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April 19, 2017

Mr. Keith Nowell
Alameda County Health Care Services Agency
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Subject: Low Threat Closure Report
Site: 76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California
Fuel Leak Case No. RO0000219

Dear Mr. Nowell;

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

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Sincerely,

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Allen Faass
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Attachment

Low-Threat Case Closure Request

*76 Station No. 5043 (aka 2705191)
449 Hegenberger Road
Oakland, California*

*Alameda County Health Care Services Agency, Fuel Leak Case No. R00000219
San Francisco Bay, Regional Water Quality Control Board, Case No. 01-1601
GeoTracker Global ID No. T0600101476*

Antea Group Project No. I42705191

April 19, 2017

Prepared for:

Mr. Keith Nowell

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Prepared by:

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Low-Threat Case Closure Request

76 Service Station No. 5043 (aka 2705191)
449 Hegenberger Road
Oakland, California
Global ID No. T0600101476
ACHCSA Case No. R00000219
SFBRWQCB Case No. 01-1601

1.0 INTRODUCTION

Antea®Group has prepared this *Low-Threat Case Closure Request* for the existing configuration of the 76 Station No. 5043 (aka 2075191) located at 449 Hegenberger Road, Oakland, California (the Site; **Figure 1**). The purpose of this document is to provide sufficient documentation to meet the requirements of the California Water Quality Control Policy for Low-Threat Underground Storage Tank Case Closure (LTC Policy), State Water Resources Control Board Resolution (SWRCB) No.2012-0016. The current status of the Site to meet the Low-Threat Closure guidelines are reflected in the LTC Policy Checklist and Path to Closure Plan updated on May 26, 2016 by the lead agency Alameda County Health Care Services Agency (ACHCSA) under case number R00000219 (**Appendix A**).

Prior to the preparation and submittal of this *Low-Threat Case Closure Request*, during 2016 Antea®Group completed a scope of work summarized in a *Site Excavation Completion Report*, dated November 22, 2016 (Antea Group, 2016). The excavation and post-excavation confirmation sampling was completed in general accordance with the *Revised Remedial Design and Implementation Plan*, dated May 13, 2015 (Antea Group, 2015c) and the *ACHCSA Conditional Approval of Work Plan and Addendum for Fuel Leak*, dated July 6, 2015 (ACEH, 2015). The objective of the implementation of the excavation remedy was to:

- Remove source material that in the past have contributed to the dissolved groundwater concentrations above the LTC Policy Groundwater Media-Specific criteria for benzene at 3,000 micrograms per liter (µg/L) or methyl tertiary butyl ether (MTBE) at 1,000 µg/L.
- Meet the Media-Specific Criteria for Direct Contact/Outdoor Air Exposure. These criterion were met by excavating fuel hydrocarbon impacted soil, to the extent practical, to a depth of at least 10 feet. Excavation focused on the removal of soil impacted with the three constituents of concern (COCs) and summarized in the LTC Policy Table A (benzene, ethylbenzene, and naphthalene); and
- Although not specifically an outstanding issue in the LTC Policy checklist referenced above, the excavation remedy addressed verbal concerns expressed by the ACHCSA case manager related to potential residual secondary source material.

2.0 SITE BACKGROUND

The following section provides a description of the site, a summary of the previous environmental investigations, the geologic and hydrogeologic setting for both the site and its surroundings.

2.1 Site Description

The Site is an operating 76 station located on the southwestern corner of Hegenberger Road and Edgewater Drive in Oakland, California (**Figure 1**). The existing facility includes six (6) fuel dispensers on two (2) islands under a single canopy, three (3) underground storage tanks (USTs) on the north side of the Site, a car wash on the west side of the Site, and a station building in the central portion of the Site (**Figure 2**). The configuration of the USTs and conveyance piping includes two 15,000 gallon USTs that are used to store regular and premium unleaded gasoline and one 10,000 gallon UST used to store diesel fuel each installed in 1995. Each UST is double-walled with steel clad fiberglass. The conveyance piping is also double-walled constructed with fiberglass. Please refer to **Appendix B** for a summary of the fuel system storage and delivery system current in operation at the Site.

2.2 Site Assessment and Remediation History

A comprehensive summary of assessment and remediation activities at the Site is presented in **Appendix C**. **Table 1** provides a summary of well construction details. For a summary of analytical data for subsurface soil and water samples collected refer to **Tables 2, 3, 4, and 5**. Refer to **Figures 3, 4, and 7** for the location of past monitoring wells, borings, and subsurface soil sampling locations. Refer to **Figures 5 and 6** for a summary of analytical laboratory results from subsurface soil sample collected from on- and off-site boring locations. Refer to **Figures 8A through 8D, and 9A through 9D** for a summary of subsurface soil samples collected during the 2016 excavation activities.

Site investigations and monitoring activities started at the Site in 1991 and are ongoing as of the preparation of this document. A summary table with technical report references of the environmental activities conducted at the Site over the period of 25 years is provided in **Appendix C**. **Figure 3** shows the locations of borings, soil sampling points, monitoring wells, the footprint of the 1995 and 2016 excavations. **Figure 4** depicts soil borings and monitoring wells with respect to their installation and sampling. The following information highlights of some of the key activities completed at the Site:

October 1991 - Four (4) soil samples P1 (southeastern dispenser), P2 (northeastern dispenser), P3 (southwestern dispenser), and P4 (northwestern dispenser) were collected from the product pipe trenches at depths of approximately 3 feet below ground surface (bgs) during a dispenser island modification. The product pipe trenches were subsequently excavated to the subsurface water depth at 4 to 4.5 feet bgs. The concentration ranges for the constituents for concern (COCs) were:

- TPH in the diesel carbon range (TPH-d/DRO): 420 (P1) milligrams per kilogram (mg/Kg) to 8,400 (P2) mg/Kg.
- TPH in the gasoline carbon range (TPH-g/GRO): 370 (P4) mg/Kg to 9,000 mg/Kg (P2).
- Benzene: 7.4 (P4) mg/Kg to 48 (P3) mg/Kg.
- Toluene: 39 (P4) mg/Kg to 410 (P3) mg/Kg.
- Ethylbenzene: 12 (P4) mg/Kg to 330 (P2) mg/Kg.
- Xylenes: 77 (P4) mg/Kg to 1,500 (P2) mg/Kg.

Based on the above referenced laboratory results, the source of the majority of the release was in the area of the sample locations P2 and P3 which were obtained at the northeastern and southwestern dispensers (Kaprealian, 1991).

November 1991 – An underground storage tank unauthorized release notification was issued to the ACHCSA on November 7, 1991. The notice identified that both gasoline and diesel were released attributed to product piping. The remedial action implemented was the installation of monitoring wells.

February 1992 - Three monitoring wells, MW-1 (south of dispenser islands), MW-2 (east of dispenser islands), and MW-3 (northwest of USTs), were installed at the Site to depths ranging from 13.5 to 15 feet bgs. The laboratory results from initial subsurface water samples collected on February 1992 following the installation of the monitoring wells indicated that the following COCs were detected:

- TPH-d: less than the laboratory reporting limit (LRL) of 50 (MW-3) micrograms per liter ($\mu\text{g/L}$) to 13,000 (MW-1) $\mu\text{g/L}$.
- TPH-g: 230 (MW-3) $\mu\text{g/L}$ to 150,000 $\mu\text{g/L}$ (MW-1).
- Benzene: 4.1 (MW-3) $\mu\text{g/L}$ to 17,000 (MW-1) $\mu\text{g/L}$.
- Toluene: 22 (MW-3) $\mu\text{g/L}$ to 26,000 (MW-1) $\mu\text{g/L}$.
- Ethylbenzene: 1.8 (MW-3) $\mu\text{g/L}$ to 5,200 (MW-3) $\mu\text{g/L}$.
- Xylenes: 33 (MW-3) $\mu\text{g/L}$ to 26,000 (MW-3) $\mu\text{g/L}$.

Based on the above referenced laboratory results, the source of the majority of the release was in the area of the sample locations dispenser islands (Kaprealian, 1992a).

August 1992 - Three additional monitoring wells, MW-4 through MW-6, were installed at the Site, each to a depth of 13.5 feet bgs (Kaprealian, 1992b). The laboratory results from initial subsurface water samples collected on August 1992 following the installation of the three additional monitoring wells indicated that the following COCs were detected:

- TPH-d: 90 (MW-4) micrograms per liter ($\mu\text{g/L}$) to 750 (MW-6) $\mu\text{g/L}$.
- TPH-g: LRL of 50 (MW-6) $\mu\text{g/L}$ to 240 $\mu\text{g/L}$ (MW-4).
- Benzene: LRL of 1.0 (MW-4/MW-6) $\mu\text{g/L}$ to 0.89 (MW-5) $\mu\text{g/L}$.
- Toluene: LRL of 1.0 (MW-4/MW-5/MW-6) $\mu\text{g/L}$.
- Ethylbenzene: LRL of 1.0 (MW-4/MW-5/MW-6) $\mu\text{g/L}$.
- Xylenes: LRL of 1.0 (MW-6) $\mu\text{g/L}$ to 13 (MW-5) $\mu\text{g/L}$.

September 1994 - One 280-gallon waste-oil UST was removed from the Site. The UST was made of steel, and no apparent holes or cracks were observed in the UST. One soil sample was collected from beneath the former UST at a depth of approximately 9 feet bgs. No petroleum hydrocarbons were reported (GeoStrategies, 1994; Kaprealian, 1994a, Kaprealian, 1994b).

January/March 1995 - Two additional monitoring wells, MW-9 and MW-10, were installed to depths of 13 and 15 feet bgs, respectively. In addition, existing monitoring wells MW-1, MW-2, MW-4, and MW-5 were destroyed in order to accommodate the site redevelopment activities (Kaprealian, 1995a).

March-July 1995 - Three 10,000-gallon UST used to store both gasoline and diesel fuel were removed from the Site. No apparent holes or cracks were observed in the tanks during the removal process. Subsurface water was encountered in the tank cavity at a depth of approximately 8.5 feet bgs with the depth of the excavation extended to approximately 16 feet bgs beneath the USTs and 8 feet bgs in the surrounding area. Soil samples contained total petroleum hydrocarbons as diesel (TPH-d), benzene, and TPH as gasoline (TPH-g). Approximately **125,000 gallons** of water were pumped from the Site for remediation and properly disposed of off-site. The four fuel dispenser islands and associated product piping were also removed. Based on the results of the confirmation samples, the soil beneath the product dispenser islands was over excavated to approximately 6 feet bgs (Kaprealian, 1995a). During demolition activities of the former station building, soil samples were collected from two excavations, which were subsequently over excavated. Confirmation samples contained petroleum hydrocarbons. An additional area on the south side of the former station building was excavated based on photo-ionization detector (PID) readings. As indicated above, MW-1 and MW-2 were destroyed in order to allow for over excavation activities to extend to an area adjacent to the dispenser islands in the southeastern quadrant of the Site. The excavated areas were subsequently backfilled with clean-engineered fill (Kaprealian, 1995b). Please refer to **Figure 3** for the footprint of the excavation. The excavation footprint beneath the dispenser islands was approximately 6 feet in depth while the area immediately to the west and east was 5 feet bgs and 4 feet bgs, respectively. The total area covered by the excavation was approximately **10,600 square feet** with estimated volume of soil transported off-site for disposal is **6,444 cubic yards** or **9,666 tons** (Kaprealian, 1995b).

April 2005 - TRC conducted a 24-hour dual phase extraction (DPE) test at the Site using monitoring well MW-6. The 24-hour DPE test was only moderately successful at removing vapor-phase petroleum hydrocarbons from the subsurface; therefore, TRC recommended DPE no longer be considered a viable remedial alternative for the Site. A total of **1.77 pounds** of total petroleum hydrocarbons and **2,000 gallons** of water were reportedly removed during the DPE testing activities (TRC, 2005).

December 2009 - In response to ACHCSA outlined in a letter dated April 3, 2009, Delta advanced borings B-4 (located south of the dispenser islands) and B-5 (located east of the dispenser islands). The ACHCSA indicated in their letter that *"it appears that the extent of the plume has not been defined since previously installed wells MW-1 and MW-2 contained free product and had high contamination concentrations, respectively. The two wells were decommissioned in 1995 and never replaced leaving the area with the highest concentrations unmonitored"*. The goal of the assessment activities was to address this concern. The depth to water observed at these boring locations was approximately 3.5 feet bgs. Analytical results from the subsurface water samples collected from these two borings was as follows:

- TPH-d: B-4 11,300 µg/L at 20 feet bgs; B-5 19,900,000 µg/L at 20 feet bgs and 294,000 µg/L at 32 feet bgs.
- TPH-d (sample treated with silica gel; [TSG]): B-4 13,500 µg/L at 20 feet bgs; B-5 20,400,000 µg/L at 20 feet bgs and 291,000 µg/L at 32 feet bgs.
- TPH-g: B-4 97,100 µg/L at 20 feet bgs; B-5 23,500,000 µg/L at 20 feet bgs and 422,000 µg/L at 32 feet bgs.
- Benzene: B-4 6,960 µg/L at 20 feet bgs; B-5 324,000 µg/L at 20 feet bgs and 8,100 µg/L at 32 feet bgs.
- Toluene: B-4 8,310 µg/L at 20 feet bgs; B-5 1,050,000 µg/L at 20 feet bgs and 918,000 µg/L at 32 feet bgs.
- Ethylbenzene: B-4 6,420 µg/L at 20 feet bgs; B-5 918,000 µg/L at 20 feet bgs and 9,580 µg/L at 32 feet bgs.
- Total Xylenes: B-4 26,000 µg/L at 20 feet bgs; B-5 4,120,000 µg/L at 20 feet bgs and 60,800 µg/L at 32 feet bgs.
- MTBE: B-4 241 µg/L at 20 feet bgs; B-5 LRL of 50 µg/L at 20 feet bgs and 632 µg/L at 32 feet bgs.

Based on the above referenced laboratory results, the source of the majority of the release was in the area of boring B-5 which was located immediately east of the dispenser islands, with the results from boring B-4 located south of the dispenser indicating the presence of an impact to a lesser degree as well (Delta, 2010a).

June 2010 - Delta advanced four borings to be completed as monitoring wells MW-11 (located south of former monitoring well MW-1), MW-12, MW-12A (located adjacent to former monitoring well MW-2), and MW-13 (also located south of former monitoring well MW-1). Monitoring wells MW-11, MW-12, and MW-13 were installed to depths of 15 to 20 feet bgs with the top of the screen intervals at 5-feet bgs, while Monitoring Well MW-12A was installed at a depth of 34 feet bgs with the top of the screen interval at 30 feet bgs. The laboratory results from initial subsurface water samples collected on July 2010 following the installation of the three shallow screened monitoring wells indicated that the following COCs were detected:

- TPH-d (TSG): 226 µg/L (MW-11), 990 µg/L (MW-12), and 469 µg/L (MW-13).
- TPH-g: 99.2 µg/L (MW-11), 20,300 µg/L (MW-12), and 122 µg/L (MW-13).
- Benzene: LRL of 0.50 µg/L (MW-11), 1,030 µg/L (MW-12), and LRL of 0.50 µg/L (MW-13)
- Toluene: LRL of 0.50 µg/L (MW-11), 955 µg/L (MW-12), and LRL of 0.50 µg/L (MW-13)
- Ethylbenzene: LRL of 0.50 µg/L (MW-11), 311 µg/L (MW-12), and LRL of 0.50 µg/L (MW-13)
- Total Xylenes: LRL of 1.5 µg/L (MW-11), 2,450 µg/L (MW-12), and LRL of 1.5 µg/L (MW-13)
- MTBE: 165 µg/L (MW-11), 1,650 µg/L (MW-12), and 217 µg/L (MW-13)

The laboratory results from initial subsurface water samples collected on July 2010 following the installation of the one new deeper screened monitoring well (MW-12A – Screen Interval 30-34 feet bgs) indicated that the following COCs were detected:

- TPH-d (TSG): 89.3 µg/L.
- TPH-g: 664 µg/L.
- Benzene: 18.3 µg/L
- Toluene: 0.78 µg/L
- Ethylbenzene: 2.3 µg/L
- Total Xylenes: 50.2 µg/L
- MTBE: 11.9 µg/L

Based on the above referenced laboratory results, the source of the majority of the release was in the area of Monitoring Well MW-12 which was located immediately east of the dispenser islands, while the vertical distribution of the dissolved phase fuel hydrocarbon plume appears to have been defined by the laboratory results from the subsurface water sample collected from Monitoring Well MW-12A (Delta, 2010b).

December 2010 – Delta Consultants issued a work plan (Delta, 2010c) to ACHCSA documenting the scope of work that would be completed to install four monitoring wells (MW-14, MW-15, MW-16, and MW-17) and complete one boring (B-6). The objective of the installation of the monitoring wells and the completion of the boring were as follows:

- Boring B-6: collect subsurface soil analytical data adjacent to existing Monitoring Well MW-12A.

- MW-14: Define onsite dissolved phase COCs at the southwestern property line.
- MW-15: Define onsite dissolved phase COCs between the western side of the dispenser islands and the station building.
- MW-16: Replacement monitoring well for former monitoring well MW-1.
- MW-17: Define onsite dissolved phase COCs at the eastern property line adjacent to the dispenser islands

May 2011 - Antea Group (formally Delta Consultants) completed the scope of work outlined in the above referenced December 2010 work plan. Each of the monitoring wells were completed with screen sections completed between 3 feet bgs and 13 feet bgs. Soil Boring B-6 was completed to a depth of 26 feet bgs. The TPH-g laboratory results from the subsurface soil samples indicated a range of concentration with the sample collected at 9 feet bgs with the highest concentration at 2,490 mg/kg attenuating with depth with the results for the soil samples collected at 21 feet bgs and 26 feet bgs at 7.2 mg/kg and 17 mg/kg, respectively. The laboratory results from initial subsurface water samples collected on June 2011 following the installation of the four shallow screened monitoring wells indicated that the following COCs were detected:

- TPH-d: 4,180 µg/L (MW-14), 124 µg/L (MW-15), 509 µg/L (MW-16), and 687 µg/L (MW-17).
- TPH-g: 51,600 µg/L (MW-14), 357 µg/L (MW-15), 1,420 µg/L (MW-16), and 9,130 µg/L (MW-17).
- Benzene: 2,750 µg/L (MW-14), LRL of 0.50 µg/L (MW-15), 79.4 µg/L (MW-16), and 2,530 µg/L (MW-17)
- Toluene: 67.9 µg/L (MW-14), LRL of 0.50 µg/L (MW-15), LRL of 0.50 µg/L (MW-16), and 960 µg/L (MW-17).
- Ethylbenzene: 1,790 µg/L (MW-14), LRL of 0.50 µg/L (MW-15), 4.2 µg/L (MW-16), and 35.1 µg/L (MW-17)
- Total Xylenes: 13,400 µg/L (MW-14), LRL of 1.5 µg/L (MW-15), LRL of 1.5 µg/L (MW-16), and 907 µg/L (MW-17)
- MTBE: 1.9 µg/L (MW-14), 15.2 µg/L (MW-15), 1,200 µg/L (MW-16), and 0.74 µg/L (MW-17).

Based on the above referenced laboratory results, the source of the majority of the residual dissolved phase COCs appear to be in the area of Monitoring Well MW-14 and MW-17 with minor impacts in the area of MW-15 and MW-16 (Antea Group, 2011).

March 2012 - Antea Group advanced five (5) borings (HPB-1 through HPB-5) at the Site. The borings were advanced using direct push technology. The borings were used to obtain a hydraulic profile data beneath the Site. The results of the testing activities were reported in a document entitled *ISCO Pilot Test Work Plan* dated May 2012 (Antea Group, 2012).

April 2013 – Antea Group submitted a document to ACHCSA entitled *Remedial Action Plan* (RAP) dated April 23, 2013 (Antea Group, 2013a). The RAP provided a summary of the activities leading up to and including the implementation of an excavation remedy.

July 2013 - As outlined in the above referenced RAP, Antea Group advanced ten (10) soil borings (SB-1 through SB-10) at the Site. The borings were advanced using direct push technology (Antea Group, 2014a). The borings were used to delineate petroleum hydrocarbon impacted soil in the vicinity of Monitoring Well MW-6. The laboratory results from the assessment activities are summarized in **Table 2**.

September 2013 - Antea Group submitted a document to ACHCSA entitled *Corrective Action Plan (CAP)* dated November 22, 2013 (Antea Group, 2013b). The objective of this document was to provide additional information supporting the excavation remedy option.

June 2014 - Antea Group decommissioned monitoring wells MW-10, MW-12, MW-12A, and MW-17 by pressure grouting in preparation for on-site soil excavation activities (Antea Group, 2014b).

September 2014 - Antea Group advanced two (2) cone penetration test (CPT) borings CPT-1 and CPT-2 in preparation for soil excavations on site. Soil and groundwater samples were not collected. Data from the borings were used to help design shoring for excavations. Antea Group advanced three (3) off-site soil borings, SB-13 through SB-15 and subsurface soil and water samples were collected from the borings (Antea Group, 2014c). A summary of the laboratory results from the subsurface soil and water samples is provided in **Tables 2** and **3** as well as **Figure 6**.

July 2015 – in preparation for on-site soil excavation activities under Alameda County Public Works Agency (ACPWA) permits W2015-0552 to W2015-0554, Antea Group decommissioned on-site monitoring wells MW-6 and MW-14 on July 7, 2015. Three (3) on-site soil borings were advanced for waste characterization (WC-1 to WC-3) within the footprint of the planned excavation footprints to evaluate potential disposal options for the transport of excavated soil (Antea Group, 2015b). An additional three borings, not originally included in the work plan (SB-16 to SB-18), were added to the scope of work to provide laboratory characterization data along the southwestern edge of the property boundary where the future excavation footprint was to be located. Additional off-site lateral characterization of the dissolved phase hydrocarbon plume was also performed by the completion of soil borings SB-11 and SB-12 (Antea Group, 2015d). Please refer to **Figure 6** for the location of the “SB” borings and **Tables 2** and **3** for laboratory results.

May-July 2016 - Antea Group supervised the completion of four excavations (E-1, E-2, E-3, and E-4). The combined total area was approximately **2,500 square feet** to a depth of approximately 12-feet. Please refer to **Figure 3** for the location of the four excavation footprints. The excavation work removed **1,559.85 tons** of soils that was properly disposed of at an off-site location. During excavation activities approximately **6,867 gallons** of water was recovered, treated, and properly disposed in compliance with an East Bay Municipal Utility District (EBMUD) discharge permit. In order to facilitate *in-situ* aerobic biodegradation of the residual dissolved hydrocarbon plume, Regensis branded Oxygen Release Compound® Advanced (ORC-A) was added, in pellet form, to the excavation limits. Approximately 1,404 pounds of ORC-A was included in the backfill material in order to facilitate further biodegradation in the subsurface saturated material (Antea Group, 2016).

2.3 Hydrogeological Setting

The Site is located within the East Bay Plain Subbasin, which is within the Santa Clara Valley Groundwater Basin, which is within the San Francisco Bay Hydrologic Region. The East Bay Plain Subbasin is a northwest trending alluvial plain bounded on the north by San Pablo Bay, on the east by the contact with Franciscan Basement rock, on the south by the Niles Cone Groundwater Basin. The East Bay Plain Basin extends beneath San Francisco Bay to the west. Numerous creeks including San Pablo Creek, Wildcat Creek, San Leandro Creek, and San Lorenzo Creek flow from the western slope of the Coast Ranges westward across the plain and into the San Francisco and San Pablo bays. Average precipitation in the subbasin ranges from about 17-inches in the southeast to greater than 25

inches along the eastern boundary, most of which occurs between the months of November and March. The East Bay Plain subbasin aquifer system consists of unconsolidated sediments of Quaternary age. Deposits include the early Pleistocene Santa Clara Formation, the late Pleistocene Alameda Formation, the early Holocene Temescal Formation, and Artificial Fill. The cumulative thickness of the unconsolidated sediments is about 1,000 feet. The average specific yield of the basin was calculated to be about 6% (Delta, 2009).

2.4 Site Hydrogeological Conditions

Based on the most recent groundwater monitoring event completed in fourth quarter 2016 for gauging and sampling of six (6) monitoring wells, the depth to water beneath the site ranges from 0.97 feet (MW-9) to 3.88 feet (MW-13) below top of casing (feet BTOC). The current monitoring well network has a range of well depths (total depth below ground surface, or bgs) of 13- to 20-feet bgs. **Table 1** provides a summary of well construction details.

The fourth quarter 2016 subsurface water movement is southwesterly at an estimated gradient of 0.067 (**Figure 10**). **Figure 11** illustrates estimate subsurface water movement for monitoring events completed between 1992 through the fourth quarter 2016 (92 data points). Based on this data the general direction of subsurface water movement beneath the Site is southerly at an average gradient of 0.024.

Table 5 provides a summary of past laboratory results from subsurface water sampling activities and **Table 6** provides the same for the most recent subsurface water sampling event completed in the fourth quarter 2016. **Figure 12** provides the concentrations of TPH-g, benzene, and MTBE detected in water samples obtain during the most recent monitoring referenced above. A review of this figure indicates that out of the six (6) monitoring well currently included in the ongoing monitoring program (MW-3, MW-9, MW-11, MW-13, MW-15, and MW-16), the COC TPH-g was only detected in concentrations above laboratory reporting limits in water samples collected from monitoring wells MW-3 and MW-15 at 81 µg/L and 98 µg/L, respectively. The COC benzene was not detected in concentrations above laboratory reporting limits in any of the water samples collected during the fourth quarter 2016 sample event, while the COC MTBE was detected in five (5) of the water samples collected ranging in concentration from 6.9 µg/L to 33 µg/L. Based on these results, the current status of the concentration of both benzene and MTBE are below LTC Policy Groundwater Media-Specific criteria of 3,000 micrograms per liter (µg/L) and 1,000 µg/L, respectively.

Five (5) offsite soil borings (SB-11, SB-12, SB-13, SB-14, and SB-15) were advanced in 2014-2015 to help delineate the dissolved phase fuel hydrocarbon plume by collecting subsurface water samples using temporary well points. These borings were located south of the Site which is the predominate direction of subsurface water movement. The COCs, TPH-g, benzene, and MTBE were not detected in concentrations above laboratory reporting limits in the subsurface water samples collected during the assessment activities. Please refer to **Figure 6** and **Table 3** for the location and a summary of the laboratory results (Antea Group, 2014c; Antea Group, 2015d).

3.0 SENSITIVE RECEPTOR SURVEY

Antea Group conducted a *Sensitive Receptor Survey*, dated March 13, 2015 (**Appendix D**) to identify any sensitive receptors which have the potential to be affected by a petroleum hydrocarbon release at the site (Antea Group, 2015a). In addition, the current status of the receptor outlined in the above referenced report were checked by Antea Group by requesting an *EDR GeoCheck* and *Offsite Receptor Reports* from Environmental Data Resources,

Inc. (EDR) that was completed August 3, 2016 (**Appendix E**). These two reports provide updated information for sensitive public receptors (i.e., day care centers, schools, hospitals, and colleges) as well as the location of surface bodies of water, water production wells. Antea Group also reviewed information on the GAMA survey from the State Water Resources Control Board (SWRCB) Geotracker GAMA (GAMA) website (**Appendix F**) and obtained well completion reports from the Department of Water Resources (DWR) that are included as **Appendix G**. East Bay Municipal Utility District was contacted to determine if they have any water supply wells in the area.

3.1 Well Search

Antea Group contacted the DWR to obtain copies of Well Completion Reports and ACPWA to obtain a copy of their records for wells located within 0.5 miles of the site. The purpose of the search was to identify the location of known water supply, domestic, municipal, and irrigation wells which have the potential to be affected by a petroleum hydrocarbon release at the Site. Antea Group identified three (3) water supply wells in the search area whose locations could be confirmed:

- W.E. Lyons Construction, Irrigation (1,184 feet south-southeast of the site). Mr. Greg Lyons confirmed in an email dated April 12, 2017 that this well is not active and there are no current plans to reactive it).
- Ratto Brothers, Irrigation (1,852 feet south-southeast of the site)
- Ratto Bros, Inc., Irrigation (2,758 feet south-southeast of the site)

Five (5) additional wells were identified whose location and status could not be determined following during site reconnaissance activities completed on March 5, 2015. Two of the water supply wells listed above were identified from the data provided by the DWR, the third well was identified from the data provided by ACPWA. Well locations are shown on **Figure 13**. According to EBMUD, they do not operate any water supply wells within a 0.5-mile radius of the site.

3.2 March 2015 Sensitive Receptors

The sensitive receptors (schools, churches, day care facilities, elderly care facilities, hospitals, surface water bodies, etc.) within a 0.5 mile radius from the March 2015 Antea Group report. The distance and direction relative to the Site included in **Figure 13** are provided below:

- A. Lighthouse Community Charter School (552 feet east)
- B. Canal which flows to San Leandro Bay (1,341 feet southwest)
- C. ITT Technical Institute (2,137 feet north-northwest)
- D. Paradise Baptist Church (2,264 feet southeast)
- E. Brookfield Elementary School and Early Childhood Center (2,486 feet east-southeast)
- F. Praise God Korean Church and Oikos University (2,170 feet north-northwest)
- G. Evangelical Lutheran Church (2,944 feet northwest)
- H. Drainage Ditch (988 feet southeast)
- I. Mountain of Fire and Miracle Ministries (1,347 feet north-northeast)
- J. Alameda Hebron Baptist Church (1,335 feet west-northwest)

Based on the direction of subsurface water movement estimated from past monitoring events, the predominant direction of subsurface water movement has been in a southeasterly direction with movement toward the west.

Please refer to **Figure 11** for a rose diagram showing the estimated direction of subsurface water movement from 1992 through 2016. The LTC Policy focuses on water production wells and surface water features within 1,000 feet of the contaminant plume footprint. From the list above, the drainage ditch identified as Item “H” on **Figure 13**, is situated just short of 1,000 feet to the southeast of the Site. The closest water production well (Item 1, W.E. Lyons Construction irrigation well) is situated just over 1,100 feet southeast of the Site. It should be noted that a representative of W.E. Lyons Construction has confirmed that this well is currently inactive. A review of satellite imagery available in the Geotracker database indicates that this surface feature does not contain surface water up slope from the canal identified as Item “B” on **Figure 13**. This would suggest that surface water is likely only present following precipitation events and is therefore not in direct contact with the subsurface water being monitored to the west at the Site.

3.3 2016 EDR Sensitive Receptor Survey

As indicated above, the current status of sensitive receptors was checked using Environmental Data Resources, Inc. (EDR) who provided information on potential sensitive receptors within a 1-mile radius of the Site that included care centers, medical centers, nursing homes, schools, hospitals, colleges, arenas, and prison. The EDR report identified a total of 35 public receptors within the 1-mile search radius. The receptors identified included Day Care Centers, Schools, Hospitals, and Colleges. The sensitive receptors situated within ¼-mile (1,320 feet) of the Site include:

- **EDR ID Number 1:** AHA Hospitals located between the site and 660 feet (0 to 1/8 mile) south of the Site
- **EDR ID Number A2/A3:** Education for Change East Oakland Community Charter School located between 660 and 1,320 feet (1/8 to ¼ mile) south of the Site.
- **EDR ID Number 4:** Center of Employment Training (CET – Oakland) located between 660 and 1,320 feet (1/8 to 1/4 mile) west-southwest of the Site.

For additional details on these EDR potential sensitive receptors, please refer to **Appendix E**.

4.0 DISTRIBUTION OF CONSTITUENTS OF CONCERN

This section of the documents the likely source of the fuel releases as well as a summary of the various remedial actions completed at the Site.

4.1 Identification of Past Fuel Release Sources

In November 1991, the release of fuel composed of both gasoline and diesel was identified in an underground storage tank unauthorized release notification was issued to the ACHCSA. The source of the release was attributed to product piping. The assessment activities leading up to the issuance of the notification was completed in the area of the four dispensers. The highest concentrations of fuel related COCs were detected in the soil samples (sample P2 and P3) collected beneath the northeastern and southwestern dispensers, respectively (Kaprealian, 1991). The highest reported concentration of each COCs were:

- TPH-d/DRO: 8,400 mg/Kg (Sample Location P2)
- TPH-g/GRO: 9,000 mg/Kg (Sample Location P2).
- Benzene: 48 mg/Kg (Sample Location P3)

- Toluene: 410 mg/Kg (Sample Location P3)
- Ethylbenzene: 330 mg/Kg (Sample Location P2)
- Xylenes: 1,500 mg/Kg (Sample Location P2)

In 1994, one (1) 280-gallon waste-oil UST was removed from the Site. The UST was made of steel, and no apparent holes or cracks were observed in the UST. One soil sample was collected from beneath the former UST at a depth of approximately 9 feet bgs. No petroleum hydrocarbons were reported (GeoStrategies, 1994; Kaprealian, 1994a, Kaprealian, 1994b). Based on these observations, this former UST is not considered an onsite source of a release into the subsurface beneath the Site.

In 1995 three (3) 10,000-gallon UST used to store both gasoline and diesel fuel were removed from the Site. No apparent holes or cracks were observed in the tanks during the removal process (Kaprealian, 1995a). Subsurface water was encountered in the tank cavity at a depth of approximately 8.5 feet bgs with the depth of the excavation extended to approximately 16 feet bgs. However, it should be noted that the average depth to water measured at Monitoring Well MW-3 in 1995 was approximately 3 feet bgs (**Table 5**). Although these USTs could have representative a source of a release of fuel into the subsurface due to over-spill from refueling activities, the condition of the USTs at the time of removal likely indicate that these USTs are a secondary fuel release source. Referring to **Table 4**, the highest COC concentrations reported from the excavation sidewalls at a depth of 8 feet bgs were:

- TPH-d/DRO: 1.8 mg/Kg (Sidewall Sample Location SW4)
- TPH-g/GRO: 140 mg/Kg (Sidewall Sample Location SW8).
- Benzene: 3.8 mg/Kg (Sidewall Sample Location SW2)
- Toluene: 5.3 mg/Kg (Sidewall Sample Location SW8)
- Ethylbenzene: 2.7 mg/Kg (Sidewall Sample Location SW8)
- Xylenes: 12 mg/Kg (Sidewall Sample Location SW8)

4.2 Remedial Action Summary

The following table provides a summary of the product, soil, subsurface water, and vapor mass removed from the Site during past remedial action activities.

Activity	Product (gallons)	Soil (tons)	Water (gallons)	Vapor Mass (pounds)	Reference
1992 – 1999 free product removal activities	19.7	NA	NA	NA	Gettler-Ryan, 2000; Appendix C, Kaprealian, 1992b
1995 Excavation Activities (total estimated excavation area of 10,600)	NA	9,666 ⁽¹⁾	125,000	NA	Kaprealian, 1995a, Kaprealian, 1995b
1999 DPE Testing Activities	NA	NA	1,000	328.26	TRC Alton Geoscience, 2000
2005 DPE Testing Activities	NA	NA	2,000	1.77	TRC, 2005
2010 water extraction event at monitoring wells MW-11, MW-12, and MW-12A	NA	NA	3,600	NA	Appendix C, Delta 2010bc
2016 Excavation Activities (total estimated excavation area of 2,500)	NA	1,559.85	6,867	NA	Antea Group, 2016
Estimated Totals	19.7	11,225.85	138,467	330.03	

Notes: Assumes 1.5 tons per cubic yard of soil.

Based on the footprint of the combined excavation areas completed in 1995/2016 of approximately 13,100 square feet and a total estimated area of the Site of 38,734 square feet, the excavation remedy was implemented on nearly 40 percent of the area of the Site with approximately 11,226 tons of impacted soil transported off-site for disposal. A total of 138,467 gallons were removed from the subsurface between 1995 and 2016, the majority of which was generated during the excavation activities. Nearly 20 gallon of product has been removed from monitoring wells between 1992 and 1999, but no product has been observed within the monitoring network in nearly 17 years (Table 5).

4.3 Post-2016 Excavation Subsurface Soil Conditions

The location and residual concentration of Benzene, Ethylbenzene, and Naphthalene above the LTC Policy Media-Specific Criteria (MSC) limits for Direct Contact and Outdoor Air Exposure (DC&OAE) under the Commercial Industrial and Utility Worker (CI&UW) receptor scenario following the completion of the 2016 excavation activities are provided in Figures 8A through 8D and 9A through 9D. The following table list the LTC Policy limits for subsurface soil samples collected between the surface and 10 feet bgs.

Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health

Chemical	Residential		Commercial/ Industrial		Utility Worker
	0 to 5 feet bgs	Volatilization to outdoor air (5 to 10 feet bgs)	0 to 5 feet bgs	Volatilization to outdoor air (5 to 10 feet bgs)	0 to 10 feet bgs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	1.9	2.8	8.2	12	14
Ethylbenzene	21	32	89	134	314
Naphthalene	9.7	9.7	45	45	219
PAH ¹	0.063	NA	0.68	NA	4.5

Notes:

1. Based on the seven carcinogenic poly-aromatic hydrocarbons (PAHs) as benzo(a)pyrene toxicity equivalent [BaPe]. Sampling and analysis for PAH is only necessary where soil is affected by either waste oil or Bunker C fuel.
2. The area of impacted soil where a particular exposure occurs is 25 by 25 meters (approximately 82 by 82 feet) or less.
3. NA = not applicable
4. mg/kg = milligrams per kilogram

Based on these results, only one sidewall soil sample collected from the excavation “E3” at 10 feet bgs exhibited concentrations above the LTC Policy limits referenced above. Benzene was detected at 18.8 mg/Kg and Ethylbenzene was detected at 179 mg/kg. The laboratory results from the remaining 32 sidewall samples collected between the surface and 10 feet bgs during the excavation implementation activities did not exceed the LTC Policy threshold concentrations.

4.4 Post-2016 Excavation Subsurface Water Conditions

To evaluate the current status of the COC saturated zone plume stability, the data collected during the on-going monitoring programs is evaluated using time-series graphs (Appendix H), the Mann Kendall statistical testing methodology (Appendix I), and comparing the past maximum dissolved-phase concentrations of the COCs (GRO/TPH-g, benzene, and MTBE) to the above referenced fourth quarter 2016 monitoring results (Figure 14 and Tables 6 and 7). The goal is to provide documentation to support that the residual dissolved-phase plume is stable and/or decreasing in its concentration trend overtime.

Time Series Evaluation

Appendix H, Time Series Graphs 1 through 14 provides the trend in concentration for selected COCs leading up to and after the implementation of the various remedies implemented after the 2016 excavation activities. The data presented in the graphs indicates that the dissolved phase plume concentration trend for benzene and MTBE is stable and/or reducing in magnitude following the in the time period preceding the excavation activities.

Mann Kendall Test

Further evidence for the presence of a stable and/or decreasing concentration trend in the saturated zone fuel hydrocarbon plume is demonstrated by the use of the Mann Kendall test methodology. The data used in the analysis of the concentration trends for the constituents TPH-d (DRO), TPH-g (GRO), benzene, and MTBE was obtained using the twenty (20) most recent available laboratory results from water samples collected from the fourteen (14) monitoring wells associated with the ongoing reoccurring monitoring program.

The Mann-Kendall test is a non-parametric analysis that compares the relative magnitudes of data in a temporal order (USEPA, 2000). The Mann-Kendall test is particularly useful in analyzing subsurface water sample data since it does not need to conform to a particular distribution or sampling frequency past sampling data values are evaluated as an ordered time series and each monitoring data value is compared to each subsequent data values (Gilbert, R.O., 1987). The initial value of the Mann-Kendall statistic (S) is assumed to be zero (0) with no trend. If a data value from a later time period is higher than a data value from an earlier time period, "S" is incremented by one (1). If the data value from a later time period is lower than a data value sampled earlier, "S" is decremented by one (1). The net result of each increment and decrement yields the final value of Mann-Kendall statistic (S). A positive value of "S" is an indicator of an increasing trend, and a negative value indicates a decreasing trend. Intermediate values of "S" indicate the null hypothesis or baseline condition and the absence of a trend, or a "stable" result. Lastly, a probability level, referred to as the confidence factor (CF), is applied to the final value of "S" to statistically quantify the significance of the trend by computing the probability associated with the sample size (USEPA, 2000).

The results of the Mann Kendall test indicates that the saturated zone fuel hydrocarbon plume as represented by the four COCs (TPH-d, TPH-g, benzene, and MTBE) is generally stable and/or decreasing in concentration over the time period leading up to and immediately after the 2016 excavation activities. For details about the results from the Mann Kendall Test, please refer to **Appendix I** for both a tabular summary (**Table I-1**) along with a graphical presentation.

COC Concentration Reduction Evaluation

The final method to demonstrate the reduction of COC concentrations for the Site is provided on **Table 7** and **Figure 14** which identifies the maximum concentration of DRO, GRO, benzene, and MTBE detected during the on-going subsurface water monitoring program beginning at the Site in 1992. **Table 7** compares the maximum reported dissolved phase concentration reported since the start of the monitoring program to the laboratory results obtained during the fourth quarter 2016 sampling. Based on these comparisons, the average site-wide reduction in concentration of dissolved phase benzene and MTBE is estimated at **91** percent (**97** percent for currently existing monitoring well locations), while the combined reduction of DRO/GRO is estimated at **87** percent (**86** percent for currently existing monitoring well locations). It should be noted that the DRO results reported for fourth quarter indicated that that the chromatographic pattern was inconsistent with the profile of the referenced fuel standard.

5.0 CONCEPTUAL SITE MODEL

The intent of this section of the document is to consolidate the available information presented in the previous sections for development of the Conceptual Site Model (CSM) to meet General LTC Policy Criteria “e”. The following sections provide a summary of the information to meet each element of the CSM requirements.

5.1 Site Description

The Site is an operating 76 station located on the southwestern corner of Hegenberger Road and Edgewater Drive in Oakland, California (**Figure 1**). The Site contains six (6) fuel dispensers on two (2) islands under a single canopy, three (3) underground storage tanks (USTs) on the north side of the Site, a car wash facility on the west side of the Site, and a station building in the central portion of the Site (**Figure 2**). The configuration of the USTs and conveyance piping includes two 15,000 gallon USTs that are used to store regular and premium unleaded gasoline and one 10,000 gallon UST used to store diesel fuel each installed in 1995. Each UST is double-walled with steel clad in fiberglass. The conveyance piping is also double-walled constructed with fiberglass.

5.2 Source Areas

In November 1991, the release of fuel composed of both gasoline and diesel was identified in a underground storage tank unauthorized release notification was issued to the ACHCSA. The source of the release was attributed to product piping. The assessment activities leading up to the issuance of the notification was completed in the area of the four dispensers. The highest concentrations of fuel related COCs were detected in the soil samples (sample P2 and P3) collected beneath the northeastern and southwestern dispensers, respectively (Kaprealian, 1991). The highest reported concentration of each COCs were:

- TPH-d/DRO: 8,400 mg/Kg (Sample Location P2)
- TPH-g/GRO: 9,000 mg/Kg (Sample Location P2).
- Benzene: 48 mg/Kg (Sample Location P3)
- Toluene: 410 mg/Kg (Sample Location P3)
- Ethylbenzene: 330 mg/Kg (Sample Location P2)
- Xylenes: 1,500 mg/Kg (Sample Location P2)

In 1995 three (3) 10,000-gallon UST used to store both gasoline and diesel fuel were removed from the Site. No apparent holes or cracks were observed in the tanks during the removal process (Kaprealian, 1995a). Subsurface water was encountered in the tank cavity at a depth of approximately 8.5 feet bgs with the depth of the excavation extended to approximately 16 feet bgs. However, it should be noted that the average depth to water measured at Monitoring Well MW-3 in 1995 was approximately 3 feet bgs (**Table 5**). Although these USTs could have representative a source of a release of fuel into the subsurface due to over-spill from refueling activities, the condition of the USTs at the time of removal likely indicate that these USTs are a secondary fuel release source. Referring to **Table 2**, the highest COC concentrations reported from the excavation sidewalls at a depth of 8 feet bgs were:

- TPH-d/DRO: 1.8 mg/Kg (Sidewall Sample Location SW4)
- TPH-g/GRO: 140 mg/Kg (Sidewall Sample Location SW8).
- Benzene: 3.8 mg/Kg (Sidewall Sample Location SW2)
- Toluene: 5.3 mg/Kg (Sidewall Sample Location SW8)
- Ethylbenzene: 2.7 mg/Kg (Sidewall Sample Location SW8)
- Xylenes: 12 mg/Kg (Sidewall Sample Location SW8)

5.3 Site Geology and Hydrogeology

The Site is located within the East Bay Plain Subbasin, which is within the Santa Clara Valley Groundwater Basin, which is within the San Francisco Bay Hydrologic Region. The East Bay Plain Subbasin is a northwest trending alluvial plain bounded on the north by San Pablo Bay, on the east by the contact with Franciscan Basement rock, on the south by the Niles Cone Groundwater Basin. The East Bay Plain Basin extends beneath San Francisco Bay to the west. Numerous creeks including San Pablo Creek, Wildcat Creek, San Leandro Creek, and San Lorenzo Creek flow from the western slope of the Coast Ranges westward across the plain and into the San Francisco and San Pablo bays. Average precipitation in the subbasin ranges from about 17 inches in the southeast to greater than 25 inches along the eastern boundary, most of which occurs between the months of November and March. The East Bay Plain subbasin aquifer system consists of unconsolidated sediments of Quaternary age. Deposits include the early Pleistocene Santa Clara Formation, the late Pleistocene Alameda Formation, the early Holocene Temescal Formation, and Artificial Fill. The cumulative thickness of the unconsolidated sediments is about 1,000 feet. The average specific yield of the basin was calculated to be about 6% (Delta, 2009).

The subsurface stratigraphy beneath the Site was evaluated in 2014 (Antea Group, 2014a), the results of which are depicted on the stratigraphic sections included as **Figures 15A, 15B, and 15C** and the logs for the various wells and borings included in **Appendix J**. Based on the interpretation included the cross sections and the timing of the completion of the various monitoring wells and borings, the native subsurface stratigraphy has likely been impacted by the imported fill material used to backfill past excavations completed prior to and after the 1995 excavation activities. An example of this is demonstrated by the presents of gravel observed at monitoring well MW-11 (**Figure 15A**) that was installed in 2010. Since the 1995 excavation in this area reportedly only extended to 5 to 6 feet bgs, the remaining gravel observed below this depth interval must of pre-dated 1995.

The stratigraphic data collected from boring locations that do not appear to have been effected by the introduction of fill material, suggests that there is a laterally continuous 2 to 4 foot thick sandy zone along the western side at a depth of 3 to 6 feet. This sandy zone seem to extend to the east to the western edge of the dispensers. Although the presents of additional sandy lenses appear to be present at depth along the eastern edge of the site, these lenses seem to not extend northward beyond the footprint of the dispenser islands. For discussion purposes, this shallow sandy zone will be referred to as “Sand Zone A”. The boring converted into Monitoring Well MW-12A is the deepest boring completed at the Site which is located at the western edge immediately adjacent to the dispenser island. The total depth of the boring is 44 feet bgs with the screen interval of the monitoring well set at 30 to 34 feet bgs in a sandy zone that ranges in depth from 34 feet bgs to the total depth of the boring. For discussion purposes, this shallow sandy zone will be referred to as “Sand Zone B”.

Given that the primary release likely occurred from the dispenser island, the “Sand Zone A” likely transported the dissolved phase fuel hydrocarbon plume toward the west as indicated by the elevated concentrations of COCs detected in water samples collected from Monitoring Wells MW-6 and MW-14 (**Figure 14**). The fourth quarter 2016 subsurface water movement within Sand Zone A is west to southwest at an estimated gradient of 0.067 (**Figure 10**). **Figure 11** illustrates estimate subsurface water movement for monitoring events completed between 1992 through the fourth quarter 2016 (92 data points). Based on this data the general direction of subsurface water movement beneath the Site within “Sand Zone A” has been southerly at an average gradient of 0.024. The vertical movement of the dissolved phase plume indicates that the pre-2016 excavation laboratory results indicate that the subsurface water in “Sand Zone B” had been impacted by the fuel release (**Figure 14**; Monitoring Well

MW-12A). It should be noted that when the water elevations data collected from Sand Zone B Monitoring Well MW-12A is compared to the adjacent “Sand Zone A” monitoring wells MW-10, MW-12, and MW-17 (**Appendix H, Time Series Graph 15**), the measured subsurface water elevations are similar indicating that there is no appreciable downward gradient beneath the source area.

5.4 Nature and Extent of Impacts

For UST release sites, the SWRCB adopted Resolution No. 2012-0016 that established the Water Quality Control Policy for Low-Threat UST Case Closure (LTC Policy). The LTC Policy outlined the general characteristics that a given site must exhibit to qualify for closure along with media-specific criteria (MSC) including Groundwater (GW), Petroleum Vapor Intrusion to Indoor Air (PVI), and Direct Contact and Outdoor Air Exposure (DC&OAE). This section provides an overview of the current status of the fuel hydrocarbon plume both in adsorb phase in subsurface soil and dissolved phase both lateral and vertically in the saturated zone.

5.4.1 Adsorb Phase in Subsurface Soil

The following provides the location and residual concentration above the LTC Policy MSC limits for Commercial/Industrial and/or Utility Worker (CI&UW) sensitive receptor scenarios for potential future exposure to these COCs following the completion of the 2005 DPE operations activities. Please refer to **Section 4.3** for a summary of the LTC Policy limits for benzene, ethylbenzene, and naphthalene. As indicated in previous sections, the dispenser area is considered the main point of the release of the fuel hydrocarbons first identified in 1991 when the release was first reported to the local enforcement agency. Subsequent remediation of subsurface soil in this area was completed in 1995 when the dispensers were replaced and the footprint of the dispenser islands along with the area adjacent to the west was excavated to 5- to 6- feet bgs (**Figure 3** shows the outline of the 1995 excavation). The area immediately west of the dispenser island along the western border of the Site was excavated to 12-feet in 2016 (Excavation E-1, **Figure 7**). Thus the issue with the LTC Policy limits for the COCs between the surface and 5 feet has been addressed through the combined excavation implementations completed in 1995 and 2016. As indicated in **Section 4.3**, only one sidewall soil sample collected from the excavation “E3” at 10 feet bgs exhibited concentrations above the LTC Policy limits referenced above. Benzene was detected at 18.8 mg/Kg, ethylbenzene was detected at 179 mg/kg, and naphthalene was detected at 52 mg/Kg. The laboratory results from the remaining 32 sidewall samples collected between the surface and 10 feet bgs during the excavation implementation activities did not exceed the LTC Policy threshold concentrations.

A statistical analysis of the likelihood of encountering concentrations above the LTC Policy limits for the three COCs of interest was included in the Excavation Completion Report dated November 22, 2016 (Antea Group, 2016). The following provides the analysis of the available to meet the LTC Policy criteria for Direct Contact/Outdoor Air Exposure. The laboratory data collected from 2016 excavation confirmation soil sampling activities was used in calculating an average exposure concentration for a representative area. Typically in performing this type of analysis, a 95 percent upper confidence level (95% UCL) average concentration is routinely used in risk assessments in California, and is recommended in the 2012 Leaking Underground Storage Tank (LUFT) Guidance Manual (SWRCB, 2012). For this site the 95% UCL concentration was calculated using the available laboratory results from soil samples collected outside the excavation boundaries (sidewall samples). The bottom samples were not used in the 95% UCL calculation since their depth was greater than 10 feet bgs. However, it should be noted the results for these soil samples were below the LTC Policy Table 1 criteria.

In order to evaluate the potential of an exceedance of the LTC Policy concentrations proximate to and in between the excavated areas, Antea Group used the EPA published statistical software ProUCL Version 5.1 (October, 2015). The initial step in this operation was to enter the available laboratory results from sidewall sampling data (soil sample obtained between the surface and 10 feet bgs) into the ProUCL software. The following key elements using the Kaplan-Meier (KM) method calculated:

- The mean concentration for Benzene is 1.866 mg/kg with a standard deviation of 4.347 mg/kg.
- The mean concentration for Ethyl-benzene is 16.24 mg/kg with a standard deviation of 35.21 mg/kg.
- The mean concentration for Naphthalene is 5.356 mg/kg with a standard deviation of 10.57 mg/kg.

The 95% UCL was calculated using the mean and standard deviation values for each COC of interest, which are in this case benzene, Ethylbenzene, and Naphthalene. Note that the 95% UCL concentration is a value that has a 5% probability of exceedance. This means that there is 95% confidence that the true distribution of the sampling data has a population mean less than or equal to the calculated UCL. The ProUCL software calculated the UCL using the Gamma Kaplan-Meier statistics and suggested the following 95% UCL values be used:

- Benzene 4.405 mg/kg
- Ethylbenzene 35.91 mg/kg
- Naphthalene 10.96 mg/kg

Below are summary tables that compares the 95% UCL concentrations to the LTC concentrations for soil.

BENZENE	Feet Below Grade	LTC Conc. (mg/kg)	Max Concentration (mg/kg)	95% UCL Concentration (mg/kg)	Meets LTC Criteria
Commercial/Industrial	0-5	8.2	ND	N/A	Yes
	5-10	12	18.8	4.405	
Utility Worker	0-10	14	18.8	4.405	

ETHYLBENZENE	Feet Below Grade	LTC Conc. (mg/kg)	Max Conc. (mg/kg)	95% UCL Concentration (mg/kg)	Meets LTC Criteria
Commercial/Industrial	0-5	89	ND	N/A	Yes
	5-10	134	179	35.91	
Utility Worker	0-10	314	179	35.91	

NAPHTHALENE	Feet Below Grade	LTC Conc. (mg/kg)	Max Conc. (mg/kg)	95% UCL Concentration (mg/kg)	Meets LTC Criteria
Commercial/Industrial	0-5	45	ND	N/A	Yes
	5-10	45	52	10.96	
Utility Worker	0-10	219	52	10.96	

The statistical analysis of the sidewall samples and the data posted on **Figures 9A through 9D** would seem to support the following conclusions:

- The excavation was successful in removing soil impacted by benzene, ethylbenzene, and naphthalene that were above the LTC Policy concentrations in all but one sidewall sample location situated at 10-feet bgs.
- Statistically, it is unlikely that LTC Policy concentrations would be exceeded in subsurface soil proximal to and/or between the excavations.
- Subsurface soil situated between the excavations boundaries and under the utility lines will not likely require additional remediation.

Appendix K contains the ProUCL worksheets and the data table used for the calculations.

5.4.2 Vertical and Lateral Extent in Dissolved Phase in Saturated Zone

The lateral extent of the dissolved phase hydrocarbon plume is currently defined by the laboratory results from water samples collected from six (6) on-site monitoring wells. Using the TPH-g results to define the extent of the post 2016 excavation remedy, the plume footprint appears to reside within the footprint of the Site between Monitoring Well MW-9 to the north and MW-11 to the south (**Figure 12**). The LTC Policy evaluates lateral plume area using the following criteria:

- (1) a. The contaminant plume that exceeds water quality objectives is less than 100 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- (2) a. The contaminant plume that exceeds water quality objectives is less than 250 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
d. The dissolved concentration of benzene is less than 3,000 micrograms per liter ($\mu\text{g/l}$), and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/l}$.
- (3) a. The contaminant plume that exceeds water quality objectives is less than 250 feet in length.
b. Free product has been removed to the maximum extent practicable, may still be present below the site where the release originated, but does not extend off-site.
c. The plume has been stable or decreasing for a minimum of five years.
d. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
e. The property owner is willing to accept a land use restriction if the regulatory agency requires a land use restriction as a condition of closure.
- (4) a. The contaminant plume that exceeds water quality objectives is less than 1,000 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
d. The dissolved concentration of benzene is less than 1,000 $\mu\text{g/l}$, and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/l}$.
- (5) a. The regulatory agency determines, based on an analysis of site specific conditions that under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.

Based on the distance between monitoring wells MW-9 and MW-11, the length of the dissolved phase TPH-g plume likely meets the LTC Policy Criteria No. 2. The remaining elements of this criteria requires that there is no free product (none observed in nearly 17 years; **Table 5**) and that the dissolved phase concentrations of benzene and MTBE be less than 3,000 $\mu\text{g/L}$ and 1,000 $\mu\text{g/L}$, respectively. Currently benzene concentrations are below laboratory reporting limits and the maximum concentration of MTBE is 33 $\mu\text{g/L}$. The remaining element of this criteria is that the defined plume boundary be a distance greater than 1,000 feet from water supply wells and surface water features. A review of sensitive receptor included in **Section 3.3**, indicates the current site conditions do not meet the distance requirements for the surface water features and the water supply wells. A review of **Figure 13**, indicates that to the southeast of the Site, there is drainage ditch (Item H) and an inactive irrigation well (W.E. Lyons Construction Company well) located approximately 988 feet and 1,184 feet from the Site. A review of satellite imagery available in the Geotracker database indicates that this surface feature does not contain surface water up slope from the canal identified as Item "B" on **Figure 13**. This would suggest that surface water is likely only present following precipitation events and is therefore not in direct contact with the subsurface water being monitored to the west at the Site.

The vertical distribution of the dissolved phase plume was evaluated using laboratory results from water samples collected from on-site Monitoring Well MW-12A, which was constructed with a screen interval situated within the above referenced “Sand Zone B”. Based on the stratigraphic cross section B-B’ (**Figure 15B**), the upper contact of this sandy zone is approximately 32 feet bgs. Post-2016 excavation concentrations cannot be evaluated since the monitoring well was abandoned to permit the completion of the excavation remedy. However, a review of the status of the dissolved phase COCs concentrations (**Appendix H, Time Series Graph 9**) prior to the abandonment of the monitoring well in 2014, indicates a decreasing trend in concentration. The Mann Kendall statistical test of the data suggests that the concentrations of these COCs were stable (**Appendix I**). Therefore, it is reasonable to assume that the post 2016 excavation activities, which removed additional fuel impacted subsurface material (identified in **Section 5.2** as the primary source of the fuel release) along the western side of the dispenser islands (Excavation Location “E-1”; **Figures 8A** and **9A**), will only improve the likelihood of a continued decline in COC concentrations within the deeper saturated zone.

5.5 Human Health Risk

Based on the data presented in this report and the LTC Policy, the Site does not pose a significant human health risk.

5.6 Ecological Risk

The facility is located in a developed portion of Alameda County, California which does not pose a significant ecological risk.

6.0 LTC POLICY CLOSURE STATUS SUMMARY

This section of the document provides a detailed summary the SWRCB Resolution No. 2012-0016 LTC Case Closure checklist. The criterion includes eight (8) General and three (3) Media-Specific items that are evaluated in this section of the document.

6.1 General Criteria

The following sections provide a summary of the current status of each of the eight (8) general criteria promulgated in the above referenced SWRCB resolution.

6.1.1 The Unauthorized Release is Located within the Service Area of a Public Water System

The site is located in the City of Oakland which obtains most of its water supply from EBMUD. The EBMUD’s main water supply comes from the 577-square mile watershed of the Mokelumne River on the western slope of the Sierra Nevada. The remaining water supply is sourced from protected local watersheds. According to EBMUD, they do not operate any water supply wells within 0.5-mile radius from this site.

6.1.2 The Unauthorized Release Consists Only of Petroleum

As indicated in **Section 2.1**, the Site has been a retail automotive service station since at least 1991 when the release case was first initiated and remains an active service station. Documentation available on Geotracker for open case RO0000219 has only identified the gasoline and diesel as a contaminant of concern.

6.1.3 The Unauthorized ('Primary') Release from the UST System Has Stopped

As outlined in **Section 4.1**, ConocoPhillips has had the primary sources of the unauthorized releases (i.e. product dispensers and conveyance piping) removed and replaced in 1995. Although, not considered a primary source of the release, the USTs were also removed and replaced during the 1995 activities.

6.1.4 Free Product Has Been Removed to the Maximum Extent Practicable

As indicated in **Section 4.2**, nearly 20 gallon of product has been removed from monitoring wells between 1992 and 1999, but no product has been observed within the monitoring network in nearly 17 years (**Table 5**).

6.1.5 Conceptual Site Model Completed

The CSM for the Site (stratigraphy, hydrogeology, and contaminant distribution) have been described in **Section 5.0**. The monitoring well details is provided in **Table 1** and **Appendix J**. Stratigraphic sections are provided in **Figures 15A, 15B, and 15C** and the current lateral extent of the dissolved phase plumes for the COCs TPH-g, benzene, and MTBE is provided on **Figure 12**.

6.1.6 Secondary Source Has Been Removed to the Extent Practicable

Based on the footprint of the combined excavation areas completed in 1995/2016 of approximately 13,100 square feet and a total estimated area of the Site of 38,734 square feet, the excavation remedy was implemented on nearly 40 percent of the area of the Site with approximately 11,226 tons of impacted soil transported off-site for disposal. The footprint of the excavations are depicted on **Figure 7**.

6.1.7 Soil and Groundwater Have Been Tested for MTBE

Both soil and subsurface water have been tested for MTBE and the results reported in accordance with Health and Safety Code section 25296.15. Results of the soil and subsurface water testing were reported in the associated site assessment reports, the periodic monitoring and sampling reports uploaded to the California State Water Resources Control Board Geotracker database. Available data for soil and subsurface water is provided in **Tables 2** and **5**. The maximum and current concentrations of these COCs are also provided in **Table 7** and **Figure 14**.

6.1.8 Nuisance

A nuisance, as defined by Water Code Section 13050-13051 meets each of the following criteria:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;
- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal;
- Occurs during, or as a result of, the treatment or disposal of wastes;

No nuisance conditions exist at the Site.

6.2 Media- Specific Criteria

The following provides a summary of the status of the three media specific LTC criteria based on the information presented in previous sections of this document.

6.2.1 Groundwater

The current site conditions appear to be in compliance with the LTC Policy media specific requirements for Criteria Number 2, which requires that the site meets the following conditions:

- The contaminant plume that exceeds water quality objectives is less than 250 feet in length
- There is no free product
- The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary
- 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.

Please refer to **Section 5.4.2** for a summary of the available documentation that supports this interpretation of the LTC Policy media specific requirements and its application to the current site conditions.

6.2.2 Media-Specific Criteria for Vapor Intrusion to Indoor Air

The site is an active service station and soil vapor evaluation is not required in this case by the Low Threat Policy. GeoTracker LTCP Checklist concurs (**Appendix A**). Per the Policy, exposures to petroleum vapors associated with historical fuel system releases are comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. Therefore, no vapor assessment is needed to meet Low Risk Closure criteria.

6.2.3 Media-Specific Criteria for Direct Contact and Outdoor Air Exposure

Based on the post-2016 excavation data presented in **Section 4.3**, the site-specific evaluation shows that site conditions meet the Policy criteria for the direct contact and outdoor air pathway.

7.0 CLOSURE REQUEST DISCUSSION

As previously referenced, the SWRCB promulgated Resolution No. 2012-0016 also referred to as the LTC Policy. In order to assist responsible parties in evaluating if a given candidate site qualifies for a low-risk closure designation, the SWRCB created the LTC Policy checklist. The current status of the LTC Policy checklist is provided in **Appendix A**. A review of the results from the information provided in the LTC Policy checklist indicated the following:

General Criteria

The site meets each of the eleven criteria for the Alameda Health Care Agency to consider the Site for closure of active Case Number RO0000219.

