Carryl MacLeod
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6506
CMacleod@chevron.com

March 31, 2014

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Dear Mr. Detterman:

Attached for your review is the *Site Conceptual Model and Data Gap Work Plan* for former Chevron-branded service station 91723, located at 9757 San Leandro Street in Oakland, California. This report was prepared by Stantec Consulting Services Inc. (Stantec), upon whose assistance and advice I have relied. I declare under penalty of perjury that the information and/or recommendations contained in the attached report are true and correct, to the best of my knowledge.

If you have any further questions, please do not hesitate to contact me or the Stantec project manager, Travis Flora, at (408) 356-6124 ext. 238, or travis.flora@stantec.com.

Sincerely,

Carryl MacLeod

Carryl MacLeod
Project Manager

Site Conceptual Model and Data Gap Work Plan

Former Chevron-branded
Service Station 91723
9757 San Leandro Street
Oakland, California

Prepared for:
Chevron Environmental
Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

Prepared by:
Stantec Consulting Services Inc.
15575 Los Gatos Blvd., Building C
Los Gatos, CA 95032

March 31, 2014

SITE CONCEPTUAL MODEL AND DATA GAP WORK PLAN

Former Chevron-branded Service Station 91723, 9757 San Leandro Street, Oakland, California
March 31, 2014

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Prepared by Erin O'Malley
(signature)

Erin O'Malley
Project Engineer

Reviewed by Marisa Kaffenberger
(signature)

Marisa Kaffenberger
Senior Engineer

Reviewed by
(signature)

Travis L. Flora
Associate Project Manager

31 MAR 2014

Reviewed by James P. May
(signature)

PROFESSIONAL GEOLOGIST
JAMES PATRICK MAY
NO. 8021
STATE OF CALIFORNIA

James P. May, P.G.
Senior Geologist

Stantec

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

(1) Due to copyright protection, Stantec will not attach the Chevron ETC Toolkit, Version 1.8, to this work plan. With permission from Chevron, the toolkit will be sent privately to ACEH for reference.

1.0 Introduction

On behalf of Chevron Environmental Management Company (Chevron), Stantec Consulting Services Inc. (Stantec) is pleased to submit this *Site Conceptual Model and Data Gap Work Plan* for former Chevron-branded service station 91723, which was located at 9757 San Leandro Street, Oakland, Alameda County, California (the Site - shown on **Figure 1**). This report was prepared at the request of Alameda County Environmental Health (ACEH) in an email dated September 18, 2013. Additionally, ACEH approved extensions on the report in correspondence dated November 12, 2013, and February 3, 2014. ACEH correspondence is presented as **Appendix A**.

This report is organized into the following sections summarizing:

- Site background;
- Extent of petroleum hydrocarbons;
- Potential receptors and exposure pathways;
- Low-Threat Underground Storage Tank (UST) Case Closure Policy (LTCP) evaluation;
- Data gap analysis; and
- Data gap work plan.

A focused Site conceptual model (SCM) was requested by ACEH and is included in **Appendix B**. The focused SCM includes many of the elements that would normally be described in the sections indicated above. To avoid duplication, the majority of the information is included in the focused SCM, with references to the appendix included in this text. In addition, ACEH provided guidance on sensitive receptor surveys, preferential pathways, and focused SCMs. Information from that guidance that is relevant to the LTCP evaluation has been included in the focused SCM and this report.

2.0 Site Background

2.1 SITE DESCRIPTION AND LAND USE

The Site is a former Chevron-branded service station located on the western corner at the intersection of San Leandro Street and 98th Avenue in Oakland, California. The Site is currently a large parking area staging semi-trucks for a distribution company. A former service station operated at the Site from approximately 1946 to 1978. According to available records, Chevron purchased and began operation of the service station in 1968 (Chevron, 1994). Prior to 1966, three fuel USTs and one fuel dispenser island (first generation) located in the eastern portion of the Site were removed. Second-generation fuel structures (installed between 1966 and 1968) included three fuel USTs located in the north-central portion of the Site, one waste oil UST located in the western portion of the Site, and five fuel dispenser islands (four located in the central portion of the Site and one located in the southern portion of the Site). In 1978, the service station was closed and all second-generation fuel structures were removed from the Site (Conestoga-Rovers & Associates [CRA], 2011). A Site Plan is shown on **Figure 2**.

Land use near the Site consists primarily of commercial and industrial properties. The Site is bounded on the northwest and southwest by a former food processing plant, on the northeast by San Leandro Street followed by railroad tracks, and on the southeast by 98th Avenue followed by commercial businesses. A former Shell-branded service station was located immediately adjacent to and northwest of the Site.

2.2 REGIONAL AND LOCAL GEOLOGY AND HYDROGEOLOGY

Soil boring and well construction logs are included in **Appendix C**. Well construction details and an assessment of whether Third Quarter 2013 groundwater samples were collected when groundwater elevations were measured across the well screen intervals are presented in **Table 1**. Historical groundwater elevation data are presented in **Table 2**. Additional historical groundwater elevation data are presented in **Appendix D**. A groundwater elevation contour map (based on Third Quarter 2013 data) is shown on **Figure 3**, and a Rose Diagram illustrating the direction of groundwater flow is shown on **Figure 4**. A description of the regional and local geology and hydrogeology is included in the focused SCM in **Appendix B**.

As requested by ACEH, the Rose Diagram (shown on **Figure 4**) was revised to include additional historical data beginning with Third Quarter 1988 data, when preparation of groundwater elevation contour maps began. With the inclusion of additional historical data beginning in 1988, the vector mean groundwater flow direction (west) varies by only 6 degrees from what it was utilizing historical data from 2011 to present.

2.3 RELEASE HISTORY

The release history is described in the focused SCM in **Appendix B**.

2.4 PREVIOUS INVESTIGATIONS AND REMEDIATION

Historical groundwater monitoring data and analytical results are summarized in **Table 2**, **Table 3**, and **Table 4**. Historical soil analytical results are summarized in **Table 5**. Historical soil vapor analytical results are summarized in **Table 6**. Locations of soil borings, groundwater monitoring wells, soil vapor borings, and soil vapor wells are shown on **Figure 2**. Soil boring and well construction logs are included in **Appendix C**.

Prior to 1966, three fuel USTs and one fuel dispenser island (first generation) located in the eastern portion of the Site were removed. Second-generation fuel structures were installed between 1966 and 1968 and included three fuel USTs located in the north-central portion of the Site, one waste oil UST located in the western portion of the Site, and five fuel dispenser islands (four located in the central portion of the Site and one located in the southern portion of the Site). In 1978, the service station was closed and all second-generation fuel structures were removed from the Site (CRA, 2011). Further documentation on these activities could not be found and it is unknown if soil sampling or excavation of impacted soil, if present, was conducted.

In April 1987, Beta Associates (Beta) oversaw advancement of 10 off-site soil borings (DH-1 through DH-7 and DH-9 through DH-11) and one on-site soil boring (DH-8) to total depths ranging from 1 to 23.5 feet below ground surface (bgs). Borings DH-1 through DH-7 and DH-9 through DH-11 were advanced to investigate potential off-site sources associated with the former food processing plant located northwest and southwest of the Site, while boring DH-8 was advanced to investigate the source associated with the former service station at the Site. Borings DH-1, DH-2, and DH-4 were converted to groundwater monitoring wells MW-1, MW-2, and MW-4, respectively. There is no record of boring DH-3 being converted into a monitoring well (MW-3). Soil samples were not collected for laboratory analysis from boring DH-10. During this investigation, total petroleum hydrocarbons as gasoline range organics (TPH-GRO) and benzene were only detected in one soil sample collected from boring DH-8 at 10 feet bgs at concentrations of 1,017 milligrams per kilogram (mg/kg) and 1.063 mg/kg, respectively. Halogenated volatile organic compounds (HVOCs) were analyzed in the soil samples collected from borings DH-1 through DH-3, DH-5, DH-7, and DH-8, and all concentrations were below laboratory reporting limits (LRLs). Motor oil was analyzed in the soil samples collected from borings DH-1, DH-4 through DH-6, DH-8, DH-9, and DH-11, and the maximum concentration (380 mg/kg) was detected in the soil sample collected from boring DH-11 at 1 foot bgs (Beta, 1987).

In May 1988, Groundwater Technology, Inc. (GTI) oversaw installation of three on-site groundwater monitoring wells (MW-5, MW-6, and MW-8) and one off-site groundwater monitoring well (MW-7) to total depths of 20 feet bgs. Well MW-7 was installed to investigate the area of the former Shell-branded service station located immediately adjacent to the Site on the northwest side. Petroleum hydrocarbons were not detected above LRLs in any soil sample collected from off-site borehole MW-7. The maximum concentration of TPH-GRO in soil (310 mg/kg) was detected in the sample collected from borehole MW-6 at 10 feet bgs, and benzene was not detected above LRLs in any sample collected (GTI, 1988).

In August 1989, Harding Lawson Associates (HLA) oversaw installation of two off-site groundwater monitoring wells (MW-9 and MW-10) and advancement of five on-site soil borings (SB-1 through SB-5) to total depths ranging from 10 to 21 feet bgs. In October 1989, HLA oversaw advancement of one additional on-site soil boring (SB-6) to a total depth of 18.5 feet bgs. Petroleum hydrocarbons were not detected above LRLs in any soil samples collected from boreholes MW-9 and MW-10. The maximum concentration of TPH-GRO in soil (470 mg/kg) was detected in the sample collected from boring SB-5 at 10.5 feet bgs, while the maximum concentration of benzene (3.3 mg/kg) was detected in the sample collected from boring SB-4 at 10.5 feet bgs (HLA, 1990).

In September 1989, HLA conducted a series of slug tests at the Site utilizing monitoring wells MW-2, MW-5, MW-6, and MW-8. The data collected during the slug tests were used to calculate the transmissivity and hydraulic conductivity of the uppermost aquifer that underlies the Site. Transmissivity and hydraulic conductivity values were estimated to range from 53 to 288 square feet per day (ft^2/day) and 15 to 72 feet per day (ft/day), respectively (HLA, 1990).

In January 1991, HLA oversaw advancement of six off-site soil borings (SB-1 through SB-6) to total depths of 15.5 feet bgs. These borings had the same nomenclature as the soil borings installed by HLA in 1989 and were advanced to investigate impacts in the area of the former Shell-branded service station located immediately adjacent and northwest of the Site. Petroleum hydrocarbons were not detected above LRLs in any soil sample collected from borings SB-1(1991) and SB-4(1991) through SB-6(1991). TPH-GRO and benzene were only detected in soil samples collected from boring SB-3(1991), at maximum concentrations of 14 mg/kg and 0.032 mg/kg, respectively, in the sample collected from 10 to 10.5 feet bgs (HLA, 1991).

In April 1996, Fluor Daniel GTI (Fluor Daniel) oversaw advancement of 23 on-site soil borings (SB-1 through SB-23) to total depths ranging from 6.5 to 16.5 feet bgs. Boring SB-1 through SB-6 had the same nomenclature as the soil borings installed by HLA in 1989 and again in 1991. The maximum concentration of TPH-GRO in soil (1,800 mg/kg) was detected in the sample collected from boring SB-15 at 10 feet bgs, while the maximum concentration of benzene (99 mg/kg) was detected in the sample collected from boring SB-10 at 10 feet bgs. Grab groundwater samples were collected from borings SB-11, SB-19, and SB-22. Maximum concentrations of TPH-GRO and benzene in grab groundwater (19,000 micrograms per liter [µg/L] and 400 µg/L, respectively) were detected in the sample collected from boring SB-22. (Fluor Daniel, 1996).

In October 1997, Cambria Environmental Technology, Inc. (Cambria) oversaw advancement of six on-site soil vapor borings (SV-1 through SV-6) to total depths ranging from 5 to 8 feet bgs and collection of shallow soil vapor samples. Soil samples were not collected for laboratory analysis or to describe lithology and there are no logs associated with these borings. Borings SV-5 and SV-6 were advanced and soil vapor samples collected to verify results from borings SV-1 and SV-2, respectively. TPH-GRO was not analyzed in any of the samples collected. The maximum concentration of benzene in soil vapor (319,338 micrograms per cubic meter [µg/m^3]) was detected in the sample collected from boring SV-5 at 5 feet bgs (Cambria, 1998).

In June 2010, CRA oversaw installation of five on-site soil vapor wells (VP-1 through VP-5) to total depths of 6 feet bgs. Petroleum hydrocarbons were not detected above LRLs in soil samples collected from boreholes VP-1 and VP-5. The maximum concentration of TPH-GRO in soil (230 mg/kg) was detected in the sample collected from boring VP-2 at 6 feet bgs, while the maximum concentration of benzene (0.14 mg/kg) was detected in the sample collected from boring VP-3 at 6 feet bgs. Following installation, soil vapor samples were collected from wells VP-1 through VP-5 on June 29, 2010, and TPH-GRO was detected in the samples at concentrations ranging from 26,000,000 µg/m^3 (well VP-1) to 89,000,000 µg/m^3 (well VP-2). Benzene was detected in all samples at concentrations ranging from 3,700 µg/m^3 (well VP-1) to 540,000 µg/m^3 (well VP-3) (CRA, 2010).

2.5 OFF-SITE SOURCES

All off-site sources are described in the focused SCM in **Appendix B**.

3.0 Extent of Petroleum Hydrocarbons

3.1 VERTICAL EXTENT OF PETROLEUM HYDROCARBONS

3.1.1 Vertical Extent of Petroleum Hydrocarbons in Soil

Historical soil sample analytical results are presented in **Table 5**. A description of the vertical extent of petroleum hydrocarbons in soil is included in the focused SCM in **Appendix B**.

3.1.2 Vertical Extent of Petroleum Hydrocarbons in Groundwater

Historical groundwater elevation data and analytical results are included in **Table 2** through **Table 4**. A description of the vertical extent of petroleum hydrocarbons in groundwater is included in the focused SCM in **Appendix B**.

3.2 LATERAL EXTENT OF PETROLEUM HYDROCARBONS

3.2.1 Lateral Extent of Petroleum Hydrocarbons in Soil

A description of the lateral extent of petroleum hydrocarbons in soil is included in the focused SCM in **Appendix B**.

3.2.2 Lateral Extent of Petroleum Hydrocarbons in Groundwater

A figure showing the Third Quarter 2013 groundwater analytical data plotted on a Site map is included as **Figure 5**. A TPH-GRO isoconcentration map is shown on **Figure 6**. A benzene isoconcentration map is shown on **Figure 7**. These maps illustrate the approximate lateral extent of these compounds in groundwater based on the monitoring well network. A description of the lateral extent of petroleum hydrocarbons in groundwater is included in the focused SCM in **Appendix B**.

3.2.2.1 Plume Stability

Hydrographs based on current and historical groundwater elevations and analytical results are included in **Appendix E**. Plume stability is described in the focused SCM in **Appendix B**.

4.0 Potential Receptors and Exposure Pathways

An evaluation was conducted to identify complete and potentially complete exposure pathways relevant to human health risks at the Site based on analyses of the following components:

- Current and future land uses;
- Water well, surface water, and conduit surveys;
- Potentially exposed populations; and
- Complete and potentially complete exposure pathways.

4.1 CURRENT AND FUTURE LAND USES

A description of current and future land uses for the Site is included in the focused SCM in **Appendix B**.

4.2 WATER SURVEY

The Site is located in the East Bay Plain groundwater basin, which has been designated as having existing beneficial uses for municipal, domestic, industrial process, industrial service, and agricultural water supply (California Regional Water Quality Control Board – San Francisco Bay Region [RWQCB], 2011).

4.2.1 Groundwater Wells

Information on the most recent well survey is included in the focused SCM in **Appendix B**.

4.2.2 Surface Water Bodies

A description of the surface water bodies located within a 0.5-mile radius of the Site Is included in the focused SCM in **Appendix B**.

4.3 UTILITY SURVEY

A survey of utilities in the vicinity of the Site was not completed as the soil source area appears to be confined to the Site and the dissolved-phase petroleum hydrocarbon plume only extends off Site to a private commercial property and not into a right-of-way where numerous utilities would be present. It is unlikely that any utilities are present in the area of the plume that would act as preferential pathways for contaminants.

4.4 POTENTIALLY EXPOSED POPULATIONS

4.4.1 On-Site and Off-Site Current or Potential Populations

A description of on-site and off-site current or potential populations is included in the focused SCM in **Appendix B**.

4.4.2 Potential Sensitive Populations

A description of the potential sensitive populations located within 0.5 miles of the Site is included in the focused SCM in **Appendix B**. Additionally, the potential sensitive populations located within a 0.5-mile radius of the Site are listed in the following table and shown on **Figure 8**.

Potential Sensitive Population	Address	Distance from Site (miles)	Direction from Site
Christopher Care Home	9945 C St.	0.35	E-NE
Stonehurst Early Childhood Center	901 105th Ave.	0.36	SE
Esperanza Elementary School	10315 E St.	0.38	SE
East Oakland Senior Center	9255 Edes Ave.	0.45	W-SW

4.5 EXPOSURE PATHWAY ANALYSIS

The exposure pathway analysis for the Site is detailed in the focused SCM in **Appendix B** and a graphical representation is shown on **Figure 9**.

4.6 RISK EVALUATION

A risk evaluation is included in the focused SCM in **Appendix B**.

5.0 Low-Threat UST Case Closure Policy Evaluation

This section presents the low-risk general and media-specific criteria defined by the State Water Resource Control Board's (SWRCB's) LTCP, effective August 17, 2012, under Resolution No. 2012-0016 (SWRCB, 2012a) and includes an evaluation of the Site compared to these criteria. The completed SWRCB LTCP Checklist is included as **Appendix F**.

5.1 GENERAL CRITERIA

- **Is the unauthorized release located within the service area of a public water system?**

  Yes. The Site is located within the service area of the East Bay Municipal Utility District.

- **Does the unauthorized release consist only of petroleum?**

  Yes. The constituents of concern (COCs) at the Site are petroleum hydrocarbons associated with gasoline hydrocarbons from a former service station, including TPH-GRO and BTEX compounds.

  Although chlorinated hydrocarbons were historically detected in groundwater in off-site wells MW-1, MW-7, and MW-9 (**Appendix D**), as detailed in the focused SCM in **Appendix B**, the source of chlorinated hydrocarbons is not believed to be associated with the release from this Site.

- **Has the unauthorized ("primary") release from the UST system been stopped?**

  Yes. Prior to 1966, three fuel USTs and one fuel dispenser island (first generation) located in the eastern portion of the Site were removed. Second-generation fuel structures were installed between 1966 and 1968 and included three fuel USTs located in the north-central portion of the Site, one waste oil UST located in the western portion of the Site, and five fuel dispenser islands (four located in the central portion of the Site and one located in the southern portion of the Site). In 1978, the service station was closed and all second-generation fuel structures were removed from the Site (CRA, 2011).

  A UST unauthorized release (leak)/contamination site report, dated August 24, 2001, states that an unknown amount of gasoline was released to the subsurface at the Site and was discovered during assessment activities in April 1987. The cause of the release is unknown. The date discharge began is unknown and it was stopped in 1978, when all fueling features were removed from the Site (ACEH, 2001).

  Dissolved-phase petroleum hydrocarbon concentrations associated with the Site are decreasing, indicating that there is no longer a petroleum hydrocarbon source propagating on Site.

- **Has free product been removed to the maximum extent practicable (per CCR Chapter 16 Section 2655 a-c)?**

  Not Applicable. Free product was reportedly observed while advancing soil boring SB-8 at 7 feet bgs in 1996; however, free product has not been observed or documented in any other borings or any Site wells to-date. Therefore, no free product removal activities have been conducted.

- **Has a Conceptual Site Model (CSM) that assesses the nature, extent, and mobility of the release been developed?**

  Yes. The focused SCM in **Appendix B** is the CSM assessing the nature, extent, and mobility of the release.

- **Has secondary source been removed to the extent practicable?**

  Yes. No active remedial efforts have been conducted at the Site to-date; however, dissolved-phase petroleum hydrocarbon concentrations associated with the Site are decreasing, indicating that there is no longer a petroleum hydrocarbon source propagating on Site that would warrant active remediation.

- **Has soil or groundwater been tested for methyl *tertiary*-butyl ether (MtBE) and results reported in accordance with Health and Safety Code section 25296.15?**

  Yes. MtBE in groundwater was routinely analyzed during groundwater monitoring and sampling events since Fourth Quarter 1995. Results have been reported to ACEH and uploaded to GeoTracker™.

- **Does nuisance as defined by Water Code section 13050 exist at the site? A "nuisance" is defined as anything which meets the following (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property; (2) Affects at the same time an entire community or neighborhood; (3) Occurs during, or as a result of, the treatment or disposal of wastes.**

  No. The conditions of "nuisance" as defined by Water Code section 13050 do not exist at the Site.

- **Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?**

  No.

5.2 MEDIA-SPECIFIC CRITERIA

5.2.1 Groundwater-Specific Criteria

Current and historical groundwater quality data indicate that the dissolved-phase petroleum hydrocarbon plume at the Site is generally stable or decreasing in size and concentration.

Media-specific criteria for groundwater have been categorized based on:

1. The length of contaminant plume;
2. Presence of free product;
3. Distance to nearest existing water supply well or surface water body; and
4. Dissolved concentrations of benzene and MtBE.

Based on this, Site conditions meet the groundwater-specific criteria under scenario #2 of the LTCP. This scenario states the following:

- "The contaminant plume that exceeds water quality objectives is less than 250 feet in length."
    - Based on dissolved-phase TPH-GRO concentrations that exceed the RWQCB Environmental Screening Level (ESL) for groundwater that is a current or potential source of drinking water of 100 µg/L, a conservative estimate of the contaminant plume is 200 feet or less in length, as shown on **Figure 6**. The areal extent of the dissolved-phase benzene plume, shown on **Figure 7**, is smaller than the areal extent of the dissolved-phase TPH-GRO plume.
- "There is no free product."
    - Free product was reportedly observed while advancing soil boring SB-8 at 7 feet bgs in 1996; however, free product has not been observed or documented in any other borings or any Site wells to-date.
- "The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary."
    - During the active water supply well survey conducted in 2013, seven water supply wells were reported within a 0.25-mile radius of the Site and all were identified as for industrial use. Although wells as close as 100 feet from the Site were reported, any wells at or in the vicinity of the Site were field verified and found to be destroyed. All other wells within a 0.25-mile radius (at distances ranging from 435 to 765 feet from the Site) are located up-gradient or cross-gradient based on the predominant direction of groundwater flow (west), and are unlikely to be

impacted by the dissolved-phase petroleum hydrocarbon plume associated with the Site. No surface water bodies were identified within a 0.5-mile radius of the Site.

- "The dissolved concentration of benzene is less than 3,000 µg/L, and the dissolved concentration of MtBE is less than 1,000 µg/L."
    - As shown on **Figure 5,** during Third Quarter 2013, benzene was detected at a maximum concentration of 60 µg/L (well MW-8) and MtBE was not detected above the LRL of 0.5 µg/L in any Site well sampled.

5.2.2 Petroleum Vapor Intrusion to Indoor Air

Current Site conditions do not satisfy any of the petroleum vapor intrusion to indoor air criteria scenarios as a bioattenuation zone (as defined by the policy) does not exist, and direct measurement of soil gas concentrations was conducted in June 2010 (**Table 6**) and concentrations were above LTCP screening levels for commercial land use.

5.2.3 Direct Contact and Outdoor Air Exposure

Current Site conditions satisfy the LTCP direct contact and outdoor air exposure criteria.

Concentrations of benzene and ethylbenzene were only detected above the limits for direct contact and outdoor air exposure specified in Table 1 of the LTCP in soil samples collected in April 1996 from borings SB-10 and SB-15 within the interval of 5 to 10 feet bgs. In June 2010, a soil sample was collected from borehole VP-3 in the same area as borings SB-10 and SB-15, within the same depth interval of 5 to 10 feet bgs, and concentrations of benzene and ethylbenzene in this sample were less than the limits specified in the LTCP. Results from borehole VP-3 are more recent and are therefore considered more representative of current soil conditions. In addition, dissolved-phase petroleum hydrocarbon concentrations associated with the Site are decreasing, indicating that there is no longer a petroleum hydrocarbon source propagating on Site.

During historical Site assessment activities, it does not appear that on-site soil samples were analyzed for naphthalene; however, benzene exclusion criteria are considered conservative for naphthalene given that naphthalene is less volatile than benzene and is typically present in gasoline at much lower fractions than benzene (SWRCB, 2012b). Using SWRCB staff precedent from recent case closure reviews, "the relative concentration of naphthalene in soil can be conservatively estimated using published relative concentrations of naphthalene and benzene in gasoline." The lack of naphthalene data is not considered a data gap and Site conditions can be assessed by using benzene concentrations (SWRCB, 2013). Gasoline mixtures contain approximately 3% benzene and 0.25% naphthalene (Potter, Thomas L. and Simmons, Kathleen E., 1998); therefore, benzene can be directly substituted for naphthalene concentrations with an approximate safety factor of ten. As previously described, the concentrations of benzene in the upper 10 feet of soil meet the criteria for direct contact and outdoor air exposure; therefore, it is

anticipated that the estimated naphthalene concentrations across the Site also meet the criteria.

In April 1996, soil samples were collected from borings SB-3(1996) and SB-4(1996) at 10 feet bgs in the immediate area of the former waste oil UST and were analyzed for total oil and grease (TOG). Concentrations of TOG in these samples are below the current shallow soil ESL for TOG of 2,500 mg/kg. Polynuclear aromatic hydrocarbons (PAHs) were not analyzed in these samples; however, because TOG was not detected above ESLs, it is likely that PAHs, if present, are below ESLs as well. Soil samples were not collected from 0 to 5 feet bgs in borings SB-3 and SB-4 due to low photoionization detector (PID) readings (1 and 39 parts per million [ppm], respectively).

6.0 Data Gap Analysis

Based on a review of the data associated with the Site, the following data gaps were identified, and are presented in **Appendix B** (Table 2):

- Status of former Site wells. The status and condition of former Site wells MW-1, MW-4, MW-7, and MW-10 is unknown and was requested in ACEH correspondence dated February 3, 2014.

- Soil vapor quality evaluation. Site conditions do not meet LTCP criteria for petroleum vapor intrusion to indoor air, and additional assessment is needed to evaluate soil vapor quality at the Site. However, the Site is currently used as a semi-truck parking and staging area for a distribution facility and background vapors associated with semi-trucks and visiting vehicles likely present a higher risk than vapors from residual contamination on Site.

7.0 Data Gap Work Plan

Stantec is proposing the resampling of currently existing on-site soil vapor wells VP-1 through VP-5 to evaluate current soil vapor quality at the Site compared to the previous sampling event and to evaluate whether current Site conditions meet the petroleum vapor intrusion to indoor air criteria set forth in the LTCP. The locations of soil vapor wells VP-1 through VP-5 are shown on **Figure 2**. Stantec will also determine the status and condition of former groundwater monitoring wells MW-1, MW-4, MW-7, and MW-10.

7.1 PRELIMINARY FIELD ACTIVITIES

7.1.1 Notifications

A schedule of field activities will be communicated to the property owner and tenant a minimum of two weeks prior to field activities in order to minimize potential disruptions to normal activities.

7.1.2 Health and Safety Plan

Stantec will generate a Site-specific health and safety plan (HASP) as required by the State of California General Industry Safety Order 5192 and Title 29 of the Code of Federal Regulations, Section 1910.120. The HASP will outline potential hazards to Stantec personnel during the field activities described herein. Job safety analyses (JSAs) for tasks to be performed by Stantec personnel (e.g., driving, sample collection, etc.) will be included. The HASP will also include required personal protective equipment (PPE) to be worn by all Stantec field personnel for each task. In addition, Stantec will produce a Journey Management Plan (JMP) in an attempt to prevent motor vehicle incidents driving to and from the Site. A copy of Stantec's HASP and JMP will be available on Site during all field activities.

7.2 SOIL VAPOR INVESTIGATION ACTIVITIES

Procedures described in the following sections regarding the collection of soil vapor samples are based on technical guidance detailed in the Chevron Energy Technology Company (Chevron ETC) Soil Vapor Sampling Technical Toolkit, Version 1.8 (**Appendix G**), which may be provided separately to ACEH but is not included in this document due to copyright protection. The toolkit follows guidance from several agencies and organizations including the American Petroleum Institute (API); American Society for Testing and Materials (ASTM), California Environmental Protection Agency (Cal EPA), and United States Environmental Protection Agency (US EPA) (API, 2004; ASTM, 2001; Cal EPA, 2005; Cal EPA 2012; and, US EPA, 2002).

7.2.1 Soil Vapor Sample Collection

Prior to the soil vapor sampling event, weather reports will be checked to verify that a significant antecedent rain event (i.e., greater than or equal to 0.5 inches; Cal EPA, 2012) has not occurred

within 24 hours. If a significant rain event has occurred, the sampling will be rescheduled for another date. Sampling immediately following a rain event increases the likelihood of soil pore occlusion by water, thereby potentially affecting soil vapor results.

Stantec personnel will maintain detailed notes during the soil vapor sample collection activities. Notes will include weather conditions, vacuum leak test data, purge data, and sample collection/tracer gas monitoring data. A soil vapor sample collection data log for the Site is included in **Appendix H**.

7.2.1.1 Procuring Equipment and Supplies

Stantec will contact Eurofins Air Toxics, Inc. (Air Toxics), of Folsom, California, a State of California-certified and Chevron-approved laboratory, to coordinate shipment of the appropriate sample containers and equipment to perform soil vapor sampling. Coordination between Stantec and Air Toxics will include establishing arrival times of the samples to ensure Air Toxics has sufficient time to analyze soil vapor samples within the required hold time. If Air Toxics is unable to provide all required equipment, Stantec may subcontract an alternate laboratory.

Stantec will request Air Toxics provide the following supplies for the sampling event:

- Eight 10% (batch) certified 1-liter (L) Summa™ canisters paired with eight laboratory-provided flow controllers (with built-in particulate filters) calibrated to deliver approximately 175 milliliters per minute (mL/min) – one for each soil vapor well, one each for a duplicate and equipment blank sample, and one spare to be used in the event of canister failure;
- Sampling tee for duplicate sample collection;
- One pressurized canister filled with "zero air" (e.g., nitrogen) to supply a source for the equipment blank;
- One 10% (batch) certified 6-L Summa™ canister – for use as a purge canister; and
- Six Tedlar® bags – one for each soil vapor sample and one spare. The Tedlar® bags will be used for field leak check measurement.

Each Summa™ canister will be equipped with a laboratory-supplied certified flow controller set to collect samples at the desired flow rate and a vacuum gauge. Air Toxics will measure and record canister vacuum using their fixed, calibrated equipment as well as the canister-assigned vacuum gauges. Upon receipt, the initial vacuum of each canister will be measured and recorded by Stantec using laboratory-supplied vacuum gauges. Laboratory and field vacuum measurements will be compared to determine if vacuum loss has occurred during shipment.

Stantec will procure the following equipment and supplies for the sampling event:

- Two-way ¼-inch Swagelok® valves;
- ¼-inch outer diameter (OD) Teflon® tubing (Nylon tubing marketed under the NylaFlow® name is also acceptable; however, Tygon®, rubber, and polyethylene tubing will be avoided);
- Tubing cutter;
- End caps for tubing;
- ¼-inch Swagelok® connectors and fittings (hose clamps and other types of connectors will be avoided as they may not provide an air-tight seal);
- Helium gas and helium detector/monitor;
- Proper hand tools to secure connections and fittings; and
- Low-flow air sampling pump.

7.2.1.2 Connecting Soil Vapor Sampling Equipment

The sampling equipment will be assembled similar to the layout shown on Figure 8 in **Appendix G** (below) and connected to the soil vapor well to be sampled. The soil vapor sampling systems will be purged prior to sample collection. Purging details are provided in Section 7.2.1.4.

