioattenuation zone (above groundwater level)
ESL - Environmental screening level
mg/kg - Milligrams per kilogram
MTBE - Methyl-tertiary-butyl ether
NE - Environmental Screening Level not established
NA - Not analyzed
PCE - Tetrachloroethene
SZ - Soil samples collected in the smear or saturated zone (at or below groundwater level)
TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015B
TPHd - Total Petroleum Hydrocarbons as Diesel Range, EPA Method 8015B
TPHmo - Total Petroleum Hydrocarbons as Motor Oil, EPA Method 8015B
TZ - Samples collected from borings advanced within or adjacent to the footprint of the former underground storage tanks
Various - Analysis of multiple compounds with various screening criteria
VOCs - Volatile organic compounds, EPA Method 8260B
Tier 1 ESLs - RWQCB Environmental Soil Screening Levels based on a generic conceptual site model designed for use at most sites. The Tier 1 ESL summary table is generally derived from the most conservative ESL for each compound (February 2016 [Rev.3])
Residential ESLs presented in San Francisco Bay Regional Water Quality Control Board, Environmental Screening Level, Table S-1, Any Land Use: Any Soil Depth Exposure
Bioattenuation Zone LTCP criteria presented in Califonia State Water Resource Control Board Low-Threat Underground Storage Tank Case Closure Policy, Appendix 3, Scenario 3 - Dissolved Phase Benzene Concentrations in Groundwater, Figure A

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Table 2
Metal Analytical Results in Soil
1110 Jackson Street
Oakland, California

Sample ID	Depth	Date Sampled	Sample Location	Cadmium	Chromium	Lead	Nickel	Zinc
	(feet)			(mg/kg)				
Tank Pit Samples								
~~9669-T1-C-9~~	~~9~~	~~04/15/16~~	~~T1 Bottom~~	~~<0.93~~	~~67.3~~	~~3.9~~	~~40.1~~	~~34.9~~
9669-T1-C-12	12	05/04/16	T1 Bottom	<0.83	69.4	1.7	0.83	1.7
9669-T1-EW-9	9	05/04/16	T1 Sidewall	<0.91	47.9	3.7	32.5	31.1
9669-T1-WW-8	8	05/04/16	T1 Sidewall	<.88	45.7	3.3	32.5	27.2
9669-T1-NW-8	8	05/04/16	T1 Sidewall	<0.93	49.3	3.34	32.1	26.5
9669-P1-4	4	04/22/16	T1 Pipe Trench	<0.99	41.4	2.4	23.2	20.4
~~9669-T2-C-9~~	~~9~~	~~04/15/16~~	~~T2 Bottom~~	~~<0.83~~	~~58.1~~	~~7.9~~	~~35.4~~	~~52.6~~
9669-T2-C-12.5	12.5	05/04/16	T2 Bottom	<0.87	61.6	2.4	47.2	22.5
9669-T2-EW-6	6	05/04/16	T2 Sidewall	<0.93	69.3	4.0	42.5	26.9
9669-T2-WW-8	8	05/04/16	T2 Sidewall	<0.88	46.4	3.2	32.2	26.0
9669-T2-SW-8	8	05/04/16	T2 Sidewall	<0.94	63.0	1.9	0.94	25.3
9669-P2-3.3	3.3	04/22/16	T2 Pipe Trench	<1.0	36.4	2.4	15.7	20.6
~~9669-T3-C-8~~	~~8~~	~~04/15/16~~	~~T3 Bottom~~	~~<0.88~~	~~62.5~~	~~3.7~~	~~40.0~~	~~30.5~~
9669-T3-C-12	12	05/04/16	T3 Bottom	<0.82	58.7	2.9	40.4	21
9669-T3-WW-8	8	05/04/16	T3 Sidewall	<0.90	56.7	4	32.8	28
9669-T3-SW-6.5	6.5	05/04/16	T3 Sidewall	<0.83	46.8	17.1	30.0	32
9669-T3-NW-8	8	05/04/16	T3 Sidewall	<.97	57.1	3.7	34.9	28.0
9669-T3-EW-9	9	05/04/16	T3 Sidewall	<0.91	51.9	3.3	33.4	30.4
9669-P3-4	4	04/22/16	T3 Pipe Trench	<0.97	37.0	4.2	16.6	25.8
Boring Samples								
SB-1-12	12	12/30/05	Boring	<2	63	3	40	20
SB-2-12	12	12/30/05	Boring	<2	48	<3	35	18
SB-3-12	12	12/30/05	Boring	<2	66	<3	33	20
EB-2-13	13	08/11/16	Boring	<0.25	55	2.4	48	24
EB-2-15.5	15.5	08/11/16	Boring	<0.25	45	1.9	36	22
EB-2-22.5	22.5	08/11/16	Boring	<0.25	110	2.3	44	26
EB-5-4.5	4.5	11/16/16	Boring	< 0.25	38	3	19	18
EB-5-8.5	8.5	11/16/16	Boring	< 0.25	50	3.7	38	30
EB-6-4.5	4.5	11/16/16	Boring	< 0.25	36	**150**	37	78
EB-6-8.5	8.5	11/16/16	Boring	< 0.25	49	3.3	34	26
EB-7-4.5	4.5	11/16/16	Boring	< 0.25	36	9.4	18	18
EB-7-8.5	8.5	11/16/16	Boring	< 0.25	69	4.4	48	34
EB-8-4.5	4.5	11/16/16	Boring	< 0.25	38	**97**	20	98
EB-8-8.5	8.5	11/16/16	Boring	< 0.25	70	4.2	49	32
Background [Metal] in Bay Area Soils*				0.27-3.3	10-142	4.8-65	16-144	33-282
Tier 1 ESLs				39	NE	80	86	2,300
ESL - Residential Land Use[1]				750	4.0	23	6.7	0.78

Notes:
ESL - Environmental Screening Level
mg/kg - Milligrams per kilogram
< 0.93 - Analyte was not detected above the laboratory reporting limit (0.93 mg/kg)
Bold values indicate an exceedance of the Tier 1 ESL
~~<0.93~~ - sample over-excavated
*Background concentration ranges of metals in Bay Area soils, Appendix A, Table A-2 from Environmental Resources Management. *Feasibility Study, Hookston Station, Pleasant Hill, California.* July 2006
NE - Environmental screening level not established
Tier 1 ESLs - RWQCB Environmental Soil Screening Levels based on a generic conceptual site model designed for use at most sites. The Tier 1 ESLs Residential [1] - Water Board Environmental Screening Level from Regional Water Quality Control Board Screening for Environmental Concerns at Contaminated Sites (Table A-1) December 2013.

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Table 3
Polycyclic Aromatic Hydrocarbon Results in Soil
1110 Jackson Street
Oakland, California

Sample ID	Depth	Date Sampled	Sample Location	PAHs																
				Acenaphthylene	Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perlyene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene
	(feet)			mg/kg																
Tank Pit Samples																				
~~9669-T1-C-9~~	~~9~~	~~04/15/16~~	T1 Bottom	~~<0.0089~~	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	**<0.0660**	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	~~<0.014~~	~~<0.0660~~	~~<0.0660~~	~~<0.014~~	~~0.220~~	**~~0.356~~**	**~~0.0335~~**	~~<0.0660~~	~~<0.0660~~
9669-P1-4	4	04/22/16	T1 Pipe Trench	<0.0033	<0.0033	<0.0033	0.00037	0.00031	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0033	<0.0033	<0.0033
9669-T1-EW-8	8	05/04/16	T1 Sidewall	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.00063	<0.0033	0.0259	0.0133	0.0257	0.00056	<0.0033
9669-T1-C-12	12	05/04/16	T1 Bottom	<0.0033	0.00097	<0.0033	0.0016	0.00069	0.00058	<0.0033	0.00057	0.0024	<0.0033	0.00087	0.003	<0.0033	0.342	**0.701**	**0.426**	0.0037	0.0021
9669-T1-WW-8	8	05/04/16	T1 Sidewall	<0.0033	0.0027	0.00077	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.00086	<0.0033	0.00091	0.0064	<0.0033	0.125	0.0389	**0.121**	0.0034	0.0013
9669-T1-NW-8	8	05/04/16	T1 Sidewall	<0.0033	0.0056	0.00096	0.0044	0.0033	0.0033	0.0008	<0.0033	0.0067	<0.0033	0.0036	0.0129	<0.0033	0.154	0.154	**0.068**	0.0193	0.0069
~~9669-T2-C-9~~	~~9~~	~~04/15/16~~	T2 Bottom	~~<0.066~~	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	**~~<0.0660~~**	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	**~~<0.0660~~**	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	~~0.132~~	~~0.238~~	**~~0.220~~**	~~<0.0660~~	~~<0.0660~~
9669-P2-3.3	3.3	04/22/16	T2 Pipe Trench	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033
9669-T2-EW-6	6	05/04/16	T2 Sidewall	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0155	0.0285	0.0142	<0.0033	<0.0033
9669-T2-C-12.5	12.5	05/04/16	T2 Bottom	<0.0033	0.0062	<0.0033	0.001	<0.0033	<0.0033	<0.0033	<0.0033	0.0013	<0.0033	0.0011	0.0191	<0.0033	1.86	**3.56**	**2.58**	0.007	0.0016
9669-T2-WW-8	8	05/04/16	T2 Sidewall	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0357	0.0642	**0.0333**	0.00047	<0.0033
9669-T2-SW-8	8	05/04/16	T2 Sidewall	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.00061	<0.0033	0.0524	0.0956	**0.0538**	0.00041	<0.0033
~~9669-T3-C-8~~	~~8~~	~~04/15/16~~	T3 Bottom	~~<0.066~~	~~0.0242~~	~~<0.0660~~	~~<0.0660~~	**~~<0.0660~~**	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	~~<0.0660~~	**~~<0.066~~**	~~<0.0660~~	~~0.0728~~	~~<0.066~~	~~2.280~~	**~~4.130~~**	**~~1.960~~**	~~0.0346~~	~~<0.0660~~
9669-P3-4	4	04/22/16	T3 Pipe Trench	<0.0033	<0.0033	<0.0033	<0.0033	0.00038	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033
9669-T3-WW-8	8	05/04/16	T3 Sidewall	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.00050	<0.0033	<0.0033	<0.0033
9669-T3-C-12	12	05/04/16	T3 Bottom	<0.0033	0.0037	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0121	<0.0033	0.124	0.242	**0.0913**	0.0065	<0.0033
9669-T3-SW-6.5	6.5	05/04/16	T3 Sidewall	<0.066	0.0245	<0.066	<0.066	**<0.066**	<0.066	<0.066	<0.066	<0.066	**<0.066**	<0.066	0.0969	<0.066	1.97	**3.33**	**0.724**	0.0389	<0.066
9669-T3-NW-8	8	05/04/16	T3 Sidewall	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0041	0.0066	0.0018	<0.0033	<0.0033
9669-T3-EW-9	9	05/04/16	T3 Sidewall	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.00082	0.0014	0.00058	<0.0033	<0.0033
9669-C-17.5	17.5	12/02/16	T4 Bottom	<0.670	<0.340	0.068	**0.800**	**0.100**	**0.280**	0.260	0.049	0.045	**0.130**	0.830	0.110	**0.170**	–	–	**<0.34**	0.290	1
9669-C-18.5	18.5	12/02/16	T4 Bottom	<0.670	<0.340	0.078	**0.170**	**0.078**	**0.200**	<0.067	0.170	<0.034	**0.160**	0.710	<0.067	<0.034	–	–	**<0.34**	.190	1
Boring Samples																					
EB-5-4.5	4.5	11/16/16	Boring	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
EB-5-8.5	8.5	11/16/16	Boring	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
EB-6-4.5	4.5	11/16/16	Boring	<0.10	<0.10	<0.10	0.10	**< 0.10**	<0.10	<0.10	<0.10	< 0.10	**<0.10**	0.31	<0.10	<0.10	<0.10	0.24	<0.0050	0.58	0.26
EB-6-8.5	8.5	11/16/16	Boring	<0.0050	<0.0050	<0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	< 0.0050
EB-7-4.5	4.5	11/16/16	Boring	<0.0050	<0.0050	<0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	< 0.0050
EB-7-8.5	8.5	11/16/16	Boring	<0.0050	<0.0050	<0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	< 0.0050
EB-8-4.5	4.5	11/16/16	Boring	<0.0050	<0.0050	<0.0050	0.0078	0.0061	<0.0050	<0.0050	<0.0050	0.0081	<0.0050	0.011	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	0.0056	0.013
EB-8-8.5	8.5	11/16/16	Boring	<0.0050	<0.0050	<0.0050	< 0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.0050	< 0.0050
Tier 1 ESLs				13	3	2.8	0.16	0.016	0.16	2.5	1.6	3.8	0.016	60	8.9	0.16	NE	0.25	0.033	11	85

Notes:
NE - Environmental Screening Level not established
NA - Not applicable
mg/kg - Milligrams per kilogram
PAHs - Polycyclic aromatic hydrocarbons
<0.0033 - Analyte was not detected above the laboratory reporting limit (0.0033 mg/kg)
~~<0.0089~~ - sample over-excavated
Bold - Detected concentration is at or above the established regulatory environmental screening level
– - Not available/analyzed
Tier 1 ESLs - RWQCB Environmental Soil Screening Levels based on a generic conceptual site model designed for use at most sites. The Tier 1 ESL summary table is generally derived from the most conservative ESL for each compound (February 2016 [Rev.3])

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Table 4
Non-Metal Analytical Results in Grab-Groundwater
1110 Jackson Street
Oakland, California

Sample ID	Date Sampled	TPHg	TPHd	TPHmo	VOCs																				PAHs				
					Acetone	Benzene	2-Butanone	sec-Butyl benzene	TBA	Chloroform	cis-1,2-DCE	cis-1,2-Dichloro-propane	Ethyl-benzene	Isopropyl-benzene	4-Isopropyl toluene	MTBE	Naph-thalene	n-Propyl benzene	PCE	TCE	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Toluene	Xylenes, Total	All Other VOCs	Acenaphthylene	Benzo (b) flouranthene	Benzo (k) flouranthene	Dibenzo (a,h) anthracene	All Other PAHs [1]
		(µg/L)																											
SB-1-GW1	12/30/05	<50	<50	<100	--	<0.50	--	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	--	<0.50-<2	--	--	--	--	--
SB-2-GW2	12/30/05	<50	<50	<100	--	<0.50	--	<1.0	<10	<1.0	<1.0	<1.0	<0.50	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	--	<0.50-<2	--	--	--	--	--
SB-3-GW3	12/30/05	<50	<50	<100	--	<0.50	--	<1.0	<10	<1.0	<1.0	<1.0	<0.50	<1.0	--	<1.0	<1.0	<1.0	4.1	4.1	<1.0	<1.0	<0.50	--	<0.50-<2	--	--	--	--	--
EB-1-GW	08/11/16	1,600	**3,200**	250	<50	<2.5	<10	<2.5	<10	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<1.0 - <10	--	--	--	--	--
EB-2-GW	08/11/16	**30,000**	**55,000**	<2,500	630	320	81	23	<50	<12	<12	<12	**740**	150	<12	<12	100	110	<12	<12	290	92	<12	**430**	<5.0 - <50	--	--	--	--	--
EB-3-GW	08/11/16	<50	<100	<500	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-4-GW	08/11/16	**16,000**	**2,300**	520	<100	110	<20	14	<20	<5.0	5.5	5.5	**250**	100	8.3	<5.0	7.9	64	<5.0	<5.0	19	<5.0	<5.0	27	<2.0 - <100	--	--	--	--	--
EB-5-GW	11/17/16	<50	<50	420	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	< 0.0050	<0.0250	<0.0250	<0.0500	<0.0250 - <0.0500
EB-6-GW	11/17/16	<50	290	2,800	<10	<0.50	<2.0	<0.50	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	0.607	<0.0250	<0.0250	<0.0500	<0.0250 - <0.0500
EB-7-GW	11/17/16	<50	<100	520	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	0.161	<0.0250	<0.0250	<0.0500	<0.0250 - <0.0500
EB-8-GW	11/17/16	<50	70	100	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	0.133	<0.0250	<0.0250	<0.0500	<0.0250 - <0.0500
EB-9-GW-28	1/16/18	<50	190	330	<10	<0.50	<2.0	<0.50	3.8	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-9-GW-38	1/16/18	<50	160	580	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-10-GW-25	1/15/18	<50	<50	<250	<10	<0.50	<2.0	<0.50	<2.0	4.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-10-GW-35	1/15/18	<50	250	500	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-11-GW-25	1/15/18	<50	90	<250	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	0.67	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-11-GW-35	1/15/18	<50	<50	<250	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-12-GW-27	1/17/18	<50	110	<250	<10	<0.50	<2.0	<0.50	<2.0	<0.50	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	3.7	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
DUP1-2018-01-17	1/17/18	<50	180	<250	<10	<0.50	<2.0	<0.50	<2.0	<0.50	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.58	4.4	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-13-GW-25	1/17/18	<50	140	420	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
EB-13-GW-35	1/17/18	<50	67	340	<10	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 - <10	--	--	--	--	--
ESLs MCL Priority		220	150	Note 2	14,000	1.0	NE	NE	12	80	6.0	NE	30	NE	NE	5.0	0.17	NE	5.0	5.0	NE	NE	40	20	Various	20	0.012	0.017	0.0034	Various
Ecological ESLs		3,700	640	NE	NE	350	NE	NE	NE	3,200	22,000	NE	43	NE	NE	8,000	240	NE	230	200	NE	NE	2,500	100	Various	30	NE	NE	NE	Varous
Residential Vapor Intrusion ESLs		NE	NE	NE	140,000,000	30	NE	NE	NE	54	15,000	NE	370	NE	NE	15,000	180	NE	100	170	NE	NE	100,000	38,000	Various	NE	NE	NE	NE	Varous
Commercial Vapor Intrusion ESLs		NE	NE	NE	NE	260	NE	NE	NE	470	130,000	NE	3,300	NE	NE	130,000	1,600	NE	880	1,500	NE	NE	NE	NE	Various	NE	NE	NE	NE	Varous
LTCP Criteria		NE	NE	NE	NE	3,000	NE	NE	NE	NE	NE	NE	NE	NE	NE	1,000	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Notes:
1 - Reporting limits for "All Other PAHs" are below their respective MCL Priority ESLs, where established.
2- TPH motor oil is not soluble. TPH motor oil detections in water most likely are petroleum degredates or less likely non-aqueous phase liquids. Results of TPH motor oil and TPH diesel results have been added together and compared to the TPH diesel criterion.
Cis-1,2-DCE - Cis-1,2-Dichloroethene
ESLs - Environmental Screening Levles
LTCP - Low-Threat Closure Policy
TPHg - Total petroleum hydrocarbons as gasoline
TPHd - Total petroleum hydrocarbons as diesel
TPHmo - Total petroleum hydrocarbons as motor oil
TPHk - Total petroleum hydrocarbons as kerosene
MCL - Maximum Contaminant Level
MTBE - Methyl-tertiary-butyl ether
NE - Environmental Screening Level not established
PCE - Tetrachloroethene
TBA - Tert-butyl alcohol
TCE - Trichloroethene
VOCs - Volatile organic compounds
PAHs - Polynuclear aromatic hydrocarbons
µg/L - Micrograms per liter
< 50 - Analyte was not detected above the laboratory reporting limit (50 µg/L)
Shaded values are at or above the established ESL MCL Priority criteria
Bold values are at or above the established Ecological ESL criteria
Various - Analysis of multiple compounds with various MCL Priority ESLs
-- - Not available/analyzed
MCL Prioroty - San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, Summary of Groundwater Environmental Screening Levels. (February 2016 [Rev.3])
Ecological ESLs - Saltwater Ecotox ESLs, as established by the San Francisco Regional Water Quality Control Board dated 22 February 2016.
Residential Vapor Intrusion ESLs - Groundwater Vapor Intrusion Human Health Risk Levels for Deep Groundwater, Residential Land Use Scenario: Fine to Coarse Soil, as established by the San Francisco Regional Water Quality Control Board dated 22 February 2016
Commercial Vapor Intrusion ESLs - Groundwater Vapor Intrusion Human Health Risk Levels for Deep Groundwater, Commercial Land Use Scenario: Fine to Coarse Soil, as established by the San Francisco Regional Water Quality Control Board dated 22 February 2016
LTCP Criteria - Low-Threat Closure Policy, Groundwater-Specific Criteria, Scenario 2

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Table 5
Volatile Organic Compound Analytical Results in Soil Vapor
1110 Jackson Street
Oakland, California

Sample ID	Date Sampled	Depth	Acetone	Benzene	2-Butanone	Carbon Disulfide	Cyclo-hexane	Dichlorodi-fluoro-methane (Freon 12)	Trichlorotri-fluoroethane (Freon 113)	Ethylbenzene	n-Hexane	Isopropanol	Naphthalene	PCE	TCE	Toluene	Trichloro-fluoro-methane	Xylenes	All Other VOCs	Methane	Helium
		(feet)	($\mu g/m^3$)																	%v	
Sub-slab Vapor Samples																					
SS-1	11/08/16	--	370	9.4	32	31	38	< 5.3	< 8.2	< 4.7	7.3	16	< 23	<1.1	<1.1	16	10	8.5	< 2.2 - < 11	< 0.22	< 0.22
SS-2	11/08/16	--	160	< 3.0	5.3	< 3.0	< 3.3	< 4.7	< 7.3	< 4.1	< 3.3	12	< 20	<0.95	<0.95	< 3.6	15	< 4.1	< 2.0 - < 10	< 0.19	< 0.19
SS-3	11/08/16	--	610	< 3.4	11	< 3.3	< 3.7	< 5.3	< 8.2	< 4.6	< 3.8	15	< 22	<1.1	<1.1	< 4.0	7.8	< 4.6	< 2.2 - < 11	< 0.21	< 0.21
SS-4	11/08/16	--	330	< 3.3	30	< 3.3	< 3.6	7.2	< 8.0	< 4.5	< 3.7	17	< 22	<1.0	<1.0	4.5	19	< 4.5	< 2.2 - < 11	< 0.21	< 0.21
SS-5	11/08/16	--	230	< 4.9	11	< 4.8	< 5.3	< 7.6	< 12	< 6.6	< 5.4	< 15	< 32	<1.5	<1.5	< 5.8	12	< 6.6	< 3.2 - < 16	< 0.31	< 0.31
SS-6	11/30/16	--	230	< 3.0	8.7	< 2.9	3.9	< 4.6	12	< 4.0	< 3.3	< 9.1	< 20	<0.93	<0.93	< 3.5	23	< 4.0	< 1.9 - < 9.9	< 0.19	0.41
Soil Gas Samples																					
SG1-2016-11-17	11/17/16	5.0	70.2	14.2	12.6	< 6.23	14.1	30.4	< 7.66	< 4.34	9.27	< 2.46	< 5.24	<6.78	<5.37	28.3	13.6	17.41	< 2.07 - < 10.7	< 0.100	< 0.100
SG2-2016-11-17	11/17/16	5.0	60.2	5.05	< 5.9	23.2	6.92	38.3	< 7.66	< 4.34	< 7.05	< 2.46	< 5.24	<6.78	<5.37	10.8	13.1	< 4.34	< 2.07 - < 10.7	< 0.100	< 0.100
SG3-2016-11-17	11/17/16	15.0	94.6	22.3	23.5	8.22	59.9	6.38	< 7.66	6.12	114	< 2.46	< 5.24	<6.78	<5.37	35.8	7.59	31.6	< 2.07 - < 10.7	1.22	< 0.100
SG4-2016-11-17	11/17/16	5.0	53.1	17.2	16	9.12	24	7.67	< 7.66	< 4.34	17.4	< 2.46	< 5.24	<6.78	<5.37	28.6	9.44	15.93	< 2.07 - < 10.7	< 0.100	< 0.100
SG5-2016-11-17	11/17/16	5.0	< 4.74	< 3.19	< 5.9	< 6.23	< 6.88	7.81	< 7.66	< 4.34	< 7.05	< 2.46	< 5.24	<6.78	<5.37	< 3.77	< 5.62	< 4.34	< 2.07 - < 10.7	1.21	< 0.100
Tier 1 ESLs			15,000,000	48	2,600,000	NE	NE	NE	NE	560	NE	NE	41	240	240	160,000	NE	52,000	Various	5*	--

Notes:
MEK - Methyl ethyl ketone
VOCs - Volatile organic compounds
PCE - Tetrachloroethene
TCE - Trichloroethene
$\mu g/m^3$ - Micrograms per cubic meter
%v - Percent by volume
< 5.3 - Analyte was not detected above the laboratory reporting limit (5.3 $\mu g/m^3$)
NE - Environmental screening level not established
Various - Analysis of multiple compounds with various Tier 1 ESLs
***** - Lower Explosive Limit (LEL) and not Tier 1 ESL
-- - Not applicable
Tier 1 ESLs - RWQCB Environmental Sub-slab and Soil Gas Screening Levels based on a generic conceptual site model designed for use at most sites. The Tier 1 ESL summary table is generally derived from the most conservative ESL for each compound (February 2016 [Rev.3])

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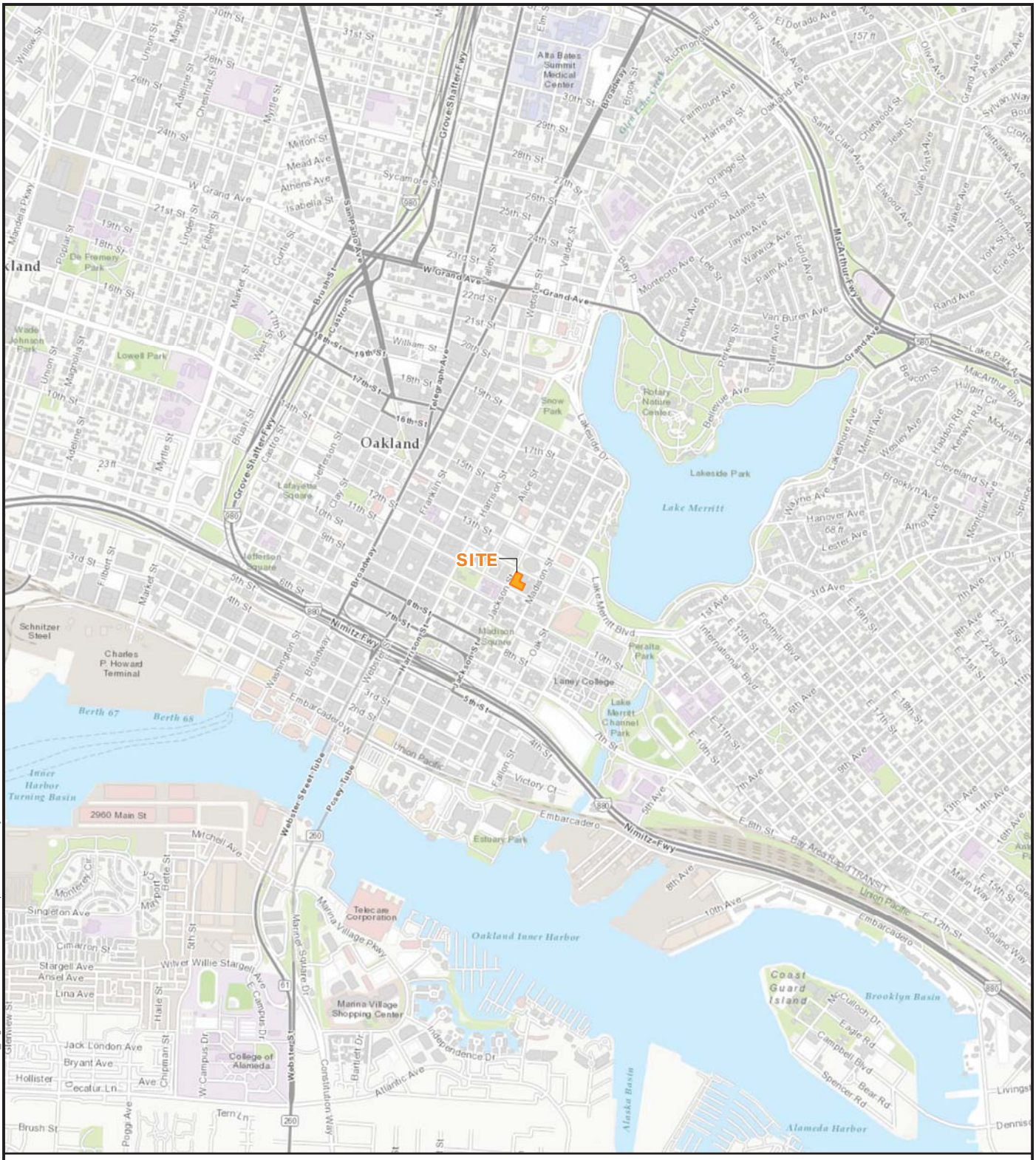
FIGURES



Legend

Site Boundary

Notes:

1. Topographic basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online © 2011 National Geographic Society, i-cubed.
2. All features shown are to be considered approximate.