Media-Specific Criteria

Groundwater: The check list indicates that the Site does not meet the standard. The Path to Closure (**Appendix A**) indicates that the Site does not meet the following conditions:

- Plume Length (That Exceeds Water Quality Objectives): Unknown
- Free Product in Groundwater: Yes
- Benzene Concentration: $\geq 3,000$ $\mu\text{g/l}$
- Nearest Supply Well (From Plume Boundary): Unknown
- Nearest Surface Water Body (From Plume Boundary): Unknown

However, a review of the information summarized in this document supports LTC Policy closure stability and decreasing in areal extent under plume class number 2.

Petroleum Vapor Intrusion to Indoor Air: The exception for an active commercial petroleum fueling facility applies to the Site.

Direct Contact and Outdoor Air Exposure: The check list indicates that the Site does not meet the standard. Site is required to meet the LTC Policy MSC Table 1 DC&OAE limits (provided in **Section 4.3**). The LTC Policy checklist currently available in Geotracker (**Appendix A**) indicates that the Site does not meet the following conditions:

3. Media Specific Criteria: Direct Contact and Outdoor Air Exposure - The site is considered low-threat for direct contact and outdoor air exposure if it meets 1, 2, or 3 below.	NO
EXEMPTION - The upper 10 feet of soil is free of petroleum contamination	NO
Does the site meet any of the Direct Contact and Outdoor Air Exposure criteria scenarios?	NO
ADDITIONAL QUESTIONS - The following conditions exist that do not meet the policy criteria:	
Exposure Type :	
• Utility Worker	
Petroleum Constituents in Soil :	
• >5 Feet bgs and ≤10 Feet bgs	
Soil Concentrations of Benzene :	
• > 14 mg/kg	
Soil Concentrations of EthylBenzene :	
• > 32 mg/kg and ≤ 89 mg/kg	
Soil Concentrations of Naphthalene :	
• Unknown	

A review of **Section 4.3** documents the subsurface soil conditions at the Site following the 2016 excavation activities. Based on these results and the statistical analysis presented in **Section 5.4.1**, Antea Group believes that the site meets the standard.

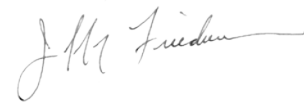
8.0 REMARKS

If you have any questions regarding this document or need any additional information about the Site, please do not hesitate to contact Dacre Bush or Jeffrey Friedman at (800) 477-7411.

Sincerely,



Dacre Bush
Senior Project Manager
Antea Group



Jeffrey Friedman, P.G. 5677
Senior Project Manager
Antea Group

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***Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191***



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Tables

Table 1	Well Construction Details
Table 2	Past Subsurface Soil Analytical Laboratory Results
Table 3	Past Temporary Well Point Subsurface Water Sample Analytical Laboratory Results
Table 4	2016 Excavation Soil Analytical Results: Sidewall and Bottom Samples
Table 5	Past Subsurface Water Gauging and Analytical Laboratory Data
Table 6	Fourth Quarter 2016 Subsurface Water Gauging and Analytical Laboratory Data
Table 7	Maximum Reported Past COC Concentrations in Subsurface Water Verses Most Recent Available Laboratory Results

Table 1
Well Construction Details
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, CA

Well I.D.	Drill Date	Well		Screen		Screen Length (feet)	Comments
		Depth (feet bgs)	Diameter (inches)	Top (feet bgs)	Bottom (feet bgs)		
Monitoring Wells							
MW-1	02/05/91	13.5	2	2.0	13.0	11.0	Destroyed (March 1995)
MW-2	02/05/91	15.0	2	3.0	15.0	12.0	Destroyed (March 1995)
MW-3	02/05/91	14.0	2	2.0	14.0	12.0	
MW-4	08/21/92	13.5	2	2.5	13.5	11.0	Destroyed (January 1995)
MW-5	08/21/92	13.5	2	2.5	13.5	11.0	Destroyed (January 1995)
MW-6	08/21/92	13.5	2	2.5	13.5	11.0	Destroyed (July 2015)
MW-7	04/21/97	13.0	2	3.0	13.0	10.0	Destroyed (January 2016)
MW-8	04/21/97	15.0	2	3.0	15.0	12.0	Destroyed (January 2016)
MW-9	01/25/95	13.0	2	3.0	13.0	10.0	
MW-10	01/25/95	13.0	2	3.0	13.0	10.0	Destroyed (June 2014)
MW-11	06/22/10	20.0	4	5.0	20.0	15.0	
MW-12	06/22/10	20.0	4	5.0	20.0	15.0	Destroyed (June 2014)
MW-12A	06/23/10	34.0	2	30.0	34.0	4.0	Destroyed (June 2014)
MW-13	06/22/10	15.0	2	5.0	15.0	10.0	
MW-14	05/17/11	13.0	2	3.0	13.0	10.0	Destroyed (July 2015)
MW-15	05/17/11	13.0	2	3.0	13.0	10.0	
MW-16	05/17/11	13.0	2	3.0	13.0	10.0	
MW-17	05/18/11	13.0	2	3.0	13.0	10.0	Destroyed (June 2014)

Explanation

Wells are of poly-vinyl-chloride (PVC) construction

bgs = Below ground surface

Table 2
Past Subsurface Soil Analytical Laboratory Results
76 Station No. 5191/5043
449 Heegenberger Raod, Oakland, California

Sample ID	Date Installed	Date Destroyed	Comments	Sample Depth (feet)	TPHg (mg/kg)	TPHg* (mg/kg)	TPPH (mg/kg)	TPHd (mg/kg)	TPHd* (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	p/m-Xylene (mg/kg)	o-Xylene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	TAME (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	Ethanol (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)	Naphthalene (mg/kg)	Lead (mg/kg)	
P1 (SE dispenser)	10/25/1991		Product pipe trenches	3	3,200	--	--	420	--	33	120	110	--	--	540	--	--	--	--	--	--	--	--	--	--	
P2 (NE dispenser)	10/25/1991		Product pipe trenches	3	9,000	--	--	8,400	--	46	120	330	--	--	1,500	--	--	--	--	--	--	--	--	--	--	
P3 (SW dispenser)	10/25/1991		Product pipe trenches	3	7,100	--	--	1,100	--	48	410	220	--	--	1,200	--	--	--	--	--	--	--	--	--	--	
P4 (NW dispenser)	10/25/1991		Product pipe trenches	3	370	--	--	460	--	7.4	39	12	--	--	77	--	--	--	--	--	--	--	--	--	--	
MW1(2.5)	2/5/1992	3/29/1995	FP; GW: 2.36-2.78; MW depth: 13.5-15 ft	2.5	14,000	--	--	1,200	--	160	680	470	--	--	2,400	--	--	--	--	--	--	--	--	--	--	
MW2(3.5)	2/5/1992	4/4/1995	GW: 2.75-3.20; MW depth: 13.5-15 ft	3.5	9,000	--	--	2,400	--	74	440	280	--	--	1,400	--	--	--	--	--	--	--	--	--	--	
MW2(4.5)	2/5/1992	4/4/1995	GW: 2.75-3.20; MW depth: 13.5-15 ft	4.5	31	--	--	29	--	2.4	0.14	3.0	--	--	9.0	--	--	--	--	--	--	--	--	--	--	
MW3(3)	2/5/1992	4/4/1995	GW: 3.10-4.28; MW depth: 13.5-15 ft	3	<1.0	--	--	49	--	<0.005	<0.005	<0.005	--	--	0.011	--	--	--	--	--	--	--	--	--	--	
MW3(4.5)	2/5/1992	4/4/1995	GW: 3.10-4.28; MW depth: 13.5-15 ft	4.5	<1.0	--	--	<1.0	--	<0.005	<0.005	<0.005	--	--	<0.005	--	--	--	--	--	--	--	--	--	--	
MW4(5)	8/21/1992	1/25/1995	GW: 5.5-6.5 ft; MW depth: 13.5 ft	5	<1.0	--	--	<1.0	--	<0.005	<0.005	<0.005	--	--	0.0066	--	--	--	--	--	--	--	--	--	--	
MW5(6)	8/21/1992	1/25/1995	GW: 5.5-6.5 ft; MW depth: 13.5 ft; Soil @ 9 ft: 70% clay, 27% silt, 3% fine-grained sand; organic clay with silt (OH)	6	340	--	--	43	--	1.1	1.2	7.8	--	--	13	--	--	--	--	--	--	--	--	--	--	
MW6(5)	8/21/1992	6/8/2014	GW: 5.5-6.5 ft; MW depth: 13.5 ft	5	3.7	--	--	1.2	--	0.9	<0.005	1.0	--	--	0.05	--	--	--	--	--	--	--	--	--	--	
WO1	9/20/1994		Bulk soil sampled via backhoe from beneath waste oil tank	9	ND	--	--	ND	--	ND	ND	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	
OWS-1	9/21/1994		Hand-auger soil sample collected beneath the O/W Separator	5	1.6	--	--	<1	--	0.014	0.014	0.15	--	--	0.12	--	--	--	--	--	--	--	--	--	5.0	
MW9(3)	1/25/1995		GW: 2-3 ft; MW depth: 13 ft	3	1.7	--	--	2.6	--	0.016	<0.005	<0.005	--	--	<0.005	--	--	--	--	--	--	--	--	--	--	
MW10(2.5)	1/25/1995	6/18/2014	GW: 2-3 ft; MW depth: 13 ft	2.5	44	--	--	17	--	2.0	1.5	2.3	--	--	5.4	--	--	--	--	--	--	--	--	--	--	
SW1	3/10/1995		Sidewall samples 0.5 ft above water table	8	11	--	--	--	--	2.8	<0.005	1.6	--	--	0.067	--	--	--	--	--	--	--	--	--	--	
SW2	3/10/1995		Sidewall samples 0.5 ft above water table	8	11	--	--	--	--	3.8	<0.005	0.79	--	--	0.034	--	--	--	--	--	--	--	--	--	--	
SW2(4)	3/10/1995		Sidewall samples 0.5 ft above water table	4	2,000	--	--	140	--	<0.005	53	42	--	--	240	--	--	--	--	--	--	--	--	--	--	
SW3	3/10/1995		Sidewall samples 0.5 ft above water table	8	1.0	--	--	<1.0	--	0.009	0.006	0.007	--	--	0.014	--	--	--	--	--	--	--	--	--	--	
SW4	3/10/1995		Sidewall samples 0.5 ft above water table	8	<1.0	--	--	1.8	--	<0.005	<0.005	<0.005	--	--	<0.005	--	--	--	--	--	--	--	--	--	--	
SW5	3/10/1995		Sidewall samples 0.5 ft above water table	8	<1.0	--	--	1.4	--	<0.005	<0.005	<0.005	--	--	<0.005	--	--	--	--	--	--	--	--	--	--	
SW6	3/10/1995		Sidewall samples 0.5 ft above water table	8	<1.0	--	--	--	--	<0.005	<0.005	<0.005	--	--	<0.005	--	--	--	--	--	--	--	--	--	--	
SW7	3/10/1995		Sidewall samples 0.5 ft above water table	8	<1.0	--	--	--	--	<0.005	<0.005	<0.005	--	--	<0.005	--	--	--	--	--	--	--	--	--	--	
SW8	3/10/1995		Sidewall samples 0.5 ft above water table	8	140	--	--	--	--	2.6	5.3	2.7	--	--	12	--	--	--	--	--	--	--	--	--	--	
D1	3/24/1995			3	760	--	--	46	--	1.5	19	15	--	--	73	--	--	--	--	--	--	--	--	--	--	
D2	3/24/1995			3	1,200	--	--	97	--	1.6	16	22	--	--	110	--	--	--	--	--	--	--	--	--	--	
B1	3/28/1995			6	<1.0	--	--	<1.0	--	0.13	0.026	0.0088	--	--	0.059	--	--	--	--	--	--	--	--	--	--	
B2	3/28/1995			6	3.4	--	--	<1.0	--	2.8	0.041	0.19	--	--	0.28	--	--	--	--	--	--	--	--	--	--	
B3	3/28/1995			6	<1.0	--	--	<1.0	--	<0.005	0.01	<0.005	--	--	0.017	--	--	--	--	--	--	--	--	--	--	
B4	3/28/1995			6	<1.0	--	--	<1.0	--	<0.005	0.017	<0.005	--	--	0.032	--	--	--	--	--	--	--	--	--	--	
BD1	3/28/1995			6	<1.0	--	--	<1.0	--	0.21	0.011	0.018	--	--	0.038	--	--	--	--	--	--	--	--	--	--	
BD2	3/28/1995			6	12	--	--	4.8	--	2.6	0.68	0.56	--	--	1.7	--	--	--	--	--	--	--	--	--	--	
BD3	3/28/1995			6	<1.0	--	--	<1.0	--	0.012	0.014	0.012	--	--	0.043	--	--	--	--	--	--	--	--	--	--	
BD4	3/28/1995			6	<1.0	--	--	<1.0	--	<0.005	0.011	0.0072	--	--	0.037	--	--	--	--	--	--	--	--	--	--	
S1	3/28/1995			4	110	--	--	<1.0	--	3.5	0.61	7.0	--	--	13	--	--	--	--	--	--	--	--	--	--	
S2	3/28/1995			4	1.4	--	--	9.4	--	0.028	0.012	0.015	--	--	0.019	--	--	--	--	--	--	--	--	--	--	
S3	3/28/1995			4	22	--	--	2.9	--	1.2	1.2	0.65	--	--	1.9	--	--	--	--	--	--	--	--	--	--	
S4	3/28/1995			4	150	--	--	5.8	--	6.8	5.6	5.3	--	--	27	--	--	--	--	--	--	--	--	--	--	
RF1	3/31/1995			3	2,000	--	--	330	--	8.8	68	55	--	--	280	--	--	--	--	--	--	--	--	--	--	
RF2	3/31/1995			3	3,300	--	--	230	--	18	160	110	--	--	550	--	--	--	--	--	--	--	--	--	--	
SW8(6)	4/3/1995			8	<1.0	--	--	<1.0	--	0.0085	<0.005	0.0084	--	--	0.011	--	--	--	--	--	--	--	--	--	--	
FB1	4/3/1995			4.5	25	--	--	8.6	--	2.1	0.058	2.2	--	--	1.3	--	--	--	--	--	--	--	--	--	--	
FB2	4/3/1995			4.5	7.1	--	--	1.6	--	0.4	0.018	0.81	--	--	1.7	--	--	--	--	--	--	--	--	--	--	
FB3	4/3/1995			4.5	1.6	--	--	<1.0	--	0.028	<0.005	0.13	--	--	0.26	--	--	--	--	--	--	--	--	--	--	
FB4	4/3/1995			4.5	1.4	--	--	<1.0	--	0.23	0.022	0.05	--	--	0.15	--	--	--	--	--	--	--	--	--	--	
FBSW1	4/3/1995			3	7.4	--	--	1.3	--	0.066	0.021	1.0	--	--	<0.005	--	--	--	--	--	--	--	--	--	--	
FBSW2	4/3/1995			3	70	--	--	7.6	--	0.11	0.096	2.1	--	--	6.7	--	--	--	--	--	--	--	--	--	--	
FBSW3	4/3/1995			3	2.3	--	--	7.8	--	0.012	0.01	0.018	--	--	0.012	--	--	--	--	--	--	--	--	--	--	
FBSW4	4/3/1995			3	9.0	--	--	3.7	--	0.25	0.036	0.93	--	--	0.062	--	--	--	--	--	--	--	--	--	--	
MW1SW1	4/5/1995			5	25	--	--	2.8	--	2.1	0.025	2.4	--	--	0.19	--	--	--	--	--	--	--	--	--	--	
MW1SW2	4/5/1995			5	4.2	--	--	1.2	--	0.17	0.01	0.68	--	--	0.048	--	--	--	--	--	--	--	--	--	--	
WE1	4/5/1995			4.5	26	--	--	3.4	--	0.31	0.3	0.59	--	--	2.6	--	--	--	--	--	--	--	--	--	--	
WE2	4/5/1995			4.5	2.7	--	--	5.1	--	0.0054	0.0065	0.038	--	--	0.17	--	--	--	--	--	--	--	--	--	--	
WE3	4/5/1995			4.5	8.2	--	--	1.6	--	0.21	0.074	1.6	--	--	0.0076	--	--	--	--	--	--	--	--	--	--	
FS-1	4/5/1995			4	12	--	--	<1.0	--	0.28	<0.005	1.5	--	--	0.016	--	--	--	--	--	--	--	--	--	--	
MW7	4/21/1997	1/26/2016	No soil samples: GW noted during utility clearance		none	--	--		--				--	--		--	--	--	--	--	--	--	--	--	--	
MW8(6)	4/21/1997	1/26/2016		6	1.3	--	--	<1.0	--	0.0051	<0.005	0.015	--	--	0.041	<0.005	--	--	--	--	--	--	--	--	--	
Delta 2009																										
B-4@6	12/17/2009		Assess soil & GW impacts near MW-1 & MW-2	6	20.4	--	--	11.4	10.1	0.046	0.18	1.0	--	--	4.2	0.061	0.091	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	<0.0029	--	--	
B-4@15	12/17/2009		Assess soil & GW impacts near MW-1 & MW-2	15	<4.9	--	--	<5.8	<5.8	0.0036	0.0069	0.011	--	--	0.049	0.0081	0.036	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	--	--	

Table 2
Past Subsurface Soil Analytical Laboratory Results
76 Station No. 5191/5043
449 Hegenberger Raod, Oakland, California

Sample ID	Date Installed	Date Destroyed	Comments	Sample Depth (feet)	TPHg (mg/kg)	TPHg* (mg/kg)	TPPH (mg/kg)	TPHd (mg/kg)	TPHd* (mg/Kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	p/m-Xylene (mg/kg)	o-Xylene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	TAME (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	Ethanol (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)	Naphthalene (mg/kg)	Lead (mg/kg)
SB-13d20	9/23/2014			20	--	<1.0	--	--	1,100 B	<0.0050	<0.0050	<0.0050	--	--	<0.0050	<0.0050	<0.0050	--	--	--	<0.050	--	--	--	--
SB-14d12	9/23/2014			12	--	<1.0	--	--	1.3 B	<0.0050	<0.0050	<0.0050	--	--	<0.0050	<0.0050	<0.0050	--	--	--	<0.050	--	--	--	--
SB-14d15	9/23/2014			15	--	<1.0	--	--	54 B	<0.0050	<0.0050	<0.0050	--	--	<0.0050	<0.0050	<0.0050	--	--	--	<0.050	--	--	--	--
SB-15d6	9/23/2014			6	--	<1.0	--	--	18 B	<0.0050	<0.0050	<0.0050	--	--	<0.0050	<0.0050	<0.0050	--	--	--	<0.050	--	--	--	--
SB-15d13.5	9/23/2014			13.5	--	<1.0	--	--	1.2 B	<0.0050	<0.0050	<0.0050	--	--	<0.0050	<0.0050	<0.0050	--	--	--	<0.050	--	--	--	--
SB-15d16	9/23/2014			16	--	<1.0	--	--	20 B	<0.0050	<0.0050	<0.0050	--	--	<0.0050	<0.0050	<0.0050	--	--	--	<0.050	--	--	--	--
Antea Group 2015																									
SB-11d9	7/8/2015		Located 300 ft SW. No detections.	9	--	<0.50	--	--	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	--	--	--	<0.50	--	--	--	--
SB-11d20	7/8/2015		Located 300 ft SW. No detections.	20	--	<0.50	--	--	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	--	--	--	<0.50	--	--	--	--
SB-12d7	7/8/2015		Located 300 ft SW. No detections.	7	--	<0.51	--	--	<5.1	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.0051	<0.051	--	--	--	<0.51	--	--	--	--
SB-12d11	7/8/2015		Located 300 ft SW. No detections.	11	--	<0.51	--	--	<5.1	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.0051	<0.051	--	--	--	<0.51	--	--	--	--
SB-12d20	7/8/2015		Located 300 ft SW. No detections.	20	--	<0.50	--	--	<5.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	--	--	--	<0.50	--	--	--	--
SB-16d9.5	7/8/2015			9.5	--	<0.50	11,000	690 A	670 A	<25	<25	300	860	<25	860	<25	<250	<51	<51	<51	<2,500	<25	<25	--	--
SB-16d15	7/8/2015			15	--	<0.50	<0.49	<4.9	<4.9	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	<0.49	<0.0049	<0.0049	--	--
SB-17d11.5	7/8/2015		Collected at southwest corner of site to help identify onsite extent of planned excavation activities.	11.5	--	<0.50	170	45 A	40 A	<0.50	<0.50	2.8	7.6	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	<1.0	<50	<0.50	<0.50	--	--
SB-17d15	7/8/2015			15	--	<0.50	<0.49	<5.0	<5.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	<0.50	<0.0049	<0.0049	--	--
SB-18d11	7/8/2015			11	--	<0.50	2300	140 A	130 A	<2.5	<2.5	46	180	5.8	185.8	<2.5	<25	<5.1	<5.1	<5.1	<250	<2.5	<2.5	--	--
SB-18d15	7/8/2015			15	--	<0.50	<0.49	<5.0	<5.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	<0.49	<0.0049	<0.0049	--	--
WC-1	7/7/2015		Composite soil samples collected to assess disposal options during planned onsite excavation activities.	12	--	<0.50	<50	--	41 A	<0.0050	<0.0050	0.17	<0.0050	<0.0050	<0.010	<0.0050	<0.050	--	--	--	<0.50	--	--	--	--
WC-2	7/7/2015			12	--	<0.50	650	--	15 A	1.4	4.7	9.7	53	14	67	<0.50	<5.0	--	--	--	<50	--	--	--	--
WC-3	7/7/2015			12	--	<0.50	660	--	26 A	2.1	6.5	12	48	16	64	<0.98	<9.8	--	--	--	<98	--	--	--	--

Notes:
= soil boring temporary borehole
TPHg = total petroleum hydrocarbons as gasoline by EPA Method 8015
TPHg* = total petroleum hydrocarbons as gasoline by CA LUFT
TPPH = total purgeable petroleum hydrocarbons by US EPA Method 8260B
TPHd = total petroleum hydrocarbons as diesel by EPA Method 8015B
TPHd* = total petroleum hydrocarbons as diesel by EPA Method 8015 Silica Gel Treated
BTEX = benzene, toluene, ethylbenzene, total xylenes by EPA Method 8260B
MTBE = methyl tertiary-butyl ether by EPA Method 8260B
TBA = tertiary-butyl alcohol by EPA Method 8260B
TAME = tert-amyl methyl ether by EPA Method 8260B
DIPE = Diisopropyl ether by EPA Method 8260B
ETBE = Ethyl-tert-butyl-ether by EPA Method 8260B
EDB = 1,2-Dibromoethane by EPA Method 8260B
1,2-DCA = 1,2-Dichloroethane by EPA Method 8260B
mg/kg = milligrams per kilogram
-- = not analysed
< - Below laboratory's indicated reporting limit
A - The TPHd result for this sample did not match the pattern of the laboratory standard for diesel.
B - Hydrocarbons are higher-boiling than typical Diesel Fuel.

Table 5
 Past Subsurface Water Gauging and Analytical Laboratory Data
 76 Station No. 5191/5043
 449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-1	2/18/1992	--	--	--	--	--	NG	13,000	150,000	17,000	26,000	5,200	26,000	--	--	--	--	--	--	--	--	--
MW-1	5/20/1992	--	--	--	--	--	NG	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8/31/1992	--	--	--	--	--	NG	8,900	64,000	13,000	12,000	2,500	22,000	--	--	--	--	--	--	--	--	--
MW-1	11/30/1992	--	--	--	--	--	NG	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	2/4/1993	--	--	--	--	--	NG	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5/4/1993	8.96	2.13	2.03	0.10	6.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8/4/1993	8.96	2.92	2.89	0.03	6.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	11/3/1993	7.38	3.04	NP	--	4.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	2/7/1994	7.38	2.55	2.52	0.03	4.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5/19/1994	7.38	2.23	2.22	0.01	5.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	6/25/1994	7.38	2.49	2.48	0.01	4.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	7/27/1994	7.38	3.10	NP	--	4.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8/15/1994	7.38	2.85	2.74	0.11	4.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	11/14/1994	7.38	2.97	2.85	0.12	4.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	2/21/1995	7.38	1.53	1.51	0.02	5.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5/18/1995	7.38	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2/18/1992	--	--	--	--	--	NG	4,300	29,000	1,000	5,300	260	7,900	--	--	--	--	--	--	--	--	--
MW-2	5/20/1992	--	--	--	--	--	NG	4,300	24,000	2,200	7,600	630	11,000	--	--	--	--	--	--	--	--	--
MW-2	8/31/1992	--	--	--	--	--	NG	1,600	9,000	1,800	640	140	2,000	--	--	--	--	--	--	--	--	--
MW-2	11/30/1992	--	--	--	--	--	NG	5,700	29,000	2,000	3,400	1,200	6,900	--	--	--	--	--	--	--	--	--
MW-2	2/4/1993	--	--	--	--	--	NG	6,100	18,000	1,600	3,000	ND	6,900	--	--	--	--	--	--	--	--	--
MW-2	5/4/1993	8.96	2.48	NP	--	6.48	--	7,100	63,000	3,200	17,000	470	17,000	--	--	--	--	--	--	--	--	--
MW-2	8/4/1993	8.96	3.20	NP	--	5.76	--	1,800	45,000	2,100	6,600	1,400	12,000	--	--	--	--	--	--	--	--	--
MW-2	11/3/1993	8.58	3.37	NP	--	5.21	--	2,600	72,000	3,700	16,000	3,700	20,000	--	--	--	--	--	--	--	--	--
MW-2	2/7/1994	8.58	2.40	NP	--	6.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	5/19/1994	8.58	2.13	NP	--	6.45	--	3,000	42,000	2,500	1,300	2,300	13,000	--	--	--	--	--	--	--	--	--
MW-2	6/25/1994	8.58	2.65	NP	--	5.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	7/27/1994	8.58	3.44	NP	--	5.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	8/15/1994	8.58	3.25	NP	--	5.33	--	2,800	35,000	2,400	850	1,700	15,000	--	--	--	--	--	--	--	--	--
MW-2	11/14/1994	8.58	2.13	NP	--	6.45	--	10,000	43,000	2,200	6,500	1,800	14,000	--	--	--	--	--	--	--	--	--
MW-2	2/21/1995	8.58	1.65	NP	--	6.93	--	2,000	44,000	2,200	3,200	1,300	1,500	--	--	--	--	--	--	--	--	--
MW-2	5/18/1995	8.58	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	2/18/1992	--	--	--	--	--	NG	ND	230	4.8	22	1.8	33	--	--	--	--	--	--	--	--	--
MW-3	5/20/1992	--	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	8/31/1992	--	--	--	--	--	NG	92	210	1	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-3	11/30/1992	--	--	--	--	--	NG	94	790	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-3	2/4/1993	--	--	--	--	--	NG	550	3,300	320	ND	96	6.1	--	--	--	--	--	--	--	--	--
MW-3	5/4/1993	7.84	4.32	NP	--	3.52	--	250	1,800	95	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-3	8/4/1993	7.84	4.94	NP	--	2.90	--	100	210	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-3	11/3/1993	7.42	4.53	NP	--	2.89	--	160	640	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-3	2/7/1994	7.42	2.40	NP	--	5.02	--	620	2,700	110	ND	17	ND	--	--	--	--	--	--	--	--	--
MW-3	5/19/1994	7.42	3.60	NP	--	3.82	--	480	1,800	83	ND	6.2	9.1	--	--	--	--	--	--	--	--	--
MW-3	6/25/1994	7.42	4.58	NP	--	2.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	7/27/1994	7.42	4.58	NP	--	2.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	8/15/1994	7.42	4.65	NP	--	2.77	--	110	130	1.1	0.54	ND	0.97	--	--	--	--	--	--	--	--	--
MW-3	11/14/1994	7.42	3.18	NP	--	4.24	--	150	1,600	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-3	2/21/1995	7.42	1.81	NP	--	5.61	--	850	3,800	350	ND	130	22	--	--	--	--	--	--	--	--	--
MW-3	5/18/1995	7.42	4.56	NP	--	2.86	--	150	1,300	42	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-3	8/17/1995	7.42	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	7/26/1996	7.42	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	10/28/1996	7.42	--	--	--	--	WO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	1/29/1997	7.42	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	4/15/1997	7.42	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5/27/1997	7.42	3.45	NP	--	3.97	--	--	670	6.5	ND	ND	ND	250	--	--	--	--	--	--	--	--
MW-3	6/1/1997	7.42	3.50	NP	--	3.92	--	610	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	7/15/1997	8.04	3.71	NP	--	4.33	--	240	240	ND	ND	ND	ND	490	--	--	--	--	--	--	--	--
MW-3	10/9/1997	8.04	3.70	NP	--	4.34	--	500	270	1.1	4.34	2.4	1.4	910	--	--	--	--	--	--	--	--
MW-3	1/14/1998	8.04	2.16	NP	--	5.88	--	340	310	ND	ND	0.62	0.65	140	--	--	--	--	--	--	--	--
MW-3	4/1/1998	8.04	2.20	NP	--	5.84	--	320	370	5.7	ND	ND	ND	93	--	--	--	--	--	--	--	--

Table 5
 Past Subsurface Water Gauging and Analytical Laboratory Data
 76 Station No. 5191/5043
 449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA															
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)	
MW-3	7/15/1998	8.04	3.38	NP	--	4.66	--	510	460	ND	ND	ND	ND	230	--	--	--	--	--	--	--	--	--
MW-3	10/16/1998	8.04	2.30	NP	--	5.74	--	67	330	4.7	ND	ND	ND	60	--	--	--	--	--	--	--	--	--
MW-3	1/25/1999	8.04	2.42	NP	--	5.62	--	120	420	1.5	ND	ND	ND	180	--	--	--	--	--	--	--	--	--
MW-3	4/15/1999	8.04	2.16	NP	--	5.88	--	170	290	0.54	ND	ND	ND	160	--	--	--	--	--	--	--	--	--
MW-3	7/14/1999	8.04	2.35	NP	--	5.69	--	420	290	3.2	ND	ND	ND	160	--	--	--	--	--	--	--	--	--
MW-3	10/21/1999	8.04	2.49	NP	--	5.55	--	350	360	0.77	ND	ND	ND	82	--	--	--	--	--	--	--	--	--
MW-3	1/20/2000	8.04	2.38	NP	--	5.66	--	2,060	ND	0.81	ND	ND	ND	54	--	--	--	--	--	--	--	--	--
MW-3	4/13/2000	8.04	2.76	NP	--	5.28	--	200	250	0.69	ND	ND	ND	91	150	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	7/14/2000	8.04	3.26	NP	--	4.78	--	423	345	ND	ND	ND	ND	94.7	--	--	--	--	--	--	--	--	--
MW-3	10/26/2000	8.04	3.12	NP	--	4.92	--	330	480	6.0	ND	ND	ND	120	--	--	--	--	--	--	--	--	--
MW-3	1/3/2001	8.04	3.65	NP	--	4.39	--	287	364	1.59	ND	ND	ND	118	--	--	--	--	--	--	--	--	--
MW-3	4/4/2001	8.04	3.98	NP	--	4.06	--	360	417	1.24	ND	ND	0.802	237	--	--	--	--	--	--	--	--	--
MW-3	7/17/2001	8.04	3.12	NP	--	4.92	--	270	480	ND	ND	ND	ND	150	--	--	--	--	--	--	--	--	--
MW-3	10/1/2001	8.04	3.25	NP	--	4.79	--	270	310	1.0	< 0.50	< 0.50	< 0.50	53	--	--	--	--	--	--	--	--	--
MW-3	1/31/2002	8.04	2.27	NP	--	5.77	--	250	250	3.5	< 1.0	< 1.0	< 1.0	110	--	--	--	--	--	--	--	--	--
MW-3	4/18/2002	8.04	3.55	NP	--	4.49	--	320	300	< 2.0	< 2.0	< 2.0	< 2.0	--	59	--	--	--	--	--	--	--	--
MW-3	7/28/2002	8.04	2.55	NP	--	5.49	--	310	500	< 0.50	< 0.50	< 0.50	< 1.0	--	130	--	--	--	--	--	--	--	--
MW-3	10/9/2002	8.04	2.47	NP	--	5.57	--	700	690	< 5	< 5	< 5	< 10	--	120	--	--	--	--	--	--	--	--
MW-3	1/2/2003	8.04	1.70	NP	--	6.34	--	210	310	< 0.50	< 0.50	< 0.50	< 1.0	--	110	< 2.0	< 2.0	< 2.0	< 100	< 500	< 2.0	< 2.0	
MW-3	4/1/2003	8.04	3.48	NP	--	4.56	--	200	250	< 1.0	< 1.0	< 1.0	< 2.0	--	210	--	--	--	--	--	--	--	--
MW-3	7/1/2003	8.04	2.65	NP	--	5.39	--	380	450	< 2.5	< 2.5	< 2.5	< 5.0	--	70	--	--	--	--	< 2500	--	--	--
MW-3	10/2/2003	8.04	3.12	NP	--	4.92	--	300	< 250	< 2.5	< 2.5	< 2.5	< 5.0	--	210	--	--	--	--	< 2500	--	--	--
MW-3	1/9/2004	8.04	2.39	NP	--	5.65	--	200	300	< 0.50	0.53	0.53	1.5	--	66	--	--	--	--	< 500	--	--	--
MW-3	4/26/2004	8.04	3.11	NP	--	4.93	--	160	440	2.5	5.5	2.9	9.4	--	81	--	--	--	--	< 50	--	--	--
MW-3	7/22/2004	8.04	2.51	NP	--	5.53	--	330	420	< 0.5	< 0.5	< 0.5	< 1	--	72	--	--	--	--	< 1000	--	--	--
MW-3	10/29/2004	8.04	2.00	NP	--	6.04	--	200	460	5.6	15	10	46	--	48	--	--	--	--	< 50	--	--	--
MW-3	1/10/2005	8.04	1.52	NP	--	6.52	--	250	280	< 0.50	0.62	< 0.50	2.4	--	64	--	--	--	--	< 50	--	--	--
MW-3	6/15/2005	8.04	2.00	NP	--	6.04	--	360	460	< 0.50	0.70	0.56	1.9	--	110	--	--	--	--	< 50	--	--	--
MW-3	9/27/2005	8.04	1.90	NP	--	6.14	--	< 200	210	< 0.50	0.60	< 0.50	< 1.0	--	100	< 0.50	< 0.50	< 0.50	79	< 250	--	--	--
MW-3	12/13/2005	8.04	2.35	NP	--	5.69	--	230	230	< 0.50	< 0.50	< 0.50	< 1.0	--	92	--	--	--	--	< 250	--	--	--
MW-3	3/23/2006	8.04	1.84	NP	--	6.20	--	260	290	< 0.50	< 0.50	< 0.50	< 1.0	--	88	--	--	--	--	< 250	--	--	--
MW-3	6/23/2006	8.04	2.26	NP	--	5.78	--	330	500	< 0.50	< 0.50	< 0.50	< 1.0	--	75	--	--	--	--	< 250	--	--	--
MW-3	9/26/2006	8.04	2.08	NP	--	5.96	--	260	270	< 0.50	< 0.50	< 0.50	< 0.50	--	73	--	--	--	--	< 250	--	--	--
MW-3	12/22/2006	8.04	1.88	NP	--	6.16	--	250	260	< 0.50	< 0.50	< 0.50	1.2	--	71	--	--	--	--	< 250	--	--	--
MW-3	3/30/2007	8.04	2.47	NP	--	5.57	--	210	390	< 0.50	< 0.50	< 0.50	< 0.50	--	120	--	--	--	--	< 250	--	--	--
MW-3	6/28/2007	8.04	2.54	NP	--	5.50	--	290	370	< 0.50	< 0.50	< 0.50	< 0.50	--	55	--	--	--	--	< 250	--	--	--
MW-3	9/25/2007	8.04	2.56	NP	--	5.48	--	210	350	< 0.50	< 0.50	< 0.50	< 0.50	--	61	--	--	--	--	< 250	--	--	--
MW-3	12/28/2007	8.04	2.29	NP	--	5.75	--	150	260	< 0.50	< 0.50	< 0.50	< 1.0	--	66	--	--	--	--	< 250	--	--	--
MW-3	3/22/2008	8.04	3.26	NP	--	4.78	--	230	390	< 0.50	< 0.50	< 0.50	< 1.0	--	39	--	--	--	--	< 250	--	--	--
MW-3	6/23/2008	8.04	2.60	NP	--	5.44	--	130	200	< 0.50	< 0.50	< 0.50	< 1.0	--	46	--	--	--	--	< 250	--	--	--
MW-3	9/19/2008	8.04	3.45	NP	--	4.59	--	93	180	< 0.50	< 0.50	< 0.50	< 1.0	--	120	--	--	--	--	< 250	--	--	--
MW-3	12/31/2008	8.04	2.55	NP	--	5.49	--	110	190	< 0.50	< 0.50	< 0.50	< 1.0	--	38	--	--	--	--	< 250	--	--	--
MW-3	3/27/2009	8.04	2.37	NP	--	5.67	--	130	150	< 0.50	< 0.50	< 0.50	< 1.0	--	50	--	--	--	--	< 250	--	--	--
MW-3	5/28/2009	8.04	3.32	NP	--	4.72	--	120	190	< 0.50	< 0.50	< 0.50	< 1.0	--	60	--	--	--	--	< 250	--	--	--
MW-3	9/17/2009	8.04	2.63	NP	--	5.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/17/2009	8.04	2.13	NP	--	5.91	--	338	300	< 0.50	< 0.50	0.78	< 1.5	--	43.1	--	--	--	--	< 250	--	--	--
MW-3	3/29/2010	8.04	2.22	NP	--	5.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/30/2010	10.81	2.91	NP	--	7.90	--	89.7	261	< 0.50	< 0.50	< 0.50	< 1.5	--	89.0	--	--	--	--	< 250	--	--	--
MW-3	7/6/2010	10.81	2.66	NP	--	8.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	9/20/2010	10.81	3.12	NP	--	7.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/8/2010	10.81	2.37	NP	--	8.44	--	137	306	< 0.50	< 0.50	< 0.50	< 1.5	--	58.8	--	--	--	--	< 250	--	--	--
MW-3	3/14/2011	10.81	2.26	NP	--	8.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/2/2011	10.81	2.43	NP	--	8.38	--	155	283	0.58	1.3	< 0.50	2.2	--	42.1	--	--	--	--	55.7	< 250	--	--
MW-3	9/7/2011	10.81	2.36	NP	--	8.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/5/2011	10.81	2.55	NP	--	8.26	--	81.7	381	< 0.50	< 0.50	< 0.50	< 1.5	--	41.8	--	--	--	--	< 250	--	--	--
MW-3	3/6/2012	10.81	2.63	NP	--	8.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/11/2012	10.81	2.99	NP	--	7.82	--	87.9	371	< 0.50	< 0.50	< 0.50	< 1.5	--	55.7	--	--	--	--	77.2	< 250	--	--
MW-3	9/6/2012	10.81	2.50	NP	--	8.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/13/2012	10.81	2.50	NP	--	8.31	--	< 50	130	< 0.50	< 0.50	< 0.50	< 0.50	--	28	--	--	--	--	77	< 5.0	--	--
MW-3	3/14/2013	10.81	2.63	NP	--	8.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/11/2013	10.81	3.31	NP	--	7.50	--	< 50	190	< 0.50	< 0.50	< 0.50	< 0.50	--	44	--	--	--	--	97	< 5.0	--	--

Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-3	9/10/2013	10.81	3.25	NP	--	7.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/12/2013	10.81	2.60	NP	--	8.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/4/2014	10.81	2.38	NP	--	8.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/12/2014	10.81	3.23	NP	--	7.58	--	< 50	310	< 0.50	< 0.50	< 0.50	< 0.50	--	28	--	--	--	74	< 5.0	--	--
MW-3	9/5/2014	10.81	3.62	NP	--	7.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/22/2014	10.81	2.07	NP	--	8.74	--	< 50	250	< 0.50	< 0.50	< 0.50	< 0.50	--	15	--	--	--	35	< 5.0	--	--
MW-3	3/16/2015	10.81	2.73	NP	--	8.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/11/2015	10.81	3.31	NP	--	7.50	--	63	< 250	< 2.5	< 5.0	< 5.0	--	21	--	--	--	--	85	< 500	--	--
MW-3	12/8/2015	10.81	3.52	NP	--	7.29	--	< 50	< 250	< 2.5	< 5.0	< 5.0	< 5.0	--	16	--	--	--	160	< 500	--	--
MW-3	3/8/2016	10.81	2.21	NP	--	8.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/29/2016	10.81	3.65	NP	--	7.16	--	65	79	< 0.50	< 1.0	< 1.0	--	23	--	--	--	--	120	< 100	--	--
MW-3	9/19/2016	10.81	3.21	NP	--	7.60	--	93	400	< 0.50	< 1.0	< 1.0	< 1.0	--	21	--	--	--	47	< 100	--	--
MW-3	12/2/2016	10.81	2.59	NP	--	8.22	--	< 48	81	< 0.50	< 1.0	< 1.0	< 1.0	--	8.7	--	--	--	24	< 100	--	--
MW-4	8/31/1992	--	--	--	--	--	NG	90	240	ND	ND	ND	0.54	--	--	--	--	--	--	--	--	--
MW-4	11/30/1992	--	--	--	--	--	NG	61	420	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	2/4/1993	--	--	--	--	--	NG	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	5/4/1993	9.00	4.09	NP	--	4.91	--	ND	110	0.95	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	8/4/1993	9.00	5.01	NP	--	3.99	--	81	250	ND	3.5	ND	4.1	--	--	--	--	--	--	--	--	--
MW-4	11/3/1993	8.41	4.23	NP	--	4.18	--	68	130	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	2/7/1994	8.41	3.35	NP	--	5.06	--	ND	56	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	5/19/1994	8.41	3.92	NP	--	4.49	--	90	140	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	6/25/1994	8.41	4.35	NP	--	4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/27/1994	8.41	4.28	NP	--	4.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	8/15/1994	8.41	4.27	NP	--	4.14	--	72	59	ND	0.6	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	11/14/1994	8.41	4.05	NP	--	4.36	--	ND	130	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-4	2/21/1995	8.41	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	8/31/1992	--	--	--	--	--	NG	690	78	0.89	ND	ND	13	--	--	--	--	--	--	--	--	--
MW-5	11/30/1992	--	--	--	--	--	NG	470	930	70	290	0.79	14	--	--	--	--	--	--	--	--	--
MW-5	2/4/1993	--	--	--	--	--	NG	5,500	5,700	38	ND	620	170	--	--	--	--	--	--	--	--	--
MW-5	5/4/1993	8.95	4.37	NP	--	4.58	--	4,600	7,400	41	ND	1,000	35	--	--	--	--	--	--	--	--	--
MW-5	8/4/1993	8.95	5.81	NP	--	3.14	--	970	1,500	130	1	460	11	--	--	--	--	--	--	--	--	--
MW-5	11/3/1993	8.95	5.68	NP	--	3.27	--	2,100	13,000	350	ND	3,500	530	--	--	--	--	--	--	--	--	--
MW-5	2/7/1994	8.95	5.11	NP	--	3.84	--	830	2,000	87	ND	370	110	--	--	--	--	--	--	--	--	--
MW-5	5/19/1994	8.95	5.09	NP	--	3.86	--	600	260	44	ND	32	4.1	--	--	--	--	--	--	--	--	--
MW-5	6/25/1994	8.95	4.55	NP	--	4.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	7/27/1994	8.95	5.72	NP	--	3.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	8/15/1994	8.95	5.68	NP	--	3.27	--	860	1,600	110	ND	340	72	--	--	--	--	--	--	--	--	--
MW-5	11/14/1994	8.95	5.63	NP	--	3.32	--	290	250	40	ND	ND	5	--	--	--	--	--	--	--	--	--
MW-5	2/21/1995	8.95	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/31/1992	--	--	--	--	--	NG	750	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-6	11/30/1992	--	--	--	--	--	NG	1,400	9,200	550	ND	740	1,600	--	--	--	--	--	--	--	--	--
MW-6	2/4/1993	--	--	--	--	--	NG	890	3,600	340	ND	290	550	--	--	--	--	--	--	--	--	--
MW-6	5/4/1993	9.12	3.72	NP	--	5.40	--	1,800	4,900	360	18	450	430	--	--	--	--	--	--	--	--	--
MW-6	8/4/1993	9.12	5.15	NP	--	3.97	--	1,100	3,400	390	ND	440	190	--	--	--	--	--	--	--	--	--
MW-6	11/3/1993	8.87	5.25	NP	--	3.62	--	390	1,400	320	ND	200	7.7	--	--	--	--	--	--	--	--	--
MW-6	2/7/1994	8.87	4.55	NP	--	4.32	--	970	4,900	650	ND	250	35	--	--	--	--	--	--	--	--	--
MW-6	5/19/1994	8.87	4.62	NP	--	4.25	--	1,400	3,600	300	1.7	210	41	--	--	--	--	--	--	--	--	--
MW-6	8/15/1994	8.87	5.08	NP	--	3.79	--	790	1,300	130	6.7	54	57	--	--	--	--	--	--	--	--	--
MW-6	11/14/1994	8.87	5.30	NP	--	3.57	--	800	730	50	ND	ND	39	--	--	--	--	--	--	--	--	--
MW-6	2/21/1995	8.87	5.37	NP	--	3.50	--	730	2,000	250	4.6	25	30	--	--	--	--	--	--	--	--	--
MW-6	5/18/1995	8.87	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/17/1995	8.87	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/26/1996	8.87	6.40	3.07	3.33	4.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/28/1996	8.87	4.10	3.89	0.21	4.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	11/13/1996	8.87	4.02	3.77	0.25	5.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	11/25/1996	8.87	4.01	3.26	0.75	5.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/4/1996	8.87	3.65	3.15	0.50	5.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/19/1996	8.87	4.80	2.60	2.20	5.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-6	1/8/1997	8.87	4.84	3.09	1.75	5.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/14/1997	8.87	4.51	3.36	1.15	5.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/27/1997	8.87	4.00	2.25	1.75	6.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/29/1997	8.87	3.24	2.93	0.31	5.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	2/11/1997	8.87	4.65	3.45	1.20	5.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	2/24/1997	8.87	4.81	3.71	1.10	4.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/10/1997	8.87	4.60	3.65	0.95	4.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/17/1997	8.87	4.50	3.61	0.89	5.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/31/1997	8.87	4.65	3.65	1.00	4.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/15/1997	8.87	4.90	3.87	1.03	4.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/28/1997	8.87	4.78	4.75	0.03	4.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/15/1997	8.87	4.60	4.35	0.25	4.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/27/1997	8.87	4.50	4.25	0.25	4.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/9/1997	8.87	4.60	4.40	0.20	4.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/24/1997	8.87	4.50	4.25	0.25	4.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/9/1997	8.87	4.80	4.20	0.60	4.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/15/1997	8.87	4.63	4.21	0.42	4.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/21/1997	8.87	4.75	4.50	0.25	4.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/6/1997	8.87	4.50	4.40	0.10	4.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/20/1997	8.87	4.55	4.45	0.10	4.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/2/1997	8.87	4.75	4.70	0.05	4.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/9/1997	8.87	4.84	4.80	0.04	4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/14/1998	8.87	3.90	2.96	0.94	5.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	2/12/1998	8.87	3.35	2.71	0.64	6.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/3/1998	8.87	4.51	4.49	0.02	4.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/1/1998	8.87	3.67	2.07	1.60	6.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/26/1998	8.87	4.11	3.61	0.50	5.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/15/1998	8.87	5.03	4.73	0.30	4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/15/1998	8.87	4.56	4.51	0.05	4.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/21/1998	8.87	4.77	4.75	0.02	4.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/30/1998	8.87	5.08	5.05	0.03	3.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/16/1998	8.87	4.31	1.91	2.40	6.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	11/6/1998	8.87	3.98	3.81	0.17	5.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	11/25/1998	8.87	3.92	3.82	0.10	5.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/28/1998	8.87	3.90	3.70	0.20	5.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/25/1999	8.87	4.18	3.58	0.60	5.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	2/22/1999	8.87	4.07	3.85	0.22	4.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/22/1999	8.87	4.32	4.17	0.15	4.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/15/1999	8.87	4.23	3.28	0.95	5.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/28/1999	8.87	4.38	3.99	0.39	4.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/29/1999	8.87	4.12	4.10	0.02	4.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/14/1999	8.87	4.20	4.17	0.03	4.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/23/1999	8.87	4.51	4.27	0.24	4.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/30/1999	8.87	4.17	4.00	0.17	4.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/21/1999	8.87	4.27	4.15	0.12	4.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	11/29/1999	8.87	4.18	NP	--	4.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/20/1999	8.87	4.26	4.25	0.01	4.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/20/2000	8.87	4.31	NP	--	4.56	--	67,600	130,000	2,900	8,600	2,000	16,000	ND	--	--	--	--	--	--	--	--
MW-6	2/26/2000	8.87	3.98	NP	--	4.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/31/2000	8.87	4.14	NP	--	4.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/13/2000	8.87	4.04	NP	--	4.83	--	8,700	140,000	5,000	14,000	3,600	27,000	7,700	--	--	--	--	--	--	--	--
MW-6	5/26/2000	8.87	4.41	NP	--	4.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/17/2000	8.87	4.35	NP	--	4.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/14/2000	8.87	4.47	NP	--	4.40	--	133,000	259,000	7,670	13,700	6,860	40,700	ND	ND	--	--	--	--	--	--	--
MW-6	8/24/2000	8.87	3.71	NP	--	5.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/27/2000	8.87	4.33	NP	--	4.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/26/2000	8.87	4.32	NP	--	4.55	--	61,000	110,000	7,000	6,200	3,700	12,000	670	43	--	--	--	--	--	--	--
MW-6	1/3/2001	8.87	4.52	NP	--	4.35	--	929	84,700	3,950	4,130	3,650	11,800	ND	ND	--	--	--	--	--	--	--
MW-6	4/4/2001	8.87	4.29	NP	--	4.58	--	18,000	69,800	2,060	2,840	3,650	10,900	ND	2,840	ND	ND	ND	ND	ND	ND	ND
MW-6	7/17/2001	8.87	4.37	NP	--	4.50	--	20,000	100,000	3,200	3,300	3,400	12,000	ND	--	--	--	--	--	--	--	--
MW-6	10/1/2001	8.87	4.45	NP	--	4.42	--	24,000	110,000	3,200	2,400	4,500	13,000	< 1000	--	--	--	--	--	--	--	--

Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA															
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)	
MW-7	7/15/1997	8.83	4.70	NP	--	4.13	--	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-7	10/9/1997	8.83	4.30	NP	--	4.53	--	190	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	1/14/1998	8.83	2.88	NP	--	5.95	--	65	ND	ND	ND	ND	ND	36	--	--	--	--	--	--	--	--	--
MW-7	4/1/1998	8.83	3.13	NP	--	5.70	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	7/15/1998	8.83	4.45	NP	--	4.38	--	74	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	10/16/1998	8.83	3.45	NP	--	5.38	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	1/25/1999	8.83	3.22	NP	--	5.61	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	4/15/1999	8.83	3.11	NP	--	5.72	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	7/14/1999	8.83	3.34	NP	--	5.49	--	69	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	10/21/1999	8.83	3.43	NP	--	5.40	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	1/20/2000	8.83	3.29	NP	--	5.54	--	ND	ND	ND	ND	ND	ND	4.2	--	--	--	--	--	--	--	--	--
MW-7	4/13/2000	8.83	3.39	NP	--	5.44	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	7/14/2000	8.83	4.42	NP	--	4.41	--	68.0	ND	ND	ND	ND	ND	7.83	--	--	--	--	--	--	--	--	--
MW-7	7/17/2001	8.83	5.06	NP	--	3.77	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-7	10/1/2001	8.83	4.98	NP	--	3.85	--	< 51	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	--	--	--	--	--	--	--	--	--
MW-7	1/31/2002	8.83	3.88	NP	--	4.95	--	90	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.5	--	--	--	--	--	--	--	--	--
MW-7	4/18/2002	8.83	4.03	NP	--	4.80	--	78	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.7	--	--	--	--	--	--	--	--	--
MW-7	7/28/2002	8.83	3.59	NP	--	5.24	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	3.9	--	--	--	--	--	--	--	--
MW-7	10/9/2002	8.83	4.53	NP	--	4.30	--	< 96	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	3.9	--	--	--	--	--	--	--	--
MW-7	1/3/2003	8.83	3.36	NP	--	5.47	--	78	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 2.0	--	--	--	--	--	--	--	--
MW-7	4/1/2003	8.83	3.94	NP	--	4.89	--	67	71	< 0.50	< 0.50	0.71	< 1.0	--	3.4	--	--	--	--	--	--	--	--
MW-7	7/1/2003	8.83	4.60	NP	--	4.23	--	68	64	< 0.50	< 0.50	0.77	2.0	--	35	--	--	--	--	--	< 500	--	--
MW-7	10/2/2003	8.83	5.46	NP	--	3.37	--	82	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	4.9	--	--	--	--	--	< 500	--	--
MW-7	1/9/2004	8.83	3.55	NP	--	5.28	--	75	54	< 0.50	< 0.50	< 0.50	< 1.0	--	2.4	--	--	--	--	--	< 500	--	--
MW-7	4/26/2004	8.83	4.49	NP	--	4.34	--	< 50	< 50	< 0.50	< 0.50	< 0.50	1.5	--	2.3	--	--	--	--	--	< 50	--	--
MW-7	7/22/2004	8.83	4.93	NP	--	3.90	--	< 200	82	0.90	2.0	3.5	9.9	--	1.4	--	--	--	--	--	< 1000	--	--
MW-7	10/29/2004	8.83	3.71	NP	--	5.12	--	54	210	0.67	1.6	1.7	5.8	--	< 0.50	--	--	--	--	--	< 50	--	--
MW-7	1/10/2005	8.83	2.77	NP	--	6.06	--	< 50	74	0.51	2.2	1.7	7.0	--	< 0.50	--	--	--	--	--	< 50	--	--
MW-7	6/15/2005	8.83	3.40	NP	--	5.43	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	0.88	--	--	--	--	--	< 50	--	--
MW-7	9/27/2005	8.83	3.44	NP	--	5.39	--	< 200	< 50	0.59	1.2	< 0.50	< 1.0	--	0.96	< 0.50	< 0.50	< 0.50	< 10	< 250	--	--	--
MW-7	12/13/2005	8.83	3.98	NP	--	4.85	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	0.65	--	--	--	--	--	< 250	--	--
MW-7	3/23/2006	8.83	3.37	NP	--	5.46	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	6/23/2006	8.83	5.25	NP	--	3.58	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	9/26/2006	8.83	4.13	NP	--	4.70	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	0.77	--	--	--	--	--	< 250	--	--
MW-7	12/22/2006	8.83	3.63	NP	--	5.20	--	630	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	3/30/2007	8.83	4.31	NP	--	4.52	--	94	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	6/28/2007	8.83	4.62	NP	--	4.21	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	0.54	--	--	--	--	--	< 250	--	--
MW-7	9/25/2007	8.83	4.65	NP	--	4.18	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	12/28/2007	8.83	3.99	NP	--	4.84	--	75	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	3/22/2008	8.83	4.08	NP	--	4.75	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	6/23/2008	8.83	4.10	NP	--	4.73	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	9/19/2008	8.83	4.86	NP	--	3.97	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	12/31/2008	8.83	4.17	NP	--	4.66	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	3/27/2009	8.83	4.00	NP	--	4.83	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	5/28/2009	8.83	4.71	NP	--	4.12	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	9/17/2009	8.83	4.87	NP	--	3.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/29/2010	8.83	--	--	--	--	WI	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/30/2010	11.64	4.45	NP	--	7.19	--	66.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	7/6/2010	11.64	4.63	NP	--	7.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	9/20/2010	11.64	4.85	NP	--	6.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/8/2010	11.64	3.99	NP	--	7.65	--	57.7	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	3/14/2011	11.64	3.81	NP	--	7.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/2/2011	11.64	3.90	NP	--	7.74	--	63.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 5.0	< 250	--	--
MW-7	9/7/2011	11.64	3.72	NP	--	7.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/5/2011	11.64	4.60	NP	--	7.04	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	--	< 250	--	--
MW-7	3/6/2012	11.64	4.54	NP	--	7.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/11/2012	11.64	4.93	NP	--	6.71	--	< 37.9	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 5.0	< 250	--	--
MW-7	9/6/2012	11.64	4.03	NP	--	7.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/13/2012	11.64	3.43	NP	--	8.21	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 5.0	< 5.0	--	--
MW-7	3/14/2013	11.64	4.90	NP	--	6.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/11/2013	11.64	6.92	NP	--	4.72	--	96	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	7.0	< 5.0	--	--

Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-8	9/7/2011	11.32	2.84	NP	--	8.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/5/2011	11.32	2.68	NP	--	8.64	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	--	< 250	--
MW-8	3/6/2012	11.32	3.07	NP	--	8.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/11/2012	11.32	3.08	NP	--	8.24	--	< 37.9	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	8.3	< 250	--
MW-8	9/6/2012	11.32	2.91	NP	--	8.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/13/2012	11.32	2.31	NP	--	9.01	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 5.0	< 5.0	--
MW-8	3/14/2013	11.32	3.19	NP	--	8.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/11/2013	11.32	3.40	NP	--	7.92	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 5.0	< 5.0	--
MW-8	9/10/2013	11.32	3.54	NP	--	7.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/12/2013	11.32	2.80	NP	--	8.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/4/2014	11.32	2.88	NP	--	8.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/12/2014	11.32	3.24	NP	--	8.08	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 5.0	< 5.0	--
MW-8	1/26/2016	11.32	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	2/21/1995	8.29	1.98	NP	--	6.31	--	71	70	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-9	5/18/1995	8.29	3.47	NP	--	4.82	--	ND	52	ND	1.1	ND	1.9	--	--	--	--	--	--	--	--	--
MW-9	8/17/1995	8.29	1.49	NP	--	6.80	--	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
MW-9	7/26/1996	8.29	0.28	NP	--	8.01	--	98	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-9	10/28/1996	8.29	1.15	NP	--	7.14	--	99	ND	ND	ND	ND	ND	7.6	--	--	--	--	--	--	--	--
MW-9	1/29/1997	8.29	1.05	NP	--	7.24	--	54	ND	ND	ND	ND	ND	5.4	--	--	--	--	--	--	--	--
MW-9	4/15/1997	8.29	1.88	NP	--	6.41	--	94	ND	ND	ND	ND	ND	5.4	--	--	--	--	--	--	--	--
MW-9	5/27/1997	8.29	1.05	NP	--	7.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	7/15/1997	8.29	1.90	NP	--	6.39	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-9	10/9/1997	8.29	1.76	NP	--	6.53	--	160	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-9	1/14/1998	8.29	1.26	NP	--	7.03	--	110	ND	ND	ND	ND	ND	3.0	--	--	--	--	--	--	--	--
MW-9	4/1/1998	8.29	0.85	NP	--	7.44	--	110	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-9	7/15/1998	8.29	1.52	NP	--	6.77	--	200	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-9	10/16/1998	8.29	0.81	NP	--	7.48	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-9	1/25/1999	8.29	0.92	NP	--	7.37	--	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-9	4/15/1999	8.29	0.90	NP	--	7.39	--	ND	75	21	ND	ND	1.1	680	--	--	--	--	--	--	--	--
MW-9	7/14/1999	8.29	1.04	NP	--	7.25	--	140	ND	1.9	ND	ND	ND	260	--	--	--	--	--	--	--	--
MW-9	10/21/1999	8.29	1.23	NP	--	7.06	--	210	ND	ND	ND	ND	ND	170	--	--	--	--	--	--	--	--
MW-9	1/20/2000	8.29	1.18	NP	--	7.11	--	519	ND	1.1	ND	ND	ND	35	--	--	--	--	--	--	--	--
MW-9	4/13/2000	8.29	1.08	NP	--	7.21	--	81	160	0.64	ND	ND	ND	53	--	--	--	--	--	--	--	--
MW-9	7/14/2000	8.29	1.43	NP	--	6.86	--	107	ND	ND	ND	ND	ND	20.2	--	--	--	--	--	--	--	--
MW-9	10/26/2000	8.29	1.38	NP	--	6.91	--	240	240	2.9	ND	ND	ND	56	--	--	--	--	--	--	--	--
MW-9	1/3/2001	8.29	1.66	NP	--	6.63	--	164	166	0.763	0.776	ND	1.28	50.2	--	--	--	--	--	--	--	--
MW-9	4/4/2001	8.29	1.27	NP	--	7.02	--	240	296	0.738	ND	ND	0.907	135	--	--	--	--	--	--	--	--
MW-9	7/17/2001	8.29	1.38	NP	--	6.91	--	ND	ND	ND	ND	ND	ND	13	--	--	--	--	--	--	--	--
MW-9	10/1/2001	8.29	1.93	NP	--	6.36	--	< 52	51	< 0.50	< 0.50	< 0.50	< 0.50	5.0	--	--	--	--	--	--	--	--
MW-9	1/31/2002	8.29	2.08	NP	--	6.21	--	200	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.8	--	--	--	--	--	--	--	--
MW-9	4/18/2002	8.29	1.76	NP	--	6.53	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.1	--	--	--	--	--	--	--	--
MW-9	7/28/2002	8.29	1.57	NP	--	6.72	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	3.5	--	--	--	--	--	--	--
MW-9	10/9/2002	8.29	1.45	NP	--	6.84	--	100	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	17	--	--	--	--	--	--	--
MW-9	1/2/2003	8.29	1.18	NP	--	7.11	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	8.6	--	--	--	--	--	--	--
MW-9	4/1/2003	8.29	2.04	NP	--	6.25	--	56	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	9.4	--	--	--	--	--	--	--
MW-9	7/1/2003	8.29	2.80	NP	--	5.49	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	3.2	--	--	--	--	< 500	--	--
MW-9	10/2/2003	8.29	2.70	NP	--	5.59	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 2.0	--	--	--	--	< 500	--	--
MW-9	1/9/2004	8.29	1.90	NP	--	6.39	--	91	74	< 0.50	0.98	2.3	6.2	--	< 2.0	--	--	--	--	< 500	--	--
MW-9	4/26/2004	8.29	1.62	NP	--	6.67	--	< 50	51	< 0.50	< 0.50	< 0.50	< 1.0	--	0.51	--	--	--	--	< 50	--	--
MW-9	7/22/2004	8.29	1.88	NP	--	6.41	--	< 200	< 50	< 0.5	< 0.5	< 0.5	< 1	--	0.78	--	--	--	--	< 1000	--	--
MW-9	10/29/2004	8.29	1.28	NP	--	7.01	--	76	< 50	< 0.50	< 0.50	< 0.50	1.0	--	< 0.50	--	--	--	--	< 50	--	--
MW-9	1/10/2005	8.29	0.07	NP	--	8.22	--	77	93	0.60	2.3	2.4	9.0	--	< 0.50	--	--	--	--	< 50	--	--
MW-9	6/15/2005	8.29	1.70	NP	--	6.59	--	67	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	6.6	--	--	--	--	< 50	--	--
MW-9	9/27/2005	8.29	1.98	NP	--	6.31	--	< 200	< 50	< 0.50	0.73	< 0.50	< 1.0	--	2.3	< 0.50	< 0.50	< 0.50	< 10	< 250	--	--
MW-9	12/13/2005	8.29	2.26	NP	--	6.03	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	2.9	--	--	--	--	< 250	--	--
MW-9	3/23/2006	8.29	1.32	NP	--	6.97	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	2.7	--	--	--	--	< 250	--	--
MW-9	6/23/2006	8.29	1.98	NP	--	6.31	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	1.9	--	--	--	--	< 250	--	--
MW-9	9/26/2006	8.29	2.52	NP	--	5.77	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	12/22/2006	8.29	1.98	NP	--	6.31	--	150	< 50	< 0.50	0.57	1.8	4.6	--	1.6	--	--	--	--	< 250	--	--
MW-9	3/30/2007	8.29	2.01	NP	--	6.28	--	72	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	3.4	--	--	--	--	< 250	--	--

**Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California**

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-9	6/28/2007	8.29	1.90	NP	--	6.39	--	1000	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	4.9	--	--	--	--	< 250	--	--
MW-9	9/25/2007	8.29	1.57	NP	--	6.72	--	100	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	12/28/2007	8.29	1.98	NP	--	6.31	--	56	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	3/22/2008	8.29	0.80	NP	--	7.49	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	0.61	--	--	--	--	< 250	--	--
MW-9	6/23/2008	8.29	1.80	NP	--	6.49	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	9/19/2008	8.29	2.43	NP	--	5.86	--	56	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	3.9	--	--	--	--	< 250	--	--
MW-9	12/31/2008	8.29	2.66	NP	--	5.63	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	3/27/2009	8.29	2.01	NP	--	6.28	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	5/28/2009	8.29	2.20	NP	--	6.09	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	9/17/2009	8.29	1.83	NP	--	6.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/17/2009	8.29	1.52	NP	--	6.77	--	105	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	3/29/2010	8.29	2.21	NP	--	6.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/30/2010	10.94	2.32	NP	--	8.62	--	95.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	0.85	--	--	--	--	< 250	--	--
MW-9	7/6/2010	10.94	2.02	NP	--	8.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	9/20/2010	10.94	2.03	NP	--	8.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/8/2010	10.94	1.77	NP	--	9.17	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-9	3/14/2011	10.94	2.24	NP	--	8.70	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-9	6/2/2011	10.94	2.24	NP	--	8.70	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-9	9/7/2011	10.94	2.46	NP	--	8.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/5/2011	10.94	2.43	NP	--	8.51	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	4.0	--	--	--	--	< 250	--	--
MW-9	3/6/2012	10.94	3.03	NP	--	7.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/11/2012	10.94	1.75	NP	--	9.19	--	< 37.9	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-9	9/6/2012	10.94	1.24	NP	--	9.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/13/2012	10.94	1.80	NP	--	9.14	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-9	3/14/2013	10.94	2.38	NP	--	8.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/11/2013	10.94	2.81	NP	--	8.13	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	4.2	--	--	--	< 5.0	< 5.0	--	--
MW-9	9/10/2013	10.94	2.63	NP	--	8.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/12/2013	10.94	1.78	NP	--	9.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/4/2014	10.94	1.93	NP	--	9.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/12/2014	10.94	2.39	NP	--	8.55	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	3.3	--	--	--	< 5.0	< 5.0	--	--
MW-9	9/5/2014	10.94	3.49	NP	--	7.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/22/2014	10.94	1.58	NP	--	9.36	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	5.2	--	--	--	< 5.0	< 5.0	--	--
MW-9	3/16/2015	10.94	2.42	NP	--	8.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/11/2015	10.94	2.95	NP	--	7.99	--	< 50	< 100	< 1.0	< 2.0	< 2.0	--	--	3.8	--	--	--	< 20	< 200	--	--
MW-9	12/8/2015	10.94	3.09	NP	--	7.85	--	< 54	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	4.6	--	--	--	< 10	< 100	--	--
MW-9	3/8/2016	10.94	1.41	NP	--	9.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/28/2016	10.94	2.94	NP	--	8.00	--	380	< 50	< 0.50	< 1.0	< 1.0	--	--	4.0	--	--	--	< 10	< 100	--	--
MW-9	9/19/2016	10.94	2.28	NP	--	8.66	--	< 45	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	< 1.0	--	--	--	< 10	< 100	--	--
MW-9	12/2/2016	10.94	0.97	NP	--	9.97	--	< 45	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	< 1.0	--	--	--	< 10	< 100	--	--
MW-10	2/21/1995	8.62	4.69	NP	--	3.93	--	270	1,500	250	26	9.1	160	--	--	--	--	--	--	--	--	--
MW-10	5/18/1995	8.62	4.92	NP	--	3.70	--	75	810	520	3.70	18	23	--	--	--	--	--	--	--	--	--
MW-10	8/17/1995	8.62	4.05	NP	--	4.57	--	ND	67	25	ND	2.4	ND	--	--	--	--	--	--	--	--	--
MW-10	7/26/1996	8.62	4.08	NP	--	4.54	--	ND	ND	3.7	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-10	10/28/1996	8.62	4.09	NP	--	4.53	--	ND	ND	1.1	ND	ND	ND	ND	--	--	--	--	--	--	--	--
MW-10	1/29/1997	8.62	2.94	NP	--	5.68	--	ND	210	41	0.67	7.2	4.8	11	--	--	--	--	--	--	--	--
MW-10	4/15/1997	8.62	4.07	NP	--	4.55	--	ND	110	12	ND	0.77	ND	9.7	--	--	--	--	--	--	--	--
MW-10	5/27/1997	8.62	4.40	NP	--	4.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	7/15/1997	8.62	4.19	NP	--	4.43	--	ND	ND	2.1	ND	0.67	0.73	ND	--	--	--	--	--	--	--	--
MW-10	10/9/1997	8.62	4.75	NP	--	3.87	--	ND	190	38	0.92	6.6	7.6	ND	--	--	--	--	--	--	--	--
MW-10	1/14/1998	8.62	2.66	NP	--	5.96	--	--	59	9.5	0.85	1.2	1.7	4.5	--	--	--	--	--	--	--	--
MW-10	4/1/1998	8.62	3.45	NP	--	5.17	--	62	230	66	1.7	12	17	6.4	--	--	--	--	--	--	--	--
MW-10	7/15/1998	8.62	4.21	NP	--	4.41	--	78	290	98	45	21	38	21	--	--	--	--	--	--	--	--
MW-10	10/16/1998	8.62	4.11	NP	--	4.51	--	ND	160	44	0.96	2.5	10	17	--	--	--	--	--	--	--	--
MW-10	1/25/1999	8.62	3.26	NP	--	5.36	--	ND	140	27	ND	2.8	6.8	23	--	--	--	--	--	--	--	--
MW-10	4/15/1999	8.62	3.63	NP	--	4.99	--	ND	120	18	ND	1.8	5.1	14	--	--	--	--	--	--	--	--
MW-10	7/14/1999	8.62	3.89	NP	--	4.73	--	180	280	55	3.2	11	31	6.1	--	--	--	--	--	--	--	--
MW-10	10/21/1999	8.62	4.09	NP	--	4.53	--	96	140	22	0.59	1.7	7.7	5.3	--	--	--	--	--	--	--	--
MW-10	1/20/2000	8.62	3.92	NP	--	4.70	--	252	ND	0.73	0.86	ND	ND	5.2	--	--	--	--	--	--	--	--
MW-10	4/13/2000	8.62	3.85	NP	--	4.77	--	69	67	54	ND	2.6	ND	3.8	--	--	--	--	--	--	--	--
MW-10	7/14/2000	8.62	4.18	NP	--	4.44	--	149	ND	0.547	ND	ND	ND	ND	--	--	--	--	--	--	--	--

Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-10	10/26/2000	8.62	3.96	NP	--	4.66	--	83	ND	3.3	ND	0.83	1.5	ND	--	--	--	--	--	--	--	--
MW-10	1/3/2001	8.62	4.14	NP	--	4.48	--	126	52.7	5.15	ND	0.823	1.57	ND	--	--	--	--	--	--	--	--
MW-10	4/4/2001	8.62	3.88	NP	--	4.74	--	75	129	28.1	1.67	4.97	10.1	ND	--	--	--	--	--	--	--	--
MW-10	7/17/2001	8.62	4.08	NP	--	4.54	--	ND	ND	4.1	ND	1.0	1.8	ND	--	--	--	--	--	--	--	--
MW-10	10/1/2001	8.62	4.22	NP	--	4.40	--	100	140	30	0.51	4.0	12	< 5.0	--	--	--	--	--	--	--	--
MW-10	1/31/2002	8.62	3.68	NP	--	4.94	--	170	110	16	< 0.50	2.3	5.6	< 2.5	--	--	--	--	--	--	--	--
MW-10	4/18/2002	8.62	4.01	NP	--	4.61	--	130	< 50	11	< 0.50	1.4	4.5	< 2.5	--	--	--	--	--	--	--	--
MW-10	7/28/2002	8.62	4.11	NP	--	4.51	--	58	67	15	< 0.50	0.94	7.3	--	< 2.0	--	--	--	--	--	--	--
MW-10	10/9/2002	8.62	3.97	NP	--	4.65	--	< 94	< 50	0.67	< 0.50	< 0.50	< 1.0	--	< 2.0	--	--	--	--	--	--	--
MW-10	1/2/2003	8.62	3.03	NP	--	5.59	--	64	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 2.0	--	--	--	--	--	--	--
MW-10	4/1/2003	8.62	3.83	NP	--	4.79	--	76	< 50	11	< 0.50	< 0.50	< 1.0	--	< 2.0	--	--	--	--	--	--	--
MW-10	7/1/2003	8.62	4.13	NP	--	4.49	--	87	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 2.0	--	--	--	--	< 500	--	--
MW-10	10/2/2003	8.62	4.05	NP	--	4.57	--	160	77	9.9	0.78	2.3	4.9	--	< 2.0	--	--	--	--	< 500	--	--
MW-10	1/9/2004	8.62	3.40	NP	--	5.22	--	74	53	1.2	< 0.50	0.70	1.6	--	< 2.0	--	--	--	--	< 500	--	--
MW-10	4/26/2004	8.62	3.89	NP	--	4.73	--	< 50	< 50	2.8	1.3	1.0	2.9	--	< 0.50	--	--	--	--	< 50	--	--
MW-10	7/22/2004	8.62	3.73	NP	--	4.89	--	< 200	< 50	< 0.5	< 0.5	< 0.5	< 1	--	< 0.5	--	--	--	--	< 1000	--	--
MW-10	10/29/2004	8.62	3.41	NP	--	5.21	--	< 50	100	2.0	1.2	1.1	3.6	--	< 0.50	--	--	--	--	< 50	--	--
MW-10	1/10/2005	8.62	2.68	NP	--	5.94	--	94	84	7.8	2.7	2.2	8.9	--	< 0.50	--	--	--	--	< 50	--	--
MW-10	6/15/2005	8.62	4.63	NP	--	3.99	--	62	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 50	--	--
MW-10	9/27/2005	8.62	3.96	NP	--	4.66	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	< 0.50	< 0.50	< 0.50	< 10	< 250	--	--
MW-10	12/13/2005	8.62	3.75	NP	--	4.87	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	3/23/2006	8.62	3.13	NP	--	5.49	--	< 200	50	13	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	6/23/2006	8.62	3.90	NP	--	4.72	--	< 200	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	9/26/2006	8.62	3.66	NP	--	4.96	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	12/22/2006	8.62	3.56	NP	--	5.06	--	81	< 50	< 0.50	< 0.50	< 0.50	1.8	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	3/30/2007	8.62	3.93	NP	--	4.69	--	82	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	6/28/2007	8.62	4.03	NP	--	4.59	--	57	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	9/25/2007	8.62	3.91	NP	--	4.71	--	82	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	12/28/2007	8.62	3.64	NP	--	4.98	--	62	< 50	2.1	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	3/22/2008	8.62	4.00	NP	--	4.62	--	< 50	64	13	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	6/23/2008	8.62	3.90	NP	--	4.72	--	< 50	94	30	0.53	3.4	3.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	9/19/2008	8.62	3.85	NP	--	4.77	--	< 50	130	15	1.7	5.7	11	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	12/31/2008	8.62	3.69	NP	--	4.93	--	< 50	82	11	< 0.50	0.81	1.7	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	3/27/2009	8.62	3.75	NP	--	4.87	--	730	210	28	1.4	1.2	3.9	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	5/28/2009	8.62	3.66	NP	--	4.96	--	< 50	< 50	0.91	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	9/17/2009	8.62	3.85	NP	--	4.77	--	65	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	12/17/2009	8.62	3.00	NP	--	5.62	--	57.7	< 50.0	1.2	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	3/29/2010	8.62	3.81	NP	--	4.81	--	82.2	< 50.0	0.77	< 0.50	< 0.50	3.4	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	6/30/2010	10.97	3.90	NP	--	7.07	--	53.4	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	7/6/2010	10.97	3.73	NP	--	7.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	9/20/2010	10.97	3.85	NP	--	7.12	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	12/8/2010	10.97	3.63	NP	--	7.34	--	< 50.0	< 50.0	1.8	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	3/14/2011	10.97	3.46	NP	--	7.51	--	63.3	< 50.0	1.1	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-10	6/2/2011	10.97	3.92	NP	--	7.05	--	< 50.0	58.7	4.8	4.2	0.96	5.1	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-10	9/7/2011	10.97	4.06	NP	--	6.91	--	< 50.0	< 50.0	4.1	< 0.50	0.66	2.4	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	12/5/2011	10.97	3.82	NP	--	7.15	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-10	3/6/2012	10.97	3.74	NP	--	7.23	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	58.7	< 250	--	--
MW-10	6/11/2012	10.97	3.99	NP	--	6.98	--	< 37.9	< 50.0	0.79	< 0.50	< 0.50	< 1.5	--	0.72	--	--	--	17.2	< 250	--	--
MW-10	9/6/2012	10.97	4.00	NP	--	6.97	--	110	64	6.9	0.89	1.8	3.9	--	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50
MW-10	12/13/2012	10.97	3.40	NP	--	7.57	--	< 50	120	15	1.1	1.7	5.2	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-10	3/14/2013	10.97	4.00	NP	--	6.97	--	< 50	86	25	< 0.50	0.56	0.80	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-10	6/11/2013	10.97	4.20	NP	--	6.77	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	< 5.0	< 8.0	--	--
MW-10	9/10/2013	10.97	3.92	NP	--	7.05	--	< 50	< 50	< 0.50	< 0.50	< 0.50	1.2	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-10	12/12/2013	10.97	3.85	NP	--	7.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/4/2014	10.97	3.38	NP	--	7.59	--	< 50	< 50	1.5	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-10	6/12/2014	10.97	3.92	NP	--	7.05	--	< 50	< 50	4.4	< 0.50	< 0.50	0.91	--	< 0.50	--	--	--	< 5.0	< 8.0	--	--
MW-10	6/18/2014	10.97	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	7/6/2010	10.53	2.44	NP	--	8.09	--	226	99.2	< 0.50	< 0.50	< 0.50	< 1.5	--	165	< 0.50	< 0.50	< 0.50	174	< 250	< 1.0	< 1.0
MW-11	9/20/2010	10.53	2.80	NP	--	7.73	--	< 50.0	76.4	< 0.50	< 0.50	< 0.50	< 1.5	--	82.7	--	--	--	--	< 250	--	--
MW-11	12/8/2010	10.53	1.90	NP	--	8.63	--	52.7	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	59.1	--	--	--	--	< 250	--	--

**Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California**

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-11	3/14/2011	10.53	1.89	NP	--	8.64	--	67.8	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	44.0	--	--	--	< 5.0	< 250	--	--
MW-11	6/2/2011	10.53	1.75	NP	--	8.78	--	69.0	< 50.0	< 0.50	0.61	< 0.50	< 1.5	--	24.9	--	--	--	7.1	< 250	--	--
MW-11	9/7/2011	10.53	1.56	NP	--	8.97	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	3.8	--	--	--	--	< 250	--	--
MW-11	12/5/2011	10.53	2.05	NP	--	8.48	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	26.4	--	--	--	--	< 250	--	--
MW-11	3/6/2012	10.53	2.31	NP	--	8.22	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	35.3	--	--	--	5.7	< 250	--	--
MW-11	6/11/2012	10.53	2.24	NP	--	8.29	--	< 37.9	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	20.9	--	--	--	10.4	< 250	--	--
MW-11	9/6/2012	10.53	1.70	NP	--	8.83	--	64	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	7.7	< 0.50	< 0.50	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50
MW-11	12/13/2012	10.53	1.56	NP	--	8.97	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	27	--	--	--	< 5.0	< 5.0	--	--
MW-11	3/14/2013	10.53	2.20	NP	--	8.33	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	20	--	--	--	< 5.0	< 5.0	--	--
MW-11	6/11/2013	10.53	2.92	NP	--	7.61	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	32	--	--	--	< 5.0	< 5.0	--	--
MW-11	9/10/2013	10.53	2.98	NP	--	7.55	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	22	--	--	--	< 5.0	< 5.0	--	--
MW-11	12/12/2013	10.53	2.20	NP	--	8.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	3/4/2014	10.53	1.75	NP	--	8.78	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	12	--	--	--	< 5.0	< 5.0	--	--
MW-11	6/12/2014	10.53	2.51	NP	--	8.02	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	3.7	--	--	--	< 5.0	< 5.0	--	--
MW-11	9/5/2014	10.53	3.27	NP	--	7.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	12/22/2014	10.53	1.53	NP	--	9.00	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	37	--	--	--	< 5.0	< 5.0	--	--
MW-11	3/16/2015	10.53	2.40	NP	--	8.13	--	--	--	< 0.50	< 0.50	< 0.50	< 1.0	--	19.6	--	--	--	< 5.0	< 5.0	--	--
MW-11	6/11/2015	10.53	2.87	NP	--	7.66	--	< 50	56	< 0.50	< 1.0	< 1.0	--	--	8.2	--	--	--	< 10	< 100	--	--
MW-11	9/9/2015	10.53	3.58	NP	--	6.95	--	< 54	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	14	--	--	--	< 10	< 100	--	--
MW-11	12/8/2015	10.53	3.32	NP	--	7.21	--	< 52	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	24	--	--	--	< 10	< 100	--	--
MW-11	3/8/2016	10.53	1.90	NP	--	8.63	--	52 HD	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	12	--	--	--	< 10	< 100	--	--
MW-11	6/29/2016	10.53	3.39	NP	--	7.14	--	350	< 50	< 0.50	< 1.0	< 1.0	--	--	8.6	--	--	--	< 10	< 100	--	--
MW-11	9/19/2016	10.53	2.84	NP	--	7.69	--	170	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	7.6	--	--	--	< 10	< 100	--	--
MW-11	12/2/2016	10.53	2.23	NP	--	8.30	--	< 46	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	6.9	--	--	--	< 10	< 100	--	--
MW-12	7/6/2010	11.01	4.00	NP	--	7.01	--	990	20,300	1,030	955	311	2,450	--	1,650	< 0.50	< 0.50	1.0	1,430	< 250	< 1.0	< 1.0
MW-12	9/20/2010	11.01	4.18	NP	--	6.83	--	5,220	73,700	6,020	6,390	2,970	18,300	--	894	--	--	--	--	< 250	--	--
MW-12	12/8/2010	11.01	3.92	NP	--	7.09	--	428	3,350	249	117	89.8	558	--	1,470	--	--	--	--	< 2500	--	--
MW-12	3/14/2011	11.01	3.70	NP	--	7.31	--	283	2,420	287	80.9	49.1	243	--	1,020	--	--	--	69.6	< 250	--	--
MW-12	6/2/2011	11.01	4.40	NP	--	6.61	--	1,330	12,200	688	70.5	225	619	--	824	--	--	--	110	< 250	--	--
MW-12	9/7/2011	11.01	4.37	NP	--	6.64	--	1,270	7,900	920	25.4	187	267	--	896	--	--	--	--	< 2500	--	--
MW-12	12/5/2011	11.01	4.32	NP	--	6.69	--	286	2,240	296	38.3	38.0	122	--	1,040	--	--	--	--	< 250	--	--
MW-12	3/6/2012	11.01	4.01	NP	--	7.00	--	272	1,260	193	22.6	28.8	80.5	--	835	--	--	--	78.4	< 250	--	--
MW-12	6/11/2012	11.01	4.20	NP	--	6.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	6/12/2012	--	--	--	--	--	--	957	1,030	178	17.0	24.1	68.8	--	993	--	--	--	448	< 250	--	--
MW-12	9/6/2012	11.01	4.15	NP	--	6.86	--	< 200	580	120	9.6	15	37	--	840	< 1.5	< 1.5	< 1.5	15	< 15	< 1.5	14
MW-12	12/13/2012	11.01	3.35	NP	--	7.66	--	< 50	480	70	4.6	7.2	19	--	820	--	--	--	19	< 15	--	--
MW-12	3/14/2013	11.01	4.11	NP	--	6.90	--	< 50	370	76	3.4	12	18	--	810	--	--	--	21	< 15	--	--
MW-12	6/11/2013	11.01	4.30	NP	--	6.71	--	62	290	51	< 1.5	4.3	6.4	--	840	--	--	--	19	< 15	--	--
MW-12	9/10/2013	11.01	3.96	NP	--	7.05	--	< 50	340	52	1.9	6.4	4.5	--	820	--	--	--	17	< 15	--	--
MW-12	12/12/2013	11.01	4.00	NP	--	7.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	3/4/2014	11.01	3.46	NP	--	7.55	--	< 50	< 200	19	< 2.0	< 2.0	< 2.0	--	990	--	--	--	< 9.0	< 20	< 2.0	11
MW-12	6/12/2014	11.01	3.96	NP	--	7.05	--	< 50	200	30	3.3	4.2	6.1	--	920	--	--	--	8.6	< 9.0	--	--
MW-12	6/18/2014	11.01	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12A	7/6/2010	11.29	4.22	NP	--	7.07	--	89.3	664	18.3 M0	0.78	2.3	50.2 M0	--	14.3 M0	< 0.50	< 0.50	< 0.50	11.9 M0	< 250	< 1.0	< 1.0
MW-12A	9/20/2010	11.29	4.39	NP	--	6.90	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	8.5	--	--	--	--	< 250	--	--
MW-12A	12/8/2010	11.29	4.00	NP	--	7.29	--	76.4	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	9.4	--	--	--	--	< 250	--	--
MW-12A	3/14/2011	11.29	3.81	NP	--	7.48	--	61.5	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-12A	6/2/2011	11.29	4.20	NP	--	7.09	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-12A	9/7/2011	11.29	4.42	NP	--	6.87	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	0.74	--	--	--	--	< 250	--	--
MW-12A	12/5/2011	11.29	4.30	NP	--	6.99	--	< 50.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	--	< 250	--	--
MW-12A	3/6/2012	11.29	4.32	NP	--	6.97	--	52.0	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-12A	6/11/2012	11.29	4.36	NP	--	6.93	--	< 37.9	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	< 0.50	--	--	--	< 5.0	< 250	--	--
MW-12A	9/6/2012	11.29	4.45	NP	--	6.84	--	300	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50
MW-12A	12/13/2012	11.29	3.80	NP	--	7.49	--	62	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-12A	3/14/2013	11.29	4.36	NP	--	6.93	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-12A	6/11/2013	11.29	4.53	NP	--	6.76	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	0.78	--	--	--	< 5.0	< 5.0	--	--
MW-12A	9/10/2013	11.29	4.40	NP	--	6.89	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	6.3	--	--	--	< 5.0	< 5.0	--	--
MW-12A	12/12/2013	11.29	4.35	NP	--	6.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12A	3/4/2014	11.29	3.73	NP	--	7.56	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--

Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-12A	6/12/2014	11.29	4.37	NP	--	6.92	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	< 0.50	--	--	--	< 5.0	< 5.0	--	--
MW-12A	6/18/2014	11.29	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	7/6/2010	11.08	4.26	NP	--	6.82	--	469	122	< 0.50	< 0.50	< 0.50	< 1.5	--	217	< 0.50	< 0.50	< 0.50	199	< 250	< 1.0	< 1.0
MW-13	9/20/2010	11.08	4.81	NP	--	6.27	--	< 50.0	250	< 0.50	< 0.50	< 0.50	< 1.5	--	272	--	--	--	--	< 250	--	--
MW-13	12/8/2010	11.08	5.02	NP	--	6.06	--	97.0	177	< 0.50	< 0.50	< 0.50	< 1.5	--	390	--	--	--	--	< 250	--	--
MW-13	3/14/2011	11.08	4.32	NP	--	6.76	--	162	127	< 0.50	< 0.50	< 0.50	< 1.5	--	241	--	--	--	125	< 250	--	--
MW-13	6/2/2011	11.08	3.98	NP	--	7.10	--	89.9	260	< 0.50	< 0.50	< 0.50	< 1.5	--	228	--	--	--	44.7	< 250	--	--
MW-13	9/7/2011	11.08	5.74	NP	--	5.34	--	< 50.0	167	< 0.50	< 0.50	< 0.50	< 1.5	--	207	--	--	--	--	< 250	--	--
MW-13	12/5/2011	11.08	5.00	NP	--	6.08	--	< 50.0	166	< 0.50	< 0.50	< 0.50	< 1.5	--	215	--	--	--	--	< 250	--	--
MW-13	3/6/2012	11.08	5.37	NP	--	5.71	--	< 50.0	63.9	< 0.50	< 0.50	< 0.50	< 1.5	--	110	--	--	--	38.5	< 250	--	--
MW-13	6/11/2012	11.08	5.73	NP	--	5.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	6/12/2012	--	--	--	--	--	--	< 37.9	118	< 0.50	< 0.50	< 0.50	< 1.5	--	220	--	--	--	81.7	< 250	--	--
MW-13	9/6/2012	11.08	4.14	NP	--	6.94	--	87	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	140	< 0.50	< 0.50	< 0.50	10	< 5.0	< 0.50	< 0.50
MW-13	12/13/2012	11.08	3.80	NP	--	7.28	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	130	--	--	--	14	< 5.0	--	--
MW-13	3/14/2013	11.08	4.20	NP	--	6.88	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	110	--	--	--	24	< 5.0	--	--
MW-13	6/11/2013	11.08	4.10	NP	--	6.98	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	97	--	--	--	31	< 5.0	--	--
MW-13	9/10/2013	11.08	4.20	NP	--	6.88	--	< 50	< 50	< 0.50	< 0.50	< 0.50	0.62	--	64	--	--	--	47	< 5.0	--	--
MW-13	12/12/2013	11.08	4.05	NP	--	7.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	3/4/2014	11.08	3.51	NP	--	7.57	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	54	--	--	--	30	< 5.0	--	--
MW-13	6/12/2014	11.08	4.08	NP	--	7.00	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	36	--	--	--	43	< 5.0	--	--
MW-13	9/5/2014	11.08	4.23	NP	--	6.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	12/22/2014	11.08	3.07	NP	--	8.01	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	28	--	--	--	39	< 5.0	--	--
MW-13	3/16/2015	11.08	3.97	NP	--	7.11	--	--	--	< 0.50	< 0.50	< 0.50	< 1.0	--	27.7	--	--	--	35.5	< 5.0	--	--
MW-13	6/11/2015	11.08	3.86	NP	--	7.22	--	< 50	< 250	< 2.5	< 5.0	< 5.0	--	--	20	--	--	--	< 50	< 500	--	--
MW-13	9/9/2015	11.08	4.48	NP	--	6.60	--	< 52	< 50	0.84	< 1.0	< 1.0	< 1.0	--	17	--	--	--	38	< 100	--	--
MW-13	12/8/2015	11.08	4.13	NP	--	6.95	--	< 52	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	14	--	--	--	< 10	< 100	--	--
MW-13	3/8/2016	11.08	3.03	NP	--	8.05	--	< 46	70	< 0.50	< 1.0	< 1.0	< 1.0	--	14	--	--	--	54	< 100	--	--
MW-13	6/28/2016	11.08	4.28	NP	--	6.80	--	190	< 50	0.62	< 1.0	< 1.0	--	--	23	--	--	--	85	< 100	--	--
MW-13	9/19/2016	11.08	4.12	NP	--	6.96	--	< 45	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	20	--	--	--	30	< 100	--	--
MW-13	12/2/2016	11.08	3.88	NP	--	7.20	--	< 45	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	19	--	--	--	63	< 100	--	--
MW-14	6/2/2011	12.00	3.58	NP	--	8.42	--	4,180	51,600	2,750	67.9	1,790	13,400	--	1.9	--	--	--	27.2	< 250	--	--
MW-14	9/7/2011	12.00	3.02	NP	--	8.98	--	2,970	42,600	1,050	28.1	2,990	7,300	--	< 25.0	--	--	--	--	< 12500	--	--
MW-14	12/5/2011	12.00	4.05	NP	--	7.95	--	3,980	14,000	709	9.1	1,420	2,530	--	0.97	--	--	--	--	< 250	--	--
MW-14	3/6/2012	12.00	3.94	NP	--	8.06	--	3,640	16,600	959	15.0	2,330	3,830	--	< 2.5	--	--	--	28.1	< 1250	--	--
MW-14	6/11/2012	12.00	3.91	NP	--	8.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	6/12/2012	--	--	--	--	--	--	4580	15,700	1,200	14.0	1,580	3,010	--	1.4	--	--	--	23.3	< 250	--	--
MW-14	9/6/2012	12.00	3.35	NP	--	8.65	--	< 2,000	12,000	210	9.1	1,100	1,800	--	< 4.0	< 4.0	< 4.0	< 4.0	< 20	< 40	< 4.0	< 4.0
MW-14	12/13/2012	12.00	3.26	NP	--	8.74	--	< 50	10,000	72	5.8	610	780	--	< 1.5	--	--	--	< 7.0	< 15	--	--
MW-14	3/14/2013	12.00	4.16	NP	--	7.84	--	< 50	5,700	290	11	750	960	--	< 1.5	--	--	--	12	< 15	--	--
MW-14	6/11/2013	12.00	4.63	NP	--	7.37	--	< 50	6,900	630	5.3	480	680	--	< 1.5	--	--	--	24	< 15	--	--
MW-14	9/10/2013	12.00	4.88	NP	--	7.12	--	120	31,000	1,500	39	2,300	5,200	--	< 1.5	--	--	--	32	< 15	--	--
MW-14	12/12/2013	12.00	4.35	NP	--	7.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	3/4/2014	12.00	3.60	NP	--	8.40	--	250	40,000	1,600	41	2,900	6,700	--	< 9.0	--	--	--	< 50	< 90	--	--
MW-14	6/12/2014	12.00	4.51	NP	--	7.49	--	64	36,000	1,600	43	3,000	6,500	--	< 9.0	--	--	--	< 50	< 90	--	--
MW-14	9/5/2014	12.00	5.47	NP	--	6.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	12/22/2014	12.00	3.18	NP	--	8.82	--	< 50	3,200	220	3.8	260	540	--	< 0.90	--	--	--	12	< 9.0	--	--
MW-14	3/16/2015	12.00	4.18	NP	--	7.82	--	--	--	393	1.6	278	413	--	0.66	--	--	--	15.0	< 5.0	--	--
MW-14	6/11/2015	12.00	4.74	NP	--	7.26	--	1,800	3,900	510	< 5.0	340	--	--	< 5.0	--	--	--	< 50	< 500	--	--
MW-14	7/7/2015	12.00	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-15	6/2/2011	11.11	2.50	NP	--	8.61	--	124	357	< 0.50	< 0.50	< 0.50	< 1.5	--	15.2	--	--	--	6.4	< 250	--	--
MW-15	9/7/2011	11.11	2.54	NP	--	8.57	--	< 50.0	412	6.2	< 0.50	42.8	< 1.5	--	128	--	--	--	--	< 250	--	--
MW-15	12/5/2011	11.11	2.70	NP	--	8.41	--	50.5	201	6.6	< 0.50	0.93	< 1.5	--	142	--	--	--	--	< 250	--	--
MW-15	3/6/2012	11.11	2.69	NP	--	8.42	--	56.2	< 50.0	< 0.50	< 0.50	< 0.50	< 1.5	--	106	--	--	--	101	< 250	--	--
MW-15	6/11/2012	11.11	2.84	NP	--	8.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-15	6/12/2012	--	--	--	--	--	--	< 37.9	74.3	< 0.50	< 0.50	< 0.50	< 1.5	--	114	--	--	--	90.9	< 250	--	--
MW-15	9/6/2012	11.11	2.24	NP	--	8.87	--	64	59	< 0.50	< 0.50	< 0.50	< 0.50	--	76	< 0.50	< 0.50	< 0.50	45	< 5.0	< 0.50	< 0.50
MW-15	12/13/2012	11.11	2.51	NP	--	8.60	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.									

Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-15	6/11/2013	11.11	3.36	NP	--	7.75	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	73	--	--	--	31	< 5.0	--	--
MW-15	9/10/2013	11.11	3.28	NP	--	7.83	--	< 50	68	< 0.50	< 0.50	< 0.50	< 0.50	--	120	--	--	--	39	< 5.0	--	--
MW-15	12/12/2013	11.11	3.00	NP	--	8.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-15	3/4/2014	11.11	2.34	NP	--	8.77	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	96	--	--	--	45	< 5.0	--	--
MW-15	6/12/2014	11.11	3.15	NP	--	7.96	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	100	--	--	--	31	< 5.0	--	--
MW-15	9/5/2014	11.11	4.00	NP	--	7.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-15	12/22/2014	11.11	2.38	NP	--	8.73	--	< 50	< 50	0.50	< 0.50	< 0.50	< 0.50	--	65	--	--	--	36	< 5.0	--	--
MW-15	3/16/2015	11.11	3.17	NP	--	7.94	--	--	--	< 0.50	< 0.50	< 0.50	< 1.0	--	46.7	--	--	--	27.0	< 5.0	--	--
MW-15	6/11/2015	11.11	3.47	NP	--	7.64	--	< 50	94	< 0.50	< 1.0	< 1.0	--	--	46	--	--	--	15	< 100	--	--
MW-15	9/9/2015	11.11	4.03	NP	--	7.08	--	< 52	150	< 0.50	< 1.0	< 1.0	< 1.0	--	75	--	--	--	36	< 100	--	--
MW-15	12/8/2015	11.11	3.04	NP	--	8.07	--	< 50	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	82	--	--	--	34	< 100	--	--
MW-15	3/8/2016	11.11	2.71	NP	--	8.40	--	< 48	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	38	--	--	--	31	< 100	--	--
MW-15	6/29/2016	11.11	3.64	NP	--	7.47	--	< 45	< 50	< 0.50	< 1.0	< 1.0	--	--	51	--	--	--	30	< 100	--	--
MW-15	9/19/2016	11.11	3.50	NP	--	7.61	--	< 45	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	47	--	--	--	35	< 100	--	--
MW-15	12/2/2016	11.11	2.62	NP	--	8.49	--	240	98	< 0.50	< 1.0	< 1.0	< 1.0	--	33	--	--	--	24	< 100	--	--
MW-16	6/2/2011	10.98	3.00	NP	--	7.98	--	509	1,420	79.4	< 0.50	4.2	< 1.5	--	1,200	--	--	--	257	< 250	--	--
MW-16	9/7/2011	10.98	2.65	NP	--	8.33	--	90.0	934	< 0.50	< 0.50	< 0.50	< 1.5	--	1,240	--	--	--	--	< 250	--	--
MW-16	12/5/2011	10.98	3.18	NP	--	7.80	--	196	948	< 0.50	< 0.50	< 0.50	< 1.5	--	1,320	--	--	--	--	< 250	--	--
MW-16	3/6/2012	10.98	2.91	NP	--	8.07	--	204	392	< 0.50	< 0.50	< 0.50	< 1.5	--	1,090	--	--	--	134	< 250	--	--
MW-16	6/11/2012	10.98	3.04	NP	--	7.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-16	6/12/2012	--	--	--	--	--	--	48.1	430	< 0.50	< 0.50	< 0.50	< 1.5	--	1,100	--	--	--	374	< 250	--	--
MW-16	9/6/2012	10.98	2.61	NP	--	8.37	--	390	< 150	< 1.5	< 1.5	< 1.5	< 1.5	--	960	< 1.5	< 1.5	< 1.5	70	< 15	< 1.5	< 1.5
MW-16	12/13/2012	10.98	2.50	NP	--	8.48	--	52	< 150	< 1.5	< 1.5	< 1.5	< 1.5	--	980	--	--	--	55	< 20	--	--
MW-16	3/14/2013	10.98	3.15	NP	--	7.83	--	< 50	< 200	< 2.0	< 2.0	< 2.0	< 2.0	--	950	--	--	--	67	< 20	--	--
MW-16	6/11/2013	10.98	3.18	NP	--	7.80	--	< 50	< 150	< 1.5	< 1.5	< 1.5	< 1.5	--	820	--	--	--	70	< 15	--	--
MW-16	9/10/2013	10.98	3.44	NP	--	7.54	--	< 50	< 50	< 0.50	< 0.50	< 0.50	0.67	--	240	--	--	--	440	< 5.0	--	--
MW-16	12/12/2013	10.98	2.90	NP	--	8.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-16	3/4/2014	10.98	3.25	NP	--	7.73	--	< 50	60	< 0.50	< 0.50	< 0.50	< 0.50	--	440	--	--	--	400	< 5.0	--	--
MW-16	6/12/2014	10.98	3.67	NP	--	7.31	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	--	92	--	--	--	440	< 5.0	--	--
MW-16	9/5/2014	10.98	3.70	NP	--	7.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-16	12/22/2014	10.98	3.11	NP	--	7.87	--	< 50	< 50	0.52	< 0.50	< 0.50	< 0.50	--	23	--	--	--	140	< 5.0	--	--
MW-16	3/16/2015	10.98	3.03	NP	--	7.95	--	--	--	< 0.50	< 0.50	< 0.50	< 1.0	--	9.2	--	--	--	185	< 5.0	--	--
MW-16	6/11/2015	10.98	3.62	NP	--	7.36	--	< 50	< 250	< 2.5	< 5.0	< 5.0	--	--	5.1	--	--	--	130	< 500	--	--
MW-16	9/9/2015	10.98	3.98	NP	--	7.00	--	< 50	< 50	< 0.5	< 1.0	< 1.0	< 1.0	--	12	--	--	--	100	< 501	--	--
MW-16	12/8/2015	10.98	3.86	NP	--	7.12	--	< 50	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	15	--	--	--	140	< 100	--	--
MW-16	3/8/2016	10.98	3.23	NP	--	7.75	--	140 HD	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	8.3	--	--	--	130	< 100	--	--
MW-16	6/28/2016	10.98	3.57	NP	--	7.41	--	330	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	4.3	--	--	--	86	< 100	--	--
MW-16	9/19/2016	10.98	3.19	NP	--	7.79	--	490	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	5.7	--	--	--	87	< 100	--	--
MW-16	12/2/2016	10.98	3.19	NP	--	7.79	--	230	< 50	< 0.50	< 1.0	< 1.0	< 1.0	--	7.5	--	--	--	140	< 100	--	--
MW-17	6/2/2011	11.52	5.78	NP	--	5.74	--	687	9,130	2,530	960	35.1	907	--	0.74	--	--	--	366	< 250	--	--
MW-17	9/7/2011	11.52	4.56	NP	--	6.96	--	1,900	47,200	9,620	5,510	1,210	4,510	--	< 25.0	--	--	--	--	< 12500	--	--
MW-17	12/5/2011	11.52	4.70	NP	--	6.82	--	1,790	17,300	4,720	511	238	747	--	< 2.5	--	--	--	--	< 1250	--	--
MW-17	3/6/2012	11.52	4.64	NP	--	6.88	--	1,530	1,580	2,090	23.8	39.3	166	--	1.1	--	--	--	481	< 250	--	--
MW-17	6/11/2012	11.52	4.67	NP	--	6.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-17	6/12/2012	--	--	--	--	--	--	1,090	4,950	2,340	123	153	610	--	< 2.5	--	--	--	411	< 1250	--	--

**Table 5
Past Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California**

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-17	9/6/2012	11.52	4.39	NP	--	7.13	--	< 1,000	18,000	4,300	170	370	1,100	--	< 10	< 10	< 10	< 10	300	< 100	< 10	110
MW-17	12/13/2012	11.52	4.20	NP	--	7.32	--	< 100	55,000	7,300	2,700	1,700	4,600	--	< 10	--	--	--	300	< 100	--	--
MW-17	3/14/2013	11.52	4.70	NP	--	6.82	--	< 200	63,000	13,000	5,400	3,100	8,800	--	< 15	--	--	--	260	< 150	--	--
MW-17	6/11/2013	11.52	4.83	NP	--	6.69	--	710	110,000	10,000	11,000	3,100	12,000	--	< 25	--	--	--	< 150	< 250	--	--
MW-17	9/10/2013	11.52	4.60	NP	--	6.92	--	160	36,000	8,200	510	1,200	2,400	--	< 15	--	--	--	320	< 150	--	--
MW-17	12/12/2013	11.52	5.00	NP	--	6.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-17	3/4/2014	11.52	3.99	NP	--	7.53	--	400	13,000	1,600	270	260	540	--	< 3.0	--	--	--	330	48	--	--
MW-17	6/12/2014	11.52	4.49	NP	--	7.03	--	87	17,000	3,600	410	650	1,100	--	< 3.0	--	--	--	300	< 30	--	--
MW-17	6/18/2014	11.52	--	--	--	--	WD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Gauging Notes:

TOC - Top of Casing
ft - Feet
NP - LNAPL not present
LNAPL - Light non-aqueous phase liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
-- - No information available

Analytical Notes:

< - Below laboratory's indicated reporting limit
ug/L - micrograms/liter
TPHd- Total petroleum hydrocarbons as diesel
TPHg- Total petroleum hydrocarbons as gasoline, also known as Gasoline Range Organics (GRO)
MTBE- Methyl tertiary-butyl ether
TBA- Tertiary-butyl alcohol
Bold - Above the laboratory's indicated reporting limit
1n - The TPHg result for this sample did not match the laboratory standard for gasoline. This is likely due to the presence of MTBE in the sample
A - Lower boiling hydrocarbons present, atypical for Diesel Fuel.
2V - The detection of Ethanol is biased high likely due to the presence of interfering compound:

Table 6
Fourth Quarter 2016 Subsurface Water Gauging and Analytical Laboratory Data
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

Well I.D.	Date	GROUNDWATER ELEVATION DATA						GROUNDWATER ANALYTICAL DATA								
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	TBA (ug/L)	Ethanol (ug/L)
MW-3	12/2/2016	10.81	2.59	NP	--	8.22	--	< 48	81	< 0.50	< 1.0	< 1.0	< 1.0	8.7	24	< 100
MW-9	12/2/2016	10.94	0.97	NP	--	9.97	--	< 45	< 50	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 100
MW-11	12/2/2016	10.53	2.23	NP	--	8.30	--	< 46	< 50	< 0.50	< 1.0	< 1.0	< 1.0	6.9	< 10	< 100
MW-13	12/2/2016	11.08	3.88	NP	--	7.20	--	< 45	< 50	< 0.50	< 1.0	< 1.0	< 1.0	19	63	< 100
MW-15	12/2/2016	11.11	2.62	NP	--	8.49	--	240 HD	98	< 0.50	< 1.0	< 1.0	< 1.0	33	24	< 100
MW-16	12/2/2016	10.98	3.19	NP	--	7.79	--	230 HD	< 50	< 0.50	< 1.0	< 1.0	< 1.0	7.5	140	< 100

<p>Gauging Notes: TOC - Top of Casing ft - Feet NP - LNAPL not present LNAPL - Light non-aqueous phase liquid * - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75) -- - No information available</p>	<p>Analytical Notes: < - Below laboratory's indicated reporting limit ug/L - micrograms/liter TPHd- Total petroleum hydrocarbons as diesel (silica gel treated) TPHg- Total petroleum hydrocarbons as gasoline, also known as Gasoline Range Organics (GRO) MTBE- Methyl tertiary-butyl ether TBA- Tertiary-butyl alcohol Bold - Above the laboratory's indicated reporting limit HD - The chromatographic pattern was inconsistent with the profile of the reference fuel standard</p>
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Table 7
Maximum Reported Past COC Concentrations in Subsurface Water Verses Most Recent Available Laboratory Results
76 Station No. 5191/5043
449 Hegenberger Road, Oakland, California

ID	DRO			GRO			Benzene			MTBE			Percent Reduction				Notes
	Max	Min	Most Recent	Max	Min	Most Recent	Max	Min	Most Recent	Max	Min	Most Recent	DRO	GRO	Benzene	MTBE	
MW-1	13,000	8,900	8,900	150,000	64,000	64,000	17000	13,000.0	13,000	NA	NA	NA	31.54%	57.33%	23.53%	NA	Destroyed (March 1995), last sampled in 8/31/92
MW-2	10,000	1,600	2,000	72,000	9,000	44,000	3700	1,000.00	2,200	NA	NA	NA	80.00%	38.89%	40.54%	NA	Destroyed (March 1995), last sampled in 2/21/95
MW-3	2,060	63	< 48	3,800	79	81	350	0.54	< 0.50	910	8.7	8.7	100.00%	97.87%	100.00%	99.04%	Last sampled 12/2/16
MW-4	90	61	ND	420	56	130	0.95	0.95	ND	NA	NA	NA	100.00%	69.05%	100.00%	NA	Destroyed (January 1995); last sample 11/14/94
MW-5	5,500	290	290	13,000	78	250	350.0	0.89	40	NA	NA	NA	94.73%	98.08%	88.57%	NA	Destroyed (January 1995); last sample 11/14/94
MW-6	250,000	250	36,000	3,000,000	730	69,000	28,000	15.6	2,300	16,000	0.56	< 50	85.60%	97.70%	91.79%	100.00%	Destroyed (July 2015); last sampled 6/11/15
MW-7	630	54	< 50	210	54	< 50	0.9	0.51	< 0.50	36	0.54	< 0.50	100.00%	100.00%	100.00%	100.00%	Destroyed (January 2016); last sampled 6/12/14
MW-8	583	79	< 50	590	58	< 50	3.9	0.88	< 0.50	4.7	4.7	< 0.50	100.00%	100.00%	100.00%	100.00%	Destroyed (January 2016); last sampled 6/12/14
MW-9	1,000	54	< 45	296	51	< 50	21	0.6	< 0.50	680	0.51	< 1.0	100.00%	100.00%	100.00%	100.00%	Last sampled 12/2/16
MW-10	730	53	< 50	1,500	50	< 50	520	0.547	4.4	23	0.72	< 0.50	100.00%	100.00%	99.15%	100.00%	Destroyed (June 2014); last sampled 6/12/14
MW-11	350	53	< 46	99	56	< 50	ND	ND	< 0.50	165	3.7	6.9	100.00%	100.00%	ND	95.82%	Last sampled 12/2/16
MW-12	5,220	62	< 50	73,700	200	200	6,020	19	30	1,650	810	920	100.00%	99.73%	99.50%	44.24%	Destroyed (June 2014); last sampled 6/12/14
MW-12A	300	52	< 50	664	664	< 50	18.3	18.3	< 0.50	14.3	0.74	< 0.50	100.00%	100.00%	100.00%	100.00%	Destroyed (June 2014); last sampled 6/12/14
MW-13	469	87	< 45	260	64	< 50	0.84	0.62	< 0.50	390	14	19	100.00%	100.00%	100.00%	95.13%	Last sampled 12/2/16
MW-14	4,580	64	1,800	51,600	3,200	3,900	2,750	72	510	1.9	0.66	< 5.0	60.70%	92.44%	81.45%	100.00%	Destroyed (July 2015); last sampled 6/11/15
MW-15	240	51	240	412	412	98	6.6	0.5	< 0.50	142	15.2	33.0	0.00%	76.21%	100.00%	76.76%	Last sampled 12/2/16
MW-16	509	48	230	1,420	60	< 50	79	0.52	< 0.50	1,320	4.30	7.5	54.81%	100.00%	100.00%	99.43%	Last sampled 12/2/16
MW-17	1,900	87	87	110,000	1,580	17,000	13,000	1,600	3,600	1.1	0.74	< 3.0	95.42%	84.55%	72.31%	100.00%	Destroyed (June 2014); last sampled 6/12/14
Post 2016 Excavation Average Site Total Reduction of Dissolved-Phase Concentrations by COC													76%	96%	100%	94%	
Post 2016 Excavation Average Site Total Reduction of Dissolved-Phase Benzene and MTBE Concentrations													97%				
Post 2016 Excavation Average Combined Reduction in Dissolved-Phase DRO/GRO Concentrations													86%				
Average Site Total Reduction of Dissolved-Phase Concentrations by COC													83%	90%	88%	94%	
Average Site Total Reduction of Dissolved-Phase Benzene and MTBE Concentrations													91%				
Combined Reduction in Dissolved-Phase DRO/GRO Concentrations													87%				

Notes:

- DRO – diesel range organics reported as total purgable petroleum hydrocarbons
- GRO – gasoline range organics reported as total purgable petroleum hydrocarbons
- MTBE - Methyl tert-butyl ether
- < - Not detected at the indicated laboratory reporting limit
- ND - Not detected at a concentration at or above the laboratory reporting limit
- COC - Chemical of Concern

The yellow shaded cells were used to assess the impact of the 2016 excavation remedy on the dissolved phase COC concentrations.

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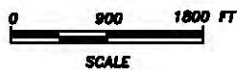
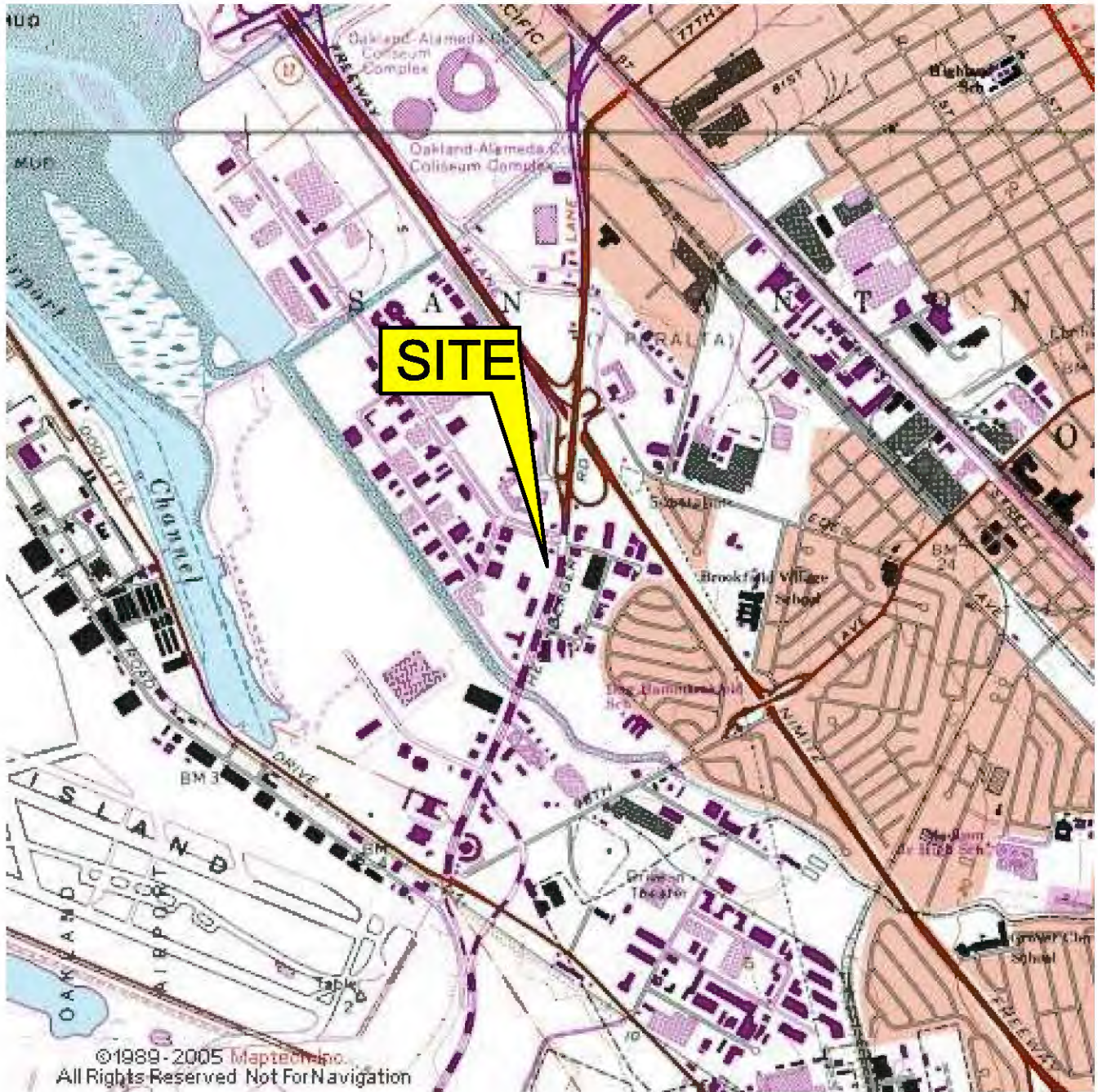

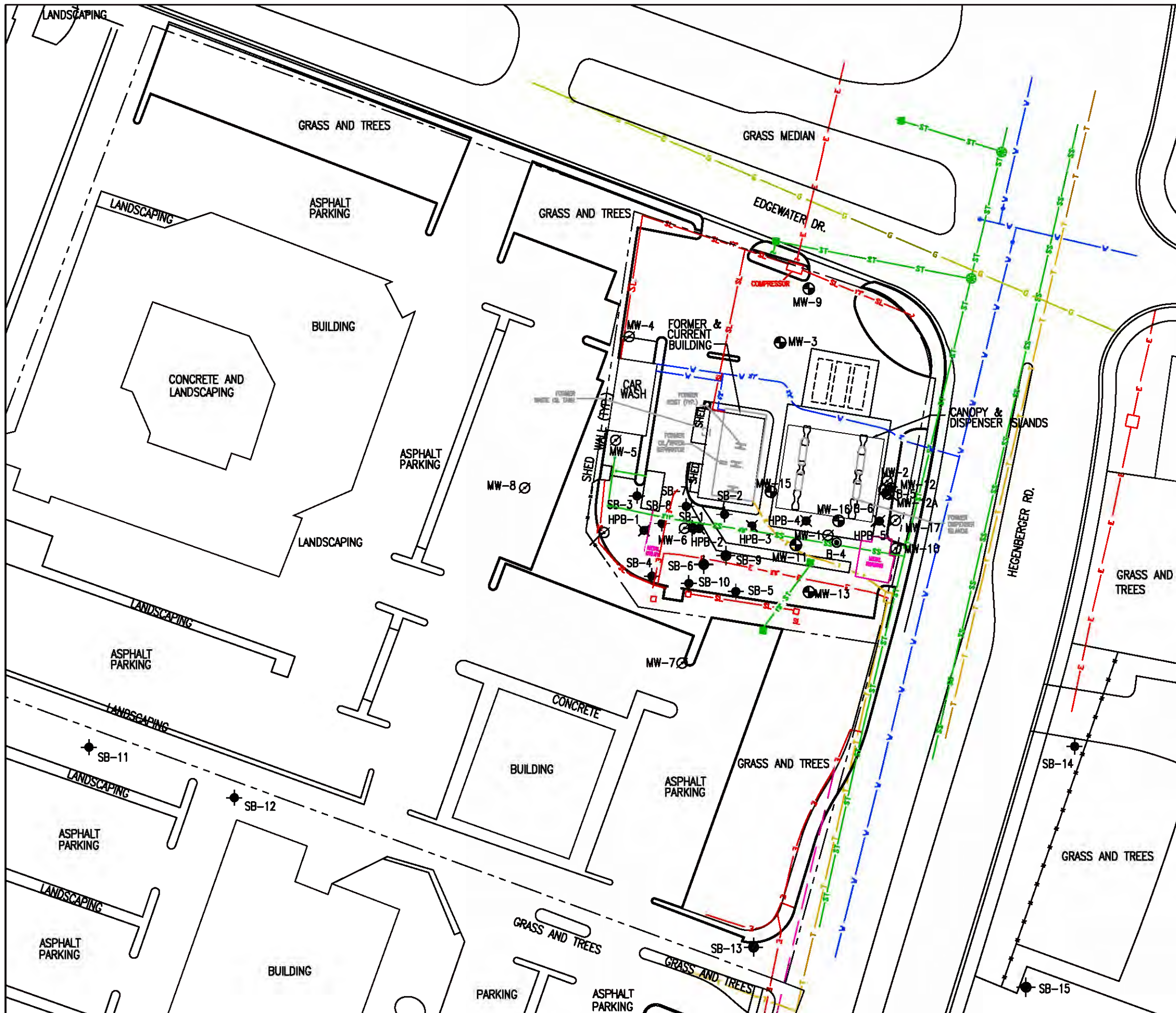


FIGURE 1
SITE LOCATION MAP

76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

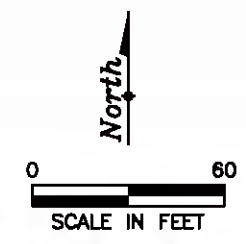
PROJECT NO. 142705191	PREPARED BY EW	DRAWN BY DR/JH	 antea group
DATE 1/31/11	REVIEWED BY DD	FILE NAME 5043-SiteLocator	

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND EAST QUADRANGLE (1973)



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊗ MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- ⊗ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- ⊙ B- BORING LOCATION
- T TELEPHONE
- SS SEWER
- W WATER
- ST STORM DRAIN
- E ELECTRIC
- G GAS
- SL STREET LIGHT



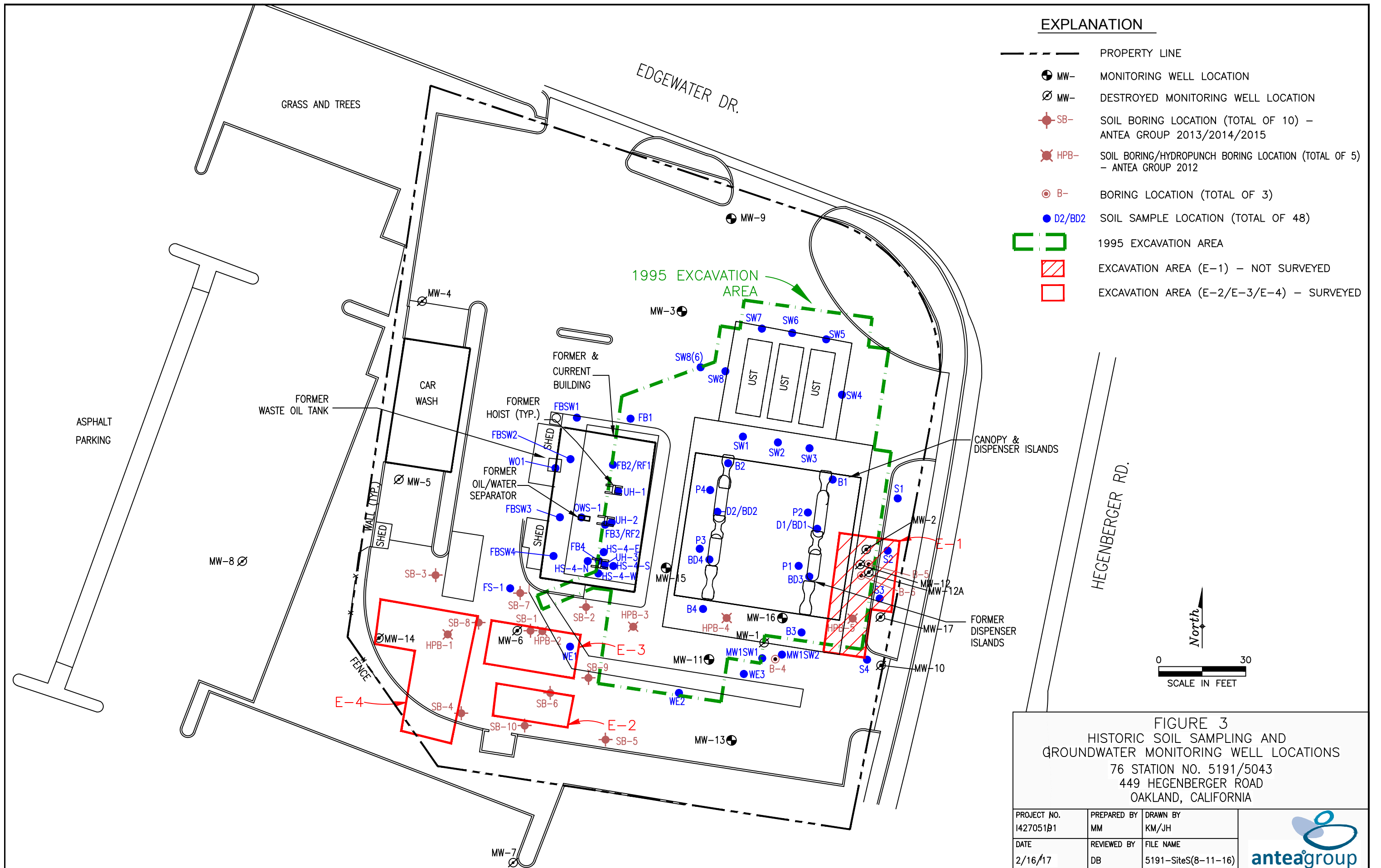
ADAPTED FROM A MORROW SURVEY ON 5/23/11

FIGURE 2
SITE PLAN WITH UTILITY LOCATIONS

76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-SiteS





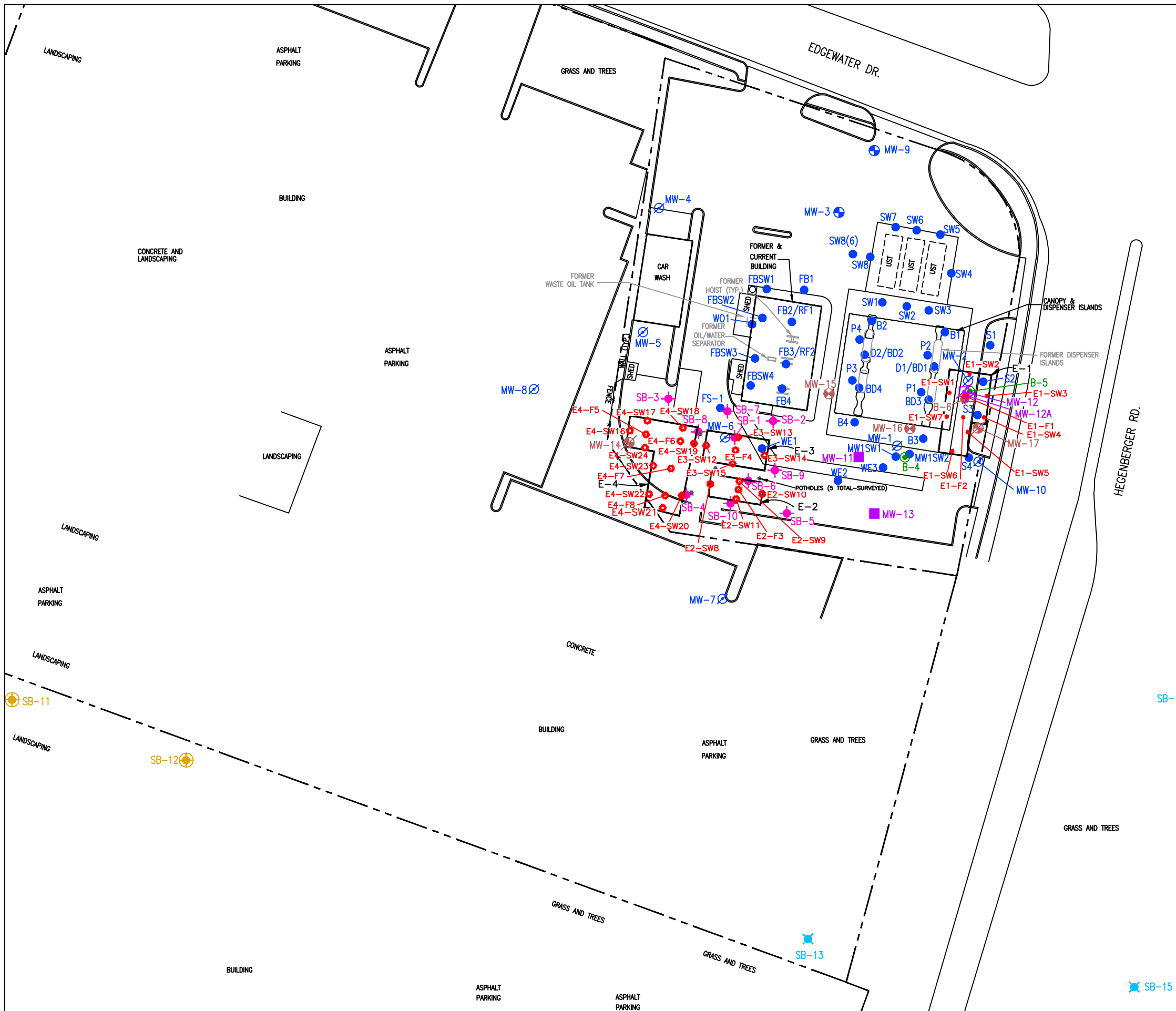
EXPLANATION

- PROPERTY LINE
- ⊕ MW- MONITORING WELL LOCATION
- ⊘ MW- DESTROYED MONITORING WELL LOCATION
- ⊕ SB- SOIL BORING LOCATION (TOTAL OF 10) - ANTEA GROUP 2013/2014/2015
- ⊕ HPB- SOIL BORING/HYDROPUNCH BORING LOCATION (TOTAL OF 5) - ANTEA GROUP 2012
- ⊙ B- BORING LOCATION (TOTAL OF 3)
- D2/BD2 SOIL SAMPLE LOCATION (TOTAL OF 48)
- ▭ 1995 EXCAVATION AREA
- ▨ EXCAVATION AREA (E-1) - NOT SURVEYED
- ▭ EXCAVATION AREA (E-2/E-3/E-4) - SURVEYED

FIGURE 3
HISTORIC SOIL SAMPLING AND
GROUNDWATER MONITORING WELL LOCATIONS
76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/16/17	REVIEWED BY DB	FILE NAME 5191-SiteS(8-11-16)

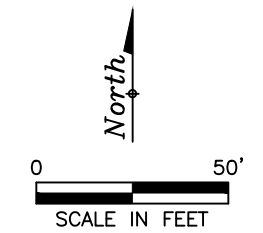




LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW- MONITORING WELL
- MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- B- BORING LOCATION
- P- SOIL SAMPLE LOCATION

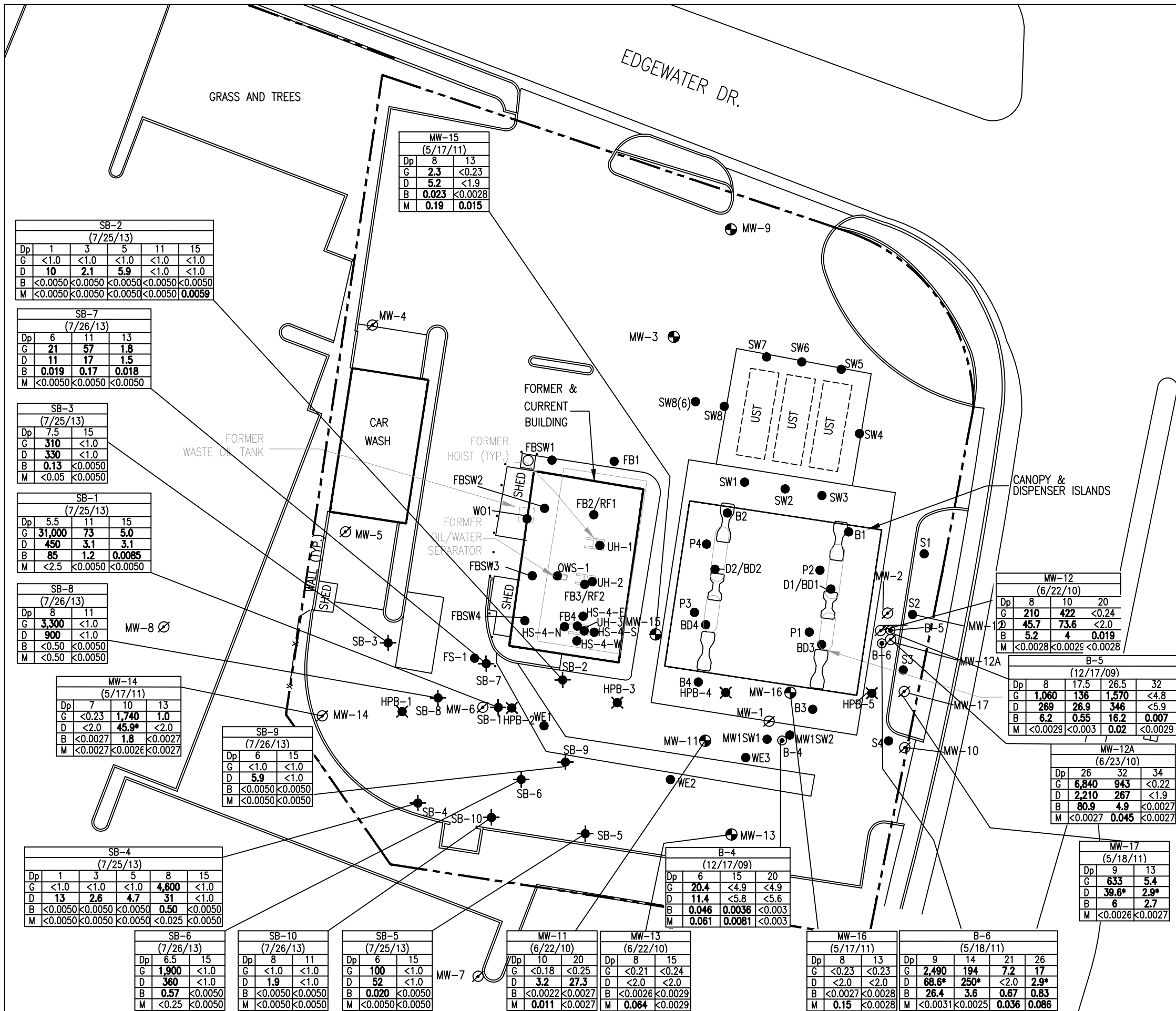
YEAR	WELLS (EXISTING)	WELLS (ABANDONED)	BORINGS
1991 - 1997	MW-9	MW-8	SW8
DELTA 2009			B-5
DELTA 2010	MW-11	MW-12	
ANTEA 2011	MW-16	MW-17	B-6
ANTEA 2013			SB-10
ANTEA 2014			SB-15
ANTEA 2015			SB-12
ANTEA 2016			E4-SW24 E1-SW5



ADAPTED FROM A MORROW SURVEY ON 5/23/11

FIGURE 4
SOIL BORINGS/MONITORING WELLS
INSTALLATION/SAMPLING YEAR
76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO. I42705191	PREPARED BY MM	DRAWN BY KM/JH	
DATE 2/16/17	REVIEWED BY DB	FILE NAME 5191-SiteSHist	



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊘ MW- DESTROYED MONITORING WELL
- ⊙ SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- ⊗ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- ⊙ B- BORING LOCATION
- SOIL SAMPLE LOCATION

MW-12	
(6/22/10)	SAMPLE NAME
Dp 8	SAMPLE DATE
G 210	DEPTH (FEET)
D 45.7	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B 5.2	DIESEL RANGE ORGANICS WITH SILICA GEL
M <0.0028	BENZENE
	METHYL TERTIARY BUTYL ETHER

NOTES:

- NA = NOT ANALYZED
 - < = LESS THAN LABORATORY INDICATED REPORTING LIMITS
 - * = RESULT DID NOT MATCH LABORATORY STANDARD
 - BOLD** = ABOVE LABORATORY DETECTED REPORTING LIMITS
- ALL CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg).