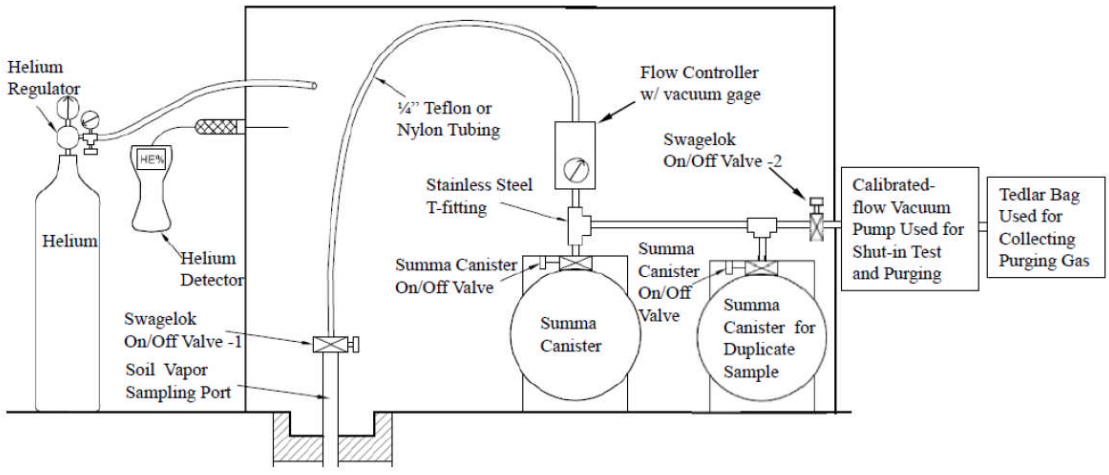

Figure 8. Soil vapor sampling train using two Summa canisters for a sample and a duplicate sample (Adapted from ENSR)

7.2.1.3 Leak Testing

Leakage of atmospheric air into the sampling equipment during sample collection can compromise sample integrity and dilute measured soil vapor petroleum hydrocarbon concentrations, possibly to the point that the concentration is below the method detection limit (i.e., a false negative). Contaminants in ambient air can also enter the sampling system and be detected in the sample from a non-contaminated sampling probe (i.e., a false positive). Air leakage can occur at the land surface into the probe and, more likely, through loose fittings in the above-ground sampling equipment.

To avoid leaks, the connections, fittings, and other parts associated with the sampling equipment will be checked to verify that they are tightly fit. The soil vapor purging and sampling rate will also be kept low (175 mL/min).

To test for leaks, two methods will be used. The first method involves performing a qualitative vacuum test (shut-in test) on the above-ground sampling equipment. This test will be performed by closing all of the sampling valves and applying a vacuum of approximately 100 inches water column [in W.C.] on the sampling equipment. If constant vacuum is maintained for at least 1 minute, the sampling equipment will pass the vacuum test. Results of the vacuum leak test will be recorded on the soil vapor sample collection data log provided in **Appendix H**.

The second method involves using a tracer gas to test for ambient air leakage into the sampling system. Chevron ETC (2013) recommends the use of helium as a tracer gas where practical to do so, primarily based on accessibility. Helium also has low toxicity, does not disrupt analytical measurements, is generally not found at fuel contaminated sites, and has a high purity. Laboratory-grade helium is recommended and can be obtained from an analytical laboratory or directly from a helium supplier.

A sampling enclosure (shroud) will be constructed to facilitate leak testing during soil vapor sample collection. The sampling enclosure may be constructed with acrylic sheets, plastic bins, or plastic sheets covering a polyvinyl chloride (PVC) frame. Regardless of the materials used to construct the enclosure, it will be large enough to cover sampling equipment from the tubing at the probe to the sample Summa™ canister. Pressure in the enclosure must remain at atmospheric pressure to ensure normal sampling conditions exist. The sampling enclosure will be filled and maintained to at least 10% laboratory-grade helium, and a helium detector (e.g., Mark Products Model 1200 or equivalent) will be used to measure the percentage of helium in the enclosure during sample collection. The 10% helium concentration is at least 10 times higher than the typical LRL (0.15%) achieved for ASTM Method D-1946.

Small amounts of sample train leakage may not invalidate sample results. A leakage of as much as 10% may allow back calculation of an adjusted soil vapor concentration.

7.2.1.4 Purging

After the sampling equipment passes the vacuum test, the probe will be purged to remove internal air from the sample train (tubing and vapor implant only). Three internal volumes will be purged from each sampling location. Note that the purge volumes calculated in **Table 7** are based on the anticipated lengths of the below- and above-ground sampling equipment. Purge volumes should be recalculated if final lengths are different than anticipated. Because each purge volume is anticipated to be less than 200 mL, purging will be performed at each location using a dedicated 6-L purge canister. An approximate 1-inch of mercury (in Hg) drop in vacuum pressure corresponds to an approximate purge volume of 200 mL. Alternatively, due to the low volume of purge air, a 60 cubic centimeter gas-tight syringe may be used to remove purge air. The flow rate during purging will be approximately equivalent to the flow rate during sampling, which is set by the flow controller provided by the laboratory. Purge data for each probe will be recorded on the log provided in **Appendix H**. Each location will be sampled immediately following purging, as described in the following section.

7.2.1.5 Collecting Soil Vapor Samples

With the leak test enclosure still in place, collection of soil vapor samples from a particular vapor well will begin within 10 minutes of purging. Each sample will be collected in a 1-L Summa™ canister at an approximate collection rate of no more than 175 mL/min. After the Summa™ canister valve is opened and the canister begins to fill, the pressure gauge on the flow controller will be observed to verify that the vacuum in the canister is decreasing over time. If the flow controller is working correctly, it will take approximately 10 minutes for the vacuum to decrease to 5 in Hg; however, the actual sampling duration may be slightly more or less than 10 minutes. The Summa™ canister valve will be closed and sampling will cease when a vacuum of 5 in Hg is obtained.

A duplicate sample will be collected from one of the soil vapor wells concurrent with the primary sample using a separate Summa™ canister and flow valve and a laboratory-supplied sampling tee. An equipment blank sample will also be collected in the field. Stantec will attempt to collect all of the planned samples on the same day.

Sample collection and tracer gas monitoring data for each probe will be recorded on the soil vapor sample collection data log provided in **Appendix H**.

7.2.1.6 Soil Vapor Sample Storage and Transport

Soil vapor samples will be properly labeled and placed within secure packaging received from Air Toxics. Soil vapor samples will not be chilled since contaminants may condense in the canisters at low temperatures. Soil vapor samples will be shipped via Federal Express (FedEx) next-day air. Samples will be transported under chain-of-custody protocol (including noting the final canister vacuums and serial numbers of the canisters). Air Toxics will be notified of the expected arrival time of the samples. Pre-field planning will prevent sample shipments from arriving at the laboratory during weekends.

7.2.2 Laboratory Analyses

Soil vapor samples will be submitted to Air Toxics for the following analyses:

- TPH-GRO, BTEX compounds, and naphthalene by US EPA Method TO-15; and
- Fixed gases (carbon dioxide, oxygen, methane, and helium) by ASTM Method D-1946. Note: Since the laboratory normally uses helium as a carrier gas, helium analysis must be specified on the chain-of-custody.

Stantec will coordinate with Air Toxics in advance of the sampling event so that the lab can be prepared to meet reporting limits that are lower than the LTCP screening levels for the target chemicals.

In correspondence dated February 3, 2014, ACEH requested that future soil vapor samples be analyzed for HVOCs; however, information presented in the focused SCM in **Appendix B** indicate that further assessment of HVOCs at the Site is not necessary.

7.2.3 Data Verification

Upon receipt of final laboratory reports, Stantec will perform data verification, which will include:

- Verifying that batch quality control (QC) samples were analyzed at the proper frequency and that results were within specifications;
- Verifying that holding times were met and that reporting units and quantitation limits are correct;
- Evaluating whether corrective action (reanalysis of QC or project samples) is needed and, if so, is performed and documented;
- Verifying that the project and QC sample results were properly reported and flagged; and
- Preparing batch narratives that adequately identify and discuss any problems encountered.

7.3 REPORT PREPARATION

Data gathered during the soil vapor investigation activities proposed herein will be documented in a soil vapor investigation report. The report will include a summary of field activities; tabulated soil vapor analytical data; a Site location map; certified laboratory analysis reports and chain-of-custody documentation; a discussion of the findings based on the new data; and conclusions and recommendations, as appropriate. The report will also include the status of former Site wells MW-1, MW-4, MW-7, and MW-10 to satisfy the ACEH request in correspondence dated

February 3, 2014. Alternatively, if the status of these wells is determined sooner, information may instead be included in a semi-annual groundwater monitoring report.

In a letter dated January 23, 2014, ACEH requested the property owner for the Site and nearby property owners submit information regarding any potential changes in the current land use and classification of the Site and any known future plans for redevelopment of the Site, inclusive of the construction of new buildings under the current land use classification (commercial/industrial). This information was requested by March 31, 2014. Dependent on potential responses from the property owners, the SCM may need to be updated.

Results from the soil vapor investigation will be used to evaluate current soil vapor quality at the Site compared to the previous sampling event and to evaluate whether current Site conditions meet the petroleum vapor intrusion to indoor air criteria set forth in the LTCP. If additional data gaps are identified or if soil vapor concentrations continue to exceed LTCP criteria, further recommendations will be provided, as appropriate. If all data gaps have been sufficiently addressed, and no further assessment is necessary, the report will include relevant sections of the focused SCM updated based on new data. If the case is determined to comply with LTCP criteria, the report will also include a low-threat closure request.

7.4 SCHEDULE OF ACTIVITIES

Stantec will begin planning and scheduling the proposed soil vapor investigation activities following approval of this work plan by ACEH. Stantec anticipates completing the pre-field planning and health and safety plan over a span of approximately one month. Following pre-field activities, Stantec anticipates completing the field work over a span of approximately one to two days. Laboratory analysis reports will be obtained approximately 2 to 4 weeks following submission of the samples to the laboratory. Stantec will submit the soil vapor investigation report to ACEH approximately 45 days following the receipt of all final certified laboratory analysis reports.

8.0 References

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TABLES

Table 1
Well Details / Screen Interval Assessment
Third Quarter 2013
Former Chevron-Branded Service Station 91723
9757 San Leandro Street, Oakland, California

Well ID	Date Installed	Well Type	Casing Diameter (inches)	Top of Casing (feet above msl)	Construction Well Depth (feet bgs)	Current Well Depth[1] (feet bgs)	Current Depth to Groundwater[1] (feet below TOC)	Screen Interval (feet bgs)	Screen Interval Assessment
MW-2	04/18/87	Monitoring	2	21.31	22.00	21.59	9.96	12-22	Depth-to-groundwater above screen interval.
MW-5	05/18/88	Monitoring	2	21.84	20.00	17.48	9.93	7-20	Depth-to-groundwater within screen interval.
MW-6	05/18/88	Monitoring	2	21.71	20.00	19.50	10.06	7-20	Depth-to-groundwater within screen interval.
MW-8	05/19/88	Monitoring	2	21.84	20.00	18.21	10.34	7-20	Depth-to-groundwater within screen interval.
MW-9	08/04/89	Monitoring	4	20.55	20.00	20.14	9.51	5.5-20	Depth-to-groundwater within screen interval.

Notes:
bgs = below ground surface
msl = mean sea level
TOC = top of casing
[1] = As measured prior to groundwater sampling on September 17, 2013.

Table 2

Groundwater Monitoring Data and Analytical Results

Former Chevron-Branded Service Station 91723

9757 San Leandro Street, Oakland, California

WELL ID/ DATE	TOC (ft.)	DTW (ft.)	GWE (msl)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MtBE (µg/L)
MW-2									
09/23/11	21.31	9.78	11.53	180	<0.5	<0.5	0.6	0.6	0.6
12/29/11	21.31	9.73	11.58	100	<0.5	<0.5	0.7	0.9	<0.5
03/30/12	21.31	8.02	13.29	180	<0.5	<0.5	2	4	<0.5
06/12/12	21.31	9.58	11.73	99	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	21.31	9.81	11.50	93	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	21.31	9.52	11.79	110	<0.5	<0.5	<0.5	<0.5	<0.5
09/17/13	**21.31**	**9.96**	**11.35**	**94**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-5									
09/23/11	21.84	9.85	11.99	190	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/11	21.84	9.91	11.93	180	<0.5	<0.5	<0.5	<0.5	<0.5
03/30/12	21.84	7.92	13.92	190	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	21.84	9.65	12.19	260	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	21.84	9.83	12.01	230	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	21.84	9.55	12.29	200	<0.5	<0.5	<0.5	<0.5	<0.5
09/17/13	**21.84**	**9.93**	**11.91**	**140**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-6									
09/23/11	21.71	9.99	11.72	<22	<0.5	<0.5	<0.5	<0.5	0.7
12/29/11	21.71	9.93	11.78	<22	<0.5	<0.5	<0.5	<0.5	0.6
03/30/12	21.71	8.00	13.71	<22	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	21.71	9.76	11.95	66	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	21.71	9.93	11.78	27	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	21.71	9.70	12.01	<22	<0.5	<0.5	<0.5	<0.5	<0.5
09/17/13	**21.71**	**10.06**	**11.65**	**34**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-8									
09/23/11	21.84	10.15	11.69	1,900	55	2	10	8	<0.5
12/29/11	21.84	10.10	11.74	1,300	31	1	5	5	<0.5
03/30/12	21.84	8.12	13.72	2,200	65	3	20	14	<0.5
06/12/12	21.84	9.90	11.94	2,300	49	2	14	14	<0.5
09/27/12	21.84	10.12	11.72	1,900	43	2	10	8	<0.5
03/13/13	21.84	9.86	11.98	1,400	31	1	7	5	<0.5
09/17/13	**21.84**	**10.34**	**11.50**	**2,100**	**60**	**2**	**11**	**9**	**<0.5**

Table 2

Groundwater Monitoring Data and Analytical Results

Former Chevron-Branded Service Station 91723

9757 San Leandro Street, Oakland, California

WELL ID/ DATE	TOC (ft.)	DTW (ft.)	GWE (msl)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MtBE (µg/L)
MW-9									
09/23/11	20.55	9.30	11.25	<22	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/11	20.55	9.51	11.04	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/30/12	20.55	7.52	13.03	<22	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	20.55	9.14	11.41	<22	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	20.55	9.24	11.31	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	20.55	9.07	11.48	<22	<0.5	<0.5	<0.5	<0.5	<0.5
09/17/13	**20.55**	**9.51**	**11.04**	**<22**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
TRIP BLANK									
QA									
09/23/11	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/11	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/30/12	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
09/17/13	**--**	**--**	**--**	**<22**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**

Table 2

Groundwater Monitoring Data and Analytical Results

Former Chevron-Branded Service Station 91723

9757 San Leandro Street, Oakland, California

EXPLANATIONS:

Current groundwater monitoring data provided by Blaine Tech Services, Inc. Current laboratory analytical results provided by Eurofins Lancaster Laboratories.

TOC = Top of Casing
(ft.) = Feet
DTW = Depth to Water
GWE = Groundwater Elevation
(msl) = Mean Sea Level

TPH-GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes

MtBE = Methyl tertiary-butyl ether
(µg/L) = Micrograms per liter
-- = Not Measured/Not Analyzed
QA = Quality Assurance/Trip Blank

Table 3

Monitored Natural Attenuation Parameters

Former Chevron-Branded Service Station 91723

9757 San Leandro Street, Oakland, California

WELL ID/ DATE	METHANE (µg/L)	NITRATE (µg/L)	SULFATE (µg/L)	ALKALINITY TO pH 4.5 (µg/L as $CaCO_3$)	ALKALINITY TO pH 8.3 (µg/L as $CaCO_3$)	FERROUS IRON (µg/L)	SULFIDE (µg/L)	POST-PURGE DO (mg/L)	POST-PURGE ORP (mV)
MW-2									
03/30/12	330	320	10,600	545,000	<460	2,200	<270[1]	1.08	219
06/12/12	300	290	12,900	460,000	<700	1,400	<220[1]	0.86	135
09/27/12	250	710	14,200	448,000	<700	450	99	0.91	138
03/13/13	680	<250	13,000	503,000	--	700	<54	1.39	-7
09/17/13	**370**	**<250**	**12,000**	**506,000**	**--**	**690**	**130**	**0.74**	**8**
MW-5									
03/30/12	110	440	30,200	370,000	<460	300	<270[1]	1.11	222
06/12/12	120	890	44,800	387,000	<700	7,300	<220[1]	0.87	124
09/27/12	110	980	30,200	370,000	<700	7,400	<110[1]	0.98	136
03/13/13	170	570	30,600	398,000	--	2,600	<54	1.19	-34
09/17/13	**110**	**900**	**31,200**	**373,000**	**--**	**2,000**	**<54**	**0.46**	**-4**
MW-6									
03/30/12	62	<250	5,600	455,000	<460	210	<54	1.12	223
06/12/12	190	<250	6,300	458,000	<700	4,700	<110[1]	0.84	115
09/27/12	170	640	8,500	434,000	<700	8,800	<110[1]	0.96	133
03/13/13	190	<250	4,400	473,000	--	6,200	<54	2.61	7
09/17/13	**120**	**<250**	**6,300**	**444,000**	**--**	**4,600**	**98**	**0.49**	**-14**
MW-8									
03/30/12	2,100	2,300	32,200	454,000	<460	29,300	780[1]	1.15	230
06/12/12	1,700	<250	9,200	441,000	<700	43,200	<220[1]	0.98	47
09/27/12	1,900	420	7,900	444,000	<700	35,600	<270[1]	1.21	50
03/13/13	1,800	<250	9,700	450,000	--	32,300	<540[1]	1.61	-85
09/17/13	**1,700**	**<250**	**5,700**	**468,000**	**--**	**22,300**	**<220[1]**	**0.38**	**-78**
MW-9									
03/30/12	<5.0	<250	7,400	381,000	<460	31	<54	1.34	179
06/12/12	<5.0	2,900	32,900	397,000	<700	340	<54	0.92	128
09/27/12	<5.0	1,700	32,200	398,000	<700	53	<54	1.10	141
03/13/13	<3.0	2,400	33,400	414,000	--	<8.0	<54	1.38	189
09/17/13	**<3.0**	**910**	**29,200**	**414,000**	**--**	**<10**	**<54**	**1.41**	**124**

Table 3

Monitored Natural Attenuation Parameters

Former Chevron-Branded Service Station 91723

9757 San Leandro Street, Oakland, California

EXPLANATIONS:

Current groundwater monitoring data provided by Blaine Tech Services, Inc. Current laboratory analytical results provided by Eurofins Lancaster Laboratories.

(µg/L) = Micrograms per liter

(µg/L as $CaCO_3$) = Micrograms per liter as calcium carbonate

DO = Dissolved Oxygen

(mg/L) = Milligrams per liter

ORP = Oxidation Reduction Potential

(mV) = Millivolts

-- = Not Measured/Not Analyzed

[1] Laboratory report indicates reporting limits were raised due to interference from the sample matrix.

Table 4
Grab Groundwater Analytical Results
Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California

Boring ID	Sample Date	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB-11	04/04/96	**5,100**	**210**	**97**	**180**	**400**
SB-19	04/03/96	**2,300**(1)	**170**	**30**	**21**	**34**
SB-22	04/02/96	**19,000**(2)	**400**	<0.50	**110**	**77**
ESLs(3)		**100**	**1**	**40**	**30**	**20**

Notes:
(1) Laboratory report indicates gasoline and unidentified hydrocarbons <C7.
(2) Laboratory report indicates gasoline and unidentified hydrocarbons >C8.
(3) California Regional Water Quality Control Board, San Francisco Bay Region, *Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater* , Interim Final - December 2013.
Bold text denotes detected concentrations.
Bold/blue text denotes detected concentrations above ESLs.

Abbreviations:
µg/L = micrograms per liter
TPH-GRO = total petroleum hydrocarbons as gasoline range organics
ESL = Environmental Screening Level

Table 5
Soil Analytical Results
Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California

Boring ID	Sample Depth (feet bgs)	Sample Date	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MO (mg/kg)	TOG (mg/kg)	HVOCs (mg/kg)
DH-1	3	04/18/87	--	--	<0.010	<0.010	<0.010	<0.020	<10.0	--	ND
DH-2	3	04/18/87	--	--	<0.010	<0.010	<0.010	<0.020	--	--	ND
DH-3	2.5	04/18/87	--	--	<0.010	<0.010	<0.010	<0.020	--	--	ND
DH-4	10.5	04/18/87	<1.0	--	<0.010	<0.010	--	<0.010	<10.0	--	--
DH-5	5	04/18/87	<1.0	--	<0.010	<0.010	<0.010	<0.020	<10.0	--	ND
DH-6	10.5	04/18/87	<1.0	--	<0.010	<0.010	--	<0.010	<10.0	--	--
DH-7	3.5	04/18/87	--	<1.0	<0.010	<0.010	<0.010	<0.010	--	--	ND
DH-8	10	04/18/87	<1.0	**1,017**	**1.063**	**9.997**	--	**108.092**	**240**	--	--
DH-9	1	04/18/87	--	--	<0.010	<0.010	<0.010	<0.020	**230**	--	ND
DH-11	1	04/18/87	--	--	<0.010	<0.010	--	<0.010	**380**	--	--
MW-5	5	05/18/88	--	<1	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--
	10		--	**160**	<0.0005	<0.0005	**3**	**7**	--	--	--
	15		--	<1	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--
MW-6	5	05/18/88	--	<1	<0.0005	<0.005	<0.005	<0.005	--	--	--
	10		--	**310**	<0.0005	**2**	**4**	**18**	--	--	--
MW-7	5	05/18/88	--	<1	<0.0005	<0.005	<0.005	<0.005	--	--	--
	10		--	<1	<0.0005	<0.005	<0.005	<0.005	--	--	--
MW-8	5	05/19/88	--	**2**	<0.0005	<0.005	<0.005	<0.005	--	--	--
	10		--	**5**	<0.0005	<0.005	<0.005	<0.005	--	--	--
SB-1	6.5	08/03/89	--	<10	<0.005	**0.03**	<0.005	<0.005	--	--	--
	10.5		--	**400**	**1.9**	**1.4**	**4.1**	**11**	--	--	--
SB-2	6.5	08/03/89	--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
	9.5		--	**34**	**0.14**	**0.2**	**0.27**	**0.43**	--	--	--
	16		--	**140**	**0.67**	**0.79**	**1.3**	**4.9**	--	--	--
SB-3	6.5	08/03/89	--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
	9.5		--	**130**	**0.9**	<0.100	**1.5**	**3.4**	--	--	--
	15.5		--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
SB-4	5.5	08/03/89	--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
	10.5		--	**300**	**3.3**	**0.42**	**8.2**	**12**	--	--	--
	15.5		--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
SB-5	5.5	08/03/89	--	<10	**0.047**	<0.005	<0.005	<0.005	--	--	--
	10.5		--	**470**	**1.9**	**0.58**	**7.2**	**22**	--	--	--
	15.5		--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
MW-9	6.5	08/04/89	--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
	12.5		--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
MW-10	6.5	08/04/89	--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
	12.5		--	<10	<0.005	<0.005	<0.005	<0.005	--	--	--
SB-6	5.5	10/05/89	--	<10	**0.018**	**0.023**	**0.008**	**0.027**	--	--	--
	10.5		--	**270**	**2.0**	**0.9**	**1.6**	**3.8**	--	--	--
	15.5		--	<10	**0.033**	**0.034**	**0.0055**	**0.026**	--	--	--
SB-1	6-6.5	01/17/91	--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	10-10.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	15-15.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
SB-2	3-3.5	01/17/91	--	<1	<0.0025	**0.0041**	<0.0025	<0.0025	--	--	ND
	10-10.5		--	<1	<0.0025	**0.0044**	<0.0025	<0.0025	--	--	ND
	15-15.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
SB-3	6-6.5	01/17/91	--	**3.5**	<0.0025	**0.0063**	<0.0025	**0.031**	--	--	ND
	10-10.5		--	**14**	**0.032**	**0.059**	**0.12**	**0.16**	--	--	ND
	15-15.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
SB-4	6-6.5	01/17/91	--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	10-10.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	15-15.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
SB-5	6-6.5	01/17/91	--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	10-10.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	15-15.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
SB-6	6-6.5	01/17/91	--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	10-10.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND
	15-15.5		--	<1	<0.0025	<0.0025	<0.0025	<0.0025	--	--	ND

Table 5
Soil Analytical Results
Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California

Boring ID	Sample Depth (feet bgs)	Sample Date	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MO (mg/kg)	TOG (mg/kg)	HVOCs (mg/kg)
SB-1	10	04/02/96	--	**400**	**1.4**	**0.44**	**8.9**	**28**	--	**78**	--
SB-2	10	04/01/96	--	**51**	**0.18**	**0.12**	**0.79**	**0.59**	--	**24**	--
SB-3	10	04/01/96	--	**190**	**0.54**	**0.66**	**2.3**	**3.3**	--	**35**	--
SB-4	10	04/01/96	--	**170**(1)	**0.59**	**0.52**	**0.14**	**1.1**	--	**940**	--
	15		--	**20**[1]	**0.091**	**0.036**	**0.029**	**0.23**	--	--	--
SB-5	10	04/01/96	--	**300**	**2.4**	**1.4**	**10**	**4.2**	--	--	--
SB-6	10	04/04/96	--	**330**(1)	**0.57**	<0.0050	**0.42**	**2.3**	--	--	--
SB-7	5	04/01/96	--	**880**	**2.2**	**0.58**	**7.7**	**7.9**	--	--	--
	10		--	**500**	**1.3**	**1.6**	**7.0**	**27**	--	--	--
SB-8	5	04/04/96	--	**110**(1)	**1.6**	<0.0050	<0.0050	**0.79**	--	--	--
	10		--	**240**(1)	**4.6**	**1.1**	**0.76**	**2.1**	--	--	--
	15		--	**2.1**(1)	**0.0054**	<0.0050	<0.0050	**0.042**	--	--	--
SB-9	5	04/01/96	--	**67**	**0.60**	**0.16**	**0.14**	**0.82**	--	--	--
	15		--	**610**	**3.8**	**7.4**	**17**	**69**	--	--	--
SB-10	5	04/04/96	--	**450**	**3.7**	**8.9**	**9.9**	**53**	--	--	--
	10		--	**1,300**	**99**	**40**	**150**	**210**	--	--	--
	15		--	<1.0	**0.010**	**0.0051**	<0.0050	**0.016**	--	--	--
SB-11	5	04/04/96	--	**7.5**(1)	**0.012**	**0.040**	**0.019**	**0.056**	--	--	--
	10		--	**550**	**1.5**	<0.0050	**9.7**	**3.2**	--	--	--
SB-12	5	04/03/96	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	--	--	--
	10		--	**750**	**1.1**	**4.1**	**19**	**85**	--	--	--
SB-13	10	04/03/96	--	**340**	**1.6**	**0.81**	**7.4**	**24**	--	--	--
SB-14	5	04/04/96	--	**17**(1)	**0.066**	**0.050**	**0.097**	**0.067**	--	--	--
	10		--	**820**	**5.0**	**28**	**16**	**82**	--	--	--
SB-15	5	04/03/96	--	**2.1**(1)	**0.011**	**0.0060**	<0.0050	**0.15**	--	--	--
	10		--	**1,800**	**17**	**68**	**53**	**260**	--	--	--
SB-16	5	04/03/96	--	**1.9**	**0.15**	<0.0050	**0.0069**	**0.026**	--	--	--
	10		--	**760**	**6.2**	**1.8**	**28**	**76**	--	--	--
SB-17	10	04/03/96	--	**1,600**	**4.3**	**15**	**38**	**150**	--	--	--
SB-18	10	04/04/96	--	**480**	**5.9**	**4.5**	**2.0**	**5.4**	--	--	--
SB-19	10	04/03/96	--	**220**	**2.3**	<0.0050	**1.1**	**1.5**	--	--	--
SB-20	10	04/03/96	--	**510**	**3.8**	**1.5**	**17**	**39**	--	--	--
SB-21	5	04/02/96	--	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	--	--	--
SB-22	5	04/02/96	--	**3.1**(1)	**0.027**	**0.0091**	**0.020**	**0.015**	--	--	--
	10		--	**110**	**0.72**	**0.47**	**4.7**	**0.39**	--	--	--
SB-23	10	04/02/96	--	**140**	**3.4**	**2.9**	**0.86**	**4.6**	--	--	--
VP-1	5	06/24/10	--	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
VP-2	6	06/24/10	--	**230**	<0.047	<0.094	<0.094	<0.094	--	--	--
VP-3	6	06/24/10	--	**100**	**0.14**	<0.047	**0.52**	**0.14**	--	--	--
VP-4	6	06/24/10	--	**100**	**0.033**	<0.050	<0.050	**0.074**	--	--	--
VP-5	5	06/24/10	--	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
ESLs - Shallow Soil (2),(3)			**110**	**500**	**0.044**	**2.9**	**3.3**	**2.3**	**500**	**500**	**NS**
ESLs - Deep Soil (2),(3)			**110**	**770**	**0.044**	**2.9**	**3.3**	**2.3**	**1,000**	**1,000**	**NS**

Notes:
(1) Laboratory report indicates gasoline and unidentified hydrocarbons >C8.
(2) California Regional Water Quality Control Board, San Francisco Bay Region, *Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater*, Interim Final - December 2013.
(3) Shallow soil refers to soil above 9.84 feet bgs and deep soil refers to soil below 9.84 feet bgs.

Bold text denotes detected concentrations. **Bold/blue** text denotes detected concentrations above ESLs for Commercial Land Use.

Abbreviations:
feet bgs = feet below ground surface
mg/kg = milligrams per kilogram
ND = not detected
-- = not analyzed
NS = no standard
TPH-DRO = total pteroleum hydrocarbons as diesel range organics
TPH-GRO = total petroleum hydrocarbons as gasoline range organics
MO = motor oil
TOG = total oil and grease
HVOCs = halogenated volatile organic compounds
ESL = Environmental Screening Level

Table 6
Soil Vapor Analytical Results
Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California

Boring/ Sample ID	Sample Depth *(feet bgs)*	Sample Date	TPH-GRO *(µg/m³)*	Benzene *(µg/m³)*	Toluene *(µg/m³)*	Ethylbenzene *(µg/m³)*	Total Xylenes[1] *(µg/m³)*	Oxygen *(%)*	Carbon dioxide *(%)*	Helium *(%)*
SV-1	3	10/06/97	--	**307**	**19**	**26.9**	**83.3**	--	--	--
SV-1	5	10/06/97	--	**1,309**	**17.3**	**1,129**	**122.8**	--	--	--
SV-2	3	10/06/97	--	**3,098**	**45**	**825**	**2,135**	--	--	--
SV-2	5	10/06/97	--	**1,341**	**22.6**	**521**	**1,241**	--	--	--
SV-2	8	10/06/97	--	**9,899**	**4,520**	**12,588**	**53,818**	--	--	--
SV-3	3	10/06/97	--	**15.6**	**21.1**	**27.8**	**126.7**	--	--	--
SV-3	5	10/06/97	--	**11.5**	**7.9**	**11.7**	**52.9**	--	--	--
SV-4	3	10/06/97	--	**5.7**	**18.1**	**26.0**	**136.3**	--	--	--
SV-4	5	10/06/97	--	**6.4**	**38**	**26.0**	**131.1**	--	--	--
SV-5[2]	5	10/06/97	--	**319,338**	**5,650**	**19,967**	**5,208**	--	--	--
SV-6[3]	5	10/06/97	--	**1,852**	**452**	**2,127**	**13,802**	--	--	--
VP-1	5.25-5.75	06/29/10	**26,000,000**	**3,700**	<3,200	<3,600	<3,600	**6.2**	**15**	<0.13
VP-2	5.25-5.75	06/29/10	**89,000,000**	**11,000**	<2,500	<2,900	<2,900	**0.84**	**21**	<0.13
VP-3	5.25-5.75	06/29/10	**88,000,000**	**540,000**	**1,700**	**26,000**	**3,700**	**2.9**	**14**	<0.13
VP-4	5.25-5.75	06/29/10	**53,000,000**	**22,000**	<2,900	<3,400	<3,400	**2.4**	**13**	<0.12
VP-5	5.25-5.75	06/29/10	**37,000,000**	**4,100**	<2,700	<3,100	<3,100	**2.3**	**18**	<0.14
ESLs [4]			**2,500,000**	**420**	**1,300,000**	**4,900**	**440,000**	**NS**	**NS**	**NS**

Notes:
(1) Total xylenes is the sum of m,p-xylene and o-xylene. If either m,p-xylene and o-xylene was non-detect, the detected value was used. If both were non-detect, the highest detection limit was used.
(2) This sample was collected to verify results from boring SV-1.
(3) This sample was collected to verify results from boring SV-2.
(4) California Regional Water Quality Control Board, San Francisco Bay Region, *Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater* , Interim Final - December 2013.
Bold text denotes detected concentrations. **Bold/blue** text denotes detected concentrations above ESLs for commercial land use.