0 1,000 2,000 4,000

Feet

N

1110 JACKSON STREETT
Oakland, California

SITE LOCATION MAP

LANGAN

Date 7/26/2017	Project 750622603	Figure 1

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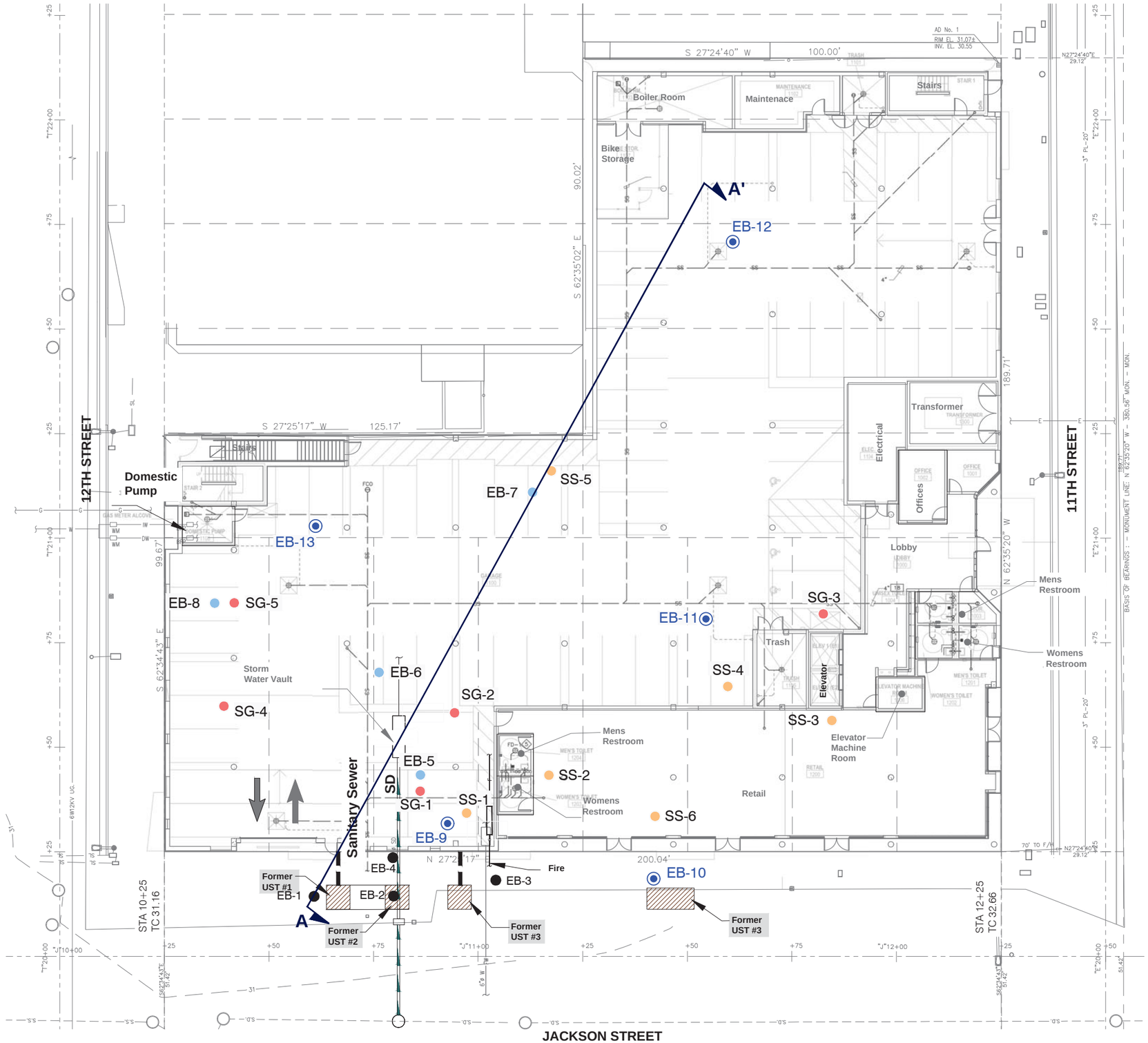

EXPLANATION

- Approximate location of former USTs
- EB-9 — Proposed location of soil and groundwater sample
- SS-1 — Approximate location of sub-slab sample by Langan, November 2016
- SG-1 — Approximate location of soil gas sample by Langan, November 2016
- EB-5 — Approximate location of soil and groundwater sample by Langan, November 2016
- EB-1 — Approximate location of grab groundwater sample by Langan, August 2016
- Capped in-place former product pipeline
- A — A' Approximate location of idealized subsurface profile

Notes:
1. Fire and water supply lines are located above ground in building footprint.
2. Elevator pit constructed with waterproof concrete walls and flooring. The bottom of the elevator pit is approximately 7 feet below ground surface.
3. UST piping does not extend beneath building, as it was removed during foundation work. Samples collected beneath former product pipelines during tank removal were non-detect for petroleum hydrocarbons.

0 25 Feet

Approximate Site Plan Scale

1110 JACKSON STREET
Oakland, California

SITE PLAN

Date 02/01/18	Project No. 750622605	Figure 2

LANGAN

\\langan.com\data\OAK\data6\750622605\Project Data\CAD\05_2D-DesignFiles\Environmental\750622605-N-SP0102.dwg

Notes:
1. Aerial imagery provided through Langan's contract with Near Map. Aerial imagery flown on 3/9/2017.
2. Stream data provided by the National Hydrologic dataset, 2017. (no strems in current map extent)

0 200 400 800
Feet

N

1110 JACKSON STREETT
Oakland, California

NEARBY SURFACE WATER BODIES

LANGAN

Date 7/26/2017	Project 750622605	Figure 3

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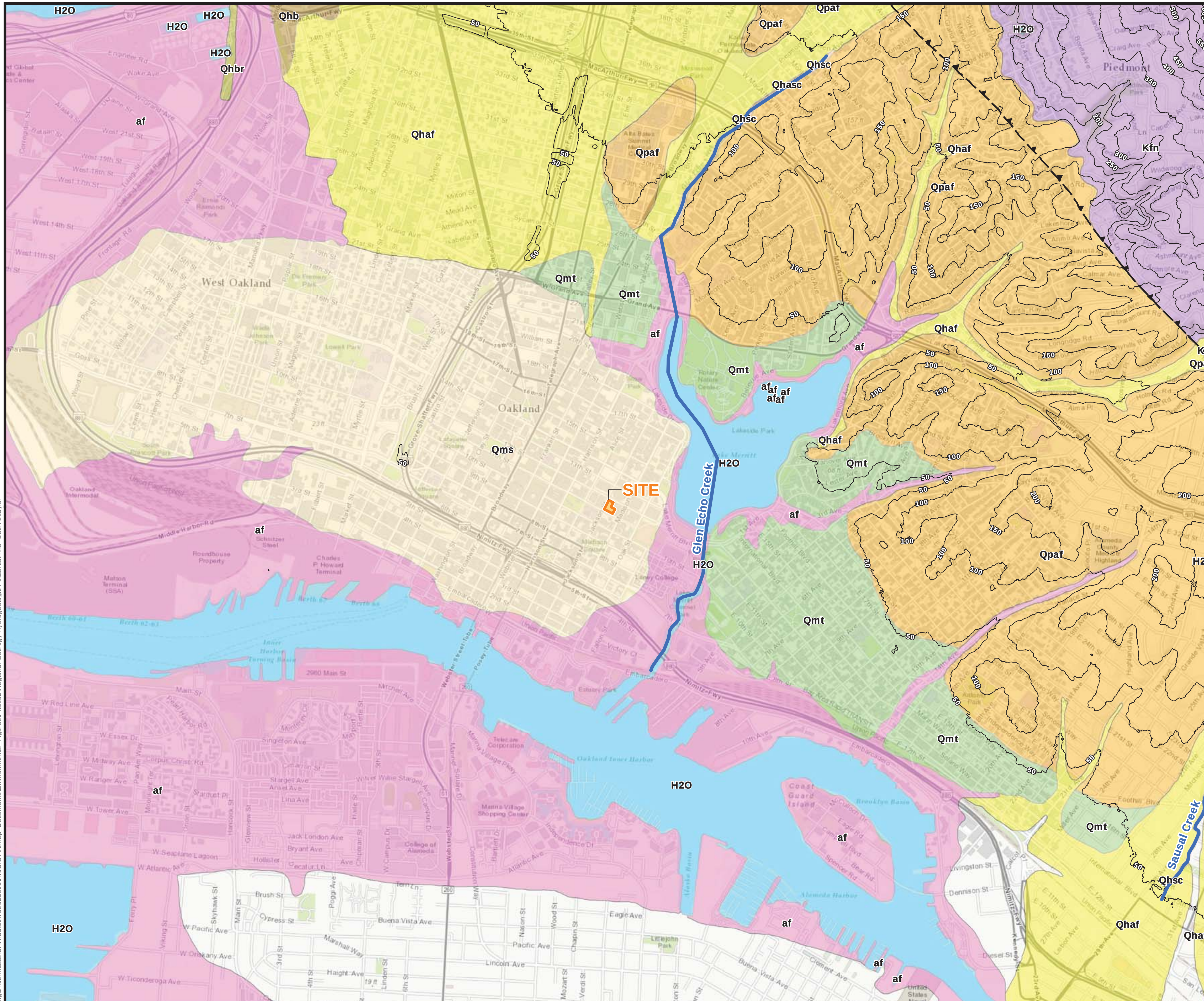

Legend

- Site Boundary
- Glenn Echo Creek
- 50ft Contour Interval
- Inferred Thrust Fault

Bedrock Geology

- Kfn – Sandstone of the Novato Quarry terrane of Blake and others (1984) (Late Cretaceous)

Surficial Geology

- Qhaf – Alluvial fan and fluvial deposits (Holocene)
- Qhasc – Artificial stream channels (Historic)
- Qhb – Basin deposits (Holocene)
- Qhbr – (Beach ridge deposits (Holocene)
- Qhsc – Stream channel deposits (Holocene)
- Qms – Merritt sand (Holocene)
- Qmt – Marine terrace deposits (Pleistocene)
- Qpaf – Alluvial fan and fluvial deposits (Pleistocene)
- Af – Artificial fill
- Water

Notes:
1. Geologic units based on the Geologic Map of the Oakland Metropolitan Area, Alameda County, California; R.W. Graymer, 2000.
2. Topographic basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online
Copyright: © 2011 National Geographic Society, i-cubed.
3. Stream data provided by the National Hydrologic dataset, 2017.

0 1,000 2,000 4,000
Feet

1110 JACKSON STREETT
Oakland, California

REGIONAL GEOLOGY AND KEY HYDROLOGIC FEATURES MAP

Date 7/26/2017	Project 750622605	Figure 4

LANGAN

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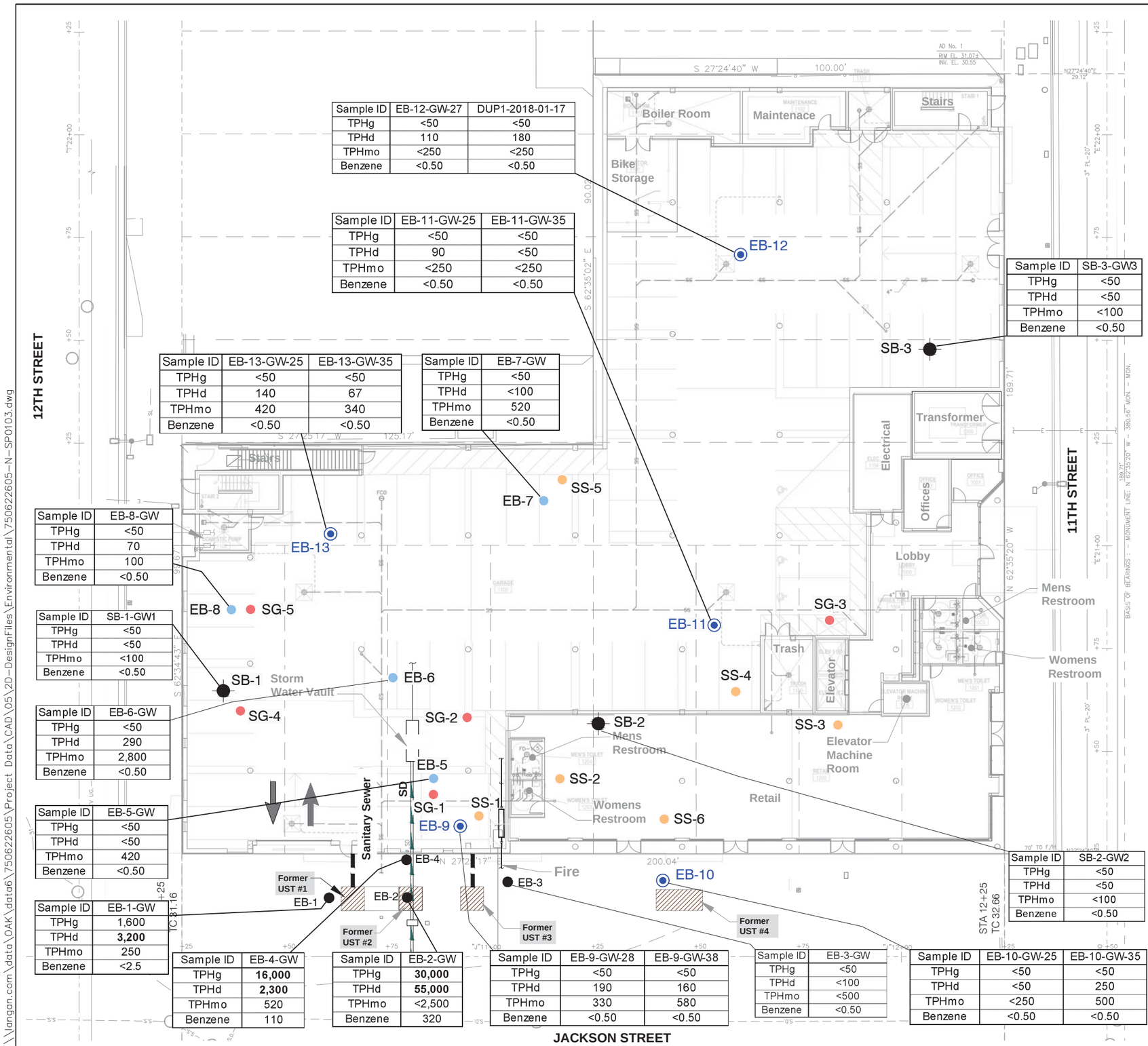

Sample ID	EB-12-GW-27	DUP1-2018-01-17
TPHg	<50	<50
TPHd	110	180
TPHmo	<250	<250
Benzene	<0.50	<0.50

Sample ID	EB-11-GW-25	EB-11-GW-35
TPHg	<50	<50
TPHd	90	<50
TPHmo	<250	<250
Benzene	<0.50	<0.50

Sample ID	SB-3-GW3
TPHg	<50
TPHd	<50
TPHmo	<100
Benzene	<0.50

Sample ID	EB-13-GW-25	EB-13-GW-35
TPHg	<50	<50
TPHd	140	67
TPHmo	420	340
Benzene	<0.50	<0.50

Sample ID	EB-7-GW
TPHg	<50
TPHd	<100
TPHmo	520
Benzene	<0.50

Sample ID	EB-8-GW
TPHg	<50
TPHd	70
TPHmo	100
Benzene	<0.50

Sample ID	SB-1-GW1
TPHg	<50
TPHd	<50
TPHmo	<100
Benzene	<0.50

Sample ID	EB-6-GW
TPHg	<50
TPHd	290
TPHmo	2,800
Benzene	<0.50

Sample ID	EB-5-GW
TPHg	<50
TPHd	<50
TPHmo	420
Benzene	<0.50

Sample ID	EB-1-GW
TPHg	1,600
TPHd	**3,200**
TPHmo	250
Benzene	<2.5

Sample ID	EB-4-GW
TPHg	**16,000**
TPHd	**2,300**
TPHmo	520
Benzene	110

Sample ID	EB-2-GW
TPHg	**30,000**
TPHd	**55,000**
TPHmo	<2,500
Benzene	320

Sample ID	EB-9-GW-28	EB-9-GW-38
TPHg	<50	<50
TPHd	190	160
TPHmo	330	580
Benzene	<0.50	<0.50

Sample ID	EB-3-GW
TPHg	<50
TPHd	<100
TPHmo	<500
Benzene	<0.50

Sample ID	EB-10-GW-25	EB-10-GW-35
TPHg	<50	<50
TPHd	<50	250
TPHmo	<250	500
Benzene	<0.50	<0.50

Sample ID	SB-2-GW2
TPHg	<50
TPHd	<50
TPHmo	<100
Benzene	<0.50

EXPLANATION

- EB-9 — Aproximate location of soil and groundwater sample by Langan, January 2018
- SS-1 — Approximate location of sub-slab sample by Langan, November 2016
- SG-1 — Approximate location of soil gas sample by Langan, November 2016
- EB-5 — Approximate location of soil and groundwater sample by Langan, November 2016
- EB-1 — Approximate location of grab groundwater sample by Langan, August 2016
- SB-1 — Approximate location of boring conducted by Tetra Tech, 2005
- Approximate location of former USTs
- Capped in-place former product pipeline

Sample ID	"Environmental Boring-Location-Groundwater-Depth"
TPHg	Total Petroleum Hydrocarbons as gasoline
TPHd	Total Petroleum Hydrocarbons as diesel
TPHmo	Total Petroleum Hydrocarbons as motor oil
Benzene	

Bold- concentrations exceed the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels, Aquatic Habitat Goal Levels, Saltwater Ecotox (3,700 ug/L for TPHg; 640 ug/L for TPHd; and 350 ug/L for Benzene)

Notes:
1. Fire and water supply lines are located above ground in building footprint.
2. Elevator pit constructed with waterproof concrete walls and flooring. The bottom of the elevator pit is approximately 7 feet below ground surface.
3. UST piping does not extend beneath building, as it was removed during foundation work. Samples collected beneath former product pipelines during tank removal were non-detect for petroleum hydrocarbons.
Concentrations greater than the ecological Environmental Screening Level are presented in bold
5. All concentrations are in milligrams per liter.
6. Sample IDs not presenting a sample depth (i.e. SB-1-GW1) were collected at first encountered groundwater

0 25 Feet

Approximate Site Plan Scale

1110 JACKSON STREET
Oakland, California

TPHg,TPHd, AND BENZENE RESULTS IN GROUNDWATER

Date 02/27/18 | Project No. 750622605 | Figure 5

LANGAN

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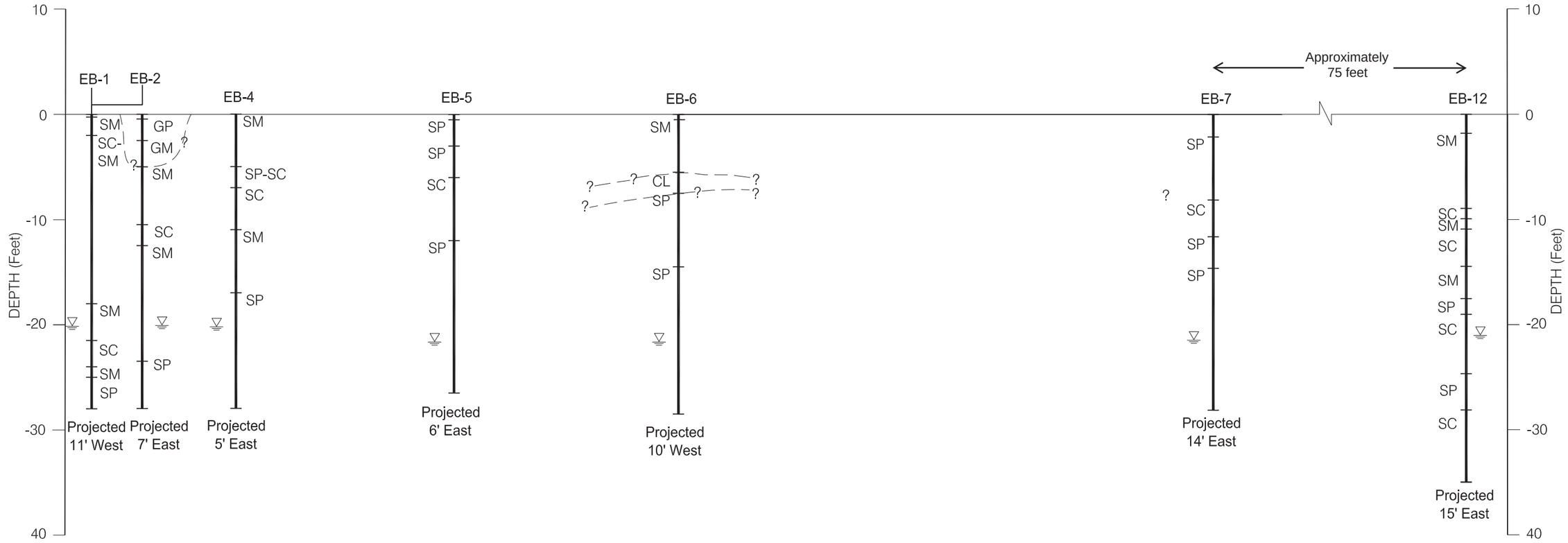
A — Northwest

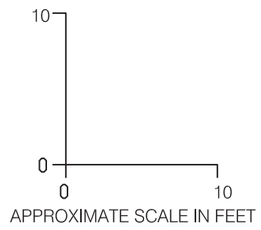
A' — Southeast



EXPLANATION

GM	Silty gravels
GP	Poorly-graded gravels
SC	Clayey sands
SM	Silty sands
SP	Poorly-graded sands
SP-SC	Poorly-graded sands to clayey sands
▽	Water level at time of drilling

Note:
The above profile represents a generalized subsurface cross section interpreted from widely spaced borings. Soil and bedrock deposits may vary in type, strength, and other important properties between points of exploration.



1110 JACKSON STREET
Oakland, California

IDEALIZED SUBSURFACE PROFILE
A-A'

Date 02/27/18	Project No. 750622605	Figure 6

LANGAN

APPENDIX A

CONCEPTUAL SITE MODEL

APPENDIX A
CONCEPTUAL SITE MODEL
1110 JACKSON STREET, OAKLAND, CALIFORNIA

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
1	Site Description	The property, 1110 Jackson Street (site), is located to on Jackson Street and occupies the length of the block from 11th Street to 12th Street in Oakland, California, in a fully developed area known as "Chinatown", characterized primarily by commercial and high density residential buildings. The site is bounded by dense development to the east. The site is L-shaped, with long dimensions measuring approximately 190 feet by 200 feet, along 11th and Jackson Streets, respectively. The L-shaped site is bound by Jackson Street to the west, 12th Street to the north, 11th Street to the south, and a school (the American Indian Model School, 171 12th Street) and residential buildings (1115 and 1109 Madison, and 150 and 168 11th Street) to the east. Based on historical research and supporting documentation (Essel Environmental Consulting, 2015), the site was developed with a hospital in 1889. By 1903, the hospital had been replaced by residences. Two automobile repair garages operated in the northern portion of the site (including two USTs beneath Jackson Street) between 1911 and 1946, while the southern portion of the site was developed for residential use. By 1939, the site was fully developed with two auto repair garages in the northern portion of the site, residences in the southern portion of the site, and a new commercial building at the southern corner of the site. One of the automobile repair garages was removed in 1946 and the residences were removed by 1950, when both became parking lots. The second auto repair garage was converted to a store, a glass works business, and a parking lot through the 1950's. In the 1960's, a store was constructed in the southwest corner of the site and a small shed was constructed near the glass works facility. The site remained in this state until 2007 when all the buildings were demolished. The site was vacant until construction of the current apartment building. The site is currently occupied by a 5-story residential building with an openly ventilated parking garage and a commercial space on the ground floor. The building is currently occupied.	Figure 1 – Site Location Map Figure 2 – Site Plan	EMG, *Phase I Environmental Site Assessment, 176 and 198 11th Street/1110 Jackson Street, Oakland, California* dated 15 September 2005. Essel Environmental Consulting, *Phase I Environmental Site Assessment, 176 and 198 11th Street/1110 Jackson Street, Oakland, California 94607* dated 13 February 2015. Langan, *Underground Storage Tank Closure Investigation Report, 1110 Jackson Street, Oakland, California* dated 13 September 2016. Langan, *Additional Environmental Site Assessment Report, 1110 Jackson Street, Oakland, California* dated 1 December 2016.	None	Not Applicable
2	Surface Water Bodies	The nearest surface water body is Lake Merritt located approximately 1,200 feet to the east of the site. The San Francisco Bay is approximately 0.7 miles southwest of the site. Lake Merritt is a brackish tidal estuary that is linked by a narrow channel at its southern terminus point into the inner Oakland Harbor of the San Francisco Bay.	Figures 3 – Nearby Surface Water Bodies Figures 4 – Regional Geology and Key Hydrologic Features Map	None	None	Not Applicable
3	Nearby Wells	The State Water Resources Quality Control Board's (RWQCB) Geotracker GAMA website provides the locations of water supply wells. Langan reviewed the GAMA website in July 2017 and no municipal supply wells were shown within 1,000 feet of the site.	Appendix B – Well Search	*RWQCB Geotracker GAMA, Results of Well Search* website accessed 22 February	None	Not Applicable

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
		Langan requested information from the California Department of Water Resources (DRW) for permitted wells and borings within one mile of the site. Appendix B presents the results of the DWR well search. None of the wells within 1 mile of the site were identified as water supply wells based on a review of the documentation provided by DWR.		2018.		
4	Regional Geology and Hydrogeology	<u>Regional Geology</u> Regional physiographic conditions are reflective of and affected by the tectonic framework, regional faulting, and geologic units that comprise the site and surrounding area. The regional topography is characterized by northwest to southeast oriented coastal hills and intervening valleys, developed as a consequence of plate motions at the boundary of the North American and Pacific lithospheric plates. Under the current tectonic framework, compressive and shearing forces from the plate motions are distributed regionally across several active, sub-parallel, northwest to southeast trending fault zones. Horizontal motion is distributed across the major active strike-slip faults. Within the East Bay, these faults include the Hayward, Calaveras and Concord Faults, which comprise the East Bay Fault System (EBFS) (Sloan, 2006). Compressive deformation is distributed across northwest to southeast trending thrust and reverse faults parallel to the major strike-slip faults of the EBFS (Graymer, 2000). Regional uplift of the East Bay hills was coincident with a change in tectonic forces to a component of compression beginning approximately 3.5 million years ago (Sloan, 2006); current measurements indicate uplift is occurring at a rate of as much as one millimeter per year (Graymer, 2000). Regionally, bedrock is composed of the Mesozoic Franciscan Assemblage (complexly faulted and folded marine sedimentary and volcanic rocks) and is overlain by Quaternary to modern sedimentary formations which include alluvial fans, and basin and stream valley deposits, amongst others (Graymer, 2000). These Quaternary sedimentary formations were deposited during regional uplift. The site is located within the Coast Ranges geomorphic province, which is characterized by a series of parallel, northwesterly trending, folded and faulted mountain chains and valleys. In central California, these ranges are separated by a geologic depression that formed mainly by Franciscan Formation rock series, consisting of Jurassic Franciscan melanges. The East Bay ranges forms the eastern boundary of the Bay and consist of Late Mesozoic shelf and slope sedimentary rocks. Situated between the East Bay ranges and San Francisco Bay is the Easy Bay Plain. This plain measures approximately 25 miles long and two to seven miles wide. Prior to urban development, the plain consisted of tidal flats, estuaries and alluvial plains. <u>Regional Hydrogeology</u> The San Francisco Bay hydrologic region has 28 identified groundwater basins underlying approximately 30 percent of the entire San Francisco Bay region (DWR, 2003). Alameda County is within the East Bay Plain sub-basin of the Santa Clara Valley groundwater basin. The East Bay Plain sub-basin is bounded to the north by San Pablo Bay, to the east by Franciscan bedrock, to the south by the Niles Cone groundwater basin, and extends to the west below the San Francisco Bay. The East Bay Plain is formed in an alluvial plain; the main water bearing units consist of unconsolidated	Figure 4 – Regional Geology and Key Hydrologic Features	Sloan, Doris. *Geology of the San Francisco Bay Region, California Natural History Guides,* University of California Press; First Printing edition. (360 pages), 27 June 2006. Graymer, R.W. *Geologic Map and Map Database of the Oakland metropolitan area, Alameda, Contra Costa, and San Francisco Counties, California.* Miscellaneous Field Studies MF-2342, 2000. California Department of Water Resources (DWR). *Bulletin 118, Update,* October 2003. DWR. *San Francisco Bay Hydrologic Region, California's Groundwater Bulletin 118, Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin,* Last update 27 February 2004.	None	Not Applicable

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
		Quaternary sedimentary formations, including the Pleistocene Santa Clara and Alameda Formations, and the Holocene Temescal Formation as well as artificial fill. With the exception of artificial fill, these main water-bearing formations were deposited as alluvial fans. Total groundwater storage capacity within the East Bay Plain was estimated to be 2,670,0000 acre feet, of which, approximately 2,500,000 acre feet is in storage to a depth of 1,000 feet below mean sea level; adjusting for potential sea water intrusion reduces the groundwater is storage to approximately 80,000 acre feet (storage above mean sea level). The San Francisco Bay Regional Water Quality Control Board identified 13 areas of major groundwater pollution in the East Bay Plain; contamination was most commonly associated with release of fuels and solvents, and was generally found within the upper 50 feet (DWR, 2004).				
5	Site Geology	The site rests on the Merritt Sand. The site's surficial geology is mapped as Holocene and Pleistocene aged Quaternary eolian deposits described as fine-grained, very well sorted, well-drained sand (Graymer, 2000). The subsurface has been explored to a depth up to 27 feet below ground surface (bgs). The subsurface soil at the site reportedly consists of three to five feet of fill underlain by sand mixed with varying amounts of silty and clayey sand.	Figure 2 – Site Plan Appendix C. Boring Logs and Cross Sections	California Geological Survey, *State of California Seismic Hazard Zones, Oakland West Quadrangle, Official Map* dated 14 February 2003. Graymer, R.W. *Geologic Map and Map Database of the Oakland metropolitan area, Alameda, Contra Costa, and San Francisco Counties, California.* Miscellaneous Field Studies MF-2342, 2000. Langan, *Additional Environmental Site Assessment Report, 1110 Jackson Street, Oakland, California* dated 1 December 2016.	None	Not Applicable
6	Site Groundwater Depth and Flow	Groundwater was generally measured between approximately 20 feet bgs with the potential for seasonal rainfall to influence groundwater levels by several feet. The groundwater flow direction at the site, based on groundwater investigations performed at a nearby site (165 13th Street, Oakland, California), is anticipated to flow in an easterly direction towards Lake Merritt.	Appendix C – Boring Logs and Cross Sections	*None*	None	Not Applicable