SB-2					
(7/25/13)	1	3	5	11	15
Dp					
G	<1.0	<1.0	<1.0	<1.0	<1.0
D	10	2.1	5.9	<1.0	<1.0
B	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
M	<0.0050	<0.0050	<0.0050	<0.0050	0.0059

SB-7			
(7/26/13)	6	11	13
Dp			
G	21	57	1.8
D	11	17	1.5
B	0.019	0.17	0.018
M	<0.0050	<0.0050	<0.0050

SB-3		
(7/25/13)	7.5	15
Dp		
G	310	<1.0
D	330	<1.0
B	0.13	<0.0050
M	<0.05	<0.0050

SB-1			
(7/25/13)	5.5	11	15
Dp			
G	31,000	73	5.0
D	450	3.1	3.1
B	85	1.2	0.0085
M	<2.5	<0.0050	<0.0050

SB-8		
(7/26/13)	8	11
Dp		
G	3,300	<1.0
D	900	<1.0
B	<0.50	<0.0050
M	<0.50	<0.0050

MW-14			
(5/17/11)	7	10	13
Dp			
G	<0.23	1,740	1.0
D	<2.0	45.9*	<2.0
B	<0.0027	1.8	<0.0027
M	<0.0027	<0.0026	<0.0027

SB-9		
(7/26/13)	6	15
Dp		
G	<1.0	<1.0
D	5.9	<1.0
B	<0.0050	<0.0050
M	<0.0050	<0.0050

SB-4					
(7/25/13)	1	3	5	8	15
Dp					
G	<1.0	<1.0	<1.0	4,600	<1.0
D	13	2.6	4.7	31	<1.0
B	<0.0050	<0.0050	<0.0050	0.50	<0.0050
M	<0.0050	<0.0050	<0.0050	<0.025	<0.0050

SB-6		
(7/26/13)	6.5	15
Dp		
G	1,900	<1.0
D	360	<1.0
B	0.57	<0.0050
M	<0.25	<0.0050

SB-10		
(7/26/13)	8	11
Dp		
G	<1.0	<1.0
D	1.9	<1.0
B	<0.0050	<0.0050
M	<0.0050	<0.0050

SB-5		
(7/25/13)	6	15
Dp		
G	100	<1.0
D	52	<1.0
B	0.020	<0.0050
M	<0.0050	<0.0050

MW-11		
(6/22/10)	10	20
Dp		
G	<0.18	<0.25
D	3.2	27.3
B	<0.0022	<0.0027
M	0.011	<0.0027

MW-13		
(6/22/10)	8	15
Dp		
G	<0.21	<0.24
D	<2.0	<2.0
B	<0.0026	<0.0029
M	0.064	<0.0029

MW-16		
(5/17/11)	8	13
Dp		
G	<0.23	<0.23
D	<2.0	<2.0
B	<0.0027	<0.0028
M	0.15	<0.0028

B-6				
(5/18/11)	9	14	21	26
Dp				
G	2,490	194	7.2	17
D	68.6*	250*	<2.0	2.9*
B	26.4	3.6	0.67	0.83
M	<0.0031	<0.0025	0.036	0.086

MW-12			
(6/22/10)	8	10	20
Dp			
G	210	422	<0.24
D	45.7	73.6	<2.0
B	5.2	4	0.019
M	<0.0028	<0.0028	<0.0028

B-5				
(12/17/09)	8	17.5	26.5	32
Dp				
G	1,060	136	1,570	<4.8
D	269	26.9	346	<5.9
B	6.2	0.55	16.2	0.007
M	<0.0029	<0.003	0.02	<0.0029

MW-12A			
(6/23/10)	26	32	34
Dp			
G	6,840	943	<0.22
D	2,210	267	<1.9
B	80.9	4.9	<0.0027
M	<0.0027	0.045	<0.0027

MW-17		
(5/18/11)	9	13
Dp		
G	633	5.4
D	39.6*	2.9*
B	6	2.7
M	<0.0026	<0.0027

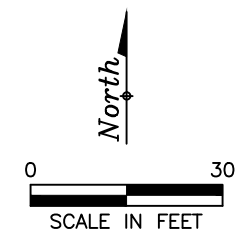
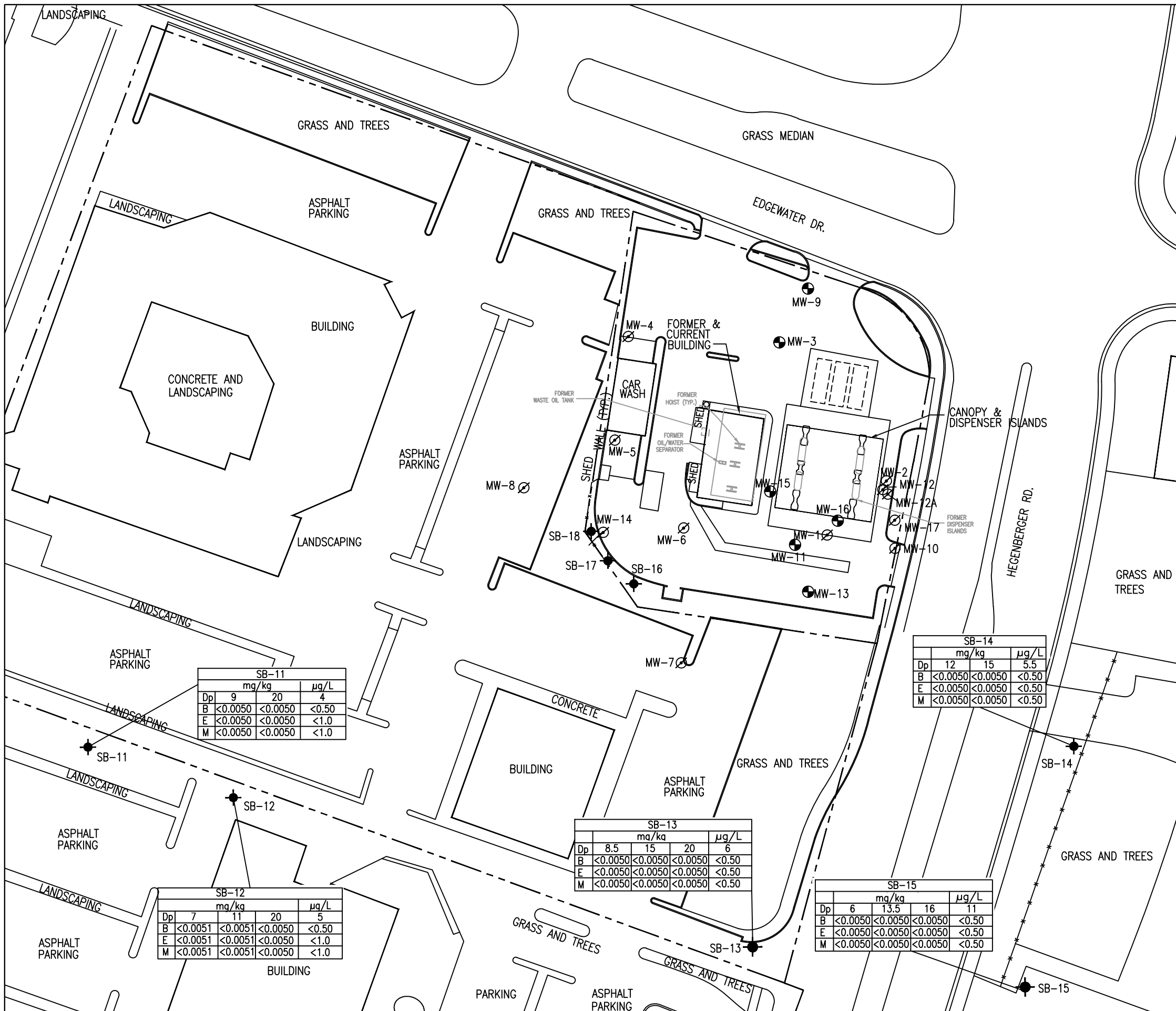


FIGURE 5
ONSITE HISTORICAL SAMPLE
LOCATIONS AND CONCENTRATIONS
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. I42705191	PREPARED BY MM	DRAWN BY JH
DATE 2/16/17	REVIEWED BY DB	FILE NAME 5191-SiteS





LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW- MONITORING WELL
- ⊘ MW- DESTROYED MONITORING WELL
- ◆ SB- SOIL BORING LOCATION (ANTEA GROUP 2014/2015)

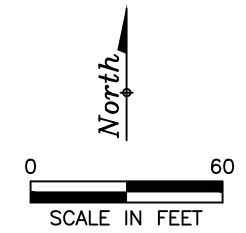
SB-13	SAMPLE NAME
mg/kg	CONCENTRATION UNIT
Dp 8.5	DEPTH (FEET)
B <0.0050	BENZENE
E <0.0050	ETHYLBENZENE
M <0.0050	METHYL TERTIARY BUTYL ETHER

NOTES:
 mg/kg = MILLIGRAMS PER KILOGRAM
 µg/L = MICROGRAMS PER LITER
 < = LESS THAN LABORATORY INDICATED REPORTING LIMITS

SOIL BORINGS SB-11 AND SB-12 WERE SAMPLED ON 7/8/2015.
 SOIL BORINGS SB-13 THROUGH SB-15 WERE SAMPLED ON 9/23/2014.

REFERENCES:

- ANTEA GROUP, 2015, SITE ASSESSMENT REPORT, 76 STATION NO. 5191/5043, 449 HEGENBERGER ROAD, OAKLAND, CALIFORNIA, AUGUST 26.
- ANTEA GROUP, 2014, SITE ASSESSMENT REPORT, 76 STATION NO. 5191/5043, 449 HEGENBERGER ROAD, OAKLAND, CALIFORNIA, NOVEMBER 12.

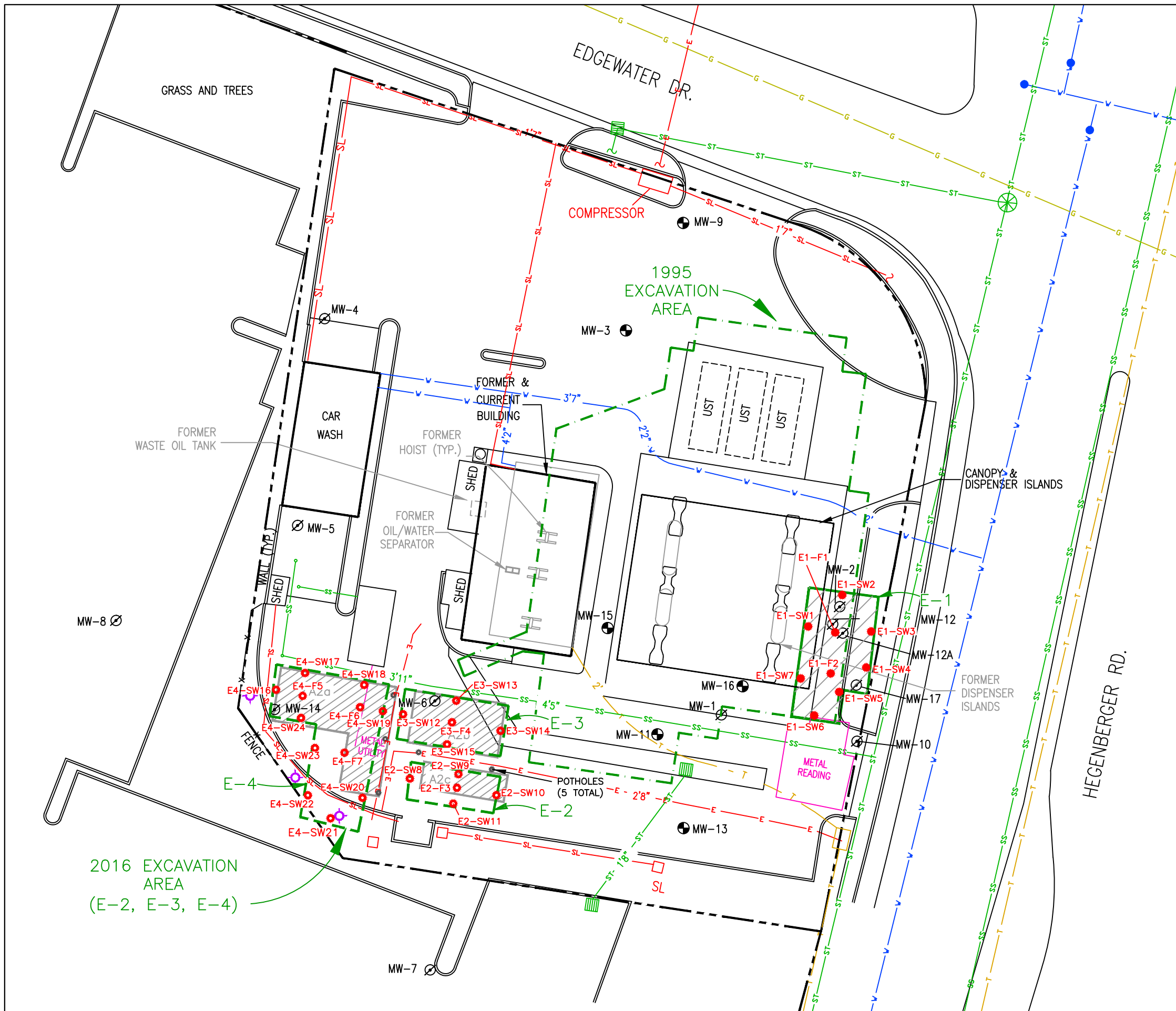


ADAPTED FROM A MORROW SURVEY ON 5/23/11

FIGURE 6
 OFFSITE SOIL AND GRAB GROUNDWATER ANALYTICAL DATA
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. I42705191	PREPARED BY JF	DRAWN BY JH
DATE 4/7/17	REVIEWED BY DB	FILE NAME 5191-SiteS





- LEGEND**
- APPROXIMATE PROPERTY BOUNDARY
 - MW- MONITORING WELL
 - ⊘ MW- DESTROYED MONITORING WELL
 - T TELEPHONE
 - SS SEWER
 - W WATER
 - ST STORM DRAIN
 - E ELECTRIC
 - G GAS
 - SL STREET LIGHT
 - [Green dashed box] 1995 EXCAVATION AREA
 - [Green solid box] 2016 EXCAVATION AREA
 - [Hatched box] PROPOSED EXCAVATION AREA 2015
 - [Green box with diagonal lines] EXCAVATION AREA (E-1) - NOT SURVEYED
 - E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
 - E1-SW3 AREA E-1 SOIL SAMPLING LOCATION

EXCAVATION AREA CALCULATION

E-1	=	757.6 ft ²
E-2	=	293.2 ft ²
E-3	=	470.3 ft ²
E-4	=	1037.2 ft ²

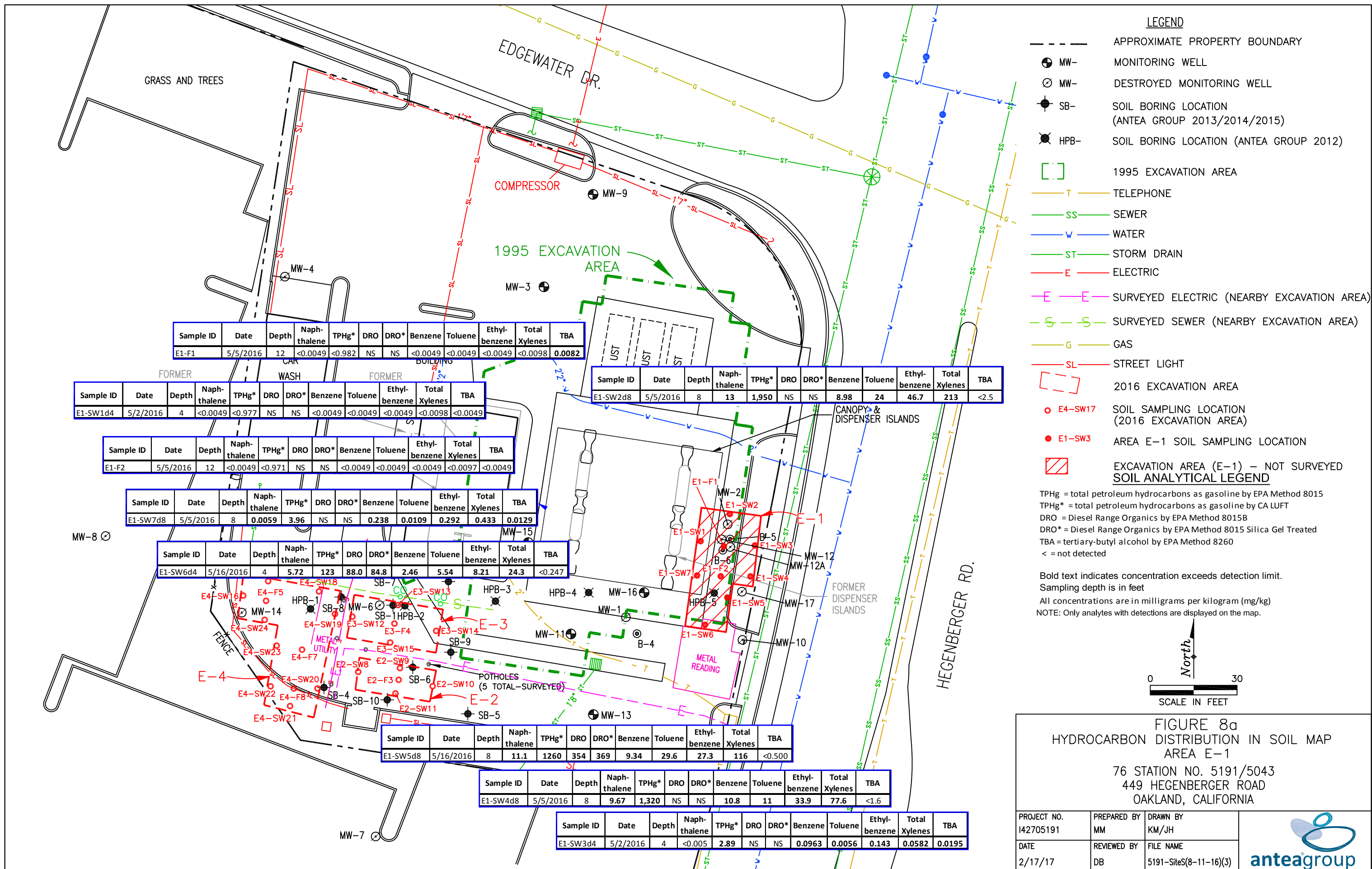
ADAPTED FROM A MORROW SURVEY ON 5/23/11 AND A SOIL SAMPLING REPORT AND CONTINUING GROUNDWATER INVESTIGATION BY KAPREALIAN ENGINEERING, INC., 6/2/95

FIGURE 7
EXCAVATION AREAS
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-SiteS



2016 EXCAVATION AREA (E-2, E-3, E-4)



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊙ MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- ⊗ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- 1995 EXCAVATION AREA
- T — TELEPHONE
- SS — SEWER
- W — WATER
- ST — STORM DRAIN
- E — ELECTRIC
- E — SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
- S — SURVEYED SEWER (NEARBY EXCAVATION AREA)
- G — GAS
- SL — STREET LIGHT
- 2016 EXCAVATION AREA
- E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
- E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
- ▨ EXCAVATION AREA (E-1) – NOT SURVEYED

SOIL ANALYTICAL LEGEND

TPHg = total petroleum hydrocarbons as gasoline by EPA Method 8015
 TPHg* = total petroleum hydrocarbons as gasoline by CA LUFT
 DRO = Diesel Range Organics by EPA Method 8015B
 DRO* = Diesel Range Organics by EPA Method 8015 Silica Gel Treated
 TBA = tertiary-butyl alcohol by EPA Method 8260
 < = not detected

Bold text indicates concentration exceeds detection limit.
 Sampling depth is in feet
 All concentrations are in milligrams per kilogram (mg/kg)
 NOTE: Only analytes with detections are displayed on the map.

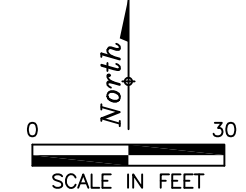



FIGURE 8a
HYDROCARBON DISTRIBUTION IN SOIL MAP
AREA E-1

76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-Site(8-11-16)(3)



Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-F1	5/5/2016	12	<0.0049	<0.982	NS	NS	<0.0049	<0.0049	<0.0049	<0.0098	0.0082

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-SW1d4	5/2/2016	4	<0.0049	<0.977	NS	NS	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-SW2d8	5/5/2016	8	13	1,950	NS	NS	8.98	24	46.7	213	<2.5

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-F2	5/5/2016	12	<0.0049	<0.971	NS	NS	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049

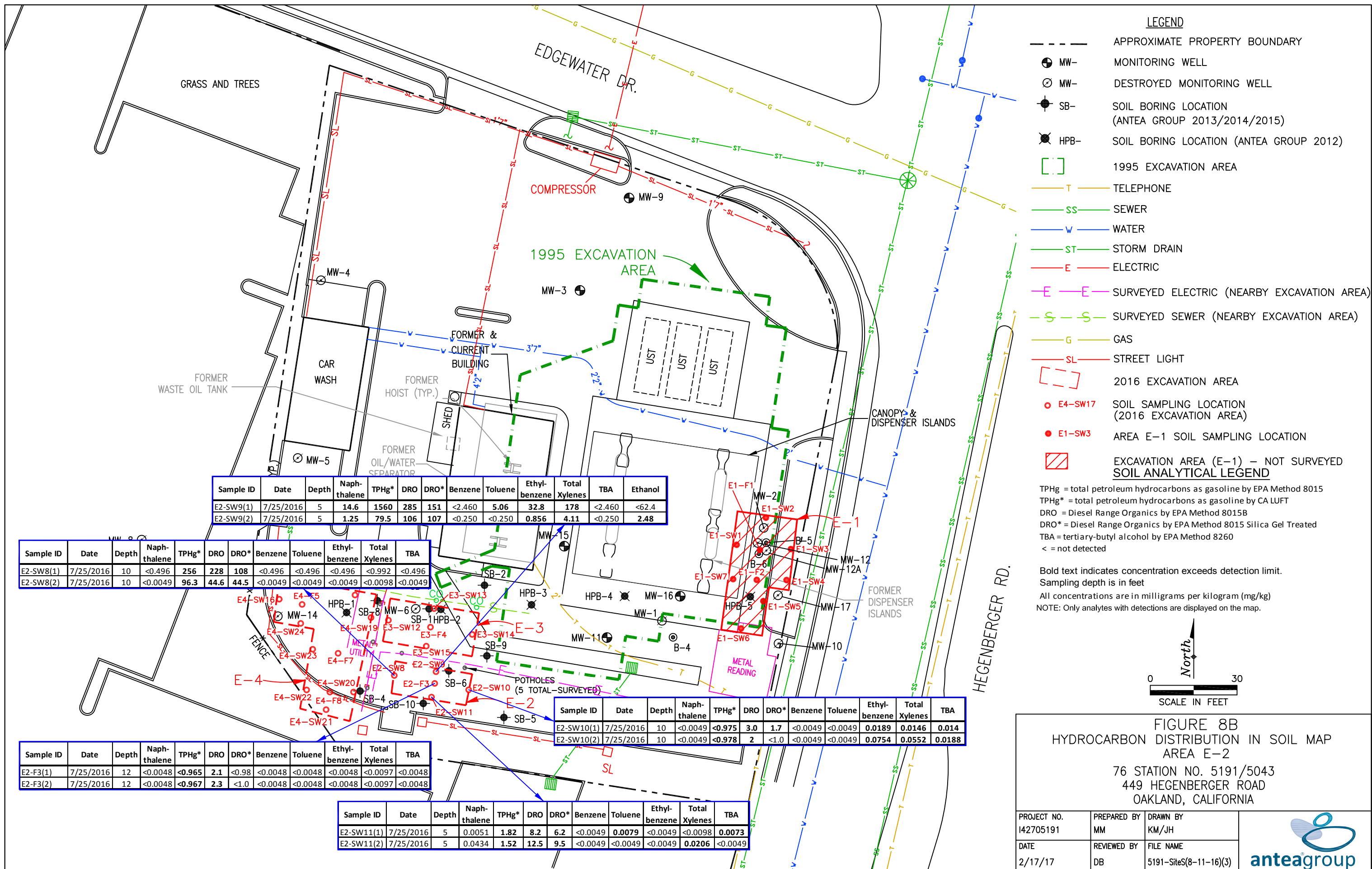
Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-SW7d8	5/5/2016	8	0.0059	3.96	NS	NS	0.238	0.0109	0.292	0.433	0.0129

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-SW6d4	5/16/2016	4	5.72	123	88.0	84.8	2.46	5.54	8.21	24.3	<0.247

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-SW5d8	5/16/2016	8	11.1	1260	354	369	9.34	29.6	27.3	116	<0.500

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-SW4d8	5/5/2016	8	9.67	1,320	NS	NS	10.8	11	33.9	77.6	<1.6

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E1-SW3d4	5/2/2016	4	<0.005	2.89	NS	NS	0.0963	0.0056	0.143	0.0582	0.0195



Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA	Ethanol
E2-SW9(1)	7/25/2016	5	14.6	1560	285	151	<2.460	5.06	32.8	178	<2.460	<62.4
E2-SW9(2)	7/25/2016	5	1.25	79.5	106	107	<0.250	<0.250	0.856	4.11	<0.250	2.48

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E2-SW8(1)	7/25/2016	10	<0.496	256	228	108	<0.496	<0.496	<0.496	<0.992	<0.496
E2-SW8(2)	7/25/2016	10	<0.0049	96.3	44.6	44.5	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E2-SW10(1)	7/25/2016	10	<0.0049	<0.975	3.0	1.7	<0.0049	<0.0049	0.0189	0.0146	0.014
E2-SW10(2)	7/25/2016	10	<0.0049	<0.978	2	<1.0	<0.0049	<0.0049	0.0754	0.0552	0.0188

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E2-F3(1)	7/25/2016	12	<0.0048	<0.965	2.1	<0.98	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048
E2-F3(2)	7/25/2016	12	<0.0048	<0.967	2.3	<1.0	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E2-SW11(1)	7/25/2016	5	0.0051	1.82	8.2	6.2	<0.0049	0.0079	<0.0049	<0.0098	0.0073
E2-SW11(2)	7/25/2016	5	0.0434	1.52	12.5	9.5	<0.0049	<0.0049	<0.0049	0.0206	<0.0049

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊙ MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- [] 1995 EXCAVATION AREA
- T TELEPHONE
- SS SEWER
- W WATER
- ST STORM DRAIN
- E ELECTRIC
- E SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
- S SURVEYED SEWER (NEARBY EXCAVATION AREA)
- G GAS
- SL STREET LIGHT
- [] 2016 EXCAVATION AREA
- E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
- E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
- [] EXCAVATION AREA (E-1) - NOT SURVEYED

SOIL ANALYTICAL LEGEND

TPHg = total petroleum hydrocarbons as gasoline by EPA Method 8015
 TPHg* = total petroleum hydrocarbons as gasoline by CA LUFT
 DRO = Diesel Range Organics by EPA Method 8015B
 DRO* = Diesel Range Organics by EPA Method 8015 Silica Gel Treated
 TBA = tertiary-butyl alcohol by EPA Method 8260
 < = not detected

Bold text indicates concentration exceeds detection limit.
 Sampling depth is in feet
 All concentrations are in milligrams per kilogram (mg/kg)
 NOTE: Only analytes with detections are displayed on the map.

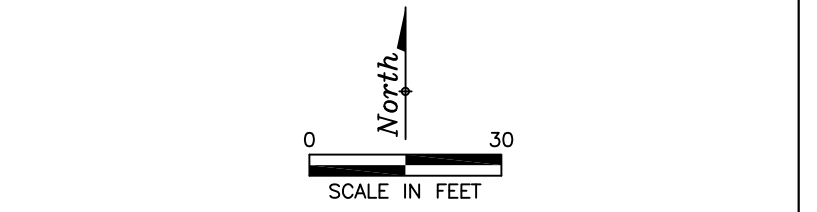
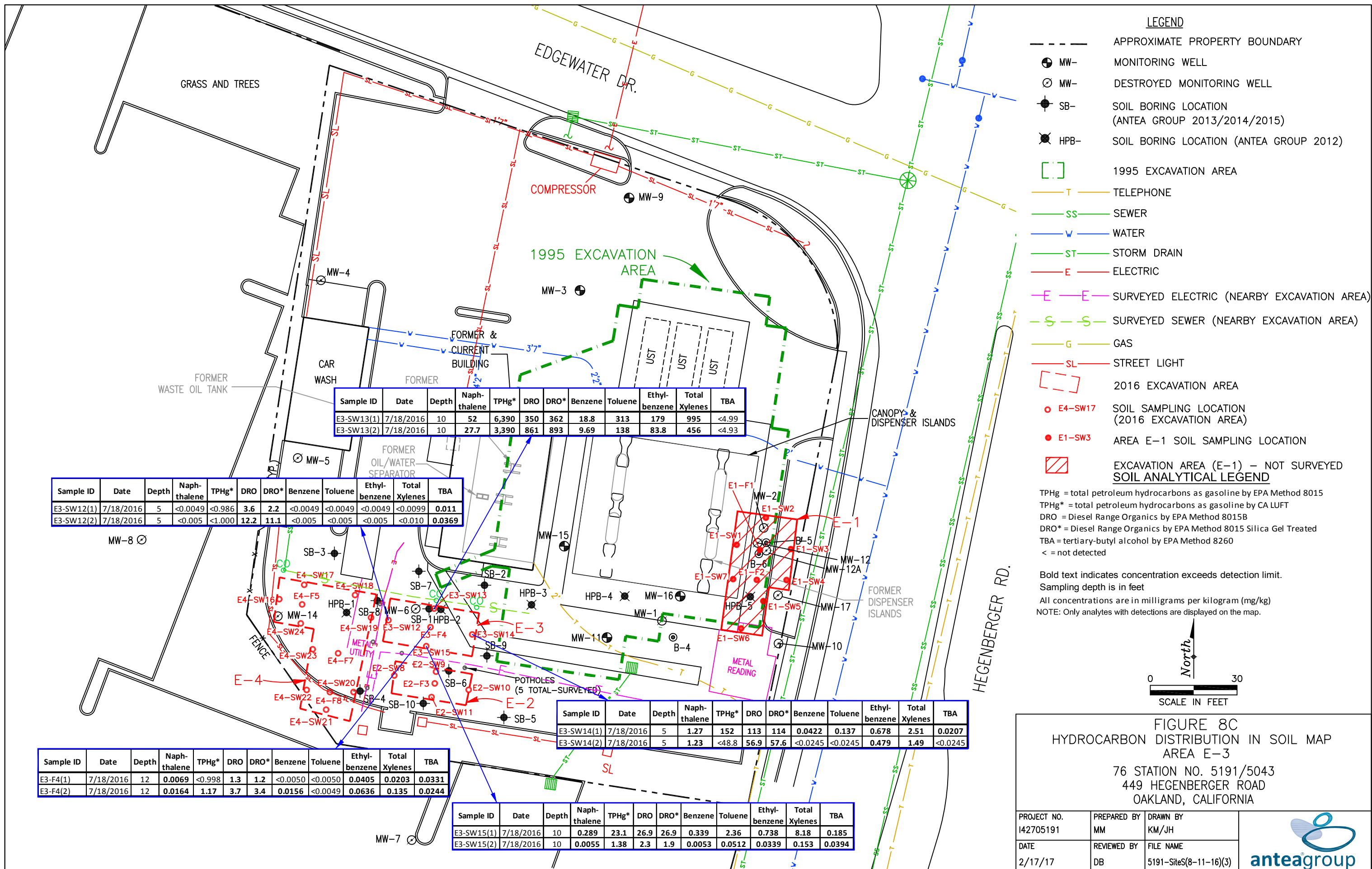


FIGURE 8B
 HYDROCARBON DISTRIBUTION IN SOIL MAP
 AREA E-2
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-Site(8-11-16)(3)



Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E3-SW13(1)	7/18/2016	10	52	6,390	350	362	18.8	313	179	995	<4.99
E3-SW13(2)	7/18/2016	10	27.7	3,390	861	893	9.69	138	83.8	456	<4.93

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E3-SW12(1)	7/18/2016	5	<0.0049	<0.986	3.6	2.2	<0.0049	<0.0049	<0.0049	<0.0099	0.011
E3-SW12(2)	7/18/2016	5	<0.005	<1.000	12.2	11.1	<0.005	<0.005	<0.005	<0.010	0.0369

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E3-SW14(1)	7/18/2016	5	1.27	152	113	114	0.0422	0.137	0.678	2.51	0.0207
E3-SW14(2)	7/18/2016	5	1.23	<48.8	56.9	57.6	<0.0245	<0.0245	0.479	1.49	<0.0245

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E3-F4(1)	7/18/2016	12	0.0069	<0.998	1.3	1.2	<0.0050	<0.0050	0.0405	0.0203	0.0331
E3-F4(2)	7/18/2016	12	0.0164	1.17	3.7	3.4	0.0156	<0.0049	0.0636	0.135	0.0244

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E3-SW15(1)	7/18/2016	10	0.289	23.1	26.9	26.9	0.339	2.36	0.738	8.18	0.185
E3-SW15(2)	7/18/2016	10	0.0055	1.38	2.3	1.9	0.0053	0.0512	0.0339	0.153	0.0394

- LEGEND**
- APPROXIMATE PROPERTY BOUNDARY
 - ⊕ MW- MONITORING WELL
 - ⊙ MW- DESTROYED MONITORING WELL
 - ⊙ SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
 - ⊙ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
 - [] 1995 EXCAVATION AREA
 - T TELEPHONE
 - SS SEWER
 - W WATER
 - ST STORM DRAIN
 - E ELECTRIC
 - E- SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
 - S- SURVEYED SEWER (NEARBY EXCAVATION AREA)
 - G GAS
 - SL STREET LIGHT
 - [] 2016 EXCAVATION AREA
 - E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
 - E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
 - [] EXCAVATION AREA (E-1) - NOT SURVEYED
- SOIL ANALYTICAL LEGEND**
- TPHg = total petroleum hydrocarbons as gasoline by EPA Method 8015
 TPHg* = total petroleum hydrocarbons as gasoline by CA LUFT
 DRO = Diesel Range Organics by EPA Method 8015B
 DRO* = Diesel Range Organics by EPA Method 8015 Silica Gel Treated
 TBA = tertiary-butyl alcohol by EPA Method 8260
 < = not detected
- Bold text indicates concentration exceeds detection limit.
 Sampling depth is in feet
 All concentrations are in milligrams per kilogram (mg/kg)
 NOTE: Only analytes with detections are displayed on the map.

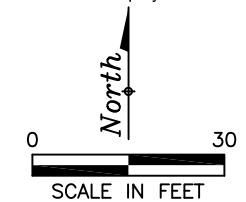
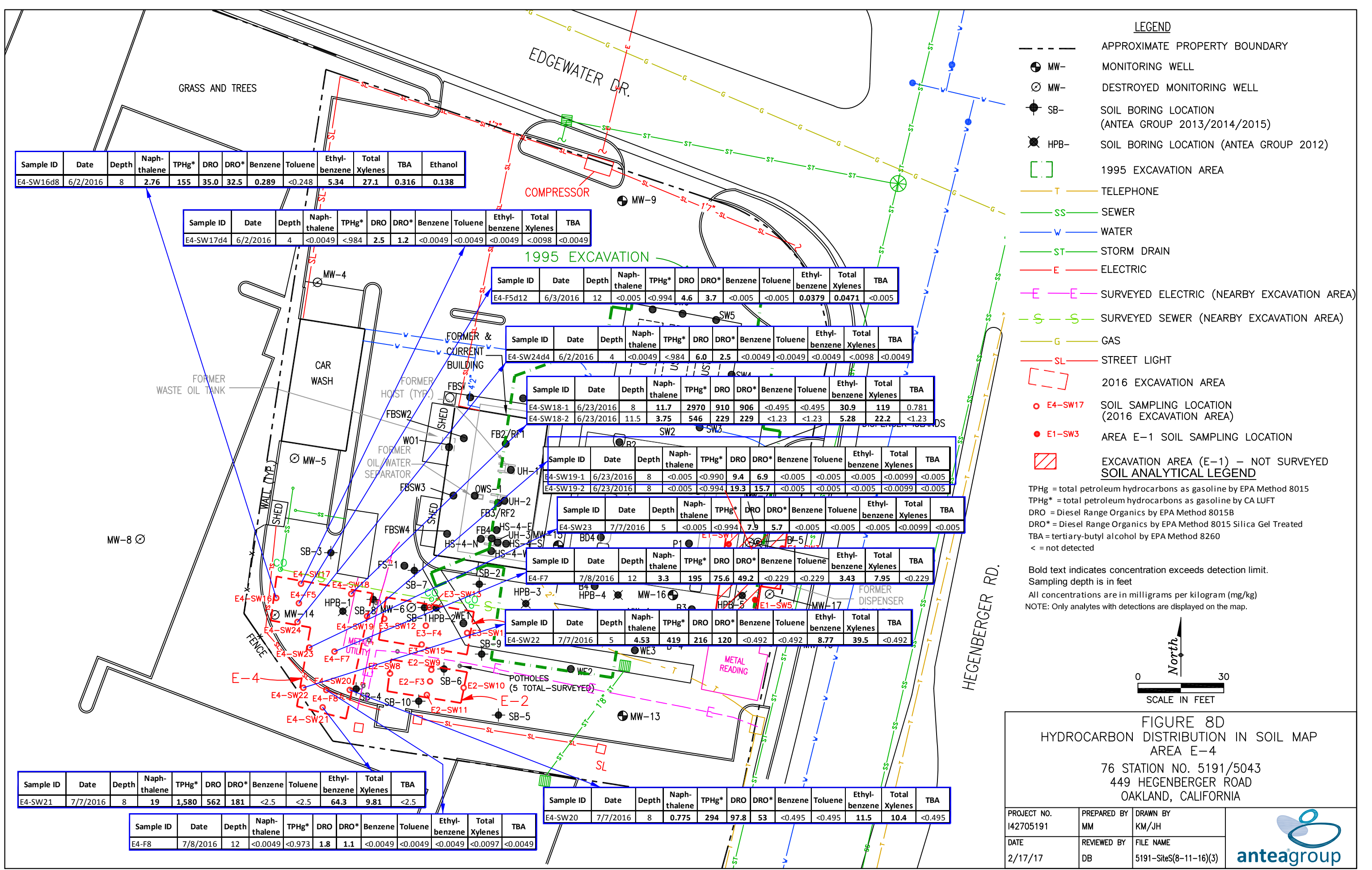


FIGURE 8C
 HYDROCARBON DISTRIBUTION IN SOIL MAP
 AREA E-3
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-SiteS(8-11-16)(3)



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊙ MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- [] 1995 EXCAVATION AREA
- T TELEPHONE
- SS SEWER
- W WATER
- ST STORM DRAIN
- E ELECTRIC
- E- SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
- S- SURVEYED SEWER (NEARBY EXCAVATION AREA)
- G GAS
- SL STREET LIGHT
- [] 2016 EXCAVATION AREA
- E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
- E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
- [] EXCAVATION AREA (E-1) - NOT SURVEYED

SOIL ANALYTICAL LEGEND

TPHg = total petroleum hydrocarbons as gasoline by EPA Method 8015
 TPHg* = total petroleum hydrocarbons as gasoline by CA LUFT
 DRO = Diesel Range Organics by EPA Method 8015B
 DRO* = Diesel Range Organics by EPA Method 8015 Silica Gel Treated
 TBA = tertiary-butyl alcohol by EPA Method 8260
 < = not detected

Bold text indicates concentration exceeds detection limit.
 Sampling depth is in feet
 All concentrations are in milligrams per kilogram (mg/kg)
 NOTE: Only analytes with detections are displayed on the map.

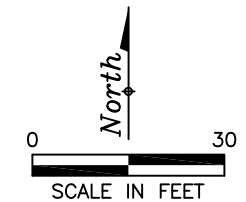


FIGURE 8D
 HYDROCARBON DISTRIBUTION IN SOIL MAP
 AREA E-4
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-SiteS(8-11-16)(3)

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA	Ethanol
E4-SW16d8	6/2/2016	8	2.76	155	35.0	32.5	0.289	<0.248	5.34	27.1	0.316	0.138

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW17d4	6/2/2016	4	<0.0049	<984	2.5	1.2	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-F5d12	6/3/2016	12	<0.005	<0.994	4.6	3.7	<0.005	<0.005	0.0379	0.0471	<0.005

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW24d4	6/2/2016	4	<0.0049	<984	6.0	2.5	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW18-1	6/23/2016	8	11.7	2970	910	906	<0.495	<0.495	30.9	119	0.781
E4-SW18-2	6/23/2016	11.5	3.75	546	229	229	<1.23	<1.23	5.28	22.2	<1.23

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW19-1	6/23/2016	8	<0.005	<0.990	9.4	6.9	<0.005	<0.005	<0.005	<0.0099	<0.005
E4-SW19-2	6/23/2016	8	<0.005	<0.994	19.3	15.7	<0.005	<0.005	<0.005	<0.0099	<0.005

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW23	7/7/2016	5	<0.005	<0.994	7.9	5.7	<0.005	<0.005	<0.005	<0.0099	<0.005

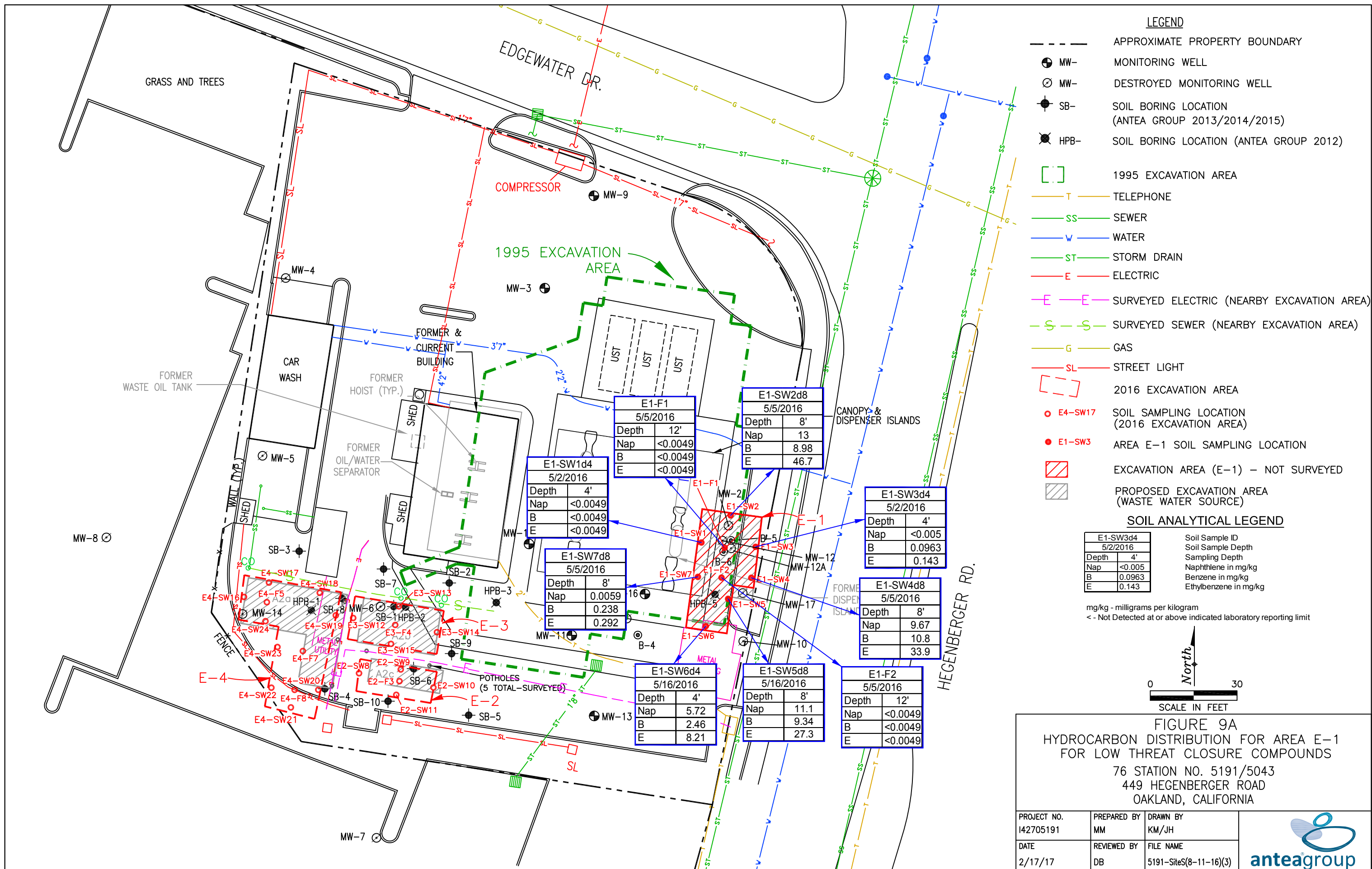
Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-F7	7/8/2016	12	3.3	195	75.6	49.2	<0.229	<0.229	3.43	7.95	<0.229

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW22	7/7/2016	5	4.53	419	216	120	<0.492	<0.492	8.77	39.5	<0.492

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW21	7/7/2016	8	19	1,580	562	181	<2.5	<2.5	64.3	9.81	<2.5

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-SW20	7/7/2016	8	0.775	294	97.8	53	<0.495	<0.495	11.5	10.4	<0.495

Sample ID	Date	Depth	Naphthalene	TPHg*	DRO	DRO*	Benzene	Toluene	Ethylbenzene	Total Xylenes	TBA
E4-F8	7/8/2016	12	<0.0049	<0.973	1.8	1.1	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊙ MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- ⊙ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- [] 1995 EXCAVATION AREA
- T TELEPHONE
- SS SEWER
- W WATER
- ST STORM DRAIN
- E ELECTRIC
- E SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
- S SURVEYED SEWER (NEARBY EXCAVATION AREA)
- G GAS
- SL STREET LIGHT
- [] 2016 EXCAVATION AREA
- E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
- E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
- [] EXCAVATION AREA (E-1) - NOT SURVEYED
- [] PROPOSED EXCAVATION AREA (WASTE WATER SOURCE)

SOIL ANALYTICAL LEGEND

E1-SW3d4	5/2/2016
Depth	4'
Nap	<0.005
B	0.0963
E	0.143

Soil Sample ID
Soil Sample Depth
Sampling Depth
Naphthlene in mg/kg
Benzene in mg/kg
Ethylbenzene in mg/kg

mg/kg - milligrams per kilogram
< - Not Detected at or above indicated laboratory reporting limit

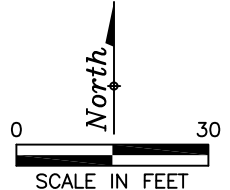


FIGURE 9A
HYDROCARBON DISTRIBUTION FOR AREA E-1
FOR LOW THREAT CLOSURE COMPOUNDS
76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

E1-F1	5/5/2016
Depth	12'
Nap	<0.0049
B	<0.0049
E	<0.0049

E1-SW2d8	5/5/2016
Depth	8'
Nap	13
B	8.98
E	46.7

E1-SW1d4	5/2/2016
Depth	4'
Nap	<0.0049
B	<0.0049
E	<0.0049

E1-SW3d4	5/2/2016
Depth	4'
Nap	<0.005
B	0.0963
E	0.143

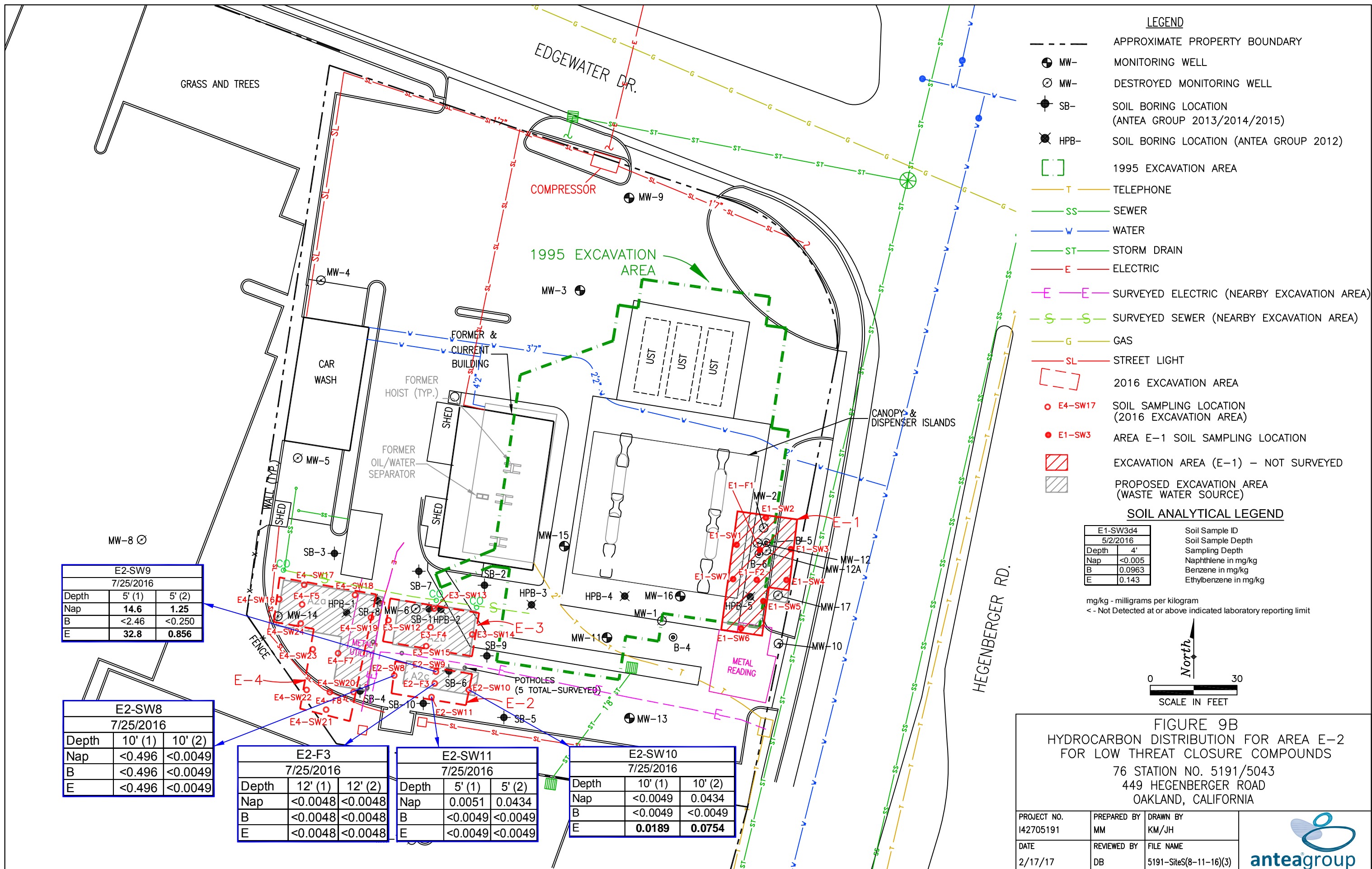
E1-SW7d8	5/5/2016
Depth	8'
Nap	0.0059
B	0.238
E	0.292

E1-SW4d8	5/5/2016
Depth	8'
Nap	9.67
B	10.8
E	33.9

E1-SW6d4	5/16/2016
Depth	4'
Nap	5.72
B	2.46
E	8.21

E1-SW5d8	5/16/2016
Depth	8'
Nap	11.1
B	9.34
E	27.3

E1-F2	5/5/2016
Depth	12'
Nap	<0.0049
B	<0.0049
E	<0.0049



- LEGEND**
- APPROXIMATE PROPERTY BOUNDARY
 - ⊕ MW- MONITORING WELL
 - ⊙ MW- DESTROYED MONITORING WELL
 - ⊙ SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
 - ⊙ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
 - [] 1995 EXCAVATION AREA
 - T TELEPHONE
 - SS SEWER
 - W WATER
 - ST STORM DRAIN
 - E ELECTRIC
 - E SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
 - S SURVEYED SEWER (NEARBY EXCAVATION AREA)
 - G GAS
 - SL STREET LIGHT
 - [] 2016 EXCAVATION AREA
 - E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
 - E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
 - [] EXCAVATION AREA (E-1) - NOT SURVEYED
 - [] PROPOSED EXCAVATION AREA (WASTE WATER SOURCE)

SOIL ANALYTICAL LEGEND

E1-SW3d4	Soil Sample ID
5/2/2016	Soil Sample Depth
Depth 4'	Sampling Depth
Nap <0.005	Naphthlene in mg/kg
B 0.0963	Benzene in mg/kg
E 0.143	Ethylbenzene in mg/kg

mg/kg - milligrams per kilogram
 < - Not Detected at or above indicated laboratory reporting limit

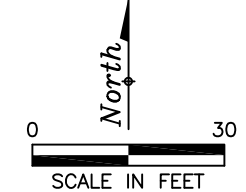


FIGURE 9B
 HYDROCARBON DISTRIBUTION FOR AREA E-2
 FOR LOW THREAT CLOSURE COMPOUNDS
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-SiteS(8-11-16)(3)