Abbreviations:
bgs = below ground surface
TPH-GRO = total petroleum hydrocarbons as gasoline range organics
µg/m³ = micrograms per cubic meter
-- = not measured/not analyzed
NS = no standard
ESL = Environmental Screening Level

Table 7
Purge Volumes, Durations, and Associated Vacuum Drops
Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California

Part	ID (in)	ID (ft)	Length (ft)	Volume (ft^3)	Volume (L)	Volume (mL)	3 Volumes (mL)	Target Vacuum Drop (in Hg)
Soil Vapor Wells VP-1 through VP-5								
Probe Tubing	0.180	0.0150	5.75	1.02E-03	2.88E-02	28.8	86.3	--
Manifold Tubing	0.180	0.0150	3	5.30E-04	1.50E-02	15.0	45.0	--
						Total:	131.4	1
Purge duration at 175 mL/min = 0.8 minutes.								

Notes:

1/4-inch Teflon® tubing (outside diameter = 0.25 inches; inside diameter = 0.180 inches)

Lengths of tubing are approximate; it may be necessary to re-calculate purge duration if different lengths are used.

Abbreviations:

ft = feet

ft^3 = cubic feet

ID = inside diameter

in = inch

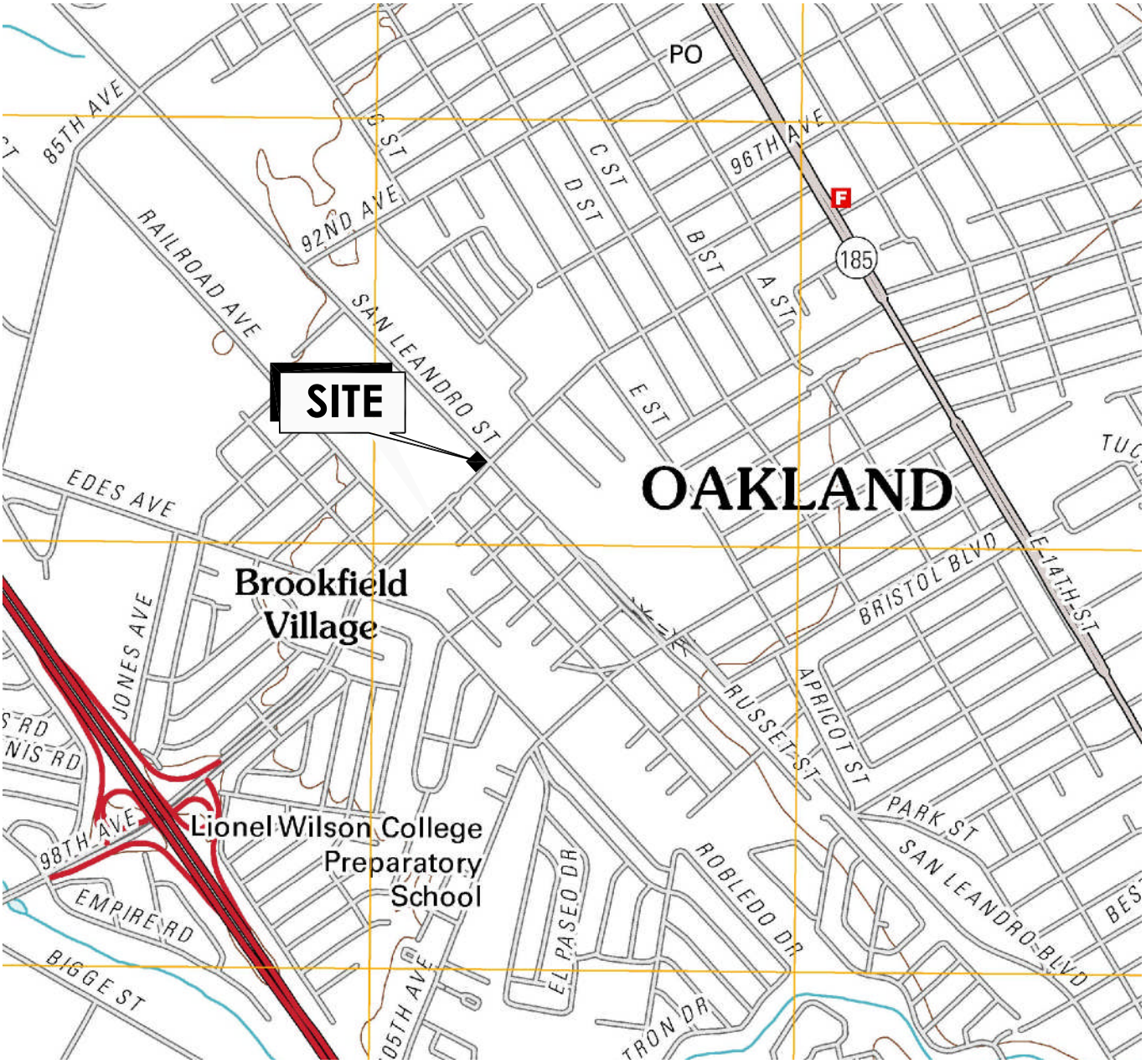
in Hg = inches of mercury

L = liter

mL = milliliter

mL/min = milliliters per minute

FIGURES



CALIFORNIA

1 1/2 0 1

SCALE IN MILES

1000 0 1000 2000 3000 4000 5000 6000 7000

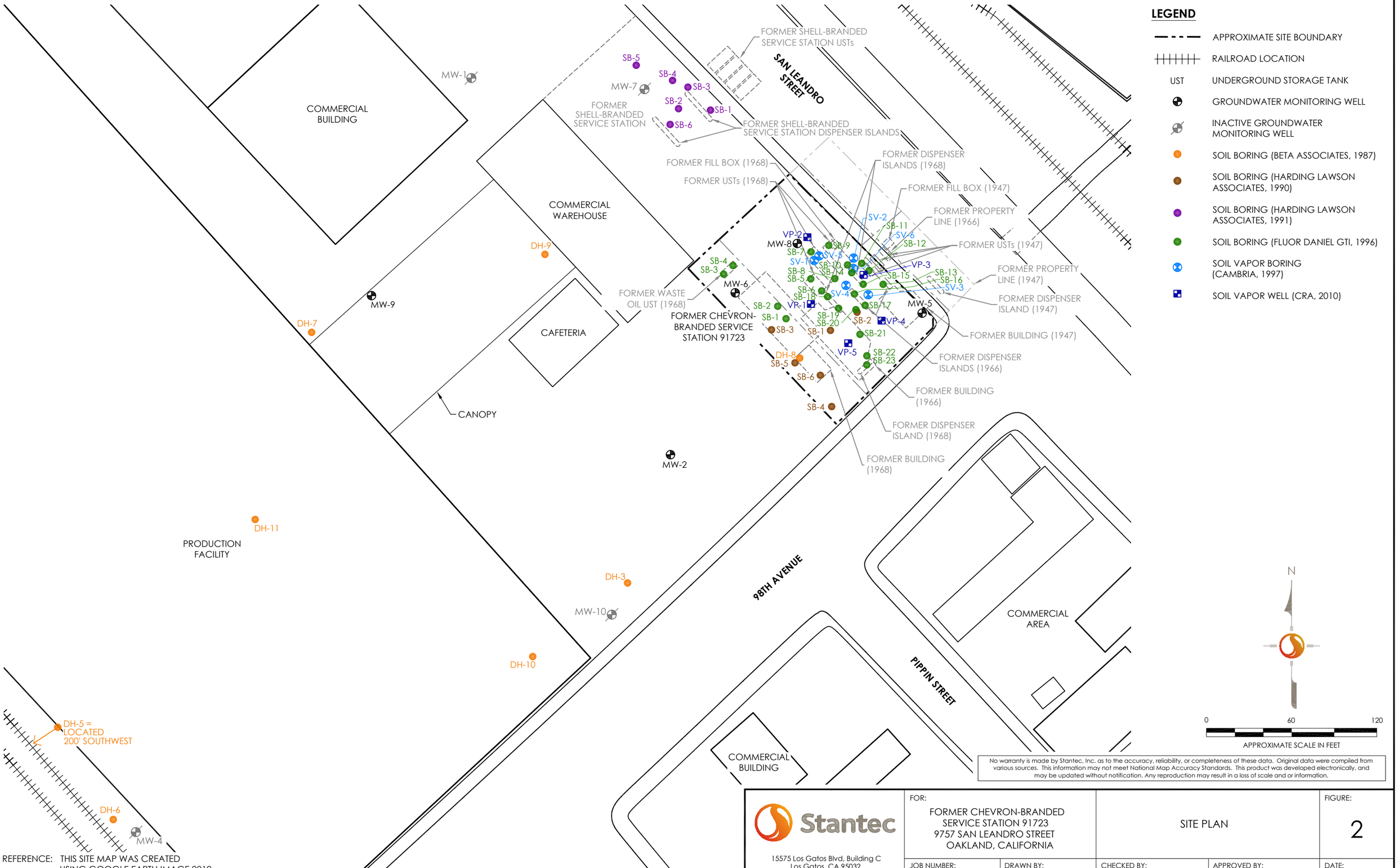
SCALE IN FEET

REFERENCE: USGS 7.5 QUADRANGLE;
SAN LEANDRO, CALIFORNIA; 2012

Stantec
15575 Los Gatos Blvd, Building C
Los Gatos, CA 95032
Phone:(408) 356-6124 Fax: (408) 356-6138

FOR:			FIGURE:
FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA		SITE LOCATION MAP	1
JOB NUMBER: 211602332	DRAWN BY: JRO	CHECKED BY: EEO/MRK	APPROVED BY: TLF	DATE: 02/07/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\SCM\Figures\91723_3Q13.dwg | jopalekopsahl | Feb 04, 2014 at 13:12 | Layout: Fig 1_SLM



REFERENCE: THIS SITE MAP WAS CREATED USING GOOGLE EARTH IMAGE 2012.

No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

Stantec
15575 Los Gatos Blvd, Building C
Los Gatos, CA 95032
Phone:(408) 356-6124 Fax: (408) 356-6138

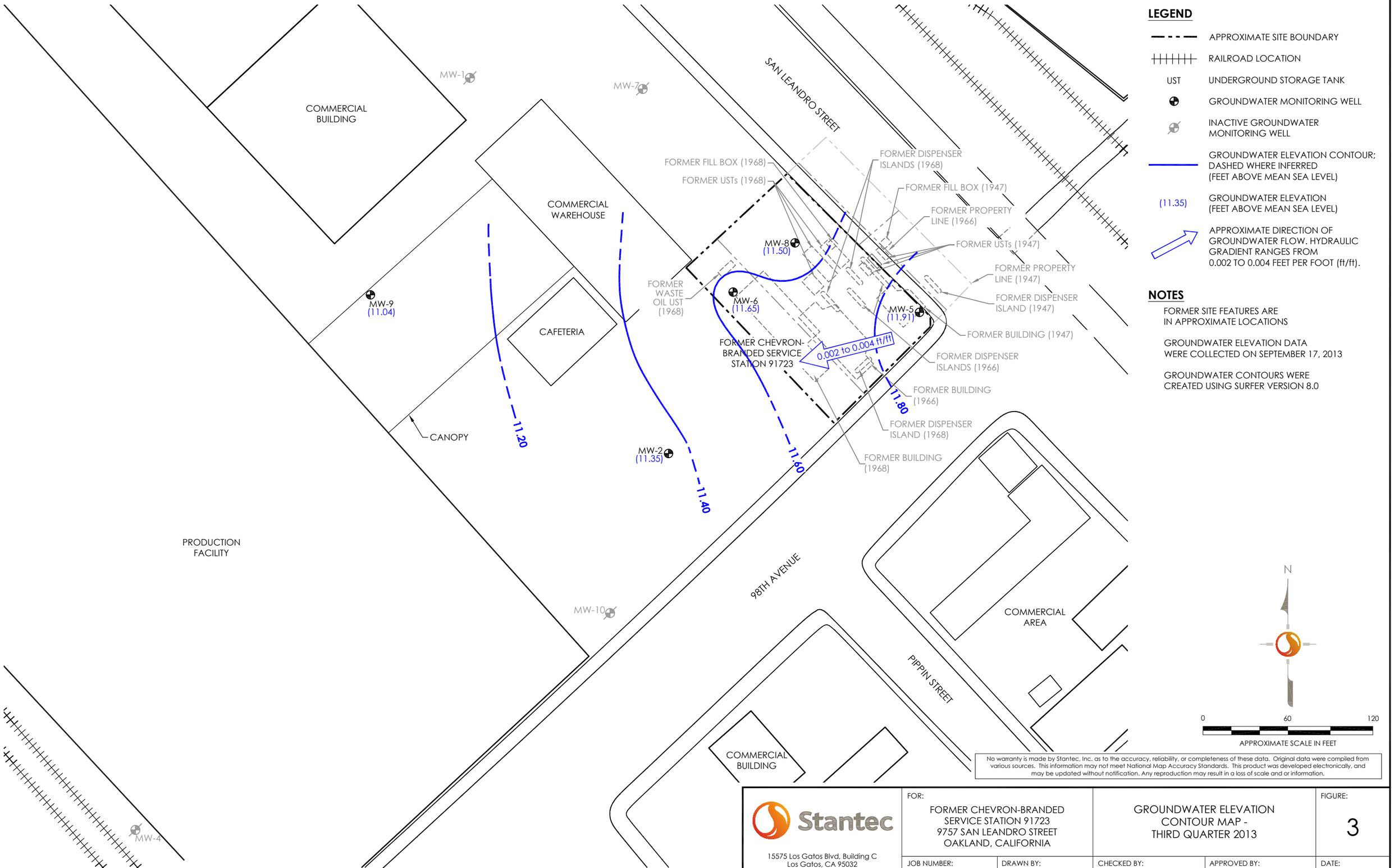
FOR:
FORMER CHEVRON-BRANDED SERVICE STATION 91723
9757 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SITE PLAN

FIGURE: 2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
211602332	JRO	EEO	TLF	02/07/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\SCM\Figures\91723_2013.dwg | jopalekopsahl | Feb 24, 2014 at 15:37 | Layout: Fig 2_SP



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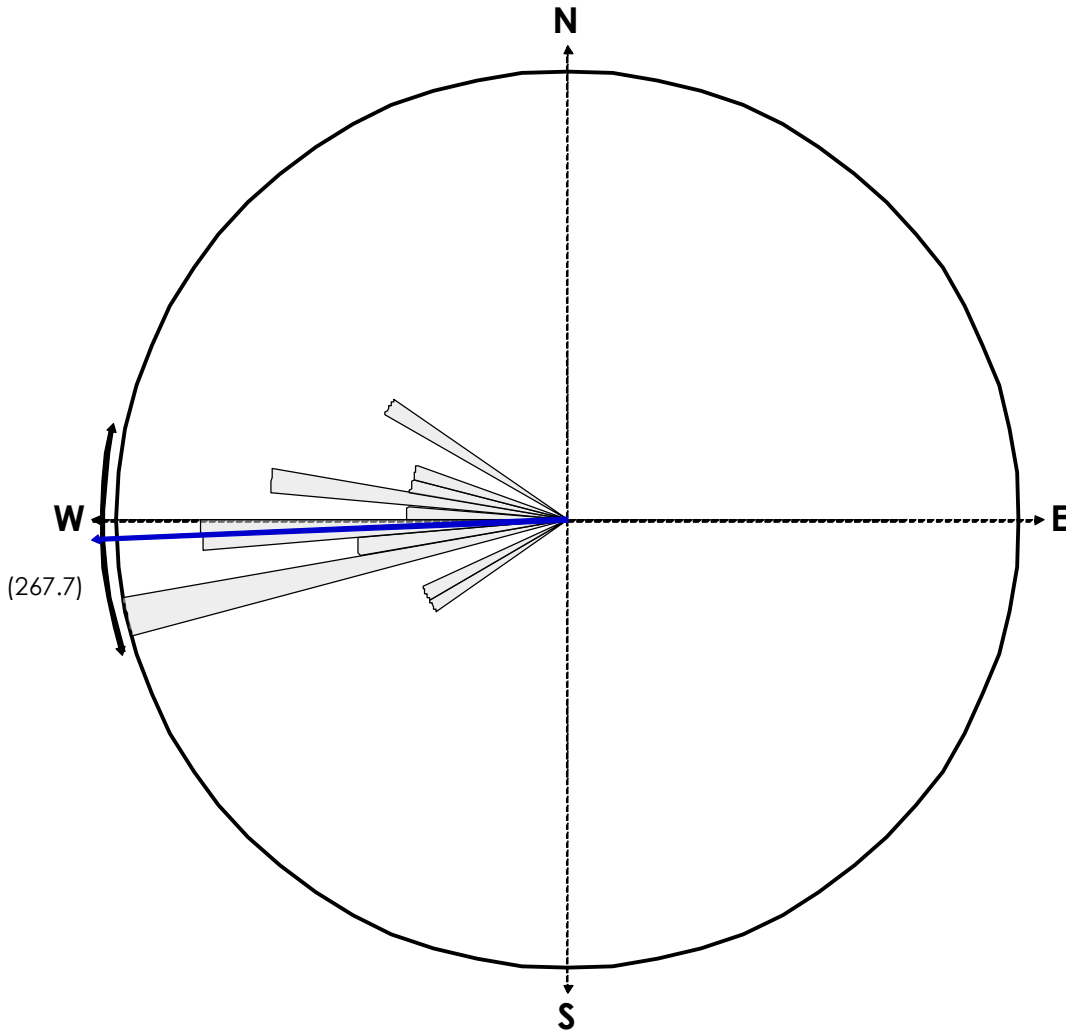
15575 Los Gatos Blvd, Building C
Los Gatos, CA 95032
Phone:(408) 356-6124 Fax: (408) 356-6138

FOR:				FIGURE:
FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA		GROUNDWATER ELEVATION CONTOUR MAP - THIRD QUARTER 2013		3
JOB NUMBER: 211602332	DRAWN BY: JRO	CHECKED BY: EEO/MRK	APPROVED BY: TLF	DATE: 02/07/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\SCM\Figures\91723_3Q13.dwg | jopalekopsahl | Feb 04, 2014 at 13:13 | Layout: Fig 3_GWE



EQUAL AREA PLOT

Number of Points	28
Class Size	5
Vector Mean	267.65
Vector Magnitude	27.08
Consistency Ratio	0.97

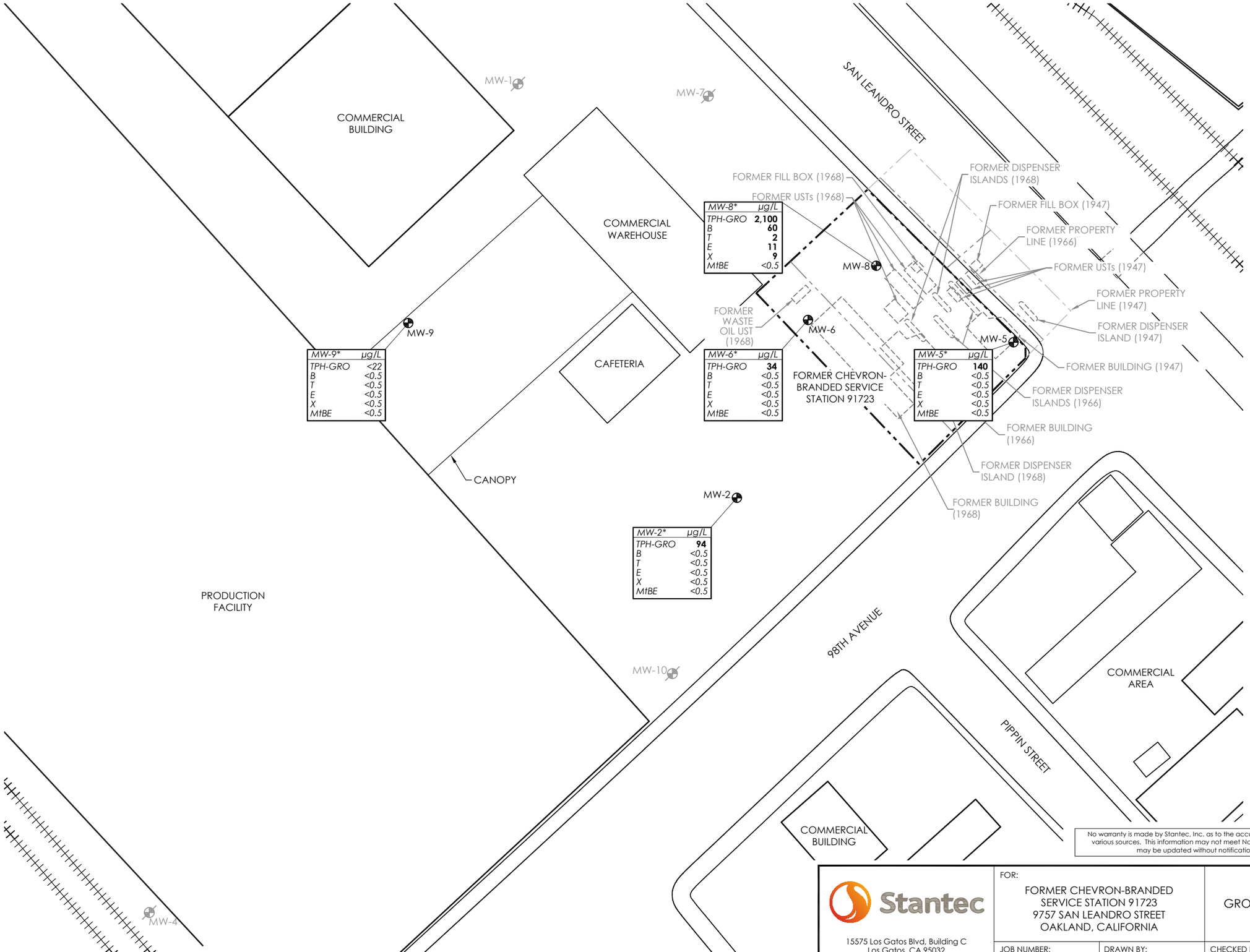
NOTE: ROSE DIAGRAM IS BASED ON THE DIRECTION OF GROUNDWATER FLOW BEGINNING THIRD QUARTER 1988.

Stantec
15575 Los Gatos Blvd, Building C
Los Gatos, CA 95032
Phone: (408) 356-6124 Fax: (408) 356-6138

FOR:		FIGURE:
FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA	ROSE DIAGRAM - THIRD QUARTER 2013	4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
211602332	JRO	EEO/MRK	TLF	02/07/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\GWM\2013\3Q13\Figures\CAD\91723_3Q13.dwg | jopalekopsahl | Feb 04, 2014 at 10:21 | Layout: Fig 3_Rose (2)



LEGEND

- APPROXIMATE SITE BOUNDARY
- RAILROAD LOCATION
- UST — UNDERGROUND STORAGE TANK
- GROUNDWATER MONITORING WELL
- INACTIVE GROUNDWATER MONITORING WELL

ANALYTES

TPH-GRO	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MtBE	METHYL TERTIARY-BUTYL ETHER

* = ADDITIONAL ANALYSES WERE RUN AND COMPLETE RESULTS ARE PRESENTED IN TABLE 3 AND ATTACHMENT B

µg/L = MICROGRAMS PER LITER

Stantec
15575 Los Gatos Blvd, Building C
Los Gatos, CA 95032
Phone:(408) 356-6124 Fax: (408) 356-6138

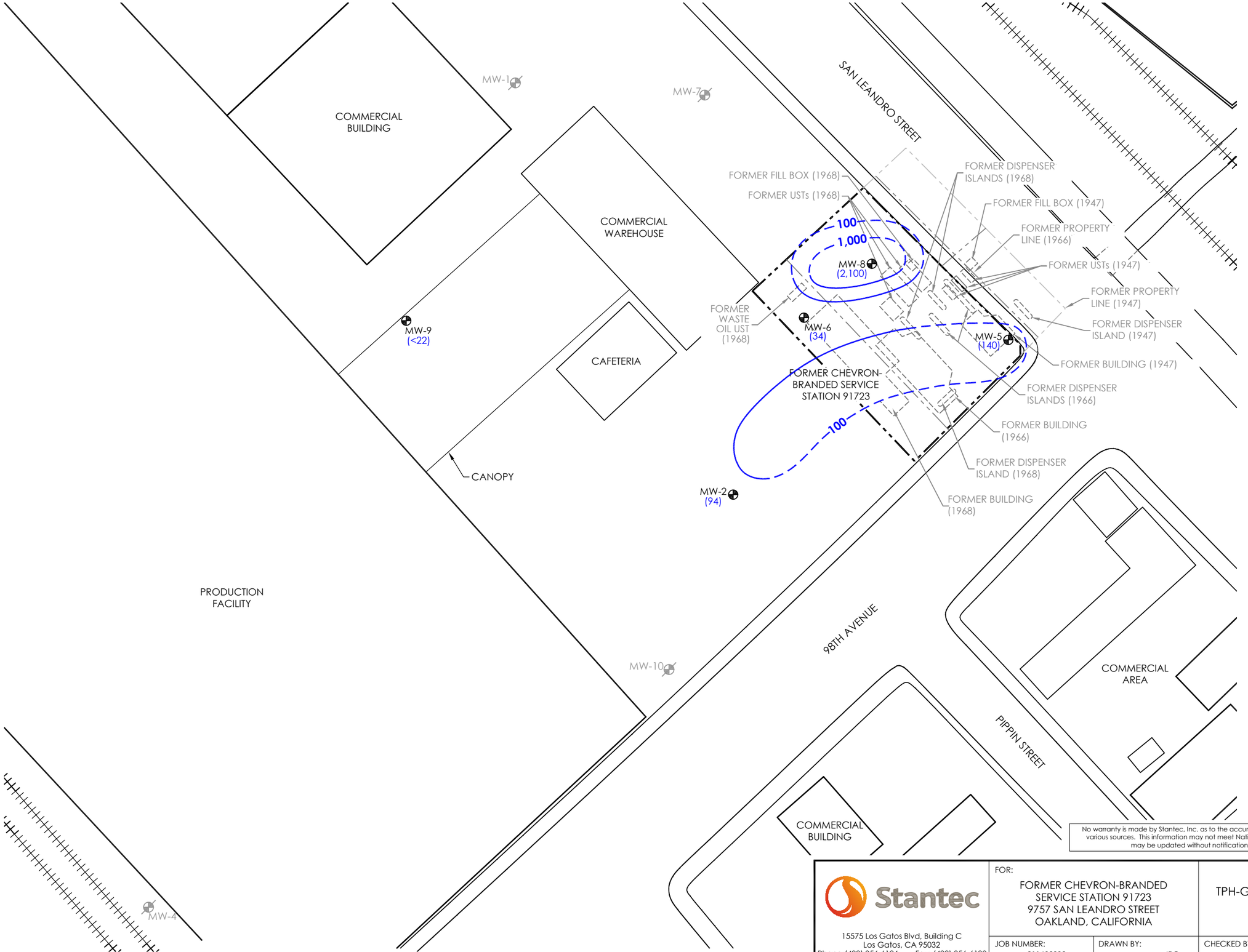
FOR: FORMER CHEVRON-BRANDED SERVICE STATION 91723
9757 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SITE PLAN SHOWING GROUNDWATER CONCENTRATIONS - THIRD QUARTER 2013

FIGURE: 5

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
211602332	JRO	EEO/MRK	TLF	02/07/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\SCM\Figures\91723_3Q13.dwg | jopalekopsahl | Feb 04, 2014 at 13:15 | Layout: Fig 5_GWC



LEGEND

- APPROXIMATE SITE BOUNDARY
- RAILROAD LOCATION
- UST — UNDERGROUND STORAGE TANK
- GROUNDWATER MONITORING WELL
- INACTIVE GROUNDWATER MONITORING WELL
- (94) — TPH-GRO CONCENTRATION (µg/L)
- TPH-GRO CONTOUR; DASHED WHERE INFERRED
- TPH-GRO — TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
- (µg/L) — MICROGRAMS PER LITER

N

0 60 120

APPROXIMATE SCALE IN FEET

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Los Gatos, CA 95032
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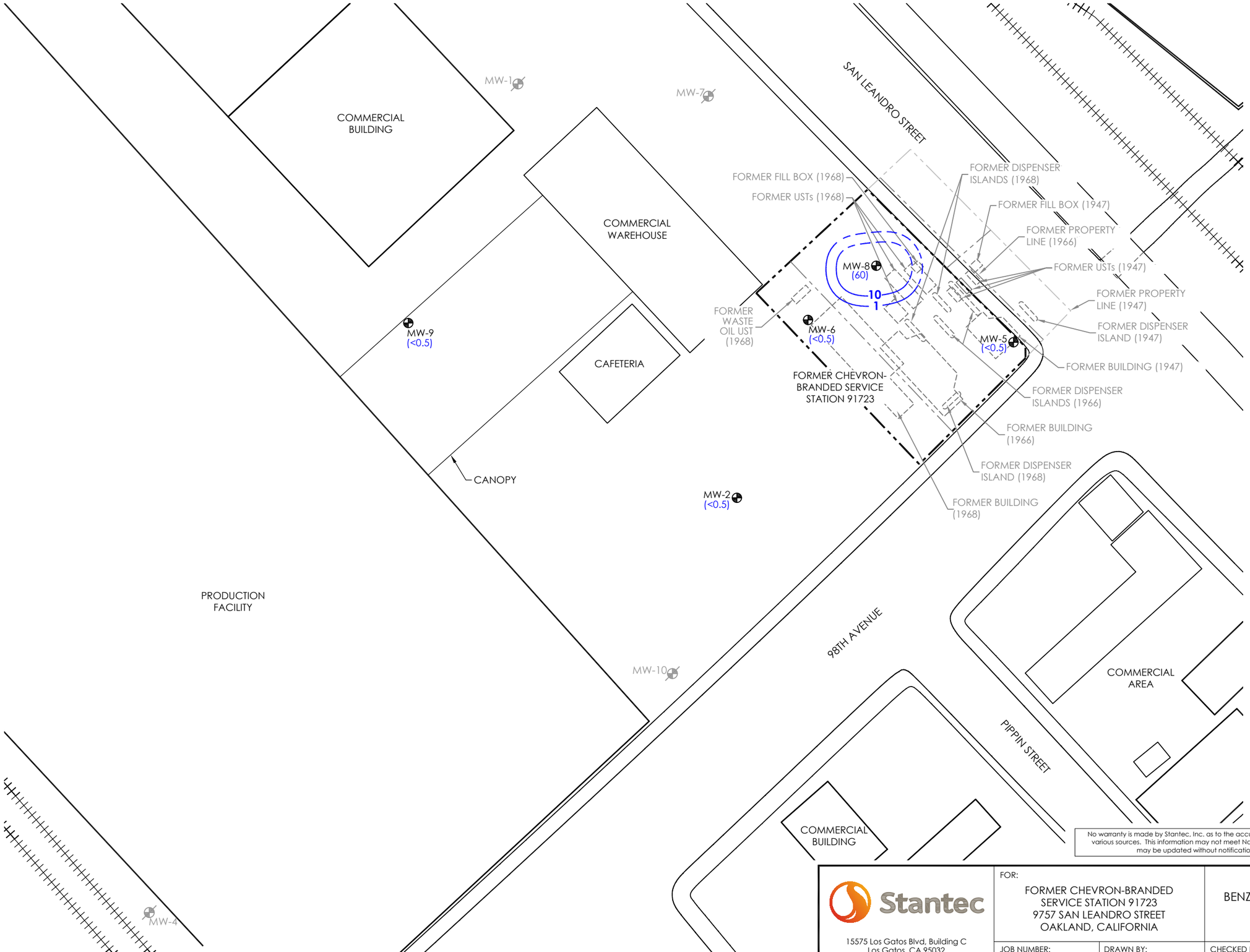
FOR: FORMER CHEVRON-BRANDED SERVICE STATION 91723
9757 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