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
7	Preferential Pathways	Utility conduits (storm water, sanitary sewer and water supply lines) enter the property from Jackson Street near the former UST #1, #2, and #3 locations. Utility conduits adjacent to or within the site boundaries are not potential preferential pathways for groundwater migration due to the depth to groundwater beneath the site. Additionally, one elevator bank is located near the commercial space along Jackson and 11th Streets. The elevator pit extends about 6 feet below the slab and is constructed of waterproof concrete. Elevator pits and shafts can act as conduits for vapor intrusion. Sub-slab and soil gas samples were collected in the vicinity of the subsurface utility trenches and the elevator pit in November 2016. No sub-slab or soil gas samples had detected concentrations in excess of their respective Regional Water Quality Control Board (RWQCB) Tier 1 Environmental Screening Levels (ESLs), which indicates that vapor intrusion is not a significant concern at the site. In January 2018, borings (EB-9 through EB-13, Figure 2) were advanced across the footprint of the existing building. Groundwater levels were measured ranging from approximately 19 to 21 feet bgs. Considering these recent groundwater level measurements, utility conduits will not act as preferential pathways for groundwater.	Figure 2 – Site Plan	Langan, *Additional Environmental Site Assessment Report, Fuel Leak Case RO0003232, 1110 Jackson Street, Oakland, California* dated 1 December 2016.	None	Not Applicable
8	UST Systems or Release Source	The site formerly housed four underground storage tanks (USTs) consisting of two 265-gallon gasoline USTs, one 110-gallon gasoline UST, and one 750-gallon diesel UST. All tanks were located underneath the Jackson Street sidewalk along the eastern side of the site. The three gasoline USTs were removed in April 2016 and the diesel UST was removed in November 2016 by Golden Gate Tank Removal (GGTR). Over-excavation was performed for each of the USTs as part of the removal and sidewall and bottom samples were collected by GGTR following excavation. Two environmental site assessments, performed in August 2016 and November 2016, were completed to evaluate the extent of soil, soil gas, and groundwater impacts related to the release of petroleum products from the USTs at the site. A total of eight borings (EB-1 through EB-8) for soil and/or groundwater collection, five soil gas borings, and six sub-slab sample points were completed to facilitate the collection of environmental samples to delineate the potential contaminant impacts since the discovery and removal of the first three USTs. The analytical results collected to date indicate contaminant impacts at the site are attributable to the former USTs and generally limited to soil immediately surrounding the former USTs and groundwater extending slightly beneath the existing building. Soil and groundwater samples were collected in January 2018 immediately east of the former UST #4 and farther downgradient of the former USTs #1, 2 and 3. Borings EB-10 and EB-11 were advanced approximately five and 60 feet downgradient of the former UST #4, respectively. Analytical results for soil from zero feet bgs to groundwater (approximately 20 feet bgs) as well as shallow and deep discreet groundwater samples (approximately 25 and 35 feet bgs, respectively) indicate that groundwater impacts	Figure 2 – Site Plan	Golden Gate Tank Removal (GGTR), *Underground Storage Tank Closure Report, 1110 Jackson Street, Oakland, California* dated 23 June 2016. GGTR, *Underground Storage Tank (T4) Closure Report, 1110 Jackson Street, Oakland, California* dated 13 January 2017. Langan, *Underground Storage Tank Closure Investigation Report, 1110 Jackson Street, Oakland, California* dated 13 September 2016.	None	Not Applicable

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
		exceeding ecological ESLs extend less than 250 feet in length from the former UST locations.				
	LNAPL	Based on previous investigations conducted by others and Langan, there is no evidence and/or documentation of light non-aqueous phase liquid (LNAPL) at the site. Groundwater samples were collected from six borings (EB-1 through EB-4 and EB-10 and EB-11) downgradient and cross-gradient of the former USTs. After allowing for groundwater equilibration and before collecting groundwater samples, a disposable bailer was used to skim the surface of groundwater to inspect for the presence of LNAPL. LNAPL was not observed in any borings.	None	None	None	Not Applicable
9	Contaminants of Concern	Chemicals currently or historically detected in site soil and/or groundwater at concentrations greater than ESLs presented in Tables 1 through 4 include: • Petroleum Hydrocarbons and TPH constituents: total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo) • Polycyclic aromatic hydrocarbons (PAHs): benzo (a) Anthracene, benzo (a) Pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene, indeno (1,2,3-cd) pyrene, 2-methyl-naphthalene, naphthalene, • Volatile Organic Compounds (VOCs): benzene, t-Butyl benzene, ethylbenzene, naphthalene, and xylenes • Metals: Lead (in soil)	Table 1—TPH and VOC Analytical Results in Soil Table 2—Metal Analytical Results in Soil Table 3—PAH Analytical Results in Soil Table 4—Non-Metal Analytical Results in Grab-Groundwater	Langan, *Underground Storage Tank Closure Investigation Report, 1110 Jackson Street, Oakland, California* dated 13 September 2016.	None	Not applicable
10	Soil Impacts	In 2006, Tetra Tech advanced three borings in an effort to assess the potential petroleum impacts associated with an adjacent property. Soil samples were collected at approximately 12 feet bgs and analytical results yielded no detections of TPH, VOCs, or metals above their respective ESLs. In 2016, after discovery of USTs in the Jackson Street sidewalk adjacent to the site, and subsequent removal of the USTs and the associated over-excavation, soil contamination was visually observed and soil samples collected from beneath all USTs. The ACEH recommended over-excavation of contaminated soil and additional bottom wall soil sampling. The recommended over-excavation and additional sampling was completed by GGTR in May 2016. TPHg contamination was detected beneath all three UST excavations at concentrations ranging between 67.8 mg/kg (beneath UST 3) and 6,320 mg/kg (beneath UST 2). The ACEH requested collection of groundwater samples near the former tanks to assess the impact of petroleum and petroleum related compounds to groundwater. In August 2016, Langan performed additional soil sampling in conjunction with the requested groundwater sampling at four locations near the former USTs (EB-1 through 4). Soil sample results collected from beneath UST 2 indicated that petroleum	Table 1—TPH and VOC Analytical Results in Soil Table 2—Metal Analytical Results in Soil Table 3—PAH Analytical Results in Soil Table 4—Non-Metal Analytical Results in Grab-Groundwater Figure 2 – Site Plan	Langan, *Underground Storage Tank Closure Investigation Report, 1110 Jackson Street, Oakland, California* dated 13 September 2016. Langan, Additional *Environmental Site Assessment Report, 1110 Jackson Street, Oakland, California* dated 1 December 2016. Tetra Tech EM, Inc., *Limited Phase II Environmental Site Assessment, Jackson Tower, Oakland,*	None	Not Applicable

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
		hydrocarbons and related compounds have impacted subsurface soils at the site. Following the additional soil and groundwater sampling, Langan collected soil and groundwater samples from four additional borings (EB-5 through EB-8) at the site in November 2016. Soil samples were collected at approximately 4.5 and 8.5 feet bgs. Soil samples collected and analyzed for TPH and VOCs were generally non-detect, except TPHd and TPHmo detected at concentrations of 15 and 160 mg/kg in sample EB-6-4.5 and TPHmo detected at 5.1 mg/kg in sample EB-8-4.5. In January 2018, soil borings (EB-9 through EB-13, Figure 2) were advanced throughout the footprint of the existing building for the collection of soil and groundwater samples. Soil samples were collected within the first five feet to characterize the chemical nature of surface soils and to assess the presence of a suitable bioattenuation zone below the slab of the building. Additionally, soil samples were collected at five foot intervals until groundwater was encountered. TPHg was not detected above the laboratory reporting limit of 1.0 mg/kg in 38 of 38 samples analyzed. TPHd was detected in three of 38 samples analyzed at concentrations ranging from 1.6 to 15 mg/kg. TPH-mo was detected in seven of 38 samples analyzed at concentrations ranging from 5.1 to 160 mg/kg. No soil samples analyzed had detected concentrations of TPH exceeding the RWQCB Low-Threat Closure Required Characteristics of Bioattenuation Zones for Sites Without Oxygen Data (i.e. sum of TPHg and TPHd greater than 100 mg/kg).		*California* dated 18 January 2006.		
11	Groundwater Impacts	Groundwater samples were first collected at the site in 2006. Additional groundwater samples were collected subsequent to the removal of USTs #1, #2, and #3. No TPH was detected in any of the groundwater samples collected by Tetra Tech from borings SB-1, SB-2 or SB-3 in 2006. The only VOCs detected were trichloroethene (TCE) and tetrachloroethene (PCE) in boring SB-3 at concentrations of 4.1 µg/L, which are both below their maximum contaminant level (MCL) of 5 µg/L. Boring SB-3 was located in the southeast portion of the site. In August 2016, Langan advanced three borings (EB-1 through EB-3) in the vicinity of the former USTs and one boring (EB-4) downgradient of the former USTs. Analytical results from this investigation revealed the highest concentrations of TPH and related compounds in groundwater were directly below UST #2, which also had the highest concentrations in soil. Contaminants detected above their MCL priority ESLs were reported as follows: • TPHg and TPHd in EB-2 at 30,000 and 55,000 µg/L, respectively; • TPHg, TPHd, and TPHmo in EB-1 at 1,600, 3,200, and 250 µg/L, respectively; • TPHg, TPHd, and TPHmo in EB-4 at 16,000, 2,300, and 520 µg/L, respectively; • Benzene in EB-2 and EB-4 at 320 and 110 µg/L, respectively;	Table 4—Non-Metal Analytical Results in Grab-Groundwater Figure 2 – Site Plan	GGTR, *Underground Storage Tank Closure Report, 1110 Jackson Street, Oakland, California* dated 23 June 2016. GGTR, *Underground Storage Tank (T4) Closure Report, 1110 Jackson Street, Oakland, California* dated 13 January 2017. Langan, *Underground Storage Tank Closure Investigation Report, 1110 Jackson Street, Oakland, California* dated 13 September 2016. Langan, *Additional Environmental Site*	None	Not applicable

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
		• Ethylbenzene EB-2 and EB-4 at 740 and 250 µg/L, respectively; • Naphthalene in EB-2 and EB-4 at 100 and 7.9 µg/L, respectively; • Xylenes in EB-2 and EB-4 at 430 and 27 µg/L, respectively. Based on elevated concentrations downgradient of the USTs, additional groundwater sampling was performed by Langan in November 2016. Four borings (EB-5 through EB-8) were advanced to a maximum depth of 26.5 feet bgs downgradient of the former USTs to determine the extent of the groundwater contamination at the site. TPHd and TPHmo were the only compounds detected above their MCL Priority ESLs. However, no groundwater samples beneath the building had detected concentrations exceeding ecological ESLs (saltwater Ecotox). Groundwater sample results yielded the following maximum detections: • TPHd in EB-6 at 290 µg/L • TPHmo in EB-6 at 2,800 µg/L Based on the groundwater investigations to this point, it has been confirmed that groundwater beneath the site has been impacted by TPHd and TPHmo downgradient of the former USTs. Discrete groundwater samples were collected by Langan in January 2018 from five borings from depths of first encountered groundwater (shallow) and approximately 10 feet below the shallow groundwater sample (deep) in an effort to delineate the vertical and horizontal extent of groundwater contamination. A total of 10 groundwater samples were collected including one duplicate sample from boring EB-12 (DUP1-2018-01-17). Shallow groundwater was collected from bottom depths ranging from 25 to 28 feet bgs and deep groundwater samples were collected from bottom depths of 35 to 38 feet bgs. Groundwater results yielded the following maximum concentrations: • TPH-g was not detected above the laboratory reporting limit of 50 µg/L in any of the 10 samples analyzed • TPH-d in EB-10 at 35 feet bgs at 250 µg/L • TPH-mo in EB-9 at 38 feet bgs at 580 µg/L • Benzene, toluene, ethylbenzene, xylenes and methyl tert-butyl ether (MTBE) were not detected above the laboratory reporting limit of 0.50 µg/L in the 10 samples analyzed • Naphthalene was not detected above the laboratory reporting limit of 0.50 µg/L in the 10 samples analyzed		*Assessment Report, 1110 Jackson Street, Oakland, California* dated 1 December 2016. Tetra Tech EM, Inc., *Limited Phase II Environmental Site Assessment, Jackson Tower, Oakland, California* dated 18 January 2006.		

NO.	CSM ELEMENT	DESCRIPTION	EXHIBITS	REFERENCES	DATA GAPS	RESOLUTION
		Groundwater results were compared to MCLs and ecological ESLs (saltwater Ecotox). Based on this comparison, the plume is less than 250 feet in length in shallow and deeper groundwater.				
12	Soil Vapor Impacts	Langan has conducted soil vapor sampling in areas closest to the former USTs, including six sub-slab vapor samples (SS-1 through SS-6) and five soil gas samples (SG-1 through SG-5), including soil gas near the elevator at a depth below the bottom of the elevator pit. Samples were collected from within both the first floor parking garage and commercial spaces. All sub-slab and soil vapor samples with reported VOC detections were at concentrations below current ESLs, where established. Based on the soil vapor analytical data, soil vapor does not pose a significant vapor intrusion concern at the site. In January 2018, soil boring EB-11 was advanced near the elevator pit. Soil samples were collected within the bioattenuation zone from zero to five feet below the building foundation and at five foot intervals until groundwater was encountered. Only TPHmo was detected in soil samples from EB-11 at a depth of 2.5 feet bgs and a concentration of 11 mg/kg. TPHg, TPHd and VOCs were not detected above laboratory reporting limits. Based on concentrations of VOCs detected in groundwater in comparison to ESLs for vapor intrusion, as well as the presence of a suitable bioattenuation zone beneath the building slab, there is not a significant risk related to vapor intrusion at the site.	Table 5—Volatile Organic Compound Analytical Results in Vapor Figure 2 – Site Plan	Langan, *Underground Storage Tank Closure Investigation Report, 1110 Jackson Street, Oakland, California* dated 13 September 2016.	None	Not applicable
13	Source Removal and Remediation	Source removal consisted of excavation of the former USTs (two 265-gallon gasoline USTs, one 110-gallon gasoline UST, and one 750-gallon diesel UST) performed by Golden Gate Tank Removal in April 2016 (USTs 1 through 3) and November 2016 (UST 4). All four former USTs were removed from beneath the Jackson Street sidewalk adjacent to the site. Remediation consisted of removal of visibly contaminated soil to the extent practical without compromising the structures surrounding the pits by over-excavation and backfill with imported fill material.	Figure 2 – Site Plan	Golden Gate Tank Removal (GGTR), *Underground Storage Tank Closure Report, 1110 Jackson Street, Oakland, California* dated 23 June 2016. GGTR, *Underground Storage Tank (T4) Closure Report, 1110 Jackson Street, Oakland, California* dated 13 January 2017.	None	Not applicable

APPENDIX B

WELL SEARCH RESULTS

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Page 1 of 1

Owner's Well Number 05-2

Date Work Began 10-27-10 Date Work Ended 10-27-10

Local Permit Agency ACPWA

Permit Number W2010-0743 Permit Date 10-13-10

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111677

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35K

Latitude / Longitude

APN/TRS/Other

Geologic Log

Orientation: O Vertical O Horizontal O Angle Specify

Drilling Method: Drilling Fluid:

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	0.5	Asphalt
0.5	28	< No logging - Adjacent to SW-4 >

Total Depth of Boring 28 Feet

Total Depth of Completed Well 28 Feet

Well Owner

[redacted]

Well Location

Address 250 8th Street

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

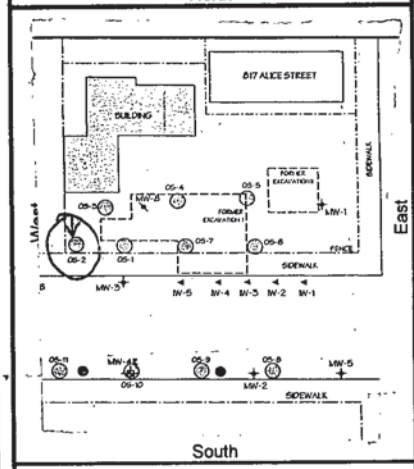
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35K

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- (●) New Well
- O Modification/Repair
  - O Deepen
  - O Other
- O Destroy
  - Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- O Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- O Cathodic Protection
- O Dewatering
- O Heat Exchange
- O Injection
- O Monitoring
- O Remediation
- (●) Sparging
- O Test Well
- O Vapor Extraction
- O Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	26.5	8	Sch 80	PVC	0.179	1.32		
26.5	28	8	Sch 80	PVC	0.179	1.32	factory	25 Micron

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
2.5	23	Cement	Neat
23	25	Bentonite	
25	28	Sand	#2/12

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name (Person, Firm or Corporation)

Address City CA State Zip

Signed (C-57 Licensed Well Contractor) Date Signed 12/10/2010 C-57 License Number 802334

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111679

Page 1 of 1

Owner's Well Number 05-3

Date Work Began 10-27-10 Date Work Ended 10-27-10

Local Permit Agency ACPWA

Permit Number W2010-0743 Permit Date 10-13-10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35K

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ○ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	0.5	Asphalt
0.5	28	< No Sampling – Between EW-5 and MW-8 >

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 250 8th Street

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

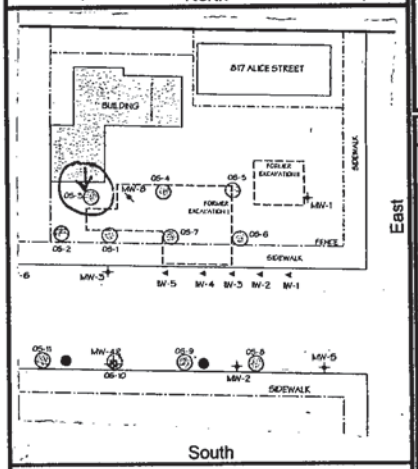
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35K

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- (●) New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ○ Destroy
  - Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- (●) Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0-5	26.5	8	Sch 80	PVC	0.179	1.32		
26.5	28	8	Sch 80	PVC	0.179	1.32	Factory	25 micron

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
2-5	23	Cement	Neat
23	25	Bentonite	
25	28	Sand	#2/12

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s) WELL 15, BH 1
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists: CERTIFIED DRILLER

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name

Person, Firm or Corporation

Address City CA State Zip

Signed C-57 Licensed Water Well Contractor Date Signed 12/9/2010 C-57 License Number 802334

DWR 188 REV. 1/2006

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Well Completion Report

Refer to Instruction Pamphlet

No. e0111680

Page 1 of 1

Owner's Well Number 05-8

Date Work Began 10-26-10 Date Work Ended 10-26-10

Local Permit Agency ACPWA

Permit Number W2010-0743 Permit Date 10-13-10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35K

Latitude / Longitude

APN/TRS/Other

Geologic Log

Orientation: O Vertical O Horizontal O Angle Specify

Drilling Method: Drilling Fluid:

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	0.5	Concrete
0.5	16	< No sampling >
16	25.5	Silty SAND
25.5	28	SAND
28	30	Sandy CLAY

Total Depth of Boring 30 Feet

Total Depth of Completed Well 28 Feet

Well Owner

[redacted]

Well Location

Address 250 8th Street

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Decimal Lat. Decimal Long.

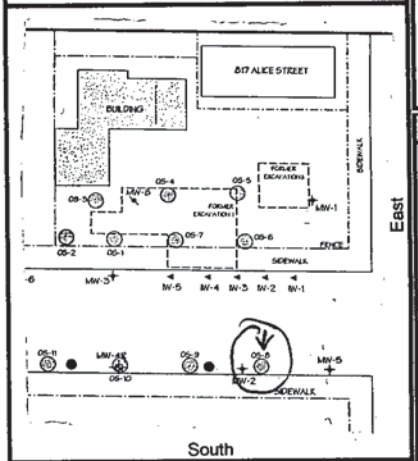
APN Book Page Parcel

Township 1S Range 4W Section 35K

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- (●) New Well
- O Modification/Repair
  - O Deepen
  - O Other
- O Destroy
  - Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- O Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- O Cathodic Protection
- O Dewatering
- O Heat Exchange
- O Injection
- O Monitoring
- O Remediation
- (●) Sparging
- O Test Well
- O Vapor Extraction
- O Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	26.5	8	Sch 80	PVC	0.179	1.32		
26.5	28	8	Sch 80	PVC	0.179	1.32	factory	25 slot

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
2.5	23	Cement	Neat
23	25	Bentonite	
25	30	Sand	#2/12

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Person, Firm or Corporation

Address City CA State Zip

Signed C-57 Licensed Water Well Contractor

Date Signed 12/01/2010 C-57 License Number 802334

DWR 188 REV. 1/2006

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Well Completion Report

Refer to Instruction Pamphlet

No. e0111681

Page 1 of 1

Owner's Well Number 05-9

Date Work Began 10-26-10 Date Work Ended 10-26-10

Local Permit Agency ACPWA

Permit Number W2010-0743 Permit Date 10-13-10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35K

Latitude / Longitude

APN/TRS/Other

Geologic Log

Orientation: O Vertical O Horizontal O Angle Specify

Drilling Method: Drilling Fluid:

Depth from Surface Feet	to Feet	Description: Describe material, grain size, color, etc
0	1	Concrete
1	16	(No sampling)
16	22	Silty SAND
22	28	SAND
28	30	(Sample jammed - couldn't remove)

Total Depth of Boring 30 Feet

Total Depth of Completed Well 28 Feet

Well Owner

[redacted]

Well Location

Address 250 18th Street

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

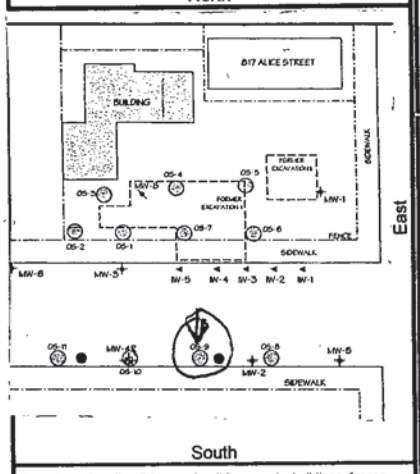
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35K

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- (●) New Well
- ( ) Modification/Repair
  - ( ) Deepen
  - ( ) Other
- ( ) Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ( ) Water Supply
  - [ ] Domestic [ ] Public
  - [ ] Irrigation [ ] Industrial
- ( ) Cathodic Protection
- ( ) Dewatering
- ( ) Heat Exchange
- ( ) Injection
- ( ) Monitoring
- ( ) Remediation
- (●) Sparging
- ( ) Test Well
- ( ) Vapor Extraction
- ( ) Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	26.5	8	Sch 80	PVC	0.179	1.32		
26.5	28	8	Sch 80	PVC	0.179	1.32	factory	25 Milan

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
2.5	23	Cement	Neat
23	25	Bentonite	
25	30	Sand	#2/12

Attachments

- [ ] Geologic Log
- [ ] Well Construction Diagram
- [ ] Geophysical Log(s)
- [ ] Soil/Water Chemical Analyses
- [ ] Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name

Person, Firm or Corporation

Address City State Zip

Signed

C-57 Licensed Water Well Contractor

12/01/2010 Date Signed

802334 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111682

Page 1 of 1

Owner's Well Number 05-10

Date Work Began 10-25-10 Date Work Ended 10-25-10

Local Permit Agency ACPWA

Permit Number W2010-0743 Permit Date 10-13-10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35K

Latitude / Longitude: N / W

APN/TRS/Other:

Geologic Log

Orientation: ○ Vertical ○ Horizontal ○ Angle Specify

Drilling Method: Drilling Fluid:

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	1	Concrete
1	16	(No Sampling)
16	21	Silty SAND
21	29.5	SAND
29.5	30	Sandy CLAY

Total Depth of Boring: Feet

Total Depth of Completed Well: Feet

Well Owner

[redacted]

Well Location

Address 250 8th Street

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

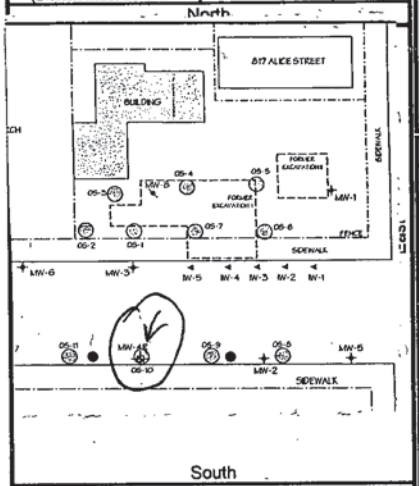
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35K

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- (●) New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- (●) Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0.5	27	8	Sch 80	PVC	0.179	1.32		
27	28.5	8	Sch 80	PVC	0.179	1.32	factory	25 mirco

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
2.5	23.5	Cement	Neat
23.5	25.5	Bentonite	
25.5	30	Sand	#2/12

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name (Person, Firm or Corporation)

Address City CA State Zip

Signed (C-57 Licensed Water Well Contractor) Date Signed 12/01/2010 C-57 License Number 802334

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e0111683

Page 1 of 1

Owner's Well Number 05-11

Date Work Began 10-25-10 Date Work Ended 10-25-10

Local Permit Agency ACPWA

Permit Number W2010-0743 Permit Date 10-13-10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S 04W 35K

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ○ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	0-5	Concrete
0-5	16	< No Sampling >
16	20	Silty SAND
20	29	SAND
29	30	Sandy CLAY

Total Depth of Boring 30 Feet

Total Depth of Completed Well 29 Feet

Well Owner

[redacted]

Well Location

Address 2509 85th ST

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

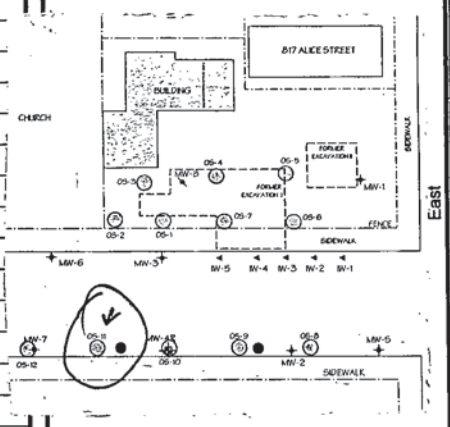
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35K

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- (●) New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- (●) Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield* (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	27.5	8	Sch 80	PVC	0.197	1.32		
27.5	29	8	Sch 80	PVC	0.197	1.32	Factory	25 micron

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
2.5	24	cement	Neat
24	26	Bentonite	
26	30	Sand	#2/12

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name

Person, Firm or Corporation Address City CA State Zip

Signed

C-57 Licensed Water Well Contractor Date Signed 12/01/2010 C-57 License Number 802334

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111684

Page 1 of 1

Owner's Well Number 05-12

Date Work Began 10-26-10 Date Work Ended 10-26-10

Local Permit Agency ACPWA

Permit Number W2010-0743 Permit Date 10-13-10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S 04W 35K

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ○ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	0.5	Concrete
0.5	16	< No Sampling
16	30	SAND

Total Depth of Boring 30 Feet

Total Depth of Completed Well 30 Feet

Well Owner

[redacted]

Well Location

Address 250 8th Street

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

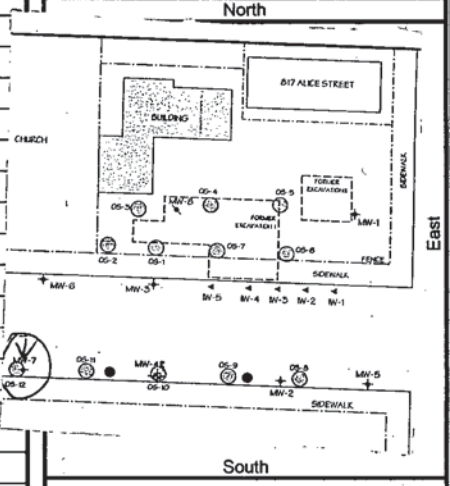
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35K

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- (●) New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- (●) Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	28.5	8	Sch 80	PVC	0.179	1-32		
28.5	30	8	Sch 80	PVC	0.179	1-32	factory	25 micron

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
2.5	25.5	cement	Neat
25.5	27.5	Bentonite	
27.5	30	Sand	#2/12

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name (Person, Firm or Corporation)

Signed (Address) City CA State 802334 Zip

(C-57 Licensed Water Well Contractor) Date Signed 12/01/2010 C-57 License Number

DWR 188 REV. 1/2006

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File Original with DWR

Page 1 of 1

Owner's Well Number MW-1

Date Work Began 07/14/2010 Date Work Ended 7/14/2010

Local Permit Agency ALAMEDA COUNTY PUBLIC WORKS AGENCY

Permit Number W2010-0433 Permit Date 7/12/10

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0114728

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35H

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ⊙ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	35	WELL DISTRUCTION- PRESSURE GROUT; WELL CASING FILLED FROM BOTTOM (USING TRIM PIPE) WITH CEMENT GROUT. GROUT PRESSURIZED TO 25 PSI FOR A PERIOD OF NOT LESS THAN 5 MINUTES. WELL BOX PULLED FROM GROUND AND HOLE TOPPED TO MATCH EXISTING GROUND SURFACE.