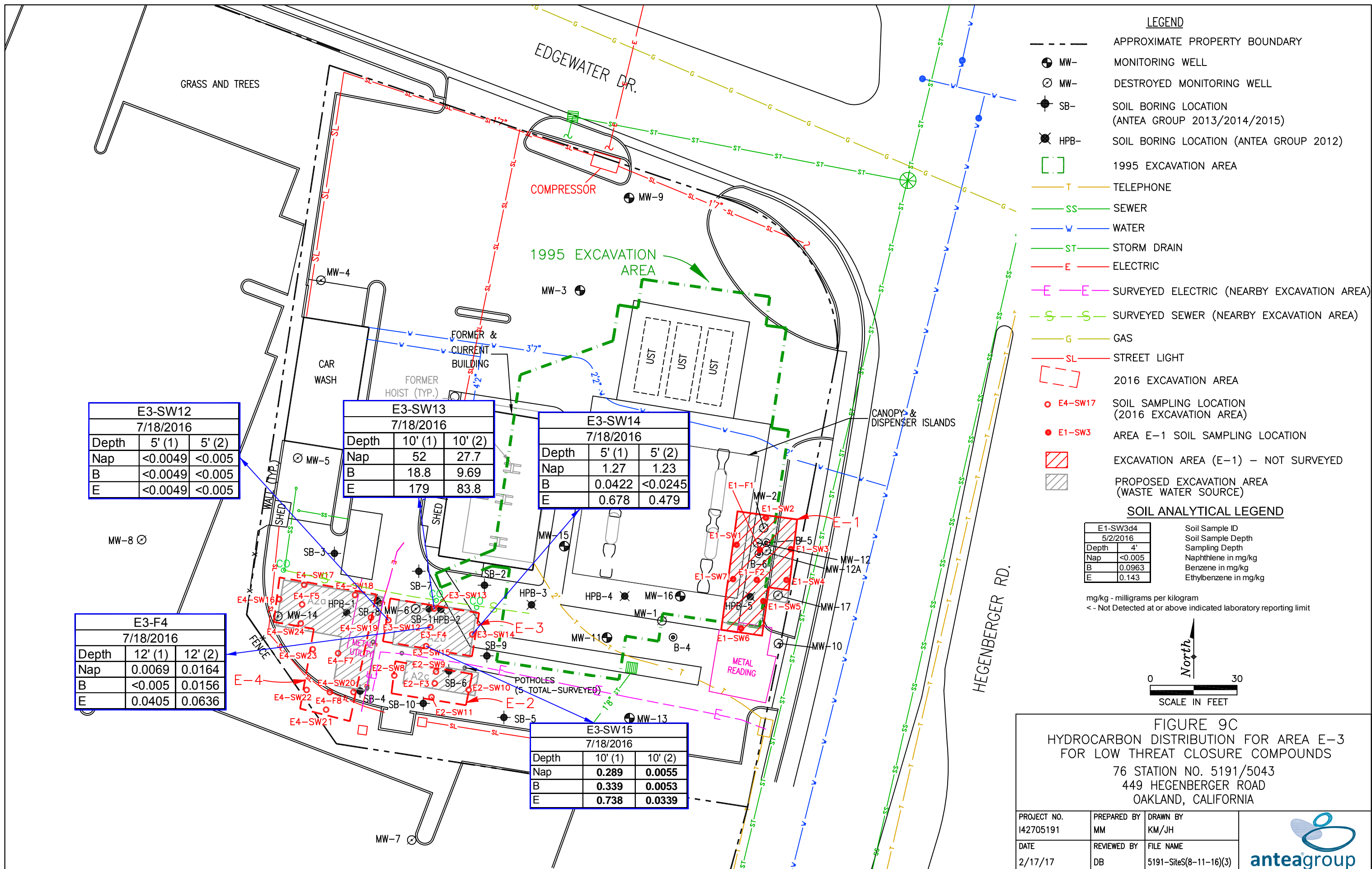
E2-SW9 7/25/2016		
Depth	5' (1)	5' (2)
Nap	14.6	1.25
B	<2.46	<0.250
E	32.8	0.856

E2-SW8 7/25/2016		
Depth	10' (1)	10' (2)
Nap	<0.496	<0.0049
B	<0.496	<0.0049
E	<0.496	<0.0049

E2-F3 7/25/2016		
Depth	12' (1)	12' (2)
Nap	<0.0048	<0.0048
B	<0.0048	<0.0048
E	<0.0048	<0.0048

E2-SW11 7/25/2016		
Depth	5' (1)	5' (2)
Nap	0.0051	0.0434
B	<0.0049	<0.0049
E	<0.0049	<0.0049

E2-SW10 7/25/2016		
Depth	10' (1)	10' (2)
Nap	<0.0049	0.0434
B	<0.0049	<0.0049
E	0.0189	0.0754



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊙ MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- ⊙ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- [] 1995 EXCAVATION AREA
- T TELEPHONE
- SS SEWER
- W WATER
- ST STORM DRAIN
- E ELECTRIC
- E SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
- S SURVEYED SEWER (NEARBY EXCAVATION AREA)
- G GAS
- SL STREET LIGHT
- [] 2016 EXCAVATION AREA
- E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
- E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
- [] EXCAVATION AREA (E-1) - NOT SURVEYED
- [] PROPOSED EXCAVATION AREA (WASTE WATER SOURCE)

SOIL ANALYTICAL LEGEND

E1-SW3d4	Soil Sample ID
5/2/2016	Soil Sample Depth
Depth 4'	Sampling Depth
Nap <0.005	Naphthlene in mg/kg
B 0.0963	Benzene in mg/kg
E 0.143	Ethylbenzene in mg/kg

mg/kg - milligrams per kilogram
 < - Not Detected at or above indicated laboratory reporting limit

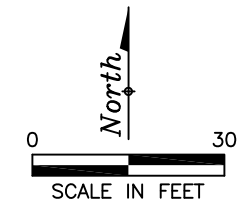


FIGURE 9C
 HYDROCARBON DISTRIBUTION FOR AREA E-3
 FOR LOW THREAT CLOSURE COMPOUNDS
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

E3-SW12		
7/18/2016		
Depth	5' (1)	5' (2)
Nap	<0.0049	<0.005
B	<0.0049	<0.005
E	<0.0049	<0.005

E3-SW13		
7/18/2016		
Depth	10' (1)	10' (2)
Nap	52	27.7
B	18.8	9.69
E	179	83.8

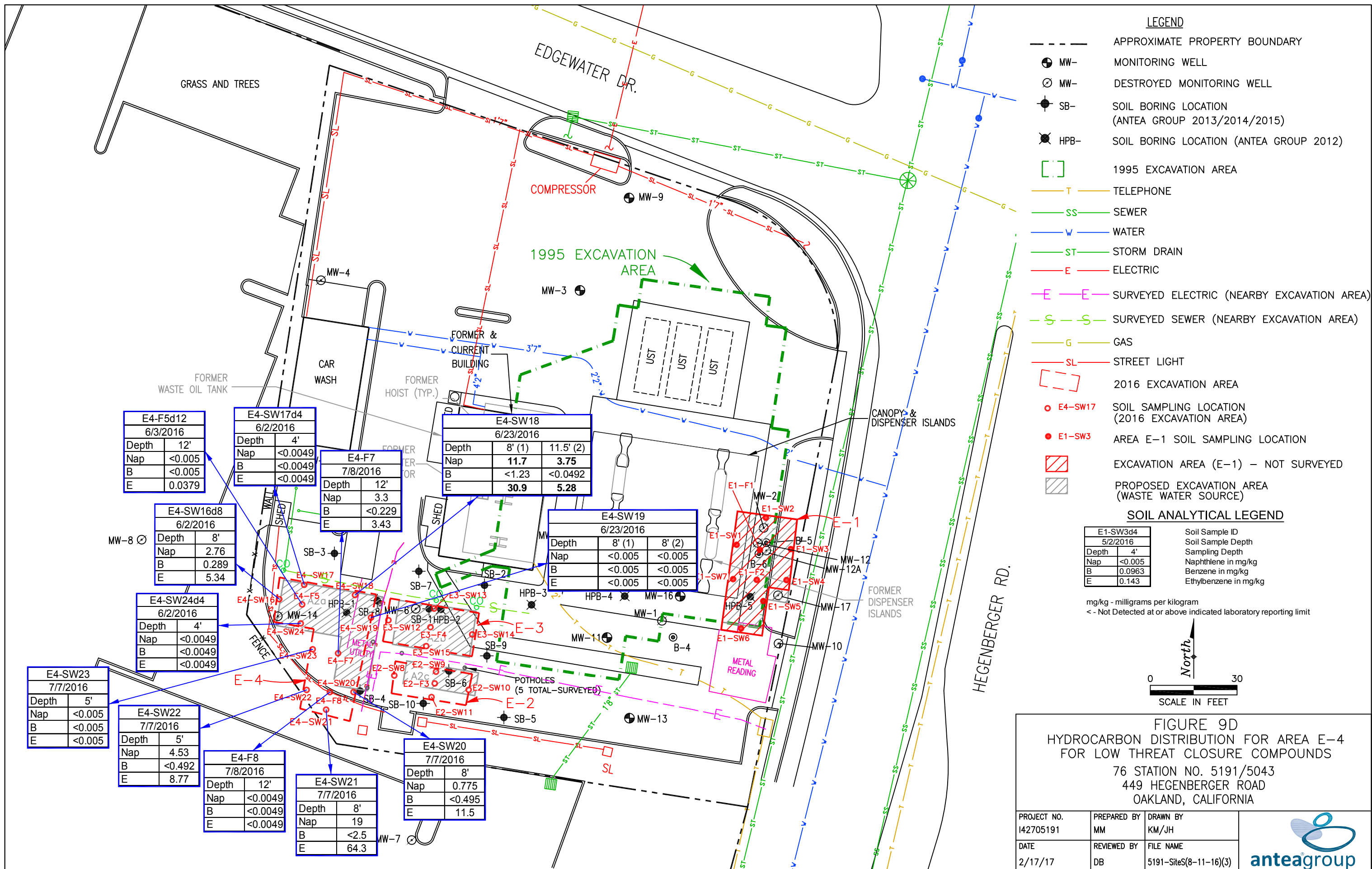
E3-SW14		
7/18/2016		
Depth	5' (1)	5' (2)
Nap	1.27	1.23
B	0.0422	<0.0245
E	0.678	0.479

E3-F4		
7/18/2016		
Depth	12' (1)	12' (2)
Nap	0.0069	0.0164
B	<0.005	0.0156
E	0.0405	0.0636

E3-SW15		
7/18/2016		
Depth	10' (1)	10' (2)
Nap	0.289	0.0055
B	0.339	0.0053
E	0.738	0.0339

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-SiteS(8-11-16)(3)





LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ⊕ MW- MONITORING WELL
- ⊙ MW- DESTROYED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013/2014/2015)
- ⊙ HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- [] 1995 EXCAVATION AREA
- T TELEPHONE
- SS SEWER
- W WATER
- ST STORM DRAIN
- E ELECTRIC
- E- SURVEYED ELECTRIC (NEARBY EXCAVATION AREA)
- S- SURVEYED SEWER (NEARBY EXCAVATION AREA)
- G GAS
- SL STREET LIGHT
- [] 2016 EXCAVATION AREA
- E4-SW17 SOIL SAMPLING LOCATION (2016 EXCAVATION AREA)
- E1-SW3 AREA E-1 SOIL SAMPLING LOCATION
- [] EXCAVATION AREA (E-1) - NOT SURVEYED
- [] PROPOSED EXCAVATION AREA (WASTE WATER SOURCE)

SOIL ANALYTICAL LEGEND

E1-SW3d4	Soil Sample ID
5/2/2016	Soil Sample Depth
Depth 4'	Sampling Depth
Nap <0.005	Naphthlene in mg/kg
B 0.0963	Benzene in mg/kg
E 0.143	Ethylbenzene in mg/kg

mg/kg - milligrams per kilogram
 < - Not Detected at or above indicated laboratory reporting limit

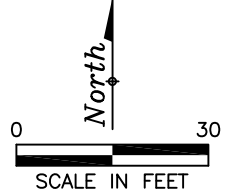
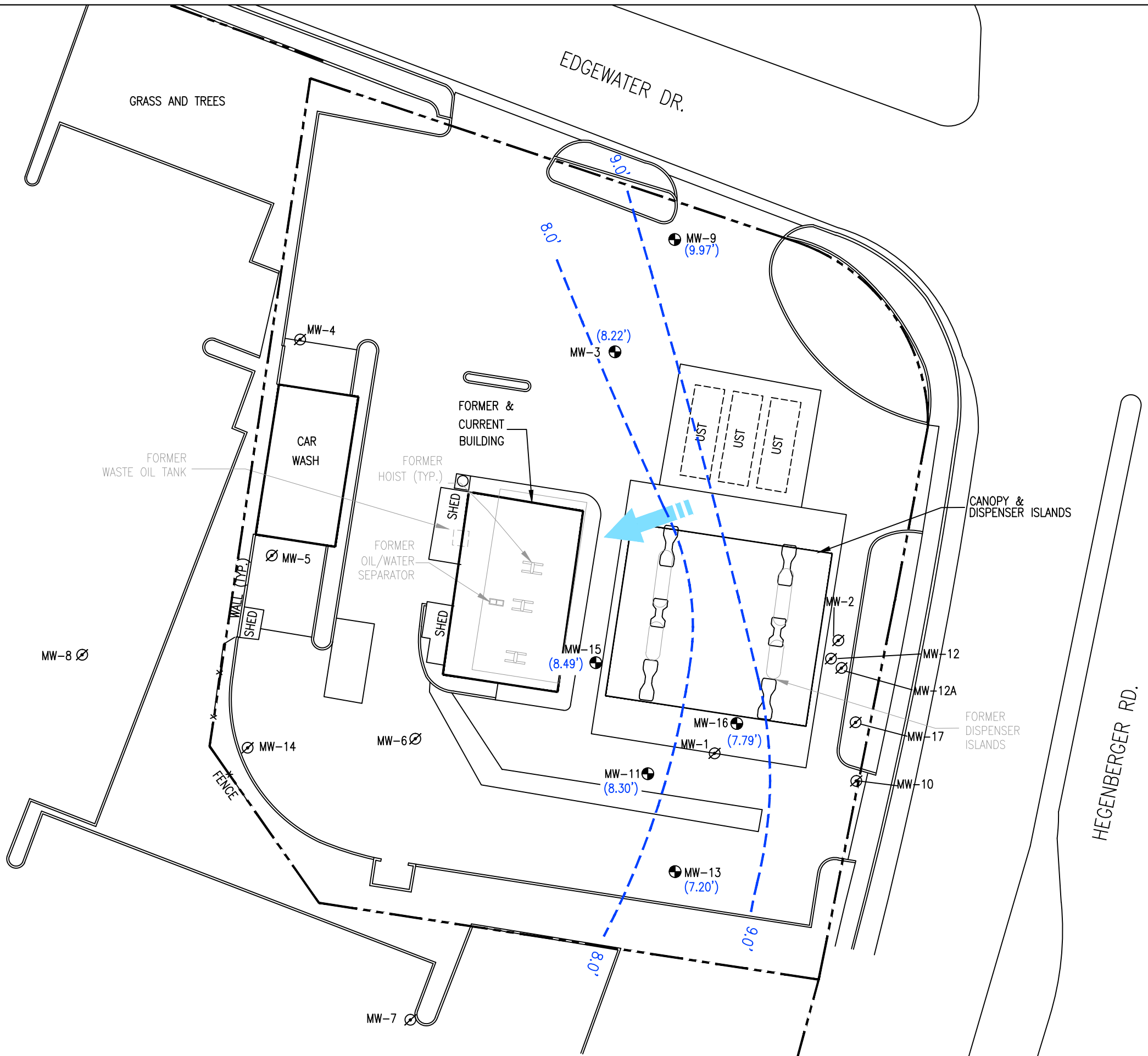


FIGURE 9D
 HYDROCARBON DISTRIBUTION FOR AREA E-4
 FOR LOW THREAT CLOSURE COMPOUNDS
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

E4-F5d12 6/3/2016 Depth 12' Nap <0.005 B <0.005 E 0.0379	E4-SW17d4 6/2/2016 Depth 4' Nap <0.0049 B <0.0049 E <0.0049	E4-SW18 6/23/2016 Depth 8' (1) 11.5' (2) Nap 11.7 3.75 B <1.23 <0.0492 E 30.9 5.28
E4-SW16d8 6/2/2016 Depth 8' Nap 2.76 B 0.289 E 5.34	E4-F7 7/8/2016 Depth 12' Nap 3.3 B <0.229 E 3.43	E4-SW19 6/23/2016 Depth 8' (1) 8' (2) Nap <0.005 <0.005 B <0.005 <0.005 E <0.005 <0.005
E4-SW24d4 6/2/2016 Depth 4' Nap <0.0049 B <0.0049 E <0.0049	E4-SW23 7/7/2016 Depth 5' Nap <0.005 B <0.005 E <0.005	E4-SW20 7/7/2016 Depth 8' Nap 0.775 B <0.495 E 11.5
E4-SW22 7/7/2016 Depth 5' Nap 4.53 B <0.492 E 8.77	E4-F8 7/8/2016 Depth 12' Nap <0.0049 B <0.0049 E <0.0049	E4-SW21 7/7/2016 Depth 8' Nap 19 B <2.5 E 64.3

PROJECT NO. 142705191	PREPARED BY MM	DRAWN BY KM/JH
DATE 2/17/17	REVIEWED BY DB	FILE NAME 5191-SiteS(8-11-16)(3)





LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW- MONITORING WELL
- MW- DESTROYED MONITORING WELL
- (8.22') GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (ft/msl)
- 8.0' - GROUNDWATER CONTOUR LINE (ft/msl) - DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION

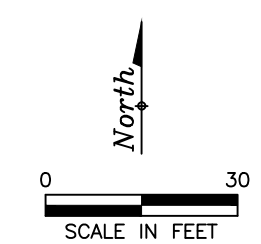
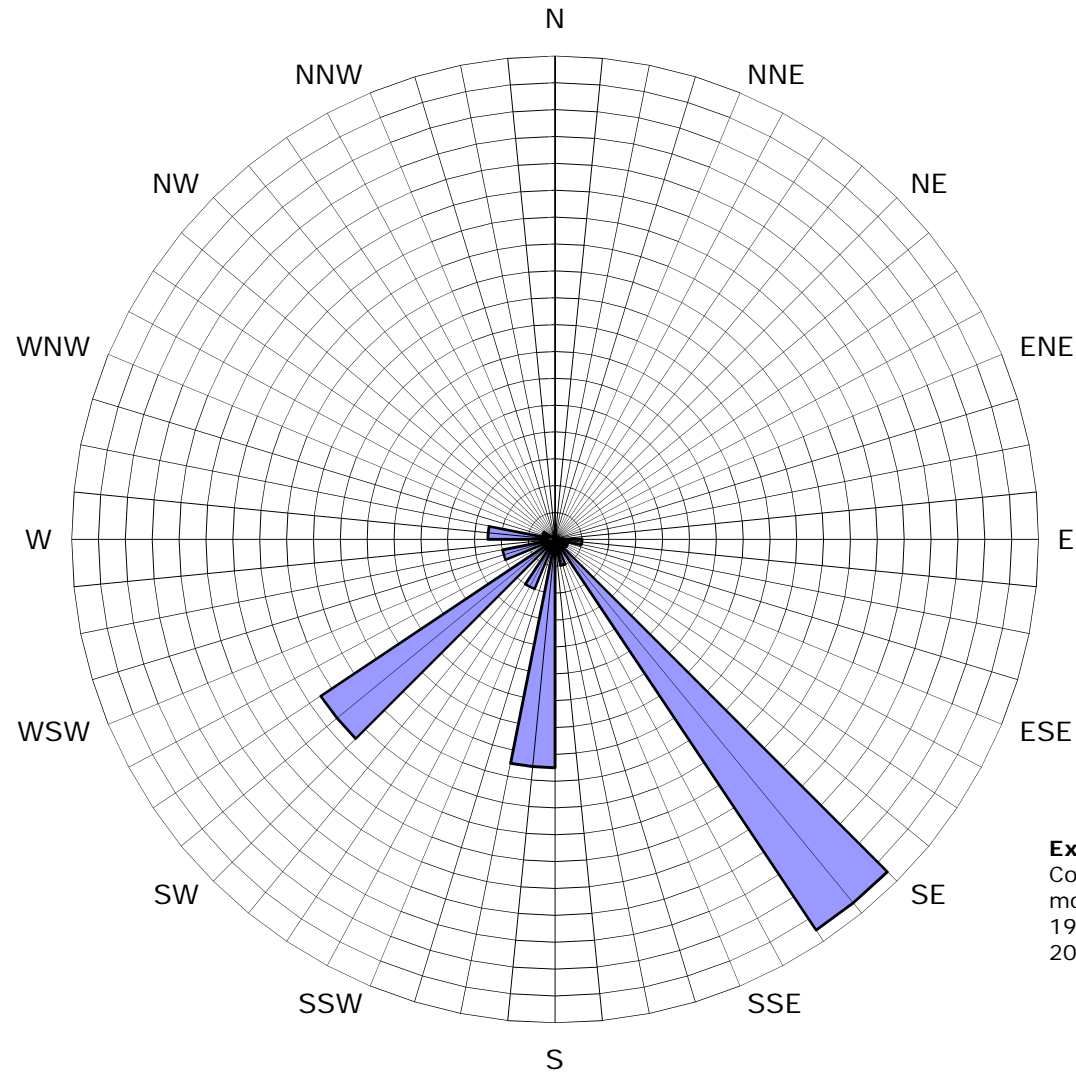


FIGURE 10
SUBSURFACE WATER ELEVATION CONTOUR MAP
 DECEMBER 2, 2016
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

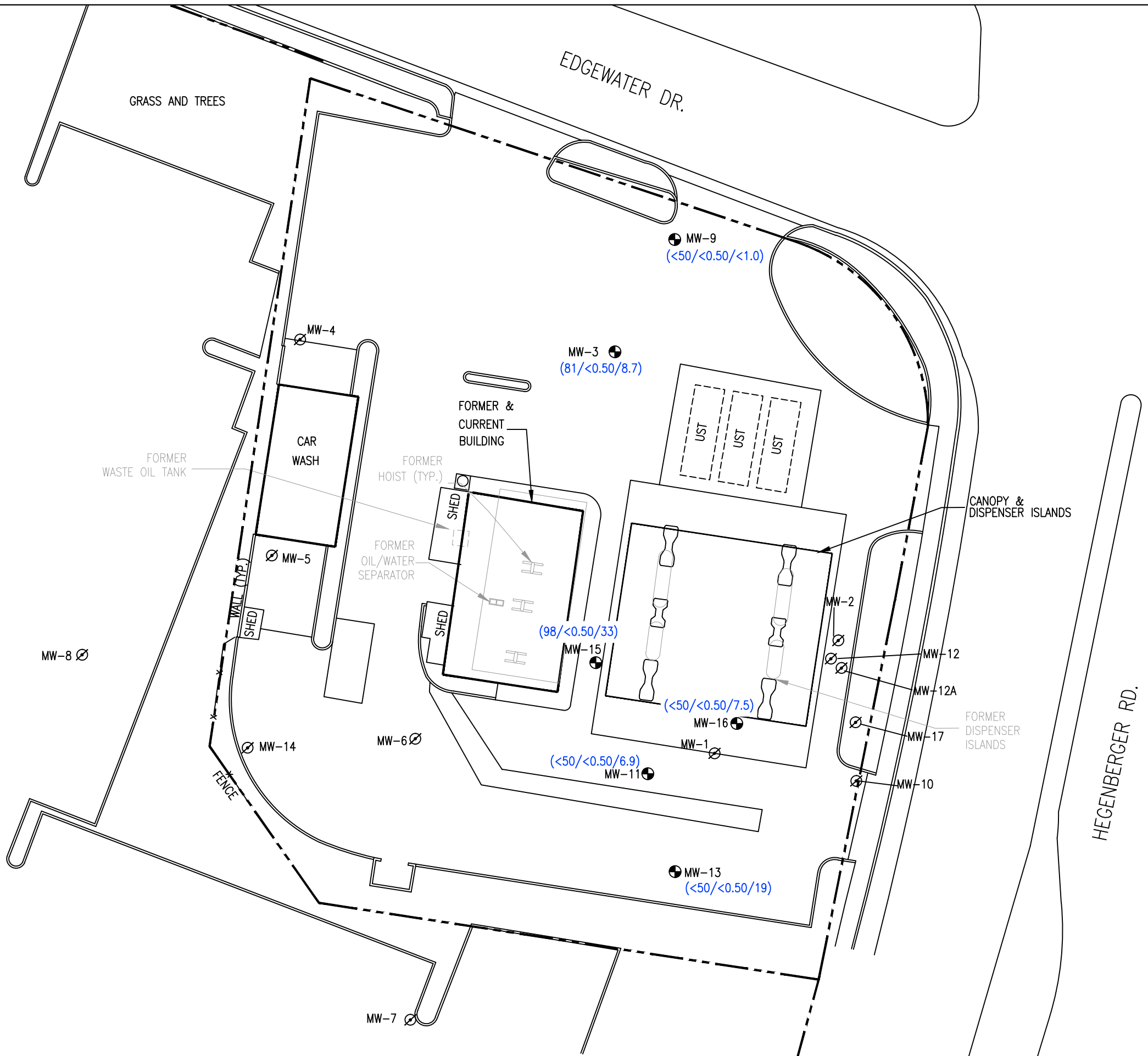
PROJECT NO. 142705191	PREPARED BY JF	DRAWN BY JH
DATE 4/4/17	REVIEWED BY BP	FILE NAME 5191-SiteS

Figure 11
Subsurface Water Flow Direction Rose Diagram
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California



Explanation
Concentric circles represent
monitoring events Second Quarter
1992 through Fourth Quarter
2016. 92 data points shown

■ Subsurface Water Flow Direction



- LEGEND**
- APPROXIMATE PROPERTY BOUNDARY
 - ⊕ MW- MONITORING WELL
 - ⊘ MW- DESTROYED MONITORING WELL

(98/<0.50/33) (TPHg / BENZENE / MTBE) (µg/L)

NOTES:
 TPHg = TOTAL PETROLEUM HYDROCARBONS IN THE GASOLINE CARBON RANGE
 MTBE = METHYL TERTIARY BUTYL ETHER
 µg/L = MICROGRAMS PER LITER
 <50 = CONSTITUENT OF CONCERN NOT DETECTED IN CONCENTRATIONS ABOVE INDICATED LABORATORY REPORTING LIMIT.

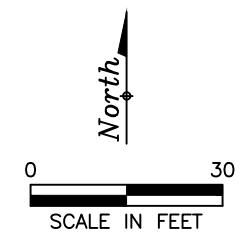


FIGURE 12
 FOURTH QUARTER 2016 DISSOLVED PHASE CONSTITUENTS OF CONCERN CONCENTRATION MAP – DECEMBER 2, 2016
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. I42705191	PREPARED BY MM	DRAWN BY JH
DATE 3/29/17	REVIEWED BY DB	FILE NAME 5191-SiteS





LEGEND

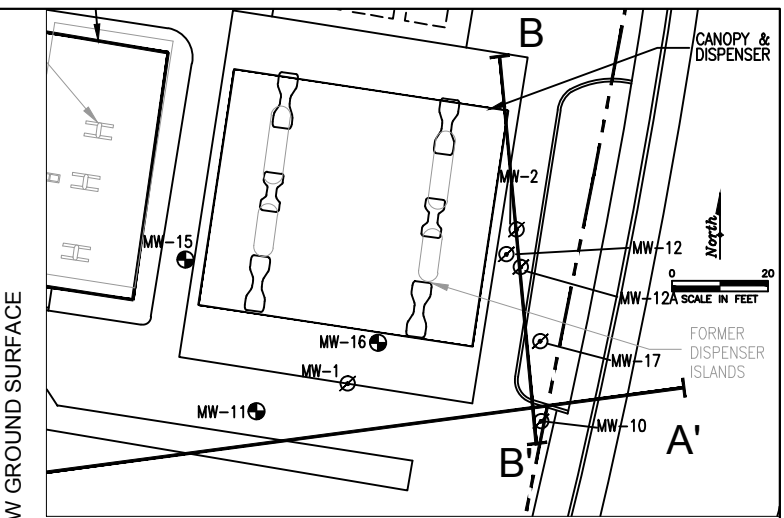
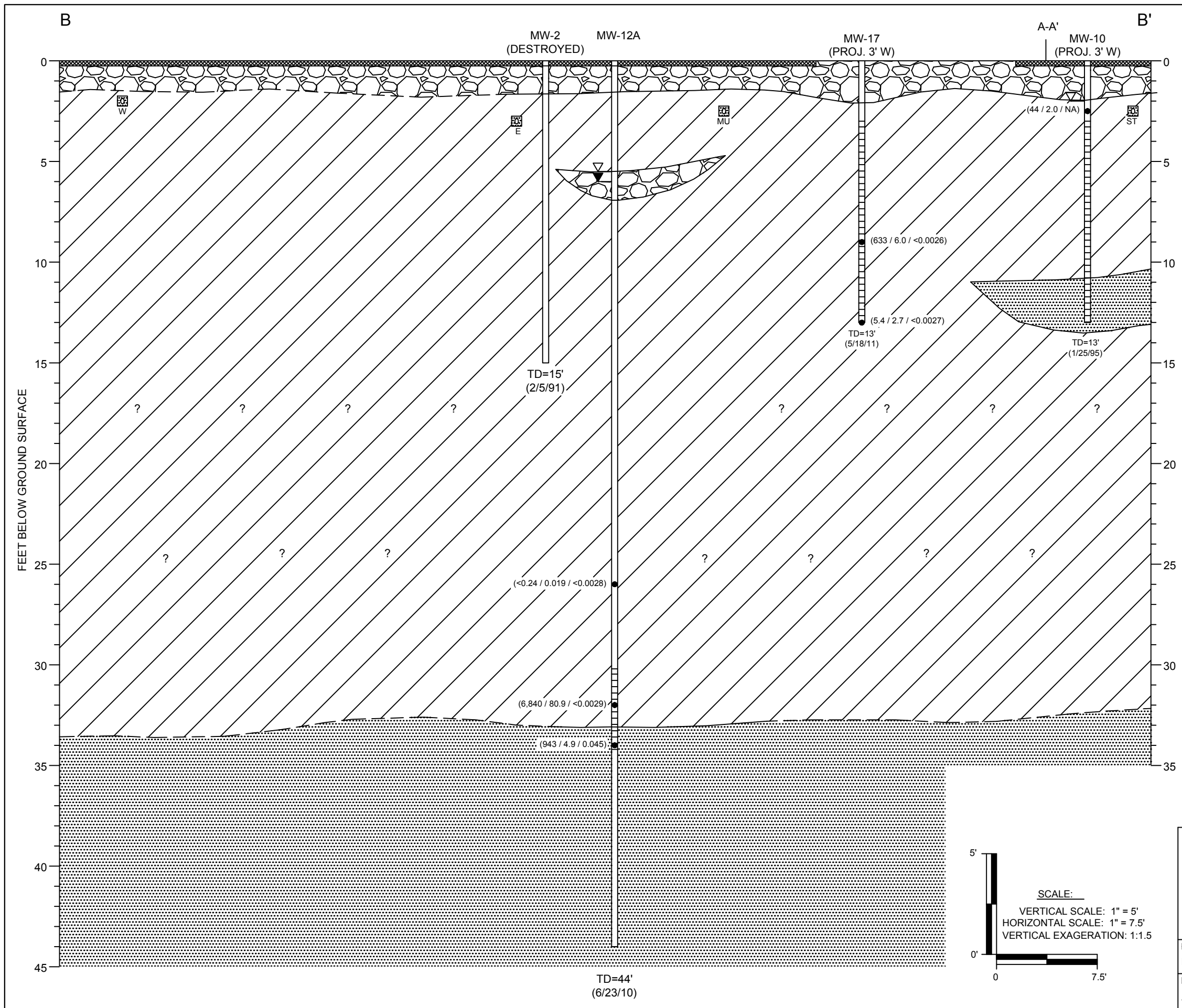
- SENSITIVE RECEPTOR
 - A. COMMUNITY CHARTER SCHOOL (552 FEET EAST)
 - B. CANAL WHICH FLOWS TO SAN LEANDRO BAY (1,341 FEET SOUTHWEST)
 - C. ITT TECHNICAL INSTITUTE (2,137 FEET NORTH NORTHWEST)
 - D. PARADISE BAPTIST CHURCH (2,264 FEET SOUTHEAST)
 - E. BROOKFIELD ELEMENTARY SCHOOL AND EARLY CHILDHOOD CENTER (2,486 FEET EAST SOUTHEAST)
 - F. PRAISE GOD KOREAN CHURCH AND OIKOS UNIVERSITY (2,170 FEET NORTH NORTHWEST)
 - G. EVANGELICAL LUTHERAN CHURCH (2,944 FEET NORTHWEST)
 - H. DRAINAGE DITCH (988 FEET SOUTHEAST)
 - I. MOUNTAIN OF FIRE AND MIRACLE MINISTRIES (1,347 FEET NORTH NORTHEAST)
 - J. ALAMEDA HEBRON BAPTIST CHURCH (1,335 FEET WEST NORTHWEST)
 - EDR RESEARCH RESULTS
 - EDR-1 AHA HOSPITAL (660 FEET SOUTH)
 - EDR-A EDUCATION FOR CHANGE EAST - OAKLAND COMMUNITY CHARTER SCHOOL (660 TO 1,320 FEET SOUTH)
 - EDR-4 CENTER FOR EMPLOYMENT TRAINING (CET - OAKLAND) (660 TO 1,320 FEET WEST-SOUTHWEST)
 - ⊕ WATER SUPPLY WELL RECEPTOR
 - 1. W.E. LYONS CONSTRUCTION, IRRIGATION (1,184 FEET SOUTH SOUTHEAST)
 - 2. RATTO BROTHERS, IRRIGATION (1,852 FEET SOUTH SOUTHEAST)
 - 3. RATTO BROS, INC., IRRIGATION (2,758 FEET SOUTH SOUTHEAST)
- NOTE: MEASUREMENTS RELATIVE TO NORTHEAST CORNER OF STATION BUILDING

FIGURE 13
SENSITIVE RECEPTOR MAP

76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY JF	DRAWN BY JH
DATE 4/14/17	REVIEWED BY DB	FILE NAME 5191-SRS





EXPLANATION

- MW-11 (PROJ.) MONITORING WELL/BORING LOCATION PROJECTED DISTANCE (FEET)
- EXPLORATORY BORING / WELL CASING
- SOIL ANALYTICAL SAMPLE IN mg/kg (TPHg / BENZENE / MTBE)
- WELL SCREEN
- DEPTH TO STATIC WATER LEVEL
- DEPTH TO FIRST ENCOUNTERED GROUNDWATER
- TOTAL DEPTH OF BORING DATE INSTALLED
- FINE GRAINED MATERIAL (CLAY)
- MEDIUM GRAINED MATERIAL (SAND)
- COARSE GRAINED MATERIAL (GRAVEL/FILL)
- ASPHALT / CONCRETE
- APPROXIMATE STRATIGRAPHIC BOUNDARY

NOTES:

- ELECTRICAL LINE
- STORM DRAIN
- METAL UTILITY
- WATER LINE

mg/kg = MILLIGRAMS PER KILOGRAM
 TPHg = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
 MTBE = METHYL TERTIARY BUTYL ETHER
 NA = NOT ANALYZED
 < = LESS THAN LABORATORY INDICATED REPORTING LIMITS

STRATIGRAPHY BETWEEN BORINGS IS INTERPRETIVE.

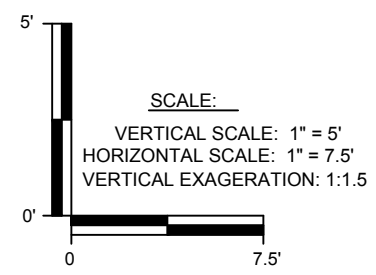
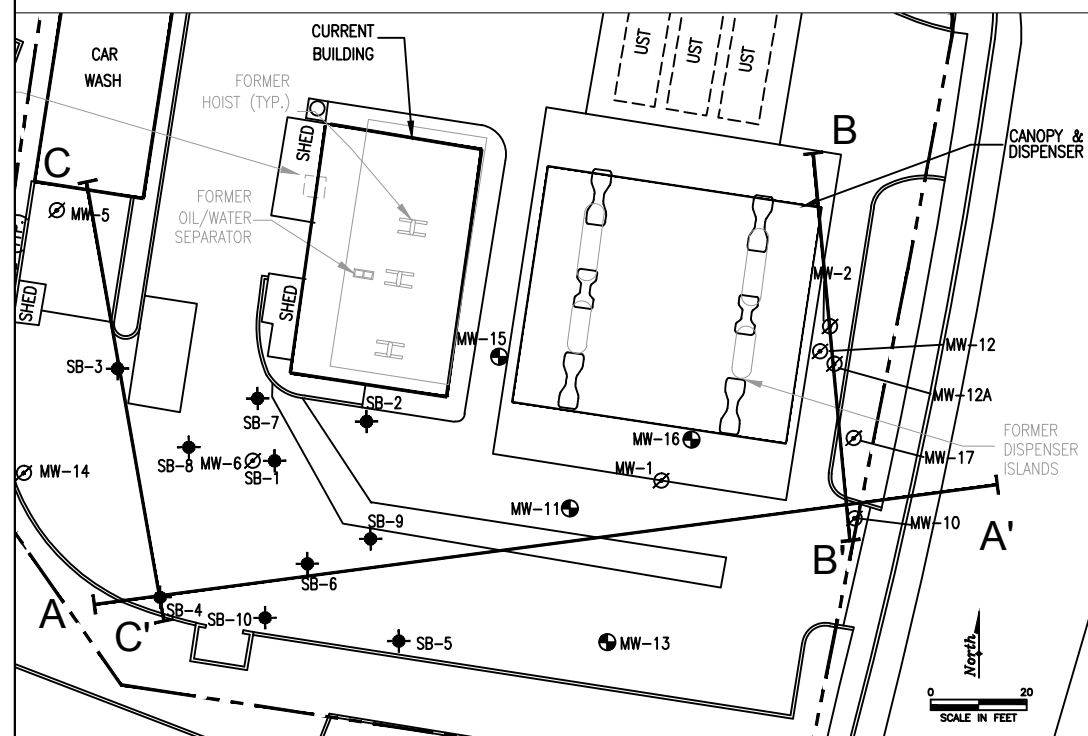
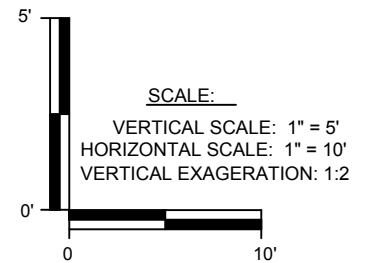
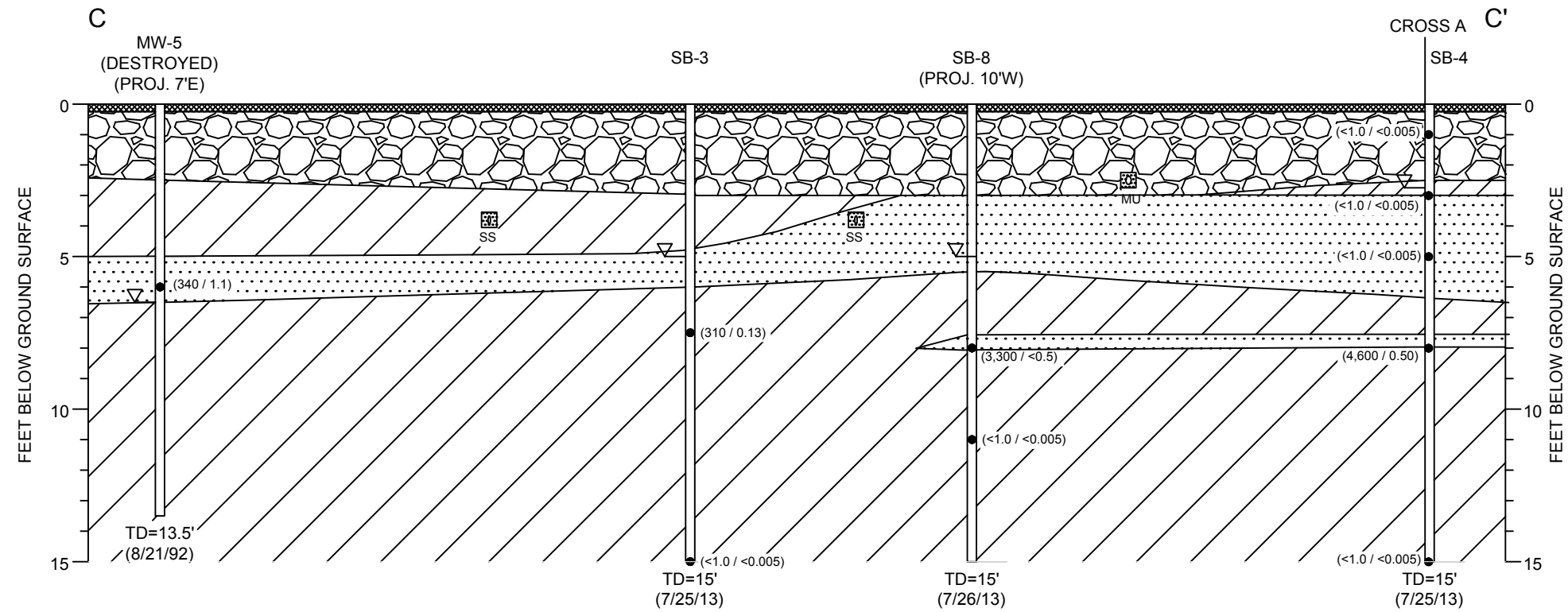


FIGURE 15B
 STRATIGRAPHIC CROSS SECTION LINE B-B'

76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. I42705191	PREPARED BY JF	DRAWN BY JH
DATE 4/7/17	REVIEWED BY DD	FILE NAME 5191-SiteS



EXPLANATION	
MW-11 (PROJ.)	MONITORING WELL/BORING LOCATION PROJECTED DISTANCE (FEET)
(310 / 0.13)	SOIL ANALYTICAL SAMPLE IN mg/kg (TPHg / BENZENE)
[Symbol]	EXPLORATORY BORING / WELL CASING
[Symbol]	WELL SCREEN
[Symbol]	DEPTH TO FIRST ENCOUNTERED GROUNDWATER
TD=20' (6/23/10)	TOTAL DEPTH OF BORING DATE INSTALLED
[Symbol]	FINE GRAINED MATERIAL (CLAY)
[Symbol]	MEDIUM GRAINED MATERIAL (SAND)
[Symbol]	COARSE GRAINED MATERIAL (GRAVEL/FILL)
[Symbol]	ASPHALT / CONCRETE
[Symbol]	SS SANITARY SEWER
[Symbol]	MU METAL UTILITY LINE
[Symbol]	APPROXIMATE STRATIGRAPHIC BOUNDARY

NOTES:

mg/kg = MILLIGRAMS PER KILOGRAM
 TPHg = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
 MTBE = METHYL TERTIARY BUTYL ETHER
 NA = NOT ANALYZED
 < = LESS THAN LABORATORY INDICATED REPORTING LIMITS

STRATIGRAPHY BETWEEN BORINGS IS INTERPRETIVE.

FIGURE 15C
 STRATIGRAPHIC CROSS SECTION LINE C-C'

76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. I42705191	PREPARED BY JF	DRAWN BY JH
DATE 4/7/17	REVIEWED BY DD	FILE NAME 5191-SiteS



*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix A

GeoTracker Case Reviews: LTCP Checklist and Path to Closure Plan



STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER

UNOCAL #5043 (T0600101476) - [\(MAP\)](#)

[SIGN UP FOR EMAIL ALERTS](#)

449 HEGENBERGER RD.
 OAKLAND, CA 94621
 ALAMEDA COUNTY
 LUST CLEANUP SITE

[PRINTABLE CASE SUMMARY](#) / [CSM REPORT](#)

CLEANUP OVERSIGHT AGENCIES

ALAMEDA COUNTY LOP (**LEAD**) - CASE #: RO0000219

CASEWORKER: [KEITH NOWELL](#)

SAN FRANCISCO BAY RWQCB (REGION 2) - CASE #: 01-1601

CASEWORKER: [Regional Water Board](#)

CUF Claim #:

6663

CUF Priority Assigned:

D

CUF Amount Paid:

LTCP CHECKLIST AS OF 5/26/2016 [VIEW PATH TO CLOSURE PLAN](#) [BACK TO CASE SUMMARY](#)

General Criteria - The site satisfies the policy general criteria

YES

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

Name of Water System : East Bay MUD

YES

b. The unauthorized release consists only of petroleum [\(info\)](#).

YES

c. The unauthorized (primary) release from the UST system has been stopped.

YES

d. Free product has been removed to the maximum extent practicable [\(info\)](#).

YES

e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed [\(info\)](#).

YES

f. Secondary source has been removed to the extent practicable [\(info\)](#).

YES

g. Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15.

YES

h. Does a nuisance exist, as defined by [Water Code section 13050](#).

NO

1. Media-Specific Criteria: Groundwater - The contaminant plume that exceeds water quality objectives is stable or decreasing in areal extent, and meets all of the additional characteristics of one of the five classes of sites listed below.

NO

EXEMPTION - Soil Only Case (Release has not Affected Groundwater - [Info](#))

NO

Does the site meet any of the Groundwater specific criteria scenarios?

NO

ADDITIONAL QUESTIONS - The following conditions exist that do not meet the policy criteria:

Plume Length (That Exceeds Water Quality Objectives) :

- Unknown

Free Product in Groundwater :

- Yes

Benzene Concentration :

- $\geq 3,000$ g/l

Nearest Supply Well (From Plume Boundary) :

- Unknown

Nearest Surface Water Body (From Plume Boundary) :

- Unknown

2. Media Specific Criteria: Petroleum Vapor Intrusion to Indoor Air - The site is considered low-threat for the vapor-intrusion-to-air pathway if site-specific conditions satisfy items 2a, 2b, or 2c

YES

EXEMPTION - Active Commercial Petroleum Fueling Facility

YES

3. Media Specific Criteria: Direct Contact and Outdoor Air Exposure - *The site is considered low-threat for direct contact and outdoor air exposure if it meets 1, 2, or 3 below.*

NO

EXEMPTION - The upper 10 feet of soil is free of petroleum contamination

NO

Does the site meet any of the Direct Contact and Outdoor Air Exposure criteria scenarios?

NO

ADDITIONAL QUESTIONS - The following conditions exist that do not meet the policy criteria:

Exposure Type :

- Utility Worker

Petroleum Constituents in Soil :

- >5 Feet bgs and ≤10 Feet bgs

Soil Concentrations of Benzene :

- > 14 mg/kg

Soil Concentrations of EthylBenzene :

- > 32 mg/kg and ≤ 89 mg/kg

Soil Concentrations of Naphthalene :

- Unknown

Additional Information

Should this case be closed in spite of NOT meeting policy criteria?

NO

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STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER



Tools

Reports

UST Case Closures

Information



UNOCAL #5043 (T0600101476) - [\(MAP\)](#)

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449 HEGENBERGER RD.
OAKLAND, CA 94621
ALAMEDA COUNTY
LUST CLEANUP SITE

[PRINTABLE CASE SUMMARY / CSM REPORT](#)

CLEANUP OVERSIGHT AGENCIES

ALAMEDA COUNTY LOP (**LEAD**) - CASE #: R00000219

CASEWORKER: [KEITH NOWELL](#)

SAN FRANCISCO BAY RWQCB (REGION 2) - CASE #: 01-1601

CASEWORKER: [Regional Water Board](#)

CUF Claim #:

6663

CUF Priority Assigned:

D

CUF Amount Paid:

PATH TO CLOSURE PLAN FY 12/13 AS OF 5/26/2016

[BACK TO LTCP CHECKLIST](#)

IMPEDIMENT 1:

General Criteria E: A conceptual site model that assesses the nature, extent, and mobility of the release has NOT been developed

Step to Resolve Impediment 1 - Step 1:

See Media Specific: Groundwater

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
12/30/2017	8/26/2015

IMPEDIMENT 2:

Media-Specific Criteria: Groundwater: The contaminant plume that exceeds water quality objectives is NOT stable or decreasing in areal extent, and does NOT meet all of the additional characteristics of one of the five classes of sites.

Conditions that do not meet the policy criteria:

- Plume Length (That Exceeds Water Quality Objectives): Unknown
- Free Product in Groundwater: Yes
- Benzene Concentration: $\geq 3,000$ $\mu\text{g/l}$
- Nearest Supply Well (From Plume Boundary): Unknown
- Nearest Surface Water Body (From Plume Boundary): Unknown

Step to Resolve Impediment 2 - Step 1:

One soil bore for off site plume delineation not advanced. (3 months) Site remediation (1 month) NEARING COMPLETION Well replacement (3 months) Verification monitoring (12 months) Closure requirements along path to closure (6 months)

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
9/30/2017	

IMPEDIMENT 3:

Media Specific Criteria: Direct Contact and Outdoor Air Exposure: The site is NOT considered low-threat for direct contact and outdoor air exposure as it does NOT meet 1, 2, or 3.

Conditions that do not meet the policy criteria:

- Exposure Type: Utility Worker
- Petroleum Constituents in Soil: >5 Feet bgs and ≤ 10 Feet bgs
- Soil Concentrations of Benzene: > 14 mg/kg
- Soil Concentrations of EthylBenzene: > 32 mg/kg and ≤ 89 mg/kg
- Soil Concentrations of Naphthalene: Unknown

Step to Resolve Impediment 3 - Step 1:

See Media Specific: Groundwater

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
9/30/2017	

REQUIREMENTS ALONG PATH TO CLOSURE

DATE IDENTIFIED	RP NOTIFICATION	PUBLIC PARTICIPATION	WELL DESTRUCTION	WELL DESTRUCTION	WASTE DISPOSAL	LAND USE		
FOR CLOSURE	CLOSURE INITIATED BY	DATE	COMPLETION DATE	LETTER DATE	DATE	DATE	RESTRICTION DATES	CLOSURE DATE

*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix B

Facility Information

Facility/Site

United #5191

449 Hegenberger Rd
Oakland, CA 94621

CERS ID

10397287

Tank ID#: 1

Submittal Status

This was a **Draft** submittal as of 3/21/2017; Last updated by *Tom Robins* on 3/21/2017 10:54 AM

Type of Action

Type of Action (UST Tank)

Confirmed/Updated Information

Facility Information

United #5191

449 Hegenberger Rd
Oakland, CA 94621

Tank Description

Tank ID#

1

Date UST System Installed

3/1/1995

Tank Configuration

A Stand-alone Tank

Tank Manufacturer

Unknown

Date Existing UST Discovered

Number of Compartments in the Unit

1

Tank Capacity In Gallons

15000

Date UST Permanently Closed

Additional Description

Tank Use and Contents

Tank Use

Motor Vehicle Fueling

Tank Contents

Regular Unleaded

Other Petroleum Contents

Other Non-Petroleum Contents

Tank Construction

Type of Tank

Double Wall

Primary Containment

Steel

Secondary Containment

Fiberglass

Overfill Protection

Audible/Visual Alarms

Yes

Fill Tube Shut-Off Valve

Ball Float

Exempt

Product / Waste Piping Construction

Piping Construction

Double-walled

Primary Containment

Fiberglass

Secondary Containment

Fiberglass

Piping/Turbine Containment Sump

Single-walled

Piping System Type

Pressure

Vent, Vapor Recovery (VR) and Riser / Fill Pipe Piping Construction

Primary Containment

Fiberglass

Vapor Recovery Primary Containment

Fiberglass

Riser Pipe Primary Containment

Steel

Vent Piping Transition Sumps

None

Secondary Containment

Fiberglass

Vapor Recovery Secondary Containment

Fiberglass

Riser Pipe Secondary Containment

None

Fill Components Installed

Yes

Spill Bucket

Yes

Striker Plate/Bottom Protector

Containment Sump

Under Dispenser Containment (UDC)

Construction Type

Single-walled

Construction Material

Fiberglass

Corrosion Protection

Sacrificial Anode

Impressed Current

Yes

Isolation

Facility/Site

United #5191

449 Hegenberger Rd
Oakland, CA 94621

CERS ID

10397287

Tank ID#: 2

Submittal Status

This was a **Draft** submittal as of 3/21/2017; Last updated by *Tom Robins* on 3/21/2017 10:54 AM

Type of Action

Type of Action (UST Tank)

Confirmed/Updated Information

Facility Information

United #5191

449 Hegenberger Rd
Oakland, CA 94621

Tank Description

Tank ID#

2

Date UST System Installed

3/1/1995

Tank Configuration

A Stand-alone Tank

Tank Manufacturer

Unknown

Date Existing UST Discovered

Number of Compartments in the Unit

1

Tank Capacity In Gallons

15000

Date UST Permanently Closed

Additional Description

Tank Use and Contents

Tank Use

Motor Vehicle Fueling

Tank Contents

Premium Unleaded

Other Petroleum Contents

Other Non-Petroleum Contents

Tank Construction

Type of Tank

Double Wall

Primary Containment

Steel

Secondary Containment

Fiberglass

Overfill Protection

Audible/Visual Alarms

Yes

Fill Tube Shut-Off Valve

Ball Float

Exempt

Product / Waste Piping Construction

Piping Construction

Double-walled

Primary Containment

Fiberglass

Secondary Containment

Fiberglass

Piping/Turbine Containment Sump

Single-walled

Piping System Type

Pressure

Vent, Vapor Recovery (VR) and Riser / Fill Pipe Piping Construction

Primary Containment

Fiberglass

Vapor Recovery Primary Containment

Fiberglass

Riser Pipe Primary Containment

Steel

Vent Piping Transition Sumps

None

Secondary Containment

Fiberglass

Vapor Recovery Secondary Containment

Fiberglass

Riser Pipe Secondary Containment

None

Fill Components Installed

Yes Spill Bucket

Yes Striker Plate/Bottom Protector

Containment Sump

Under Dispenser Containment (UDC)

Construction Type

Single-walled

Construction Material

Fiberglass

Corrosion Protection

Sacrificial Anode

Impressed Current

Yes

Isolation

Facility/Site

United #5191

449 Hegenberger Rd
Oakland, CA 94621

CERS ID

10397287

Tank ID#: 3

Submittal Status

This was a **Draft** submittal as of 3/21/2017; Last updated by *Tom Robins* on 3/21/2017 10:54 AM

Type of Action

Type of Action (UST Tank)

Confirmed/Updated Information

Facility Information

United #5191

449 Hegenberger Rd
Oakland, CA 94621

Tank Description

Tank ID#

3

Date UST System Installed

3/1/1995

Tank Configuration

A Stand-alone Tank

Tank Manufacturer

Unknown

Date Existing UST Discovered

Number of Compartments in the Unit

1

Tank Capacity In Gallons

10000

Date UST Permanently Closed

Additional Description

Tank Use and Contents

Tank Use

Motor Vehicle Fueling

Tank Contents

Diesel

Other Petroleum Contents

Other Non-Petroleum Contents

Tank Construction

Type of Tank

Double Wall

Primary Containment

Steel

Secondary Containment

Fiberglass

Overfill Protection

Audible/Visual Alarms

Yes

Fill Tube Shut-Off Valve

Ball Float

Exempt

Product / Waste Piping Construction

Piping Construction

Double-walled

Primary Containment

Fiberglass

Secondary Containment

Fiberglass

Piping/Turbine Containment Sump

Single-walled

Piping System Type

Pressure

Vent, Vapor Recovery (VR) and Riser / Fill Pipe Piping Construction

Primary Containment

Fiberglass

Vapor Recovery Primary Containment

None

Riser Pipe Primary Containment

Steel

Vent Piping Transition Sumps

None

Secondary Containment

Fiberglass

Vapor Recovery Secondary Containment

None

Riser Pipe Secondary Containment

None

Fill Components Installed

Yes

Spill Bucket

Yes

Striker Plate/Bottom Protector

Containment Sump

Under Dispenser Containment (UDC)

Construction Type

Single-walled

Construction Material

Fiberglass

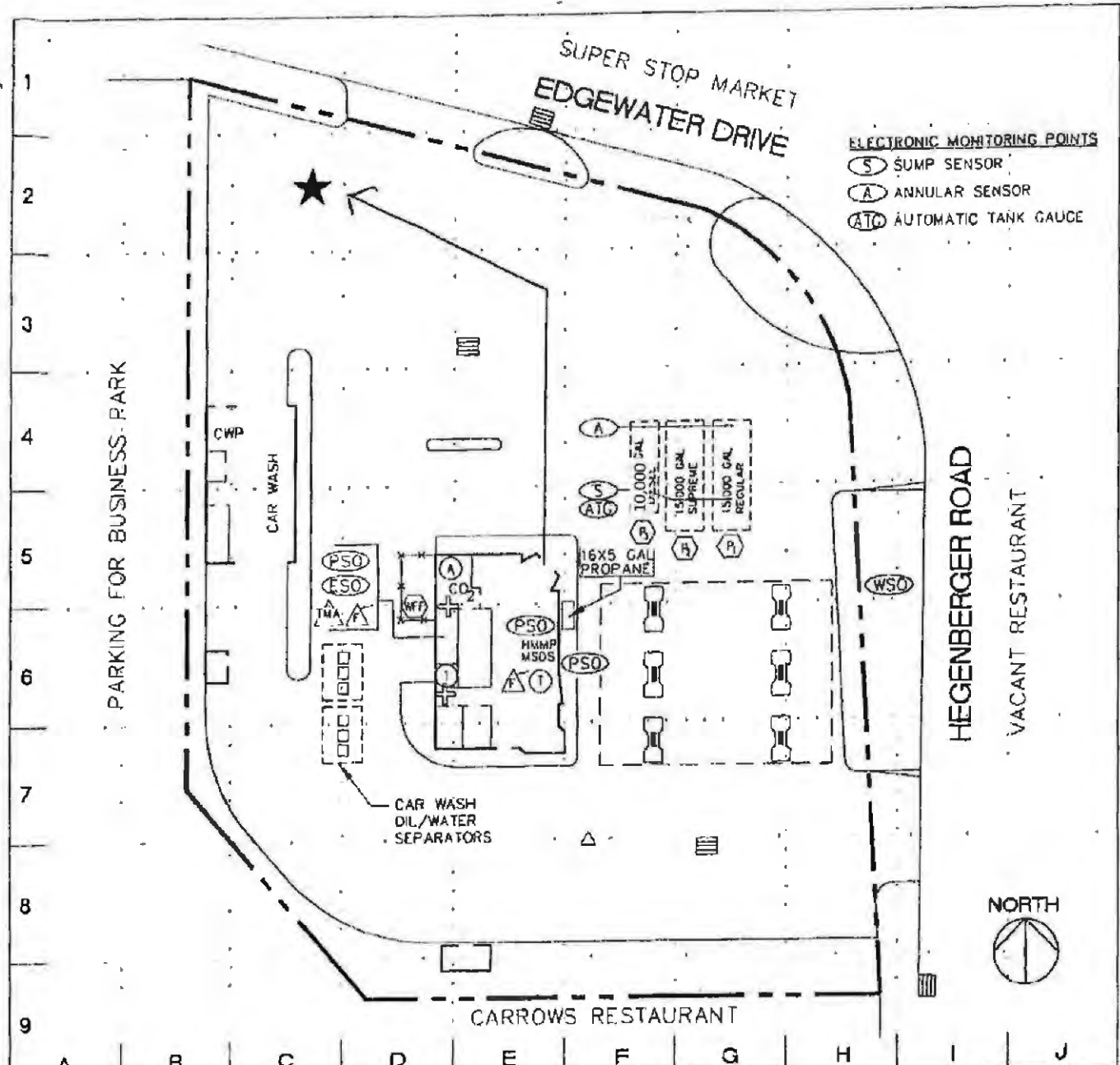
Corrosion Protection

Sacrificial Anode

Impressed Current

Yes

Isolation



ELECTRONIC MONITORING POINTS
 (S) SUMP SENSOR
 (A) ANNULAR SENSOR
 (ATG) AUTOMATIC TANK GAUGE

SELF SERVICE STATION LEGEND

SCALE: 1"=40'-0"±

DATE: 4/23/2007

- | | | | |
|-----------|---------------------------|-----------------|------------------------|
| (PSO) | EMERGENCY PUMP SHUT-OFF | ▲ | MONITORING WELLS |
| (ESO) | ELECTRICAL PANEL SHUT-OFF | △ | OBSERVATION WELLS |
| (GSO) | NATURAL GAS SHUT-OFF | (A) | ANTIFREEZE |
| (WSO) | WATER SHUT-OFF | (M) | MOTOR/TRANSMISSION OIL |
| (TMA) | TANK MONITORING ALARM | (P) | A.G. PRODUCT TANK |
| (T) | TELEPHONE | (P) | U.G. PRODUCT TANK |
| + | FIRST AID KIT | (W) | USED OIL TANK |
| ▲ | FIRE EXTINGUISHER | (A) | SPILL KIT |
| ≡ | STORM DRAIN | CO ₂ | CARBON DIOXIDE |
| ≡ | OIL/WATER SEPARATOR | CWP | CAR WASH PRODUCTS |
| ★ | EMERGENCY ASSEMBLY AREA | | |
| HMMP MSDS | HMMP AND MSDS LOCATION | | |
| ⊕ | FIRE HYDRANT | | |
| + | FENCE | | |

SITE PLAN
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA 94621
 SSH# 2705191



PREPARED BY:
RHL ARCHITECTURE • ENGINEERING • ENVIRONMENTAL SERVICES
 DESIGN: ORADUP INC. 1137 N. WOODWELL BLVD. PETALUMA, CA (707) 765-1660
 JOHN W. JOHNSON, ARCHITECT JAMES H. RAY, CIVIL ENGINEER

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*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix C

Summary of Petroleum Hydrocarbon Investigation and Remediation Events

Table C-1: Summary of Petroleum Hydrocarbon Investigation and Remediation Events

Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
October 1991	Investigation / Monitoring Wells Work Plan/Proposal for collection of soil samples (depths: 3 ft & 4.5 ft bgs) from product pipe and dispenser island replacements, monitoring wells installation, and groundwater sampling. TPHg, TPHd and benzene impacts noted.	Kaprealian, 1991			
February 1992	Investigation / Monitoring Wells MW-1, MW-2 & MW-3 installed to 13.5 to 15 ft bgs. TPHg, TPHd and benzene impacts noted in soil and groundwater samples.	Kaprealian, 1992a			
August 1992	Investigation / Monitoring Wells MW-4, MW-5 & MW-6 installed to 13.5 ft bgs. TPHg, TPHd and benzene impacts noted in soil and groundwater samples.	Kaprealian, 1992c			
June 1993	Phase II Work Plan/Proposal Defining the extent of subsurface contamination, soil and groundwater sampling, well installations (MW-7 through MW-10)	Kaprealian, 1993			
June 1994	Work Plan/Proposal Proposed work to destroy MW-4 and MW-5 and installation of two monitoring wells following completion of car wash construction. Soil and groundwater sampling.	Kaprealian, 1994a			
September 1994	Waste Oil UST Removal One 280-gallon waste oil UST removed September 20. No holes/cracks observed in UST. Soil sample beneath UST excavation (9ft bgs) only detected metals (Cr, Pb, Ni, Zn) and non-detect petroleum hydrocarbons.	Kaprealian, 1994b			
December 1994	Abandonment of Hydraulic Hoists and Oil/Water Separator Field activities and soil sampling associated with abandonment of oil/water separator and three hydraulic hoists.	GeoStrategies, 1994			
January 1995	Investigation / Monitoring Wells MW-9 & MW-10 installed to 13 ft bgs (1/25/95). Low-level TPHg, TPHd and benzene impacts noted. MW-4 & MW-5 destroyed (1/25/95; over-drilled/backfilled with neat cement) during car wash construction. MW-7 and MW-8, were pending off-site access approval for installation. Groundwater sampling (2/21/95).	Kaprealian, 1995a Kaprealian, 1995b			
March 1995	Gasoline & Diesel USTs Removal Two 10K gallon gasoline and one 10K gallon diesel USTs, four dispenser islands, and associated product piping removed. No holes/cracks observed in USTs. Groundwater encountered in tank excavation at ~8.5 ft bgs. South sidewall staining noted at 2 to 6 ft bgs; soil sampled at 4 ft. Moderate TPHg, TPHd and benzene levels. MW-1 and MW-2 destroyed (respectively, March 29 and April 4)	Kaprealian, 1995c Kaprealian, 1995d			
April 1995	Soil Sampling Report and Continuing Ground Water Investigation Reporting for soil sampling during UST replacement, dispenser islands, associated piping replacement, and building replacement.	Kaprealian, 1995c			
November 1996	Work Plan/Proposal Installation of two monitoring wells and reconstruction of MW-3.	Kaprealian, 1996			
April 1997	Investigation / Monitoring Wells MW-7 & MW-8 installed to 13 to 15 ft bgs. Minor to non-detect TPHg, TPHd, benzene, and MtBE noted in MW-8 (6 ft bgs) soil boring sample (4/21/97).	Kaprealian, 1997			
November 1999	Dual-Phase Vacuum Extraction Event Report Results of DPE event conducted 11/19-11/24/1999. High vacuum liquid-ring pump DPE with thermal oxidizer performed on MW-6 and MW-7. Total recovery by vapor was 52.45 gallons / 328.26 lbs. Total recovery volume by water was <1,000 gallons. MW-6 groundwater concentrations on 11/24/99: TPH-G - 6,500,000 ug/L; Benzene - 9,500 ug/L; Toluene - 47,000 ug/L; Ethyl Benzene - 29,000 ug/L; Total Xylenes - 310,000 ug/L; MTBE - <25,000 ug/L.	TRC Alton Geoscience, 2000	Vapor mass removed: 52.45 gallons / 328.26 lbs Groundwater volume removed: <1,000 gallons		
August 2003	Dual Phase Extraction Work Plan Work Plan details five to six week DPE event on MW-6.	Gettler-Ryan, 2003b			
October 2004	Workplan for Dual-Phase Vacuum Extraction Pilot Test TRC Mobile Treatment System targeting MW-6 proposed for 72-hour pilot test	TRC, 2004			