TPH-GRO ISOCONCENTRATION MAP - THIRD QUARTER 2013

FIGURE: 6

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
211602332	JRO	EEO/MRK	TLF	02/07/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\SCM\Figures\91723_3Q13.dwg | jopalekopsahl | Feb 24, 2014 at 8:31 | Layout: Fig 6_TPHg



No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

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FOR:				FIGURE:
FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA		BENZENE ISOCONCENTRATION MAP - THIRD QUARTER 2013		7
JOB NUMBER: 211602332	DRAWN BY: JRO	CHECKED BY: EEO/MRK	APPROVED BY: TLF	DATE: 02/07/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\SCM\Figures\91723_3Q13.dwg | jopalekopsahl | Feb 04, 2014 at 13:17 | Layout: Fig 7_BNZ

LEGEND

POTENTIAL SENSITIVE POPULATIONS

A CHRISTOPHER CARE HOME
9945 C STREET

B STONEHURST EARLY CHILDHOOD CENTER
901 105TH AVENUE

C ESPERANZA ELEMENTARY SCHOOL
10315 E STREET

D EAST OAKLAND SENIOR CENTER
9255 EDES AVENUE

N

0 500 1,000

APPROXIMATE SCALE IN FEET

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15575 Los Gatos Blvd, Building C
Los Gatos, CA 95032
PHONE:(408) 356-6124 FAX: (408) 356-6138

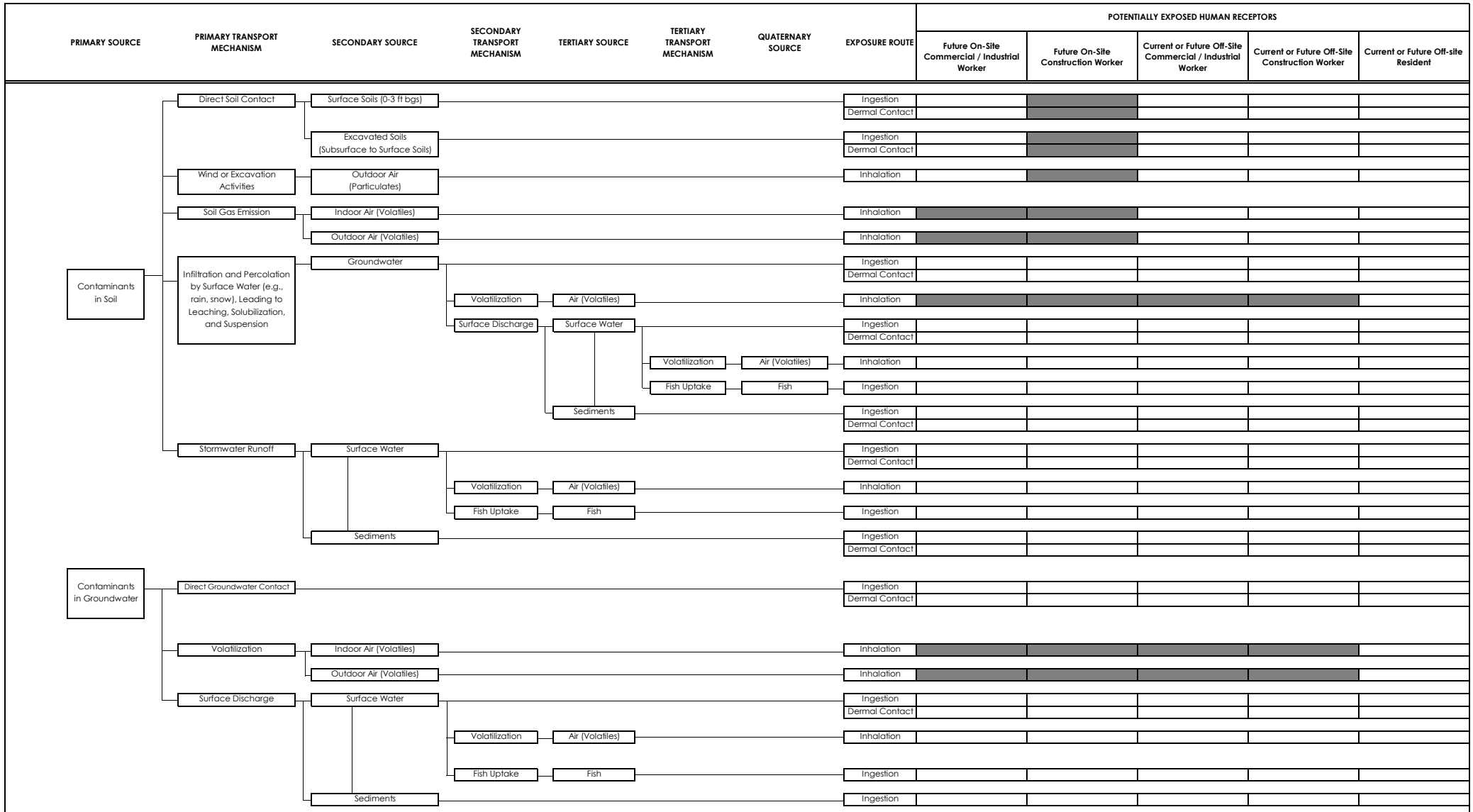
FOR:
FORMER CHEVRON-BRANDED
SERVICE STATION 91723
9757 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SENSITIVE POPULATION SURVEY

FIGURE: 8

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
211602332	NMB	EEO	TLF	01/22/14

FILEPATH:P:\Chevron\N. CA Marketing Sites\Carryl MacLeod Portfolio\91723\SCM\Figures\91723_SRS-2014.dwg | jopalekopsahl | Jan 22, 2014 at 9:50 | Layout: Fig 8_SRS


PRIMARY SOURCE
PRIMARY TRANSPORT MECHANISM
SECONDARY SOURCE
SECONDARY TRANSPORT MECHANISM
TERTIARY SOURCE
TERTIARY TRANSPORT MECHANISM
QUATERNARY SOURCE
EXPOSURE ROUTE
POTENTIALLY EXPOSED HUMAN RECEPTORS
Future On-Site Commercial / Industrial Worker
Future On-Site Construction Worker
Current or Future Off-Site Commercial / Industrial Worker
Current or Future Off-Site Construction Worker
Current or Future Off-site Resident
Contaminants in Soil
Direct Soil Contact
Surface Soils (0-3 ft bgs)
Ingestion
Dermal Contact
Excavated Soils (Subsurface to Surface Soils)
Wind or Excavation Activities
Outdoor Air (Particulates)
Inhalation
Soil Gas Emission
Indoor Air (Volatiles)
Outdoor Air (Volatiles)
Infiltration and Percolation by Surface Water (e.g., rain, snow), Leading to Leaching, Solubilization, and Suspension
Groundwater
Volatilization
Air (Volatiles)
Surface Discharge
Surface Water
Fish Uptake
Fish
Sediments
Stormwater Runoff
Contaminants in Groundwater
Direct Groundwater Contact
Volatilization
Indoor Air (Volatiles)
Outdoor Air (Volatiles)
Surface Discharge
Surface Water
Volatilization
Air (Volatiles)
Fish Uptake
Fish
Sediments
LEGEND
Exposure pathway is complete or potentially complete.
Exposure pathway is incomplete.
DATE: 02/04/14
DRAWN BY: EEO
APPROVED BY: TLF
Former Chevron-Branded Service Station 91723
9757 San Leandro Street
Oakland, California
FIGURE 9
EXPOSURE PATHWAY FLOW CHART

APPENDIX A
ACEH Correspondence

Flora, Travis

From: Detterman, Mark, Env. Health <Mark.Detterman@acgov.org>
Sent: Tuesday, November 12, 2013 5:01 PM
To: Flora, Travis
Cc: 'CMacleod@Chevron.com'
Subject: RE: 91723 DWR Well Request.pdf (RO412; Well Completion Request and Request for Data Gap Work Plan, Focused SCM, Preferential Pathway Survey, and Path to Closure Schedule, or RFC (if appropriate) for 9757 San Leandro St, Oakland)

Travis,
I see that ACPWA did complete the well survey last Friday, November 8th; however, I have extended the due date to February 28, 2014 on Geotracker. That should be sufficient enough time. Please use this email to document the changed date.

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

-----Original Message-----
From: Flora, Travis [mailto:Travis.Flora@stantec.com]
Sent: Monday, November 11, 2013 10:09 AM
To: Detterman, Mark, Env. Health
Subject: RE: 91723 DWR Well Request.pdf (RO412; Well Completion Request and Request for Data Gap Work Plan, Focused SCM, Preferential Pathway Survey, and Path to Closure Schedule, or RFC (if appropriate) for 9757 San Leandro St, Oakland)

Hi Mark,
I'm following up on the extension request submitted a couple weeks ago. The requested deadline is this Friday, and as described, due to delays with well search data, and also the desire to discuss options with the property owner prior to proposing a path forward, the report will not be ready by this Friday.

Thanks,

Travis L. Flora
Associate Project Manager
Phone: (408) 827-3876
Cell: (408) 458-6320

-----Original Message-----
From: Flora, Travis
Sent: Tuesday, 29 October, 2013 15:09
To: 'Detterman, Mark, Env. Health'
Subject: RE: 91723 DWR Well Request.pdf (RO412; Well Completion Request and Request for Data Gap Work Plan, Focused SCM, Preferential Pathway Survey, and Path to Closure Schedule, or RFC (if appropriate) for 9757 San Leandro St, Oakland)

Hi Mark,
The attached correspondence was uploaded to GeoTracker and the ACEH FTP site.

Regards,

Travis L. Flora
Associate Project Manager
Phone: (408) 827-3876
Cell: (408) 458-6320

-----Original Message-----
From: Detterman, Mark, Env. Health [mailto:Mark.Detterman@acgov.org]
Sent: Wednesday, 18 September, 2013 10:42
To: Flora, Travis
Cc: 'CMacleod@Chevron.com'; Roe, Dilan, Env. Health
Subject: RE: 91723 DWR Well Request.pdf (RO412; Well Completion Request and Request for Data Gap Work Plan, Focused SCM, Preferential Pathway Survey, and Path to Closure Schedule, or RFC (if appropriate) for 9757 San Leandro St, Oakland)

Travis,

Sorry for the delay; it's been a bit hectic around here. Regardless, here's the signed DWR form.

Please also forward a signed copy of the Alameda County Dept of Public Works well survey form (available from the ACPWA website) as the two databases are different enough to get interesting results, and thus will capture a more complete well record of the location. Both information sources will help move the case along a Path to Closure. In order to expedite that path, ACEH requests site information be organized when submitted in a limited and focused Site Conceptual Model that identifies site data gaps, evaluates potential conduits (utilities and wells), evaluates the site under the Low Threat Closure Policy, includes a Data Gap Work Plan as needed, and details a Path to Closure Schedule. Initial LTCP reviews of cases are available on Geotracker; ACEH does not believe the site meets the LTCP at this time. However, if you can provide information, reports, and data that fill some of the data gaps that ACEH has identified under the LTCP, ACEH will be able to review it and make any changes to its understanding of the site under the LTCP. This may (or may not) preclude the need for field work. Please see Attachment A (Preferential Pathway and Sensitive Receptor Survey), Attachment B (Site Conceptual Model) and Attachment C (Path to Closure Schedule) for the requisite detail for these items.

If you (Stantec) and Ms. MacLeod would like to come in to discuss this site and other sites that you are managing for Chevron in order to help identify Paths to Closure for the sites, ACEH would be interested. We have been holding a number of meetings that have substantially accelerated work at a number of Chevron

sites with other Chevron case managers and their consultants. Let me know and we can arrange a day and time.

TECHNICAL REPORT REQUEST
Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- November 15, 2013 – Resulting Report
  File to be named RO342_SCM / WP / RFC_R_yyyy-mm-dd (as appropriate)

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Should you have questions, please let me know.

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

-----Original Message-----
From: Flora, Travis [mailto:Travis.Flora@stantec.com]
Sent: Thursday, September 05, 2013 10:47 AM
To: Detterman, Mark, Env. Health
Subject: RE: 91723 DWR Well Request.pdf

Hi Mark,
Will you please sign and return the attached DWR well request form for 9757 San Leandro St., Oakland?

Thanks,
Travis

-----Original Message-----
From: Flora, Travis
Sent: Tuesday, 20 August, 2013 09:56
To: Detterman, Mark, Env. Health (Mark.Detterman@acgov.org)
Subject: 91723 DWR Well Request.pdf

Hi Mark,
Will you please sign and return the attached DWR well request form for 9757 San Leandro St., Oakland?

Thanks,

Travis L. Flora
Project Manager

Stantec Consulting Services Inc.
Ph: (408) 356-6124 ext. 238
Cell: (408) 458-6320

Detterman, Mark, Env. Health

From: Detterman, Mark, Env. Health
Sent: Monday, February 03, 2014 9:51 AM
To: MacLeod, Carryl G; 'Flora, Travis'
Cc: Fischer, Alexis N; Roe, Dilan, Env. Health
Subject: Meeting Followup: RO412 / Chevron 91723; 9757 San Leandro Street, Oakland, CA
Attachments: Attachment_1_and_ftpUploadInstructions_2013_09-17.pdf; Attachment A Site Conceptual Model.pdf

Carryl and Travis,

This email is in followup to our meeting of January 21, 2014, to discuss the subject site and an efficient strategy for addressing data gaps under the Low-Threat Closure Policy. A summary of the main points of our discussion is provided below for incorporation into the focused Site Conceptual Model (SCM) and Data Gap Work Plan that was discussed at the meeting, and is requested below. Items discussed include, but were not limited to the following.

TECHNICAL COMMENTS

1. **Groundwater Plume Delineation -** The following data gaps were included in the discussion. Additional data gaps may be noted in your case review.
   - **a.** Wells MW-1, 3, 4, and 7 have been destroyed, abandoned, or lost; however, the specific status of wells are not known.
   - **b.** Four water supply wells are documented in case files to be within 100 to 250 feet of the release. Some may have been destroyed since they were originally documented. The status or construction details of each water supply well is not known.
   - **c.** The lateral and downgradient extent of contamination in groundwater has not been defined. There appears to be two principal groundwater flow directions at the site, west and north-northwest.
   - **d.** Groundwater collected from former wells MW-1 and MW-7 historically contained a series of HVOC compounds and are downgradient of the former waste oil UST. The downgradient extent for HVOC contaminants has not been delineated.
   - **e.** Only soil bore logs for wells MW-1, MW-2, and MW-4 (DH-1, DH-2, and DH-4) have been submitted; well logs have not been submitted to confirm reported well screen intervals, and if they are (or were) capable of capturing representative groundwater concentrations.
   - **f.** Soil or well logs for MW-3 have not been submitted.
   - **g.** Well MW-2 is consistently submerged and based on reported screen intervals in groundwater monitoring reports, does not define the southern edge of the plume.
   - **h.** The historic groundwater flow direction ranges substantially more than current rose diagrams suggest, and should be updated to allow an understanding of plume dimensions and delineation.
   - **i.** Because the location of the site is in an heavily-used industrial setting, the former presence of diesel usage (and analysis for naphthalene and other PAHs) at the site should be evaluated. The presence of TPHd could affect the extent of delineation of groundwater contamination.
2. **Soil Vapor Data –** Soil vapor data from 2010 does not allow the site to meet the vapor intrusion to indoor air criteria of the LTCP, and suggests residual shallow soil contamination not currently seen in groundwater. The resampling of the vapor wells was discussed, and should include HVOCs (full) and naphthalene. Problems have been encountered by Chevron with respect to accessing these wells. ACEH has issued a letter to the property owners inquiring as to future development plans for the site in order to determine appropriate cleanup goals for the site. If ACEH does not receive information by March 31, 2014, ACEH will assume the current commercial

land use will define applicable remedial goals. Unless otherwise informed, the resampling of vapor will follow current 2012 DTSC guidelines.

3. **Direct Contact and Outdoor Air Data Gaps -** Naphthalene and PAH concentrations in soil also do not appear to have been analyzed in the former waste oil UST source area, and the potential for the use of diesel at the site is considered probable.

TECHNICAL REPORT REQUEST

In ACEHs directive letter dated September 18, 2013, a delivery date of November 15, 2013 was initially assigned for the submittal of the SCM. This was later extended to February 28, 2014; however, per the discussion at the meeting and previous emails, ACEH will extend the submittal date for the SCM and Data Gap Work Plan (if appropriate) to **March 31, 2014**.

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

I believe this captures the principal points of our discussions, if not all. If you believe I have left something off, please let me know.

Otherwise, should you have questions, please let me know.

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

APPENDIX B
Focused Site Conceptual Model

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Regional	9757 San Leandro Street, Oakland, Alameda County, California (the Site) is located within the East Bay Plain Groundwater Basin, which is a subbasin of the Santa Clara Valley Groundwater Basin. The subbasin is comprised chiefly of unconsolidated sediments of Quaternary age with a thickness of approximately 1,000 feet. Deposits in the subbasin include the early Pleistocene age Santa Clara Formation, the late Pleistocene age Alameda Formation, the early Holocene age Temescal Formation, and artificial fill (Department of Water Resources [DWR], 2004).	None	NA
Geology and Hydrogeology	Site	Soil boring and well construction logs are included in the *Site Conceptual Model and Data Gap Work Plan*, dated March 31, 2014 (Stantec Consulting Services Inc. [Stantec], 2014). Geologic cross-section A-A' prepared by Cambria Environmental Technology, Inc. [Cambria] is included in the *Closure Request*, dated December 14, 2006 (Cambria, 2006). This cross-section shows lithology, historic high and low depth-to-water (DTW) measurements, DTW measurements on July 17, 1998, historical soil, groundwater, and soil vapor sample locations and analytical results, and the approximate extent of petroleum hydrocarbon impacts in soil. As illustrated in the cross-section, the subsurface beneath the Site consists primarily of fine-grained soils including clayey silt, silty clay, and silty sand interbedded with occasional lenses of gravel to the greatest depth explored of 23.5 feet below ground surface (bgs) (Cambria, 2006). Well construction details, an assessment of whether Third Quarter 2013 groundwater samples were collected when groundwater elevations were measured across the well screen intervals, and	None	NA

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		historical groundwater elevation data are included in the *Third Quarter 2013 Semi-Annual Groundwater Monitoring Report*, dated November 1, 2013. The historical range of DTW measurements for the Site is approximately 5 to 11.5 feet below top of casing (TOC). During Third Quarter 2013, DTW gauged in wells for the Site ranged from 9.51 to 10.34 feet below TOC and all active Site wells were screened across the prevailing groundwater table, with the exception of well MW-2 where the groundwater elevation was gauged above the upper screen interval, and the entire screen interval was thought to be submerged. Further evaluation of well MW-2, regarding its submerged screen interval, is provided below in the "Petroleum Hydrocarbons in Groundwater" CSM element. The direction of groundwater flow during Third Quarter 2013 was generally toward the west at an approximate hydraulic gradient ranging from 0.002 to 0.004 feet per foot (ft/ft), which is consistent with the historical direction of groundwater flow from Third Quarter 1988 to Third Quarter 2013 (vector mean flow direction to the west) (Stantec, 2013).		
Surface Water Bodies		The United States Geological Survey (USGS) 7.5-minute San Leandro Quadrangle topographic map and aerial photos from Google Earth® were reviewed to identify any surface water within a 0.5-mile radius of the Site. The nearest surface water body is the San Leandro Creek, located approximately 0.85 miles (4,488 feet) southwest of the Site. Based on the distance to this surface water body, it is unlikely that it will be impacted by the dissolved-phase petroleum hydrocarbon plume associated with the Site.	None	NA

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

Nearby Wells		Stantec conducted a well survey in November 2013 to identify all active, inactive, standby, decommissioned, unrecorded, and abandoned (improperly decommissioned or lost) wells within a 0.5-mile radius of the Site. The survey consisted of reviewing files provided by the DWR and Alameda County Public Works (ACPW). All files provided by the DWR and ACPW are confidential in nature and are not provided with this document. Information provided by the DWR indicated seven wells with an unknown use, four cathodic protection wells, one domestic well, 13 extraction wells, five industrial wells, three irrigation wells, 117 monitoring wells, five wells with other uses, three test wells, and nine unused wells. Information provided by ACPW indicated 4 cathodic protection wells, 3 extraction wells, 9 industrial wells, 8 irrigation wells, 137 monitoring wells, 19 test wells, 11 geotechnical wells, 2 recovery wells, 2 wells that have been abandoned and are not being used but were not destroyed through permitting, and 14 wells that were destroyed through permitting. Stantec reviewed the well information listed above to determine wells within a 0.25-mile radius of the Site that may have been abandoned and could be acting as preferential pathways for contaminant migration. All borings, soil sampling or exploration holes, and geotechnical wells are assumed to have been destroyed properly so as not to create a preferential pathway for contaminant migration. Of the seven wells identified by the DWR with an unknown use, two are not located within 0.25 miles of the Site and the other five wells have unknown locations. From ACPW information, the two wells listed as abandoned are not within 0.25 miles of the Site.	1. The status of previous Site wells MW-1, MW-4, MW-7, and MW-10 is unknown.	Conduct a Site visit to determine the status of former Site wells. Details in the data gap summary table.

		Wells MW-1, MW-4, MW-7, and MW-10 were formerly monitored and sampled as part of the groundwater monitoring program for the Site. These wells were installed to investigate potential off-site source areas and are no longer monitored or sampled. The current status and condition of these wells is unknown. Stantec did not locate any documentation of the abandonment or destruction of these wells in DWR and ACPW records. There is no evidence to suggest there are any abandoned wells that have the potential to act as preferential pathways for contaminant migration. To determine active water supply wells within a 0.25-mile radius of the Site, Stantec removed all cathodic protection, extraction, monitoring, other use, geotechnical, recovery, test, unused, and abandoned and destroyed wells from the lists of wells provided by the DWR and ACPW. There were four wells identified in the DWR list that did not have an identified use or location and these wells were removed as well. These four wells were not identified in the ACPW list. All wells not within a 0.25-mile radius were then removed. Seven water supply wells were identified during the active water supply well survey and all were identified as for industrial use. The industrial well located approximately 100 feet southwest of the Site is the only well identified within 0.25 miles of the Site that is down-gradient. This well was identified as well P2. Well P2 was previously identified by Fluor Daniel GTI (Fluor Daniel) during their water well survey in 1996. Well P2 was completed to a depth of 602 feet bgs, and screened from approximately 160 to 590 feet bgs (Fluor Daniel, 1996). Stantec visited the Site on January 10, 2014,		

		and did not observe any water supply wells remaining at or in the close vicinity of the Site. Stantec spoke with property maintenance staff, who was not aware of any existing water supply wells at or in the close vicinity of the Site. It appears all water supply wells previously identified by Fluor Daniel in 1996, including well P2, have been destroyed since they were originally documented. All other water supply wells identified within a 0.25-mile radius of the Site during the current well survey are located up-gradient or cross-gradient based on the predominant direction of groundwater flow (west), and are unlikely to be impacted by the dissolved-phase petroleum hydrocarbon plume associated with the Site. **Utility Survey** A survey of utilities in the vicinity of the Site was not completed as the soil source area appears to be confined to the Site and the dissolved-phase petroleum hydrocarbon plume appears to extend off Site to a private commercial property and not into a right-of-way where utilities would be present. It is unlikely that any utilities are present in the area of the plume that would act as preferential pathways for contaminants. Given the limited extent of the dissolved-phase petroleum hydrocarbon plume and the information presented above, there is no evidence to suggest utility trenches are acting as preferential pathways for contamination associated with the Site. It does not appear that additional assessment of utilities is necessary, and this is not a requirement of the Low-Threat Underground Storage Tank (UST) Case Closure Policy (LTCP). The potential need for additional information on utilities is not considered a data gap at this time.		

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

Release Source and Volume		Prior to 1966, three fuel USTs and one fuel dispenser island (first generation) located in the eastern portion of the Site were removed. Second-generation fuel structures were installed between 1966 and 1968 and included three fuel USTs located in the north-central portion of the Site, one waste oil UST located in the western portion of the Site, and five fuel dispenser islands (four located in the central portion of the Site and one located in the southern portion of the Site). In 1978, the service station was closed and all second-generation fuel structures were removed from the Site (Conestoga-Rovers & Associates [CRA], 2011). A UST unauthorized release (leak) contamination site report, dated August 24, 2001, is on file with ACEH. The report states that an unknown amount of gasoline was released to the subsurface at the Site, which was discovered during assessment activities on April 18, 1987, and stopped when all second-generation fuel structures were removed in 1978 (ACEH, 2001). **Off-Site Sources** In email correspondence dated February 3, 2014, ACEH expressed concern about halogenated volatile organic compounds (HVOCs) historically detected in former off-site wells MW-1 and MW-7. Historical groundwater analytical data for former wells MW-1 and MW-7 from 1987 to 1989 indicates the presence of 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), and trichloroethane (TCA). These detections of 1,1-DCE, 1,1-DCA, 1,2-DCA, and TCA off Site indicate the presence of an off-site source potentially comingling with the dissolved-phase petroleum hydrocarbon plume associated with the Site.	None	NA

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

		Monitoring well MW-1 was installed to investigate the outdoor chemical storage area located on the east side of the cold storage building associated with the former food processing plant to the northwest of the Site (Beta Associates [Beta], 1987) and well MW-7 was installed to investigate the area of the former Shell-branded service station, located immediately adjacent and northwest of the Site (Groundwater Technology, Inc. [GTI], 1988). As these wells were installed to investigate potential off-sources not associated with the former Chevron-branded service station, the detections of 1,1-DCE, 1,1-DCA, 1,2-DCA, and TCA are unlikely associated with the unauthorized release at the Site. Furthermore, HVOCs were analyzed in current Site wells MW-2, MW-5, MW-6, MW-8, and MW-9 from 1987 through 1989, and all concentrations were below laboratory reporting limits (LRLs) with the exception of 1,1-DCE in well MW-9 during Third Quarter 1989, which was detected at 3 micrograms per liter (µg/L). This is below the current ESL for 1,1-DCE of 6 µg/L. HVOCs are not believed to be associated with the former release associated with the Site; therefore, further assessment of HVOCs is not necessary and is not considered a data gap.		
LNAPL		Light non-aqueous phase liquid (LNAPL) was reportedly observed while advancing soil boring SB-8 at approximately 7 feet bgs in 1996; however, LNAPL has not been observed or documented in any other borings or any Site wells to-date.	None	NA
Source Removal Activities		Prior to 1966, three fuel USTs and one fuel dispenser island (first generation) located in the eastern portion of the Site were removed. Second-generation fuel structures were installed between 1966 and 1968 and included three fuel USTs located in the north-central portion of the Site, one waste oil UST located in the western portion of the Site, and five fuel dispenser islands	None	NA

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

		(four located in the central portion of the Site and one located in the southern portion of the Site). In 1978, the service station was closed and all second-generation fuel structures were removed from the Site (CRA, 2011). Further documentation on these activities could not be found and it is unknown if soil sampling or excavation of impacted soil, if present, was conducted.		
Contaminants of Concern		The contaminants of concern (COCs) at the Site are dissolved-phase petroleum hydrocarbons associated with gasoline from a former service station, including TPH-GRO and BTEX compounds. In email correspondence dated February 3, 2014, ACEH stated that the former presence of diesel usage should be evaluated. Historical records were reviewed, and there is no evidence that diesel was ever dispensed at the Site. During soil sampling at the Site in April 1987, clear TPH-GRO and BTEX compound impacts were observed in soil boring DH-8, with concentrations above current California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB) Environmental Screening Levels (ESLs) for commercial land use; however, total petroleum hydrocarbons as diesel range organics (TPH-DRO) was not detected above the LRL of 1.0 milligrams per kilogram (mg/kg) (Beta, 1987). This data appears to support that diesel was not dispensed at the former service station, or if it was dispensed, it was not part of the historical release. Further evaluation of TPH-DRO is not considered a data gap.	None	NA
Petroleum Hydrocarbons in Soil		Soil analytical results are compared to California RWQCB ESLs for commercial land use (RWQCB, 2013). The vertical extent of petroleum hydrocarbons in on-site soil appears to be from approximately 5 to 16 feet bgs. Many on-site	None	NA

		soil borings exceeded ESLs for TPH-GRO and BTEX compounds at the greatest depth explored; however, with the exception of the sample collected from boring VP-3 at 6 feet bgs, all soil samples that exceeded ESLs at the greatest depth explored (ranging from 10 to 15 feet bgs) were collected at a depth within the current saturated zone. The depth of the current saturated zone is based on DTW readings from on-site wells MW-5, MW-6, and MW-8 from Third Quarter 2011 to Third Quarter 2013 (ranging from 7.92 to 10.34 feet below TOC). Any samples collected deeper on Site, even in the area of boring VP-3, would be in the saturated zone and would likely be more indicative of groundwater conditions than actual soil conditions. Furthermore, the soil concentrations detected in VP-1 through VP-5, which were collected in 2010 in the vicinity of the 1996 "SB" series of borings, show concentration decreases of one to three orders of magnitude. No soil ESLs were exceeded in any sample collected off Site. The vertical extent of petroleum hydrocarbons in soil is considered adequately defined. The lateral extent of petroleum hydrocarbons in soil appears to be confined to the Site in the area of the second-generation USTs and fuel dispenser islands. Concentrations of TPH-GRO and/or BTEX compounds were observed above soil ESLs in vadose zone soil in borings SB-5(1996), SB-7 through SB-10, SB-14, and SB-16 and borehole VP-3. These impacts are laterally delineated by concentrations below soil ESLs in vadose zone samples collected from boreholes MW-8 and VP-2 to the northwest, borings SB-11 and SB-12 to the northeast, borings SB-2(1989), SB-15, and SB-21 and boreholes MW-5, VP-4, and VP-5 to the southeast, and boring SB-1(1989) and boreholes MW-6 and VP-1 to the southwest. The lateral extent of petroleum hydrocarbons in soil is considered defined.		