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 165 13TH STREET

City OAKLAND County Alameda

Latitude 37 Deg. 48 Min. 4 Sec. N Longitude -122 Deg. 15 Min. 56 Sec. W

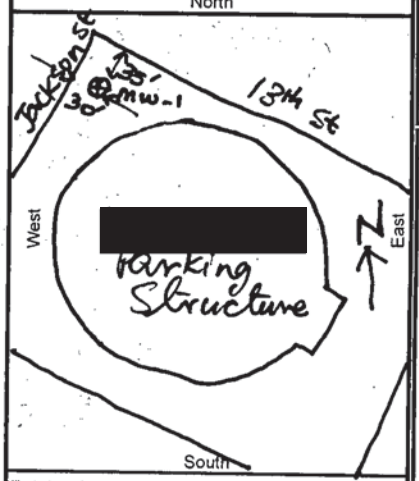
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35H

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

- ○ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ⊙ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description

Attachments

- ☒ Geologic Log
- ☒ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name V & w DRILLING, INC. (Person, Firm or Corporation)

3806 DUCK CREEK DRIVE (Address) STOCKTON (City) CA (State) 95215 (Zip)

Signed (C-57 Licensed Water Well Contractor) Date Signed 8/12/10

720904 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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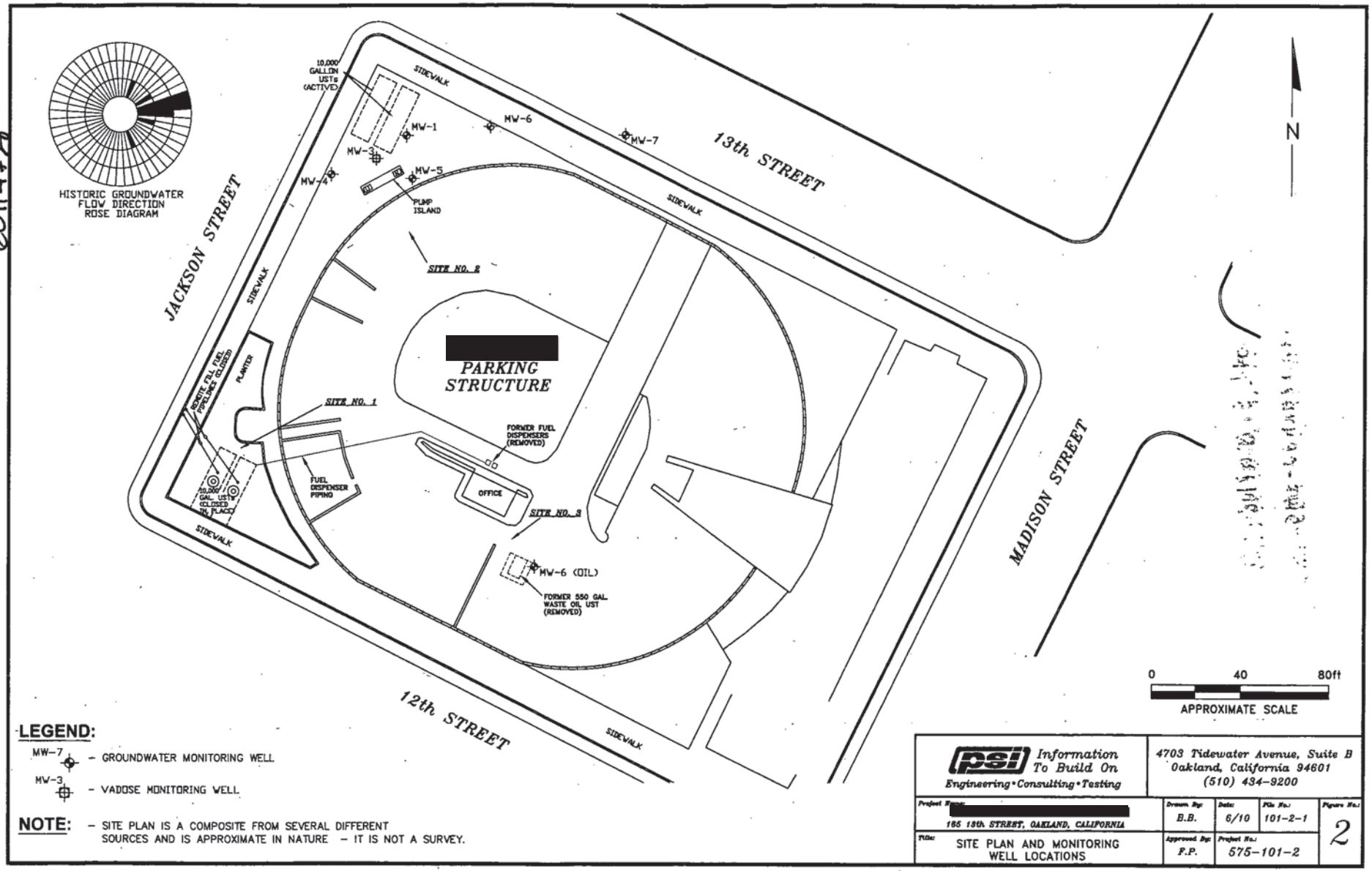

LEGEND:

MW-7 – GROUNDWATER MONITORING WELL

MW-3 – VADOSE MONITORING WELL

NOTE: – SITE PLAN IS A COMPOSITE FROM SEVERAL DIFFERENT SOURCES AND IS APPROXIMATE IN NATURE – IT IS NOT A SURVEY.

psi Information To Build On
Engineering • Consulting • Testing

4703 Tidewater Avenue, Suite B
Oakland, California 94601
(510) 434-9200

Project Name: [redacted] 165 13th STREET, OAKLAND, CALIFORNIA	Drawn By: B.B.	Date: 6/10	File No.: 101-2-1	Figure No.: 2
Title: SITE PLAN AND MONITORING WELL LOCATIONS	Approved By: F.P.	Project No.: 575-101-2		

E0114728

HUNTER
ENVIRONMENTAL SERVICES, INC.

597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW–1

PROJECT NO: 02–276–010
DATE: 3/21/89
CLIENT: [redacted]
REF. ELEV. –
SITE LOCATION: 165 13th St.,Oakland
METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 5' East of pump island
HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						4" Concrete at Surface	
2					SP	SAND, brown, silty, fine–grained, medium dense, slightly moist, no odor	
4		30	47	RING @ 5'	SP	As Above	
6							
8							
10		38	ND	RING @ 10'	SP	As Above, moist, trace of odor	
12							
14		40	300	RING @ 15'	SP	SAND, brown, fine–grained, medium dense, moist, strong odor	
16							
18							
20		50+	260	RING @ 20'	SP	SAND, brown, medium–grained, moist, slight odor	
22							
24						▽ Water found at 23'	

E0114728

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW-1 PAGE 2 of 2

PROJECT NO: DATE:
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		–	–	RING @ 25'	SP	As above, silty, no odor	
26					CL	CLAY, light-brown, sandy, silty, firm, moist, no odor	
28							
30					SP	SAND, brown, gravelly, fine to medium-grained, very dense, moist, no odor	
32							
34							
36						TOTAL DEPTH-35'	

Well Construction: 35'-14', 0.02" slotted 4" PVC; 14'-0', blank 4" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11.5'; holeplug 11.5'-4'; concrete 4'-0'. 12" water-proof well box.

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File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0114729

Page 1 of 1

Owner's Well Number MW-3

Date Work Began 07/14/2010 Date Work Ended 7/14/2010

Local Permit Agency ALAMEDA COUNTY PUBLIC WORKS AGENCY

Permit Number W2010-0434 Permit Date 7/12/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35H

Latitude N / Longitude W

APN/TRS/Other

Geologic Log

Orientation: ⊙ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	15	WELL DISTRUCTION- PRESSURE GROUT;
		WELL CASING FILLED FROM BOTTOM (USING
		TRIM PIPE) WITH CEMENT GROUT. GROUT
		PRESSURIZED TO 25 PSI FOR A PERIOD OF
		NOT LESS THAN 5 MINUTES. WELL BOX
		PULLED FROM GROUND AND HOLE TOPPED
		TO MATCH EXISTING GROUND SURFACE.

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 165 13TH STREET

City OAKLAND County Alameda

Latitude 37 Deg. 48 Min. 4 Sec. N Longitude -122 Deg. 15 Min. 57 Sec. W

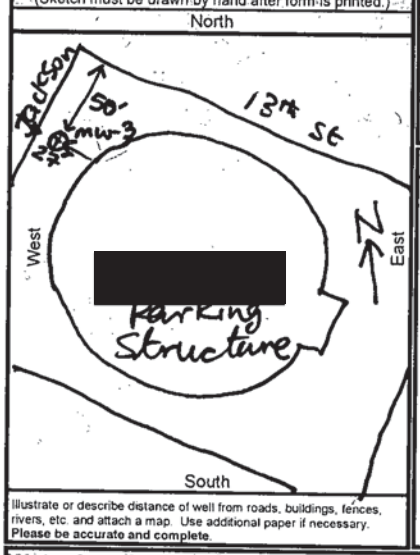
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35H

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

- ○ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ⊙ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description

Attachments

- ☒ Geologic Log
- ☒ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name V & w DRILLING, INC.
Person, Firm or Corporation

3806 DUCK CREEK DRIVE Address STOCKTON City CA State 95215 Zip

Signed [signature] C-57 Licensed Water Well Contractor

8/12/10 Date Signed

720904 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

08-18-10P02:28 RCVD

E0114729

HUNTER
ENVIRONMENTAL SERVICES, INC.

597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW–3 PAGE 1 of 1

PROJECT NO: 02–276–010 DATE: 3/20/89
CLIENT: Alameda County REF. ELEV. –
SITE LOCATION: 165 13th St., Oakland METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 5' N.W. of pump Island HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham, R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						8" Concrete at surface	
2							
4		33	16	RING @ 5'	SP	SAND, brown, silty, fine–grained, medium dense, slighty moist, no odor	
6							
8							
10		22	35	RING @ 10'	SP	As above	
12							
14							
		50+	160	RING @ 15'	SP	As above, slight odor	
16						Well Construction: 15'-5', 0.02" slotted 2" PVC; 5'-0', blank 2" PVC. Holeplug 24'-22'; 3/8" bentonite pellets 22'-21'; holeplug 21'-16'; #3 Lonestar sand 16'-4'; 3/8" bentonite pellets 4'-3'; concrete 3'-0'. 12" water-proof well box.	
18							
20			ND	RING @ 20'		As above	
22							
24						▽ Water found at 23' TOTAL DEPTH = 24'	

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File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e0114730

Page 1 of 1

Owner's Well Number MW-4

Date Work Began 07/14/2010 Date Work Ended 7/14/2010

Local Permit Agency ALAMEDA COUNTY PUBLIC WORKS AGENCY

Permit Number W2010-0435 Permit Date 7/12/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35H

Latitude N / Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	35	WELL DISTRUCTION- PRESSURE GROUT; WELL CASING FILLED FROM BOTTOM (USING TRIM PIPE) WITH CEMENT GROUT. GROUT PRESSURIZED TO 25 PSI FOR A PERIOD OF NOT LESS THAN 5 MINUTES. WELL BOX PULLED FROM GROUND AND HOLE TOPPED TO MATCH EXISTING GROUND SURFACE.

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 165 13TH STREET

City OAKLAND County Alameda

Latitude 37 Deg. 48 Min. 4 Sec. N Longitude -122 Deg. 15 Min. 57 Sec. W

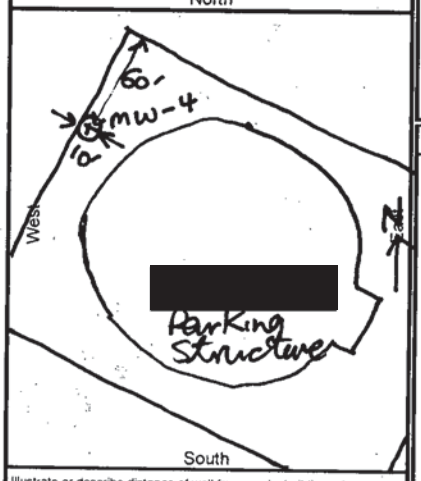
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35H

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

- ○ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ◉ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description

Attachments

- ☒ Geologic Log
- ☒ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name V & w DRILLING, INC. (Person, Firm or Corporation)

3806 DUCK CREEK DRIVE (Address) STOCKTON (City) CA (State) 95215 (Zip)

Signed [signature] (C-57 Licensed Water Well Contractor) Date Signed 8/12/10

720904 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

08-18-10P02:28 RCVD

E0114730

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW–4

PAGE 1 of 2

PROJECT NO: 02–276–010
CLIENT: [redacted]
SITE LOCATION: 02–276–010

DATE: 3/21/89
REF. ELEV. –
METHOD: Hollow–stem Auger, Mobile Drill B–53

BORING LOCATION: 20' West of pump island
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G. #3851

HOLE DIA: 8.25"

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION
0						4" Concrete at Surface
4		4	ND	RING @ 5'	SP	SAND, brown, some silt, fine-grained, loose, slighty moist, no odor
10		25	ND	RING @ 10'	SP	As above, medium dense
14		35	133	RING @ 15'	SP	As above, ,slight odor
20		50+	15	RING @ 20'	SP	SAND, brown, fine-grained, dense, moist, no odor
23						▽ Water found at 23'

WELL CONSTRUCTION

E0114730

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. MW-4 PAGE 2 of 2

PROJECT NO: 02-276-010 DATE: 3/21/89
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		1	ND	RING @ 25'	SP	As above, saturated	
26							
28							
30							
32							
34							
36						TOTAL DEPTH-35'	

Well Construction: 35'-15', 0.02" slotted 2" PVC; 15'-0', blank 2" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11'; holeplug 11'-4'; concrete 4'-0'. 12" water-proof well box.

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0114731

Page 1 of 1

Owner's Well Number MW-5

Date Work Began 07/14/2010 Date Work Ended 7/14/2010

Local Permit Agency ALAMEDA COUNTY PUBLIC WORKS AGENCY

Permit Number W2010-0436 Permit Date 7/12/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35H

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	35	WELL DISTRUCTION- PRESSURE GROUT; WELL CASING FILLED FROM BOTTOM (USING TRIM PIPE) WITH CEMENT GROUT. GROUT PRESSURIZED TO 25 PSI FOR A PERIOD OF NOT LESS THAN 5 MINUTES. WELL BOX PULLED FROM GROUND AND HOLE TOPPED TO MATCH EXISTING GROUND SURFACE.

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 165 13TH STREET

City OAKLAND County Alameda

Latitude 37 Deg. 48 Min. 4 Sec. N Longitude -122 Deg. 15 Min. 56 Sec. W

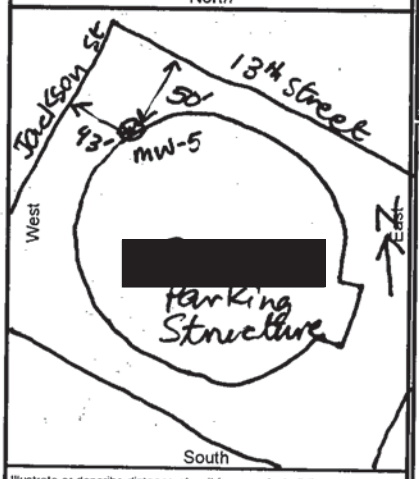
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35H

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

- ○ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ◉ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description

Attachments

- ☒ Geologic Log
- ☒ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name V & w DRILLING, INC.
Person, Firm or Corporation

3806 DUCK CREEK DRIVE Address STOCKTON City CA State 95215 Zip

Signed C-57 Licensed Water Well Contractor

8/12/10 Date Signed

720904 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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E0114731

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415–372–3637

LOG OF BORING NO. MW–5 PAGE 1 of 2

PROJECT NO: 02–276–010
DATE: 3/21/89
CLIENT: [redacted]
REF. ELEV. –
SITE LOCATION: 165 13th St.,Oakland
METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 5' East of pump Island
HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION
0						6" Concrete at Surface
4		18	ND	RING @ 5'	SP	SAND, light–brown, silty, fine–grained, medium dense, slightly moist, no odor
10		22	ND	RING @ 10'	SP	As above
14		46	10	RING @ 15'	SP	SAND, gray–brown, fine–grained, medium dense, slightly moist, no odor
20		50+	110	RING @ 20'	SP	As above, trace of odor
24						▽ Water found at 24'

WELL CONSTRUCTION

E0114731

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. MW-5 PAGE 2 of 2

PROJECT NO: DATE:
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		-	-	RING @ 25'	SP	▽ RING @ 25'	
26							
28					CL	CLAY, light-brown, sandy, silty, fine-grained, medium dense, saturated	
30							
32					SP	SAND, brown, silty, fine-grained, medium dense, saturated	
34							
36						TOTAL DEPTH-35'	

Well Construction: 35'-15', 0.02" slotted 4" PVC; 15'-0', blank 4" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11.5'; holeplug 11.5'-4'; concrete 4'-0'. 12" water-proof well box.

The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

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Page 1 of 1

Owner's Well Number MW-6 (OIL)

Date Work Began 07/14/2010 Date Work Ended 7/14/2010

Local Permit Agency ALAMEDA COUNTY PUBLIC WORKS AGENCY

Permit Number W2010-0438 Permit Date 7/12/10

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0114733

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35H

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	20	WELL DISTRUCTION- PRESSURE GROUT;
		WELL CASING FILLED FROM BOTTOM (USING
		TRIM PIPE) WITH CEMENT GROUT. GROUT
		PRESSURIZED TO 25 PSI FOR A PERIOD OF
		NOT LESS THAN 5 MINUTES. WELL BOX
		PULLED FROM GROUND AND HOLE TOPPED
		TO MATCH EXISTING GROUND SURFACE.

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 165 13TH STREET

City OAKLAND County Alameda

Latitude 37 Deg. 48 Min. 2 Sec. N Longitude -122 Deg. 15 Min. 55 Sec. W

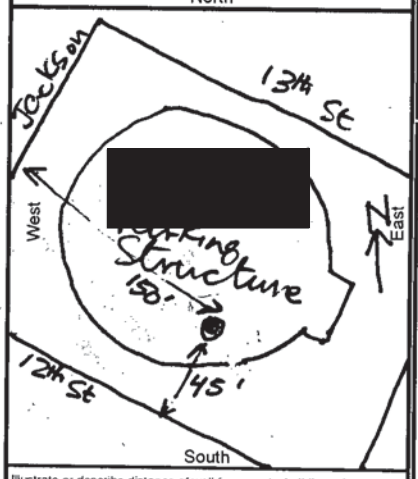
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35H

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- ○ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ◉ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description

Attachments

- ☒ Geologic Log
- ☒ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name V & w DRILLING, INC. (Person, Firm or Corporation)

3806 DUCK CREEK DRIVE (Address) STOCKTON (City) CA (State) 95215 (Zip)

Signed [signature] (C-57 Licensed Water Well Contractor) 8/12/10 (Date Signed) 720904 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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E0114733

Environmental Science & Engineering, Inc.
A GELCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-6

Page 1 of 1

WELL COMPLETION

Completion Depth: 20 FEET

	Size/Type	From	To
Casing:	2" PVC Sch. 40	5	0
Screen:	2"-0.02" slot PVC	20	5
Filter:	#3 Monteray Sand	20	4
Seal:	Bentonite Pellets	4	3.5
	Grout /sand slurry	3.5	1.5
	Concrete	1.5	0

Well Cap or Box: Flush Traffic box with locking well cap.

Project Name: [redacted] Project No: 6-92-5413
Location: 165 13th Street
Oakland, California

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger - Access II
Hole Diameter: 8 In. O.D. Total Depth: 20 Feet
Ref. Elevations: NA
Logged By: Kerry Lefever

Dates:
Start: 10-29-92
Finish: 10-29-92

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	Concrete						
1	SILTY SAND; orange-brown, dense, fine grained sand, moist, no odor.	SM					
2							
3							
4							
5			22				
6			30				
7			22			2	
8	SAND; brown, wet, fine grained sand, no odor.	SP	48				Water at 7 Feet
9			17				
10			23				
11			24				
12							
13							
14							
15							
16	GRAVELLY SAND; brown, wet, some clay, fine to coarse grained sand.	SW					
17							
18							
19							
20							Total Depth = 20 Feet
21							
22							

REGISTERED GEOLOGIST
STATE OF CALIFORNIA

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State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0114734

Page 1 of 1

Owner's Well Number MW-7

Date Work Began 07/14/2010 Date Work Ended 7/14/2010

Local Permit Agency ALAMEDA COUNTY PUBLIC WORKS AGENCY

Permit Number W2010-0439 Permit Date 7/12/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35H

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation: ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	25	WELL DISTRUCTION - DRILLED OUT;
		WELL DRILLED OUT AND FILLED WITH
		CEMENT GROUT AND HOLE TOPPED TO
		MATCH EXISTING GROUND SURFACE.

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 165 13TH STREET

City OAKLAND County Alameda

Latitude 37 Deg. 48 Min. 4 Sec. N Longitude -122 Deg. 15 Min. 55 Sec. W

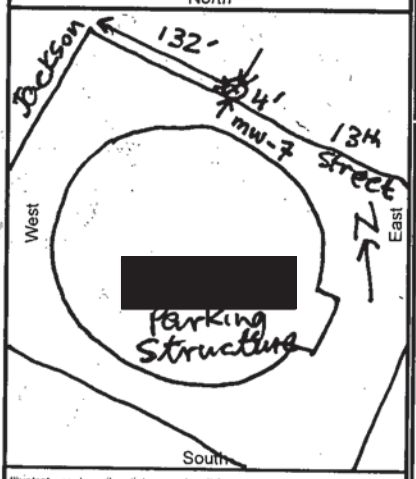
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35H

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

- ○ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ◉ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description

Attachments

- ☒ Geologic Log
- ☒ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name V & w DRILLING, INC. (Person, Firm or Corporation)

Address 3806 DUCK CREEK DRIVE City STOCKTON State CA Zip 95215

Signed [signature] (C-57 Licensed Water Well Contractor) Date Signed 8/12/10

C-57 License Number 720904

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

08-18-10P02:29 RCVD

E0114734

SOIL BORING LOG

BORING NO: B-7
SHEET 1 OF 2

PROJECT NAME: [redacted] Site No. 2
PROJECT NO: 575-9G028
DATE 9/3/99

DRILLING COMPANY: FISCH ENVIRONMENTAL
DRILLING METHOD: DIRECT PUSH - GEOPROBE
BORING DIMENSIONS: 2 INCH DIAMETER DEPTH: 24 ft.

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
9/3/99	initial	18.0
9/3/99	stabilized	16.9

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1					Sand with some silt, fine to medium grained sand, brown, moist, no odor.		SP	Concrete Surface
5		16				0		
8								Color change to green.
10		18				0		
15		20				0		
18								groundwater encountered.
19		19						
20					Log continues downward			

LOGGED BY: Chris Merritt

E0114734

SOIL BORING LOG

BORING NO: B-7
SHEET 2 OF 2

PROJECT NAME: [redacted] Site No. 2
PROJECT NO: 575-9G028
DATE 9/3/99

DRILLING COMPANY: FISCH ENVIRONMENTAL
DRILLING METHOD: DIRECT PUSH - GEOPROBE
BORING DIMENSIONS: 2 INCH DIAMETER DEPTH: 24 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
21					Silty sand as described above.		SP	
22								
23								
24		24						
25						0		Groundwater encountered at 18 feet.
26								Total Depth = 24 feet.
27								Boring terminated at depth sufficient for well installation.
28								Well MW-7 installed in boring.
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

LOGGED BY: Chris Merritt

EQ14734

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO: B7/MW7

PERMIT NO:

DATE: 9/3/99 | PROJECT NAME: [redacted] Site #2 | PROJECT NO: 96028

WELL SITE LOCATION PLAN:

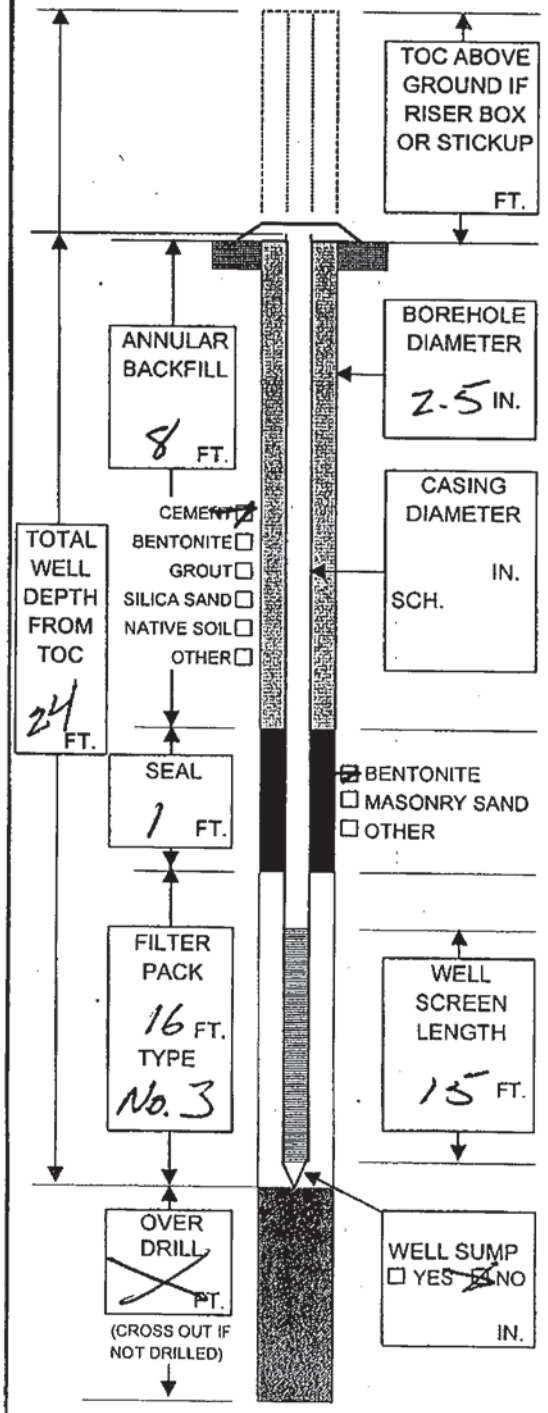
SEC: TWN: RGE: LAT: LONG:

DRILLING CO: Fisch Environmental

DRILL CREW: Dave Fisch

WELL TYPE: ☐ SHALLOW ☐ SINGLE CASED ☒ MONITORING
☐ PERMANENT ☐ INTERMEDIATE ☐ DOUBLE CASED ☐ RECOVERY
☐ TEMPORARY ☐ DEEP ☐ OTHER ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECON. ☐ STEAM CLEAN ☒ HIGH PRESSURE WASH ☐ SOAP WASH ☐ OTHER

CASING TYPE: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ☐ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED ☒ OTHER Prepack
PIT CASING: ☐ YES ☐ NO ☐ DESCRIBE

WELL SCREEN: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER ____ IN
SLOT: ☒ 0.010 ☐ 0.020 ☐ OTHER ____ IN

DRILLING METHOD: ☐ SOLID STEM ☐ HOLLOW STEM ☐ MUD ROTARY ☐ AIR ROTARY ☒ DIRECT PUSH ☐ HAND AUGER ☐ OTHER
BIT SIZE: ☒ 2.5 ☐ 4" ☐ 6" ☐ 8" ☐ 12" ☐ OTHER ____ IN
DRILLING MUD: ☒ NONE ☐ WATER ☐ BENTONITE ☐ OTHER
CENTRALIZER: ☐ YES ☒ NO

COMPLETION: ☒ FLUSH MOUNT ☐ STICKUP ☐ RISER BOX
LOCK TYPE: ☒ DOLPHIN ☐ MASTER KEY NO. ____ ☐ OTHER
PAD: ☐ 2'X2' ☐ 4'X4' ☐ OTHER

CUTTINGS: ☐ DRUMMED NUMBER OF DRUMS ____ ☐ SPREAD ☒ OTHER None generated

DEVELOPMENT METHOD: ☐ NONE ☒ BAILING ☐ PUMPING ☐ AIR LIFT ☐ SURGE & BLOCK ☐ OTHER
TIME: ☐ 10 MIN ☐ 20 MIN ☒ OTHER 30 MIN
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ____ GAL
WATER BEFORE: ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
WATER AFTER: ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
EVIDENT ODOR: ☐ YES ☐ NO TYPE

DEVELOPMENT WATER: ☐ DRUMMED NUMBER OF DRUMS ____ ☐ SPREAD ☐ TREATED ☐ POTW ☐ OTHER

WATER LEVEL: INITIAL ____ FT ☐ BTOC ☐ BGS
DATE: ____ ____ FT BELOW TOC
DATE: ____ ____ FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

PSI
Rev. 12/95

PREPARED BY: Chris Merritt

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File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0114739

Page 1 of 1

Owner's Well Number MW-6

Date Work Began 07/14/2010 Date Work Ended 7/14/2010

Local Permit Agency ALAMEDA COUNTY PUBLIC WORKS AGENCY

Permit Number W2010-0437 Permit Date 7/12/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number: 01S04W35H

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	25	WELL DISTRUCTION - DRILLED OUT;
		WELL DRILLED OUT AND FILLED WITH
		CEMENT GROUT AND HOLE TOPPED TO
		MATCH EXISTING GROUND SURFACE.

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Owner

[redacted]

Well Location

Address 165 13TH STREET

City OAKLAND County Alameda

Latitude 37 Deg. 48 Min. 4 Sec. N Longitude -122 Deg. 15 Min. 55 Sec. W

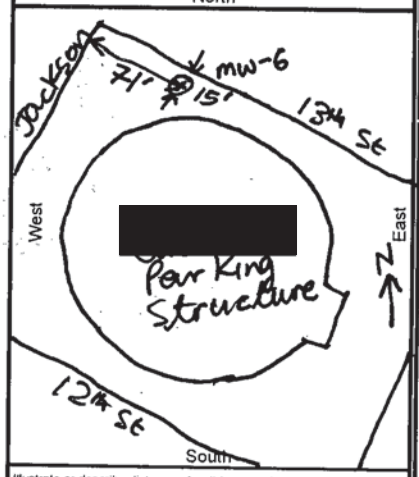
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35H

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

- ○ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ◉ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description

Attachments

- ☒ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name V & w DRILLING, INC.
Person, Firm or Corporation

3806 DUCK CREEK DRIVE Address STOCKTON City CA State 95215 Zip

Signed [signature] C-57 Licensed Water Well Contractor

8/12/10 Date Signed

720904 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

08-18-10P02:28 RCVD

E0114739

SOIL BORING LOG

REGISTERED GEOLOGIST
TIMOTHY R. O'BRIEN
No. 1919
Certified Engineering Geologist
STATE OF CALIFORNIA

BORING NO:	B2
SHEET 1 OF 2	
PROJECT NAME:	[redacted]
PROJECT NO:	8G004
DATE:	3/23/98
NORTHINGS:	EASTINGS:
DRILLING COMPANY:	FISCH ENVIRONMENTAL SERVICES
DRILLING METHOD:	DIRECT PUSH - GEOPROBE
BORING DIMENSIONS:	2.5 INCH DIAMETER DEPTH: 24 FT

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
3/23/98	INITIAL	19 FT
3/23/98	STABILIZED	16 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1					Sand with some clay, fine to medium grained sand, brown, moist, low plasticity fines, no odor.		SP	Concrete pavement surface.
5		22				0		
10		16				0		
15		19				0		
18								Color change to green.
19								Slight organic (sewage) odor noted.
20		16				0		

Log continued on Sheet 2 of 2

LOGGED BY: TIM O'BRIEN

E0114739

SOIL BORING LOG

BORING NO: B2
SHEET 2 OF 2
PROJECT NAME: [redacted]
PROJECT NO: 8G004
DATE: 3/23/98
NORTHINGS: EASTINGS:
DRILLING COMPANY: FISCH ENVIRONMENTAL SERVICES
DRILLING METHOD: DIRECT PUSH - GEOPROBE
BORING DIMENSIONS: 2.5 INCH DIAMETER DEPTH: 24 FT

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
3/23/98	STABILIZED	16 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
21		16			Sand with trace fines as described above.	0	SP	Sample interval continued from 19 ft. bgs.
24								Probe refusal at 24 ft. bgs.
								Total Depth = 24 feet.
								Boring terminated at depth of probe refusal.
								Well MW-6 constructed in boring.