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Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
April 2005	<p>Dual-Phase Extraction Report A 24-hour DPE event was performed 4/8-9/2005. Average flow rate was 6.6 cfm at average vacuum of 23 inches Hg. TPH measurements by OVA were 2,640 ppmv at the start and 210 ppmv at the conclusion of the DPE event. Approximately 1.77 lbs of TPH-g were removed in 24 hours of operation. A total of 2,000 gallons of groundwater were removed from the subsurface.</p>	TRC, 2005	1.77 lbs TPHg removed. 2,000 gallons of groundwater removed.		
April 2006	<p>Sensitive Receptor Survey Department of Water Resources contacted to identify domestic and municipal wells within one-half mile of the subject site. Surface water also evaluated. Irrigation wells (Well 1 and Well 2) are located within the path of local groundwater flow; therefore they are potential sensitive receptors. However, at >1,000 feet distance, these wells are unlikely to be impacted by the Site hydrocarbon plume. Industrial well (Well 3) not located in the path of local groundwater flow; therefore, not considered a potential sensitive receptor. Surface waters (San Leandro Creek and Elmhurst Creek are located within one-half mile, and therefore initially considered to be potential sensitive receptors. However, Creek locations and distance to this Site renders unlikely impacts from the Site to the water bodies.</p>	TRC, 2006			
October 2007	<p>Project Management assumed by Delta Consultants</p>				
January 2009	<p>Work Plan for Hydrogen Peroxide Injection Work Plan to test the effectiveness of using hydrogen peroxide to remediate residual petroleum hydrocarbons in the site groundwater. MW-6 was targeted for injections, weekly, for four weeks.</p>	Delta, 2009a			
June 2009	<p>Site Conceptual Model Delta Consultants (Delta) completed SCM. Model summarizes known information and data up through 2008.</p>	Delta, 2009b			
June 2009	<p>Additional Site Assessment: Work Plan Proposed soil and groundwater investigation to assess vertical extent of petroleum hydrocarbon impacts in vicinity of former MW-1 and MW-2. Borings B-4 and B-5 were 20 ft bgs and 32 ft bgs, respectively.</p>	Delta, 2009c			
December 2009	<p>Additional Site Assessment: Results Two soil borings noted predominantly clay, some sand, and occasional silt and gravel. Groundwater encountered at 3 to 5 ft bgs. LPH observed in borings. Petroleum hydrocarbon concentrations reported in the boring B-5 at 32 ft bgs. Suspected preferential pathway along electrical line does not appear to be conduit for dissolved-phase plume migration. Delta recommends four monitoring wells be installed. Two proposed in vicinity of soil borings (B-4 and B-5), another in southeast corner of site, and one east of site in Hegenberger Road.</p>	Delta, 2010a			
February 2010	<p>Site Investigation Report</p>	Delta, 2010a			
February 2010	<p>Work Plan - Additional Site Investigation Delta proposed installing two monitoring/extraction wells (MW-11 & MW-12), MW-13 in southeast corner of site, MW-14 east of site in Hegenberger Road, and MW-12A (depth @ 34 ft bgs; adjacent to soil boring B-5) to monitor groundwater at 30 ft to 34 ft bgs. Wells installed near B-4 & B-5 also intended for batch extraction.</p>	Delta, 2010b			

Table C-1: Summary of Petroleum Hydrocarbon Investigation and Remediation Events

Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
July 2010	<p>Additional Site Investigation: Work Plan Details well installation, development, surveying, and sampling of two monitoring/extraction wells (MW-11 & MW-2) and of MW-12A and MW-13. MW-14 was not installed due to lack of encroachment permit from the City of Oakland.</p> <p>During June 22-23, 2010, MW-12A boring advanced to 44 ft bgs (screened interval 30 to 34 ft bgs). MW-13 boring advanced to 15 ft bgs (5 to 15 ft bgs).</p> <p>Analytical results from MW-12 and MW-12A soil borings indicated petroleum hydrocarbon impacts. MW-12A noted impacts at 26 ft and 32 ft; however, only near detection limits for 34 ft bgs. MW-12 noted minor impacts at 8 and 12 ft bgs, and near-detection limits at 20 ft.</p> <p>July 7-8, 2010, extraction event (Belshire Environmental Services, Inc) on MW-11, MW-12, and MW-12A. LPH/groundwater extracted (1,800 gallons) from MW-11. MW-12 extracted only 500 gallons. MW-12A extracted 1,300 gallons. Total of 3,600 gallons extracted.</p> <p>Delta recommends monthly batch extraction from MW-12, MW-6, and MW-12A.</p> <p>Well-graded sand encountered in boring MW-12A at 37 to 43 ft bgs, with clayey sand at 44 ft.</p> <p>Survey datum NAD 83.</p>	Delta, 2010c	<p>Total of 3,600 gallons of LPH/groundwater extracted: MW-11: 1,800 gallons MW-12: 500 gallons MW-12A: 1,300 gallons</p>		
December 2010	<p>Additional Site Investigation: Work Plan Proposed to complete horizontal extent of dissolved-phase plume with installation of four monitoring wells (MW-14, -15, -16, and -17). Additional soil boring (B-6) proposed next to MW-12A for confirmation of analytical results at 26 ft bgs.</p>	Delta, 2010d			
August 2011	<p>Site Investigation Report Soil and groundwater in the area around MW-12 and MW-17 suggest prior fuel dispensers and/or product piping releases. The southwest corner of the Site around MW-6 and MW-14 may have been impacted from dispenser and/or product piping releases. Additional site investigation was suggested.</p>	Antea Group, 2011a			
November 2011	<p>Work Plan - Additional Site Investigation Work Plan proposes five test borings to help assess if in-situ chemical oxidation (ISCO) is a viable remediation option to address the impacted soil and groundwater beneath the site.</p>	Antea Group, 2011b			
May 2012	<p>ISCO Pilot Test Work Plan Pilot test Work Plan for in-situ chemical oxidation (ISCO) using alkaline activated sodium persulfate. Hydraulic Profile Borings (HPB-1 through HPB-5) were advanced to evaluate pressure and fluid flow soil subsurface properties. Soil buffering tests refine the injection design.</p>	Antea Group, 2012			
February 2013	<p>Work Plan - Monitoring Well Destruction Work Plan to destroy MW-12A.</p>	Antea Group, 2013a			
April 2013	<p>Remedial Action Plan Shallow soil excavation in the southwest and eastern portions of the site.</p>	Antea Group, 2013b			
June 2013	<p>Fuel Leak Case R00000219 - ACEH Correspondence ACEH documents case file review of Work Plan - Additional Site Investigation (11/14/2011), ISCO Pilot Test Work Plan (5/15/2012), Quarterly Summary Report, Further Quarter 2012 (1/16/2013), and Remedial Action Plan (4/23/2013). ACEH disagreed with RAP work and requested preparation of FS/CAP. ACEH states proposed MW-12A destruction needs a replacement as it is the only site well that monitors deeper groundwater.</p>	ACEHS, 2013a			
October 2013	<p>Fuel Leak Case R00000219 - ACEH Correspondence Post-meeting with RPS, ACEH noted "immediate risk to sensitive receptors from shallow groundwater migrating off-site." Correspondence had action items for Groundwater Assessment, FS/CAP, Public Participation Notification, Remedial Design, Groundwater Monitoring, Gant Chart-Path to Closure Project Schedule. "ACEH concurs that groundwater in the deeper water zone monitored by well MW-12A has not been impacted by the petroleum hydrocarbons identified in the shallow groundwater zone." ACEH requested to retain MW-12A until FS/CAP has been accepted.</p>	ACEHS, 2013b			
November 2013	<p>Work Plan - Monitoring Well Installation Two down-gradient monitoring wells proposed to assess the extent of the petroleum hydrocarbon and MTBE dissolved-phase migration. MW-18 and MW-19 to be advanced to maximum depth of 15 ft bgs. Installation is pending off-site owner approval.</p>	Antea Group, 2013c			

Table C-1: Summary of Petroleum Hydrocarbon Investigation and Remediation Events

Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
November 2013	Corrective Action Plan Technical and cost feasibility of three remediation alternatives: Soil Excavation and Off-Site Disposal, Soil Excavation with Oxygen Release Amendment, Dual Phase Extraction.	Antea Group, 2013d			
November 2013	Project Schedule Pacific Convenience & Fuel provided ACHCSA with a Project Schedule. Tentative schedule slated RAP Implementation for June 9-October 31, 2014 (105 days) followed by additional well installation. Groundwater Monitoring was slated for January 1, 2014 through December 25, 2015 (562 days).	Pacific, 2013a			
December 2013	Draft Fact Sheet Pacific Convenience & Fuel provided ACHCSA with a Draft Fact Sheet for public notice purposes. In the draft, "excavation activities are anticipated to begin between April and June of 2014 and take approximately two weeks to complete". Referenced Antea's Corrective Action Plan (CAP), dated November 22, 2013.	Pacific, 2013b			
December 2013	Fuel Leak Case RO0000219 - ACEH Correspondence ACEH reviewed case file and Work Plan - Monitoring Well Installation (11/21/2013) and disagreed with proposed installation of two monitoring wells down-gradient the on-site MW-17. ACEH proposes soil borings with grab-groundwater samples collected from temporary borings.	ACEHS, 2013c			
January 2014	Site Investigation Report Completed ten soil borings in vicinity of MW-6 during July 25-26, 2013. Borings were advanced to 15 ft bgs and sampled continuously beginning at 5 ft bgs. Two areas of concern noted: east of the fuel dispensers near MW-12 and MW-17; southwest corner of site between MW-6 and MW-14.	Antea Group, 2014a			
February 2014	Addendum Work Plan Site plan with proposed soil borings	Antea Group, 2014b			
February 2014	RO219 - 449 Hegenberger ACEH email to PC&F. "ACEH conditionally concurs with proposed correction action plan concept presented in the CAP provided you address the technical comments and send us the reports listed below." In addition, ACEH requested RDIP with MW destruction, shallow MW replacement, and protocols for protection of remaining onsite wells.	ACEHS, 2014a			
May 2014	Work Plan - Well Destruction Proposed destruction of five on-site monitoring wells (MW-12, MW-12A, MW-17 for A1 excavation; MW-6, MW-14 for A2 excavation).	Antea Group, 2014c			
June 2014	ACEH review: Work Plan - Well Destruction ACEH approves of Work Plan, with requested change in MW-10 destruction.	ACEHS, 2014b			
June 2014	ACEH correspondence: MW-7/MW-8 ACEH acknowledges adjacent property owner's request to remove MW-7/MW-8. ACEH "encourages them to continue to provide access to these wells until such time it has been demonstrated that the wells are no longer needed."	ACEHS, 2014c			
June 2014	Remedial Design and Implementation Plan RDIP details proposed shallow soil excavation in the southwest and eastern portions of the site. The open excavation will be amended with ORC prior to backfilling with clean materials.	Antea Group, 2014d			
June 2014	Work Plan - CPT Investigation Proposed advancement of two CPT borings (CPT-1 & CPT-2) in preparation for shoring designs of pending excavations.	Antea Group, 2014e			
August 2014	ACEH email correspondence ACEH reviewed and approved of Work Plan - CPT Investigation.	ACEHS, 2014d			
August 2014	ACEH email correspondence ACEH reviewed and approved of RDIP with technical comments.	ACEHS, 2014e			
August 2014	Fact Sheet on Environmental Assessment CAP Public Notice, Fuel Leak Case No. RO0000219	ACEHS, 2014f			
September 2014	Well Destruction Report MW-10, MW-12, MW-12A, and MW-17 destroyed 6/18/14 to allow access for A1 excavation.	Antea Group, 2014f			
October 2014	Revised Remedial Design and Implementation Plan ACEH (email: 8/18/2014) requested revisions to Plan that details proposed shallow soil excavation in the SW and E portions of the site. Notice that MW-10, MW-12, MW-12A, and MW-17 were destroyed 6/18/2014.	Antea Group, 2014g			

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Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
November 2014	Off-site borings (SB-11 & SB-12) and wells (MW-7 & MW-8) ACEH email to off-site property owner. ACEH proposes relocating SB-11/SB-12 outside property owner's location. ACEH maintains need to retain MW-7/MW-8. ACEH notes, "Please note that Antea will be performing corrective action at the UNOCAL site in the near future which should remove residual source material, and as such, future groundwater monitoring may be limited to one additional year."	ACEHS, 2014g			
November 2014	Site Investigation Report Report on three soil borings (SB-13@20 ft, SB-14@15 ft, SB-15@16 ft) and grab-samples from each boring. TPHd as motor oil detected (280-480 ug/L), not related to site, and non-detect BTEX except for minor toluene detect (SB-15@ 5.9 ug/L).	Antea Group, 2015h			
February 2015	Summary of ACEH Meeting (2/24/2015) Topics at meeting: Property ownership & RPs identification, groundwater monitoring wells MW-7 and MW-8, soil borings SB-11 and SB-12, and upcoming site activities. A review of groundwater analytical data performed during the meeting resulted in a determination that wells MW-7 and MW-8 are no longer need for plume delineation, and that these wells can be destroyed.	ACEHS, 2015a			
March 2015	Sensitive Receptor Survey SRS reviewed ACPWA and DWR records, conducted web-based receptor search, and performed a site reconnaissance for potential receptors. Three irrigation wells were located from DWR records (980 feet south-southeast, 1,700 feet south-southeast, and 2,570 feet south-southeast). No receptors are expected to be affected by site conditions.	Antea Group, 2015a			
March 2015	Work Plan - Well Destruction and Waste Characterization Antea proposed to destruction of MW-7 & MW-8 per ACHCSA meeting (2/24/2015). Three soil borings proposed for waste characterization of the proposed A1 and A2 excavation areas (estimated 1,475 cubic yards).	Antea Group, 2015b			
May 2015	Revised Remedial Design and Implementation Plan Plan was revised to reflect schedule changes.	Antea Group, 2015c			
June 2015	Revised Remedial Design Implementation Plan Report Review May 13, 2015, Revised RDIP proposes to excavate area A2 in two separate excavations, separated by an electrical utility line that powers the existing 76 Station. ACEH indicated that the RDIP scope of work has not been adequately justified and cannot be approved at this time, pending addressing the ACEH technical comments and revising the Revised RDIP.	ACEHS, 2015b			
July 2015	Conditional Approval of Work Plan and Addendum Figures 2 and 3 provided as attachments to email (6/24/2015) and depict three soil boring locations for area A2, and two off-site borings, SB-11 and SB-12. ACEH proposed one additional off-site boring between SB-11/SB-12. ACEH indicated that proposed work scope may be implemented following addressing and incorporation of technical comments during field implementation.	ACEHS, 2015c			
August 2015	Site Investigation Report Down-gradient soil borings (SB-11 & SB-12) advanced. No petroleum hydrocarbons or fuel oxygenates were detected in soil or groundwater from these borings. MW-6 & MW-14 were destroyed.	Antea Group, 2015d			
December 2015	Moratorium for Excavation Work Plan Antea notified ACEH of City of Oakland's grading work moratorium for October 15, 2015-April 15, 2016. ACEH acknowledged and requested a revised date for RAP report submittal.	ACEHS, 2015d			
February 2016	Well Destruction Report MW-7 and MW-8 destroyed by over-drilling and backfilling each borehole with neat cement.	Antea Group, 2016a			
March 2016	Well Destruction Report MW-7 and MW-8 destroyed by over-drilling and backfilling each borehole with neat cement.	Antea Group, 2016b			

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Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
Groundwater					
1992 - 2016	<p>Groundwater Monitoring Petroleum hydrocarbon concentrations in groundwater samples have varied over the duration of monitoring. A general decrease in petroleum hydrocarbon concentrations has been observed in most locations.</p> <p>Historic Levels: The following are the highest observed concentrations of each petroleum hydrocarbon analyte. TPHg: 3,000,000 ug/L (MW-6; March 1993). Benzene: 28,000 ug/L (MW-6; December 2007). MTBE: 16,000 ug/L (MW-6; December 2007).</p> <p>Monitoring activities detected free product (LPH) in three locations over the historical monitoring of the groundwater: MW-1, MW-2, and MW-6. Since November 1999, all monitoring well groundwater samples have been dissolved-phase detections and no LPH observed.</p>	Delta, 2009b; Ge. Ier-Ryan, 2003a; Antea Group, 2016c; Antea Group 2016d ?			
April 1995	<p>Groundwater: Dissolved-Phase Plume 125,000 gallons of impacted groundwater treated and properly disposed resulting from March-April 1995 excavation activities.</p>	Kaprealian, 1995c			
Free Product					
February 1992 - November 1999	<p>Free Product Removal As of 1Q2000, a historical total LPH volume recovered was 19.7 gallons. Passive oil skimmers installed in MW-1 (1992) and MW-6 (1996) and hand-bailing removed the LPH from these locations.</p> <p>Activities to monitor, remove, and collect free product (LPH) focused on three monitoring well locations. MW-1: Multiple LPH detection events (trace to 0.13 ft) from Feb 1992 - Feb 1995; skimmer operated Aug 1992-Feb 1995; MW-1 destroyed 5/95. MW-2: One LPH detection event (2/94) from Feb 1992 to Feb 1995; MW-2 destroyed 5/95. MW-6: Location paved over in 1995; well restored 1996; LPH noted July 1996 through Nov 1999. Passive skimmer installed in 1996. DPE event (Nov 1999) on MW-6 resulted in <0.01 ft LPH (no passive skimmer) since December 1999.</p>	Kaprealian, 1992b; Gettler-Ryan, 2000	19.7 gallons LNAPL removed		
November 1999	<p>Dual-Phase Vacuum Extraction Event Report Results of DPE event conducted 11/19-11/24/1999. High vacuum liquid-ring pump DPE with thermal oxidizer performed on MW-6 and MW-7. Total recovery by vapor was 52.45 gallons / 328.26 lbs. Total recovery volume by water was <1,000 gallons. MW-6 groundwater concentrations on 11/24/99: TPH-G - 6,500,000 ug/L; Benzene - 9,500 ug/L; Toluene - 47,000 ug/L; Ethyl Benzene - 29,000 ug/L; Total Xylenes - 310,000 ug/L; MTBE - <25,000 ug/L.</p>	TRC Alton Geoscience, 2000	<p>Vapor mass removed: 52.45 gallons / 328.26 lbs</p> <p>Groundwater volume removed: <1,000 gallons</p>		
August 2003	<p>Dual Phase Extraction Work Plan Gettler-Ryan submitted DPE Work Plan (8/28/2003) at request of COP. Work Plan proposed five to six week DPE event at the site to address elevated hydrocarbon dissolved-phase concentrations in vicinity of MW-6.</p>	Gettler-Ryan, 2003b			
October 2004 - May 2005	<p>Workplan for Dual-Phase Vacuum Extraction Pilot Test After project transfer to TRC in October 2003, TRC submitted a Workplan for 72-hour DPE pilot test. Dual-Phase Extraction Report (5/24/2005) summarizes April 8-9, 2005 field work. "Influent concentrations and mass removal rates suggested DPE is not a viable long-term remedial alternative for removing source hydrocarbons from this site." "TRC recommends investigation of alternative remedial methods to obtain site closure."</p>	TRC, 2004; TRC, 2005			
April 2005	<p>Dual-Phase Extraction Report A 24-hour DPE event was performed 4/8-9/2005. Average flow rate was 6.6 cfm at average vacuum of 23 inches Hg. TPH measurements by OVA were 2,640 ppmv at the start and 210 ppmv at the conclusion of the DPE event. Approximately 1,77 lbs of TPH-g were removed in 24 hours of operation. A total of 2,000 gallons of groundwater were removed from the subsurface.</p>	TRC, 2005	<p>1.77 lbs TPHg removed.</p> <p>2,000 gallons of groundwater removed.</p>		

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Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
Dissolved-Phase					
April 1995	Groundwater: Dissolved-Phase Plume 125,000 gallons of impacted groundwater treated and properly disposed resulting from March-April 1995 excavation activities.	Kaprealian, 1995c			
May-July 2016	Excavation Completion Report Upon completion of the implemented 2016 RAP excavation activities, the following were noted. 6,867 gallons of excavation wastewater properly treated and discharged in compliance with EBMUD permit This work was conducted per a Revised Remedial Action Plan (RAP), dated May 13, 2015. The revised RAP was conditionally accepted by ACHCS on July 6, 2015.	Antea Group, 2016e			
Excavation					
September 1994	Remediation: Abandonment of Hydraulic Hoists and Oil/Water Separator GeoStrategies, Inc. (GSI) abandoned O/W separator and three hydraulic hoists during September 1994. Western hoist pit over-excavated to 4 ft x 5 ft x 8 ft (~5.9 yd3 volume). Pits backfilled with clean sand. O/W separator backfilled with clean pea gravel. Concrete seal from fill to surface. Excavated soil disposed 10/21/1994.	GeoStrategies, 1994			
March-July 1995	Remediation: Excavated Soils Excavated soils from UST removals (to 16 ft bgs), dispenser islands/product lines replacement (3 to 6 ft bgs), and additional soils (4.5 ft bgs) from building demolition. See report Figure 1 for Excavation Dimensions. A total of 6,444 yd3 (9,666 tons) of impacted soil removed, tested, and properly disposed. Volumes verified by Conrad & Sons Trucking manifests during 3/6/95 to 7/8/95 (358 truckloads). See report Table 3: Summary of Soil Disposal.	Kaprealian, 1995d	6,444 yd3 of impacted soil excavated & disposed. 125,000 gallons of impacted groundwater removed & disposed.	Table 3: Summary of Soil Disposal	Figure 1: Excavation Dimensions
May-July 2016	Excavation Completion Report A Revised Remedial Action Plan (RAP), dated May 13, 2015. The revised RAP was conditionally accepted by ACHCS on July 6, 2015. Execution of the work was delayed until May 2016 due to permitting issues with the City of Oakland. The goal of the excavation plan was to excavate residual fuel petroleum hydrocarbon impacted soil remaining beneath the Site after the 1995 excavation activities were completed in which an estimated 6,444 cubic yards (9,666 tons) of soil were excavated and disposed of at an off-site facility (Kaprealian, 1995). Upon completion of the implemented RAP excavation activities, the following were noted. 1,559.85 tons of soil excavated and properly disposed 6,867 gallons of excavation wastewater properly treated and discharged in compliance with EBMUD permit 1,403.75 lbs of Regensis branded Oxygen Release Compound® Advanced (ORC-A) amendments backfilled into excavation limits for additional post-excavation bioremediation of residual impacts The RAP was prepared for excavation of two areas designated as "A1" and "A2; one area located at the southwestern corner of the Site (immediately south of the car wash and the existing service building structure) and the eastern side of the Site (immediately adjacent to the existing dispenser islands). These two excavation areas were later subdivided into four excavation footprints, with former area "A1" separated into three excavations ("E-2", "E-3", and "E-4"), while former area "A2" was renamed excavation "E-1". Any changes in the anticipated footprint of the excavation areas were the due to impediments encountered during the field activities requiring the field supervisor to alter the excavation plan as a field conditions dictated.	Antea Group, 2016e	1,559.85 tons of soil excavated and properly disposed 6,867 gallons excavation wastewater treated and discharged under EBMUD permit 1,403.75 lbs ORC®-A amendments to excavation prior to backfilling		
Remediation					
January 2009	Remediation: Work Plan for Hydrogen Peroxide Injection Proposed test injection of hydrogen peroxide into MW-6 (four events: one per week for four weeks). An injection total of 560 gallons of hydrogen peroxide was planned.	Delta, 2009a			
July 2009	Remediation: Technology Consideration During April 2009 MW-6 and MW-9 were sampled and analyzed for terminal electron acceptors (TEAs), including nitrate, iron, and sulfate. All TEAs were either depleted or at low levels. Up-gradient clean groundwater noted higher sulfate levels. Therefore, magnesium sulfate additions as a source of sulfate to the impacted groundwater was considered feasible.	Delta, 2009d			

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Date	Description	Cited Data Sources	LNAPL / Soil / Water Removal	Data Tables	Graphics
July 2010	<p>Additional Site Investigation: Work Plan Details well installation, development, surveying, and sampling of two monitoring/extraction wells (MW-11 & MW-2) and of MW-12A and MW-13. MW-14 was not installed due to lack of encroachment permit from the City of Oakland.</p> <p>During June 22-23, 2010, MW-12A boring advanced to 44 ft bgs (screened interval 30 to 34 ft bgs). MW-13 boring advanced to 15 ft bgs (5 to 15 ft bgs).</p> <p>Analytical results from MW-12 and MW-12A soil borings indicated petroleum hydrocarbon impacts. MW-12A noted impacts at 26 ft and 32 ft; however, only near detection limits for 34 ft bgs. MW-12 noted minor impacts at 8 and 12 ft bgs, and near-detection limits at 20 ft.</p> <p>July 7-8, 2010, extraction event (Belshire Environmental Services, Inc) on MW-11, MW-12, and MW-12A. LPH/groundwater extracted (1,800 gallons) from MW-11. MW-12 extracted only 500 gallons. MW-12A extracted 1,300 gallons. Total of 3,600 gallons extracted.</p> <p>Delta recommends monthly batch extraction from MW-12, MW-6, and MW-12A. Well-graded sand encountered in boring MW-12A at 37 to 43 ft bgs, with clayey sand at 44 ft.</p> <p>Survey datum NAD 83.</p>	Delta, 2010c	<p>Total of 3,600 gallons of LPH/groundwater extracted: MW-11: 1,800 gallons MW-12: 500 gallons MW-12A: 1,300 gallons</p>		
November 2011	<p>Additional Site Investigation: Work Plan In order to evaluate hydraulic subsurface conditions prior to pilot test implementation of ISCO, direct-push Hydraulic Profiling Tool (HPT) application was proposed for five locations (HPB-1 to HPB-5) to depth of 13 ft bgs in a location between MW-14 and MW-17.</p>	Antea Group, 2011b			
May 2012	<p>ISCO Pilot Test Work Plan Pilot test for alkaline activated sodium persulfate injection. Bench testing proposed to evaluate soil buffering characteristics and to analyze TOC & SOD in collected samples. Areas of interest are Area 1 (20 ft x 30 ft area; 60 ft south of car wash building) and Area 2 (20 ft x 25 ft area; east of dispenser islands, near MW-17).</p> <p>After pilot test injections, groundwater samples will be analyzed monthly for at least four months.</p> <p>During March 2012 Hydraulic Profile Borings (HPB-1 thru HPB-5) were advanced to 13 ft bgs.</p>	Antea Group, 2012			
April 2013	<p>Remedial Action Plan Proposed shallow soil excavation in the southwest and eastern portion of the site.</p>	Antea Group, 2013b			
November 2013	<p>Corrective Action Plan: Alternatives Analysis Three remediation options evaluated: 1. Soil Excavation with ORC Amendment 2. Dual Phase Extraction 3. ISCO Soil Excavation with ORC Amendment recommended.</p>	Antea Group, 2013d			
June 2014	<p>Remedial Design and Implementation Plan Details proposed shallow soil excavation in the southwest and eastern portions of the site. The open excavation will be amended with ORC prior to backfilling with clean materials.</p>	Antea Group, 2014d			
October 2014	<p>Revised Remedial Design and Implementation Plan ACEH generally concurs with the proposed scope of work. ACEH requests that technical comments are addressed, the RDIPis updated, and the technical reports are provided as requested.</p>	Antea Group, 2014g			
May 2015	<p>Revised Remedial Design and Implementation Plan Plan was revised to reflect schedule changes.</p>	Antea Group, 2015c			

Table C-1: Summary of Petroleum Hydrocarbon Investigation and Remediation Events

Alameda County Environmental Health Services (ACEHS), 2013b, Fuel Leak Case RO0000219 and GeoTracker Global ID T0600101476, correspondence, UNOCAL #5043, 449 Hegenberger Road, Oakland, California, October 8

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Antea Group, 2012, ISCO Pilot Test Work Plan, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, May 15.

Antea Group, 2013a, Work Plan - Monitoring Well Destruction, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, February 11.

Antea Group, 2013b, Remedial Action Plan, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, April 23.

Antea Group, 2013c, Work Plan - Monitoring Well Installation, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, November 21.

Antea Group, 2013d, Corrective Action Plan, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, November 22.

Antea Group, 2014a, Site Investigation Report, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, January 9.

Antea Group, 2014b, Addendum Work Plan, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, February 18.

Antea Group, 2014c, Work Plan - Well Destruction, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, May 8.

Antea Group, 2014d, Remedial Design and Implementation Plan, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, June 19.

Antea Group, 2014e, Work Plan - CPT Investigation, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, June 20.

Antea Group, 2014f, Well Destruction Report, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, September 17.

Antea Group, 2014g, Revised Remedial Design and Implementation Plan, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, October 29.

Antea Group, 2014h, Site Investigation Report, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, November 12.

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Antea Group, 2016b, Well Destruction Report, 76 Station No. 5191/5043, 449 Hegenberger Road, Oakland, California, March 14.

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Gettler-Ryan, 2003a, Third Quarter Event of July 1, 2003, Tosco (Unocal) Service Station #5043, 449 Hegenberger Road, Oakland, California, July 29.

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Kaprealian, 1992b, Quarterly Summary Report, Unocal Service Station #5043, 449 Hegenberger Road, Oakland, California, September 1992.

Kaprealian, 1992c, Continuing Ground Water Investigation, Unocal Service Station #5043, 449 Hegenberger Road, Oakland, California, October 12.

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Kaprealian, 1994b, Soil Sampling Report, Unocal Service Station #5043, 449 Hegenberger Road, Oakland, California, October 7.
Kaprealian, 1995a, Addendum to Work Plan/Proposal, Unocal Service Station #5043, 449 Hegenberger Road, Oakland, California, February 23.
Kaprealian, 1995b, Quarterly Summary Report 1st Quarter - 1995, Unocal Service Station #5043, 449 Hegenberger Road, Oakland, California, March 1995.
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*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix D

March 2015 Sensitive Receptor Survey

March 13, 2015

Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Sensitive Receptor Survey
Site: 76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California
Fuel Leak Case No. RO0000219

Dear Mr. Nowell;

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call:

Walter T. Sprague
Pacific Convenience & Fuel
7180 Koll Center Parkway, Suite 100
Pleasanton, California 94566
Tel: (925) 931-5714
Fax: (925) 905-2746
WSprague@pcandf.com

Sincerely,

PACIFIC CONVENIENCE & FUEL



WALTER SPRAGUE
Director of Retail Services

Attachment

Sensitive Receptor Survey

*76 Station No. 5191/5043
449 Hegenberger Road
Oakland, CA*

*Alameda County Health Care Services Agency Fuel Leak
Case No. R00000219*

*San Francisco Bay, Regional Water Quality Control
Board Case No. 01-1601*

GeoTracker Global ID No. T0600101476

Antea Group Project No. I42705191

March 13, 2015

Prepared for:
Mr. Keith Nowell
Alameda County Health Care Services
Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Prepared by:
Antea® Group
11050 White Rock Road, Suite 110
Rancho Cordova, CA 95670
+1 800 477 7411

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2.0 SITE DESCRIPTION AND LAND USE	2
3.0 SENSITIVE RECEPTOR SURVEY	2
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Figure 3	Sensitive Receptor Map
Figure 4	Historical Groundwater Flow Directions

Appendices

Appendix A	Previous Investigation and Site History Summary
Appendix B	DWR Well Completion Reports

Certification

Information, conclusions, and recommendations provided by Antea Group in this document regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

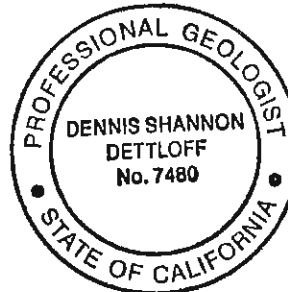
Please contact the undersigned at 800-477-7411 if you have any questions.



Dennis S. Dettloff, P.G.

Senior Project Manager

California Registered Professional Geologist No. 7480



Sensitive Receptor Survey

76 Station No. 5191/5043
Oakland, CA

1.0 INTRODUCTION

Antea Group has prepared this *Sensitive Receptor Survey* for the referenced site in Oakland, California (**Figure 1**). The subject site is an operating 76 gasoline station located on the southwestern corner of Hegenberger Road and Edgewater Drive in Oakland, CA. Station facilities include three underground storage tanks (USTs), two dispenser islands, a station building, and a carwash. A total of ten groundwater monitoring wells are located at or near the site (**Figure 2**). Please refer to **Appendix A** for additional site information and for the history of environmental investigations and remedial actions.

The site is currently under the lead regulatory oversight of the Alameda County Health Care Services Agency (ACHCSA). Selected reports and agency correspondence for the site can be found on the State of California Water Resources Control Board's online GeoTracker database (Global I.D. No. T0600101476).

2.0 SITE DESCRIPTION AND LAND USE

Station No. 5191/5043 is an active 76-branded gasoline retail outlet located at the intersection of Hegenberger Road and Edgewater Drive in a commercial area of Oakland, California. The site is bounded to the north by Edgewater Drive; to the east by Hegenberger Road, and to the south and west by a parking lot (**Figure 2**). The closest residential buildings are approximately 830 feet west southwest of the site. Station facilities include a station building, a car wash, six fuel dispensers on two islands under a single canopy, and three fuel underground storage tanks (USTs) (**Figure 2**).

3.0 SENSITIVE RECEPTOR SURVEY

Antea Group conducted a survey to identify any sensitive receptors which have the potential to be affected by a petroleum hydrocarbon release at the site. The survey included a review of well completion reports from the Department of Water Resources (DWR) and from Alameda County Public Works Agency (ACPWA), a web-based search for potential receptors, and a site reconnaissance to confirm receptor location. In addition, East Bay Municipal Utility District (EBMUD) was contacted to determine if they have any water supply wells in the area.

3.1 Well Search

Antea Group contacted the DWR to obtain copies of Well Completion Reports and ACPWA to obtain a copy of their records for wells located within 0.5 miles of the site. The purpose of the search was to identify all water supply,

domestic, municipal, and irrigation wells which have the potential to be affected by a petroleum hydrocarbon release at the site. Antea Group identified three water supply wells in the search area whose locations could be confirmed:

1. W.E. Lyons Construction, Irrigation (980 feet south-southeast of the site)
2. Ratto Bros, Inc., Irrigation (2,570 feet south-southeast of the site)
3. Ratto Brother, Irrigation (1,700 feet south-southeast of the site)

Five additional wells were identified whose location could not be determined which may be water supply wells within 0.5 miles of the site. Two of the water supply wells listed above were identified from the data provided by the DWR, the third well was identified from the data provided by ACPWA. A copy of the well completion reports provided by the DWR for the two irrigation wells is included as **Appendix B**. Well locations are shown on **Figure 2**.

According to EBMUD, they do not operate any water supply wells within a half mile radius of the site.

3.2 Web-Based Receptor Search

Using Google Maps and Google Earth, Antea Group conducted a web-based search to identify any sensitive receptors (schools, churches, day care facilities, elderly care facilities, hospitals, surface water bodies, etc.) within a 0.5 mile radius of the site which have the potential to be affected by a petroleum hydrocarbon release at the site. Antea Group identified the following sensitive receptors during the web-based search (all distances are approximate):

- A. Lighthouse Community Charter School (150 feet east)
- B. Canal which flows to San Leandro Bay (1,150 feet southwest)
- C. ITT Technical Institute (1980 feet north northwest)
- D. Paradise Baptist Church (2,060 feet southeast)
- E. Brookfield Elementary School and Early Childhood Center (2,170 feet east southeast)
- F. Praise God Korean Church and Oikos University (2,170 feet north northwest)
- G. Evangelical Lutheran Church (2,700 feet northwest)

Receptor locations within the survey area are shown on **Figure 3**. Based on the above identified receptors distance from the site, location up-gradient or cross-gradient to the site, and the extent of the impacted groundwater plume, they are not anticipated to be affected by a petroleum hydrocarbon release at the site.

3.3 Site Reconnaissance

Antea Group conducted a site reconnaissance on March 5, 2015 to verify any receptors reported during the web-based search, and identify any receptors not reported during the web-based search. Antea Group was able to verify the location of all the receptors reported above (**Section 3.2**). In addition, Antea Group identified the following sensitive receptors during the site reconnaissance.

- H. Drainage Ditch (931 feet southeast)
- I. Mountain of Fire and Miracle Ministries (1,340 feet north northeast)
- J. Alameda Hebron Baptist Church (1,540 feet west northwest)

Based on the distance from the site, location with respect to the site and the prevailing groundwater flow direction, predominately to the southeast and to a lesser extent to the southwest and south (**Figure 4**), the potential sensitive receptors identified above and in **Section 3.2** do not appear and are not anticipated to be affected by soil, soil vapor, or groundwater impact due to a petroleum hydrocarbon release at the site.

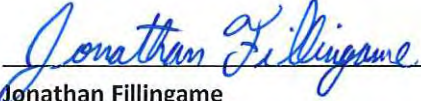
4.0 SUMMARY

As part of this *Sensitive Receptor Survey*, Antea Group conducted a well radius search through the DWR, a web-based search, and a site reconnaissance sensitive receptors which have the potential to be affected by a petroleum hydrocarbon release at the site. The results indicate that each of the identified sensitive receptors and wells within a 0.5-mile radius of the site do not appear and are not anticipated to be affected by the soil, soil vapor, or groundwater impacts due to a petroleum hydrocarbon release at the site.

5.0 REMARKS

The descriptions, conclusions, and recommendations contained in this report represent Antea Group's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. For any reports cited that were not generated by Antea Group, the data from those reports is used "as is" and is assumed to be accurate. Antea Group does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. This report is based upon a specific scope of work requested by the client. The Contract between Antea Group and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were conducted. This report is intended only for the use of Antea Group's Client and anyone else specifically listed on this report. Antea Group will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea Group makes no express or implied warranty as to the contents of this report.

If you have questions about this report and the site, please contact Dennis Dettloff at 800-477-7411.


Jonathan Fillingame
Staff Geologist

Information, conclusions, and recommendations provided by Antea Group in this document regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Reviewed by:

 Date: 3/13/15
Dennis S. Dettloff, P.G.
Senior Project Manager

Figures

- | | |
|----------|--|
| Figure 1 | Site Location Map |
| Figure 2 | Site Plan |
| Figure 3 | Sensitive Receptor Map |
| Figure 4 | Historical Groundwater Flow Directions |

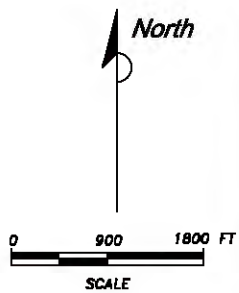
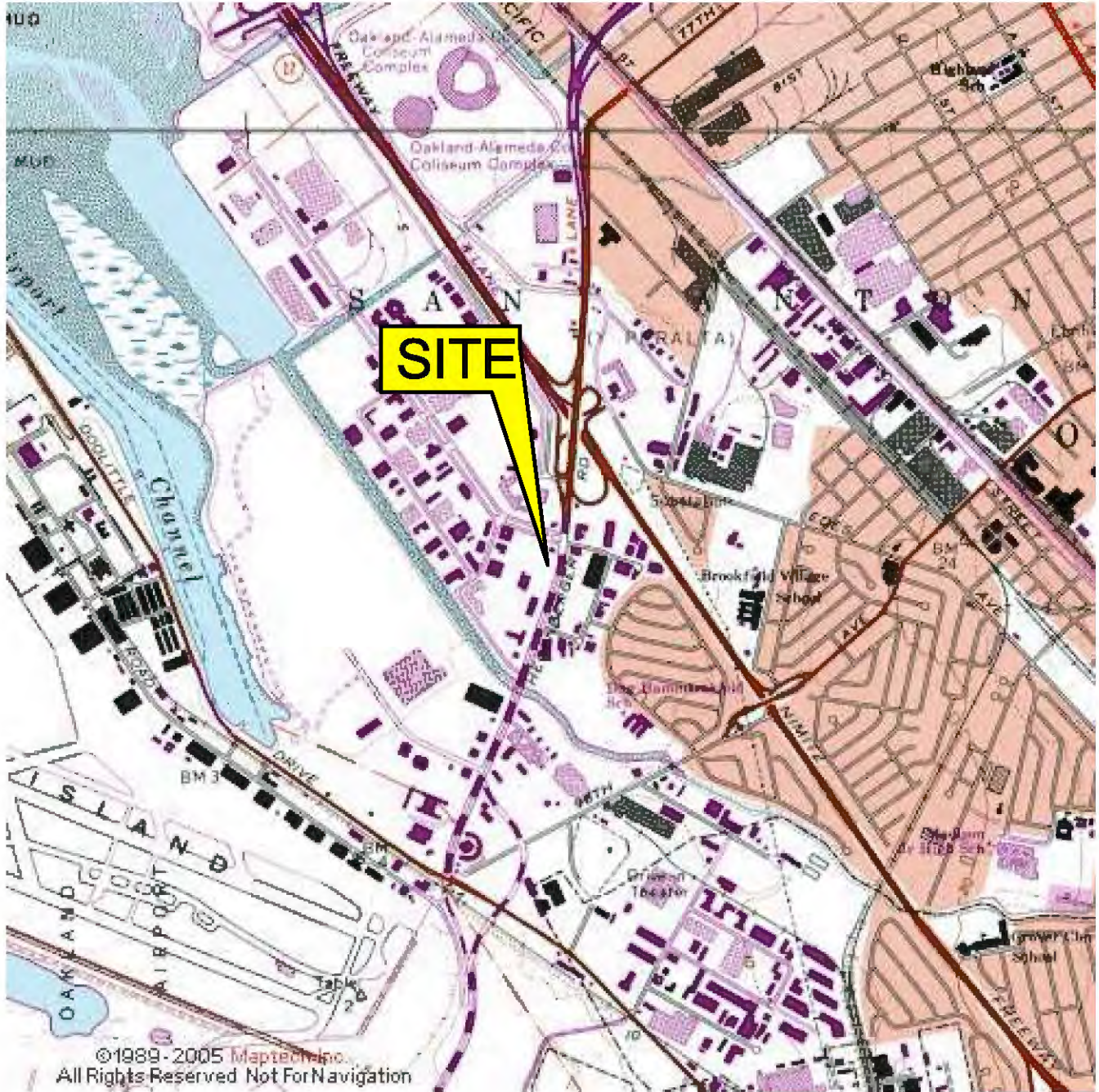

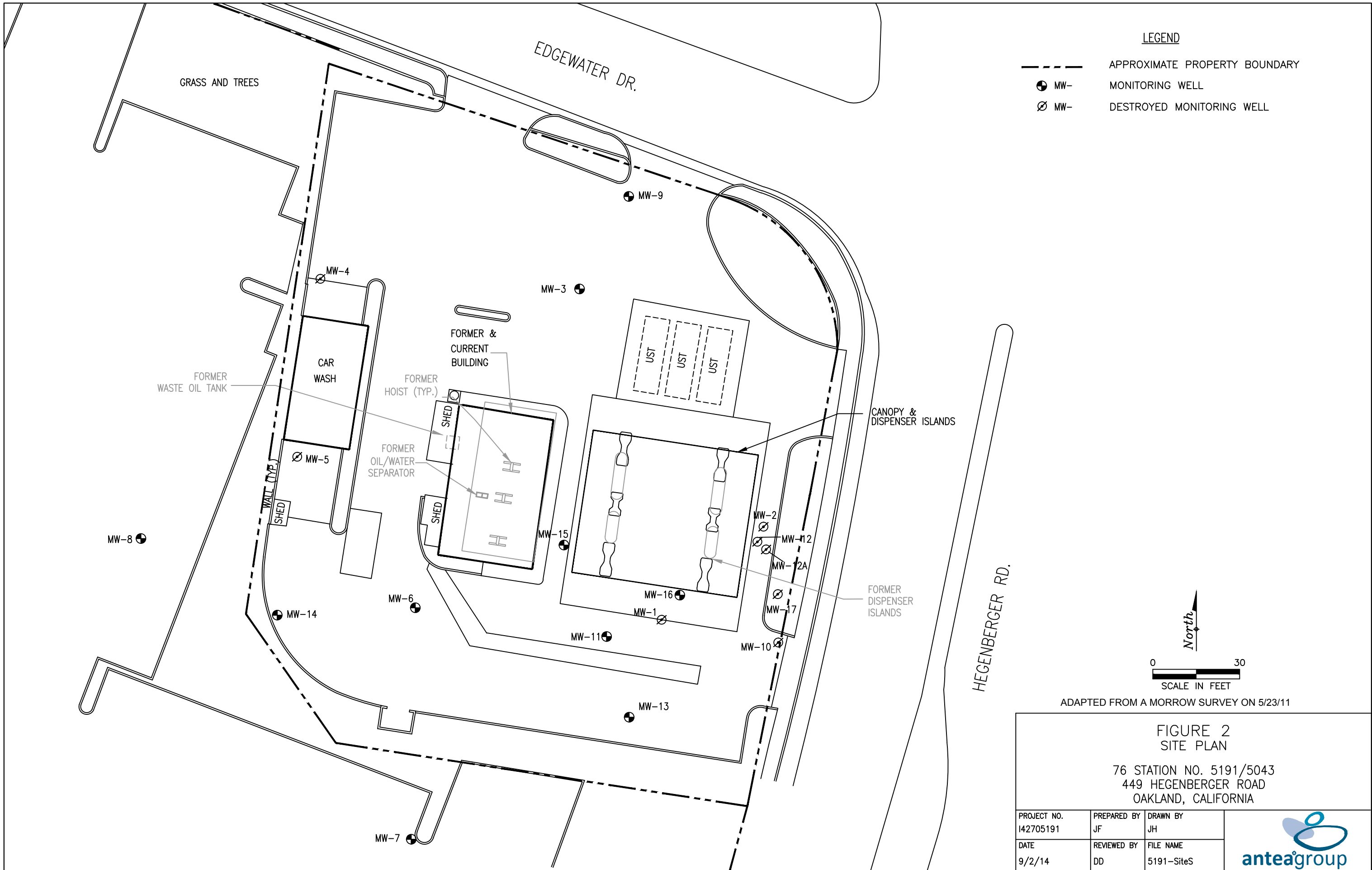


FIGURE 1
SITE LOCATION MAP
 76 STATION NO. 5191/5043
 449 HEGENBERGER ROAD
 OAKLAND, CALIFORNIA

PROJECT NO. 142705191	PREPARED BY EW	DRAWN BY DR/JH	
DATE 1/31/11	REVIEWED BY DD	FILE NAME 5043-SiteLocator	

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND EAST QUADRANGLE (1973)





449 Hegenberger Rd, Oakland, CA 94621

Half Mile Radius

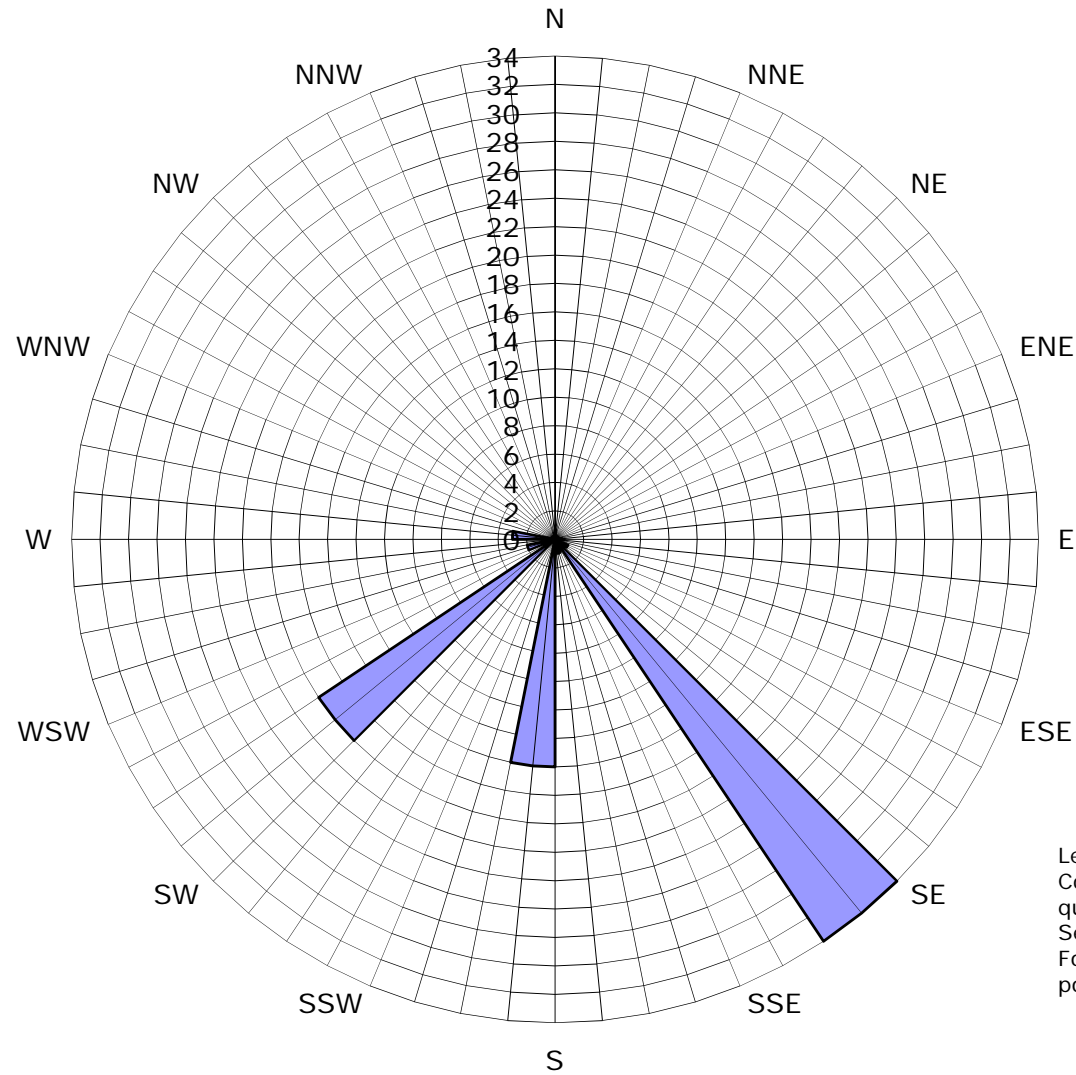
Figure 3
Sensitive Receptor Map
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

© 2014 Google

Imagery Date: 6/9/2014 37°44'11.69" N 122°11'50"

1993

Figure 4
Historical Groundwater Flow Directions
76 Station No. 5191/5043
 449 Hegenberger Road
 Oakland, California



Legend
 Concentric circles represent
 quarterly monitoring events
 Second Quarter 1992 through
 Fourth Quarter 2014. 77 data
 points shown

■ Groundwater Flow Direction

Sensitive Receptor Survey
76 Station No. 5191/5043
Oakland, CA
Antea Group Project No. I42705191



Appendix A

Previous Investigation and Site History Summary

PREVIOUS INVESTIGATION AND SITE HISTORY SUMMARY

October 1991 - Four soil samples were collected from the product pipe trenches at depths of approximately 3 feet below ground surface (bgs) during a dispenser island modification. The product pipe trenches were subsequently excavated to the groundwater depth at 4 to 4.5 feet bgs.

February 1992 - Three monitoring wells, MW-1 through MW-3, were installed at the site to depths ranging from 13.5 to 15 feet bgs.

August 1992 - Three additional monitoring wells, MW-4 through MW-6, were installed at the site to a depth of 13.5 feet bgs.

September 1994 - One 280-gallon waste-oil UST was removed from the site. The UST was made of steel, and no apparent holes or cracks were observed in the UST. One soil sample was collected from beneath the former UST at a depth of approximately 9 feet bgs. No petroleum hydrocarbons were reported.

January 1995 - Two additional monitoring wells, MW-9 and MW-10, were installed to depths of 13 and 15 feet bgs. In addition, monitoring wells MW-4 and MW-5 were destroyed by over-drilling the wells and backfilling with neat cement.

March 1995 - Two 10,000-gallon gasoline USTs and one 10,000-gallon diesel UST were removed from the site. Groundwater was encountered in the tank cavity at a depth of approximately 8.5 feet bgs. Soil samples contained total petroleum hydrocarbons as diesel (TPHd) and benzene, and TPH as gasoline (TPHg). Approximately 125,000 gallons of groundwater were pumped from the site for remediation and properly disposed off-site. Four fuel dispenser islands and associated product piping were also removed. Based on the results of the confirmation samples, the product dispenser islands were over excavated to approximately 6 feet bgs.

March-April 1995 - During demolition activities of the former station building, soil samples were collected from two excavations, which were subsequently over excavated. Confirmation samples contained petroleum hydrocarbons. An additional area on the south side of the former station building was excavated based on photo-ionization detector (PID) readings. Two monitoring wells, MW-1 and MW-2, were destroyed in order to allow for over excavation activities to extend to an area adjacent to the dispenser islands in the southeastern quadrant of the site. The excavated areas were subsequently backfilled with clean-engineered fill.

April 1997 - Two additional monitoring wells, MW-7 and MW-8, were installed off-site to the south and east on the neighboring property to a depth of 13 feet bgs. In addition, monitoring well MW-3, which was damaged during site renovation activities, was fully drilled out and reconstructed in the same borehole.

October 2003 - Site environmental consulting responsibilities were transferred to TRC.

April 8-9, 2005 - TRC conducted a 24-hour dual phase extraction (DPE) test at the site using monitoring well MW-6. The 24-hour DPE test was only moderately successful at removing vapor-phase petroleum hydrocarbons from the subsurface; therefore, TRC recommended DPE no longer be considered a viable remedial alternative for the site.

October 2007 - Site environmental consulting responsibilities were transferred to Delta Consultants.

December 2009 - Delta advanced two borings, B-4 and B-5, to depths of 20 feet bgs and 32 feet bgs, respectively. Analytical results from the soil and groundwater samples collected from these two borings indicated that the soil and the groundwater were impacted by petroleum hydrocarbons at these locations.

June 2010 – Delta installed two 4-inch diameter monitoring/extraction wells, MW-11 and MW-12, and two 2-inch diameter monitoring wells, MW-12A and MW-13, at the site. Analytical results from the soil and groundwater samples collected from the MW-12 and MW-12A boring locations indicated that the soil and the groundwater were impacted by petroleum hydrocarbons at these locations.

May 2011 – Antea Group (formally Delta Consultants) installed four 2-inch diameter monitoring wells, MW-14 through MW-17, and advanced one soil boring, B-6, at the site. All four monitoring wells were installed with ten feet of screen from 3 feet bgs to 13 feet bgs. Analytical results of soil samples collected during the monitoring well installation reported TPHg concentrations ranging from 1.0 milligrams per kilogram (mg/kg) (MW-14d13) to 2,490 mg/kg (B-6d9), benzene concentrations ranging from 0.67 mg/kg (B-6d21) to 26.4 mg/kg (B-6d9), toluene concentrations ranging from 0.2 mg/kg (MW-14d10) to 73.9 mg/kg (B-6d9), ethylbenzene concentrations ranging from 0.037 mg/kg (MW-14d13) to 58.1 mg/kg (B-6d9), total xylenes concentrations ranging from 0.066 mg/kg (MW-14d13) to 230 mg/kg (B-6d9), methyl tertiary-butyl ether (MTBE) concentrations ranging from 0.015 mg/kg (MW-15d13) to 0.19 mg/kg (MW-15d8), tertiary-butyl alcohol (TBA) concentrations ranging from 0.014 mg/kg (MW-16d8 and B-6d21) to 0.16 mg/kg (MW-15d8), and lead concentrations ranging from 5.5 mg/kg (MW-16d13) to 16.3 mg/kg (MW-17d9). Diesel range organics (DRO) and DRO with silica gel concentrations were reported; however, all of the results did not match the laboratory standard for diesel. Concentrations of DRO ranged from 2.9 mg/kg (MW-17d13) to 258 mg/kg (B-6d14) and DRO with silica gel concentrations ranged from 2.5 mg/kg (MW-17d13) to 250 mg/kg (B-6d14).

March 2012 – Antea Group advanced five soil borings (HPB-1 through HPB-5) at the site. The borings were advanced using direct push technology. The borings were used to obtain a hydraulic profile of the substrate beneath the site. The data obtained during the investigation will be used to determine the best path forward in terms of remediation.

July 2013 – Antea Group advanced ten soil borings (SB-1 through SB-10) at the site. The borings were advanced using direct push technology. The borings were used to delineate petroleum hydrocarbon impacted soil around

monitoring well MW-6. Results of the investigation can be found in the *Site Investigation Report*, dated January 9, 2014.

June 2014 – Antea Group destroyed monitoring wells MW-10, MW-12, MW-12A, and MW-17 by pressure grouting. The wells were destroyed in preparation for on-site soil excavation activities.

September 2014 – Antea Group advanced two (2) cone penetration test (CPT) borings CPT-1 and CPT-2 in preparation for soil excavations on site. Soil and groundwater samples were not collected. Data from the CPT borings was used to help design shoring for excavations. Antea Group advanced three (3) off-site soil borings, SB-13 through SB-15. Soil and grab-groundwater samples were collected from the borings.

SENSITIVE RECEPTORS

April 24, 2006, TRC completed a sensitive receptor survey for the site. According to the Department of Water Resources (DWR) records, three water supply wells are located within one-half mile of the site. The closest well is an irrigation well, reported to be, approximately 1,080 feet southeast of the site. In addition, two surface water bodies were observed within a one-half mile radius of the site. San Leandro Creek is located approximately 1,400 feet southwest of the site and flows into the San Leandro Bay. Elmhurst Creek is located approximately 2,220 feet north of the site and also flows into the San Leandro Bay.

Current Consultant: **Antea Group**

Appendix B

DWR Well Completion Reports

Confidential pages removed.