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

Petroleum Hydrocarbons in Groundwater		Soil impacts extend vertically to groundwater and DTW at the Site has historically ranged from approximately 5 to 11.5 feet below TOC. During Third Quarter 2013, concentrations of TPH-GRO and benzene exceeded ESLs for groundwater that is a potential source of drinking water as follows: • TPH-GRO concentrations exceeded the ESL of 100 µg/L in wells MW-5 and MW-8; and • The benzene concentration exceeded the ESL of 1 µg/L in well MW-8. During Third Quarter 2013, maximum concentrations of TPH-GRO and BTEX compounds were observed in well MW-8, which is located in the northern portion of the Site in the area of the second-generation USTs. TPH-GRO was also detected above the ESL in well MW-5, in the area of the first-generation dispenser island (Stantec, 2013). Isoconcentration maps showing the estimated lateral extent of the dissolved-phase plume were prepared following the Third Quarter 2013 groundwater monitoring and sampling event. Due to TPH-GRO and BTEX compounds below ESLs or LRLs in well MW-6 (cross-gradient of well MW-8) and the potential for two distinct source areas, dissolved-phase TPH-GRO is currently represented as two distinct plumes, the longest of which is currently defined to below ESLs within approximately 200 feet down-gradient of the source area. The dissolved-phase TPH-GRO plumes are defined by concentrations below ESLs or LRLs in wells MW-2, MW-6, and MW-9. The dissolved-phase TPH-GRO plume is considered adequately defined.	None	NA

		The dissolved-phase benzene plume is considered defined by concentrations below LRLs in wells MW-5, MW-6, and MW-9. In email correspondence dated February 3, 2014, ACEH expressed concern that well MW-2 was not providing representative groundwater data. Although the screen interval in well MW-2 is often submerged, there is no evidence to suggest groundwater concentrations in well MW-2 are not representative of actual groundwater concentrations. Groundwater elevations in well MW-2 are similar to other Site wells and trends suggest that the data is representative of actual groundwater conditions. During Third Quarter 2013, the groundwater elevations in all Site wells differed by a maximum of 0.84 feet. In addition, during quarters when the screen interval of well MW-2 was not submerged, petroleum hydrocarbon concentrations were similar to, if not less than, concentrations observed in the same year when the well was submerged. For instance, during First Quarter 1995, the screen interval in well MW-2 was not submerged and the concentration of TPH-GRO was observed to be 78 µg/L, while during Second Quarter 1994 and Third Quarter 1995, the screen interval was submerged, and concentrations were observed to be 390 µg/L and 100 µg/L, respectively. Concentrations within well MW-2 appear to be conservative in quarters when the screen is submerged. Furthermore, the sand filter pack for well MW-2 begins at approximately 9 feet bgs and allows the groundwater to infiltrate the well at this depth. These observations suggest that groundwater concentrations in well MW-2 are representative of actual groundwater conditions at the Site. Current and historical groundwater quality data indicate that the petroleum hydrocarbon plume associated with the Site is generally stable or decreasing in size and concentration. During Third		

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

		Quarter 2013, with the exception of a historical low concentration of TPH-GRO in well MW-5, all groundwater concentrations were within historical limits at all wells sampled. Concentrations of TPH-GRO and benzene appear to have an inverse relationship with changes in groundwater elevation; however, overall stable or decreasing concentration trends are still observed (Stantec, 2013).		
Risk Evaluation		**Current and Future Land Uses** The Site is a former Chevron-branded service station located on the western corner at the intersection of San Leandro Street and 98th Avenue in Oakland, California. The zoning for the Site and all adjacent and nearby down-gradient properties is currently commercial/industrial. In a letter dated January 23, 2014, ACEH requested the property owner for the Site and nearby property owners submit information regarding any potential changes in the current land use and classification of the Site and any known future plans for redevelopment of the Site, inclusive of the construction of new buildings under the current land use classification (commercial/industrial). This information was requested by March 31, 2014. Should there be changes to the current land use and classification of the Site from commercial/industrial to residential, the Site conceptual model will be updated to compare Site criteria to residential ESLs and LTCP criteria. The current Site conceptual model assumes the Site will likely continue to be used for commercial/industrial purposes in the future. **On-Site and Off-Site Current or Potential Populations** Based on the current and likely future use of the Site, adjacent, and nearby down-gradient properties as commercial/industrial, the future potentially exposed populations on Site include	2. Site conditions do not meet LTCP criteria for petroleum vapor intrusion to indoor air.	Resample soil vapor wells VP-1 through VP-5 and conduct an evaluation of current soil vapor quality. See data gaps summary table.

		commercial/industrial workers, customers, and construction workers. **Potential Sensitive Population Survey** Stantec conducted a survey to determine if any potential sensitive populations were located in the vicinity of the Site. Potential sensitive populations are people who would potentially be more susceptible to risks resulting from exposure to Site-related hydrocarbons such as school-age children, medically-compromised people, and the elderly. Based on the predominant direction of groundwater flow associated with the Site (west), only one identified potential sensitive population is located within a 0.5-mile radius down-gradient of the Site (East Oakland Senior Center). Based on its distance from the Site (approximately 0.45 miles [2,376 feet]), and the limited extent of the dissolved-phase plume associated with the Site, East Oakland Senior Center is unlikely to be at risk from exposure to Site-related petroleum hydrocarbons. **Exposure Pathway Analysis** Incomplete exposure pathways are justified as follows: • The ingestion of groundwater and dermal contact with groundwater exposure pathways are considered incomplete for all current or future human receptors as there is no mechanism for deliberate consumption of the groundwater (no on-site or nearby down-gradient water supply wells) and because excavation at or below the groundwater table is unlikely. • The soil gas emission pathways (inhalation of indoor and outdoor air) are considered incomplete for current or future off-site human receptors due to the limited extent		

		and location of the soil source area and the distance to down-gradient potential sensitive populations (approximately 0.45 miles). Potentially complete pathways are summarized as follows: • The ingestion and dermal contact surface soil exposure pathways are considered potentially complete for on-site construction workers only, as shallow soil impacts were observed in the area of the second-generation fuel USTs and dispenser islands. The Site is paved, so customers and commercial workers are unlikely to contact shallow soil. • The ingestion, dermal contact, and inhalation of outdoor particulates from excavated soil exposure pathways are considered potentially complete for on-site construction workers only, due to historical shallow (less than 10 feet bgs) soil detections of petroleum hydrocarbons above ESLs. These pathways are considered incomplete for customers and commercial workers, as excavation work is unlikely while the Site is used as a semi-truck parking and staging area for a distribution facility. • The soil gas emission pathways (inhalation of indoor and outdoor air) are considered potentially complete for on-site receptors due to the potential for petroleum hydrocarbons in shallow vadose zone soil to volatilize and be inhaled in the indoor or outdoor air. • The groundwater emission pathways (inhalation of indoor and outdoor air) are considered potentially complete for on-site and off-site receptors due to the potential for petroleum hydrocarbons in shallow groundwater to volatilize and be inhaled in the indoor or outdoor air.		

TABLE 1
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

		Risk Evaluation Although the ingestion, dermal contact, and inhalation pathways for shallow and excavated soil are considered potentially complete for on-site construction workers, the Site is paved, so risk to construction workers is unlikely at this time. In the event of planned construction or excavation, care should be taken to safely manage exposed and excavated soil. In addition, Site conditions appear to meet the criteria for direct contact and outdoor air exposure criteria set forth in the LTCP. The soil gas and groundwater emission pathways are considered potentially complete for on-site and off-site receptors and conditions do not meet the petroleum vapor intrusion to indoor air criteria set forth in the LTCP. However, the Site is currently used as a semi-truck parking and staging area for a distribution facility and background vapors associated with semi-trucks and visiting vehicles likely present a higher risk than vapors from residual contamination on Site.		

TABLE 2
Focused Site Conceptual Model
Former Chevron-branded Service Station 91723
9757 San Leandro Street, Oakland, California

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
1	The status of previous Site wells MW-1, MW-4, MW-7, and MW-10 is unknown.	Conduct a Site visit to determine the status (location and condition) of former Site wells.	Determining the status of former Site wells MW-1, MW-4, MW-7, and MW-10 will satisfy ACEH request in February 3, 2014 correspondence.	None.
2	Site conditions do not meet LTCP criteria for petroleum vapor intrusion to indoor air.	Resample soil vapor wells VP-1 through VP-5.	Resampling of soil vapor wells VP-1 through VP-5 will allow for an evaluation of current soil vapor quality at the Site and whether the Site meets the criteria for petroleum vapor intrusion to indoor air set forth in the LTCP. Soil vapor wells VP-1 through VP-5 are adequately spaced across the Site and in the area of former fueling features.	TPH-GRO, BTEX compounds, and naphthalene by United States Environmental Protection Agency (US EPA) Method TO-15, and fixed gases (carbon dioxide, oxygen, methane, and helium) by American Society for Testing and Materials (ASTM) Method D-1946.

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Stantec, 2013. *Third Quarter 2013 Semi-Annual Groundwater Monitoring Report*. November 1.

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APPENDIX C
Soil Boring and Well Construction Logs

EXPLORATION DRILL HOLE LOG

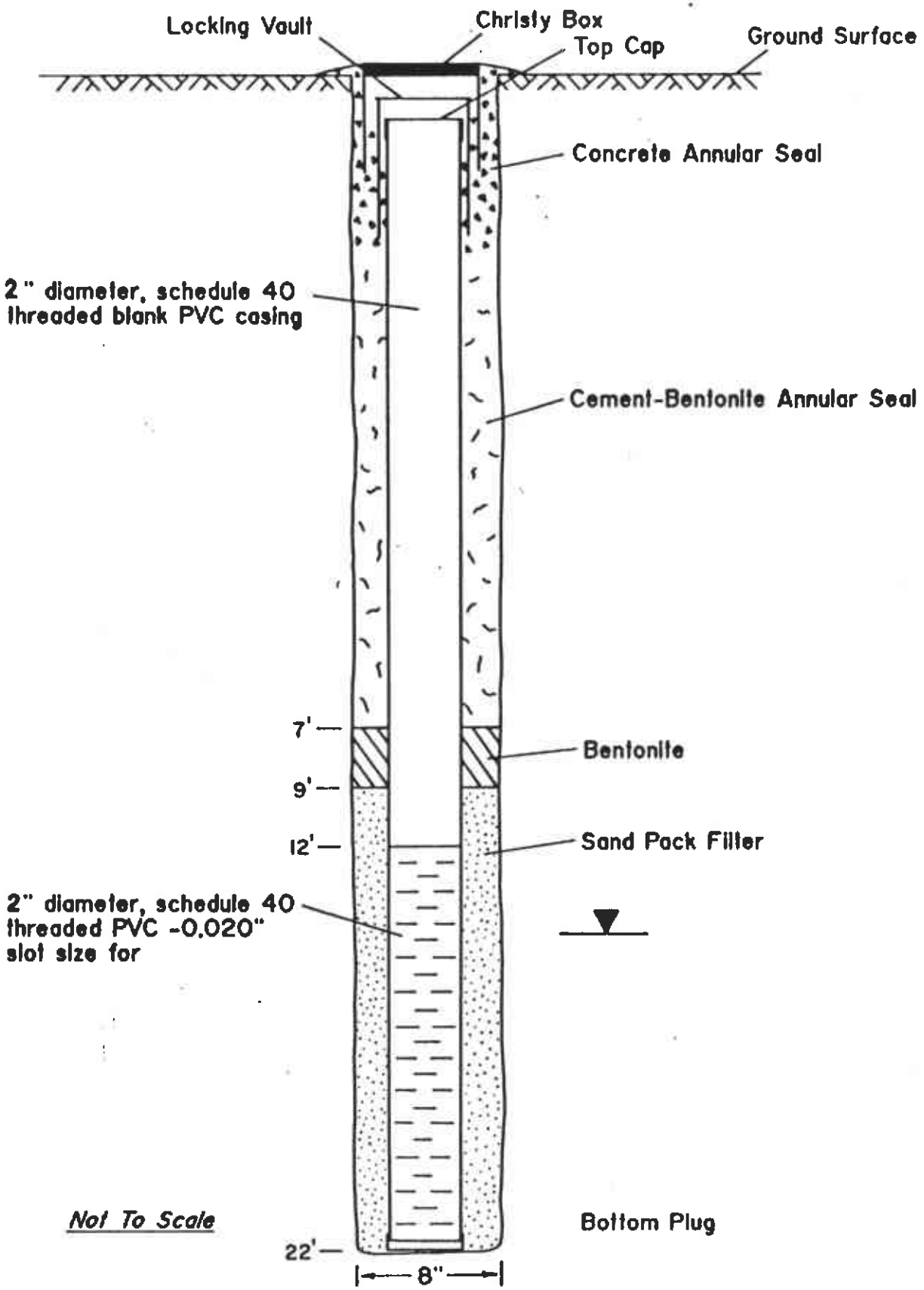
HOLE No. DH-1

PROJECT GERBER PRODUCTS | DATE 04/18/87 | LOGGED BY DLS

DRILL RIG CME 55 | HOLE DIA. 8" | SAMPLER Modified California

GROUNDWATER DEPTH INITIAL 10.8' | FINAL 10.28' | HOLE ELEV. --

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
9" concrete.		1											
Gravel sub base.													
CLAY, black, damp, stiff, slightly silty.	CI	2											
		3	X	10									
		4	X										
dark brown.		5											
		6	X	13									
			X										
medium brown.		7											
		8											
		9											
		10											
		11	X	15									
			X										
SAND, brown-gray, wet, medium dense, very clayey, slightly gravelly.	SC	12											
		13											
		14											
		15											
		16	X	9									
			X										
		17											
		18											
		19											
Bottom of Drillhole @ 22.0'.		20											



Beta Associates

MONITORING WELL CONSTRUCTION DETAIL

GERBER PRODUCTS
OAKLAND, CALIFORNIA

FIGURE 2

186-1.1
5/87

SAN JOSE BLUEPRINT CO
PRINTED ON JR 330

EXPLORATION DRILL HOLE LOG

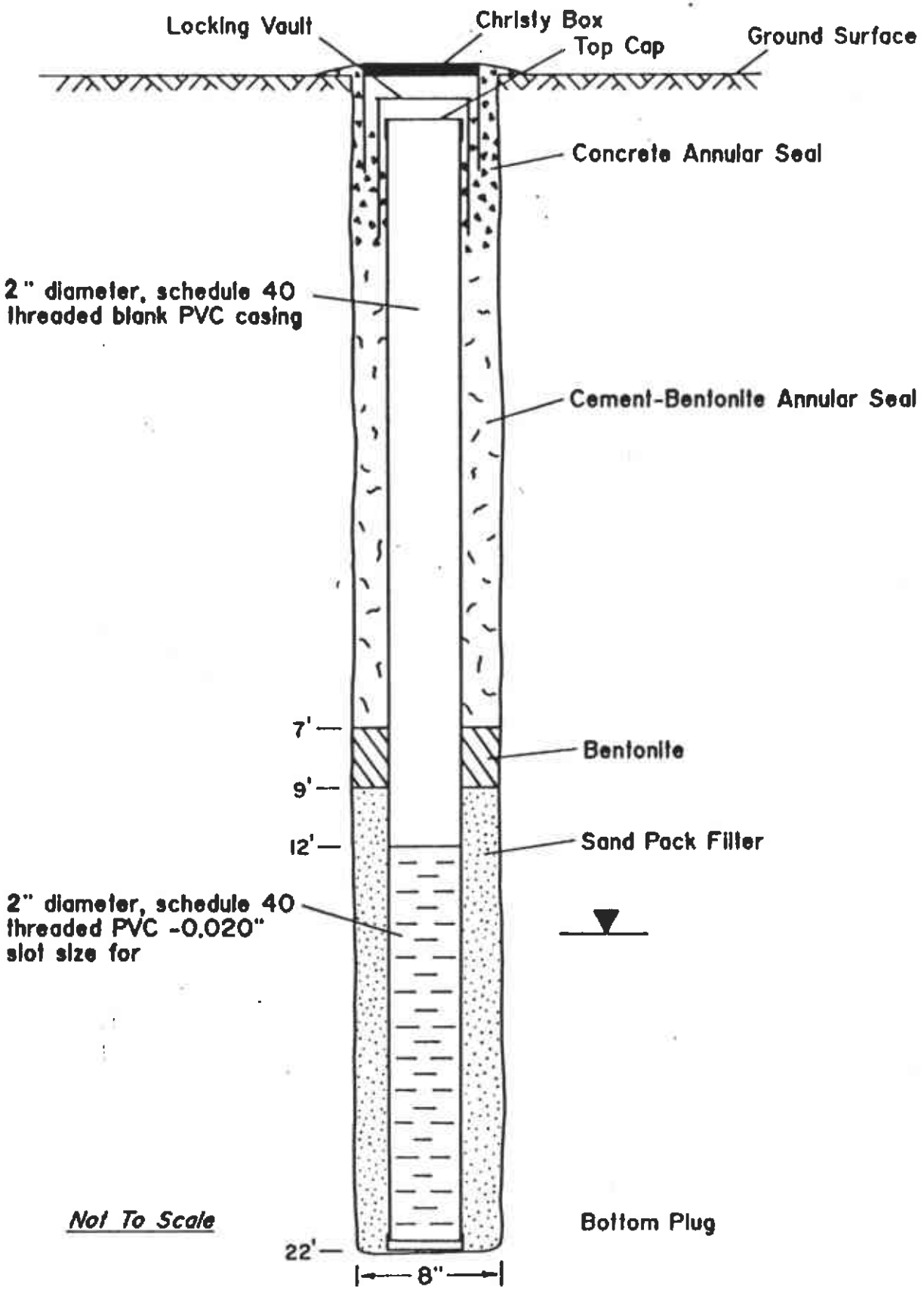
HOLE No. DH-2

PROJECT GERBER PRODUCTS | DATE 04/18/87 | LOGGED BY DLS

DRILL RIG CME 55 | HOLE DIA. 8" | SAMPLER Modified California

GROUNDWATER DEPTH INITIAL 10.8' | FINAL 10.38' | HOLE ELEV. __

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
7" concrete.													
gravel sub base.	CI	1											
CLAY, black, damp, stiff, silty.		2											
		3											
		4	X X	13									
slightly sandy.		5											
		6	X X	14									
medium brown, sandy.		7											
Greenish-gray, damp, silty, very clayey, SAND, firm.	SC	8											
CLAY, brown, damp, stiff, silty.	CI	9											
		10											
CLAY, gray-brown mottled, damp, stiff, silty.	CI	11	X X	14									
		12											
		13											
		14											
SAND, gray, wet, medium dense, clayey.	SC	15											
CLAY, gray-brown mottled, damp, stiff, w/ rootholes.		16	X X	13									
		17											
		18											
		19											
Bottom of Drillhole @ 23.5'.		20											



Beta Associates

MONITORING WELL CONSTRUCTION DETAIL

GERBER PRODUCTS
OAKLAND, CALIFORNIA

FIGURE 2

186-1.1
5/87

SAN JOSE BLUEPRINT CO
PRINTED ON JR 330

EXPLORATION DRILL HOLE LOG

HOLE No. DH-3

PROJECT GERBER PRODUCTS | DATE 04/18/87 | LOGGED BY DLS

DRILL RIG CME 55 | HOLE DIA. 8" | SAMPLER Modified California

GROUNDWATER DEPTH INITIAL | FINAL | HOLE ELEV. --

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN. (tsf)	TORVANE (tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
7" concrete.													
SAND, brown - gray, damp, medium dense.	SP	1											
SAND, orange, damp, medium dense very clayey.	SC	2											
CLAY, black, damp, stiff, silty.	CI	3	X	2									
Bottom of Drillhole @ 4.0'. No Ground Water Encountered.		4	X										
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. DH-4

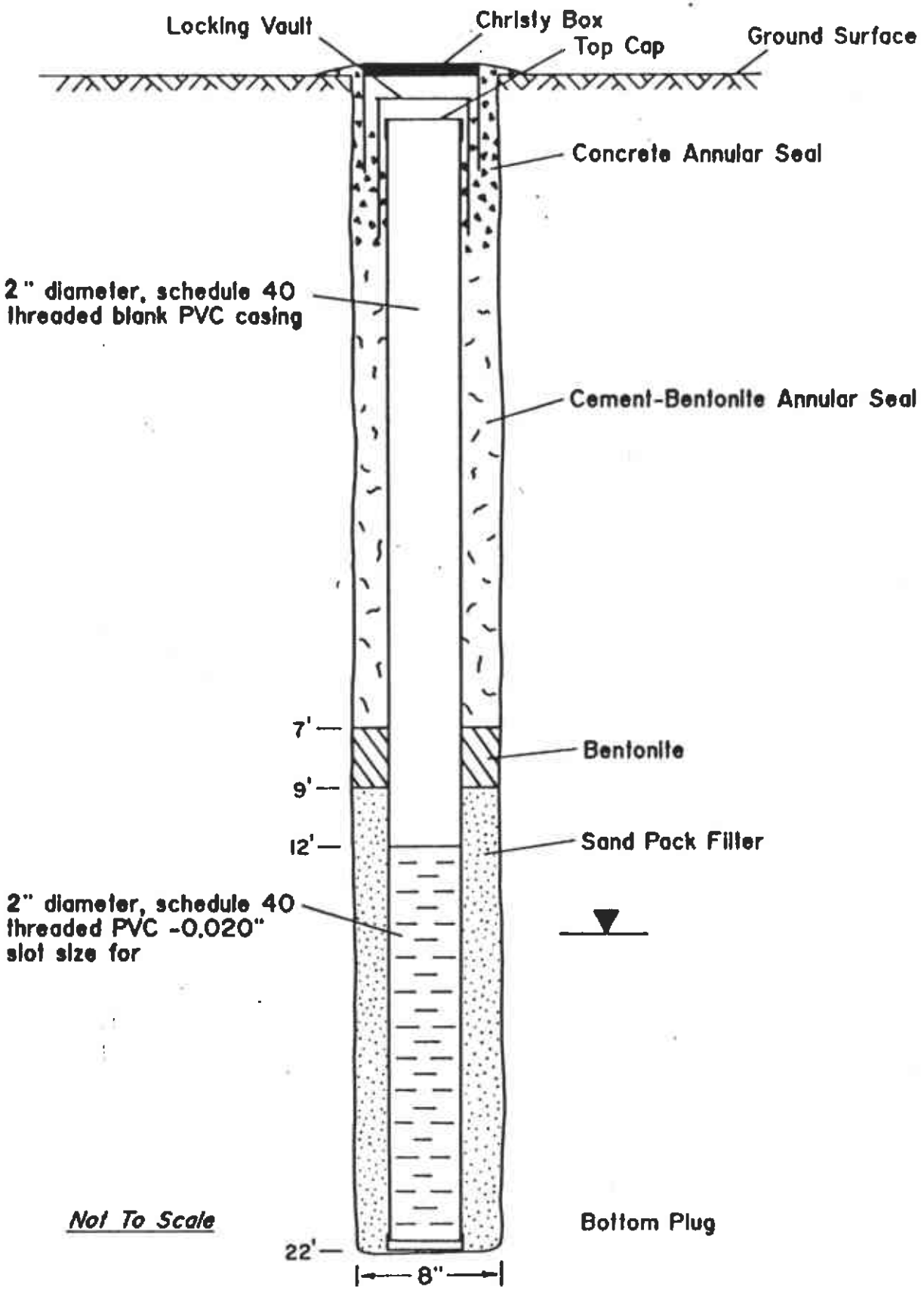
PROJECT GERBER PRODUCTS DATE 04/18/87 LOGGED BY DLS

DRILL RIG CME 55 HOLE DIA. 8" SAMPLER Modified California

GROUNDWATER DEPTH INITIAL 12.4' FINAL 10.84' HOLE ELEV. __

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY(pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
3" concrete.													
CLAY, brown, damp, stiff, gravelly, sandy.	CL	1											
		2											
SAND, brown - gray, damp, dense, very coarse grained.	SP	3											
CLAY, black, damp, stiff, silty.	CI	4											
		5											
		6	X X	13									
		7											
CLAY, greenish-gray, damp, stiff, silty, slightly sandy.	CI	8											
		9											
CLAY, gray-brown mottled, damp, stiff, silty.	CI	10											
		11	X X	16									
		12											
		13											
SAND, gray, wet, dense, clayey.	SC	14											
		15											
CLAY, brown - gray mottled, damp, stiff, silty.		16	X X	10									
		17											
		18											
		19											
Bottom of Drillhole @ 22.0'.		20											

PROJECT 186-1.1 Beta Associates



Beta Associates

MONITORING WELL CONSTRUCTION DETAIL

GERBER PRODUCTS
OAKLAND, CALIFORNIA

FIGURE 2

186-1.1
5/87

SAN JOSE BLUEPRINT CO
PRINTED ON JR 330

EXPLORATION DRILL HOLE LOG

HOLE No. DH-5

PROJECT GERBER PRODUCTS | DATE 04/18/87 | LOGGED BY DLS

DRILL RIG CME 55 | HOLE DIA. 8" | SAMPLER Modified California

GROUNDWATER DEPTH INITIAL | FINAL | HOLE ELEV. __

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR
SAND/GRAVEL, brown, dry, medium dense.	SP/GP	1											
		2											
		3											
CLAY, dark brown, damp, stiff, very sandy.	CL	4											
		5											
		6	X	18									
			X										
dark brown and black.		7											
		8											
		9											
CLAY, brown, damp, stiff, silty.	CI	10											
			X	13									
Bottom of Drillhole @ 11.0'		11	X										
No Ground Water Encountered.		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. DH-6

PROJECT GERBER PRODUCTS DATE 04/18/87 LOGGED BY DLS

DRILL RIG CME 55 HOLE DIA. 8" SAMPLER Modified California

GROUNDWATER DEPTH INITIAL FINAL HOLE ELEV. --

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
3" concrete.		1											
CLAY, brown, damp, stiff, silty, sandy, trace gravel.	CL	2											
CLAY, black, damp, stiff, silty.	CI	3											
		4											
		5											
		6	X	14									
		7	X										
		8											
		9											
		10											
		11	X	14									
Bottom of Drillhole @ 10.5'. No Ground Water Encountered.		12	X										
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. DH-7

PROJECT GERBER PRODUCTS DATE 04/18/87 LOGGED BY DLS

DRILL RIG CME 55 HOLE DIA. 8" SAMPLER Modified California

GROUNDWATER DEPTH INITIAL FINAL HOLE ELEV. --

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
7" concrete.		1											
Gravel sub base.		2											
CLAY, black, damp, stiff, silty.	CI	3											
		4	X	7									
Bottom of Drillhole @ 3.5'. No Ground Water Encountered.		5	X										
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. DH-8

PROJECT GERBER PRODUCTS | DATE 04/18/87 | LOGGED BY DLS

DRILL RIG CME 55 | HOLE DIA. 8" | SAMPLER Modified California

GROUNDWATER DEPTH INITIAL | FINAL | HOLE ELEV. __

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
2" concrete.													
CLAY/GRAVEL, orange, damp, stiff, medium dense, sandy.	CL/GC	1											
		2											
		3											
		4	X X	10									
		5											
		6	X X	15									
green clay - smells like gas.		7											
		8											
CLAY, brown - gray, mottled, damp, stiff, silty - gas odor.		9											
		10											
		11	X X	14									
Bottom of Drillhole @ 10.5'. No Ground Water Encountered.		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. DH-9

PROJECT GERBER PRODUCTS **DATE** 04/18/87 **LOGGED BY** DLS

DRILL RIG CME 55 **HOLE DIA.** 8" **SAMPLER** Modified California

GROUNDWATER DEPTH INITIAL **FINAL** **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
8" concrete.													
Gravel, orange/brown, damp, very dense, clayey, very sandy.	GP	1	X										
		2	X										
Bottom of Drillhole @ 1.0'. No Ground Water Encountered.		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. DH-10

PROJECT GERBER PRODUCTS | DATE 04/18/87 | LOGGED BY DLS

DRILL RIG CME 55 | HOLE DIA. 8" | SAMPLER Modified California

GROUNDWATER DEPTH INITIAL | FINAL | HOLE ELEV. --

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
7" concrete.													
GRAVEL, brown/gray, wet, very dense, slightly sandy.		1	X										
		2	X										
Bottom of Drillhole @ 1.0'. No Ground Water Encountered.		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. DH-11

PROJECT GERBER PRODUCTS **DATE** 04/18/87 **LOGGED BY** DLS

DRILL RIG CME 55 **HOLE DIA.** 8" **SAMPLER** Modified California

GROUNDWATER DEPTH INITIAL **FINAL** **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY(pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
7" concrete.		1											
GRAVEL, brown/orange, damp, very dense, clayey, sandy.		2	X X										
Bottom of Drillhole @ 1.0'. No Ground Water Encountered.		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

GROUNDWATER TECHNOLOGY, INC.

Monitoring Well 5

Drilling Log

Project GERBER/OAKLAND | Owner GERBER PRODUCTS
Location OAKLAND, CALIFORNIA | Project Number 203-798-5049
Date Drilled 5/18/88 | Total Depth of Hole 20 FT | Diameter 7.5 IN
Surface Elevation | Water Level Initial 9 FT | 24-hour
Screen: Dia. 2 IN | Length 13 FT | Slot Size 0.020 IN
Casing: Dia. 2 IN | Length 7 FT | Type PVC
Drilling Company KYLIHAUG | Drilling Method HOLLOW STEM AUGER
Driller CHRIS PRUNER | Log by BRUCE EPPLER
Geologist / Engineer | License No.

Sketch Map

Notes:

Depth (Feet)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0				CL	4 inches of asphalt over 6 inches base course Dark brown–black clay (Medium stiff, moist, no product odor, organic rich)
6		0	A 6 6 11 17	SC	Dark brown clay with minor fine grained sands (Stiff, no product odor)
8		3		CL	(Grades blue–grey)
9					▼ Encountered water 5/18/88 (1020 hours)
10		0	B 5 5 4 5	CL	Blue–grey mottled clay (Wet, product odor, stiff)
14		180	C 6 6 7 13	SC	Blue–grey sandy clay (Wet, stiff, no product odor)
16					(Grades tan–brown silty clay)
18		0	D 6 50	CL	Tan–brown silty clay (No product odor, wet, medium stiff)
20					End of boring, installed monitoring well (1045 hours)
22					
24					

GROUNDWATER TECHNOLOGY, INC.

Monitoring Well 6

Drilling Log

Project GERBER/OAKLAND Owner GERBER PRODUCTS
Location OAKLAND, CALIFORNIA Project Number 203-799-5049
Date Drilled 5/18/88 Total Depth of Hole 20 FT Diameter 7.5 IN
Surface Elevation Water Level Initial 9 FT 24-hour
Screen: Dia. 2 IN Length 7 FT Slot Size 0.020 IN
Casing: Dia. 2 IN Length 13 FT Type PVC
Drilling Company KVILHAUG Drilling Method HOLLOW STEM AUGER
Driller CHRIS PRUNER Log by BRUCE EPPLER
Geologist / Engineer License No.

Sketch Map
SAN LEANDRO
EMPTY LOT
MW6
98th
Notes:

Depth (ft)	Well Construction	PID (ppm)	Sample	Blows/6"	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					CL	4 inches of asphalt over 6 inches base course Dark brown-black clay (Moist, very stiff, no product odor)
2						
4						
6		0	A	3 7 9	CL	Dark brown clay (Moist, stiff, no product odor) (Grades blue-grey clay 7 feet)
8						▼ Encountered water 5/19/88 (1140 hours) (Grades brown)
10		300	B	5 8 8	CL	Brown-grey mottled silty clay (Strong product odor, wet, medium stiff)
12						
14						
16			C	7 7 9	SC	Tan-grey mottled silty sandy clay with minor gravel (No product odor, wet, stiff) (Grades tan)
18						
20			D	3 7 5	CL	Tan silty clay (Wet, medium stiff, no product odor) End of boring, installed monitoring well
22						
24						

4/88 REV. 0

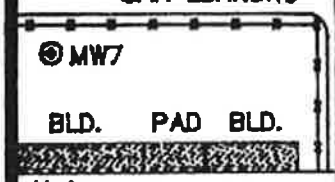
GROUNDWATER TECHNOLOGY, INC.

Monitoring Well 7

Drilling Log

Project GERBER/OAKLAND Owner GERBER PRODUCTS
Location OAKLAND, CALIFORNIA Project Number 203-799-5049
Date Drilled 5/18/88 Total Depth of Hole 20 FT Diameter 7.5 IN
Surface Elevation Water Level Initial 9 FT 24-hour
Screen: Dia. 2 IN Length 13 FT Slot Size 0.020 IN
Casing: Dia. 2 IN Length 7 FT Type PVC
Drilling Company KVILHAUG Drilling Method HOLLOW STEM AUGER
Driller CHRIS PRUNER Log by BRUCE EPPLER
Geologist / Engineer License No.