LOGGED BY: Tim O'Brien

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0121812 – 20121812A

DWR Use Only - Do Not Fill In

01S04W35Q

State Well Number/Site Number

N / W

Latitude / Longitude

APN/TRS/Other

Page 1 of 1

Owner's Well Number SVP-6 / SVP-6

Date Work Began 07/28/2010 Date Work Ended 7/28/2010

Local Permit Agency Alameda County Public Works Agency

Permit Number W2010-0531 Permit Date 7/20/10

Geologic Log

Orientation ⊙ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Air Drilling Drilling Fluid

Depth from Surface Feet	to Feet	Description: Describe material, grain size, color, etc.
		LITHOLOGIC DESCRIPTION
		CONCRETE
		Silty SAND (SM); very dark brown (10YR 2/2); dry; 45% silt, 55% fine to medium grained sand.

CONTACT DEPTH (fbg): 0.6; 5.0

WELL DIAGRAM: Flush-grade 6" well box; Portland Type I/II; Bentonite Seal; Monterey Sand #2/12; 1" vapor well screen; Bentonite Seal; Monterey Sand #2/12; Bottom of Boring @ 5 fbg

Total Depth of Boring 5 Feet

Total Depth of Completed Well 5 Feet

Well Owner

[redacted]

Well Location

Address 105 5th Street

City Oakland County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

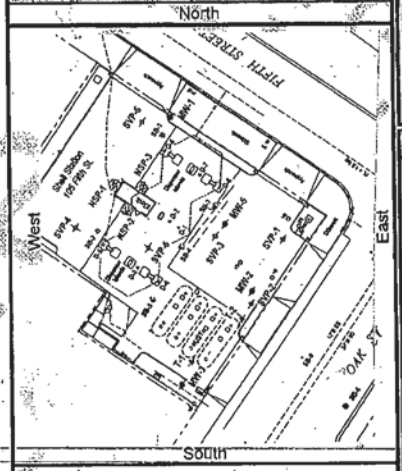
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 1S Range 4W Section 35Q

Location Sketch

(Sketch must be drawn by hand after form is printed)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

⊙ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
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○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
⊙ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

	Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
A	0	2.91		Blank	Teflon Tubing		0.25		
	2.91	3		Screen	Polyethylene		0.25	Vapor Implai	
B	0	4.91		Blank	Teflon Tubing		0.25		
	4.91	5		Screen	Polyethylene		0.25	Vapor Implai	

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	2.16	Cement	
2.16	2.33	Bentonite	
2.33	3.25	Fill	Sand
3.25	4.42	Bentonite	
4.42	5	Fill	Sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Gregg Drilling & Testing
Person, Firm or Corporation

950 Howe Road Martinez CA 485165
Address City State Zip

Signed C-57 Licensed Water Well Contractor

12/9/10 #485165
Date Signed C-57 License Number

DWR 188 REV 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

1S/4W ~~35D41~~ 35D41
35D42

Driller: Soils Exploration Services, Inc.

MARTIN LUTHER KING JR. WAY

14TH STREET

OAKLAND

V-1 V-2 V-3 V-4 V-5 V-6 V-7 V-8 V-9 V-10 V-11 V-12 V-13 V-14 V-15 V-16 V-17 V-18 V-19 V-20 V-21 V-22 V-23 V-24

EW-2

43

28

N

SCALE 0 10 20 ft

⊕ Pre-existing well

+ NEW WELL

ZONE 7 PERM [redacted] # 90699

[redacted]

Phone 415 268-0461
Lic# C57-582696

88-44-499-01
7-21-88

[redacted]

B1 – 24'-6 3/4" @ S. @ 1345

SUCTION @ 30 FT. PUMPED 1PT. "DRY" 1ST RECHARGE
INITIAL H2O CLEAR. DEVELOPED – ROTTEN ODOR.
1405 H2O ± 28°
1420 H2O @ 29-4½" U

B4 – 22 ~~16'-11"~~ 1440 NO REACTION to PASTE
RAN DISTILLED water through LINE, PUT ON NEW TUBEING
BOTTOM of PIEZOMETER 28'FT ±
PURGED 3 QTS
SAMPLED 14:35 unable to DRAW DOWN BEYOND 26'FT.

WP-1 TP over ~~+3½" from Ground~~ SURFACE NO PASTE REACTION
24'-11" TOP OF PIPE
FLUSH 1Pt DISTILLED NEW SILICONE PUMP HOSE
PURGED 2½ QUARTS. "DRY" BOTTOM WELL POINT SAMPLED IN
RESERVOIR ONLY "8" DEEP
SAMPLED 1518

WP-2 STICK UP = ~~1'~~ 11½" NO PASTE REACTION
WATER 24'-11½" BELOW TOP PIPE
RESERVOIR = 8"
PUMP 1Pt DISTILLED NEW SILICON PUMP TUBE
PURGE 1 QUART 1545
TOOK 3 LITER ½
then VOA SAMPLE @ 1635
Bentonite pellets TO 2'

1

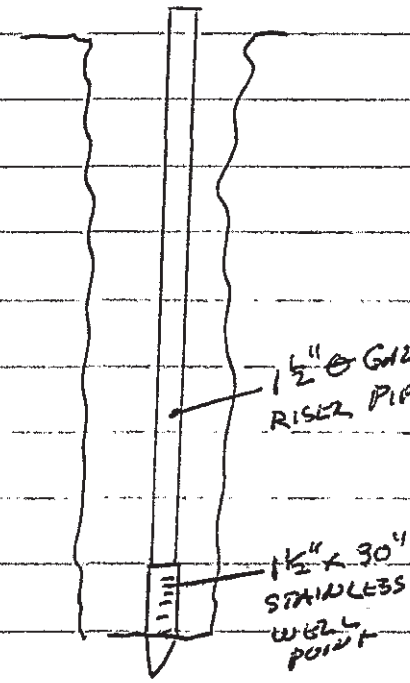
(98-44-499-01

2-21-88 IS/HW

[redacted] 35G 51-52

Inv/Add/

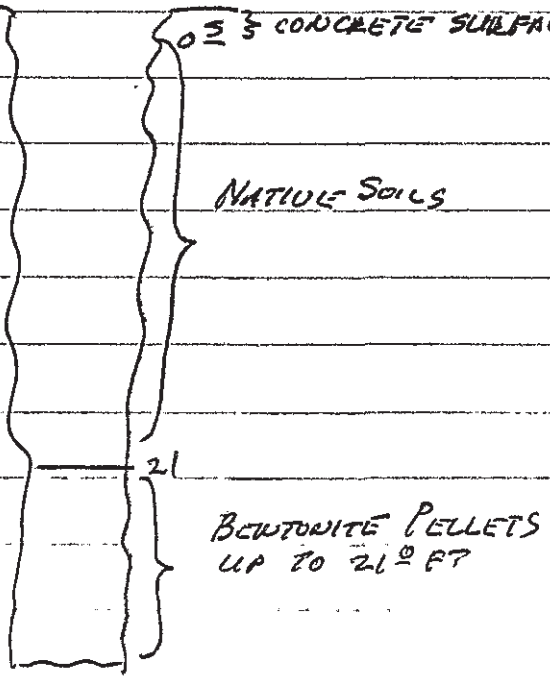
WELL POINTS 1 & 2 HAND AUGERED 3½" ⌀ DOWN TO WATER BEARING SAND. VERY LITTLE DIFF. IN WATER LEVEL BEFORE & AFTER DIGGING HOLE. SET POINT & ATTEMPTED TO DRIVE INTO SANDS.



(1) DEVELOPEMENT BY PARASTALTIC PUMP.

(2). V.O.A. SAMPLES TAKEN FROM SUCTION SIDE OF PUMP & LET DRAIN INTO BOTTLES

AFTER



01-418E 1S/4W-35F

WOODWARD-CLYDE CONSULTANTS

TEST BORING RECORD

SCE Boring

Job No. 8810021A Date 12/19/88

Name [redacted] Location 1111 Broadway, Oakland

Hole No. APC-11 Gr. El. 17 ft Type of Boring 8-inch Auger Rig CME-75

Datum MSL Engr. J. Springer Wt. Ham. 13016.

Dp	DESCRIPTION	Sa. No	Pen	% Rec.	Bl Ct	Wtr. Level	Lab. Data
5	CLAYEY SAND (SC), moist, light gray.				16		
6		1-4			30		
7					50		
8						▽ ATD	
9							
10	SAND (SW), grayish-brown, medium-grained.				25		
11		2-4			50/3"		
12							
13							
14							
15	SAND (SP-SW), grayish-brown, medium-grained.				9		
16					12		
		3-4			40		
17	BOH - 16 ½ ft.						

Inv/Addl 1S14W35C 01-4250

Woodward-Clyde Consultants

PROJECT NAME [redacted] NO. 8910214A

BORING NUMBER	D3			ELEVATION AND DATUM	
DRILLING AGENCY	RNL Exploration	DRILLER	Ramon/Jessie	DATE STARTED / DATE FINISHED	July 24, 1989
DRILLING EQUIPMENT	All Terrain			COMPLETION DEPTH	16.5'
DRILLING METHOD	6" Solid Auger	DRILL BIT		NO. OF SAMPLES / DIST.	NA
SIZE AND TYPE OF CASING	NA			WATER LEVEL / FIRST	NA
TYPE OF PERFORATION	NA	FROM	TO Ft.	LOGGED BY:	W. Copeland
SIZE AND TYPE OF PACK	NA	FROM	TO Ft.	CHECKED BY:	G. Ford
TYPE OF SEAL	NO. 1 NA	FROM	TO Ft.		
	NO. 2 NA	FROM	TO Ft.		

SAMPLER: 2" Modified California Type

UNDIST.: 3

COMPL.: NA 24 HRS.: NA

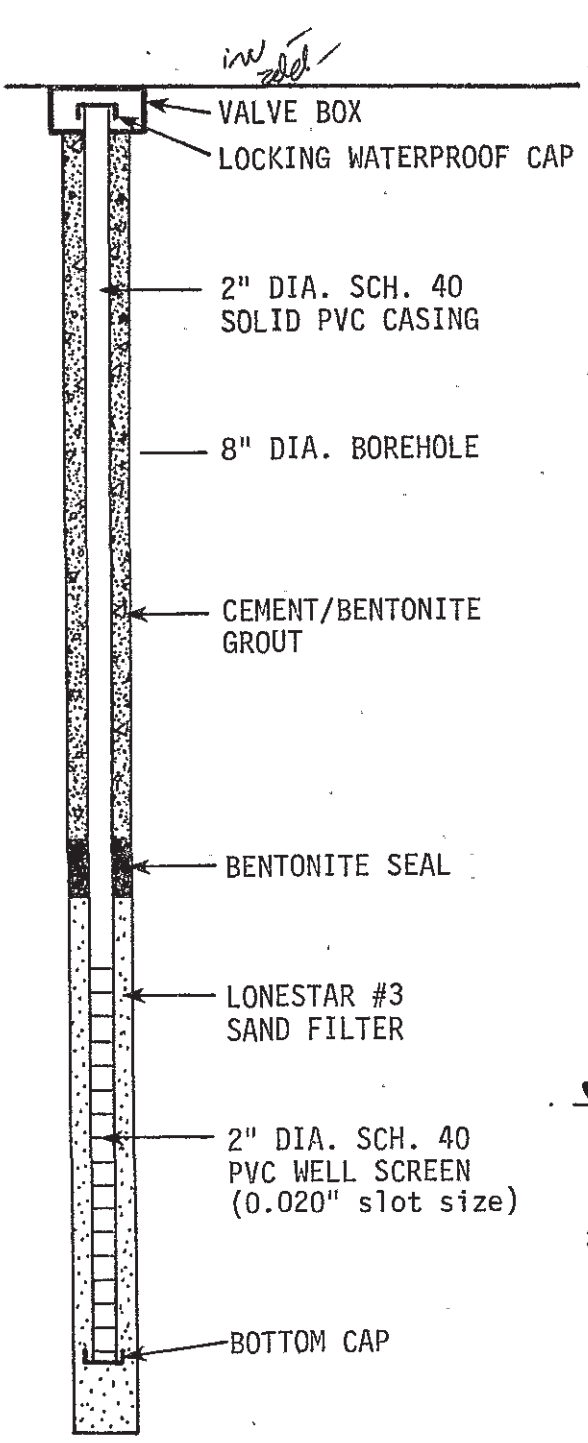
DEPTH (feet)	DESCRIPTION	DEPTH (feet)	SAMPLES: Drive Number	Sample Number	Recov. (Feet)	Blow Counts	REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
	Asaphaltic Concrete						
	SILTY SAND (SM) reddish brown, damp, fine grained, little clay (NATIVE SOIL)						no odor
	medium dense		1	D3-1		33 43 50	OVM = 0 ppm
5	becomes mottled reddish brown, gray, and light brown	5	2	D3-2		23 20 19	OVM = 0 ppm
10	some clay	10					
15	becomes moist, dense	15	3	D3-3		38 38 37	OVM = 0 ppm
	Bottom of Boring at 16.5'						
20		20					
25		25					
30		30					
35		35					

[redacted] 01-4690 1S/4W 35D16

monitoring well

LOG OF TEST BORING 39

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 3/29/89
ELEVATION --



DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
0			ASPHALTIC CONCRETE - 4" thick CONCRETE - 6" thick GRAY-GREEN SILTY SAND (SM) medium dense, moist (fill)
5			GRAY-GREEN CLAYEY SAND (SC) medium dense, moist
10			
15			color changes to brown
20		58	BROWN SAND (SP) dense, moist
25		72	GROUNDWATER LEVEL 9/28/89
		77	
30		50/4"	
35			
40			

SAMPLER TYPE:
CALIFORNIA DRIVE
O.D.: 2.5" I.D.: 2.0"
HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

HEW Drilling

Subsurface Consultants

1330 MARTIN LUTHER KING, JR. WAY – OAK.

JOB NUMBER	DATE	APPROVED	PLATE
430.002	7/7/89		20

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

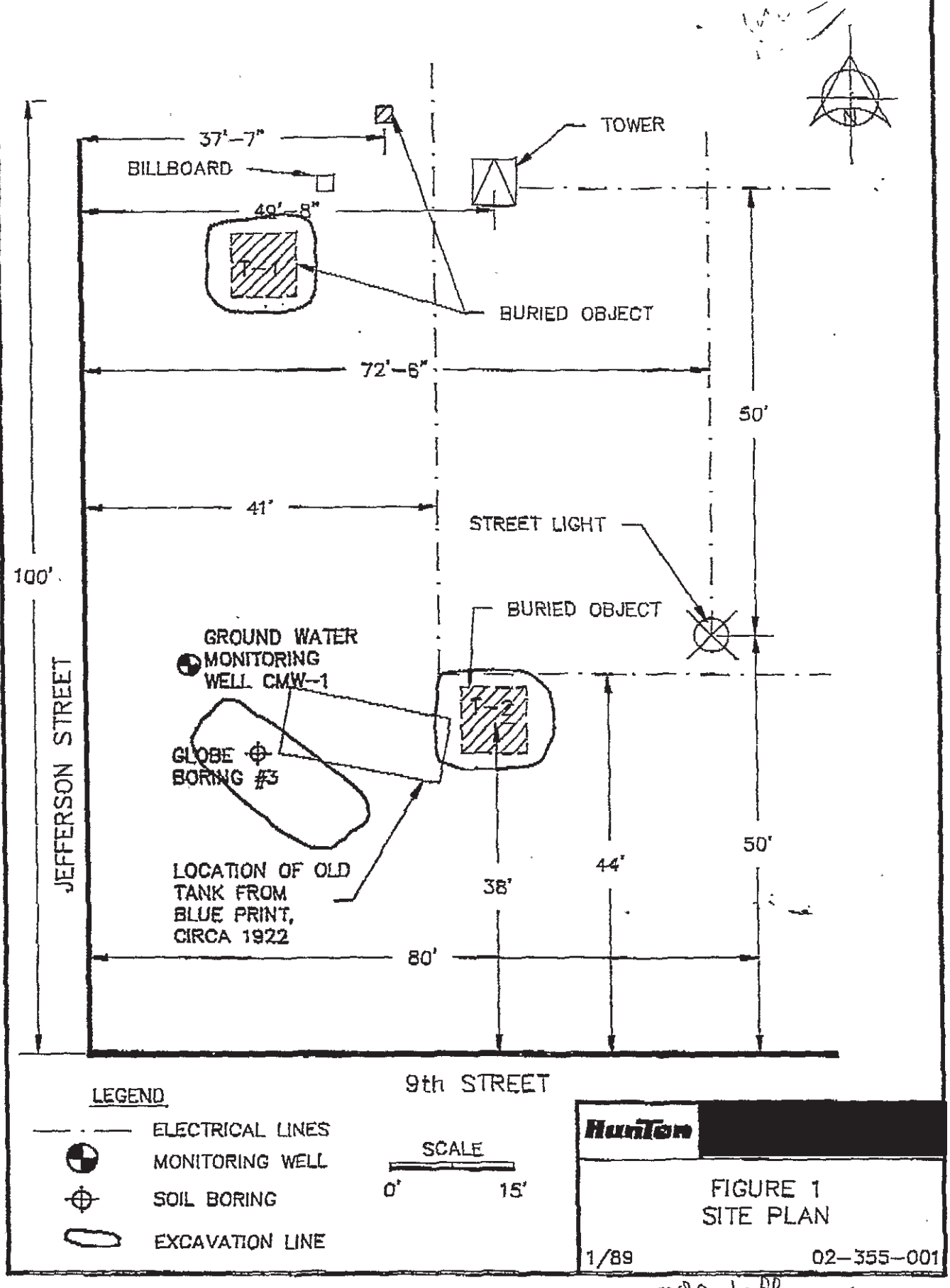
LOG OF BORING NO. CMW 1 PAGE 2 of 2

PROJECT NO: 02-355-001
CLIENT: [redacted]
SITE LOCATION: 900 Jefferson, Oakland, Ca.
BORING LOCATION:
DRILLER: ASE
LOGGED BY: M. MARSDEN
SUPERVISOR: S. WICKHAM Susan Wickham RG 3851

DATE: 1/25/89
REF. ELEV.
METHOD: B61 Hollow Stem Auger
HOLE DIA: 8"

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
26		21	4	Ring @ 25'*	SM	25' driller notes stem plug is wet, possibly ground water SILTY SAND, brown, wet (saturated), no odor, very little silt	
28						* Could not retrieve sample with brass ring (no sample) used standard sampler 1.5" to review lithology	
30						As above	
32							
34							
36							
38					SM	As above, more clay, not completely saturated, stiff	
40					SM	SILTY SAND, brown, saturated, low coh, no odor	
42						Total depth 40' Ground water found at 25.5'	
44						40-20' 2" Slotted (.02 slots) 40 gauge PVC, 20-0' blank PVC; 40-18' Lonestar #3 sand, 18-16' bentonite, 16-0' concrete, well box.	
46							
48							
50							

ADW INW 1S/4W 35E 11
01-033Z



Huntom

FIGURE 1
SITE PLAN

1/89 02-355-001

900 Jefferson
OAKLAND, CA.

01-0332

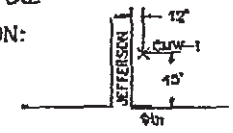
89029 Lic#C-57-487900 Add'l Inv 1S/4W 35 E1

HUNTER
ENVIRONMENTAL SERVICES, INC.

597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. CMW 1 PAGE 1 of 2

PROJECT NO: 02-355-001
CLIENT: [redacted]
SITE LOCATION: 900 Jefferson, Oakland, Ca.
BORING LOCATION:

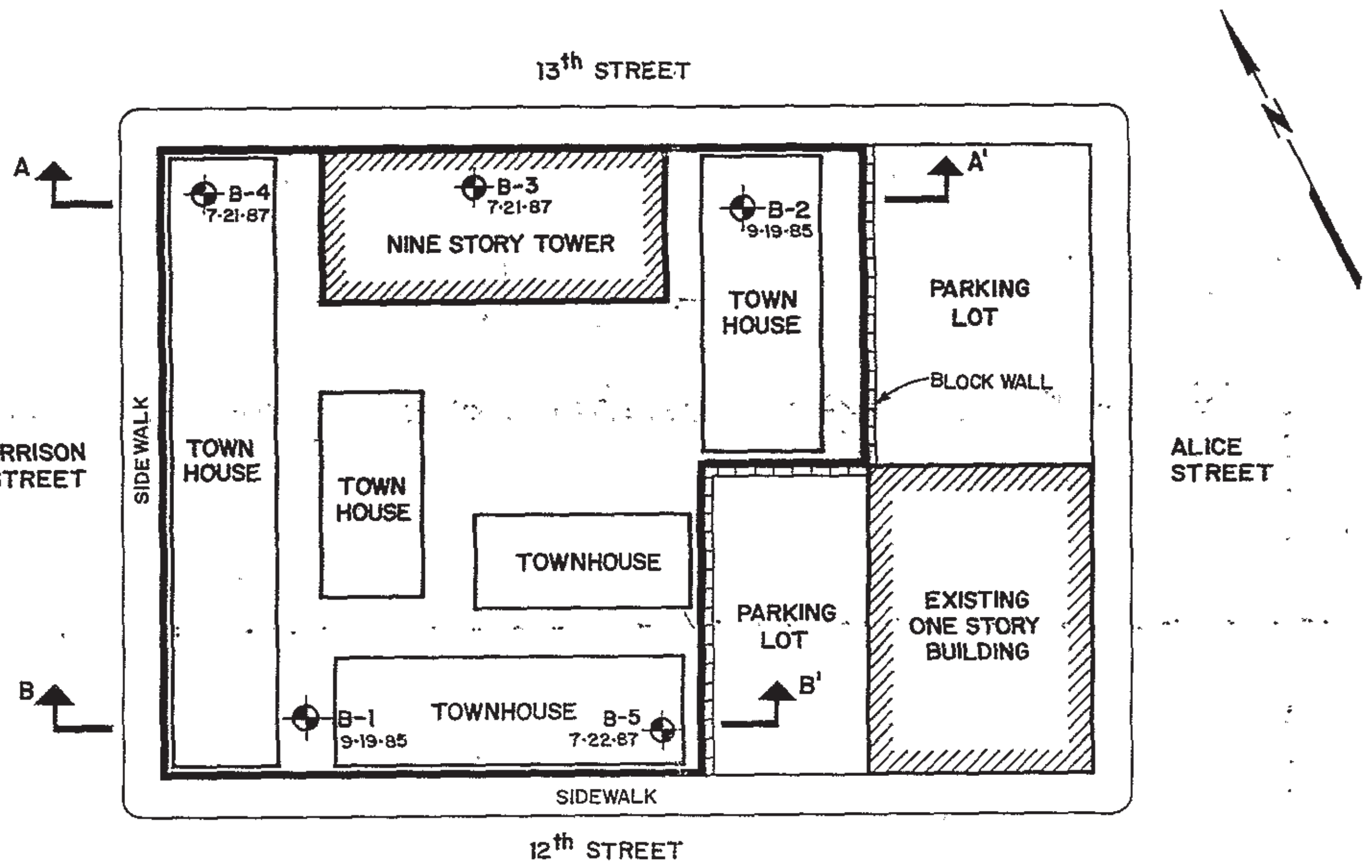


DRILLER: ASE
LOGGED BY: M. MARSDEN
SUPERVISOR: S. WICKHAM Susan Wickham RG 3851

DATE: 1/25/89
REF. ELEV.
METHOD: B61 Hollow Stem Auger
HOLE DIA: 8"

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						Asphalt and surface 3-4" thick	
					SM	SILTY SAND, dark brown, moist, low cohesion, no odor	
2							
4						As above, lighter brown	
		5		Ring @ 5'	SM	SILTY SAND, some clay, red brown, moist, low cohesion, no odor	
6							
8						As above, brown	
		30		Ring @ 10'	SM	As above	
10							
12						As above, slightly more clay	
14							
		15		Ring @ 15'	SC	CLAYEY SAND, brown, moist, slightly consolidated, no odor, some grey mottling	
16							
18							
		31		Ring @ 20'	SM	SILTY SAND, brown, moist, no odor	
20							
22							
24							

#87164



SOURCE: PRELIMINARY SITE PLAN PREPARED
BY MacDONALD & GEE ASSOCIATED ARCHITECTS

SITE PLAN

[redacted]

Harrison and 13th Street, Oakland, California

[redacted]

Converse Consultants — Geotechnical Engineering and Applied Sciences

Scale	1" = 40 Feet
Date	10-7-87
Prepared by	CCR/LQL
Checked by	DPO
Approved By	DPO
Project No.	87-34-145-01
Drawing No	2

EXPLANATION :

⊕ LOCATION AND DATE OF EXPLORATORY BORINGS

[redacted]

HARRISON ST. & 12th/13th ST.
OAKLAND, CA.

DRILLER: PITCHER
DRILLING

#87164

INV ✓
ADV

15/4W35G
(5 BORINGS)

01-266 A-C

pla/op&

BRP.

BRUNING 40-107

LP7164

1S/4W35G 01-266 A

LOG OF BORING NO. B-3

DATE DRILLED: 7-21-87

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES	SYMBOL					BLOWS/FT.	FIELD MOISTURE & DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
							2" asphalt concrete 10" aggregate base				
			SM	dry	loose	brown	SILTY SAND				
		D				light brown		8	6.5 8.0	106 107	
1											
			SC	slightly moist	dense	mottled gray	CLAYEY SAND trace of fines lightly cemented				
	5	D						30	15.1	113	ma
2											
3	10	D					----- lightly cemented sand	28	13.8	122	tx ma
4											
	15			moist	medium dense	gray-brown rust					
		D						21	16.9	119	tx
5											
6	20										

(Cont.)

[redacted]

Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

[redacted]

Converse Consultants Northern California

Drawing No. A-8

LOG OF BORING NO. B-3 (Cont.)

1S/4W35G 01-266A

DATE DRILLED: 7-21-87

AP 7164

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES	SYMBOL					BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
		D	SP	moist	dense	grayish brown	FINE SAND				
							——— trace fines				
7											
	25	D		wet				63	20.5	110	
8											
9	30	D			very dense			80	20.8	108	
			SC	wet	medium dense	light grayish brown	CLAYEY FINE SAND				
10											
	35	D						28	17.8	113	tx
11											
							trace coarse sand & gravel				
12	40										

(Cont.)

[redacted] Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

Converse Consultants Northern California

Drawing No. A-9

LOG OF BORING NO. B-3 (Cont.)

15/4N/35G 61-266 A

DATE DRILLED: 7-21-87

AP 7167

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

ELEVATION: — EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES SYMBOL						BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
		S	CL SC	moist	medium dense stiff	light grayish brown	CLAYEY SAND SANDY CLAY	push	18.1 19.8 19.2	104 104 108	tx ma c
13			SP/ GP				gravelly zone				
	45	S					gravelly zone	push			
14			CL	wet	stiff	gray	SILTY CLAY				
15	50	S						push	31.1	87	c
						mottled gray/rust	sandy clay trace fine sand				
16			SC			gray	CLAYEY SAND				
	55	D	CL	moist	very stiff	black	CLAY trace fine sand	32	19.7	111	tx
17							trace coarser sand				
18	60										

(Cont.)

[redacted]

Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

[redacted]

Converse Consultants Northern California

Drawing No. A-10

DATE DRILLED: 7-21-87

#87164

LOG OF BORING NO. B-3 (Cont.)

1S/4W35G

01-266A

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES	SYMBOL					BLOWS/FT.	FIELD MOISTURE & DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
		D	SC	wet	medium dense to dense	mottled olive gray/rust	CLAYEY SAND	32	18.7	112	tx
							Bottom of Boring 61'3"				
19	65										
20											
21	70										
22											
	75										
23											
24	80										

[redacted] Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

[redacted]

Converse Consultants Northern California

Drawing No. A-11

1S/4W35G 01-266 B

LOG OF BORING NO. B-4

DATE DRILLED: 7-21-87

#87164

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES	SYMBOL					BLOWS/FT.	FIELD MOISTURE & DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
							2" asphalt concrete 10" aggregate base				
1		D	SM	dry	loose	brown light brown	SILTY SAND	9	7.4	106	
	5	D	SC	moist	medium dense	mottled gray-rust	CLAYEY SAND	11	15.9	114	
2			SP	moist	dense	rusty brown	CEMENTED SAND				
		D						43	15.1	113	tx
3	10										
4		D	SC	moist	medium dense	mottled gray-brown	CLAYEY SAND	15	14.4	118	tx
	15						SANDY CLAY				
5											
			SP	moist	dense	grayish brown	SAND trace fines				
		D						39	16.5	108	
6	20										

(Cont.)

[redacted]

Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

[redacted]

Converse Consultants Northern California

Drawing No. A-12

DATE DRILLED: 7-21-87

#87164

LOG OF BORING NO. B-4 (Cont.)