*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix E

Environmental Data Resources, Inc. (EDR) GeoCheck Report and Offsite Receptor Report

2705191

449 HEGENBERGER RD
Oakland, CA 94621

Inquiry Number: 4691273.1s
August 03, 2016

The EDR GeoCheck® Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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GEOCHECK® - PHYSICAL SETTING SOURCE REPORT

TARGET PROPERTY ADDRESS

2705191
449 HEGENBERGER RD
OAKLAND, CA 94621

TARGET PROPERTY COORDINATES

Latitude (North):	37.736665 - 37° 44' 11.99"
Longitude (West):	122.197466 - 122° 11' 50.88"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	570713.9
UTM Y (Meters):	4176696.2
Elevation:	10 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37122-F2 SAN LEANDRO, CA
Version Date:	1980
North Map:	37122-G2 OAKLAND EAST, CA
Version Date:	1980

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

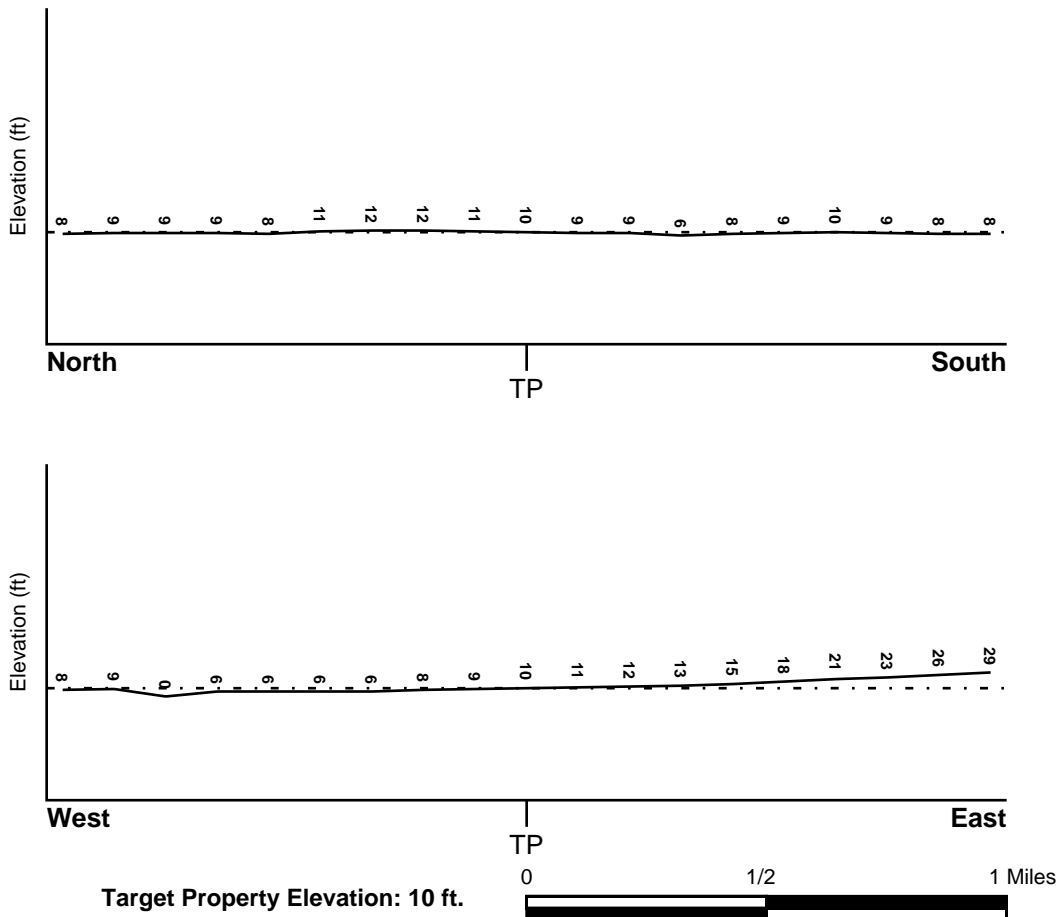
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u> ALAMEDA, CA	FEMA Flood <u>Electronic Data</u> YES - refer to the Overview Map and Detail Map
Flood Plain Panel at Target Property:	06001C - FEMA DFIRM Flood data
Additional Panels in search area:	Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u> SAN LEANDRO	NWI Electronic <u>Data Coverage</u> YES - refer to the Overview Map and Detail Map
---	--

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data:*

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
A1	0 - 1/8 Mile SSE	NE
A2	0 - 1/8 Mile SSE	E
3	1/8 - 1/4 Mile South	SE
4	1/4 - 1/2 Mile NNW	NE
5	1/4 - 1/2 Mile South	SW
6	1/4 - 1/2 Mile NNE	WSW
7	1/4 - 1/2 Mile North	Not Reported
11	1/2 - 1 Mile SW	SE
C12	1/2 - 1 Mile SW	NW

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
C13	1/2 - 1 Mile SW	NW
14	1/2 - 1 Mile SSW	NE,SW,Varies
D15	1/2 - 1 Mile SSE	ESE
D16	1/2 - 1 Mile SSE	E, ESE
17	1/2 - 1 Mile South	S
E18	1/2 - 1 Mile North	Not Reported
F19	1/2 - 1 Mile South	NE
F20	1/2 - 1 Mile South	NE,NW,Varies
E21	1/2 - 1 Mile North	NW
22	1/2 - 1 Mile East	S
G23	1/2 - 1 Mile NE	NE
G24	1/2 - 1 Mile NE	NE
25	1/2 - 1 Mile NW	NW
H26	1/2 - 1 Mile NNE	NW
H27	1/2 - 1 Mile NNE	NW
H28	1/2 - 1 Mile NNE	N
H29	1/2 - 1 Mile NNE	NW
I30	1/2 - 1 Mile East	SW
I31	1/2 - 1 Mile East	SW
I32	1/2 - 1 Mile East	Varies
K36	1/2 - 1 Mile ENE	SE
K38	1/2 - 1 Mile ENE	SE
K39	1/2 - 1 Mile ENE	SE
41	1/2 - 1 Mile NNE	SE
L42	1/2 - 1 Mile NNE	Varies
L43	1/2 - 1 Mile NNE	Varies
L44	1/2 - 1 Mile NNE	Varies
M45	1/2 - 1 Mile NW	NE
M46	1/2 - 1 Mile NW	NE
M47	1/2 - 1 Mile NW	NE

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

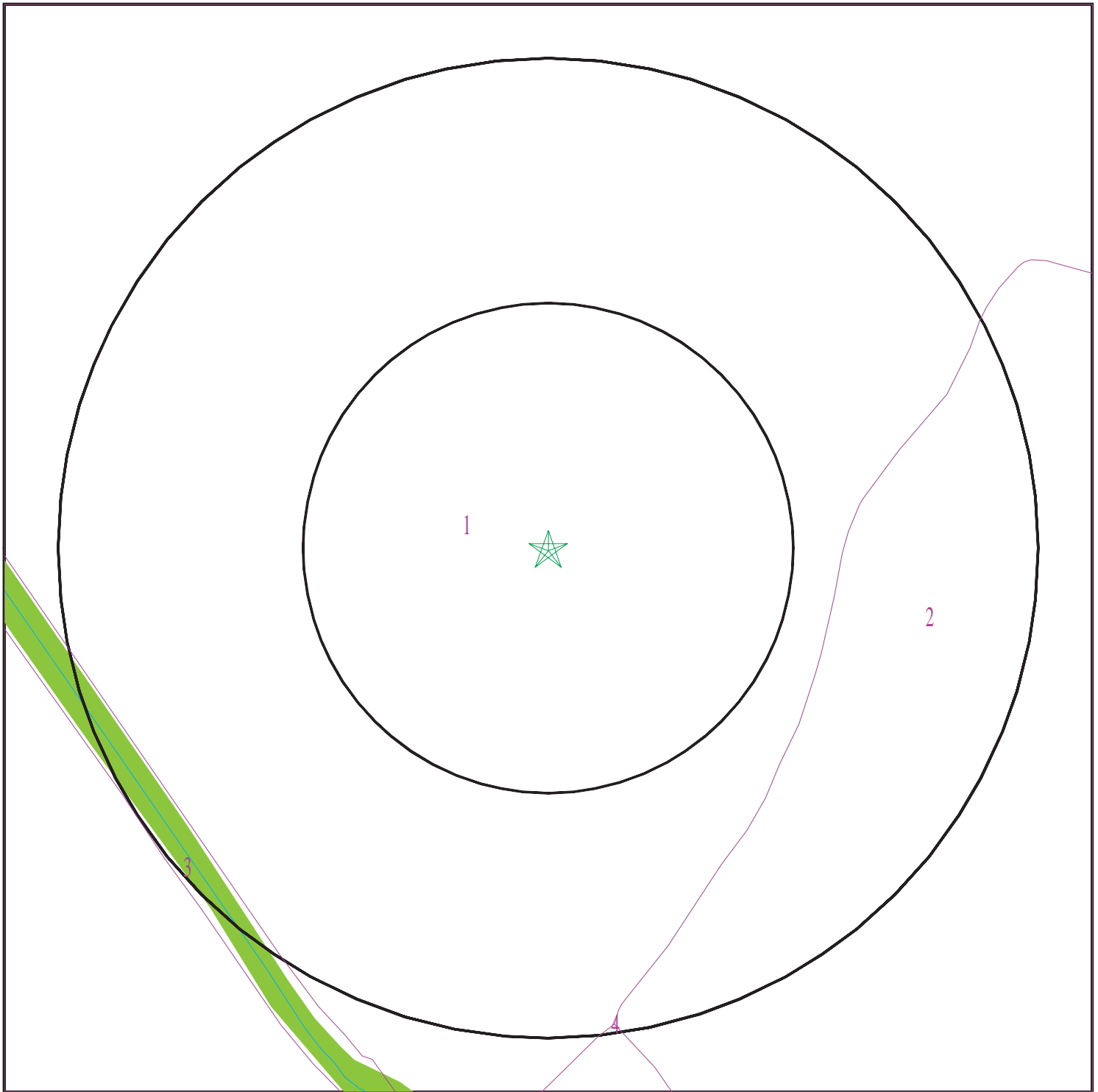
Era: Cenozoic
System: Quaternary
Series: Quaternary
Code: Q (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4691273.1s



- ★ Target Property
- SSURGO Soil
- Water

0 1/16 1/8 1/4 Miles



SITE NAME: 2705191
ADDRESS: 449 HEGENBERGER RD
Oakland CA 94621
LAT/LONG: 37.736665 / 122.197466

CLIENT: Antea Group
CONTACT: Jeff Friedman
INQUIRY #: 4691273.1s
DATE: August 03, 2016 4:20 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Urban land

Soil Surface Texture:
Hydrologic Group: Not reported

Soil Drainage Class:
Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 2

Soil Component Name: Clear Lake

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 137 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	25 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
2	25 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: Water

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 4

Soil Component Name: Laugenour

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Poorly drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 145 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	7 inches	22 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9
3	22 inches	40 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9
4	40 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 42 Min: 14	Max: 8.4 Min: 7.9

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	1.000
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
B8	USGS40000185197	1/4 - 1/2 Mile SSE
I33	USGS40000185250	1/2 - 1 Mile East
J34	USGS40000185358	1/2 - 1 Mile North
J35	USGS40000185346	1/2 - 1 Mile North
49	USGS40000185263	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

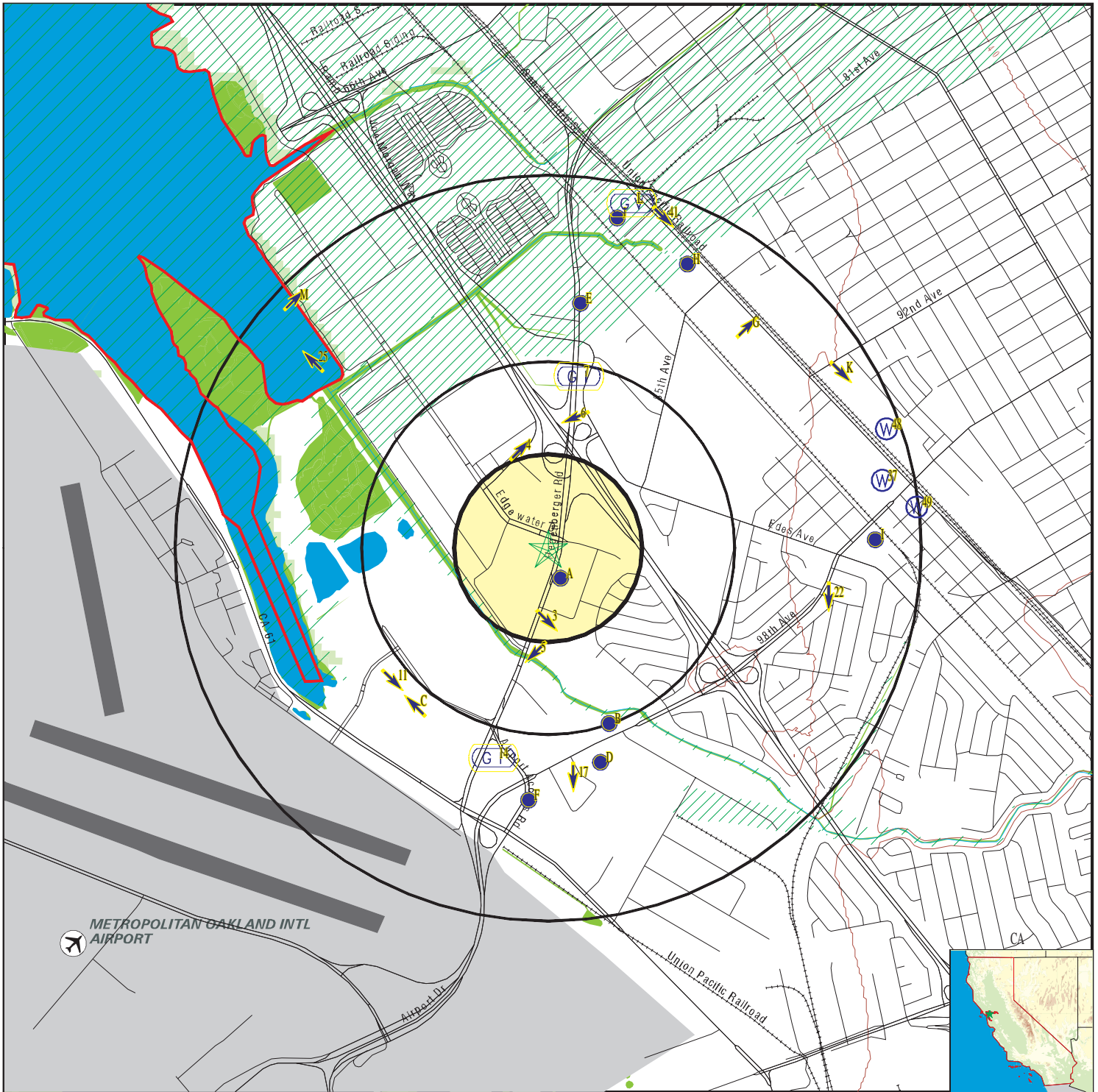
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

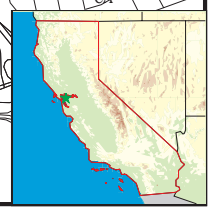
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
B9	CADW60000017052	1/2 - 1 Mile SSE
B10	CADW60000017053	1/2 - 1 Mile SSE
37	CADW60000031717	1/2 - 1 Mile ENE
J40	CADW60000017050	1/2 - 1 Mile NNE
48	CADW60000015718	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 4691273.1s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory



SITE NAME: 2705191
 ADDRESS: 449 HEGENBERGER RD
 Oakland CA 94621
 LAT/LONG: 37.736665 / 122.197466

CLIENT: Antea Group
 CONTACT: Jeff Friedman
 INQUIRY #: 4691273.1s
 DATE: August 03, 2016 4:20 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
A1 SSE 0 - 1/8 Mile Higher	Site ID:	01-1350	AQUIFLOW	64087
	Groundwater Flow:	NE		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	5		
Date:	05/10/1995			
A2 SSE 0 - 1/8 Mile Higher	Site ID:	01-4456	AQUIFLOW	51874
	Groundwater Flow:	E		
	Shallow Water Depth:	24 ft		
	Deep Water Depth:	48 ft		
	Average Water Depth:	Not Reported		
Date:	12/23/1998			
3 South 1/8 - 1/4 Mile Higher	Site ID:	01-0689	AQUIFLOW	63939
	Groundwater Flow:	SE		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	Not Reported		
Date:	06/22/1995			
4 NNW 1/4 - 1/2 Mile Higher	Site ID:	01-1271	AQUIFLOW	51851
	Groundwater Flow:	NE		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	Not Reported		
Date:	02/09/1995			
5 South 1/4 - 1/2 Mile Lower	Site ID:	01-1696	AQUIFLOW	64093
	Groundwater Flow:	SW		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	12		
Date:	02/05/1996			
6 NNE 1/4 - 1/2 Mile Higher	Site ID:	01-1601	AQUIFLOW	51914
	Groundwater Flow:	WSW		
	Shallow Water Depth:	3.0 f		
	Deep Water Depth:	8.0 f		
	Average Water Depth:	Not Reported		
Date:	03/10/1995			
7 North 1/4 - 1/2 Mile Higher	Site ID:	01-3646	AQUIFLOW	66291
	Groundwater Flow:	Not Reported		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	2.3		
Date:	02/10/1993			

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

B8
SSE
 1/4 - 1/2 Mile
 Lower

FED USGS USGS40000185197

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-374346122113801		
Monloc name:	002S003W28G001M		
Monloc type:	Well		
Monloc desc:	EAST BAY MUD TRANSECT		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.7301444
Longitude:	-122.1950306	Sourcemap scale:	Not Reported
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Unknown		
Horiz coord refsys:	NAD83	Vert measure val:	11.55
Vert measure units:	feet	Vertacc measure val:	1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	NAVD88	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1928	Welldepth:	250
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

B9
SSE
 1/2 - 1 Mile
 Higher

CA WELLS CADW60000017052

Objectid:	17052
Latitude:	37.7297
Longitude:	-122.1942
Site code:	377297N1221942W001
State well numbe:	02S03W28G001M
Local well name:	"
Well use id:	3
Well use descrip:	Irrigation
County id:	1
County name:	Alameda
Basin code:	'2-9.04'
Basin desc:	East Bay Plain
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000017052

B10
SSE
 1/2 - 1 Mile
 Higher

CA WELLS CADW60000017053

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Objectid: 17053
 Latitude: 37.7297
 Longitude: -122.1942
 Site code: 377297N1221942W002
 State well numbe: 02S03W28G002M
 Local well name: "
 Well use id: 6
 Well use descrip: Unknown
 County id: 1
 County name: Alameda
 Basin code: '2-9.04'
 Basin desc: East Bay Plain
 Dwr region id: 80236
 Dwr region: North Central Region Office
 Site id: CADW60000017053

11 SW 1/2 - 1 Mile Lower	Site ID:	01-1017		
	Groundwater Flow:	SE	AQUIFLOW	51903
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	72 ft		
	Date:	09/06/1996		

C12 SW 1/2 - 1 Mile Lower	Site ID:	01-1615		
	Groundwater Flow:	NW	AQUIFLOW	51898
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	18 ft		
	Date:	06/08/1988		

C13 SW 1/2 - 1 Mile Lower	Site ID:	01-1615		
	Groundwater Flow:	NW	AQUIFLOW	51899
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	50 ft		
	Date:	07/13/1989		

14 SSW 1/2 - 1 Mile Higher	Site ID:	01-0761		
	Groundwater Flow:	NE,SW,Varies	AQUIFLOW	55851
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	11		
	Date:	10/28/1996		

D15 SSE 1/2 - 1 Mile Higher	Site ID:	01-2133		
	Groundwater Flow:	ESE	AQUIFLOW	55885
	Shallow Water Depth:	7.5		
	Deep Water Depth:	19.5		
	Average Water Depth:	Not Reported		
	Date:	11/1994		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
D16 SSE 1/2 - 1 Mile Higher	Site ID:	01-2133	AQUIFLOW	55886
	Groundwater Flow:	E, ESE		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	21		
Date:	02/05/1996			
17 South 1/2 - 1 Mile Higher	Site ID:	01-0817	AQUIFLOW	55956
	Groundwater Flow:	S		
	Shallow Water Depth:	6.76		
	Deep Water Depth:	6.78		
	Average Water Depth:	Not Reported		
Date:	03/05/1996			
E18 North 1/2 - 1 Mile Higher	Site ID:	01-1830	AQUIFLOW	66308
	Groundwater Flow:	Not Reported		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	1.5		
Date:	08/22/1995			
F19 South 1/2 - 1 Mile Higher	Site ID:	01-1542	AQUIFLOW	55784
	Groundwater Flow:	NE		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	6-9		
Date:	10/27/1997			
F20 South 1/2 - 1 Mile Higher	Site ID:	01-1542	AQUIFLOW	55785
	Groundwater Flow:	NE,NW,Varies		
	Shallow Water Depth:	5.6		
	Deep Water Depth:	7.3		
	Average Water Depth:	Not Reported		
Date:	04/08/1994			
E21 North 1/2 - 1 Mile Higher	Site ID:	01-1112	AQUIFLOW	66322
	Groundwater Flow:	NW		
	Shallow Water Depth:	5.1		
	Deep Water Depth:	10.2		
	Average Water Depth:	Not Reported		
Date:	02/21/1997			
22 East 1/2 - 1 Mile Higher	Site ID:	01-2215	AQUIFLOW	67908
	Groundwater Flow:	S		
	Shallow Water Depth:	2.0		
	Deep Water Depth:	12.0		
	Average Water Depth:	Not Reported		
Date:	01/27/1992			

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
G23 NE 1/2 - 1 Mile Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-2160 NE Not Reported Not Reported 1-2 f 08/11/1986	AQUIFLOW	51842
G24 NE 1/2 - 1 Mile Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-2160 NE 12.5 13.5 Not Reported 10/01/1991	AQUIFLOW	51843
25 NW 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-0778 NW Not Reported Not Reported Not Reported 10/21/1997	AQUIFLOW	51859
H26 NNE 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-1612 NW 96.0 144 Not Reported 09/18/1998	AQUIFLOW	51334
H27 NNE 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-1612 NW Not Reported Not Reported 20 bg 10/01/1997	AQUIFLOW	51333
H28 NNE 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-1612 N 6.4 6.6 Not Reported 05/17/1994	AQUIFLOW	68798
H29 NNE 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-1612 NW Not Reported Not Reported 15 06/29/1994	AQUIFLOW	51335

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

I30 East 1/2 - 1 Mile Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-1740 SW Not Reported Not Reported Not Reported 07/11/1996	AQUIFLOW	51341
---	---	---	-----------------	--------------

I31 East 1/2 - 1 Mile Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-1740 SW Not Reported Not Reported Not Reported 05/24/1991	AQUIFLOW	51700
---	---	---	-----------------	--------------

I32 East 1/2 - 1 Mile Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-1740 Varies Not Reported Not Reported Not Reported 06/22/1984	AQUIFLOW	51699
---	---	---	-----------------	--------------

I33 East 1/2 - 1 Mile Higher			FED USGS	USGS40000185250
---	--	--	-----------------	------------------------

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-374412122104901		
Monloc name:	002S003W22K008M		
Monloc type:	Well		
Monloc desc:	EAST BAY MUD TRANSECT		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.736596
Longitude:	-122.1813555	Sourcemap scale:	Not Reported
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Unknown		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1948	Welldepth:	551
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

J34
North
1/2 - 1 Mile
Higher

FED USGS USGS40000185358

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-374504122112201		
Monloc name:	002S003W16R001M		
Monloc type:	Well		
Monloc desc:	EAST BAY MUD QW TRANSECT		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.74925
Longitude:	-122.1944167	Sourcemap scale:	24000
Horiz Acc measure:	.5	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	10
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19770323	Welldepth:	495
Welldepth units:	ft	Wellholedepth:	510
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

J35
North
1/2 - 1 Mile
Higher

FED USGS USGS40000185346

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-374458122113601		
Monloc name:	002S003W16R001SM		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.7493734
Longitude:	-122.1944116	Sourcemap scale:	Not Reported
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	Not Reported
Construction date:	Not Reported	Wellholeddepth:	Not Reported
Welldepth units:	Not Reported		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

K36 ENE 1/2 - 1 Mile Higher	Site ID: 01-1100 Groundwater Flow: SE Shallow Water Depth: 2.0 f Deep Water Depth: 2.5 f Average Water Depth: Not Reported Date: 05/27/1993	AQUIFLOW	51907
--	--	-----------------	--------------

37 ENE 1/2 - 1 Mile Higher		CA WELLS	CADW60000031717
	Objectid: 31717 Latitude: 37.7393 Longitude: -122.1811 Site code: 377393N1221811W001 State well numbe: 02S03W22P003M Local well name: '02S03W22P003M' Well use id: 2 Well use descrip: Industrial County id: 1 County name: Alameda Basin code: '2-9.04' Basin desc: East Bay Plain Dwr region id: 80236 Dwr region: North Central Region Office Site id: CADW60000031717		

K38 ENE 1/2 - 1 Mile Higher	Site ID: 01-2187 Groundwater Flow: SE Shallow Water Depth: Not Reported Deep Water Depth: Not Reported Average Water Depth: 26 ft Date: 12/07/1989	AQUIFLOW	51848
--	---	-----------------	--------------

K39 ENE 1/2 - 1 Mile Higher	Site ID: 01-2187 Groundwater Flow: SE Shallow Water Depth: Not Reported Deep Water Depth: Not Reported Average Water Depth: Not Reported Date: 08/16/1990	AQUIFLOW	51849
--	--	-----------------	--------------

J40 NNE 1/2 - 1 Mile Higher		CA WELLS	CADW60000017050
--	--	-----------------	------------------------

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Objectid: 17050
 Latitude: 37.7499
 Longitude: -122.1934
 Site code: 377499N1221934W001
 State well numbe: 02S03W16R001M
 Local well name: '02S03W16R001M'
 Well use id: 2
 Well use descrip: Industrial
 County id: 1
 County name: Alameda
 Basin code: '2-9.04'
 Basin desc: East Bay Plain
 Dwr region id: 80236
 Dwr region: North Central Region Office
 Site id: CADW60000017050

41 NNE 1/2 - 1 Mile Higher	Site ID: 01-1022 Groundwater Flow: SE Shallow Water Depth: Not Reported Deep Water Depth: Not Reported Average Water Depth: Not Reported Date: 11/22/1996	AQUIFLOW 51340
---	--	-----------------------

L42 NNE 1/2 - 1 Mile Higher	Site ID: 01-0071 Groundwater Flow: Varies Shallow Water Depth: Not Reported Deep Water Depth: Not Reported Average Water Depth: 10 ft Date: 11/20/1987	AQUIFLOW 51539
--	---	-----------------------

L43 NNE 1/2 - 1 Mile Higher	Site ID: 01-0071 Groundwater Flow: Varies Shallow Water Depth: 5.0 Deep Water Depth: 5.5 Average Water Depth: Not Reported Date: 02/02/1989	AQUIFLOW 51540
--	--	-----------------------

L44 NNE 1/2 - 1 Mile Higher	Site ID: 01-0071 Groundwater Flow: Varies Shallow Water Depth: 10.0 Deep Water Depth: 10.5 Average Water Depth: Not Reported Date: 12/12/1992	AQUIFLOW 51541
--	--	-----------------------

M45 NW 1/2 - 1 Mile Lower	Site ID: 01-0411 Groundwater Flow: NE Shallow Water Depth: 15.0 Deep Water Depth: 18.5 Average Water Depth: Not Reported Date: 10/04/1989	AQUIFLOW 51882
--	--	-----------------------

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

M46 NW 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-0411 NE 3.65 8.14 Not Reported 12/13/1991	AQUIFLOW	51883
--	---	---	-----------------	--------------

M47 NW 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	01-0411 NE Not Reported Not Reported 15 ft 08/27/1996	AQUIFLOW	51884
--	---	--	-----------------	--------------

48 ENE 1/2 - 1 Mile Higher			CA WELLS	CADW60000015718
---	--	--	-----------------	------------------------

Objectid:	15718
Latitude:	37.7413
Longitude:	-122.1809
Site code:	377413N1221809W001
State well numbe:	02S03W22Q002M
Local well name:	"
Well use id:	2
Well use descrip:	Industrial
County id:	1
County name:	Alameda
Basin code:	'2-9.04'
Basin desc:	East Bay Plain
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000015718

49 East 1/2 - 1 Mile Higher			FED USGS	USGS40000185263
--	--	--	-----------------	------------------------

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-374418122104201		
Monloc name:	002S003W22Q002M		
Monloc type:	Well		
Monloc desc:	EAST BAY MUD TRANSECT		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.7382626
Longitude:	-122.179411	Sourcemap scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refs:	NAD83	Vert measure val:	25
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refs:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1999-12-06	40.80	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94621	45	0

Federal EPA Radon Zone for ALAMEDA County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level \geq 2 pCi/L and \leq 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for ALAMEDA COUNTY, CA

Number of sites tested: 49

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.776 pCi/L	100%	0%	0%
Living Area - 2nd Floor	-0.400 pCi/L	100%	0%	0%
Basement	1.338 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: Department of Fish & Game

Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database

Source: Department of Water Resources

Telephone: 916-651-9648

California Drinking Water Quality Database

Source: Department of Public Health

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations

Source: Department of Conservation

Telephone: 916-323-1779

Oil and Gas well locations in the state.

RADON

State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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2705191

449 HEGENBERGER RD
Oakland, CA 94621

Inquiry Number: 4691273.2s
August 03, 2016

EDR Offsite Receptor Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available records was conducted by Environmental Data Resources, Inc. (EDR). The EDR Offsite Receptor Report provides information which may be used to comply with the Clean Air Act Risk Management Program 112-R. *"The rule requires that you estimate in the RMP residential populations within the circle defined by the endpoint for your worst-case and alternative release scenarios (i.e., the center of the circle is the point of release and the radius is the distance to the endpoint). In addition, you must report in the RMP whether certain types of public receptors and environmental receptors are within the circles."*

The address of the subject property, for which the search was intended, is:

2705191
449 HEGENBERGER RD
OAKLAND, CA 94621

Distance Searched: 1.000 miles from subject property

RECEPTOR SUMMARY

An X indicates the presence of the receptor within the search radius.

Residential Population

Estimated population within search radius: 6554 persons.

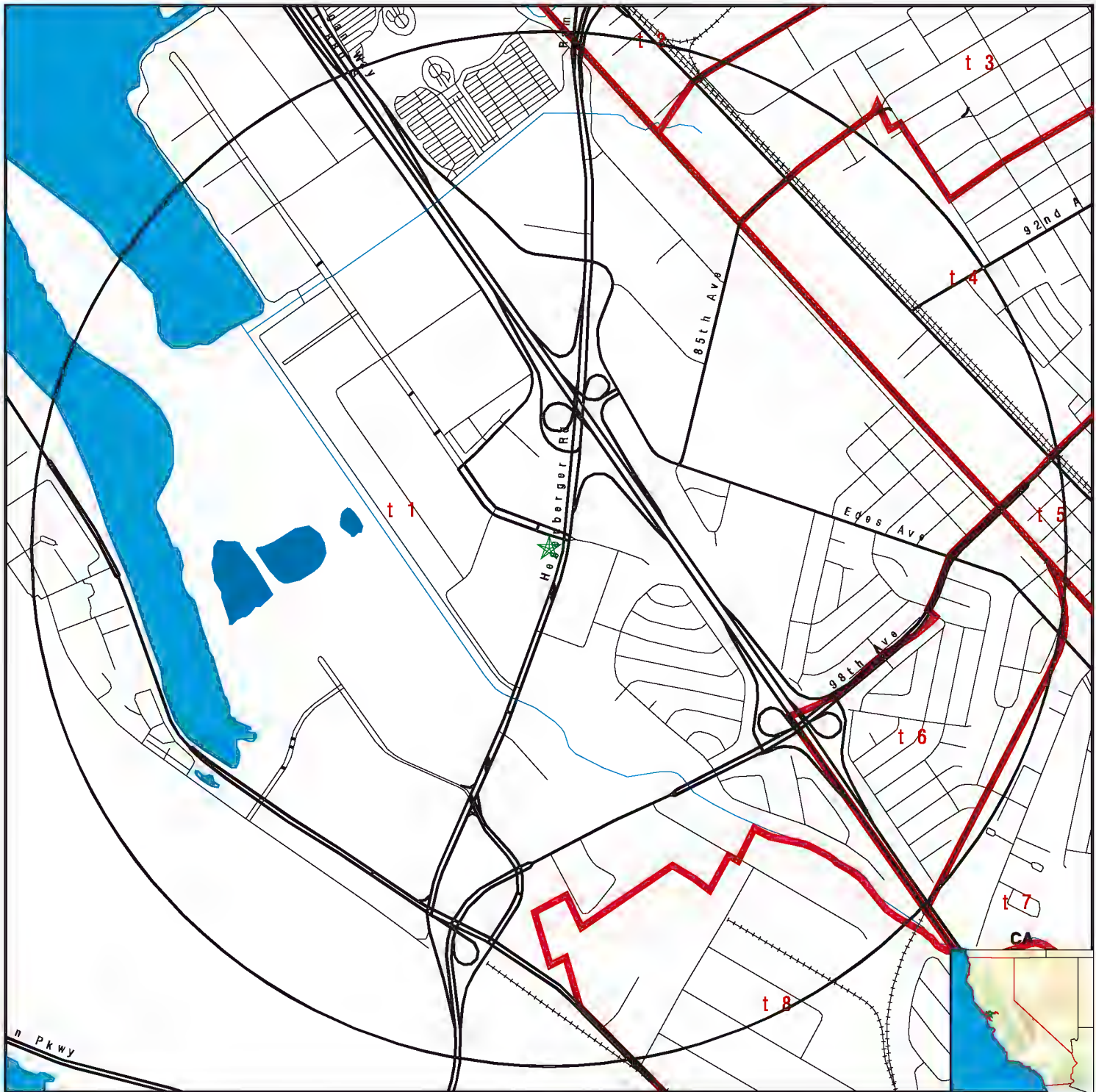
Other Public Receptors

Type	Within Search Radius	Sites Total
Day Care Centers:	<input checked="" type="checkbox"/>	11
Medical Centers:	<input type="checkbox"/>	
Nursing Homes:	<input type="checkbox"/>	
Schools:	<input checked="" type="checkbox"/>	3
Hospitals:	<input checked="" type="checkbox"/>	19
Colleges:	<input checked="" type="checkbox"/>	2
Arena:	<input type="checkbox"/>	
Prison:	<input type="checkbox"/>	

Environmental Receptors

Type	Within Search Radius	Sites Total
Federal Land:	<input type="checkbox"/>	

CENSUS MAP - 4691273.2s



- ★ Target Property
- ⚡ Roads
- 🌊 Waterways
- 🔴 Census Tracts



TARGET PROPERTY: 2705191 ADDRESS: 449 HEGENBERGER RD CITY/STATE/ZIP: Oakland CA 94621 LAT/LONG: 37.7367 / 122.1975	CUSTOMER: Antea Group CONTACT: Jeff Friedman INQUIRY #: 4691273.2s DATE: August 03, 2016 4:20 pm
---	---

CENSUS FINDINGS

Map ID	Tract Number	Total Population	Population in Radius	Total Area(sq.mi.)	Area in Radius(sq.mi.)
T1	4090.00	3552	1074.0	8.13	2.46
T2	4089.00	3414	272.0	0.31	0.02
T3	4095.00	3122	580.0	0.32	0.06
T4	4094.00	4306	1742.8	0.48	0.20
T5	4093.00	5229	195.1	0.42	0.02
T6	4091.00	2255	2240.4	0.19	0.19
T7	4092.00	3152	110.0	0.28	0.01
T8	4324.00	5814	339.8	3.00	0.18

RECEPTOR MAP - 4691273.2s



- ★ Target Property
- Roads
- Waterways
- Environmental or Public Receptor
- Federal Lands Linear Features
- Federal Lands Area



TARGET PROPERTY: 2705191
ADDRESS: 449 HEGENBERGER RD
CITY/STATE/ZIP: Oakland CA 94621
LAT/LONG: 37.7367 / 122.1975

CUSTOMER: Antea Group
CONTACT: Jeff Friedman
INQUIRY #: 4691273.2s
DATE: August 03, 2016 4:20 pm

MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	Elevation	Site	EDR ID Database
1	South	0-1/8 mi	562	Higher	Hospital type: 01 Num of times COO: 00 Owner date: Not Reported City: OAKLAND Has plan of corr: Not Reported Compliance status: A SSA county code: 000 Cross ref number: Not Reported FMS survey date: Not Reported Current survey date: 19980225 Medicare/Medicaid: 1 Facility name: HEALTH SERVICE SOLUTIONS Intermediary/Carrier: 00040 Medicaid number: Not Reported Participation date: 19921006 Prior COO date: Not Reported Prior carrier: Not Reported Provider ID: 557234 Record Status: A Region code: 09 Is Partial Record: Not Reported state abbrev: CA ssa state: 05 state region cd: BK street address: 333 HEGENBERGER RD STE 401 Phone num: 5106324872 Termination reason: 01 Term Date: 20010731 Purpose of action: 2 Provider control: 03 Zip: 94621 Fips state: 06 Fips cnty: 001 SSA MSA: 418 SSA MSA size code: B Date accredited: Not Reported Accred expire date: Not Reported Accred Org: 0 Num beds: 0000 Num cert beds: 0000 Source: US_HOSPITAL_POSOTHER Edr id: SRHO20070108623	SRHO20070108623 AHA Hospitals
A2	South	1/8-1/4 mi	806	Higher	Ncessch: 062805010728 Schname05: EDUCATION FOR CHANGE EAST OAKLAND COMMUNITY CHARTE Mstreet05: 303 HEGENBERGER RD., STE. 301 Mcity05: OAKLAND Mstate05: CA Mzip05: 94621 Mzip405: Not Reported Member05: 606 Phone05: (510) 879-1240 Locale05: 1	SRPU20071009655 Public Schools

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Type05: 1
 Level05: 4
 Gslo05: KG
 Gshi05: 04
 Edr id: SRPU20071009655

A3		SRPU20071009675
South	Ncessch: 062805011561	Public Schools
1/8-1/4 mi	Mschname05: EDUCATION FOR CHANGE UPPER ELEMENTARY	
806	Mstreet05: 303 HEGENBERGER RD., STE. 301	
Higher	Mcity05: OAKLAND	
	Mstate05: CA	
	Mzip05: 94621	
	Mzip405: Not Reported	
	Member05: -2	
	Phone05: M	
	Locale05: 1	
	Type05: 1	
	Level05: 4	
	Gslo05: N	
	Gshi05: N	
	Edr id: SRPU20071009675	

4		SRCL20051004425
WSW	Unitid: 367608	Colleges
1/8-1/4 mi	Instnm: CET-OAKLAND	
935	Addr: 8390 CAPWELL DR	
Higher	City: OAKLAND	
	Stabbr: CA	
	Zip: 94621	
	Zip4: Not Reported	
	Unk: Not Reported	
	Fips: 094621	
	Oberge: 8	
	Chfnm: Yolanda Ojeda	
	Chftitle: Acting Director	
	Gentele: 4082877924	
	Fintele: 4082877924	
	Admtele: 4082877924	
	Ein: 941658311	
	Duns: -1	
	Opeid: 2332820	
	Opeflag: 1	
	Webaddr: -1	
	Sector: 8	
	Iclevel: 3	
	Control: 2	
	Hloffer: 2	
	Ugoffer: 1	
	Groffer: 2	
	Fpoffer: 2	
	Hdegoffer: 0	
	Deggrant: 2	
	Hbcu: 2	

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Hospital: 2
 Medical: 2
 Tribal: 2
 Carnegie: -3
 Locale: 1
 Openpubl: 1
 Act: A
 Newid: -2
 Deathyr: -2
 Closedat: -2
 Cyactive: 1
 Postsec: 1
 Pseflag: 1
 Pset4flg: 1
 Rptmth: 2
 Fte: 99
 Enrtot: 99
 Edr id: SRCL20051004425

5 SE EDR ID: SRDCCA200721358 SRDCCA200721358
 1/8-1/4 mi Facility number: 13417031 Daycare
 1137 Facility name: "WILLIAMS, KIMBERLY "

Higher Facility eval. code: 0105
 Facility office number: 02
 Facility county number: 01
 Facility type code: 810
 Facility status code: 03
 Address: 208 MAKIN ROAD
 City: OAKLAND
 State: CA
 Zip: 94603
 Alt. address: 208 MAKIN ROAD
 City: OAKLAND
 State: CA
 Zip: 94603
 Facility investor: "WILLIAMS, KIMBERLY "
 Licensee type: A
 License effective date: 30612
 License expiration date: Not Reported
 License issue date: 030612
 Program type: "MAXIMUM CAPACITY: 6 CHILDREN WITH NO MORE THAN 3 INFANTS, OR 4
 INFANTSONLY, OR CAPACITY 8 CHILDREN WHEN 2 ARE AT LEAST 6 YEARS OF AGE
 WITH AMAXIMUM OF 2 INFANTS; PROPERTY OWNER/LANDLORD CONSENT IS REQUIRED
 "

Original app. received date: 030516
 Facility closed date: Not Reported
 Mailing address: 208 MAKIN ROAD
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94603
 Contact person: "WILLIAMS, KIMBERLY "
 Facility capacity: 8
 Type of clients served: 960
 Facility phone: 5106336323

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	EDR ID Database
6 ESE 1/4-1/2 mi 1409 Higher	EDR ID: SRDCCA200740806 Facility number: 13419109 Facility name: "WASHINGTON-BOLTON, ARNETTA" Facility eval. code: 0105 Facility office number: 02 Facility county number: 01 Facility type code: 810 Facility status code: 03 Address: 9239 CORAL ROAD City: OAKLAND State: CA Zip: 94603 Alt. address: 9239 CORAL ROAD City: OAKLAND State: CA Zip: 94603 Facility investor: "WASHINGTON-BOLTON, ARNETTA" Licensee type: A License effective date: 61228 License expiration date: Not Reported License issue date: 061228 Program type: "MAX. CAP: 6 - NO MORE THAN 3 INFANTS OR 4 INFANTS ONLY. CAP 8 - NO MORE THAN 2 INFANTS, 1 CHILD IN KINDERGARTEN OR ELEMENTARY SCHOOL AND 1 CHILD AT LEAST AGE 6." Original app. received date: 061117 Facility closed date: Not Reported Mailing address: 9239 CORAL ROAD Mailing city: OAKLAND Mailing state: CA Mailing zip: 94603 Contact person: "WASHINGTON-BOLTON, ARNETTA" Facility capacity: 8 Type of clients served: 960 Facility phone: 5104308920	SRDCCA200740806 Daycare
7 SSE 1/4-1/2 mi 1476 Higher	EDR ID: SRDCCA200729713 Facility number: 13418339 Facility name: "MIJANGO, VILMA" Facility eval. code: 0105 Facility office number: 02 Facility county number: 01 Facility type code: 810 Facility status code: 03 Address: 9561 EMPIRE ROAD City: OAKLAND State: CA Zip: 94603 Alt. address: 9561 EMPIRE ROAD City: OAKLAND State: CA Zip: 94603 Facility investor: "MIJANGO, VILMA" Licensee type: A	SRDCCA200729713 Daycare

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

License effective date: 50726
 License expiration date: Not Reported
 License issue date: 050726
 Program type: "MAX. CAP: 6 - NO MORE THAN 3 INFANTS OR 4 INFANTS ONLY.
 CAP 8 - NO MORE THAN 2 INFANTS, 1 CHILD IN KINDERGARTEN OR ELEMENTARY
 SCHOOL AND 1 CHILD AT LEAST AGE 6. "

Original app. received date: 050603
 Facility closed date: Not Reported
 Mailing address: 9561 EMPIRE ROAD
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94603
 Contact person: "MIJANGO, VILMA "
 Facility capacity: 8
 Type of clients served: 960
 Facility phone: 5106326478

8 SRHO20070134795
 NNE AHA Hospitals
 1/4-1/2 mi Num of times COO: 00
 1741 Owner date: Not Reported
 Higher City: OAKLAND
 Has plan of corr: Not Reported
 Compliance status: Not Reported
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: Not Reported
 Medicare/Medicaid: Not Reported
 Facility name: NAVCARE 2
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19930504
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0602903
 Record Status: A
 Region code: 09
 Is Partial Record: Not Reported
 state abbrev: CA
 ssa state: 05
 state region cd: LAB
 street address: 8450 EDES AVENUE
 Phone num: 5106325514
 Termination reason: 01
 Term Date: 19950930
 Purpose of action: Not Reported
 Provider control: 04
 Zip: 94621
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070134795

9 SE EDR ID: SRDCCA200718576 SRDCCA200718576
 1/4-1/2 mi Facility number: 13416366 Daycare

1761 Higher Facility name: "HARRISON, SOPHIA"
 Facility eval. code: 0105
 Facility office number: 02
 Facility county number: 01
 Facility type code: 810
 Facility status code: 03
 Address: 229 TUNIS ROAD
 City: OAKLAND
 State: CA
 Zip: 94603
 Alt. address: 229 TUNIS ROAD
 City: OAKLAND
 State: CA
 Zip: 94603
 Facility investor: "HARRISON, SOPHIA"
 Licensee type: A
 License effective date: 20620
 License expiration date: Not Reported
 License issue date: 020620
 Program type: "MAXIMUM CAPACITY: 6 CHILDREN WITH NO MORE THAN 3 INFANTS, OR 4
 INFANTSONLY, OR CAPACITY 8 CHILDREN WHEN 2 ARE AT LEAST 6 YEARS OF AGE
 WITH AMAXIMUM OF 2 INFANTS; PROPERTY OWNER/LANDLORD CONSENT IS REQUIRED
 "
 Original app. received date: 020430
 Facility closed date: Not Reported
 Mailing address: 229 TUNIS ROAD
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94603
 Contact person: "HARRISON, SOPHIA"
 Facility capacity: 8
 Type of clients served: 960
 Facility phone: 5106353188

B10 NNW Hospital type: 01 SRHO20070010897
 1/4-1/2 mi Num of times COO: 05 AHA Hospitals
 2491 Higher Owner date: Not Reported
 City: OAKLAND
 Has plan of corr: 1
 Compliance status: A
 SSA county code: 000
 Cross ref number: 051506
 FMS survey date: Not Reported
 Current survey date: 19980422

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Medicare/Medicaid: 1
 Facility name: PATHWAYS HOSPICE
 Intermediary/Carrier: 00040
 Medicaid number: Not Reported
 Participation date: 19790628
 Prior COO date: 19990423
 Prior carrier: 00041
 Provider ID: 057227
 Record Status: A
 Region code: 09
 Is Partial Record: Not Reported
 state abbrev: CA
 ssa state: 05
 state region cd: BK
 street address: 7901 OAKPORT STREET, SUITE 3500
 Phone num: 5106324390
 Termination reason: 01
 Term Date: 19981231
 Purpose of action: 2
 Provider control: 03
 Zip: 94621
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: 0
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSOTHER
 Edr id: SRHO20070010897

B11

NNW Hospital type:
 1/4-1/2 mi Num of times COO:
 2491 Owner date:
 Higher City:

Has plan of corr: Not Reported
 Compliance status: Not Reported
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: Not Reported
 Medicare/Medicaid: Not Reported
 Facility name: MIDPENINSULA HOSPICE
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19950404
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0600670
 Record Status: A
 Region code: 09
 Is Partial Record: Y

SRHO20070133688
 AHA Hospitals

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)
Elevation

Site

EDR ID
Database

state abbrev: CA
 ssa state: 05
 state region cd: LAB
 street address: 7901 OAKPORT STREET SUITE 3500
 Phone num: 5106324390
 Termination reason: 08
 Term Date: 20000831
 Purpose of action: Not Reported
 Provider control: 02
 Zip: 94621
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070133688

B12
 NNW
 1/4-1/2 mi
 2491
 Higher

Hospital type: 01
 Num of times COO: 01
 Owner date: 19990101
 City: OAKLAND
 Has plan of corr: 1
 Compliance status: A
 SSA county code: 060
 Cross ref number: 057227
 FMS survey date: Not Reported
 Current survey date: 19980422
 Medicare/Medicaid: 1
 Facility name: PATHWAYS HOME HEALTH AND HOSPICE
 Intermediary/Carrier: 00040
 Medicaid number: Not Reported
 Participation date: 19840316
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 051506
 Record Status: A
 Region code: 09
 Is Partial Record: Not Reported
 state abbrev: CA
 ssa state: 05
 state region cd: SJ
 street address: 7901 OAKPORT STREET, SUITE 3500
 Phone num: 5106324390
 Termination reason: 00
 Term Date: Not Reported
 Purpose of action: 2
 Provider control: 03
 Zip: 94621
 Fips state: 06

SRHO20070009474
 AHA Hospitals

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Fips cnty: 013
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: 0
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSOTHER
 Edr id: SRHO20070009474

C13 SRDCCA200749311
 ESE EDR ID: SRDCCA200749311 Daycare

1/4-1/2 mi Facility number: 10215401
 2548 Facility name: O.U.S.D. - BROOKFIELD CDC
 Higher Facility eval. code: 0203
 Facility office number: 02
 Facility county number: 01
 Facility type code: 850
 Facility status code: 03
 Address: 401 JONES AVENUE
 City: OAKLAND
 State: CA
 Zip: 94603
 Alt. address: 495 JONES AVE
 City: OAKLAND
 State: CA
 Zip: 94603
 Facility investor: OAKLAND UNIFIED SCHOOL DISTRICT
 Licensee type: F
 License effective date: 940222
 License expiration date: Not Reported
 License issue date: 940222
 Program type: AGES 2-1ST GR ENTRY. HRS:MON-FRI (1)IN PORTABLE RM 1-7AM TO 5:3PM (2) IN PORT RM 3 & SCHOOL RM 9-8:30AM TO 2:30PM (3)IN PORT RM 2-8:30AM TO 12:30PM. MAX.# OF CHILDREN:(1)7AM-8:30AM-20 (2)8:30AM TO 12:30PM-82(3)12:30 PM TO 2:30PM-61 (4)2:30PM TO 5:30PM-20. SUBJECT TO 2 WAIVERS.
 Original app. received date: 930512
 Facility closed date: Not Reported
 Mailing address: 1025 - 2ND AVENUE
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94606
 Contact person: JOSEPHINE ROLAND
 Facility capacity: 59
 Type of clients served: 950
 Facility phone: 5106330462

C14 SRPU20071012618
 ESE Ncessch: 062805004243 Public Schools
 1/4-1/2 mi Schname05: BROOKFIELD ELEMENTARY
 2548 Mstreet05: 401 JONES AVE.
 Higher Mcity05: OAKLAND

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)
Elevation

Site

EDR ID
Database

Mstate05: CA
Mzip05: 94603
Mzip405: 1123
Member05: 487
Phone05: (510) 879-1030
Locale05: 1
Type05: 1
Level05: 1
Gslo05: KG
Gshi05: 05
Edr id: SRPU20071012618

B15

NNW
1/2-1 mi
2679
Higher

Hospital type: 01
Num of times COO: 00
Owner date: Not Reported
City: OAKLAND
Has plan of corr: Not Reported
Compliance status: Not Reported
SSA county code: 000
Cross ref number: Not Reported
FMS survey date: Not Reported
Current survey date: Not Reported
Medicare/Medicaid: Not Reported
Facility name: US HEALTHWORKS
Intermediary/Carrier: Not Reported
Medicaid number: Not Reported
Participation date: 19930526
Prior COO date: Not Reported
Prior carrier: Not Reported
Provider ID: 05D0870772
Record Status: A
Region code: 09
Is Partial Record: Y
state abbrev: CA
ssa state: 05
state region cd: M2
street address: 7817 OAKPORT STREET
Phone num: 5106380701
Termination reason: 00
Term Date: 20080831
Purpose of action: Not Reported
Provider control: 04
Zip: 94621
Fips state: 06
Fips cnty: 001
SSA MSA: 418
SSA MSA size code: B
Date accredited: Not Reported
Accred expire date: Not Reported
Accred Org: Not Reported
Num beds: 0000
Num cert beds: 0000
Source: US_HOSPITAL_POSCLIA
Edr id: SRHO20070147316

SRHO20070147316
AHA Hospitals

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	EDR ID Database
D16 NW 1/2-1 mi 2686 Higher	Hospital type: 01 Num of times COO: 00 Owner date: Not Reported City: OAKLAND Has plan of corr: Not Reported Compliance status: A SSA county code: 000 Cross ref number: Not Reported FMS survey date: Not Reported Current survey date: 19960619 Medicare/Medicaid: 1 Facility name: NEIGHBORHOOD HOME HEALTH DIV OF ABHOW Intermediary/Carrier: 00140 Medicaid number: Not Reported Participation date: 19960619 Prior COO date: Not Reported Prior carrier: Not Reported Provider ID: 557709 Record Status: A Region code: 09 Is Partial Record: Not Reported state abbrev: CA ssa state: 05 state region cd: BK street address: 400 ROLAND WAY Phone num: 5106357797 Termination reason: 01 Term Date: 19990630 Purpose of action: 1 Provider control: 01 Zip: 94621 Fips state: 06 Fips cnty: 001 SSA MSA: 418 SSA MSA size code: B Date accredited: Not Reported Accred expire date: Not Reported Accred Org: 0 Num beds: 0000 Num cert beds: 0000 Source: US_HOSPITAL_POSOTHER Edr id: SRHO20070108896	SRHO20070108896 AHA Hospitals
D17 NW 1/2-1 mi 2686 Higher	Hospital type: 01 Num of times COO: 00 Owner date: Not Reported City: OAKLAND Has plan of corr: Not Reported Compliance status: Not Reported SSA county code: 000 Cross ref number: Not Reported FMS survey date: Not Reported Current survey date: Not Reported	SRHO20070147246 AHA Hospitals

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Medicare/Medicaid: Not Reported
 Facility name: NEIGHBORHOOD HOME HEALTH
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19960610
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0915846
 Record Status: A
 Region code: 09
 Is Partial Record: Y
 state abbrev: CA
 ssa state: 05
 state region cd: LAB
 street address: 400 ROLAND WAY
 Phone num: 5106357797
 Termination reason: 17
 Term Date: 20000329
 Purpose of action: Not Reported
 Provider control: 02
 Zip: 94621
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070147246

D18
 NW
 1/2-1 mi
 2725
 Higher

Hospital type: 01
 Num of times COO: 00
 Owner date: Not Reported
 City: OAKLAND
 Has plan of corr: Not Reported
 Compliance status: Not Reported
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: Not Reported
 Medicare/Medicaid: Not Reported
 Facility name: ADVANTAGE OCCUPATIONAL MEDICINE CENTER
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19970613
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0929441
 Record Status: A
 Region code: 09
 Is Partial Record: Y

SRHO20070147538
 AHA Hospitals

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)
Elevation

Site

EDR ID
Database

state abbrev: CA
 ssa state: 05
 state region cd: LAB
 street address: 401 ROLAND WAY STE 130
 Phone num: 5106359515
 Termination reason: 08
 Term Date: 20050612
 Purpose of action: Not Reported
 Provider control: 04
 Zip: 94621
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070147538

19
 East
 1/2-1 mi
 2816
 Higher

Hospital type: 01
 Num of times COO: 00
 Owner date: Not Reported
 City: OAKLAND
 Has plan of corr: Not Reported
 Compliance status: Not Reported
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: Not Reported
 Medicare/Medicaid: Not Reported
 Facility name: OVER 60 HEALTH
 Intermediary/Carrier: 00450
 Medicaid number: Not Reported
 Participation date: 19950315
 Prior COO date: Not Reported
 Prior carrier: 51051
 Provider ID: 051981
 Record Status: A
 Region code: 09
 Is Partial Record: Y
 state abbrev: CA
 ssa state: 05
 state region cd: SF
 street address: 9255 EDES AVENUE
 Phone num: 5103822190
 Termination reason: 00
 Term Date: Not Reported
 Purpose of action: 1
 Provider control: 02
 Zip: 94603
 Fips state: 06

SRHO20070009875
 AHA Hospitals

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSOTHER
 Edr id: SRHO20070009875

E20
 SSE
 1/2-1 mi
 2818
 Higher

Hospital type: 01
 Num of times COO: 00
 Owner date: Not Reported
 City: OAKLAND
 Has plan of corr: Not Reported
 Compliance status: Not Reported
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: Not Reported
 Medicare/Medicaid: Not Reported
 Facility name: ALLCARE MEDICAL - AIRPORT
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19950725
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0903560
 Record Status: A
 Region code: 09
 Is Partial Record: Y
 state abbrev: CA
 ssa state: 05
 state region cd: LAB
 street address: 9811 BIGGE STREET
 Phone num: 5105693720
 Termination reason: 01
 Term Date: 20011228
 Purpose of action: Not Reported
 Provider control: 04
 Zip: 94603
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070144109

SRHO20070144109
 AHA Hospitals

MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	Elevation	Site	EDR ID Database
E21						SRHO20070150962
SSE					Hospital type: 01	AHA Hospitals
1/2-1 mi					Num of times COO: 00	
2818					Owner date: Not Reported	
Higher					City: OAKLAND	
					Has plan of corr: Not Reported	
					Compliance status: Not Reported	
					SSA county code: 000	
					Cross ref number: Not Reported	
					FMS survey date: Not Reported	
					Current survey date: Not Reported	
					Medicare/Medicaid: Not Reported	
					Facility name: MOHAMMAD H NOORI, MD INC	
					Intermediary/Carrier: Not Reported	
					Medicaid number: Not Reported	
					Participation date: 19980701	
					Prior COO date: Not Reported	
					Prior carrier: Not Reported	
					Provider ID: 05D0948117	
					Record Status: A	
					Region code: 09	
					Is Partial Record: Y	
					state abbrev: CA	
					ssa state: 05	
					state region cd: M2	
					street address: 9811 BIGGE AVENUE	
					Phone num: 5106361622	
					Termination reason: 00	
					Term Date: 20070411	
					Purpose of action: Not Reported	
					Provider control: 04	
					Zip: 94603	
					Fips state: 06	
					Fips cnty: 001	
					SSA MSA: 418	
					SSA MSA size code: B	
					Date accredited: Not Reported	
					Accred expire date: Not Reported	
					Accred Org: Not Reported	
					Num beds: 0000	
					Num cert beds: 0000	
					Source: US_HOSPITAL_POSCLIA	
					Edr id: SRHO20070150962	
22						SRDCCA200708001
ENE					EDR ID: SRDCCA200708001	Daycare
1/2-1 mi					Facility number: 13411434	
3237					Facility name: "ADAMS, RAMONA	"
Higher					Facility eval. code: 0105	
					Facility office number: 02	
					Facility county number: 01	
					Facility type code: 810	
					Facility status code: 03	
					Address: 9312 OSCARS AVENUE	
					City: OAKLAND	

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

State: CA
 Zip: 94603
 Alt. address: 9312 OSCARS AVENUE
 City: OAKLAND
 State: CA
 Zip: 94603
 Facility investor: "ADAMS, RAMONA"
 Licensee type: A
 License effective date: 960419
 License expiration date: Not Reported
 License issue date: 960419
 Program type: "MAXIMUM CAPACITY: 12 CHILDREN, INCLUDING LICENSEE'S CHILDREN UNDER 10 YEARS OF AGE WHO RESIDE IN THE HOME, WITH NO MORE THAN 4 INFANTS (INFANT MEANS A CHILD UNDER 2 YEARS OLD)."

Original app. received date: 960228
 Facility closed date: Not Reported
 Mailing address: 9312 OSCARS AVENUE
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94603
 Contact person: "ADAMS, RAMONA"
 Facility capacity: 12
 Type of clients served: 960
 Facility phone: 5105684565

23
 NW
 1/2-1 mi
 3270
 Higher

Hospital type: 01
 Num of times COO: 00
 Owner date: Not Reported
 City: OAKLAND
 Has plan of corr: Not Reported
 Compliance status: Not Reported
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: Not Reported
 Medicare/Medicaid: Not Reported
 Facility name: HEALTH SERVICE SOLUTION
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19951013
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0907414
 Record Status: A
 Region code: 09
 Is Partial Record: Y
 state abbrev: CA
 ssa state: 05
 state region cd: LAB
 street address: 7700 EDGEWATER DRIVE SUITE 803
 Phone num: 5106324872
 Termination reason: 12
 Term Date: 20010827

SRHO20070149950
 AHA Hospitals

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Purpose of action: Not Reported
 Provider control: 04
 Zip: 94621
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070149950

24			SRDCCA200740092
ESE	EDR ID:	SRDCCA200740092	Daycare
1/2-1 mi	Facility number:	13419116	
3554	Facility name:	"BRADDY, THIMIKIA	"
Higher	Facility eval. code:	0105	
	Facility office number:	02	
	Facility county number:	01	
	Facility type code:	810	
	Facility status code:	03	
	Address:	448 CASWELL STREET	
	City:	OAKLAND	
	State:	CA	
	Zip:	94603	
	Alt. address:	PO BOX 144	
	City:	SAN LORENZO	
	State:	CA	
	Zip:	94580	
	Facility investor:	"BRADDY, THIMIKIA	"
	Licensee type:	A	
	License effective date:	61219	
	License expiration date:	Not Reported	
	License issue date:	061219	
	Program type:	"MAX. CAP: 6 - NO MORE THAN 3 INFANTS OR 4 INFANTS ONLY. CAP 8 - NO MORE THAN 2 INFANTS, 1 CHILD IN KINDERGARTEN OR ELEMENTARY SCHOOL AND 1 CHILD AT LEAST AGE 6. "	
	Original app. received date:	061120	
	Facility closed date:	Not Reported	
	Mailing address:	PO BOX 144	
	Mailing city:	SAN LORENZO	
	Mailing state:	CA	
	Mailing zip:	94580	
	Contact person:	"BRADDY, THIMIKIA	"
	Facility capacity:	8	
	Type of clients served:	960	
	Facility phone:	5108782186	

25			SRDCCA200752430
East	EDR ID:	SRDCCA200752430	Daycare
1/2-1 mi	Facility number:	10216109	
3625			
Higher			

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Facility name: OAKLAND HEAD START - BROOKFIELD
 Facility eval. code: 0203
 Facility office number: 02
 Facility county number: 01
 Facility type code: 850
 Facility status code: 03
 Address: 9600 EDES AVENUE
 City: OAKLAND
 State: CA
 Zip: 94603
 Alt. address: "505 - 14TH STREET, SUITE #300 "
 City: OAKLAND
 State: CA
 Zip: 94612
 Facility investor: CITY OF OAKLAND
 Licensee type: F
 License effective date: 940921
 License expiration date: Not Reported
 License issue date: 940921
 Program type: AGES 2YRS. TO FIRST GRADE ENTRY.
 HOURS OF OPERATION: MON. - FRI. 8:15AM - 4:45PM IN 3 CLASSROOM
 AREAS.
 Original app. received date: 940527
 Facility closed date: Not Reported
 Mailing address: "505 - 14TH STREET, SUITE #300 "
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94612
 Contact person: ANDREA BURNETT
 Facility capacity: 48
 Type of clients served: 950
 Facility phone: 5106155737

26 SSW 1/2-1 mi 4133 Higher	Unitid: Instnm: Addr: City: Stabbr: Zip: Zip4: Unk: Fips: Oberge: Chfnm: Chftitle: Gentele: Fintele: Admtele: Ein: Duns: Opeid: Opeflag: Webaddr: Sector:	365329 SIERRA ACADEMY OF AERONAUTICS-AIRLINE TRAIN CENTER 9465 EARHART RD OAKLAND CA 94614 Not Reported Not Reported 094614 8 NORRIS N EVERETT CHIEF EXECUTIVE OFFICER 5105686100 5.11E+11 5.11E+11 942923652 23988686 2542000 5 -1 6	SRCL20051004195 Colleges
---	---	---	-----------------------------

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Iclevel: 2
 Control: 3
 Hloffter: 4
 Ugoffer: 1
 Groffer: 2
 Fpoffer: 2
 Hdegoffer: 0
 Deggrant: 2
 Hbcu: 2
 Hospital: 2
 Medical: -1
 Tribal: 2
 Carnegie: -3
 Locale: 1
 Openpubl: 1
 Act: A
 Newid: -2
 Deathyr: -2
 Closedat: -2
 Cyactive: 1
 Postsec: 1
 Pseflag: 1
 Pset4flg: 2
 Rptmth: 2
 Fte: Not Reported
 Enrtot: Not Reported
 Edr id: SRCL20051004195

F27		SRDCCA200704968
SE	EDR ID:	SRDCCA200704968
1/2-1 mi	Facility number:	10214203
4366	Facility name:	"LARSON, ARTHENA"
Higher	Facility eval. code:	0105
	Facility office number:	02
	Facility county number:	01
	Facility type code:	810
	Facility status code:	03
	Address:	109 ISLETON AVENUE
	City:	OAKLAND
	State:	CA
	Zip:	94603
	Alt. address:	109 ISLETON AVENUE
	City:	OAKLAND
	State:	CA
	Zip:	94603
	Facility investor:	"LARSON, ARTHENA"
	Licensee type:	A
	License effective date:	941015
	License expiration date:	Not Reported
	License issue date:	911015
	Program type:	"MAXIMUM CAPACITY: 12 CHILDREN, INCLUDING LICENSEE'S CHILDREN UNDER 10 YEARS OF AGE WHO RESIDE IN THE HOME, WITH NO MORE THAN 4 INFANTS (INFANT MEANS A CHILD UNDER 2 YEARS OLD)."