Sketch Map



Notes:

Depth (feet)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0				CL	4 inches of asphalt over 6 inches base course
					Dark-brown-black clay (Moist, no product odor)
2					
					(Grades brown)
4					
		0	A 4 6 13		Dark brown clay (Very stiff, moist, no product odor)
6					(Color change to blue-grey clay)
					(Grades brown)
8					▼ Encountered water 5/18/88 (1330 hours)
10		0	B 6 8 12	CL	Tan-brown-grey mottled silty clay with some gravel (Moist, rootlets, very stiff, no product odor) (Grades sandy gravelly)
12				SC	
14					
		0	C 6 6 12		Tan-brown mottled sandy gravel with clay (Wet, no product odor, medium dense, clast to 1/2")
16				CL	Tan silty clay (Very stiff, no product odor)
18					
		0	D 50+	CL	Tan-white mottled silty clay (Wet, very stiff, no product odor, some pebbles, caliche)
20					End of boring, installed monitoring well (1340 hours)
22					
24					

GROUNDWATER TECHNOLOGY, INC.

Monitoring Well 8

Drilling Log

Project GERBER/OAKLAND Owner GERBER PRODUCTS
Location OAKLAND, CALIFORNIA Project Number 203-799-5049
Date Drilled 5/19/88 Total Depth of Hole 20 FT Diameter 7.5 IN
Surface Elevation ____ Water Level Initial 9 FT 24-hour ____
Screen: Dia. 2 IN Length 13 FT Slot Size 0.020 IN
Casing: Dia. 2 IN Length 7 FT Type PVC
Drilling Company KVILHAUG Drilling Method HSA
Driller CHRIS PRUNER Log by BRUCE EPPLER
Geologist / Engineer ____ License No. ____

Sketch Map

Notes:

Depth (ft)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					4 inches of asphalt over 6 inches base course
2				CL	Tan silty clay (Moist, no product odor)
4				CL	(Grades dark brown–black clay)
6		0	A 5 8 9	SC	(Grades sandy gravelly)
8		500	B 9 14 7	CL	7" color change to blue–grey (Grades tan–grey mottled silty clay) (Moist, strong product odor, very stiff)
10		500	C 8 12 11		▼ Encountered water 5/19/88 (1039 hours) (Grades with strong product odor)
12		1000+	D 10 10 12	SC	Tan–grey mottled sandy gravelly clay (Very strong product odor, wet, medium dense)
14		NS	E	SC	Tan–grey mottled silty fine sandy clay (Wet rootlets) (Grades clayey)
16					
18		NS		CL	
20		NS			End of boring, installed monitoring well (1100 hours)
22					
24					

6/88 REV. 0

15920

Equipment 6" Hollow Stem Auger

Elevation 19.2 ft Date 8/3/89

Depth (ft) Sample	Blow/ft	OVA (ppm)	
0			4" asphalt BROWN AND BLACK MOTTLED SANDY CLAY (CL) soft, moist
	21	20	becoming black, stiff, moist
5	32	30	
			DARK GRAY SAND (SP) medium dense, moist, medium-grained, slight hydrocarbon odor
	32		DARK GRAY CLAY (CL) stiff, moist, slight white staining, strong hydrocarbon odor
10		700	Bottom of boring at 10.0 ft
15			

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring
Gerber Products Company
Oakland, California

PLATE
A-1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459.001.02	JDS	11/89	

15921

Equipment 6" Hollow Stem Auger

Elevation 19.2 ft Date 8/3/89

Depth (ft) Sample	Blows/ft	OVA (ppm)	
0			4" asphalt SANDY GRAVEL SUB-BASE (Fill) loose, dry BLACK SILTY CLAY (CL) medium stiff, moist
	20		color change to dark gray and brown mottled, stiff, moist
5	30	1	GRAY CLAYEY SAND (SC) stiff, moist, fine- to medium-grained sand
	25	200	GRAY AND BROWN MOTTLED SILTY CLAY (CL) very stiff, moist, strong hydrocarbon odor
10			becoming wet
15	22	650	strong hydrocarbon odor
	12		
20			BROWN AND GRAY MOTTLED CLAYEY SILT (ML) soft, wet bottom of boring at 19.5 ft

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring [redacted]
Gerber Products Company
Oakland, California

PLATE A-2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459, 001.02	JDS	11/89	

15922

Equipment 6" Hollow Stem Auger

Elevation 19.2 ft Date 8/3/89

Blows/Ft	OVA (ppm)	Depth (ft)	Sample	
		0		4" asphalt BROWN AND GRAY GRAVELLY SANDY CLAY (CL)
19	400			becoming black silty clay, stiff, moist, minor 1/4" diameter gravel
		5		
35	20			GRAY SAND (SP) loose, moist, predominantly fine-grained GRAY SANDY CLAY (CL) stiff, moist, predominantly fine-grained sand
26	650			becoming gray and brown mottled silty clay
		10		
		15		
36	1			bottom of boring at 16.5 ft
		20		

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring [redacted]
Gerber Products Company
Oakland, California

PLATE A-3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459,001.02	JDS	11/89	

15923

Equipment 6" Hollow Stem Auger

Elevation 19.2 ft Date 8/3/89

Blows/Ft	OVA (ppm)	Depth (ft) Sample	
		0	4" asphalt BLACK SANDY CLAY (CL) loose, moist
			becoming black silty clay
35	400	5	color change to dark gray, very stiff, moist increasing fine-grained sand
22	1000	10	becoming brown and gray mottled sandy clay, stiff, moist. [redacted] odor strong hydrocarbon odor
14	0	15	wet, no hydrocarbon odor
			bottom of boring at 16.5 ft
		20	

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring [redacted]
Gerber Products Company
Oakland, California

PLATE A-4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459, 001.02	JPS	11/89	

15924

Equipment: 6" Hollow Stem Auger

Elevation 19.2 ft Date 8/3/89

Depth (ft) Sample	Blows/Ft	OVA (ppm)	
0			4" asphalt BLACK SANDY CLAY (CL) loose, moist
5	30	200	color change to gray, 20% fine- to medium-grained sand
10	22	400	becoming wet, 10% fine-grained sand, strong hydrocarbon odor
15	20	0	medium stiff, wet, no hydrocarbon odor
20			bottom of boring at 16.5 ft

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring
Gerber Products Company
Oakland, California

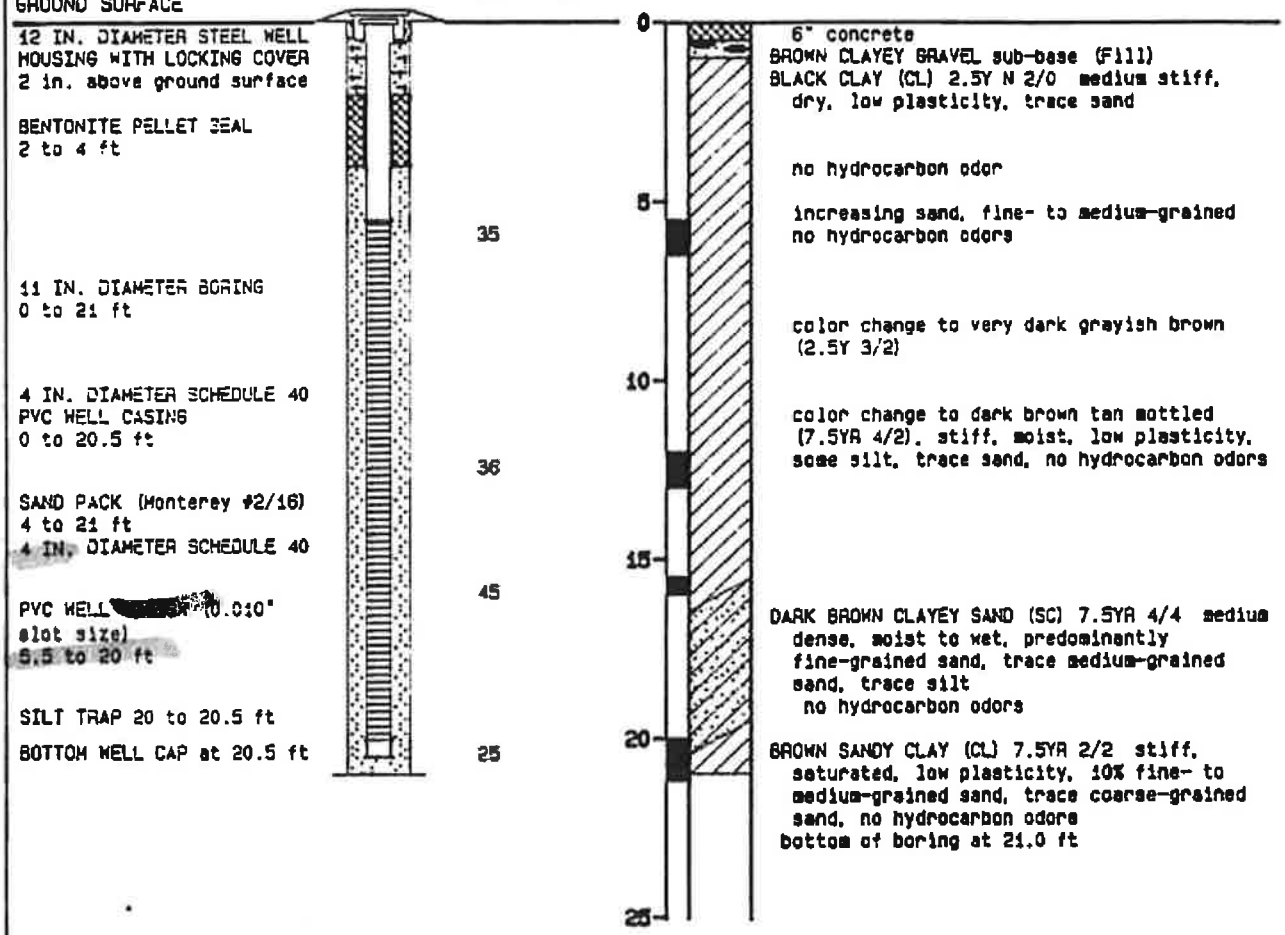
PLATE
A-5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459, 001.02	JDS	11/89	

15926

Top of PVC Casing
Elevation 17.60 ft

Equipment 11" Hollow Stem Auger
Elevation 40.0 ft Date 8/4/89



Harding Lawson Associates
Engineering and Environmental Services

Log of Boring and Well Completion Detail PLATE

Gerber Products Company
Oakland, California

A-7

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459, 001.02		11/89	

.15927

Top of PVC Casing Elevation 18.36 ft

GROUND SURFACE

12 IN. DIAMETER STEEL WELL HOUSING WITH LOCKING COVER 2 in. above ground surface

BENTONITE PELLET SEAL 2 to 4 ft

11 IN. DIAMETER BORING 0 to 21 ft

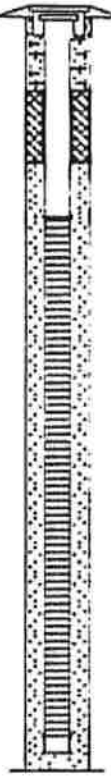
4 IN. DIAMETER SCHEDULE 40 PVC WELL CASING 0 to 20.5 ft

SAND PACK (Monterey #2/16) 4 to 21 ft

4 IN. DIAMETER SCHEDULE 40 PVC WELL SCREEN (0.010" slot size) 5.5 to 20 ft

SILT TRAP 20 to 20.5 ft

BOTTOM WELL CAP at 20.5 ft



Blows/foot	OVA (ppm)	Depth (ft)	Sample
		0	
40		5	
37		10	
31		15	
53		20	
		25	

Equipment 11" Hollow Stem Aug.

Elevation 40.0 ft Date 8/4/89

9" concrete
GRAVEL sub-base (Fill)

VERY DARK GRAY CLAY (CL) 7.5YR 3/0 medium stiff, moist, low plasticity
no hydrocarbon odor

no hydrocarbon odor

color change to very dark grayish brown (10YR 3/2)

color change to olive gray (5Y 4/2), stiff, moist, no hydrocarbon odor

BROWN CLAYEY SAND (SC) 7.5YR 5/4 stiff, moist, very fine- to fine-grained sand, trace coarse sand, some silt
no hydrocarbon odor

increasing silt, saturated
BROWN SAND (SP) poorly graded, saturated, medium-grained, minor silt, some fine gravel, no hydrocarbon odors
bottom of boring at 21.0 ft

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Engineering and Environmental Services

Log of Boring and Well Completion Detail MW-10

Gerber Products Company
Oakland, California

PLATE **A-8**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459, 001.02	JPS	11/89	

15925

Equipment 6" Hollow Stem Auger

Elevation 19.2 ft Date 10/5/89

Blows/Ft	OVA (ppm)	Depth (ft)	Sample	
		0		4" asphalt
				BROWN SANDY CLAY (CL) loose to firm, moist, fine- to medium-grained sand
		5		decrease in sand
30	2			color change to dark brown, medium stiff to stiff, moist, trace silt
		10		becoming wet
	110			
16	300			color change to gray green and brown mottled, medium stiff, wet to saturated, strong hydrocarbon odor
		15		
12	15			BROWN CLAYEY SILT (ML) stiff, wet, no hydrocarbon odor
13	0			
	0			
		20		bottom of boring at 18.5 ft

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Log of Boring [redacted]
Gerber Products Company
Oakland, California

PLATE A-6

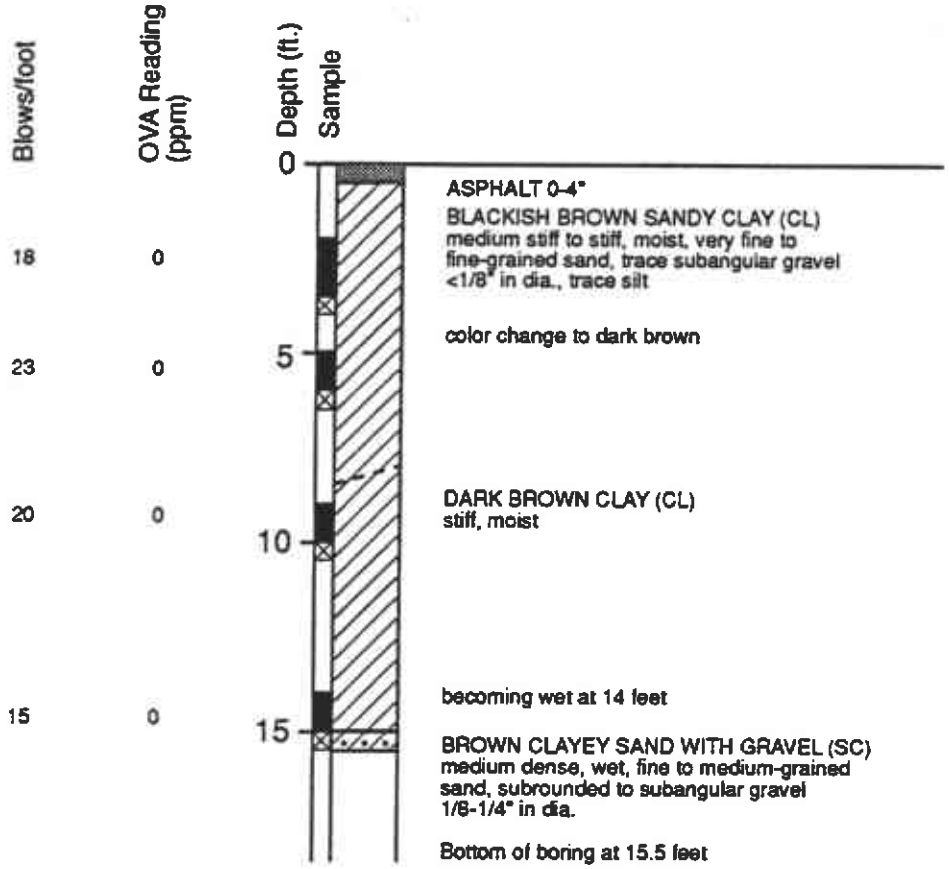
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	19459, 001.02	[signature]	11/89	

21381

Log of Boring SB-1

Equipment 4" Solid Flight Auger

Date 1/17/91



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Log of Boring SB-1
Gerber Products
Oakland, California

PLATE **A-1**

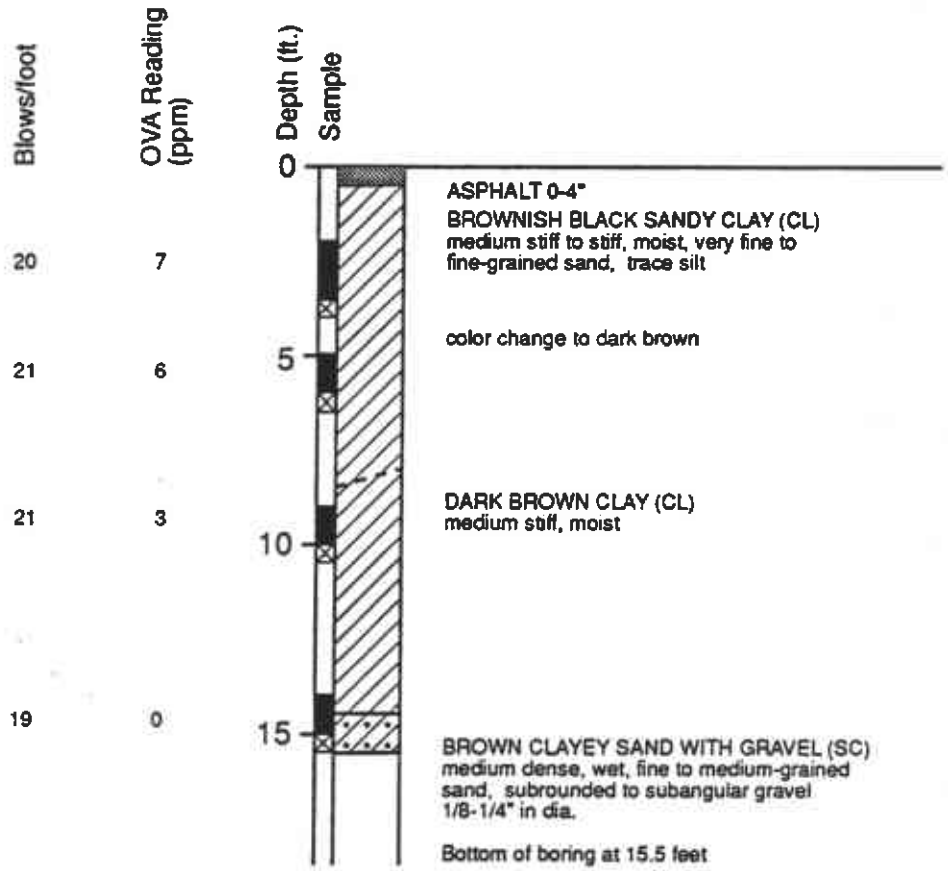
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CSNc	19459,001.02	PEP	3/91	

21382

Log of Boring SB-2

Equipment 4" Solid Flight Auger

Date 1/17/91



Harding Lawson Associates
Engineering and Environmental Services

Log of Boring SB-2
Gerber Products
Oakland, California

PLATE
A-2

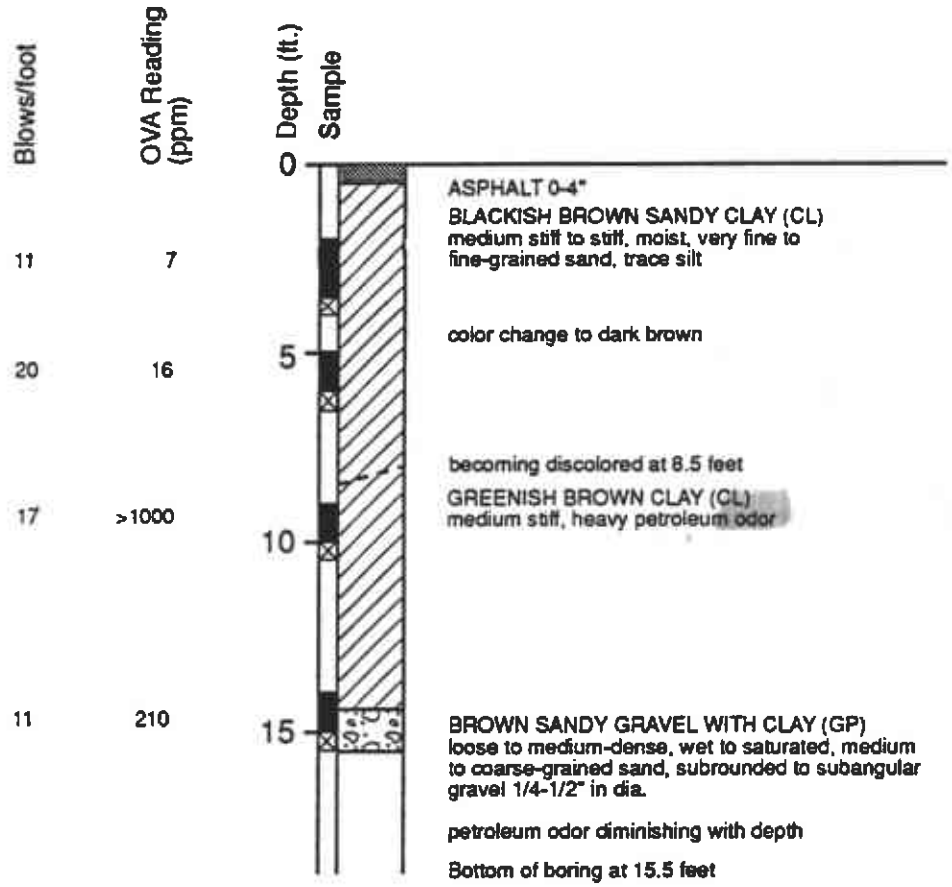
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CSNc	19459,001.02	JCP	3/91	

21383

Log of Boring SB-3

Equipment 4" Solid Flight Auger

Date 1/17/91



Harding Lawson Associates
Engineering and Environmental Services

Log of Boring SB-3
Gerber Products
Oakland, California

PLATE
A-3

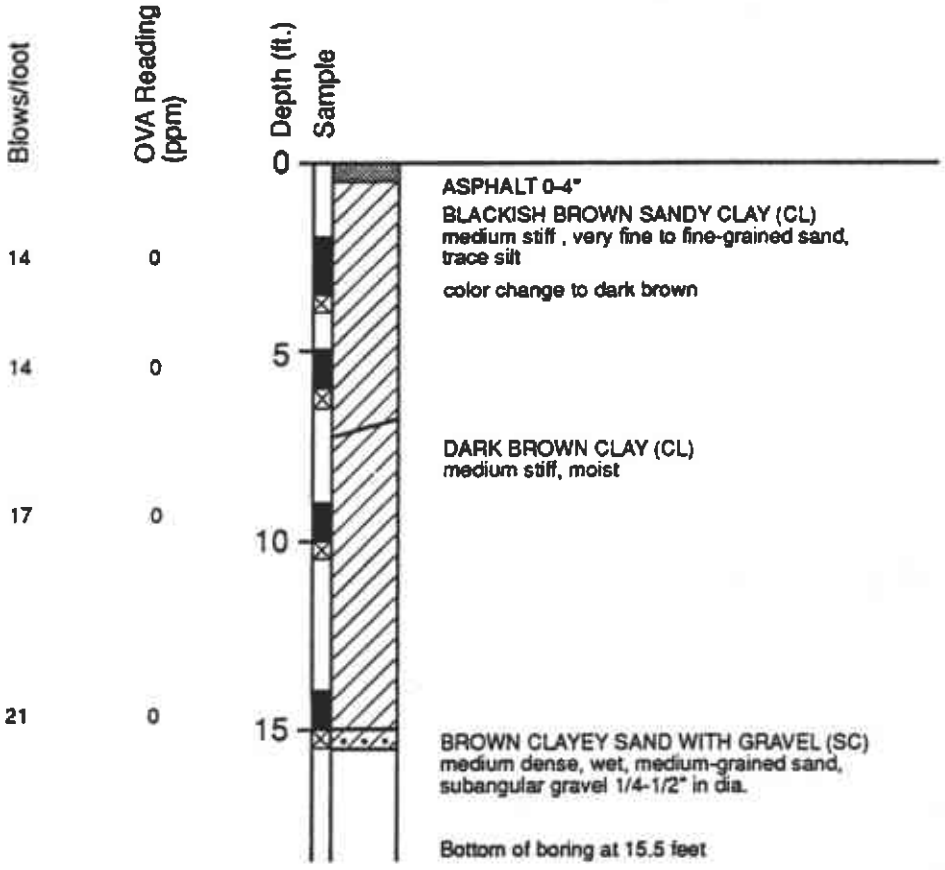
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CSNc	19459,001.02	~ cg	3/91	

21384

Log of Boring SB-4

Equipment 4" Solid Flight Auger

Date 1/17/91



Harding Lawson Associates
Engineering and Environmental Services

Log of Boring SB-4
Gerber Products
Oakland, California

PLATE
A-4

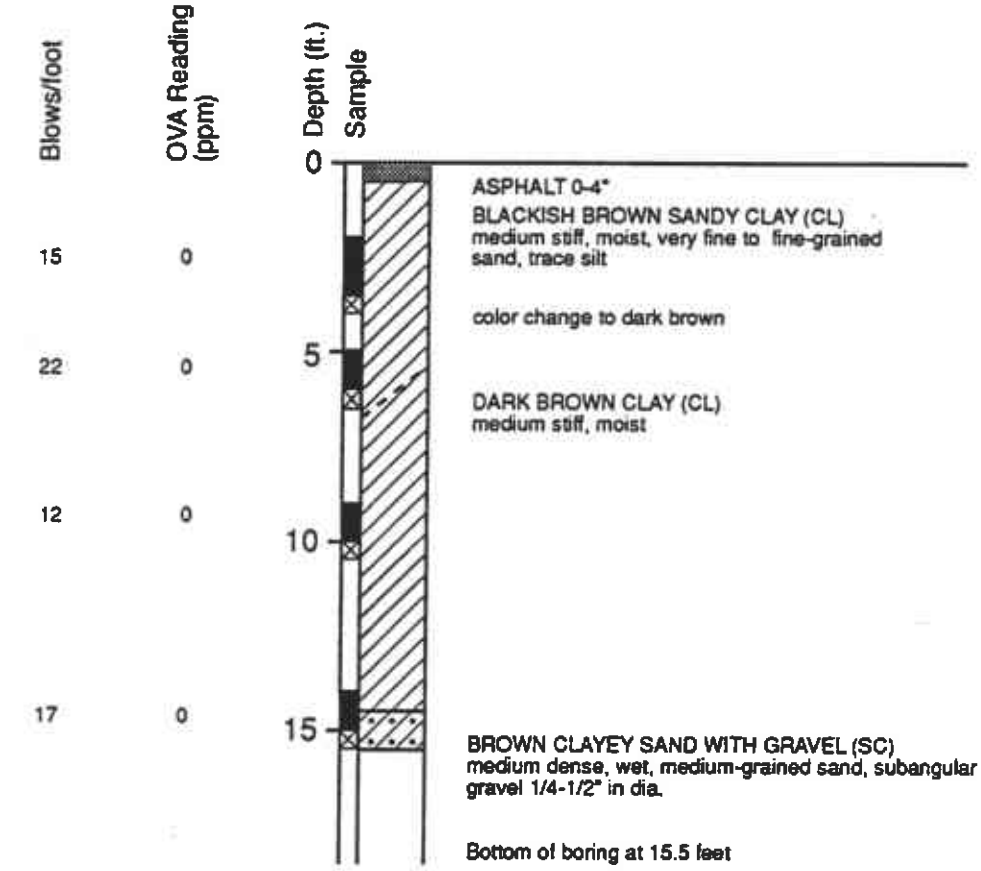
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CSNc	19459,001.02	RCP	3/91	

21385

Log of Boring SB-5

Equipment 4" Solid Flight Auger

Date 1/17/91



Harding Lawson Associates
Engineering and Environmental Services

Log of Boring SB-5
Gerber Products
Oakland, California

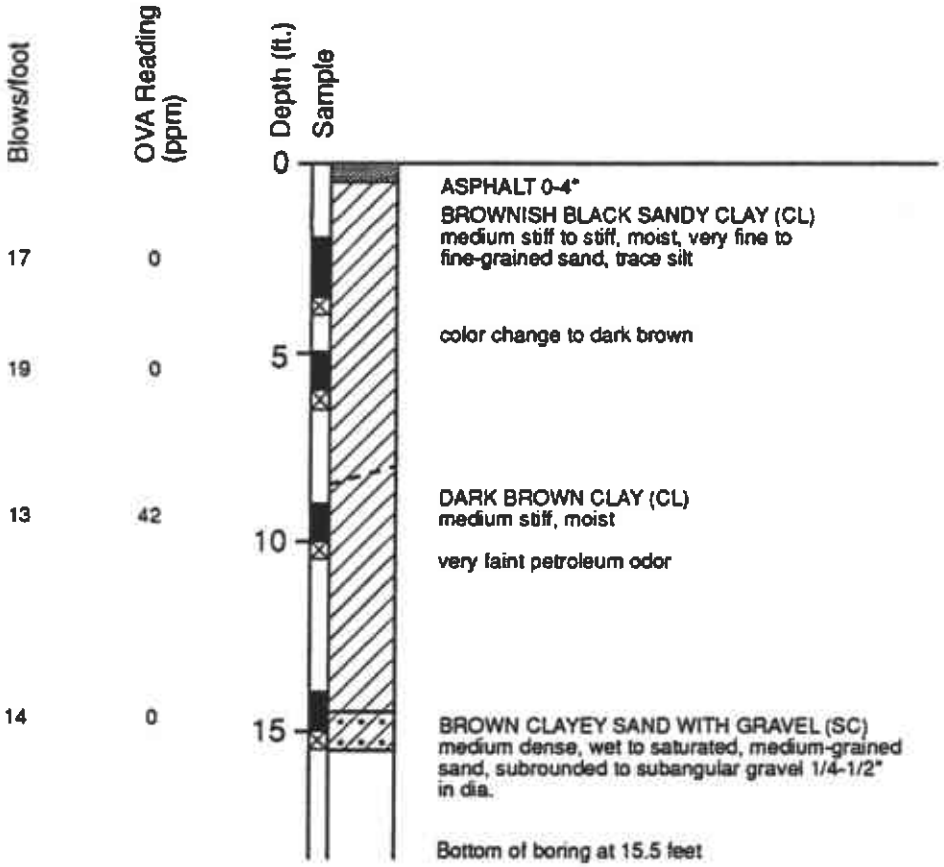
PLATE
A-5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CSNc	19459,001.02		3/91	

Log of Boring SB-6

Equipment 4" Solid Flight Auger

Date 1/17/91



Harding Lawson Associates
Engineering and Environmental Services

Log of Boring SB-6
Gerber Products
Oakland, California

PLATE
A-6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CSNc	19459,001.02		3/91	

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-1

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial 14.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-55
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/02/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						3" asphalt.
2						Sandy silty CLAY (10,20,70): greenish gray, plastic, slightly damp, no hydrocarbon odor.
4					CL	
6	6	SB-1 -6'	3 6 10			
8						Silty CLAY (20,80): greenish gray, slightly plastic, moist, soft, hydrocarbon odor.
10	934	SB-1 -11'	4 4 7		CL	
12						
14					CL	Silty CLAY (30,70): light yellowish brown, plastic, wet, no hydrocarbon odor, with trace fine SAND, stiff, trace blue green mottling.
16	0	SB-1 -16'	6 8 11			*Encountered Water, 04/02/96 1135 hrs.*
18						End of Boring.
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-2

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-55
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/01/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0					GM	Asphalt. Backfill.
2						Sandy CLAY (20,80): dark gray, damp, slightly stiff, no hydrocarbon odor.
4					CL	
6	3	SB-2 -6'	3 5 7			
8					ML	Clayey SILT (30,70): greenish gray, hydrocarbon odor.
10	79	SB-2 -11'	3 4 7			
12						End of Boring.
14						
16						
18						
20						
22						
24						

05/09/1996 lithlog-dec.,93

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-3

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial 14.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-45
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/01/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

North end of site.