1-S/4W-35G 01-266 B

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES	SYMBOL					BLOWS/FT.	FIELD MOISTURE & DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
			SP	moist	dense	grayish brown	FINE SAND				
7		D		wet				55	21.3	107	ma
	25						trace of fines				
8		D			very dense			89			
9	30										
			SC	wet	medium dense	gray brown w/rust streak	CLAYEY SAND				
10		D						22	18.4	112	tx
	35										
11						light gray brown w/rust mottled	trace fine gravel				
		D						31	17.8 18.1	114 114	
12	40						Bottom of Boring 39.3'				

[redacted] Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

[redacted]

Converse Consultants Northern California

Drawing No. A-13

15/4W35G 01-266C

LOG OF BORING NO. B-5

DATE DRILLED: 7-22-87

#87167

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES SYMBOL					BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
						2" asphalt concrete 10" aggregate base				
			SM	dry	loose	brown	SILTY SAND				
1	5	D	SP	dry	loose	light brown	FINE SAND	6	11.9 7.0	100 106	
2		D	SC	moist	medium dense	rusty brown	CLAYEY SAND	9	15.5	113	
						mottled gray-rust	less clay with depth				
3	10	D	SP	moist	dense	gray-brown	CEMENTED FINE SAND trace fines	44	12.9	119	ma
4											
5	15	S	SC	moist	dense	gray-brown	CLAYEY SAND	push	15.1	118	ma
6	20		SP	moist	dense	gray-brown	FINE SAND trace fines				

(Cont.)

[redacted] Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

Converse Consultants Northern California

Drawing No. A-14

DATE DRILLED: 7-22-87

AP 7167

LOG OF BORING NO. B-5 (Cont.)

15/4W35G 01-266 C

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES	SYMBOL					BLOWS/FT.	FIELD MOISTURE & DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
		D	SP	wet	very dense	gray brown	CEMENTED FINE SAND	65			
7											
	25	D						75	20.5	106	
8											
9	30							90			
10			SP/ SC				trace fines				
			SC	wet	dense	brown	CLAYEY SAND				
	35										
11		S						push	21.7	107	tx ma
12	40										

(Cont.)

[redacted]

Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

Converse Consultants Northern California

Drawing No. A-15

DATE DRILLED: 7-22-87

LOG OF BORING NO. B-5 (Cont.)

1S/4W-35 G

01-166C

#P7164

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

ELEVATION: —

EQUIPMENT: 4-7/8" Rotary Wash

DEPTH m.	DEPTH ft.	SAMPLES	SYMBOL					BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	TESTS
		D	SC/CL	wet	stiff	lt. green brown/w rust strk	CLAYEY SAND SANDY CLAY	25	18.5 17.8	113 114	tx
							Bottom of Boring 41.3'				
13	45										
14											
15	50										
16											
	55										
17											
18	60										

[redacted]

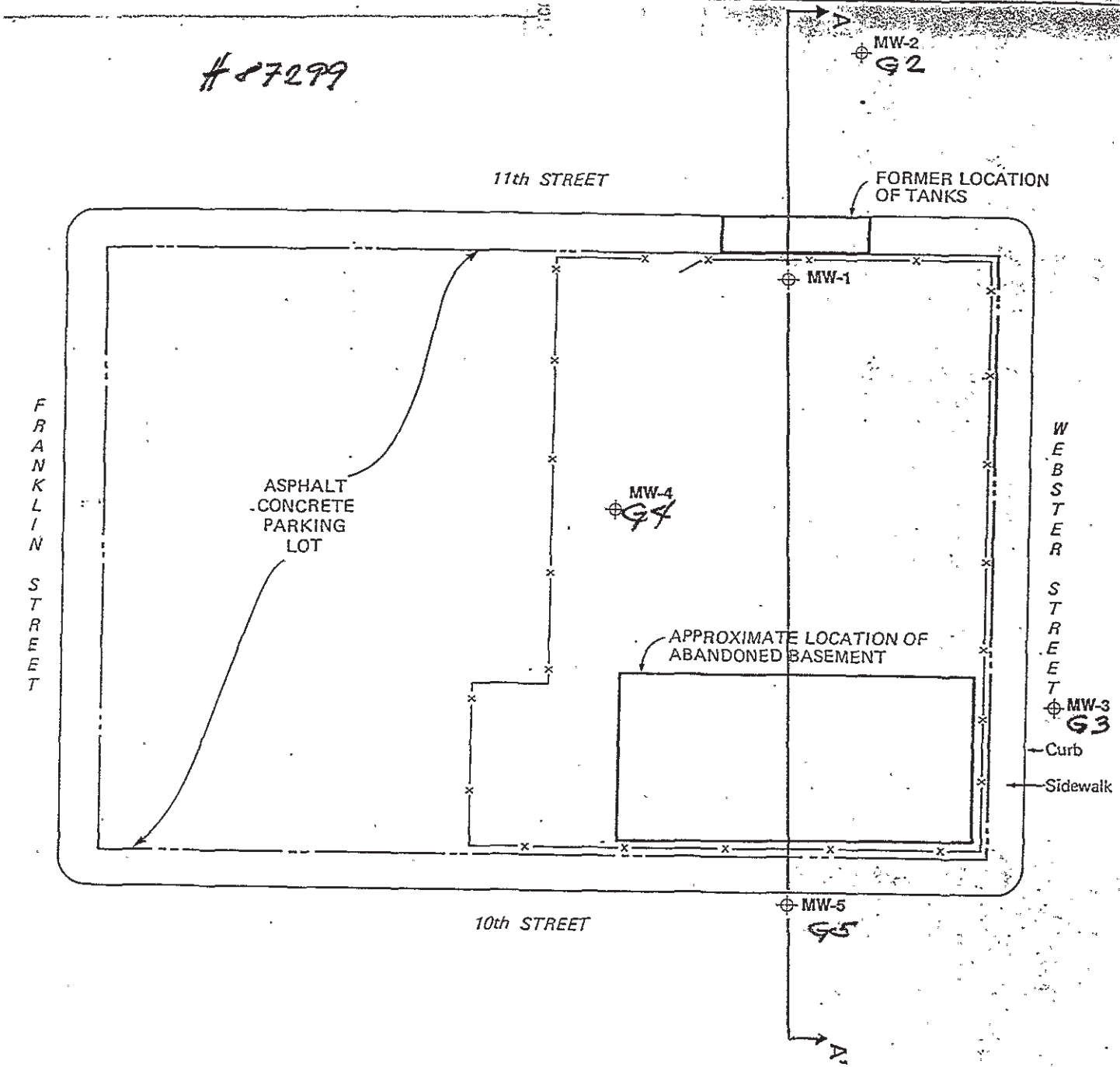
Harrison and 13th Street, Oakland, California

Project No. 87-34-145-01

Converse Consultants Northern California

Drawing No. A-16

#07299



EXPLANATION

MW-2 ⊕ Monitoring Well Location

x——x Fence

——— Property Line

A A' Cross Section Location

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Monitoring Well Location Map

[redacted]

Oakland, California

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	9382,013.02		12/87		

01-267 A

15/4W 35G

4286

Equipment 8" Hollow Stem Auger

Elevation ——— Date 10/9/87

TPH as gasoline (ppb)	Vapor Reading (ppm)	Depth (ft)	Sample
		0	
			ASPHALT CONCRETE
			BROWN GRAVEL WITH SAND (GP) baserock
			BROWN CLAYEY SAND (SC) medium dense to dense
		5	
		10	
ND	75	15	
			▽ water level at 1400, 10/9/87
ND	80	20	
2,000,000	>500	25	
2,500,000	>500	30	
31,000	200	35	
			bottom of boring at 36.5 ft
		40	

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Log of Boring B-3

[redacted]

Oakland, California

PLATE

A-3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JAS	09382,008.01		10/87		

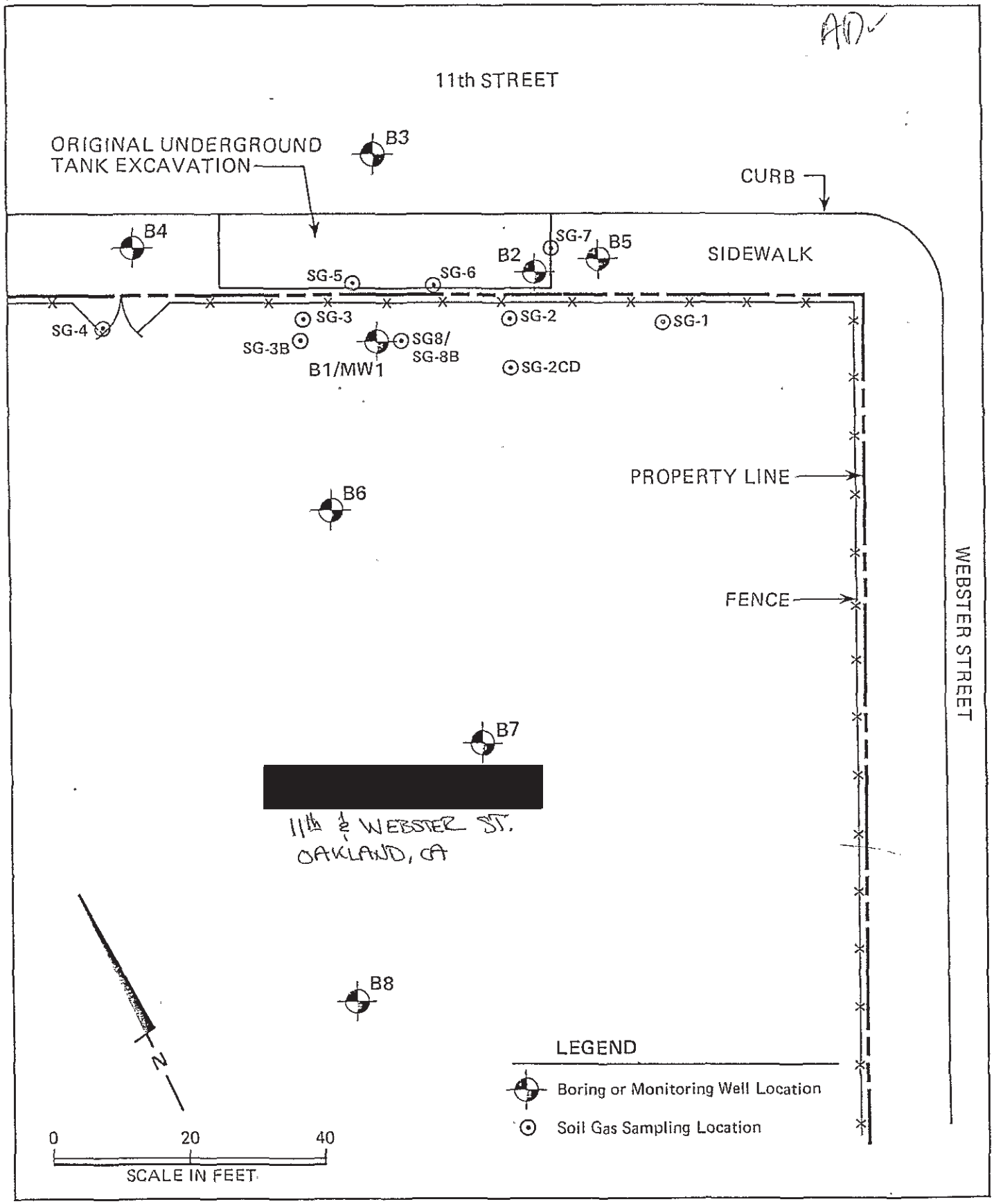
87239 a-267 A-E, F

15/4W 35G (5 BORINGS)

HN ✓

AD ✓

105849



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Site Plan
[redacted]
Oakland, California

DRILLER: AQUA SCIENCE & ASE

PLATE 2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JAS	09382,008.01		10/87		

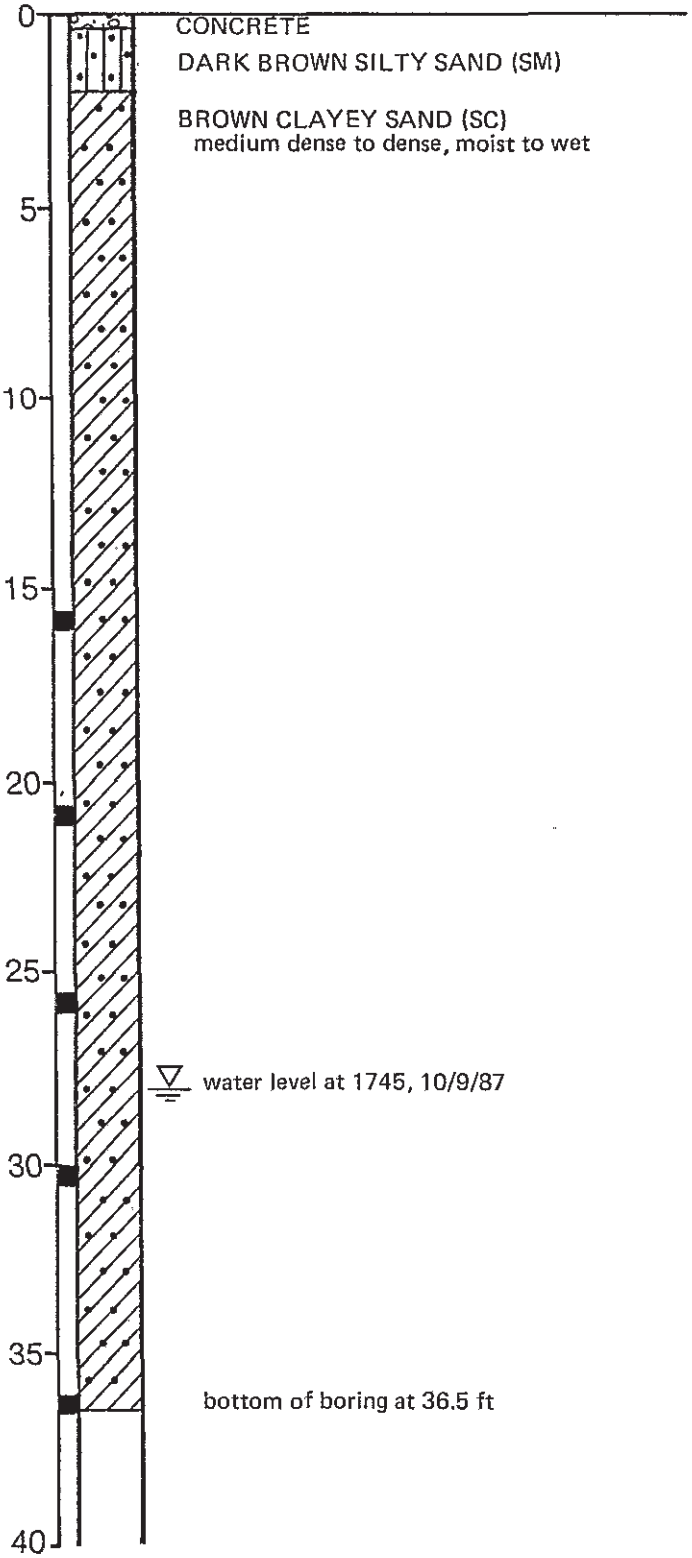
01-267 B
15/4N 85G

4286

Equipment 8" Hollow Stem Auger

Elevation — Date 10/9/87

TPH as gasoline (ppb)	Vapor Reading (ppm)	Depth (ft)	Sample
		0	
		5	
		10	
ND	90	15	
ND	90	20	
120	125	25	
1,400		30	
860		35	
		40	



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Log of Boring B-4

[redacted]

Oakland, California

PLATE

A-4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JAS	09382,008.01		10/87		

01-267 C

1S/4W 35G

4286

Equipment 8" Hollow Stem Auger

Elevation [redacted] Date 10/9/87

TPH as gasoline (ppb)	Vapor Reading (ppm)	Depth (ft) Sample	
		0	CONCRETE SIDEWALK BROWN SAND WITH CLAY (SC) dense to very dense
		5	
		10	
			increase in clay content at 13.0 ft
		15	
			decrease in clay content at 19.0 ft
ND	60	20	
			water level at 1000, 10/9/87
2,800,000	>500	25	
29,000	>500	30	
470,000		35	
			bottom of boring at 36.5 ft
		40	

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Log of Boring B-5
[redacted]
Oakland, California

PLATE
A-5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JAS	09382,008.01	[redacted]	10/87		

01-267 D
1S/4W 35 G

4286

Equipment 8" Hollow Stem Auger

Elevation — Date 10/8/87

TPH as Gasoline (ppb)	Vapor Reading (ppm)	Depth (ft) Sample	
		0	CONCRETE
			DARK BROWN SANDY SILT (ML)
			BROWN SAND WITH SILT (SP) medium dense, moist
	5	5	changes to loose
	50	10	changes to dense
			GRAY SANDY CLAY (CL)
			BROWN SAND WITH SILT (SP) medium dense, moist
	70	15	
		20	changes to very dense
ND	100		
			▽ water level at 1245, 10/8/87
		25	color change to gray at 25.0 ft
	>500		
870,000	>500	30	changes to dense
			bottom of boring at 36.0 ft
		35	
		40	

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Log of Boring B-6

[redacted]

Oakland, California

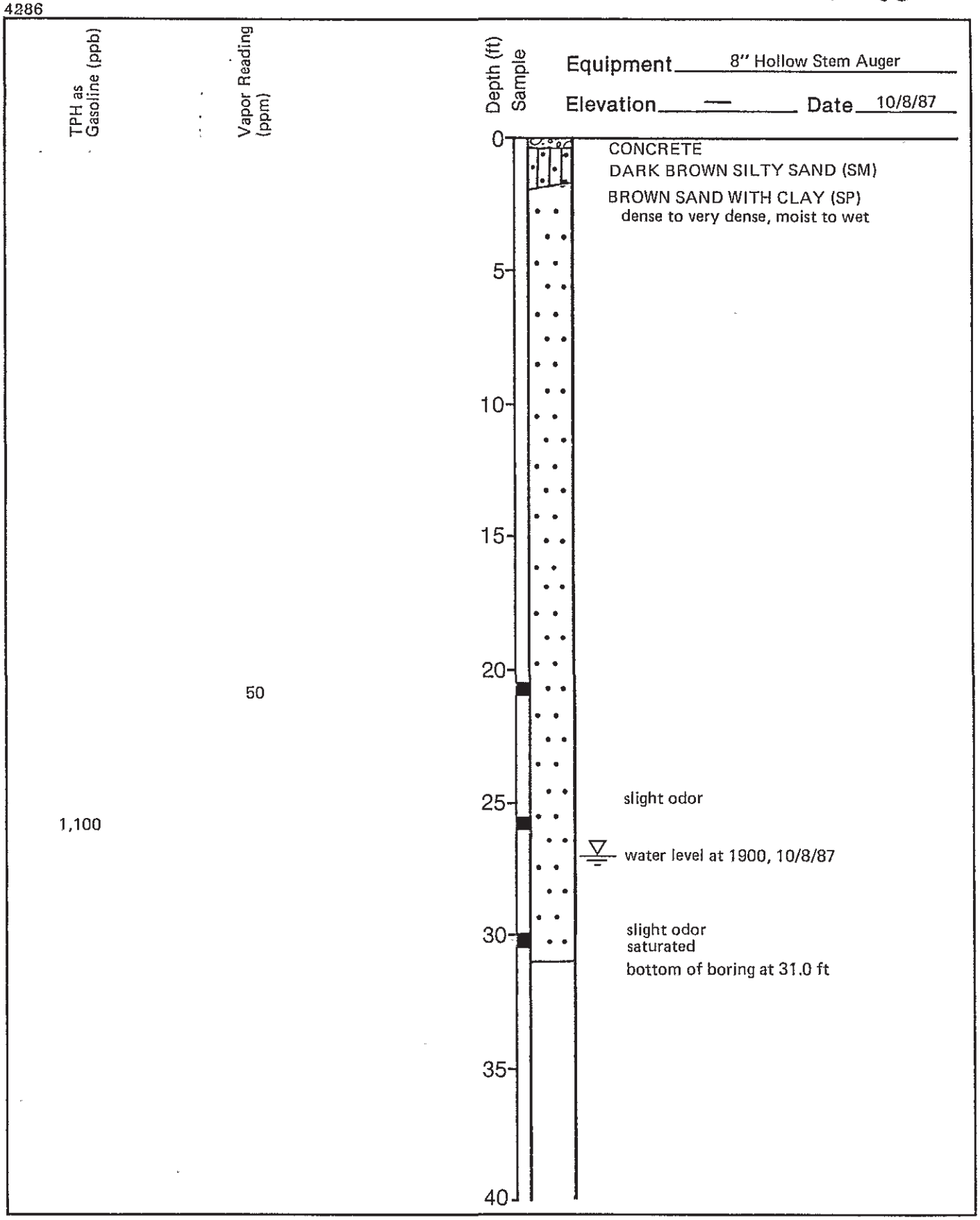
PLATE

A-6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JAS	09382,008.01		10/87		

01-267E
15/4W35G

4286



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Log of Boring B-7

[redacted]

Oakland, California

PLATE
A-7

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JAS	09382,008.01		10/87		

01-267F

15/4N 3E 5G

4286

Equipment 8" Hollow Stem Auger

Elevation _____ Date 10/8/87

TPH as Gasoline (ppb)	Vapor Reading (ppm)	Depth (ft)	Sample	
		0		CONCRETE
				DARK BROWN SILTY SAND (SM)
				BROWN SAND WITH CLAY (SC)
		5		
		10		
		15		
		20		
ND	50			very dense
				changes to mottled gray-brown at 23.0 ft
		25		changes to medium dense
	90			▽ water level at 1615, 10/8/87
		30		
	60			changes to very dense
		35		
330				changes to dense, bottom of boring at 30.8 ft
		40		

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Log of Boring B-8

[redacted]

Oakland, California

PLATE

A-8

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JAS	09382,008.01		10/87		

0158 #87123

01-267 G

KS/FW356

Equipment 7" hollow-stem auger

Elevation — Date 5/26/87

TPH as gasoline (ppm)	Vapor reading (ppm)	Depth (ft)	Sample
		0	
		5	
	>500	10	
3700	>500	15	
2400	>500	20	
16000	>500	25	
		30	
		35	
		40	

BROWN SAND (SP) loose, moist

Fill

ORANGE-BROWN SAND (SP-SC) medium dense, moist, slight clay content, strong odors

BROWN SAND (SP) medium dense, saturated

▽ water level, 5/26/87 (not stabilized)

bottom of boring at 29 ft

boring grouted from 9 to 29 ft

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Engineers, Geologists & Geophysicists

Log of Boring 2

[redacted]

Oakland, California

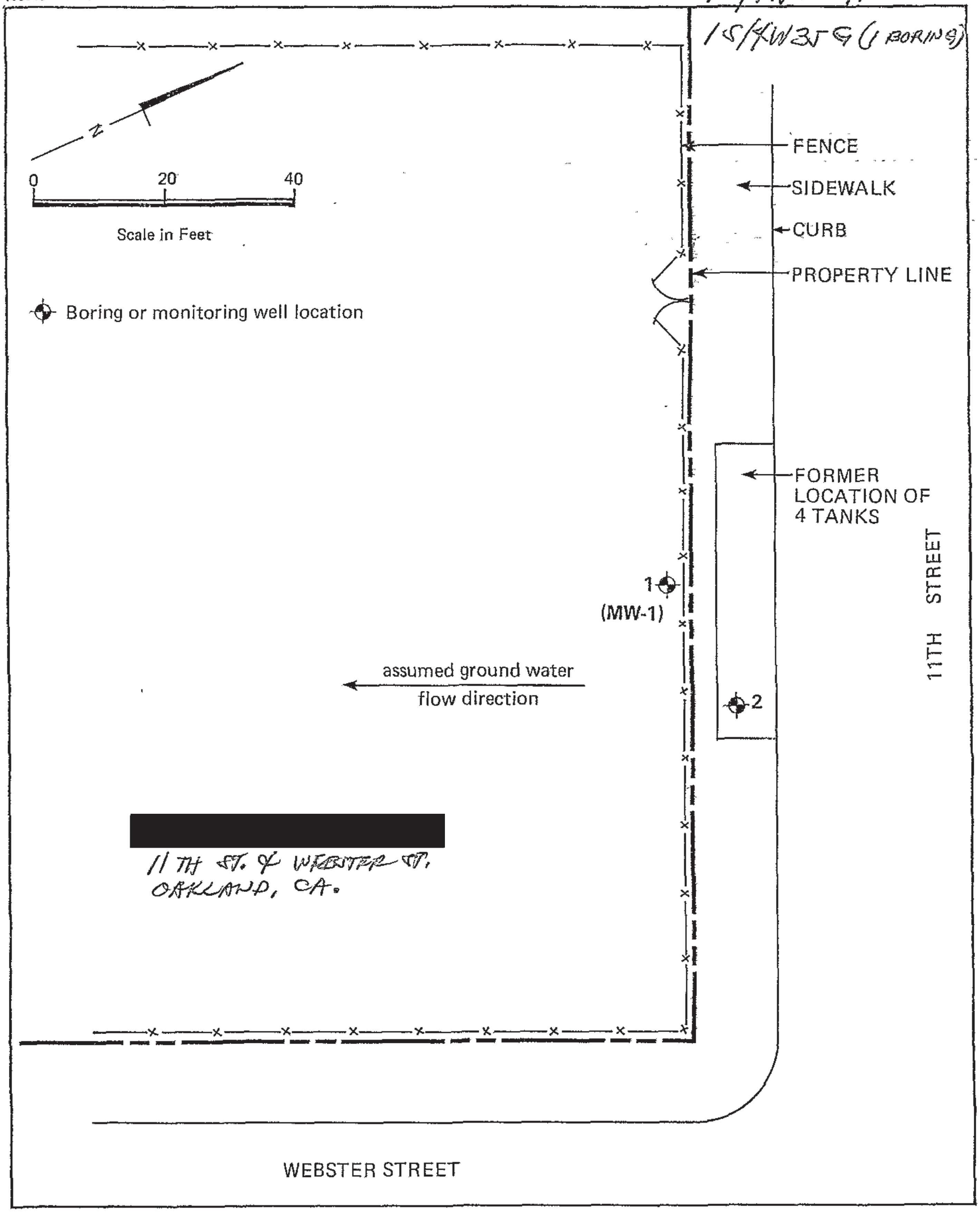
PLATE **3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	9382,005.02	D. Bray	6/87		

0156
105649

#87/23 01-267 G, H

INV ✓ AD ✓ 1S/4W35G1 plot/gd



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Engineers and Geoscientists

Boring Location Map
[redacted]
Oakland, California

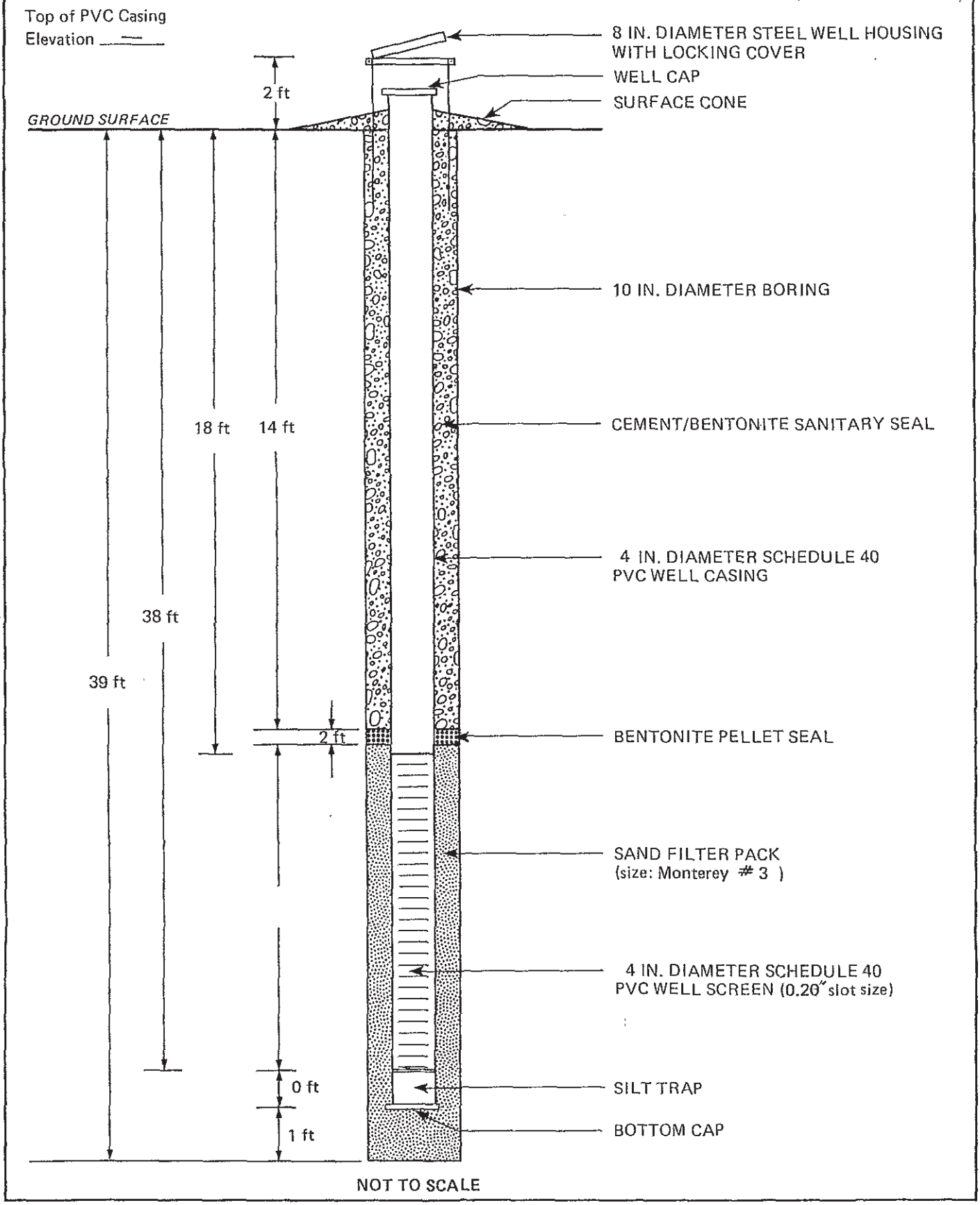
DRILLER: WEEKS (SEBASTOPOL)

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
MG	09382,005.02	D. Brag	6/87		

0189 #87123

01-267 EHS
1S/4W35G1 H



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Engineers, Geologists & Geophysicists

Well Construction Detail for Monitoring Well 1
[redacted]
Oakland, California

PLATE **5**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	9382,005.02	D Bray	6/87		

FORM GW1

0157 #87123

01-267 H
IS/4W35G1

Equipment 10" hollow-stem auger

Elevation — Date 5/26/87

TPH as gasoline (ppm)	Vapor reading (ppm)	Depth (ft) Sample	
—	—	0	BLACK SILTY CLAY (CL) medium stiff, moist
			ORANGE-BROWN SAND (SP) loose, moist
	50		
—		5	ORANGE-BROWN SAND (SP-SC) loose, moist, slight clay content
			less clay below 8 ft
	225		
—		10	
	200		
—		15	wet at 15 ft, moderate petroleum odor, increased clay content
	250		medium dense below 19 ft
0.43		20	
	>500		GRAY-BROWN SAND (SP) medium dense to dense, saturated, strong petroleum odor
		25	▽ water level, 5/26/87
	> 500		
		30	
			heaving sands at 34 ft
		35	
			bottom of boring at 39 ft converted to 4" PVC monitoring well - See plate 5
		40	

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 1 [redacted]
Oakland, California

PLATE 2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	9382,005.02	D. Brug	6/87		

0160 #87123

01-267 H

1S/4W35G1

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS (MORE THAN HALF IS LARGER THAN NO. 200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL-GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE-GRAINED SOILS (MORE THAN HALF IS SMALLER THAN NO. 200 SIEVE)	SILTS AND CLAYS (LIQUID LIMIT 50% OR LESS)		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50%)		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM

Perm	—	Permeability
Consol	—	Consolidation
LL	—	Liquid Limit (%)
PI	—	Plastic Index (%)
G_s	—	Specific Gravity
MA	—	Particle Size Analysis
■	—	"Undisturbed" Sample
☒	—	Bulk or Classification Sample

	Shear Strength (psf) ↓	Confining Pressure ↓		
TxUU (FM) or (S)	3200	(2600)	—	Unconsolidated Undrained Triaxial Shear (field moisture or saturated)
TxCU (P)	3200	(2600)	—	Consolidated Undrained Triaxial Shear (with or without pore pressure measurement)
TxCD	3200	(2600)	—	Consolidated Drained Triaxial Shear
SSCU (P)	3200	(2600)	—	Simple Shear Consolidated Undrained (with or without pore pressure measurement)
SSCD	3200	(2600)	—	Simple Shear Consolidated Drained
DSCD	2700	(2000)	—	Consolidated Drained Direct Shear
UC	470		—	Unconfined Compression
LVS	700		—	Laboratory Vane Shear

KEY TO TEST DATA

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Unified Soil Classification Chart
[redacted]
Oakland, California

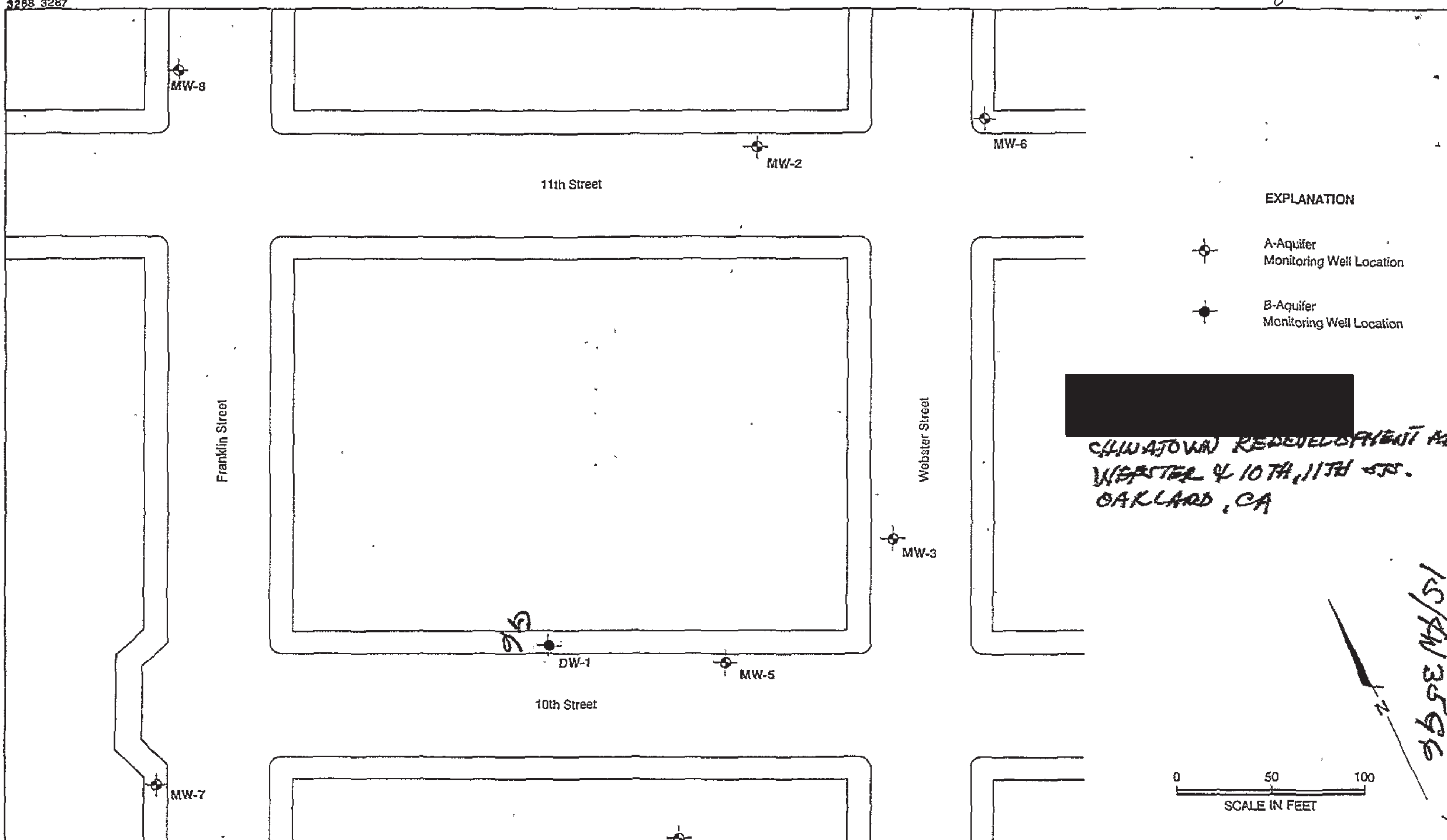
PLATE **4**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
MG	09382,005.02	D.S.H.	6/87		

01-343

85065

1S/4W 35G6



[redacted]

CHINATOWN REDEVELOPMENT AREA
WEBSTER & 10TH, 11TH STS.
OAKLAND, CA

Harding Lawson Associates Engineers and Geoscientists	Monitoring Well Locations [redacted]				1
DRAWN ML	JOB NUMBER 9382,029.02	APPROVED DF	DATE 4/88	REVISED	DATE

DRILLER: EXPLORATION DRILLING SERVICES

INV. ✓
AD. ✓

3826 #APO65 01-393 15/5W3596

Top of PVC Casing Elevation 38.42 ft

GROUND SURFACE

Blows/foot

Depth (ft)

Sample

Equipment Failing 1250

Elevation 39.02 ft Date 3/30/88

8.5 IN. DIAMETER STEEL CONDUCTOR CASING
0.5 ft to 45.0 ft below ground surface

14 3/4 IN. DIAMETER BOREHOLE
0 to 43.0 ft

BENTONITE-CEMENT SEAL
0 to 43.0 ft

7 7/8 IN. DIAMETER BOREHOLE
0 to 66 ft

4 IN. DIAMETER SCHEDULE 40 PVC WELL CASING
0 to 49.0 ft

BENTONITE-CEMENT SEAL
0 to 44.0 ft

0

5

10

15

20

25

30

35

40

CEMENT SIDEWALK

DARK BROWN (7.5YR 4/4) SAND (SP) medium dense, moist, very fine to fine sand

dark yellowish brown (10YR 4/4)

becomes very moist to wet

color change to grayish brown (10YR 5/2) mottling

few clay, few silt

color change to light olive-brown (7.5Y 5/4)

PLATE

Harding Lawson Associates
Engineers and Geoscientists

Log of Boring and Well Completion Detail DW-1

[redacted]

Oakland, California

2a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
DM	9382, 029.02		4/88		

3825 #880665 01-343 1S/4W35G6

Top of PVC Casing Elevation 38.42 ft

GROUND SURFACE

Blows/foot | Depth (ft) | Sample

Equipment Failing 1250

Elevation 39.02 ft Date 3/30/88

BENTONITE PELLET SEAL
44.0 to 47.0 ft

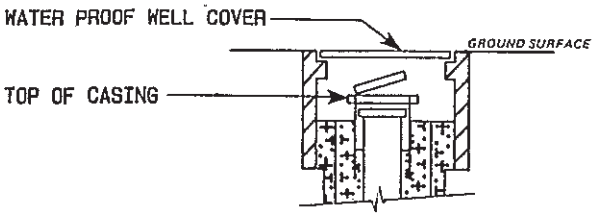
MONTEREY #3 SAND PACK
47.0 to 66.0 ft

4 IN. DIAMETER SCHEDULE 40 PVC WELL SCREEN
(0.020 in. slot size)
49.0 to 64.0 ft

BOTTOM WELL CAP at 64.0 ft

BOREHOLE CLEANED OUT to 66.0 ft

BOTTOM OF BOREHOLE at 66.0 ft



40
45
50
55
60
65
70
75
80

LIGHT BROWN (2.5Y 5/4) LEAN CLAY WITH SILT (CL) stiff, saturated, trace fine sand

LIGHT OLIVE-BROWN (2.5Y 5/4) CLAYEY GRAVEL (GC) very dense, saturated, fine angular to subangular gravel

LIGHT OLIVE-BROWN (2.5Y 5/4) LEAN CLAY (CL) stiff, some silt
color change to olive-gray (5Y 5/2) at 43 ft

MOTTLED OLIVE-GRAY (5Y 5/2) AND DARK YELLOWISH BROWN (10YR 4/6) SAND (SP) dense, saturated, very fine to fine subrounded sand

OLIVE-GRAY (5Y 5/2) CLAY (CL) stiff, saturated, trace very fine sand, few silt

MOTTLED OLIVE-GRAY (5Y 5/2) AND DARK YELLOWISH BROWN (10YR 4/6) SAND (SP) dense, saturated, very fine to fine sand, trace very fine angular gravel

DARK YELLOWISH BROWN (10YR 4/4) SAND (SP) dense, saturated, very fine to fine sand

YELLOWISH BROWN (10YR 5/4) SILTY SAND (SM) dense, saturated, very fine sand

YELLOWISH BROWN (10YR 5/4) SILT (ML) stiff, saturated

YELLOWISH BROWN (10YR 5/4) SAND (SW) dense, saturated, fine to coarse sand, caliche nodules

YELLOWISH BROWN (10YR 5/4) SILT (ML) very stiff, saturated, trace very fine sand

YELLOWISH BROWN (10YR 5/4) SAND (SP) medium dense to dense, saturated, fine to medium sand, trace silt

OLIVE-GRAY (5Y 5/2) SAND (SW) dense, saturated, fine to coarse subrounded sand, trace caliche

YELLOWISH BROWN (10YR 5/4) SAND (SP) dense, saturated, trace silt

OLIVE-GRAY (5Y 5/2) CLAY (CL) stiff, moist to saturated
bottom of boring at 66 ft

Harding Lawson Associates
Engineers and Geoscientists

Log of Boring and Well Completion Detail DW-1

[redacted]

Oakland, California

PLATE **2b**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
DM	9382, 029.02		4/88		

01-405I 15/4W-35C1

Project: [redacted]

Log of Boring No. 4

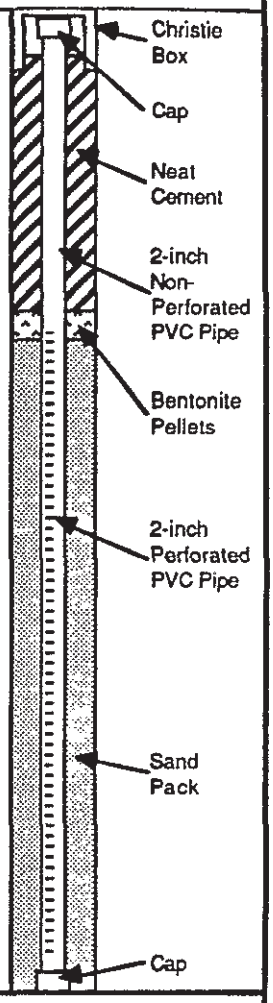
2-1

Date Drilled: June 3, 1988
Type of Boring: 8-inch-diameter hollow stem auger
Hammer: 140 pounds falling 30 inches

Remarks: Refer to Figure A-1 for Sampler Legend
Location:

Depth Ft	Samples	Blows/Ft	MATERIAL DESCRIPTION
			Surface Elevation:
			ORGANIC-RICH SOIL
			CLAYEY SAND (SC) FILL Medium dense, slightly moist, brown to red-brown
5	1	20	
			SILTY CLAY (CL) FILL Medium stiff, slightly moist, dark brown, with concrete and brick fragments
10	2	75/11"	
			CLAYEY SAND (SC) Medium dense to dense, damp to moist, gray-brown, with some silt
15	3	38	
20	4	63	ATD
25			
30			Bottom of boring at 30 feet.
35			
40			
45			

WELL CONSTRUCTION DETAIL

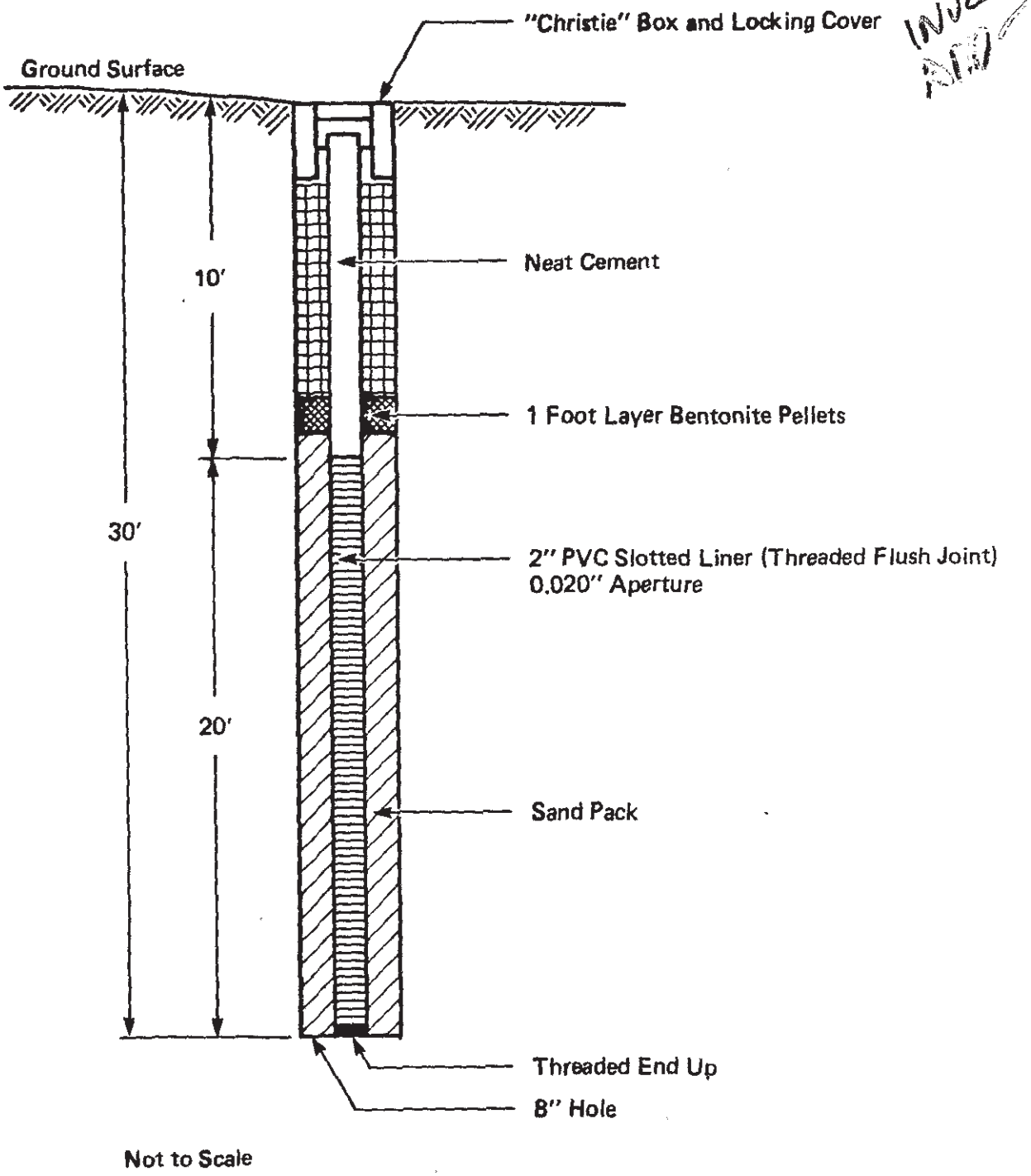


Project: 8810026A | Woodward-Clyde Consultants | Figure A-4

01-405I-R 8826

15/4W 35C 1-3

35C Borings-6



Not to Scale

COMPLETED WELL DIAGRAM –
MONITORING WELL NO. 4, 5, 6
[redacted]
Oakland, California

Project No. 8810026A	September 16, 1987	
Woodward-Clyde Consultants		

01-405 J 15/4W-35C2 C-2

Project: [redacted]

Log of Boring No. FCC 5

Date Drilled: July 14, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location: 14th & Clay

Depth Ft	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			Surface Elevation:			
			CLAYEY SAND (SC) FILL? Medium dense, moist, brown, fine-grained, with orange mottling			
5	1	46	} with some medium gravel			
10			CLAYEY SAND (SC) Dense, moist to wet, fine-grained			
	2	62	Becomes Sandy Clay			
15						
	3	66				
20						
			Becomes wet and medium-grained ATD			
25	4	37				
30						
35			Bottom of Boring at 35' Installed well			
40						

Project: 8810021A/26A | Woodward-Clyde Consultants | Figure 2

01-405K 1S/4W-35C3 C-3

Project: [redacted]

Log of Boring No. FCC 6a

Date Drilled: July 14, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location: 14th & Clay

Surface Elevation:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
5	1	35	CLAYEY SAND (SC) FILL? Medium dense, wet, brown, fine-grained, with some medium-grained sand			
10	2	75	With some brick fragments			
15	3	50/6"	CLAYEY SAND (SC) Dense, wet, brown, medium-grained			
20						
25	4	50/6"	Becomes saturated ATD			
30						
35			Bottom of Boring at 35' Installed observation well			
40						

Project: 8810021A/26A | Woodward-Clyde Consultants | Figure 4

01-405L

Project: [redacted]

Log of Boring No. 1

Date Drilled: June 3, 1988
Type of Boring: 8-inch-diameter hollow stem auger
Hammer: 140 pounds falling 30 inches

Remarks: See below for Sampler Legend

Location:

15/4W-35C

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			Surface Elevation:			
	1	17	SILTY SAND (SM) FILL Medium dense, slightly moist, brown, with some cobbles			
5	2	18				
10	3	24	Becomes brown to dark red-brown, clayier			
15	4	36				
			SILTY SAND (SM-SC) Dense, slightly moist, brown to gray with orange mottling			
20	5	59				
25	6	71/11"	ATD			
30	7	55				
			Bottom of boring at 31.5 feet.			
35			SAMPLER LEGEND			
			2-1/2-INCH O.D. MODIFIED CALIFORNIA SAMPLER.			
40		29	BLOW COUNT WITH A 140-POUND HAMMER FALLING 30 INCHES			
			WATER LEVEL MEASURED: At time of Drilling → ATD In Hours or Days After Drilling → 3 Hrs. On Date Indicated → 6-3-88			
45						

Project: 8810026A | Woodward-Clyde Consultants | Figure A-1

01-405M

Project: [redacted] SITE ASSESSMENT

Log of Boring No. 2

15/4W-35C

Date Drilled: June 3, 1988
Type of Boring: 8-inch-diameter hollow stem auger
Hammer: 140 pounds falling 30 inches

Remarks: Refer to Figure A-1 for Sampler Legend
Location:

Surface Elevation:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			ORGANIC-RICH SOIL			
			FILL Dry, brown, with abundant well-graded gravels			
5	1	28	Becomes finer and contains more clay			
10	2	27				
			FILL : rubble consisting of concrete and cobbles			
15	3	28	SILTY SAND (SM-SC) Medium dense to dense, slightly moist, gray to brown with some orange mottling, fine-grained			
20	4	41				
			CLAYEY SAND (SC) Dense to very dense, moist, gray to brown, with some silt			
25	5	72				
30	6	36	ATD			
			Bottom of boring at 31.5 feet.			
35						
40						
45						

Project: 8810026A | Woodward-Clyde Consultants | Figure A-2

01-405 SW

Project: [redacted]

Log of Boring No. 3

1S/4W-35C

Date Drilled: June 3, 1988

Remarks: Refer to Figure A-1 for Sampler Legend

Type of Boring: 8-inch-diameter hollow stem auger

Hammer: 140 pounds falling 30 inches

Location:

Surface Elevation:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			ORGANIC-RICH SOIL			
			CLAYEY GRAVEL (GC) FILL Loose, dark gray-brown, with concrete and brick fragments			
5			SANDY CLAY (CL) FILL Soft to medium stiff, damp, dark brown, with concrete and brick fragments			
10	1	24				
			CLAYEY SAND (SC) Medium dense, moist brown to orange-brown			
15	2	22				
20	3	86/11"	Becomes dense, red-brown to gray-brown			
25	4	50				
30	5	77/9"	CLAYEY SAND (SC) Medium dense, to dense, moist, light gray-brown ATD			
			Bottom of boring at 31.5 feet.			
35						
40						
45						

Project: 8810026A | Woodward-Clyde Consultants | Figure A-3

01-4058 15/4W-35C

Project: [redacted]

Log of Boring No. FCC 6

Date Drilled: July 14, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location: 14th and Clay

Surface Elevation:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			SANDY CLAY (CL) FILL Medium stiff, red-brown, wet, with fine gravel and medium-grained sand			
5	1	16	CLAYEY SAND (SC) FILL Medium dense, brown, moist to wet, fine-grained			
10			Becomes wet			
			Bottom of Boring (Concrete Vault) at 12'			
15						
20						
25						
30						

Project: 8810021A/26A | **Woodward-Clyde Consultants** | Figure 3

01-405 SP B.15/4W 35C

Project: [redacted] SITE ASSESSMENT

Log of Boring No. FCC 7

Date Drilled: July 14, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location: 14th & Clay

Surface Elevation:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
5	1	24	CLAYEY SAND (SC) FILL Medium dense, moist to wet, brown, fine-grained			
10	2	36	CLAYEY SAND (SC) Medium dense to dense, wet, brown, fine-grained, with orange mottling			
15	3	27	ATD			
20	4	37				
	5	50/6"				
			Bottom of Boring at 23'			
25						
30						
35						
40						

Project: 8810021A/26A | Woodward-Clyde Consultants | Figure 5

01-405R 15/4W 35 Boring 8

- Project: [redacted]

Log of Boring No. FCC 8

Date Drilled: July 14, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location: 14th & Clay

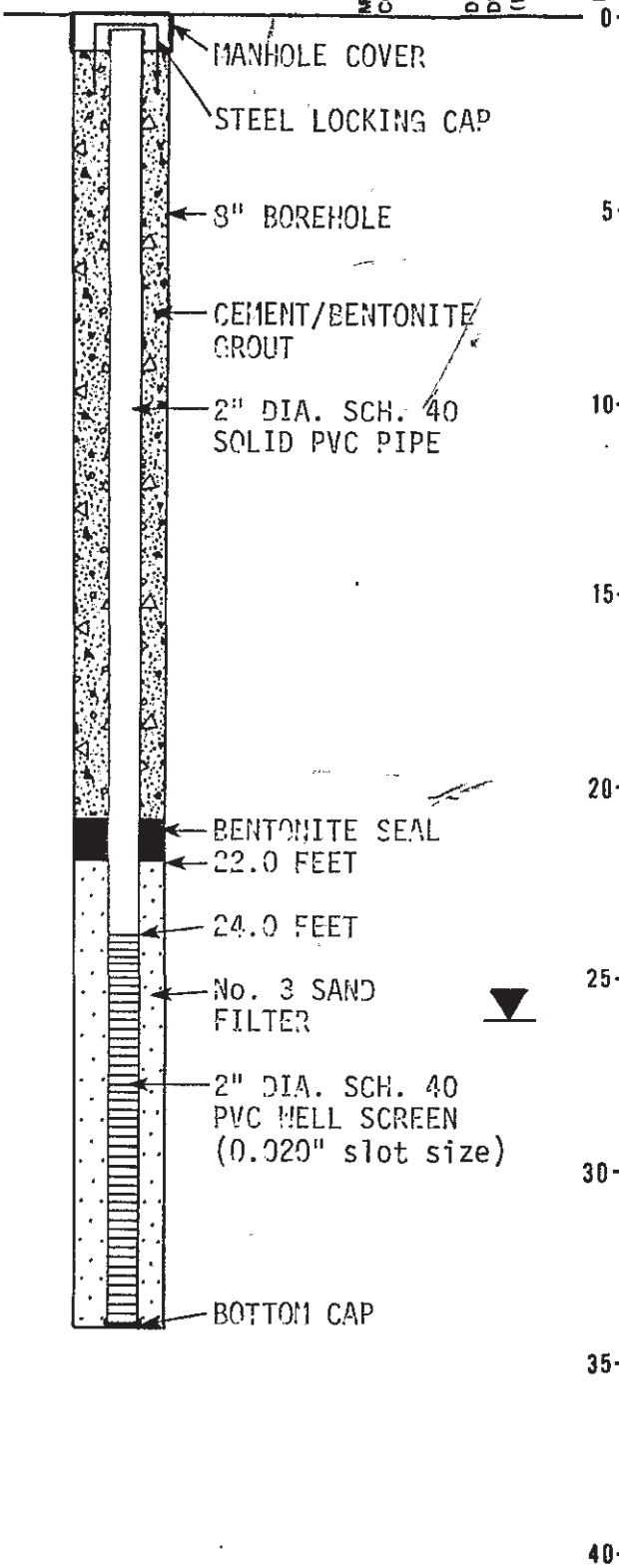
Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			Surface Elevation:			
			CLAYEY SAND (SC) FILL Dense, wet, brown			
5	1	46				
10	2	48	CLAYEY SAND (SC) Dense, wet, brown, with orange-brown mottling			
15						
20	3	41				
25	4	41				
	5	44				
			Bottom of Boring at 27'			
30						
35						
40						

Project: 8810021A/26A | Woodward-Clyde Consultants | Figure 6

01-405R 15/4 B-1

LOG OF TEST BORING 8

EQUIPMENT 8" Hollow Stem
DATE DRILLED 6-24-88
ELEVATION --



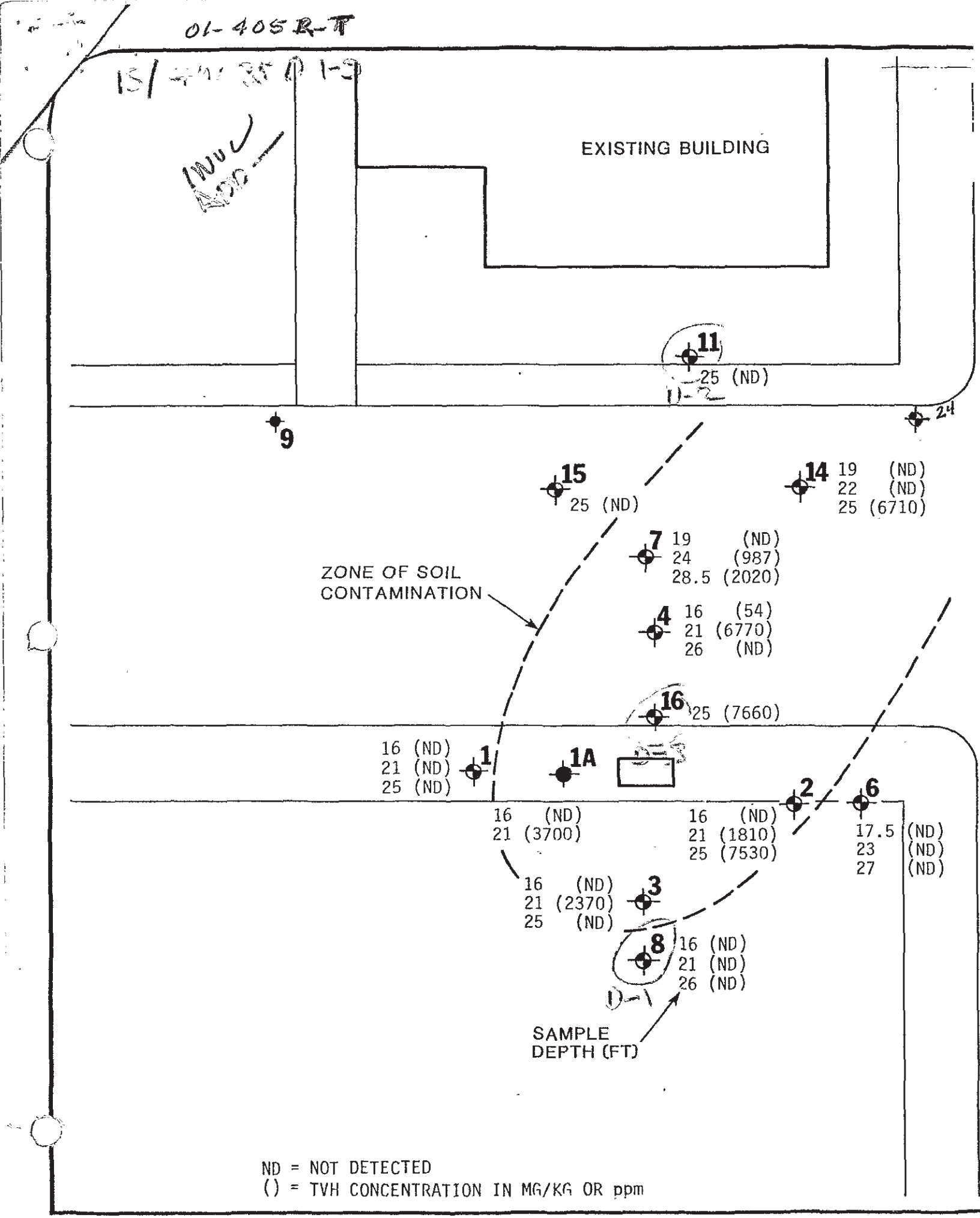
6" CONCRETE
3" BASE ROCK
DARK BROWN SILTY SAND (SM)
medium dense, moist with numerous pieces of glass and brick (fill)
BROWN CLAYEY SAND (SC)
medium dense, moist