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0					GM	3" asphalt. Backfill to 1". CLAY with traces silt: black, plastic, damp.
4	1	SB-3 -6'	3 5 9		CL	Sandy silty CLAY (20,20,60): dark gray, plastic, slightly damp, no hydrocarbon odor.
8						Clayey SILT (50,50): greenish gray, very moist, soft, moderate hydrocarbon odor.
10	725	SB-3 -11'	3 5 8		ML/CL	
12						Clayey SILT (30,70): greenish gray, moist, no hydrocarbon odor.
14						*Encountered Water, 04/01/96 1015 hrs.*
16	5	SB-3 -16'	6 7 11		ML	(grades yellowish brown) End of Boring.
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-4

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-55
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date 04/01/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GM	Asphalt. Backfill.
2					SW	Fine SAND.
4						
6	39	SB-4 -6'	1 2 1			CLAY: Very dark gray, damp, very soft, hydrocarbon odor.
8						
10	277	SB-4 -11'	4 4 7		CL	Silty CLAY (30,70): greenish gray, very plastic, slightly stiff, hydrocarbon odor.
12						
14						Pebbly, sandy, silty CLAY (10,20,30,40): yellow-brown, with greenish gray staining, hydrocarbon odor.
16	23	SB-4 -16'	5 7 7		CL	End of Boring.
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-5

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter 8 1/4 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-55
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/01/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0					GM	Asphalt. Backfill.
4	2	SB-5 -6'	4 5 7			Sandy silty CLAY (15,15,70): dark gray, plastic, slight hydrocarbon odor.
8					CL	
10	137	SB-5 -11'	1 5 7			Silty CLAY (30,70): greenish gray, plastic, hydrocarbon odor.
14	13	SB-5 -16'	4 10 15			Pebbly, sandy, silty CLAY (10,20,30,40): yellowish brown with greenish gray mottling, plastic, moist, hydrocarbon odor.
16						End of Boring.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-6

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial 14 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-45
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date 04/04/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GC	Asphalt.
2						Fill.
4					CL	Sandy CLAY (30,70): very dark gray, plastic, no hydrocarbon odor.
6	7	SB-6 -6'	3 6 9			
8						Clayey SILT (50,50): dark greenish gray, damp to moist, soft, hydrocarbon odor.
10	2510	SB-6 -11'	4 5 7		ML/CL	
12						
14						*Encountered Water, 04/04/96*
16	0	SB-6 -16'	7 7 7		SC	Clayey silty fine SAND (20,30,50): trace gravel clasts, well rounded, wet, no hydrocarbon odor.
18						End of Boring.
20						
22						
24						

Drilling Log

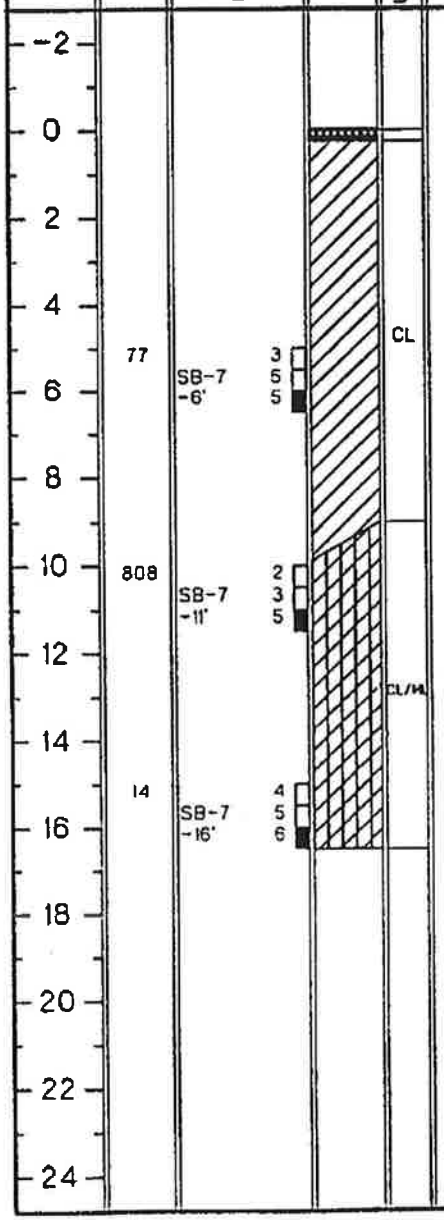
GROUNDWATER TECHNOLOGY

Soil Boring SB-7

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-45
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/01/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Asphalt.

Gravelly sandy CLAY (10,30,60): greenish gray, wet, soft, no hydrocarbon odor.

Silty CLAY (40,60): greenish gray, root casts, slightly plastic, damp, soft, strong hydrocarbon odor.

Pebbly, sandy, silty CLAY (20,20,30,30): greenish gray.

End of Boring.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-8

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. _____ Total Hole Depth 16.5 ft. Diameter _____
Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material Neat Cement Rig/Core CME-45
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date 04/01/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt.
2						Sandy CLAY (30,70): black, plastic, moist, stiff.
4					CL	
6	MAX	SB-8 -6'	3 4 8			(strong hydrocarbon odor)
8						Silty CLAY (30,70): dark greenish gray, moist, [illegible] product.
10	MAX	SB-8 -11'	4 5 6		CL	
12						Gravelly clayey SAND (10,30,60): dark greenish gray, wet, loose, poorly sorted, hydrocarbon odor.
14					SC	
16	19	SB-8 -16'	5 6 8		CL	Silty CLAY (40,60): greenish gray, plastic, stiff, hydrocarbon odor.
18						End of Boring.
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-9

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ — Total Hole Depth 16.5 ft. — Diameter ____
Top of Casing ____ — Water Level Initial ____ — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material Neat Cement — Rig/Core CME-45
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/01/96 — Permit # 98218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GM	Asphalt over base course.
2					GW	GRAVEL.
4						Fine sand backfill: black, wet, hydrocarbon odor.
6	148	SB-9 -6'	3 4 3		SW	
8						Silty CLAY (40,60): greenish gray, plastic, wet, soft, strong hydrocarbon odor.
10	190	SB-9 -11'	3 4 6		CL/ML	
12						Clayey, pebbly, silty SAND (10,20,20,50): greenish gray, wet, soft, no hydrocarbon odor.
14					SM	
16	4	SB-9 -16'	5 5 6			End of Boring.
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-10

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial 14 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-45
Drill Co. BAEC Method Hollow Stem Auger
Driller Donny Log By Terry James Date 04/04/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GC	Asphalt.
2						Fill.
4						Sandy CLAY (30,70): dark gray, plastic, slightly damp, soft, hydrocarbon odor.
6	2588	SB-10 -6'	3 4 6		CL	
8						
10	2462	SB-10 -11'	4 5 6		ML/CL	Clayey SILT (50,50): dark greenish gray, slightly plastic, moist, soft, hydrocarbon odor.
12					SC	Gravelly clayey SAND (20,30,50): dark greenisg gray, wet, poorly sorted.
14						*Encountered Water, 04/04/96*
16	19	SB-10 -16'	3 6 9		CL	Silty CLAY (20,80): dark greenish gray, plastic, slightly moist, stiff, no hydrocarbon odor.
18						End of Boring.
20						
22						
24						

Drilling Log

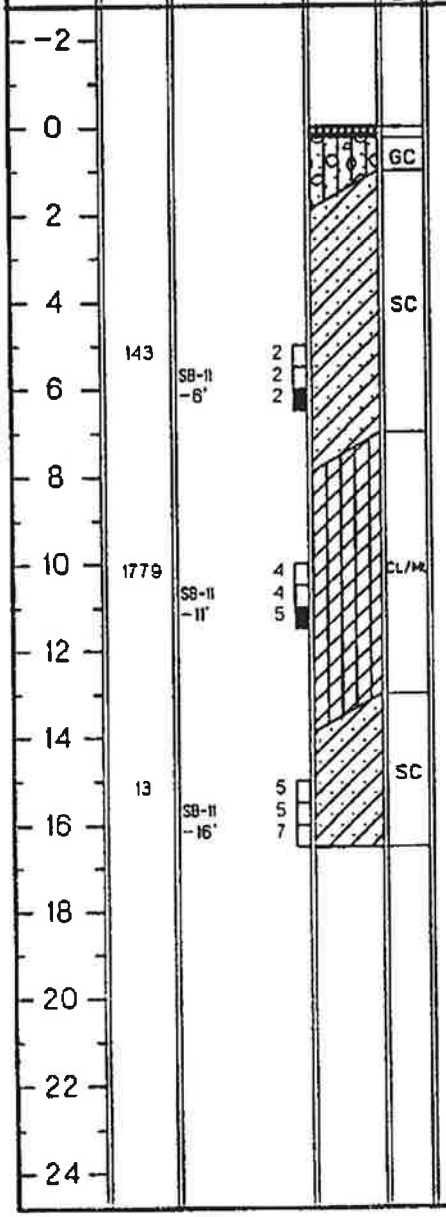
GROUNDWATER TECHNOLOGY

Soil Boring SB-11

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-55
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date ____ — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Asphalt.

Gravelly clayey medium to coarse SAND (20,30,50): black, slightly plastic, moist, soft, hydrocarbon odor.

Sandy silty CLAY (10,40,50): dark greenish gray, plastic, moist, soft, strong hydrocarbon odor.

Clayey silty SAND (20,20,60): trace fine gravel, dark greenish gray, wet, soft, no hydrocarbon odor.

End of Boring.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-12

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 16.5 ft. Diameter ____
Top of Casing ____ Water Level Initial 14 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-55
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date 04/03/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0					GC	Asphalt. Sandy CLAY (30,70): dark gray, plastic, slightly damp, faint hydrocarbon odor.
4	167	SB-12 -6'	3 5 9		CL	
8					ML/CL	Clayey SILT (50,50): dark greenish gray, slightly plastic, moist, soft, strong hydrocarbon odor.
10	958	SB-12 -11'	3 4 5			
12					SP	Silty fine to medium SAND: greenish gray, wet, soft. Redrilled to 15' on 04/04/96 adjacent to SB-12 drilled 04/03/96. *Encountered Water, 04/03/96*
16	9	SB-12 -16'	3 6 8		ML	Clayey SILT (30,70): greenish gray, plastic, wet, slightly stiff, no hydrocarbon odor.
18						End of Boring.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-13

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-45
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/03/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt.
2						Silty CLAY (20,80): green gray to black, stiff to slightly stiff, slightly damp.
4					CL	
6	4	SB-13 -6'	4 6 10			
8						Clayey SILT (40,60): dark greenish gray, slightly plastic to plastic, moist, soft, strong hydrocarbon odor.
10	1752	SB-13 -11'	3 4 6		ML/CL	
12						End of Boring.
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-14

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-55
Drill Co. BAEC Method Hollow Stem Auger
Driller Donny Log By Terry James Date 04/04/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GC	Asphalt over base course.
2						Sandy CLAY (30,70): very dark gray, plastic, slightly damp, stiff, hydrocarbon odor.
4						
6	276	SB-14 -6'	4 6 9		CL	
8						
10	1953	SB-14 -11'	3 5 6		ML/CL	Silty CLAY (40,60): dark greenish gray, slightly plastic, moist, soft.
12						End of Boring.
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-15

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-55
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/03/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt.
2						Silty CLAY (20,80): black, plastic, slightly damp, slightly stiff, faint hydrocarbon odor.
4						
6	351	SB-15 -6'	3 5 9		CL	
8						
10	2215	SB-15 -11'	3 4 6		CL	Clayey SILT (40,60): dark greenish gray, slighlty plastic, moist, soft, strong hydrocarbon odor.
12						End of Boring.
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-16

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. — Diameter ____
Top of Casing ____ Water Level Initial ____ — Static ____
Screen: Dia ____ Length ____ — Type/Size ____
Casing: Dia ____ Length ____ — Type ____
Fill Material Neat Cement — Rig/Core CME-45
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date ____ — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt, backfill SAND: green, very strong odor.
2					SM	
4						Silty CLAY (30,70): greenish black, plastic, damp, hydrocarbon odor.
6	80	SB-16 -6'	2 5 10		CL	
8						Clayey SILT (40,60): dark greenish gray, moist, strong hydrocarbon odor.
10	1219	SB-16 -11'	4 6 8		ML/CL	
12						End of Boring.
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-17

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-45
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/03/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt.
2						Silty CLAY (20,80): dark green gray, plastic, damp, slight hydrocarbon odor.
4					CL	
6	2	SB-17 -6'	5 7 8			
8						Clayey SILT (40,60): dark greenish gray, slightly plastic, moist, strong hydrocarbon odor.
10	1320	SB-17 -11'			ML/CL	
12						End of Boring.
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-18

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-45
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date 04/04/96 — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt.
2						Sandy CLAY (40,60): greenish black, plastic, slightly damp, no hydrocarbon odor.
4						
6	7	SB-18 -6'	4 5 7		CL	
8						
10	1440	SB-18 -11'	4 6 7		CL/ML	Silty CLAY (40,60): dark greenish gray, slightly plastic, moist, strong hydrocarbon odor.
12						End of Boring.
14						
16						
18						
20						
22						
24						

Drilling Log

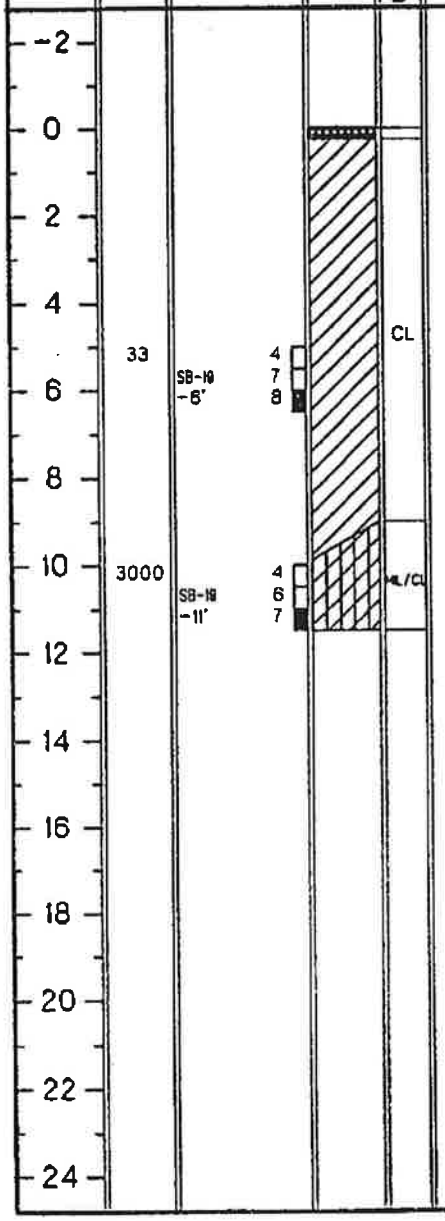
GROUNDWATER TECHNOLOGY

Soil Boring SB-19

Project Chevron - Oakland — Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA — Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement — Rig/Core CME-55
Drill Co. BAEC — Method Hollow Stem Auger
Driller Scott Fitche — Log By Terry James — Date ____ — Permit # 96218
Checked By Ed Simonis — License No. RG#4422

See Site Map For Boring Location

COMMENTS:



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Asphalt.

Silty CLAY (30,70): very dark gray, plastic, damp, stiff.

Clayey SILT (50,50): greenish gray, slightly plastic, moist, soft, strong hydrocarbon odor.

End of Boring.

Drilling Log

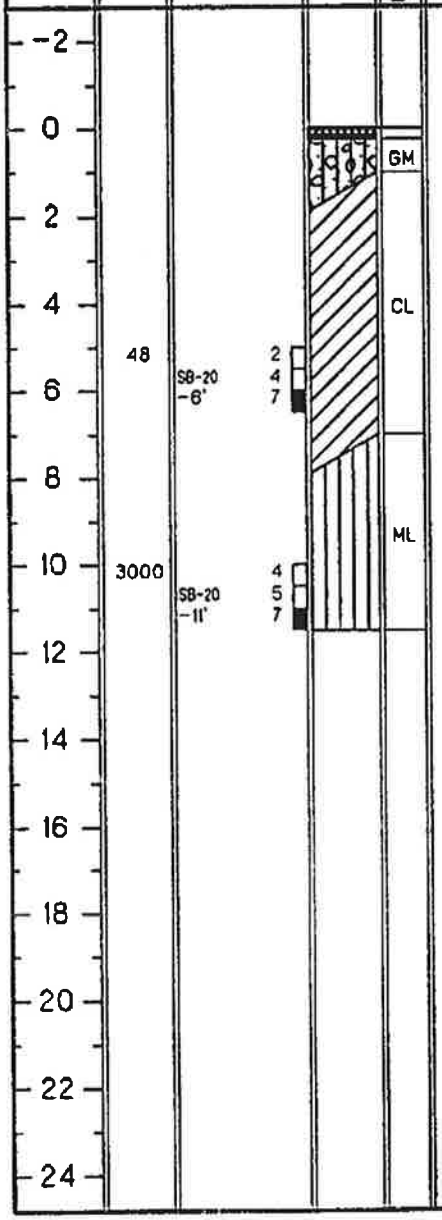
GROUNDWATER TECHNOLOGY

Soil Boring SB-20

Project Chevron – Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-55
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date ____ Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Asphalt. Peagravel backfill, wet, free water.

Silty CLAY (30,70): very dark gray, plastic, wet, stiff.

Silty CLAY (40,60): greenish gray, plastic, wet, soft, strong hydrocarbon odor.

End of Boring.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-21

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 6.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-45
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date 04/02/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt.
2						Sandy silty CLAY (10,20,70): dark gray, plastic, damp, slightly stiff, no hydrocarbon odor.
4					CL	
6	2	SB-21 -6'	3 7 8			End of Boring.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-22

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 8757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. ____ Total Hole Depth 11.5 ft. Diameter ____
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material Neat Cement Rig/Core CME-45
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date 04/02/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GM	Asphalt over base course.
2						Clayey, silty, fine SAND (30,30,40): very dark green gray, stiff, degraded hydrocarbon odor.
4					SC	
6	557	SB-22 -6'	3 7 10			
8						(grades sandy silty CLAY (20,30,50))
10	654	SB-22 -11'	3 4 7		CL	
12						End of Boring.
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-23

Project Chevron - Oakland Owner Chevron U.S.A. Products Company
Location 9757 San Leandro Boulevard, Oakland, CA Proj. No. 02070 0080
Surface Elev. _____ Total Hole Depth 11.5 ft. Diameter _____
Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material Neat Cement Rig/Core CME-55
Drill Co. BAEC Method Hollow Stem Auger
Driller Scott Fitche Log By Terry James Date 04/02/96 Permit # 96218
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt.
2						Silty CLAY (40,60): dark green gray, plastic, damp, stiff.
4					CL	
6	17	SB-23 -6'	4 8 10			
8						(grades silty CLAY (20,80): gray)
10	216	SB-23 -11'	2 4 6		CL	
12						End of Boring.
14						
16						
18						
20						
22						
24						

Conestoga-Rovers & Associates
10969 Trade Center Drive Suite 107
Rancho Cordova, CA 95670
Telephone: (916) 889-8900
Fax: (916) 889-8999

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	VP-1
JOB/SITE NAME	9-1723	**DRILLING STARTED**	24-Jun-10
LOCATION	9757 San Leandro Street, Oakland, California	**DRILLING COMPLETED**	24-Jun-10
PROJECT NUMBER	610675	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	PeneCore Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand-auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3.25-inch	**SCREENED INTERVAL**	5.25 to 5.75 fbg
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	J. Kiernan, PE# C68498	**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
				0			**4" Asphalt**	0.3	1/4"-inner diam. Nylaflow® tubing
				1	GM		**AGGREGATE BASE: Silty GRAVEL with sand:** Brown; moist; 3/4 - 1 inch gravel.		Concrete
								1.5	Portland Type I/II
3.1				2			**CLAY:** Grey; moist; high estimated plasticity.		
3.7				3					Bentonite Seal
				4	CH				
17.2		VP-1- 5		5					3" Dry Granular Bentonite
									1"-diam., 0.010" Slotted Schedule 40 PVC
11.4				6				6.0	Monterey Sand #2/12 Bottom of Boring @ 6 fbg

WELL LOG (PID) I:\PROJEC~2\6-CHAR\61----\6106--\6106756106675--2\6106675-BORING LOGS.GPJ DEFAULT.GDT 11/29/10

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10969 Trade Center Drive Suite 107
Rancho Cordova, CA 95670
Telephone: (916) 889-8900
Fax: (916) 889-8999

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	VP-2
JOB/SITE NAME	9-1723	**DRILLING STARTED**	24-Jun-10
LOCATION	9757 San Leandro Street, Oakland, California	**DRILLING COMPLETED**	24-Jun-10
PROJECT NUMBER	610675	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	PeneCore Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand-auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3.25-inch	**SCREENED INTERVAL**	5.25 to 5.75 fbg
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	NA ▽
REVIEWED BY	J. Kieman, PE# C68498	**DEPTH TO WATER (Static)**	NA ▼
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							8" Concrete	0.3	1/4"-inner diam. Nylaflow® tubing; Concrete
				1	SC		**FILL: Clayey SAND with gravel:** Dark grey; moist; 3/4 - 1 inch gravel.		
							Sandy CLAY: Grey; moist; high estimated plasticity.	1.5	Portland Type I/II
275		VP-2- 3		2	CH				
				3			**CLAY:** Grey; moist; high estimated plasticity.	3.0	Bentonite Seal
412		VP-2- 4		4					
233		VP-2- 5		5	CH				3" Dry Granular Bentonite; 1"-diam., 0.010" Slotted Schedule 40 PVC
753		VP-2- 6		6			Brown mottling.	6.0	Monterey Sand #2/12; Bottom of Boring @ 6 fbg

WELL LOG (PID) I:\PROJEC~2\6-CHAR\61----\6106~1\610675\610675~2\610675-BORING LOGS.GPJ DEFAULT.GDT 11/29/10

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10969 Trade Center Drive Suite 107
Rancho Cordova, CA 95670
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BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	VP-3
JOB/SITE NAME	9-1723	**DRILLING STARTED**	24-Jun-10
LOCATION	9757 San Leandro Street, Oakland, California	**DRILLING COMPLETED**	24-Jun-10
PROJECT NUMBER	610675	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	PeneCore Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand-auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3.25-inch	**SCREENED INTERVAL**	5.25 to 5.75 fbg
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	J. Kiernan, PE# C68498	**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							4" Asphalt	0.3	1/4"-inner diam. Nylaflow® tubing; Concrete
				1	GM		**AGGREGATE BASE: Silty GRAVEL with sand:** Brown; moist; 3/4 - 1 inch gravel.	1.5	Portland Type I/II
221		VP-3- 2		2			**CLAY:** Grey; moist; high estimated plasticity.		
103		VP-3- 3.5		3	CH				Bentonite Seal
412		VP-3- 5		4					
				5					3" Dry Granular Bentonite; 1"-diam., 0.010" Slotted Schedule 40 PVC
719		VP-3- 6		6				6.0	Monterey Sand #2/12; Bottom of Boring @ 6 fbg

WELL LOG (PID) I:\PROJEC~2\6-CHAR\61---\6106~1\610675\610675~2\610675-BORING LOGS.GPJ DEFAULT.GDT 11/29/10

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10969 Trade Center Drive Suite 107
Rancho Cordova, CA 95670
Telephone: (916) 889-8900
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BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	VP-4
JOB/SITE NAME	9-1723	**DRILLING STARTED**	24-Jun-10
LOCATION	9757 San Leandro Street, Oakland, California	**DRILLING COMPLETED**	24-Jun-10
PROJECT NUMBER	610675	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	PeneCore Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand-auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3.25-inch	**SCREENED INTERVAL**	5.25 to 5.75 fbg
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	J. Kieman, PE# C68498	**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							4" Asphalt	0.3	1/4"-inner diam. Nylaflow® tubing
				1	GM		**AGGREGATE BASE: Silty GRAVEL with sand:** Brown; moist; 3/4 - 1 inch gravel.		Concrete
								1.5	Portland Type I/II
30.5				2			**CLAY:** Grey; moist; high estimated plasticity.		
57				3	CH				Bentonite Seal
639		VP-4- 5		4					
				5					3" Dry Granular Bentonite
896		VP-4- 6							1"-diam., 0.010" Slotted Schedule 40 PVC
				6				6.0	Monterey Sand #2/12 Bottom of Boring @ 6 fbg

WELL LOG (PID) I:\PROJEC~2\6-CHAR\61----\6105--\610675\610675-2\610675-BORING LOGS.GPJ DEFAULT.GDT 11/29/10

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10969 Trade Center Drive Suite 107
Rancho Cordova, CA 95670
Telephone: (916) 889-8900
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BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	VP-5
JOB/SITE NAME	9-1723	**DRILLING STARTED**	24-Jun-10
LOCATION	9757 San Leandro Street, Oakland, California	**DRILLING COMPLETED**	24-Jun-10
PROJECT NUMBER	610675	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	PeneCore Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand-Auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3.25-inch	**SCREENED INTERVAL**	5.25 to 5.75 fbg
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	J. Kiernan, PE# C68498	**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							4" Asphalt	0.3	1/4"-inner diam. Nylaflow® tubing
				1	GM		**AGGREGATE BASE: Silty GRAVEL with sand:** Brown; moist; 3/4 - 1 inch gravel.		Concrete
								1.5	Portland Type I/II
6.1				2			**CLAY:** Grey; moist; high estimated plasticity.		
1.2				3	CH				Bentonite Seal
6.6		VP-5- 5		4					
				5					3" Dry Granular Bentonite
22.5									1"-diam., 0.010" Slotted Schedule 40 PVC
				6				6.0	Monterey Sand #2/12
									Bottom of Boring @ 6 fbg

WELL LOG (PID) I:\PROJEC~2\6-CHAR\61----\6106~\610675\610675~2\610675-BORING LOGS.GPJ DEFAULT.GDT 11/29/10

APPENDIX D
Historical Groundwater Monitoring Data and Analytical Results

Table 2. Summary of Chemical Results from Ground-water Samples

WELL NUMBER	SAMPLING DATE	TPH (GASOLINE) mg/l	BENZENE ug/l	TOLUENE ug/l	ETHYL BENZENE ug/l	XYLENES, TOTAL ug/l	OTHER DETECTABLE VOLATILE COMPOUNDS 1,1-DCE ug/l	1,1-DCA ug/l	1,1,1-TCA ug/l	1,2-DCA ug/l
MW-1	18-Apr-87	NT	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	61	9.5	93.1	0.5
	03-Jun-88	NT	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	8	40	ND(5)
	08-Aug-89	ND(0.05)	ND(1)	ND(1)	ND(1)	ND(1)	47	9	21	ND(1)
MW-2	18-Apr-87	NT	76.9	121	93.4	477	ND(0.2)	ND(0.5)	ND(0.5)	ND(0.5)
	03-Jun-88	NT	64	18	48	60	ND(5)	ND(5)	ND(5)	ND(5)
	08-Aug-89	1.1	48	9	33	55	ND(1)	ND(1)	ND(1)	ND(1)
MW-4	18-Apr-87	NT	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(0.5)	ND(0.5)
	03-Jun-88	NT	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
	08-Aug-89	ND(0.05)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
MW-5	03-Jun-88	NT	93	ND(5)	100	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
	08-Aug-89	ND(0.05)	49	8	15	63	ND(1)	ND(1)	ND(1)	ND(1)
MW-6	03-Jun-88	NT	110	140	35	210	ND(5)	ND(5)	ND(5)	ND(5)
	08-Aug-89	1.0	45	8	15	74	ND(1)	ND(1)	ND(1)	ND(1)
MW-7	03-Jun-88	NT	ND(5)	ND(5)	ND(5)	ND(5)	25	5	18	ND(5)
	08-Aug-89	ND(0.05)	ND(1)	ND(1)	ND(1)	ND(1)	39	8	13	ND(1)
MW-8	03-Jun-88	NT	2300	2000	950	4100	ND(5)	ND(5)	ND(5)	ND(5)
	08-Aug-89	77	1900	820	1000	3600	ND(1)	ND(1)	ND(1)	ND(1)
MW-9	08-Aug-89	ND(0.05)	ND(1)	ND(1)	ND(1)	ND(1)	3	ND(1)	ND(1)	ND(1)
MW-10	08-Aug-89	ND(0.05)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
Field Blank	03-Jun-88	NT	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
	08-Aug-89	ND(0.05)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)

NOTES:

mg/l: milligrams per liter (equivalent to parts per million)
ug/l: micrograms per liter (equivalent to parts per billion)
NT: Not Tested
ND: Not detected; Limit of detection indicated in parenthesis
1,1-DCE: 1,1-Dichloroethene
1,1-DCA: 1,1-Dichloroethane
1,1,1-TCA: 1,1,1-Trichloroethane
1,2-DCA: 1,2-Dichloroethane

Volatile Organics in Water by EPA Method 624
Total Petroleum Hydrocarbons (TPH) as Gasoline in Aqueous Solutions by EPA Method 8015 (Modified)
Extraction by EPA Method 5030, Purge and Trap

April 18, 1987 Results from Beta Associates (1987)
June 3, 1988 Results from Groundwater Technology (1988)
August 8, 1989 Results from Curtis & Tompkins, Ltd.

Table 3. Water-Level Elevations

WELL NUMBER	MW-1	MW-2	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
Top of Casing Elevation	18.05	18.42	18.74	18.96	18.71	18.05	18.97	17.66	18.36
DATE	DEPTH TO WATER (FEET) FROM TOP OF CASING								
20-Apr-87	10.28	10.38	NA	10.84	NA	NA	NA	NA	NA
22-Jul-88	10.48	10.71	11.43	10.86	11.00	10.39	11.04	NM	NM
04-Aug-89	10.41	NM	NM	10.63	10.91	NM	10.95	NM	NM
08-Aug-89	10.40	10.56	11.19	10.77	10.89	10.27	10.98	10.11	10.53
DATE	GROUND-WATER ELEVATION (FEET) ABOVE MEAN SEA LEVEL								
20-Apr-87	7.77	8.04	NA	8.12	NA	NA	NA	NA	NA
22-Jul-88	7.57	7.71	7.31	8.10	7.71	7.66	7.93	NM	NM
04-Aug-89	7.64	NM	NM	8.33	7.80	NM	8.02	NM	NM
08-Aug-89	7.65	7.86	7.55	8.19	7.82	7.78	7.99	7.55	7.83

NOTES:

NA: Not Applicable, Monitoring Well Not Yet Installed

NM: Not Measured

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	Lead	MTBE
MW-1											
11/02/93	20.92	10.68	10.24	--	--	--	--	--	--	--	--
02/10/94	20.92	--	--	--	--	--	--	--	--	--	--
05/12/94	20.92	--	--	--	--	--	--	--	--	--	--
08/26/94	20.92	--	--		--	--	--	--	--	--	--
NO LONGER MONITORED OR SAMPLED											
MW-2											
11/02/93	21.31	10.83	10.48	--	--	--	--	--	--	--	--
02/10/94	21.31	--	--	--	--	--	--	--	--	--	--
05/12/94	21.31	11.94	9.37	--	390	6.8	2.0	6.3	14	--	--
08/26/94	21.31	--	--	Sampled biannually	--	--	--	--	--	--	--
02/01/95	21.31	13.76	7.55	--	78	10	1.2	<0.5	0.51	--	--
08/02/95	21.31	11.53	9.78	--	100	3.5	<0.5	2.6	4.1	--	--
01/31/96	21.31	14.38	6.93	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
08/01/96	21.31	11.49	9.82	--	73	<0.5	<0.5	<0.5	<0.5	--	610
12/17/96	21.31	12.75	8.56	--	--	--	--	--	--	--	--
02/20/97	21.31	12.30	9.01	--	280	6.7	0.56	1.5	2.9	--	11
05/02/97	21.31	11.78	9.53	--	--	--	--	--	--	--	--
07/23/97	21.31	11.23	10.08	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
02/04/98	21.31	16.06	5.25	--	<50	1.1	<0.5	<0.5	<0.5	--	5.6
07/17/98	21.31	11.71	9.60	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
MW-4											
11/02/93	--	--	10.23	--	--	--	--	--	--	--	--
02/10/94	--	--	--	--	--	--	--	--	--	--	--
05/12/94	--	--	--	--	--	--	--	--	--	--	--
08/26/94	--	--	--		--	--	--	--	--	--	--
NO LONGER MONITORED OR SAMPLED											

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	Lead	MTBE
MW-5											
11/02/93	21.84	11.15	10.69	--	790	43	3.4	22	12	<400	--
02/10/94	21.84	13.10	8.74	--	1400	52	3.0	50	40	--	--
05/12/94	21.84	12.40	9.44	--	1800	87	6.2	77	66	--	--
08/26/94	21.84	--	--	--	--	--	--	--	--	--	--
11/11/94	21.84	13.50	8.34	--	380	18	<1.0	18	11	--	--
02/01/95	21.84	14.32	7.52	--	570	36	0.59	21	11	--	--
05/18/95	21.84	12.87	8.97	--	590	29	1.0	16	9.8	--	--
08/02/95	21.84	11.98	9.86	--	210	9.2	<0.5	4.0	1.2	--	--
11/01/95	21.84	11.58	10.26	--	210	5.6	<0.5	1.9	<0.5	--	<2.5
01/31/96	21.84	14.72	7.12	--	1200	50	<5.0	19	29	--	<25
05/16/96	21.84	14.22	7.62	--	440	14	<0.5	17	8.6	--	11
08/01/96	21.84	11.86	9.98	--	58	1.4	<0.5	<0.5	<0.5	--	2.5
12/17/96	21.84	13.13	8.71	--	300	9.7	<0.5	11	6.3	--	6.9
02/20/97	21.84	12.81	9.03	--	350	6.7	<0.5	4.3	1.9	--	5.0
05/02/97	21.84	12.50	9.34	--	270	4.8	<0.5	3.5	1.3	--	7.3
07/23/97	21.84	11.70	10.14	--	290	3.4	<0.5	<0.5	<0.5	--	3.1
11/04/97	21.84	11.69	10.15	--	180	3.8	<0.5	1.5	<0.5	--	8.6
02/04/98	21.84	16.54	5.30	--	140	4.3	<0.5	8.5	<0.5	--	<2.5
05/01/98	21.84	12.77	9.07	--	1200	19	<1.0	9.7	1.7	--	25
07/17/98	21.84	12.19	9.65	--	900	3.6	<2.0	12	2.6	--	11

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	Lead	MTBE
MW-6											
11/02/93	21.71	10.93	10.78	--	300	19	1.8	2.5	5.0	<400	--
02/10/94	21.71	12.86	8.85	--	200	10	0.9	2.0	4.0	--	--
05/12/94	21.71	12.08	9.63	--	210	10	1.1	1.2	3.1	--	--
08/26/94	21.71	10.82	10.89	--	310	16	1.4	2.3	7.1	--	--
11/11/94	21.71	13.25	8.46	--	<50	1.3	<0.5	<0.5	1.0	--	--
02/01/95	21.71	14.02	7.69	--	<50	1.9	<0.5	<0.5	0.51	--	--
05/18/95	21.71	12.43	9.28	--	<50	8.2	<0.5	<0.5	<0.5	--	--
08/02/95	21.71	11.64	10.07	--	<50	2.3	<0.5	<0.5	<0.5	--	--
11/01/95	21.71	11.31	10.40	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
01/31/96	21.71	13.63	8.08	--	<50	0.98	<0.5	<0.5	<0.5	--	<2.5
05/16/96	21.71	13.91	7.80	--	<50	1.6	<0.5	<0.5	<0.5	--	<2.5
08/01/96	21.71	11.56	10.15	--	<50	0.82	<0.5	<0.5	<0.5	--	<2.5
12/17/96	21.71	13.26	8.45	--	63	2.6	<0.5	<0.5	<0.5	--	<2.5
02/20/97	21.71	--	--	Inaccessible	--	--	--	--	--	--	--
05/02/97	21.71	--	--	Inaccessible	--	--	--	--	--	--	--
05/29/97	21.71	11.72	9.99	--	120	1.8	<0.5	<0.5	<0.5	--	2.6
07/23/97	21.71	11.31	10.40	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
11/04/97	21.71	11.38	10.33	--	63	1.2	<0.5	<0.5	<0.5	--	<2.5
02/04/98	21.71	16.19	5.52	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
05/01/98	21.71	12.40	9.31	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
07/17/98	21.71	11.84	9.87	--	<50	1.0	<0.5	<0.5	<0.5	--	<2.5

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	Lead	MTBE
MW-7											
11/02/93	20.95	10.88	10.07	--	--	--	--	--	--	--	--
02/10/94	20.95	--	--	--	--	--	--	--	--	--	--
05/12/94	20.95	--	--	--	--	--	--	--	--	--	--
08/26/94	20.95	--	--	--		--	--	--	--	--	--
NO LONGER MONITORED OR SAMPLED											
MW-8											
11/02/93	21.84	11.02	10.82	--	15,000	2000	440	420	1400	<400	--
02/10/94	21.84	12.97	8.87	--	6500	1200	380	250	7900	--	--
05/12/94	21.84	12.19	9.65	--	30,000	1400	2900	800	3800	--	--
08/26/94	21.84	10.90	10.94	--	17,000	720	200	330	930	--	--
11/11/94	21.84	13.38	8.46	--	6800	250	170	190	650	--	--
02/01/95	21.84	14.36	7.48	--	330	68	2.8	2.7	4.3	--	--
05/18/95	21.84	12.54	9.30	--	540	120	12	11	23	--	--
08/02/95	21.84	11.73	10.11	--	1100	150	9.7	20	40	--	--
11/01/95	21.84	11.36	10.48	--	1700	120	15	16	39	--	<5.0
01/31/96	21.84	14.64	7.20	--	57	5.3	<0.5	<0.5	<0.5	--	<2.5
05/16/96	21.84	13.99	7.85	--	2100	260	43	56	130	--	64
08/01/96	21.84	11.59	10.25	--	1100	45	0.92	8.9	25	--	7.4
12/17/96	21.84	12.95	8.89	--	2000	280	30	51	88	--	22
02/20/97	21.84	--	--	Inaccessible	--	--	--	--	--	--	--
05/02/97	21.84	--	--	Inaccessible	--	--	--	--	--	--	--
05/29/97	21.84	11.79	10.05	--	3400	280	31	53	120	--	<50
07/23/97	21.84	11.48	10.36	--	760	20	2.2	2.6	5.0	--	9.7
11/04/97	21.84	11.49	10.35	--	1100	150	13	22	39	--	49
02/04/98	21.84	16.29	5.55	--	270	6.8	<0.5	3.3	<0.5	--	<2.5
05/01/98	21.84	12.62	9.22	--	190	5.3	<0.5	<0.5	0.75	--	2.8
07/17/98	21.84	11.89	9.95	--	1400	210	20	24	54	--	<25

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	Lead	MTBE
MW-9											
11/02/93	20.55	10.53	10.02	--	--	--	--	--	--	--	--
02/10/94	20.55	--	--	--	--	--	--	--	--	--	--
05/12/94	20.55	11.60	8.95	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/26/94	20.55	--	--	Sampled biannually	--	--	--	--	--	--	--
02/01/95	20.55	13.35	7.20	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/02/95	20.55	11.22	9.33	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/31/96	20.55	14.10	6.45	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
08/01/96	20.55	11.20	9.35	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
12/17/96	20.55	12.29	8.26	--	--	--	--	--	--	--	--
02/20/97	20.55	12.09	8.46	--	55*	1.1	<0.5	<0.5	<0.5	--	<2.5
05/02/97	20.55	11.45	9.10	--	--	--	--	--	--	--	--
07/23/97	20.55	10.95	9.60	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
02/04/98	20.55	15.51	5.04	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
07/17/98	20.55	11.37	9.18	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
MW-10											
11/02/93	21.25	10.93	10.32	--	--	--	--	--	--	--	--
02/10/94	21.25	--	--	--	--	--	--	--	--	--	--
05/12/94	21.25	--	--	--	--	--	--	--	--	--	--
08/26/94	21.25	--	--	--		--	--	--	--	--	--

NO LONGER MONITORED OR SAMPLED

* Chromatogram pattern indicates an unidentified hydrocarbon.

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	Lead	MTBE
TRIP BLANK											
02/10/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/12/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/26/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/11/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/01/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/18/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/02/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/01/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/31/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
05/16/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
08/01/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
12/17/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
02/20/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
05/02/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
07/23/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
02/04/98	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
05/01/98	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5
07/17/98	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<2.5

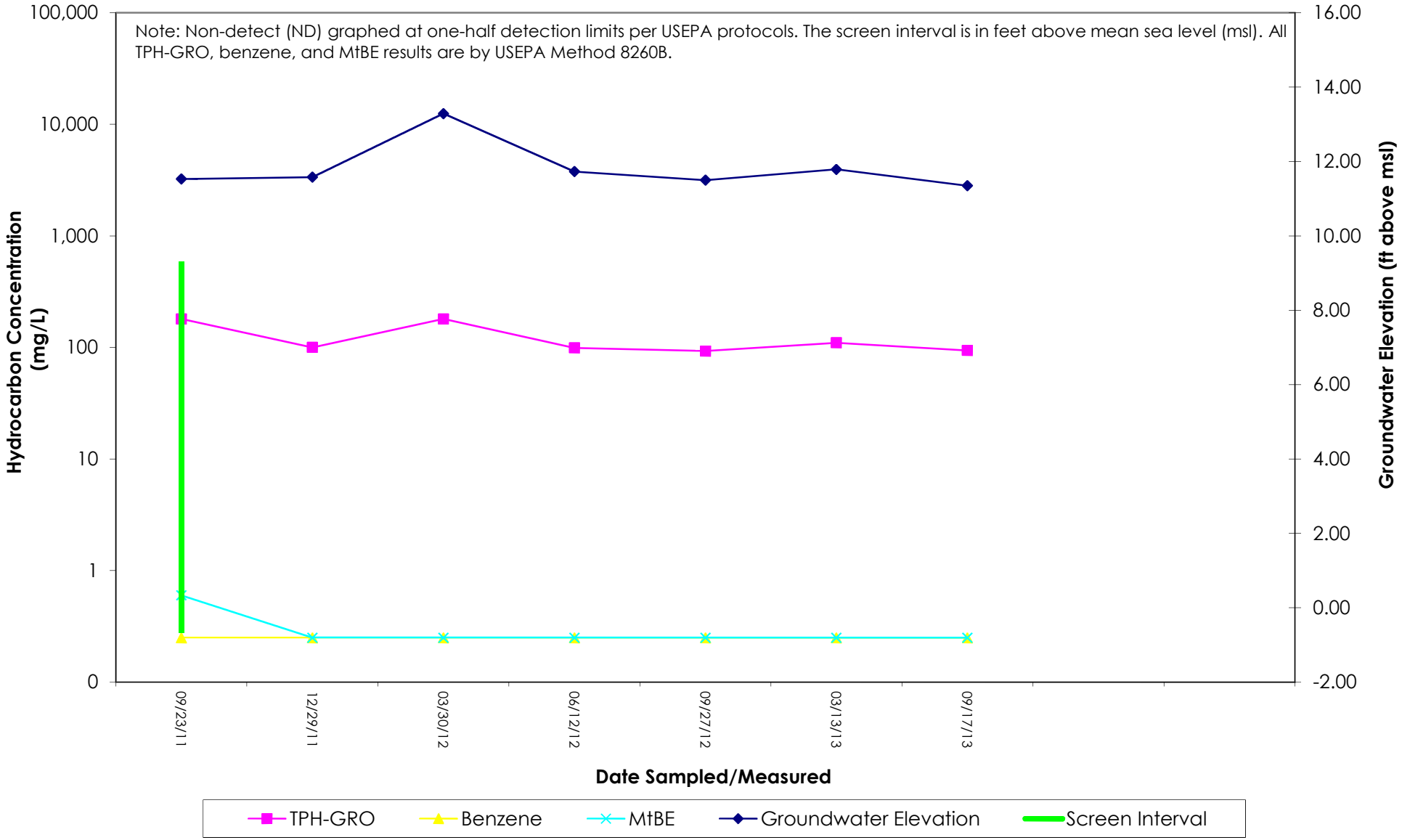
Note: Blaine Tech Services, Inc. began routine monitoring of the groundwater wells at this site on November 1, 1994.
Earlier field data and analytical results are drawn from the September 14, 1994 Groundwater Technology, Inc. report.

ABBREVIATIONS:
TPH = Total Petroleum Hydrocarbons
MTBE = Methyl t-Butyl Ether

APPENDIX E
Hydrographs

MW-2 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time

Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California

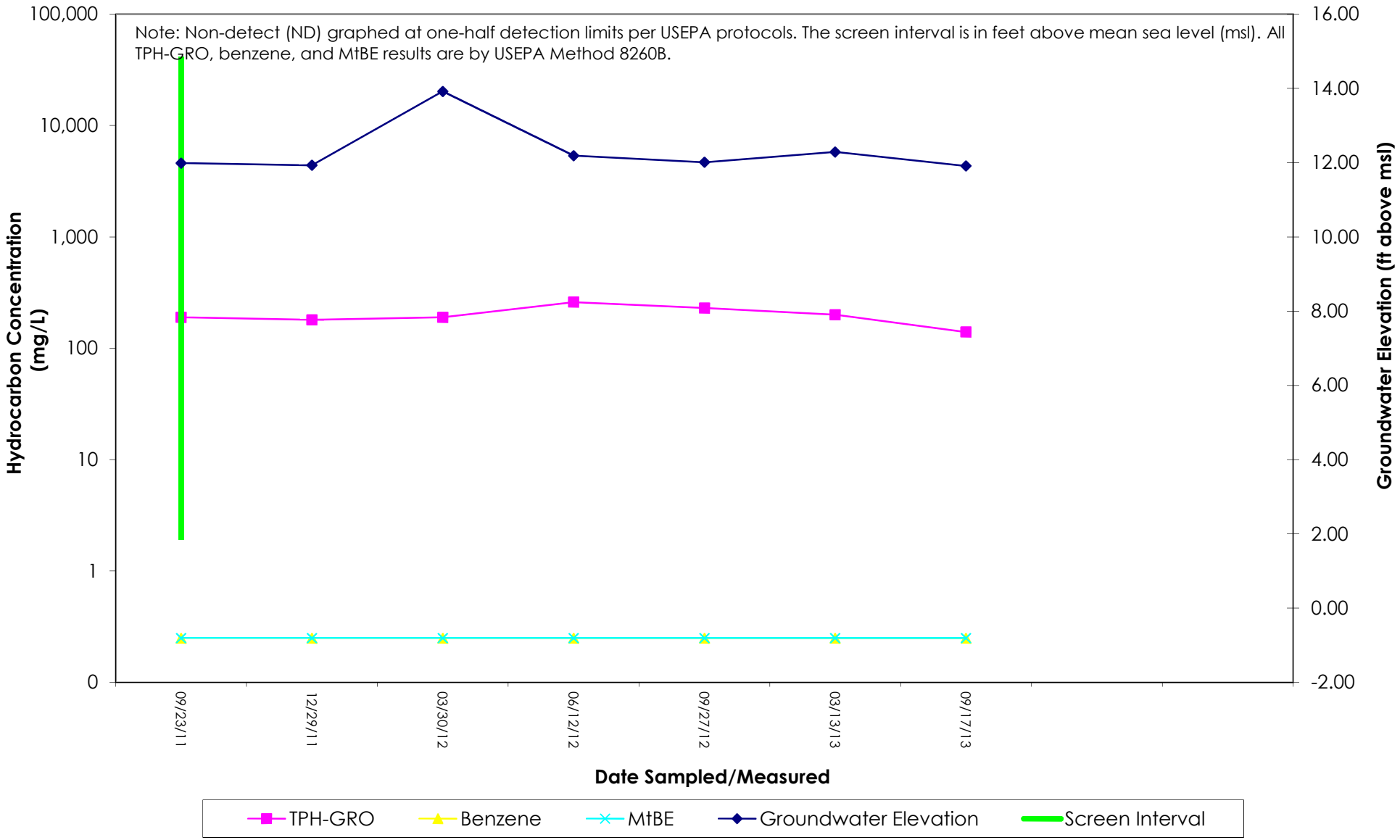


MW-5 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time

Former Chevron-branded Service Station 91723

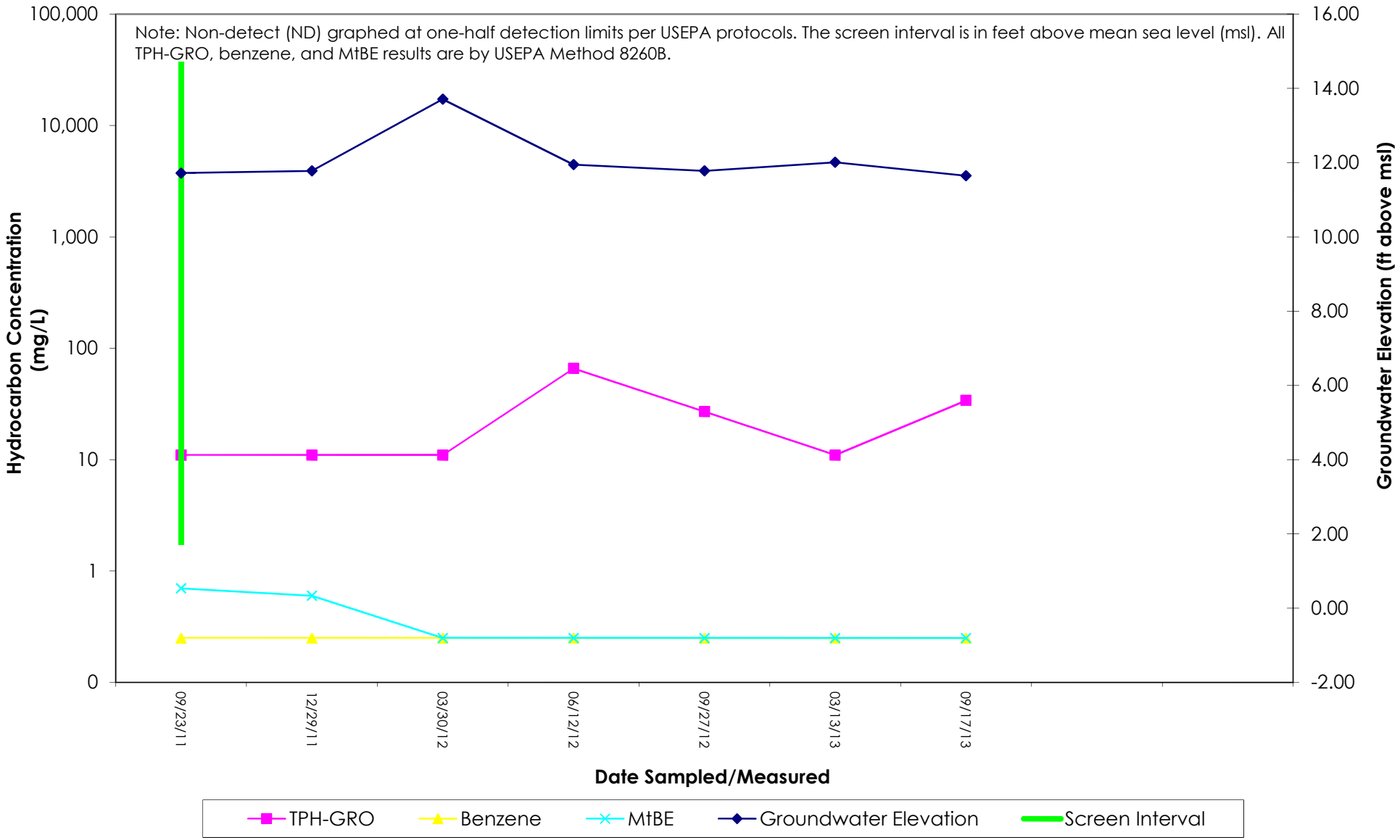
9757 San Leandro Street

Oakland, California



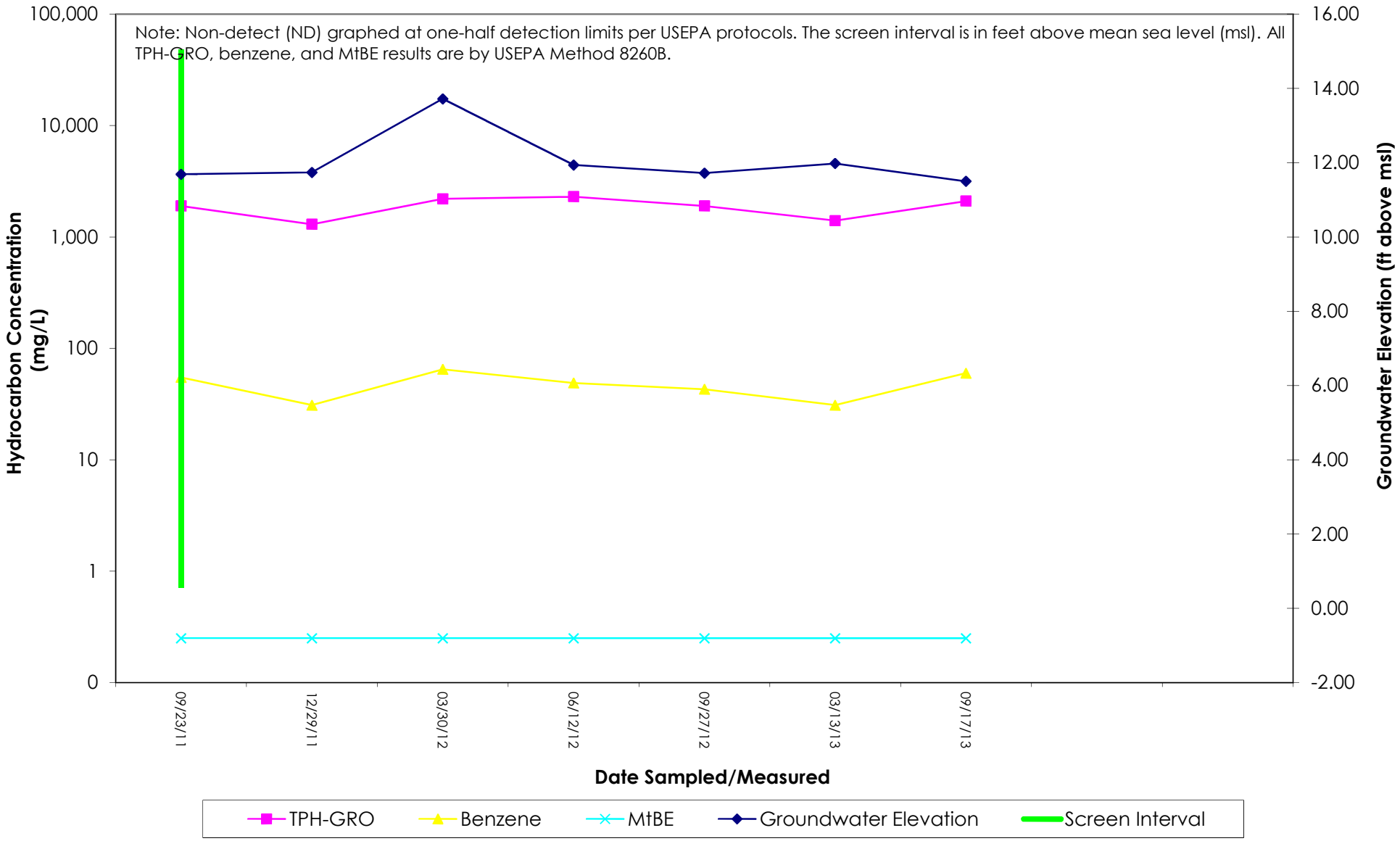
MW-6 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time

Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California



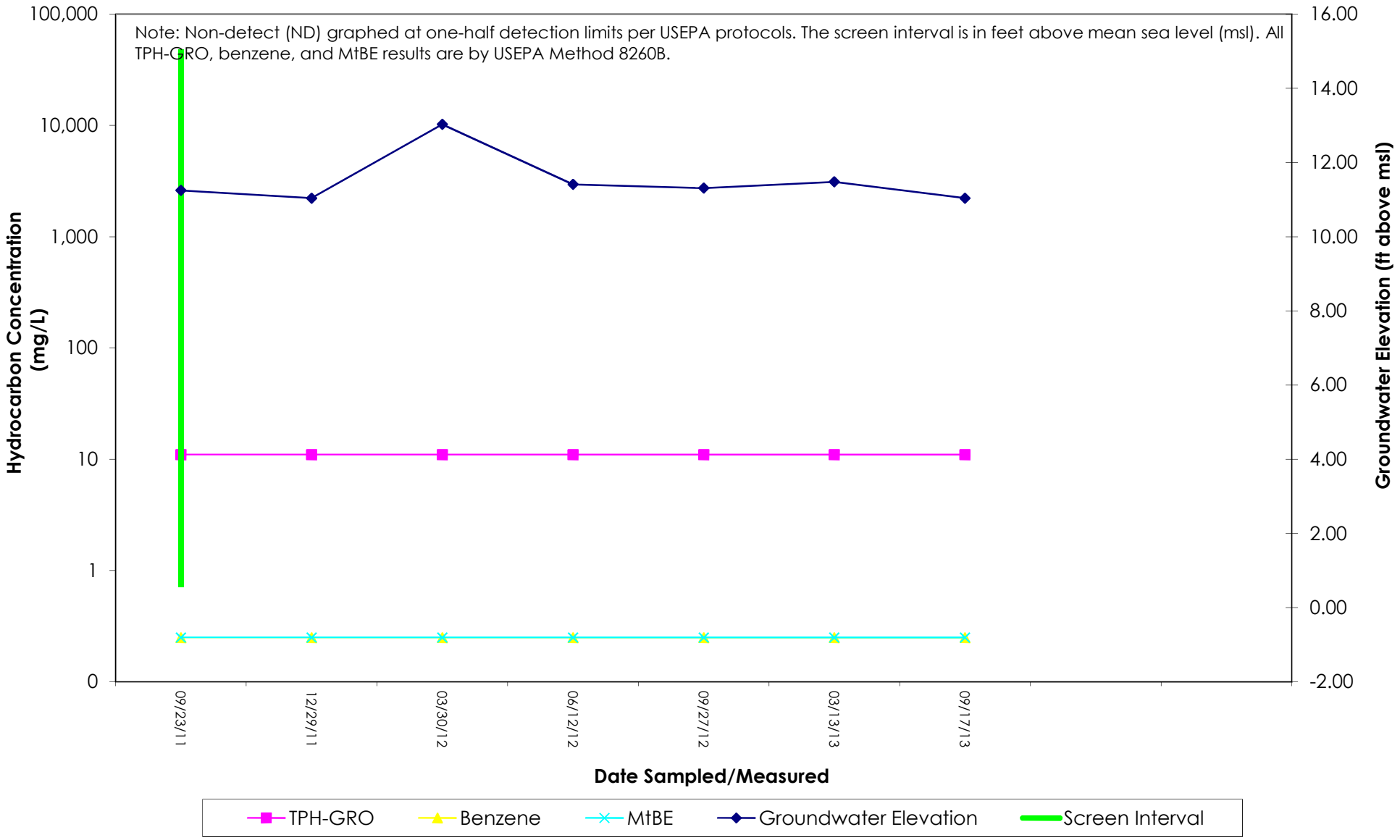
MW-8 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time

Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California



MW-9 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time

Former Chevron-branded Service Station 91723
9757 San Leandro Street
Oakland, California



APPENDIX F
SWRCB LTCP Checklist

Site Name: Former Chevron-branded Service Station 91723
Site Address: 9757 San Leandro Street, Oakland, California

Site meets the criteria of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.[1]

General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☐ Yes ☐ No ☒ NA
Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No
Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?	☒ Yes ☐ No
Does nuisance as defined by Water Code section 13050 exist at the site?	☐ Yes ☒ No
Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
Media-Specific Criteria Candidate sites must satisfy all three of these media-specific criteria: **1. Groundwater:** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites? If YES, check applicable class: ☐ **1** ☒ **2** ☐ **3** ☐ **4** ☐ **5**	☒ Yes ☐ No ☐ NA

[1] Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?	☐ Yes ☐ No ☒ NA
2. Petroleum Vapor Intrusion to Indoor Air: The site is considered low-threat for vapor intrusion to indoor air if site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies. **Is the site an active commercial petroleum fueling facility?** Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk. **a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4?** If YES, check applicable scenarios: ☐ **1** ☐ **2** ☐ **3** ☐ **4** **b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?** **c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?**	☐ Yes ☒ No ☐Yes ☒ No ☐ NA ☐ Yes ☒ No ☐ NA ☐ Yes ☒ No ☐ NA
3. Direct Contact and Outdoor Air Exposure: The site is considered low-threat for direct contact and outdoor air exposure if site-specific conditions satisfy one of the three classes of sites (a through c). **a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?** **b. Are maximum concentrations of petroleum constituents in soil less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health?** **c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?**	☒ Yes ☐ No ☐ NA ☐ Yes ☐ No ☒ NA ☐ Yes ☐ No ☒ NA

APPENDIX G
Soil Vapor Sampling Technical Toolkit (Chevron ETC, Version 1.8)

[Note: Due to copyright protection, Stantec will not attach the Chevron ETC Toolkit, Version 1.8, to this work plan. With permission from Chevron, the toolkit will be sent privately to ACEH for reference.]

APPENDIX H
Soil Vapor Sample Collection Data Log

Soil Vapor Sample Collection Data Log

Project: Former Chevron-branded Service Station 91723

Address: 9757 San Leandro Street, Oakland, California

Date:

Field Personnel:

Weather:

Surface Soil Conditions:

Outdoor Environment Conditions:

		VP-1	VP-2	VP-3	VP-4	VP-5	DUPLICATE
Preliminary Data	Sample ID:						
	Canister Serial No.:						
	Flow Controller Serial No.:						
	Sample Depth (ft):						
	Probe Tubing Length (ft):						
	Manifold Tubing Length (ft):						
	Calculated Purge Volume (mL):						
	Calculated Purge Duration (min):						
Vacuum Leak Testing	Start Time:						
	Initial Vacuum (in Hg):						
	End Time:						
	Final Vacuum (in Hg):						
	Duration of Leak Test (min):						
	Pass/Fail:						
Purging	Start Time:						
	End Time:						
	Purge Duration (min):						
	Start Vacuum:						
	End Vacuum:						
	Total Vacuum Drop:						
Sample Collection and Tracer Gas Monitoring	Initial Canister Vacuum (in Hg):						
	Start Time:						
	Helium @ Start (%):						
	Helium @ 5 min (%):						
	Helium @ 10 min (%):						
	Helium @ 15 min (%):						
	Helium @ 20 min (%):						
	Helium @ 25 min (%):						
	Helium @ 30 min (%):						
	Helium @ 35 min (%):						
	Helium @ 40 min (%):						
	Helium @ 45 min (%):						
	Helium @ 50 min (%):						
	Helium @ 55 min (%):						
	Helium @ 60 min (%):						
	End Time:						
	Final Canister Vacuum (in Hg):						

Comments