BROWN SILTY SAND (SM)
medium dense, moist, fine grained

GROUNDWATER LEVEL 6-30-88

BROWN SAND (SP)
medium dense to dense, saturated, fine grained

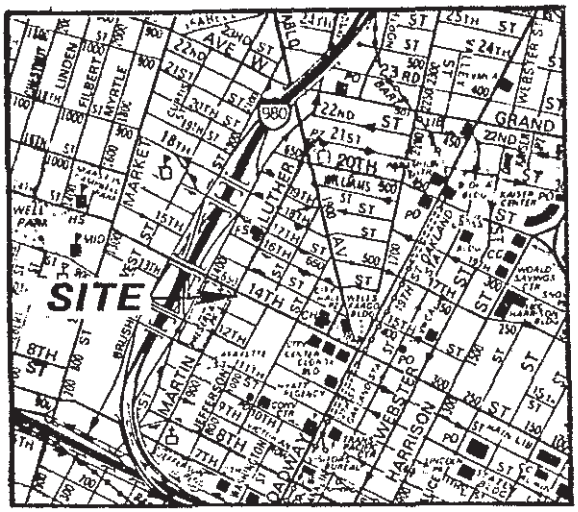
Subsurface Consultants	1330 MARTIN LUTHER KING, JR. WAY, OAK.			PLATE
	JOB NUMBER	DATE	APPROVED	9
	430.002	7-11-88		


01-405R-T
EXISTING BUILDING
11
25 (ND)
9
24
15
25 (ND)
14
19 (ND)
22 (ND)
25 (6710)
7
19 (ND)
24 (987)
28.5 (2020)
ZONE OF SOIL CONTAMINATION
4
16 (54)
21 (6770)
26 (ND)
16
25 (7660)
16 (ND)
21 (ND)
25 (ND)
1
1A
2
6
16 (ND)
21 (3700)
16 (ND)
21 (1810)
25 (7530)
17.5 (ND)
23 (ND)
27 (ND)
16 (ND)
21 (2370)
25 (ND)
3
8
16 (ND)
21 (ND)
26 (ND)
SAMPLE DEPTH (FT)
ND = NOT DETECTED
() = TVH CONCENTRATION IN MG/KG OR ppm

25

10

DIRECTION OF GROUNDWATER FLOW



VICINITY MAP

MARTIN LUTHER KING Jr. WAY

- TEST BORING
- MONITORING WELL
- TEST BORING PREVIOUS STUDY
- PIEZOMETER
- TANK

APPROXIMATE SCALE (FEET)

20 40

14th STREET

SITE PLAN

DRILLING FOR [redacted]

Subsurface Consultants

1330 MARTIN LUTHER KING Jr. WAY, OAK.

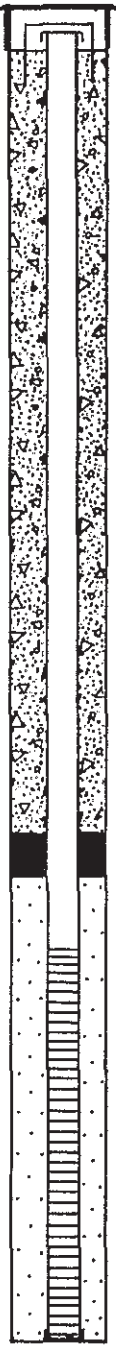
JOB NUMBER	DATE	APPROVED
430.002	7-25-88	

PLATE 1

01-4055 LS/4W-35D

LOG OF TEST BORING 11

EQUIPMENT 8" Hollow stem
DATE DRILLED 6-30-88
ELEVATION --



WELL DETAILES: (SEE LOG OF BORING 8)

MOISTURE CONTENT %	DRY DENSITY (PCF)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
		0			BROWN SILTY SAND (SM) medium dense, moist (fill)
		5			
		10		16	MOTTLED GRAY AND BROWN CLAYEY SAND (SC) medium dense, moist
		15			
		20		28	GRAY BROWN SAND (SP) medium dense, moist, fine grained
				22	
12.5	114	25		27	GROUNDWATER LEVEL 7-5-88
				27	
		30		23	
				18	
		35			
		40			

Subsurface Consultants

1330 MARTIN LUTHER KING, JR. WAY, OAK.

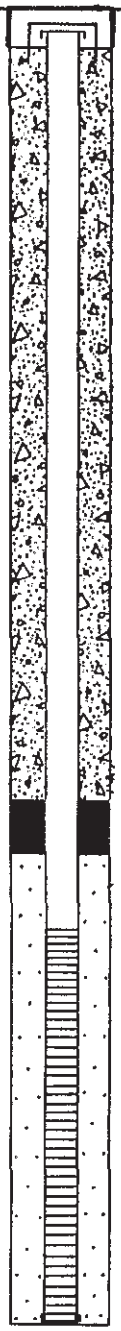
JOB NUMBER	DATE	APPROVED
430.002	7-11-88	

PLATE 12

OL-405T 1-5/40-35 I-2

LOG OF TEST BORING 16

EQUIPMENT 8" Hollow Stem
DATE DRILLED 7-1-88
ELEVATION --



WELL DETAILES: (SEE LOG OF BORING 8)

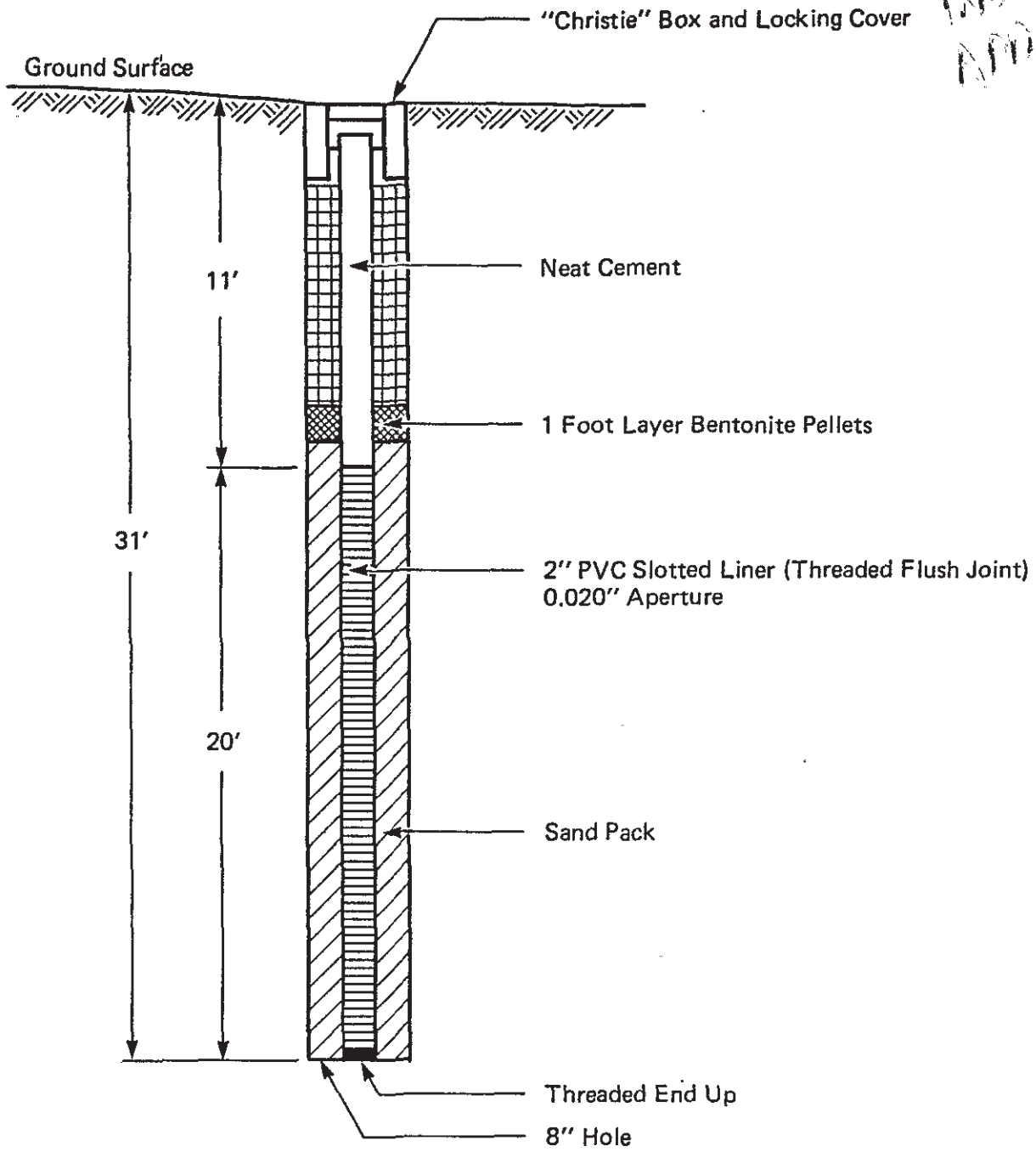
MOISTURE CONTENT %	DRY DENSITY (PCF)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
		0			4" ASPHALT CONCRETE 3" BASE ROCK DARK BROWN SILTY SAND (SM) medium dense, moist (fill)
		5			BROWN SAND (SP) medium dense, moist fine grained
		10			BROWN CLAYEY SAND (SC) medium dense, moist becomes mottled gray and brown below 12 feet
		15			GRAY BROWN SAND (SP) dense, moist, fine grained
		20			
		25		29 28	GROUNDWATER LEVEL MEASURED 7-1-88
		30			
		35			
		40			

Subsurface Consultants

1330 MARTIN LUTHER KING, JR. WAY, OAK.

JOB NUMBER 430.002 | DATE 7-11-88 | APPROVED

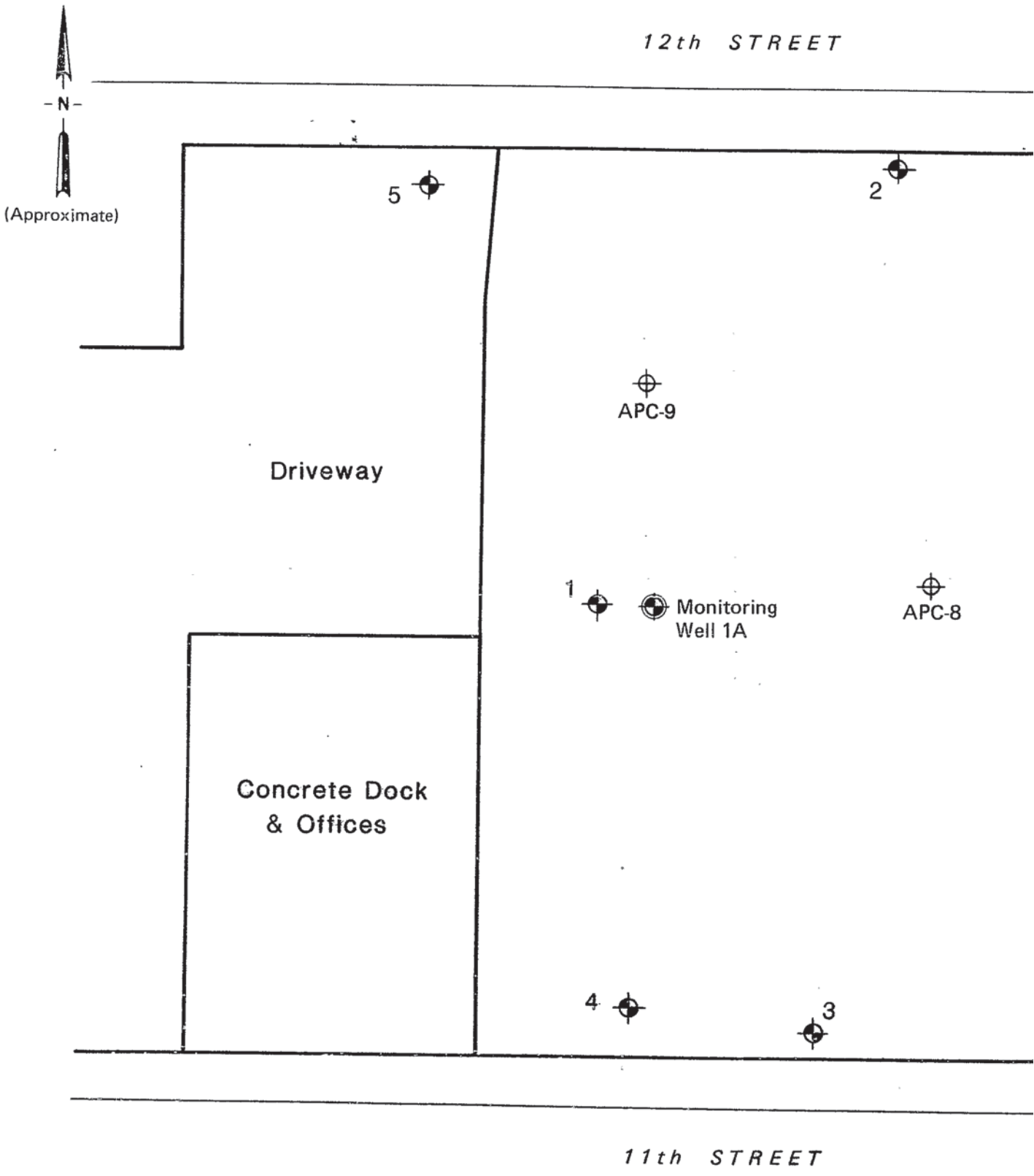
PLATE 16



Not to Scale

COMPLETED WELL DIAGRAM –
MONITORING WELL NO. 1A, 6, 7
[redacted]
Oakland, California

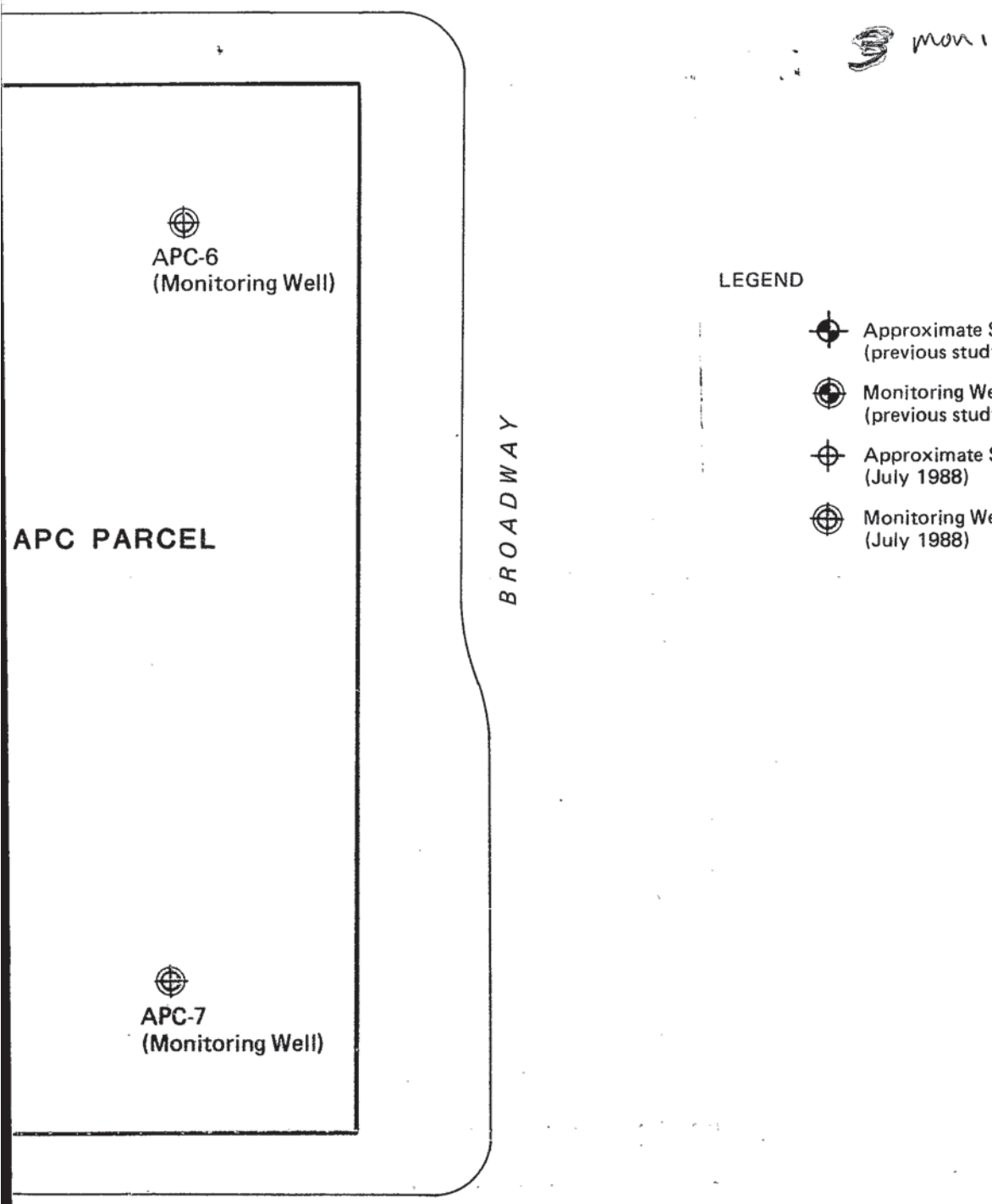
Project No. 8810021A	September 16, 1987	
Woodward-Clyde Consultants		


12th STREET
-N-
(Approximate)
5
2
APC-9
Driveway
1
Monitoring
Well 1A
APC-8
Concrete Dock
& Offices
4
3
11th STREET

01-4050-X
15/4W-35F2-4
+ 2 borings

2 Borings

3 monitoring Wells



Project No. 8810021A	[redacted] Oakland, CA	BORING LOCATION PLAN	Figure 1
Woodward-Clyde Consultants			

01-405V 15/40-35 F-3

Project: [redacted] SITE ASSESSMENT

Log of Boring No. APC 6

Date Drilled: July 15, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location:

Surface Elevation:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
	1	50/6"	SANDY GRAVEL (GW) Dense, moist, gray brown FILL			
5	2	50/6"	CLAYEY SAND (SC) Dense, moist, brown ATD FILL			
10	3	48	CLAYEY SAND (SM-SC) Dense, damp, gray brown, with some medium-grained sand			
15	4	23	CLAYEY SAND (SM-SC) Dense, damp, gray brown Silty			
30			Bottom of Boring at 30'			
35						
40						

Project: 8810021A | Woodward-Clyde Consultants | Figure 2

01-405W 15/4W-35F-4

Project: [redacted]

Log of Boring No. APC 7

Date Drilled: July 15, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location:

Depth Ft	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			Surface Elevation:			
	1	33	CLAYEY SAND (SC) Dense, wet, brown, with some gravel and brick fragments FILL			
5	2	30	CLAYEY SAND (SM) Dense, damp, brown			
			Color turns tan brown			
10	3	44	CLAYEY SAND (SM-SC) Dense, damp, mottled brown, with gray fine-grained sand			
15	4	39	SILTY SAND (SM) Dense, damp, mottled, with gray fine-grained sand			
20			CLAYEY SAND (SC) Moist, slightly grayish brown ▽ ATD			
25						
30			Bottom of Boring at 30'			
35						
40						

Project: 8810021A | Woodward-Clyde Consultants | Figure 3

01-405X 015/410-3

Project: [redacted]

Log of Boring No. APC 8

Date Drilled: July 15, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			Surface Elevation:			
	1	64	CLAYEY SAND (SC) Dense, moist, brown FILL			
5	2	44	CLAYEY SAND (SC) Dense, moist, brown			
10			SILTY SAND (SM) Dense, moist, brown			
15	3	15/6"				
	4	46	SILTY SAND (SM) Dense, moist, grayish brown			
20			Bottom of Boring at 19.5'			
25						
30						
35						
40						

Project: 8810021A | Woodward-Clyde Consultants | Figure 4

01-405 X 1S/4W-35F...

Project: [redacted]

Log of Boring No. APC 9

Date Drilled: July 15, 1988
Type of Boring: 8" HSA
Hammer: 140 lbs falling 30"

Remarks:

Location:

Surface Elevation:

Depth Ft.	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density pcf	Unconfined Compress. Strength, psf
			AGGREGATE BASE			
	1	33	CLAYEY SAND (SC-SM) Damp, brown FILL			
5	2	31	CLAYEY SAND (SM-SC) Damp, brown, slightly grayish, mottled, with gray fine-grained sand			
10	3	35				
			CLAYEY SAND (SC) Dense, damp to moist, lightgray			
15	4	31				
			CLAYEY SAND (SC) Dense, moist, light brownish gray, mottled, with red brown			
20						
25						
30						
35						
40						

Project: 8810021A | Woodward-Clyde Consultants | Figure 5

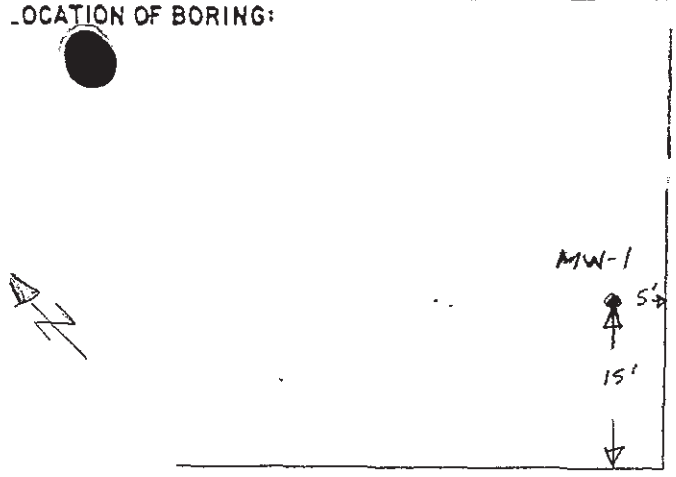
WGK, INC.

Western Geologic Resources, Inc.
Geologic and Environmental Consulting

01-417T 1S/4W-35 A3

FIELD LOG OF BORING SHEET 1 OF 3

LOCATION OF BORING:



PROJECT: [redacted] 17TH & HARRISON OAKLAND	BORING NO. 1
	TOTAL DEPTH: 34'
JOB NO.: 1-012.01	LOGGED BY: CL. JONES
PROJ. MGR.: T. HOWARD	EDITED BY: T. HOWARD
DRILLING CONTRACTOR: ALL TERRAIN	
DRILL RIG TYPE: CME 95	
DRILLERS NAME: WES	
BOREHOLE DIAMETER 12" TO 29' 2½" TO 34'	
HAMMER WT.: 140 #	DROP: 30"
STARTED, TIME: 12:30	DATE: 10.26.88
COMPLETED, TIME: 14:00	DATE: 10.26.88

BORING DEPTH (ft.)	25		
CASING DEPTH (ft.)	ANNULAR SEAL		
WATER DEPTH (ft.)	~25	20.40	
TIME:	14:30	11:30	
DATE:	10/26/88	11/5/88	

BACKFILLED, TIME: — DATE: — BY: —

SURFACE ELEV.: DATUM: GL

CONDITIONS: —

SAMPLE SIZE / FLUID	SAMPLER TYPE & DEPTH	BLOW COUNT / 6-IN.	INCHES DRIVEN	INCHES RECOVERED	SAMPLE CONDITION	DRILLING RATE (min/ft)	CIRCULATION	CASING/SCREEN SIZE, MATERIAL, SLOTS	ANULUS-FILLER GROUT, BENTONITE	DEPTH IN FEET	GRAPHIC LOG	
12"	2"									0		ASPHALT
										1		SILTY SAND (SM) LT. BROWN, MED. DENSE TO LOOSE, DAMP 20% FINES, F TO M gr SAND, MOD EST. K
										2		
										3		
	2"	5	18	18	E			PVC		4		SILTY SAND (SM) LT. BROWN W/ ORANGE MOTTLING, 20 % FINES F TO M gr SAND MOD EST. K MED DENSE TO LOOSE, DAMP
	3.5	6 10				5.0		40	T	5		
								SCHD	H	6		
								BLANK	O	7		
									L	8		
	8.5	7	18	18	E			4" D	G	9		
		8 13				10.0				10		

WGR, INC.

01-417T 15/4W-35A3

FIELD LOG OF BORING (CONTINUED) SHEET 2 OF 3

PROJECT: 17th HARRISON | NO. 101201 | BORING NO. 1

	TYPE	BLOWS	DRIVEN	REC'VD.	COND.	D.RATE	CIRC.	CASE	ANUL.	DEPTH	GRAPHIC LOG	
										11		SILTY SAND AS ABOVE
										12		
										13		
	19.5	11	18	18	E			BLANK		14		SAND (SP) ORANGE-BROWN
		19 24			15.0					15		LOOSE, DAMP, F TO M GR, HIGH EST. K
								SCHED 40 CASING		16		
									BENT CHIPS	17		
								4" LD		18		
	18.5	10	18	12	G			4" PVC		19		SAND AS ABOVE GRAY-BROWN
		12 20			2nd			SCHED 80 PVC		20		
										21		
								SLOTTED 40		22		
									D			SAMPLE
	23.5	17	18	1*	F			0.00 =	N	23		* FELL OUT
		22 29							A	24		SAND AS ABOVE MED. DENSE
								ID	S	25		WET, GRADES TO MED. GR
								4"		26		
									2/4	27		
	28.5	3	18	18	E					28		
		5 9			29.0				BENT CHIPS	29		(CONTACT DIPS 5°)
	4	8	24	24	E				BENT CHIPS	30		SILTY SAND (SM) LT. BROWN, LOOSE 30-40% FINES, VF GR SAND, LOW EST. K, ROOTLETS

WGR, INC.

01-417

FIELD LOG OF BORING (CONTINUED) 15/4W-35A3 SHEET 3 OF 3

PROJECT: 17TH & HARRISON | NO. 1-012-01 | BORING NO. 1

TYPE	BLOWS	DRIVEN	REC'V'D.	COND.	D.RATE	CIRC.	CASE	ANUL.	DEPTH	GRAPHIC LOG	
	8							BENTONITE	31		SILTY SAND AS ABOVE
	10										LT GRAY BROWN W/ BLACK MOTTLING
	11										ROOTLETS, FEO(?) STAINING,
	8	24	24	E					32		LOW EST. K
	12							SAND			CLAYEY SILT (ML) LT GRAY
	15								33		MED STIFF, 10% VF GV SAND,
	16			340				HOLE			ROOTLETS LOW EST. K
									34		
									5		
									6		MATERIALS
									7		(1) 10' SLOTTED .002" 4" ϕ ID PVC
											(2) 10' BLANK. 4" ϕ ID PVC
									8		1 BUCKET BENTONITE PELLETS
											8 SACKS ~~2/12~~ 2/12 SAND
									9		
									0		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		

15/4W 35-A3-5
01-4177 U, V

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

(1) LOCATION OF PROJECT 17TH + HARRISON
NW. CORNER
OAKLAND

(2) CLIENT [redacted]

(3) APPLICANT
Name TOM HOWARD
WESTERN GEOLOGIC RESOURCES
Address 2164 E. FRANCISCO Phone 415 457 7595
City SAN RAFAEL Zip 94901

(4) DESCRIPTION OF PROJECT
Water Well Construction X Geotechnical ___
Cathodic Protection ___ Well Destruction ___

(5) PROPOSED WATER WELL USE
Domestic ___ Industrial ___ Irrigation ___
Municipal ___ Monitoring X Other ___

(6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

WELL PROJECTS
Drill Hole Diameter 12 in. Depth(s) ~60 ft. MAX
Casing Diameter 4 in. Number
Surface Seal Depth ~10 ft. of Wells 3
Driller's License No. 437836
ALL TERRAIN MARYSVILLE, CA

GEOTECHNICAL PROJECTS
Number ___
Diameter ___ in. Maximum Depth ___ ft.

(7) ESTIMATED STARTING DATE 10/26/88
ESTIMATED COMPLETION DATE 10/28/88

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Thomas M Howard Date 10/24/88

FOR OFFICE USE

PERMIT NUMBER 88540
LOCATION NUMBER

Approved Wyman Hong Date 24 Oct 88
Wyman Hong

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Notify this office (484-2600) at least one day prior to starting work on permitted work and before placing well seals.
3. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or bore hole logs and location sketch for geotechnical projects. Permitted work is completed when the last surface seal is placed or the last boring is completed.
4. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie, or equivalent.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie, or equivalent.

E. WELL DESTRUCTION. See attached.

RECEIVED
NOV 17 1988

Approved TMH
Job # 1-012.01
Copy To Tom

91987