Original app. received date: 910906

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Facility closed date: Not Reported
 Mailing address: 109 ISLETON AVENUE
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94603
 Contact person: "LARSON, ARTHENA"
 Facility capacity: 12
 Type of clients served: 960
 Facility phone: 5106353040

<p>F28 SE 1/2-1 mi 4507 Higher</p>	<p>Hospital type: Num of times COO: Owner date: City: Has plan of corr: Compliance status: SSA county code: Cross ref number: FMS survey date: Current survey date: Medicare/Medicaid: Facility name: Intermediary/Carrier: Medicaid number: Participation date: Prior COO date: Prior carrier: Provider ID: Record Status: Region code: Is Partial Record: state abbrev: ssa state: state region cd: street address: Phone num: Termination reason: Term Date: Purpose of action: Provider control: Zip: Fips state: Fips cnty: SSA MSA: SSA MSA size code: Date accredited: Accred expire date: Accred Org: Num beds: Num cert beds: Source: Edr id:</p>	<p>02 00 Not Reported OAKLAND Not Reported B 000 Not Reported Not Reported 19911219 1 BERNHARDT DRIVE HOUSE Not Reported Not Reported 19881101 Not Reported Not Reported 05G432 A 09 Not Reported CA 05 BK 9993 BERNHARDT DRIVE 4156389743 05 19920921 2 02 94603 06 001 418 B Not Reported Not Reported Not Reported 0006 0006 US_HOSPITAL_POSOTHER SRHO20070006756</p>	<p>SRHO20070006756 AHA Hospitals</p>
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MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	EDR ID Database
29 ESE 1/2-1 mi 4515 Higher	EDR ID: SRDCCA200711363 Facility number: 13414347 Facility name: "CAIN, ANNETTE" Facility eval. code: 0105 Facility office number: 02 Facility county number: 01 Facility type code: 810 Facility status code: 03 Address: 181 ISLETON AVENUE City: OAKLAND State: CA Zip: 94603 Alt. address: 200 HUNTER AVENUE City: OAKLAND State: CA Zip: 94603 Facility investor: "CAIN, ANNETTE" Licensee type: A License effective date: 990823 License expiration date: Not Reported License issue date: 990823 Program type: "MAXIMUM CAPACITY: 6 CHILDREN WITH NO MORE THAN 3 INFANTS, OR 4 INFANTSONLY, OR CAPACITY 8 CHILDREN WHEN 2 ARE AT LEAST 6 YEARS OF AGE WITH AMAXIMUM OF 2 INFANTS; PROPERTY OWNER/LANDLORD CONSENT IS REQUIRED" Original app. received date: 990323 Facility closed date: Not Reported Mailing address: 181 ISLETON AVENUE Mailing city: OAKLAND Mailing state: CA Mailing zip: 94603 Contact person: "CAIN, ANNETTE" Facility capacity: 8 Type of clients served: 960 Facility phone: 5106381397	SRDCCA200711363 Daycare
30 SE 1/2-1 mi 4704 Higher	EDR ID: SRDCCA200706893 Facility number: 10215607 Facility name: "HUGHES, JUANITA" Facility eval. code: 0105 Facility office number: 02 Facility county number: 01 Facility type code: 810 Facility status code: 03 Address: 164 KERWIN AVENUE City: OAKLAND State: CA Zip: 94603 Alt. address: 164 KERWIN AVENUE City: OAKLAND State: CA Zip: 94603 Facility investor: "HUGHES, JUANITA"	SRDCCA200706893 Daycare

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Licensee type: A
 License effective date: 931122
 License expiration date: Not Reported
 License issue date: 931122
 Program type: "MAXIMUM CAPACITY: 6 CHILDREN, INCLUDING LICENSEE'S CHILDREN UNDER 10 YEARS OF AGE WHO RESIDE IN THE HOME, WITH NO MORE THAN 3 INFANTS OR 4 INFANTS ONLY (INFANT MEANS A CHILD UNDER 2 YEARS OLD). "

Original app. received date: 930823
 Facility closed date: Not Reported
 Mailing address: 164 KERWIN AVENUE
 Mailing city: OAKLAND
 Mailing state: CA
 Mailing zip: 94603
 Contact person: "HUGHES, JUANITA "
 Facility capacity: 6
 Type of clients served: 960
 Facility phone: 5106324813

31		SRHO20070145676
South	Hospital type: 01	AHA Hospitals
1/2-1 mi	Num of times COO: 00	
4746	Owner date: Not Reported	
Higher	City: SAN LEANDRO	
	Has plan of corr: 1	
	Compliance status: A	
	SSA county code: 000	
	Cross ref number: Not Reported	
	FMS survey date: Not Reported	
	Current survey date: 19951006	
	Medicare/Medicaid: 1	
	Facility name: INTERSTATE ENVIRONMENTAL MEDICAL LAB	
	Intermediary/Carrier: Not Reported	
	Medicaid number: Not Reported	
	Participation date: 19940824	
	Prior COO date: Not Reported	
	Prior carrier: Not Reported	
	Provider ID: 05D0890760	
	Record Status: A	
	Region code: 09	
	Is Partial Record: Not Reported	
	state abbrev: CA	
	ssa state: 05	
	state region cd: M2	
	street address: 130 DOOLITTLE DRIVE SUITE 16	
	Phone num: 5105671440	
	Termination reason: 08	
	Term Date: 19981011	
	Purpose of action: 2	
	Provider control: 04	
	Zip: 94577	
	Fips state: 06	
	Fips cnty: 001	
	SSA MSA: 418	
	SSA MSA size code: B	
	Date accredited: Not Reported	

MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	Elevation	Site	EDR ID Database
					Accred expire date: Not Reported Accred Org: Not Reported Num beds: 0000 Num cert beds: 0000 Source: US_HOSPITAL_POSCLIA Edr id: SRHO20070145676	
32	North	1/2-1 mi	4763	Higher	Hospital type: 01 Num of times COO: 00 Owner date: Not Reported City: OAKLAND Has plan of corr: Not Reported Compliance status: Not Reported SSA county code: 000 Cross ref number: Not Reported FMS survey date: Not Reported Current survey date: Not Reported Medicare/Medicaid: Not Reported Facility name: OAKCARE MEDICAL GROUP, INC Intermediary/Carrier: Not Reported Medicaid number: Not Reported Participation date: 19971229 Prior COO date: Not Reported Prior carrier: Not Reported Provider ID: 05D0937961 Record Status: A Region code: 09 Is Partial Record: Y state abbrev: CA ssa state: 05 state region cd: LAB street address: 675 HEGENBERGER ROAD SUITE 123 Phone num: 5106325514 Termination reason: 08 Term Date: 20031228 Purpose of action: Not Reported Provider control: 04 Zip: 94621 Fips state: 06 Fips cnty: 001 SSA MSA: 418 SSA MSA size code: B Date accredited: Not Reported Accred expire date: Not Reported Accred Org: Not Reported Num beds: 0000 Num cert beds: 0000 Source: US_HOSPITAL_POSCLIA Edr id: SRHO20070154407	SRHO20070154407 AHA Hospitals
G33	SE	1/2-1 mi	4957	Higher	Hospital type: 01 Num of times COO: 00	SRHO20070133685 AHA Hospitals

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Owner date: Not Reported
 City: SAN LEANDRO
 Has plan of corr: Not Reported
 Compliance status: Not Reported
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: Not Reported
 Medicare/Medicaid: Not Reported
 Facility name: LABORATORY CORPORATION OF AMERICA
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19930106
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0600639
 Record Status: A
 Region code: 09
 Is Partial Record: Y
 state abbrev: CA
 ssa state: 05
 state region cd: M2
 street address: 10930 BIGGE STREET
 Phone num: 5106354555
 Termination reason: 00
 Term Date: 20070227
 Purpose of action: Not Reported
 Provider control: 04
 Zip: 94577
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070133685

G34
 SE
 1/2-1 mi
 4957
 Higher

Hospital type: 01
 Num of times COO: 00
 Owner date: Not Reported
 City: SAN LEANDRO
 Has plan of corr: 1
 Compliance status: A
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: 19930708
 Medicare/Medicaid: 1
 Facility name: CHIRON CORPORATION REFERENCE TEST SVC
 Intermediary/Carrier: 00542

SRHO20070136281
 AHA Hospitals

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

EDR ID
 Database

Medicaid number: Not Reported
 Participation date: 19920901
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 05D0663422
 Record Status: A
 Region code: 09
 Is Partial Record: Not Reported
 state abbrev: CA
 ssa state: 05
 state region cd: M2
 street address: 10930 BIGGE STREET
 Phone num: 5106558730
 Termination reason: 04
 Term Date: 19930930
 Purpose of action: 1
 Provider control: 04
 Zip: 94577
 Fips state: 06
 Fips cnty: 001
 SSA MSA: 418
 SSA MSA size code: B
 Date accredited: Not Reported
 Accred expire date: Not Reported
 Accred Org: Not Reported
 Num beds: 0000
 Num cert beds: 0000
 Source: US_HOSPITAL_POSCLIA
 Edr id: SRHO20070136281

G35
 SE
 1/2-1 mi
 4966
 Higher

Hospital type: 01
 Num of times COO: 00
 Owner date: Not Reported
 City: SAN LEANDRO
 Has plan of corr: Not Reported
 Compliance status: A
 SSA county code: 000
 Cross ref number: Not Reported
 FMS survey date: Not Reported
 Current survey date: 20040716
 Medicare/Medicaid: 1
 Facility name: ALLERGY THERAPY SOLUTIONS INC
 Intermediary/Carrier: Not Reported
 Medicaid number: Not Reported
 Participation date: 19920901
 Prior COO date: Not Reported
 Prior carrier: Not Reported
 Provider ID: 14D0714890
 Record Status: A
 Region code: 09
 Is Partial Record: Not Reported
 state abbrev: CA
 ssa state: 05
 state region cd: M2

SRHO20070212347
 AHA Hospitals

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)
Elevation

Site

EDR ID
Database

street address: 10936 BIGGE STREET
Phone num: 5106381442
Termination reason: 00
Term Date: 20070327
Purpose of action: 2
Provider control: 02
Zip: 94577
Fips state: 06
Fips cnty: 001
SSA MSA: 418
SSA MSA size code: B
Date accredited: Not Reported
Accred expire date: Not Reported
Accred Org: Not Reported
Num beds: 0000
Num cert beds: 0000
Source: US_HOSPITAL_POSCLIA
Edr id: SRHO20070212347

RECORDS SEARCHED/DATA CURRENCY TRACKING

Census

Source: U.S. Census Bureau
Telephone: 301-763-4636

2010 U.S. Census data was used to estimate residential population following these EPA guidelines:
"Census data are presented by Census tract. If your circle covers only a portion of the tract, you should develop an estimate for that portion...Determine the population density per square mile (total population of the Census tract divided by the number of square miles in the tract) and apply that density figure to the number of square miles within your circle."

FED_LAND: Federal Lands

Source: USGS
Telephone: 888-275-8747

Federal lands data. Includes data from several Federal land management agencies, including Fish and Wildlife Service, Bureau of Land Management, National Park Service, and Forest Service. Includes National Parks, Forests, Monuments; Wildlife Sanctuaries, Preserves, Refuges; Federal Wilderness Areas.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Colleges - Integrated Postsecondary Education Data

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on integrated postsecondary education in the United States.

Arenas

Source: Dunhill International

EDR indicates the location of buildings and facilities - arenas - where individuals who are public receptors are likely to be located.

Prisons: Bureau of Prisons Facilities

Source: Federal Bureau of Prisons
Telephone: 202-307-3198

List of facilities operated by the Federal Bureau of Prisons.

Daycare Centers: Licensed Facilities

Source: Department of Social Services
Telephone: 916-657-4041

STREET AND ADDRESS INFORMATION

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*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix F

GeoTracker GAMA Report

449 Hegenberger Rd, Oakland, CA 94621, USA

LIMIT TO SITES WITHIN FEET OF THIS LOCATION

[REMOVE SEARCH RADIUS](#) [DOWNLOAD DATA IN SEARCH RADIUS](#)

[VIEW WATER QUALITY SUMMARY FOR ALAMEDA COUNTY](#)

449 Hegenberger Road, Oakland

Map Address

Select Data to Display

Select a Data Category:

- Groundwater Well Locations
- Wells with Groundwater Chemical Data
- Groundwater Elevation / Depth Data

Select Datasets:

- Department of Pesticide Regulation
- Department of Water Resources
- GAMA - Domestic Wells
- GAMA - Special Studies
- GAMA - Priority Basin Project
- Irrigated Lands Program (Central Coast RB)
- Monitoring wells (Water Board Regulated Sites)
- Public Water System Wells - Actual Locations
- National Water Information System (NWIS)

Run My Query

Filters / Data Export

Tools

Reports and Well Logs

Map Coverages

GeoTracker Sites

CONTACT US TAKE A TOUR VIEW ON GEOTRACKER

449 Hegenberger Road, Oakland

Map Address

One Toyota of Oakland

In-N-Out Burger

Motel 6

Oakland DMV

Edgewater Dr

Hegenberger Rd

Starbucks

Chipotle Mexican Grill

Edgewater Dr

Pendleton Way

Leet Dr

Nimitz Fwy

Edes Ave

William "Bill" Patterson Park

Oakland UPS HUB / Customer Center

Oakland Aviation Museum

Edes Ave

Clara St

Ashton Ave

Burtwood

Casw

98th

Wistar Rd

Tunis Rd

Sextus Rd

Cairo Rd

Makin Rd

Fitzpatrick Rd

Empire Rd

Corral Rd

Jones Ave

Edes Ave

Phelps St

Worth St

Date St

85th Ave

880

Capwell Dr

Oakport St

Pardee Dr

Doornik Dr

Earman

*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix G

DWR - Well Completion Reports

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in

No. 106650

State Well No. 25/3W-28B1
Other Well No. _____

Notice of Intent No. _____
Permit No. or Date 77717

(1) OWNER: Name WE Lyons Construction (12) WELL LOG: Total depth _____ ft. Depth of completed well _____ ft.
Address 50 Neerhenberg Road from # _____ to # _____ ft. Formation / Description _____

Confidential Information

Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes No If yes, by whom? _____
Type of test Pump Bailer Air lift
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge 6 gal/min after 3/4 hours Water temperature _____
Chemical analysis made? Yes No If yes, by whom? _____
Electric log made? Yes No If yes, attach copy to this report

Work started 9/22 1977 Completed 10-7-1977

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Richard Roth
(Well Driller)
NAME Richard Roth
(Person, firm, or corporation) (Typed or printed)
Address 1417 5th St SE
City Alameda CA Zip 94501
License No. _____ Date of this report 10-7-77

25/3W 2862

QUADRUPLICATE
Use to comply with
local requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

100-
300-

Do not fill in

No. **273809**

Notice of Intent No. _____
Local Permit No. or Date **88142**

State Well No. _____
Other Well No. _____

Confidential Information

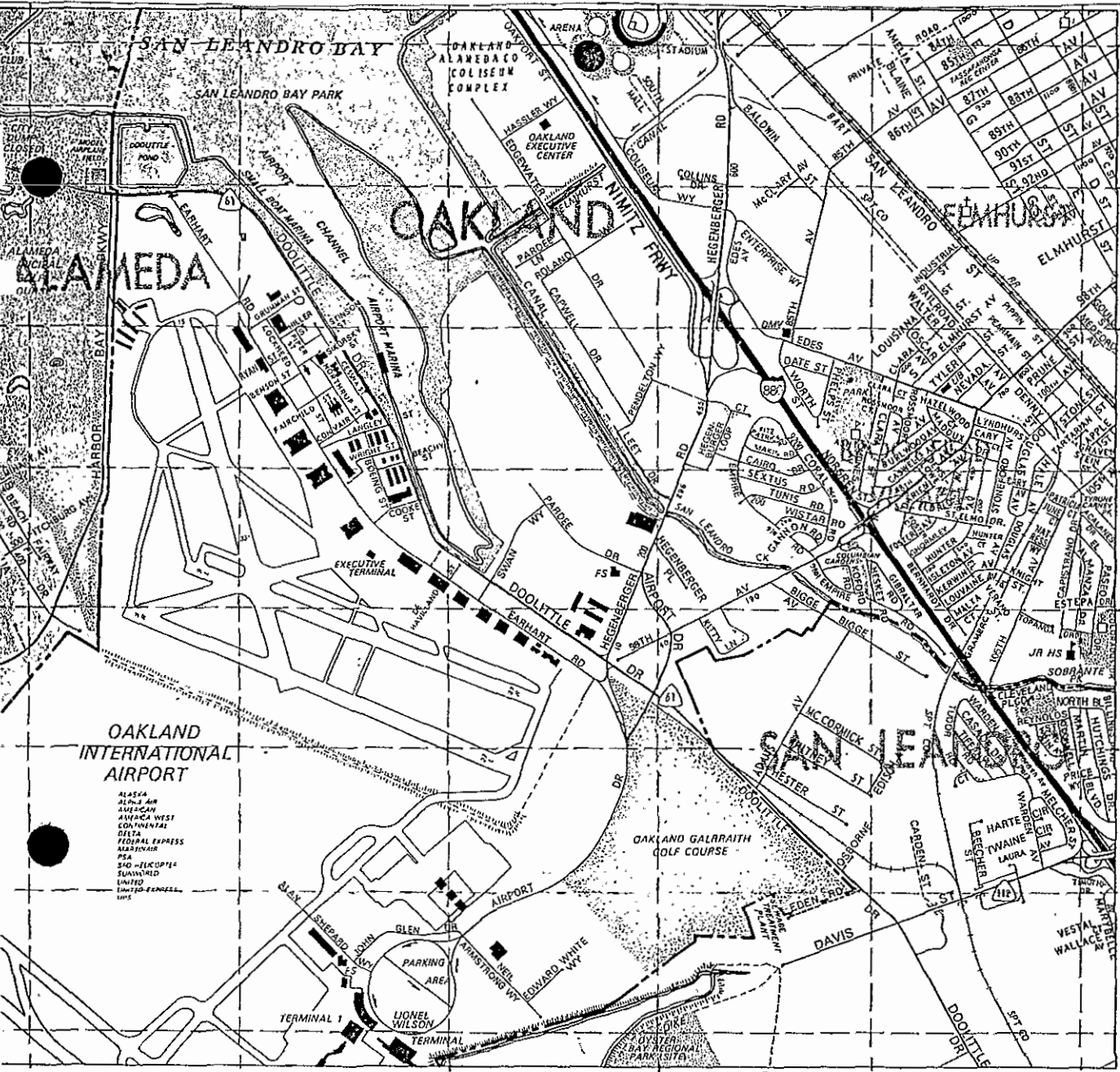
Standing level after well completion _____ ft.

_____ best of my knowledge and belief.

(11) WELL TESTS:
Was well test made? Yes No If yes, by whom? Driller
Type of test Pump Bailer Air lift
Depth to water at start of test 30 ft. At end of test _____ ft.
Discharge 250-300 min after 1/2 hours Water temperature _____
Chemical analysis made? Yes No If yes, by whom? _____
Was electric log made Yes No If yes, attach copy to this report

Signed _____ (Well Driller)
NAME Glenn Martell & Son, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 1818 Loveridge Road
City Pittsburg, CA ZIP 94565
License No. 510952 Date of this report 6/3/88

273809



OAKLAND INTERNATIONAL AIRPORT

- ALASKA
- ALPS AIR
- AMERICAN
- AVIACA WEST
- CONTINENTAL
- DELTA
- FEDERAL EXPRESS
- HAASNAAR
- PSA
- SFD - HELICOPTER
- SUNSHINE
- UNITED EXPRESS
- WEST

TERMINAL 1

LIONEL WILSON

PARKING AREA

OAKLAND GALRAITH GOLF COURSE

SECRET

*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



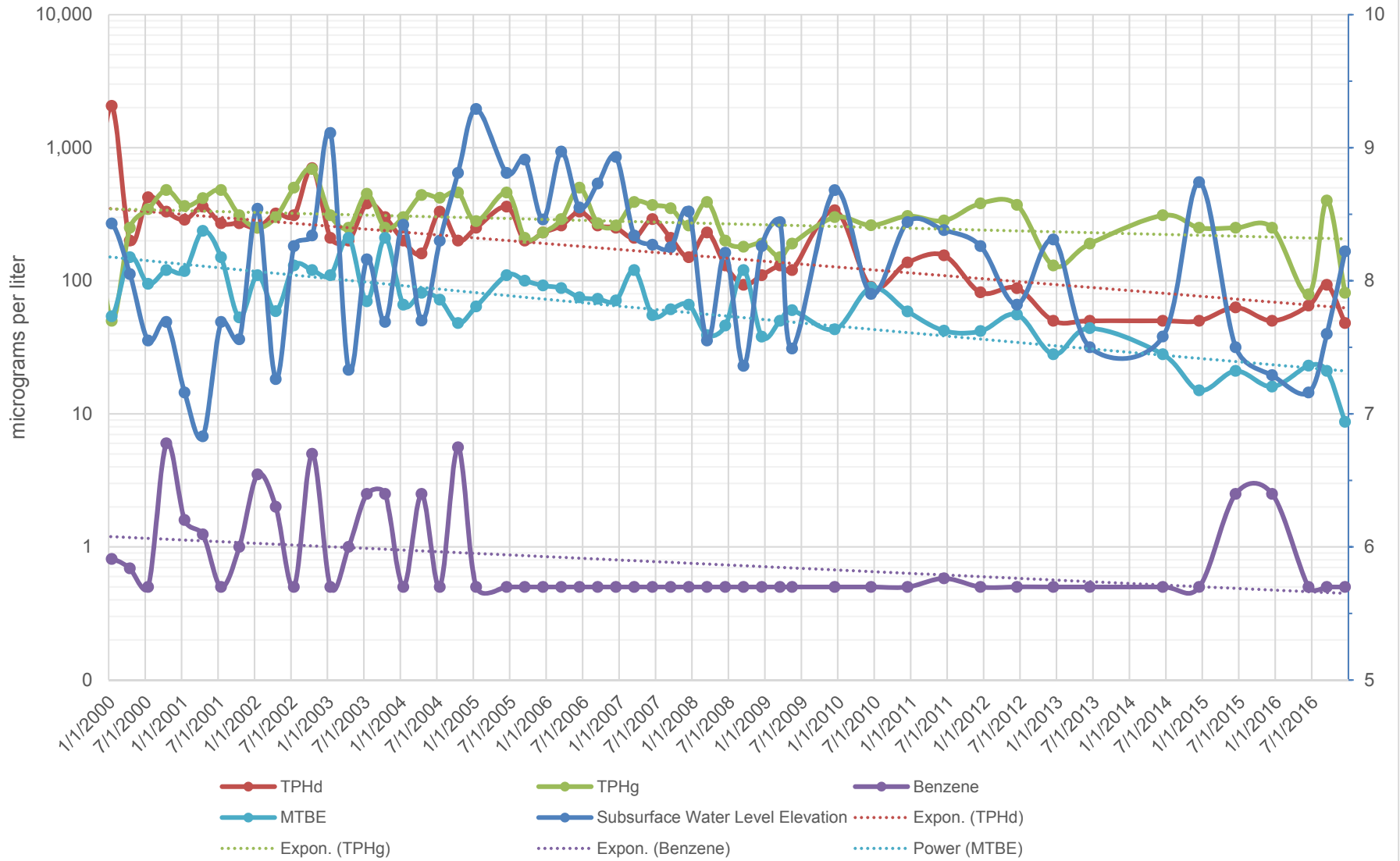
Appendix H

Time Series Graphs

Time Series Graph 1

76 Station No. 5191/5043

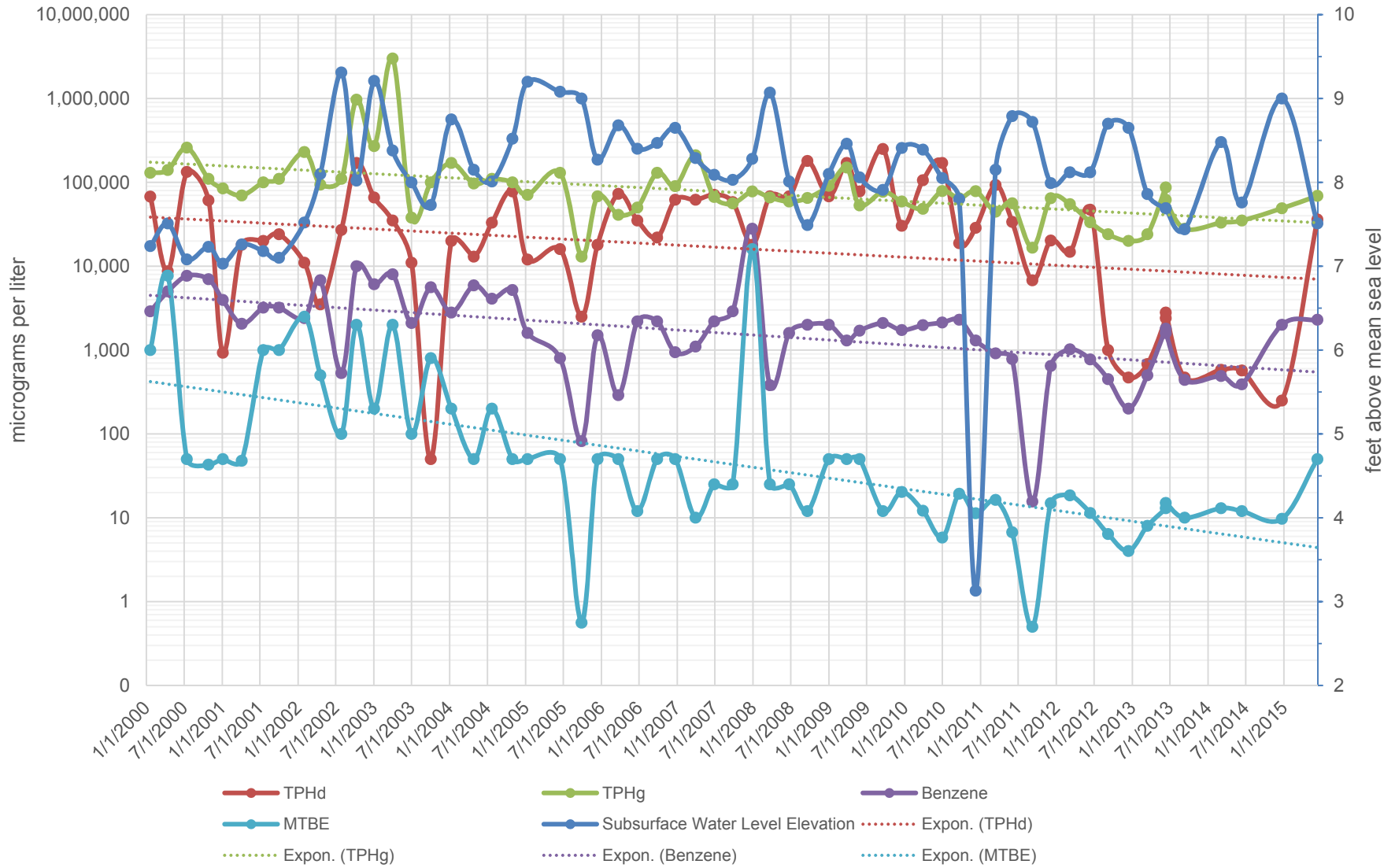
Monitoring Well MW-3 -2000 Through 2016



Time Series Graph 2

76 Station No. 5191/5043

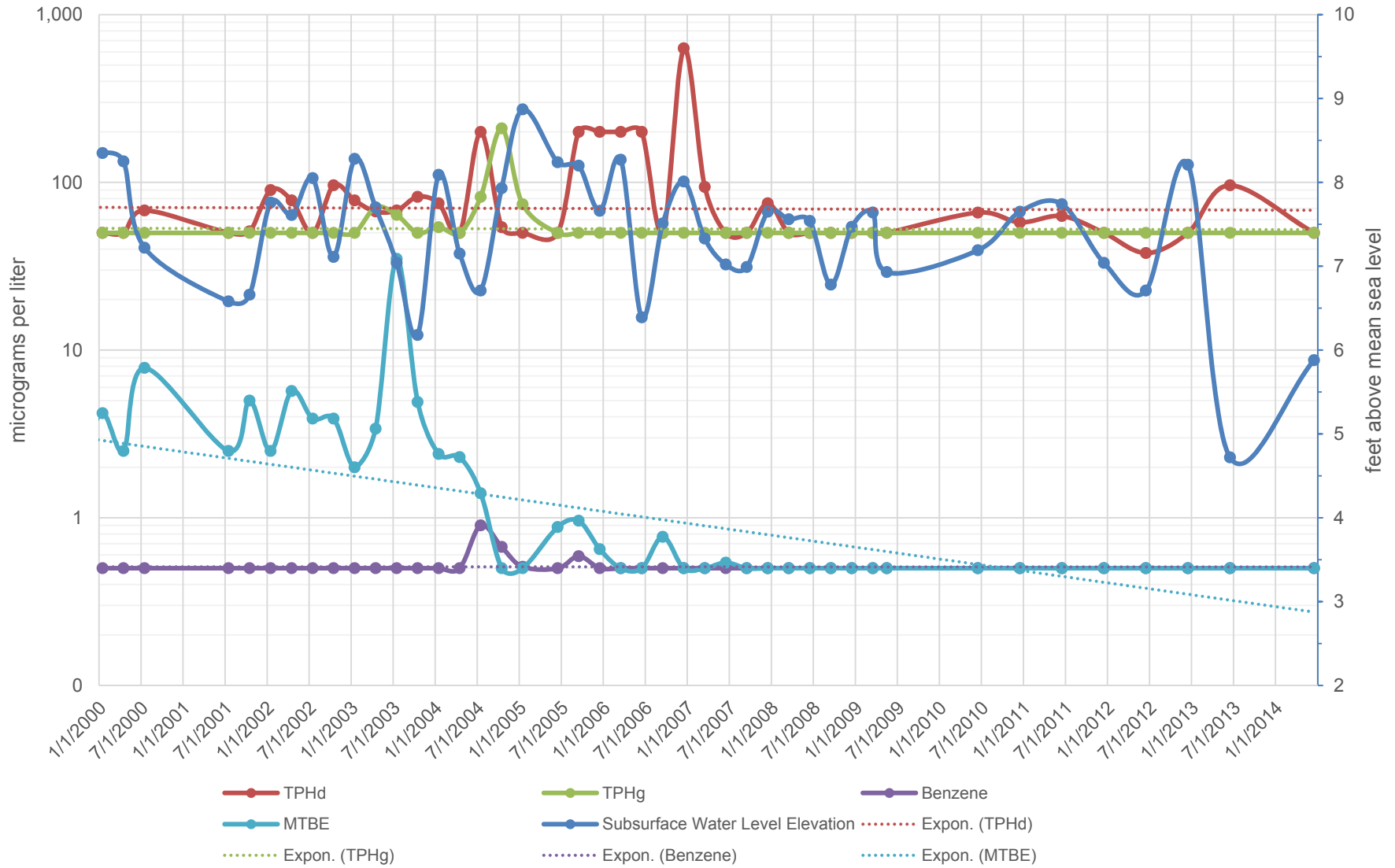
Monitoring Well MW-6 -2000 Through 2015



Time Series Graph 3

76 Station No. 5191/5043

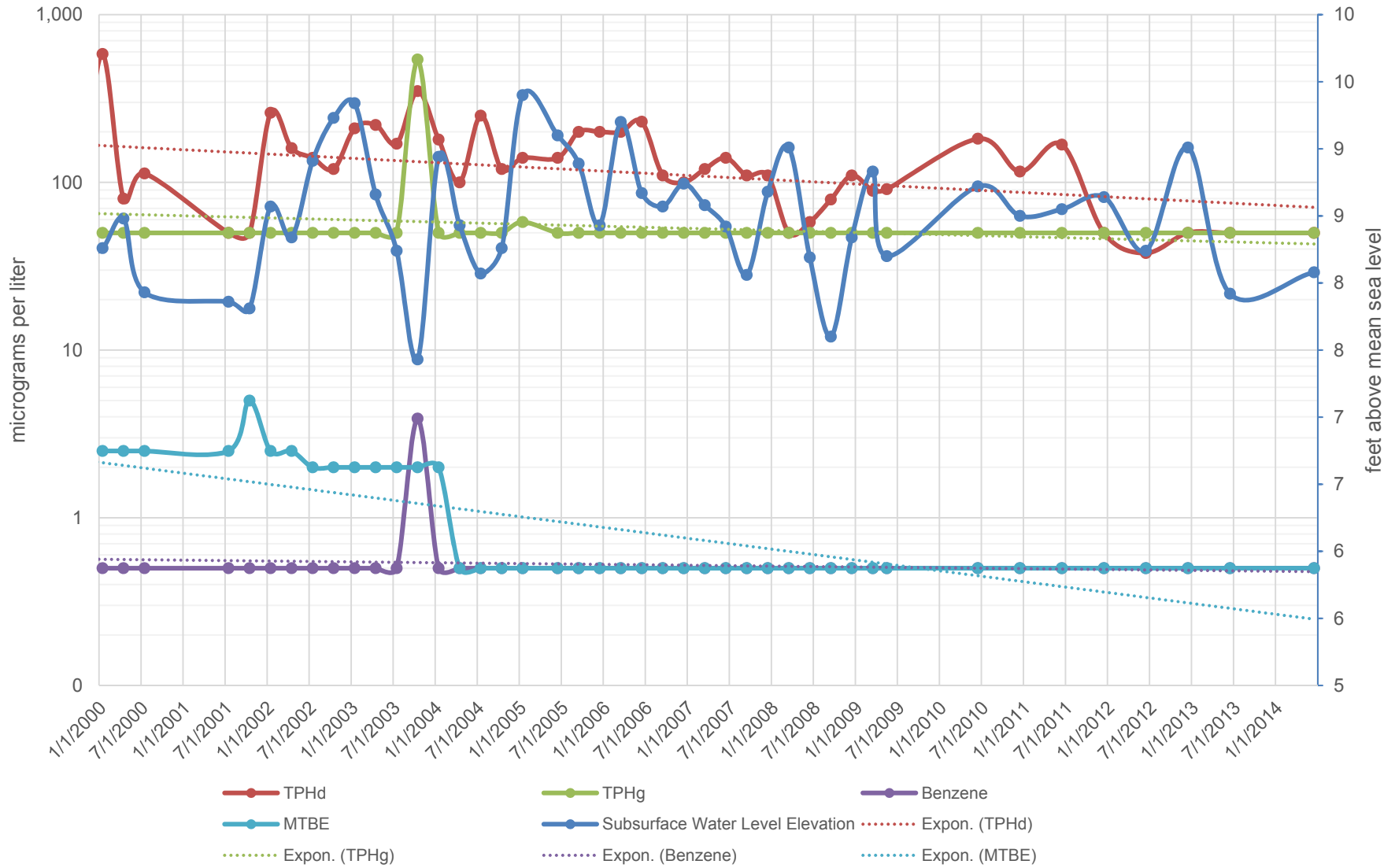
Monitoring Well MW-7 -2000 Through 2014



Time Series Graph 4

76 Station No. 5191/5043

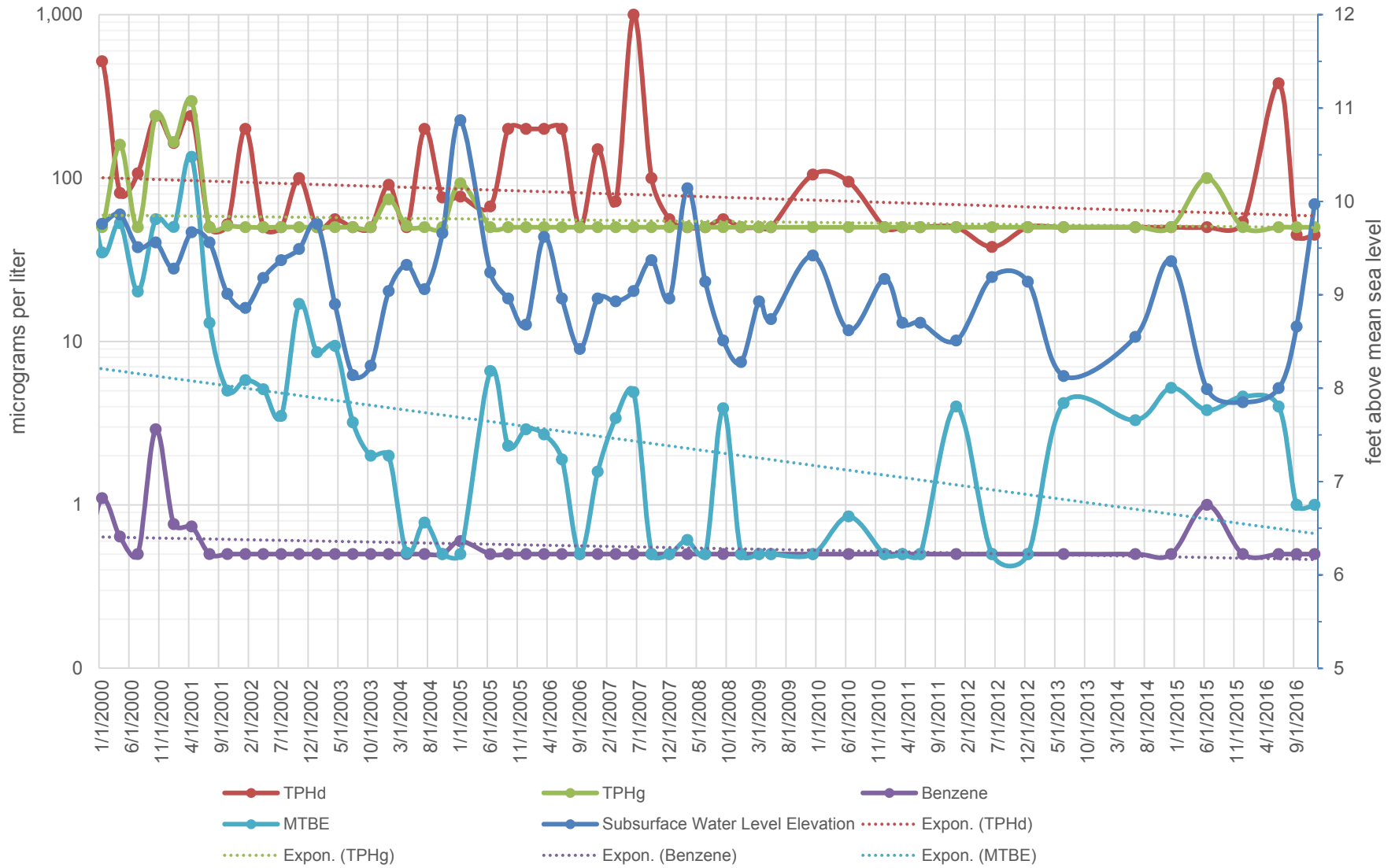
Monitoring Well MW-8 -2000 Through 2014



Time Series Graph 5

76 Station No. 5191/5043

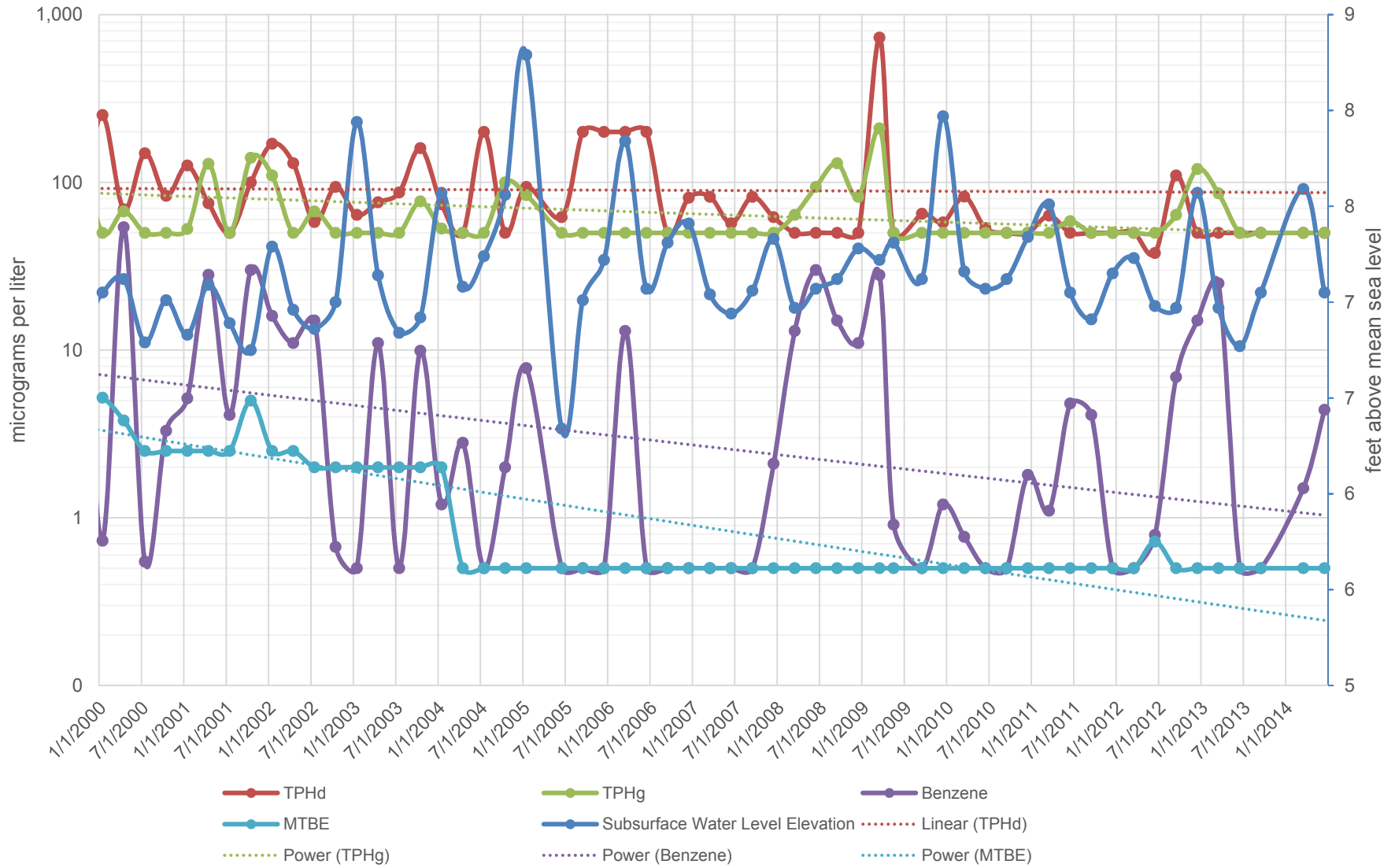
Monitoring Well MW-9 -2000 Through 2016



Time Series Graph 6

76 Station No. 5191/5043

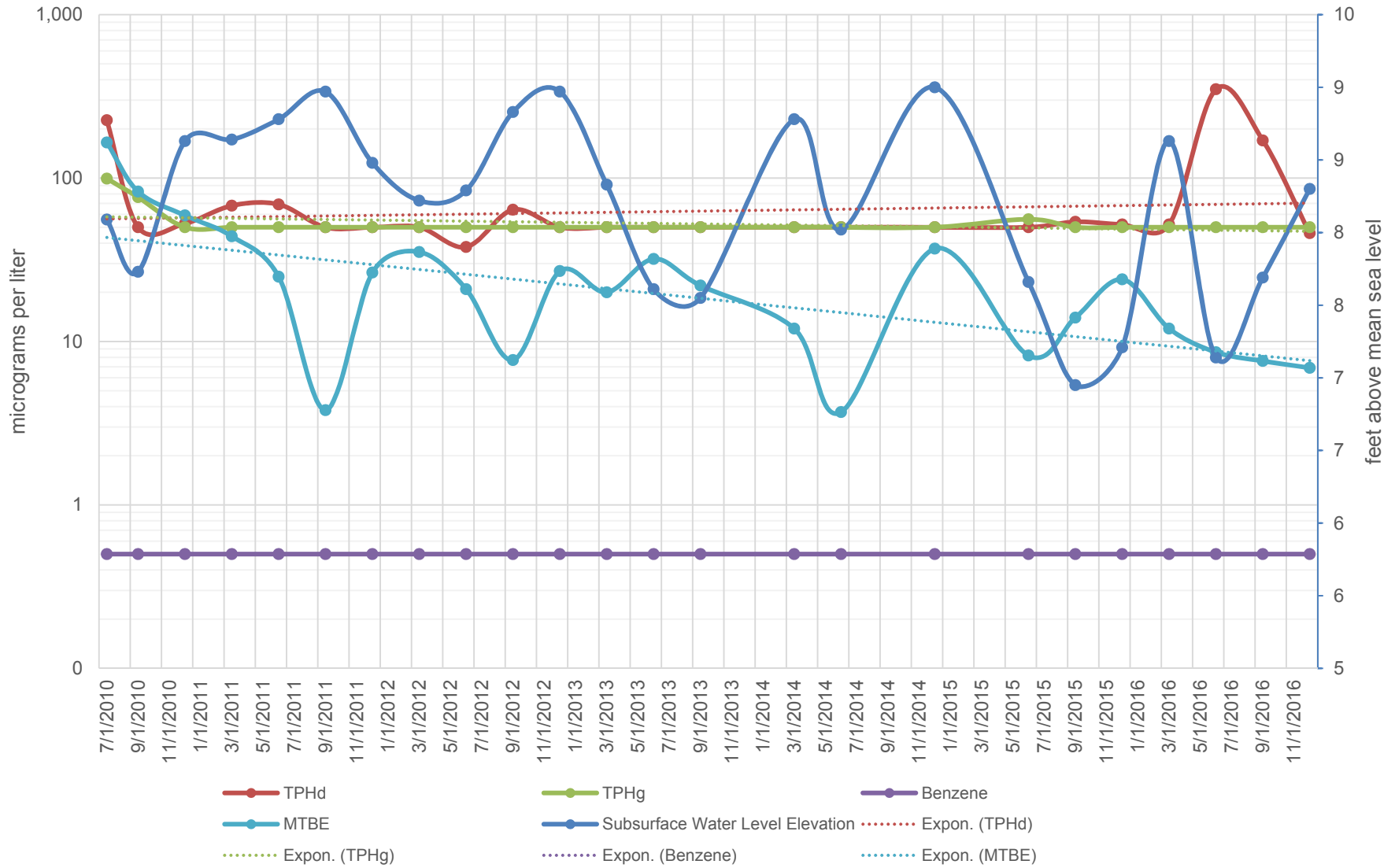
Monitoring Well MW-10 -2000 Through 2014



Time Series Graph 7

76 Station No. 5191/5043

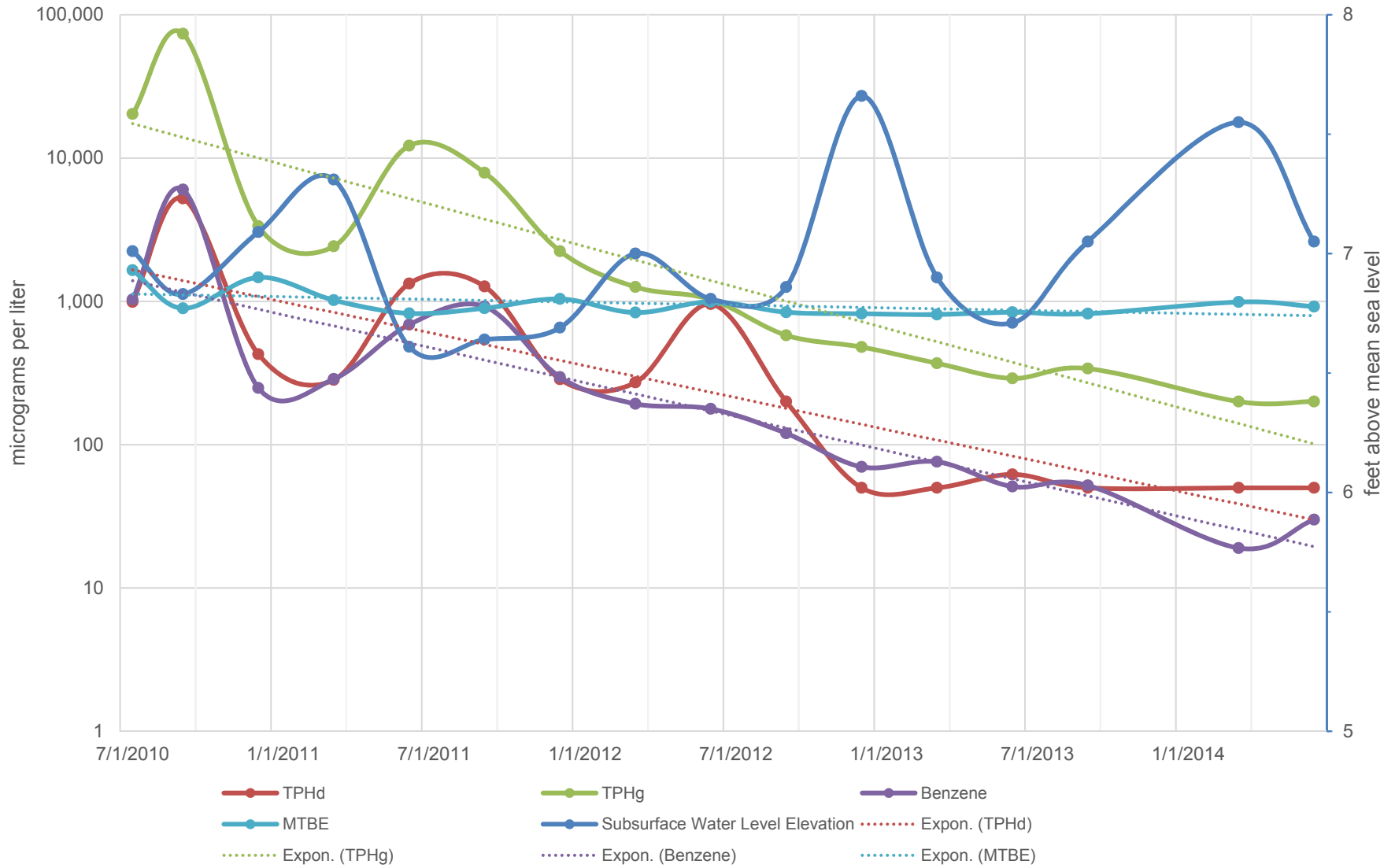
Monitoring Well MW-11 -2010 Through 2016



Time Series Graph 8

76 Station No. 5191/5043

Monitoring Well MW-12 -2010 Through 2014

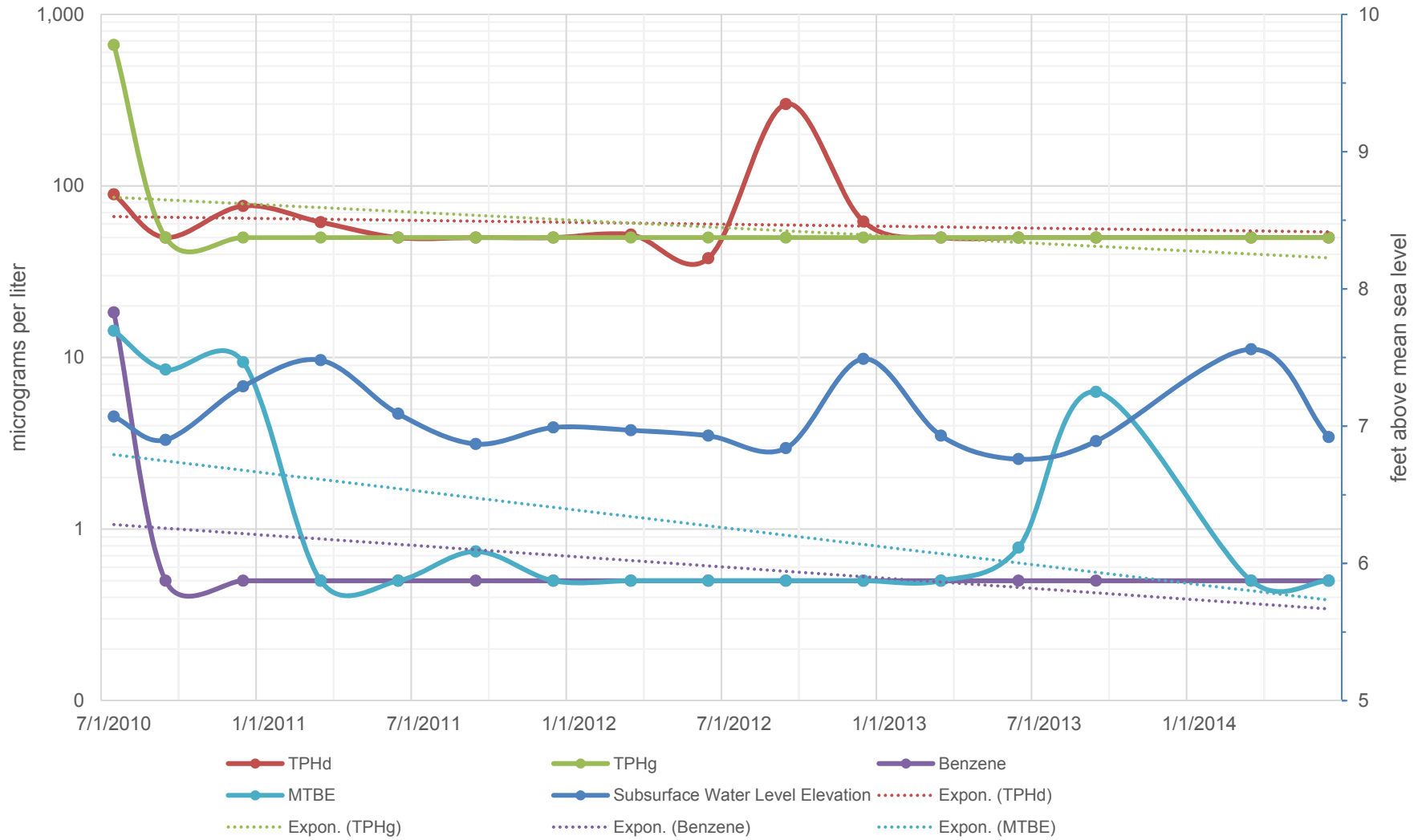


Time Series Graph 9

76 Station No. 5191/5043

Monitoring Well MW-12A -2010 Through 2014

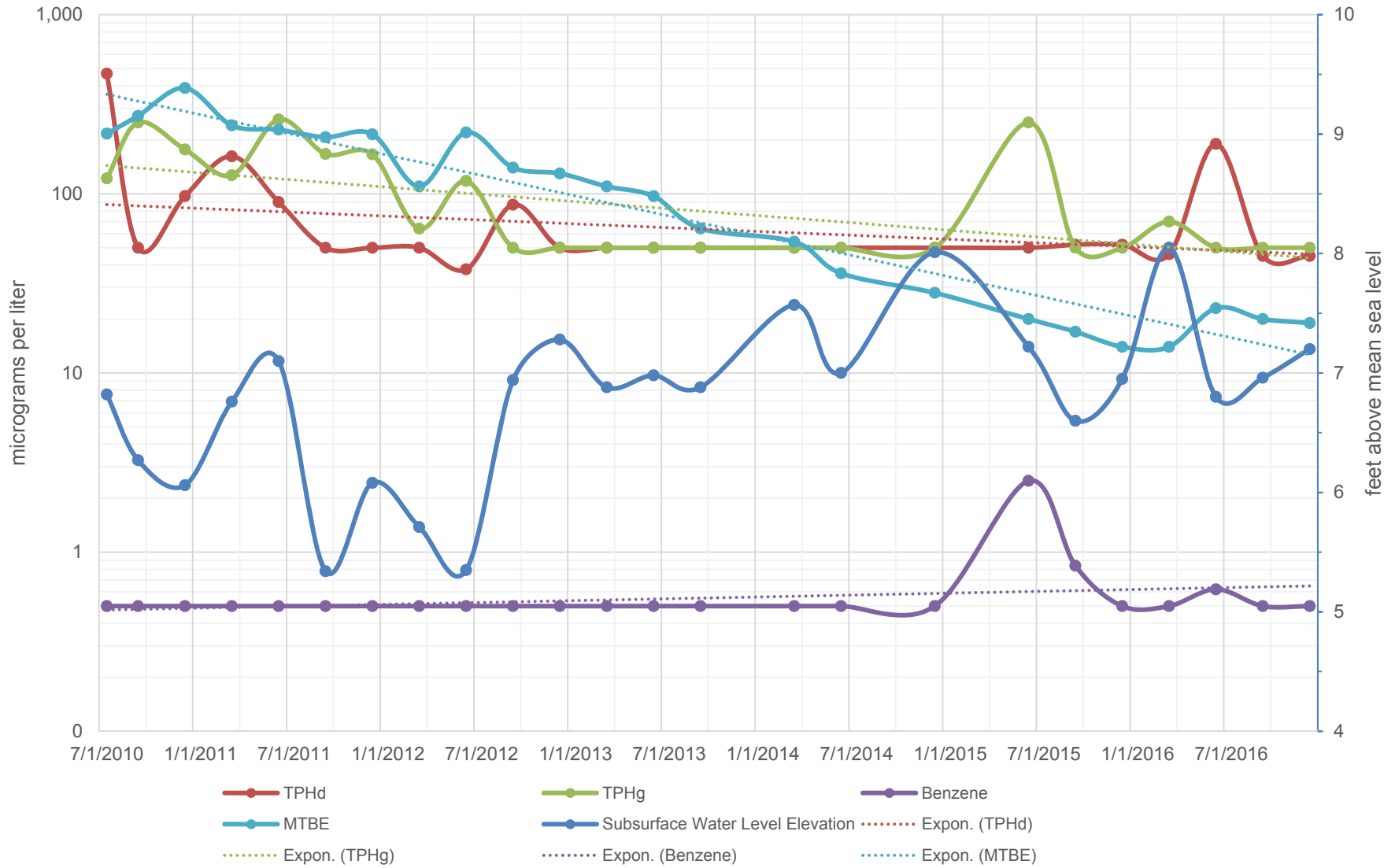
Deeper Screened Well



Time Series Graph 10

76 Station No. 5191/5043

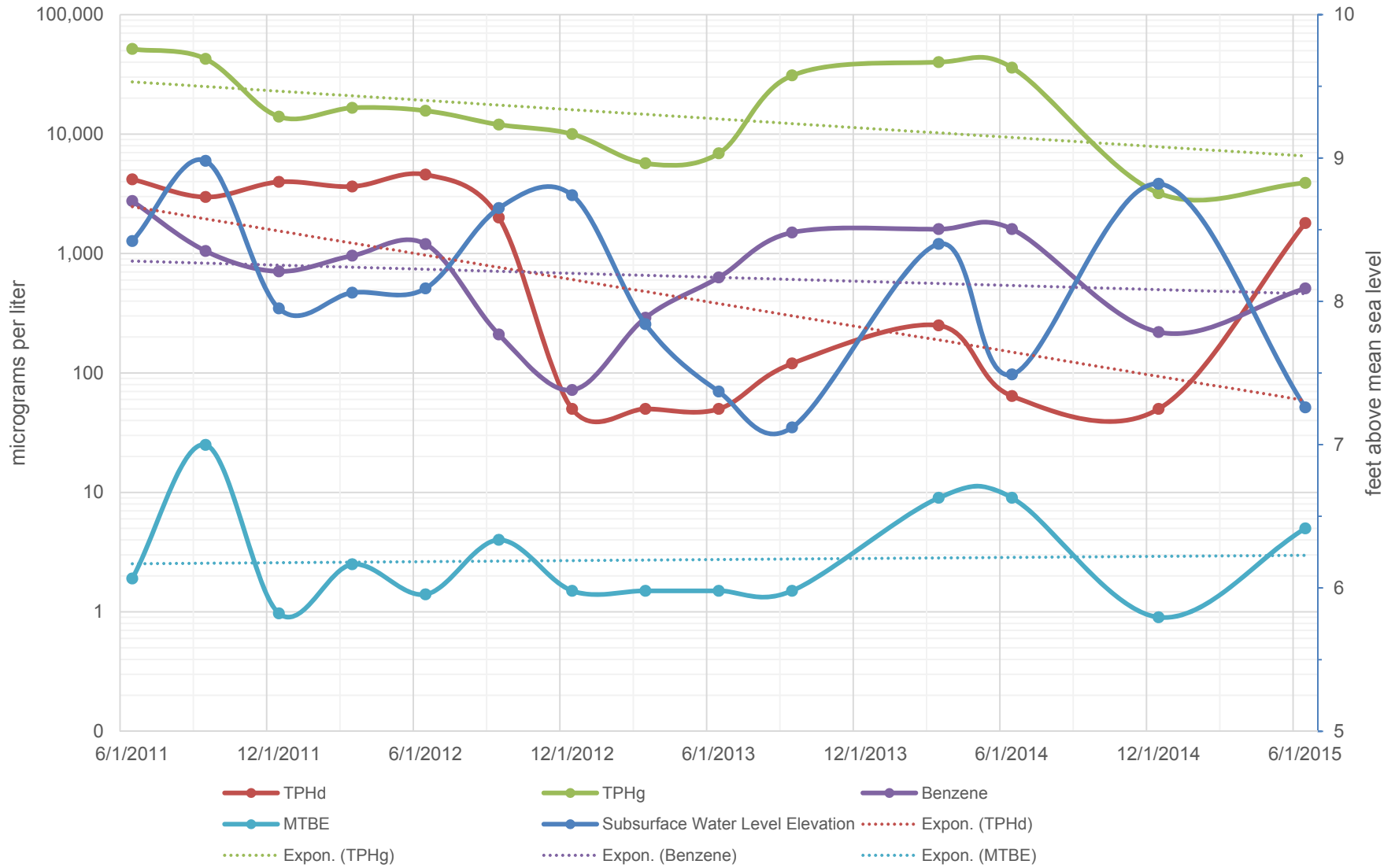
Monitoring Well MW-13 -2010 Through 2016



Time Series Graph 11

76 Station No. 5191/5043

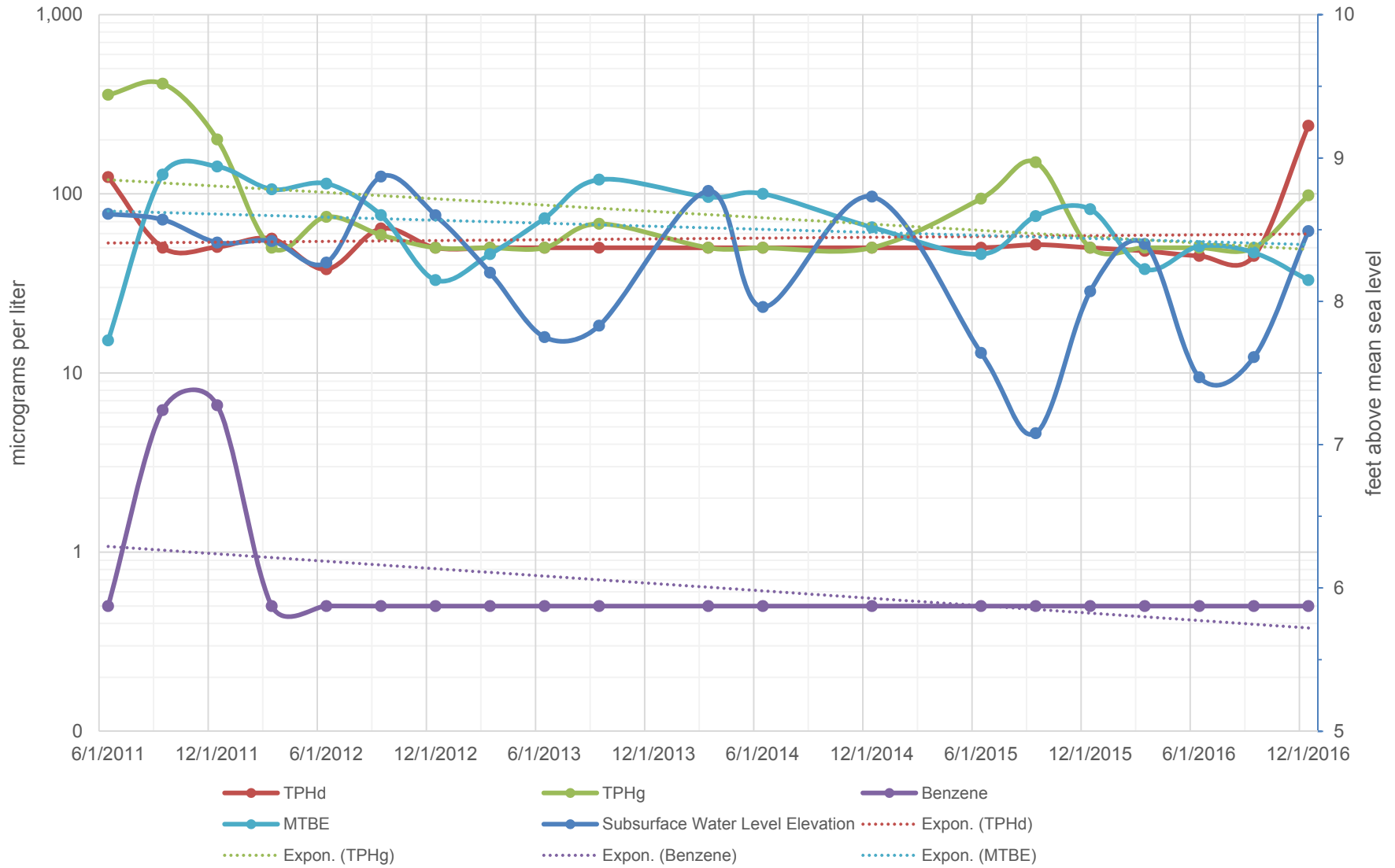
Monitoring Well MW-14 -2011 Through 2015



Time Series Graph 12

76 Station No. 5191/5043

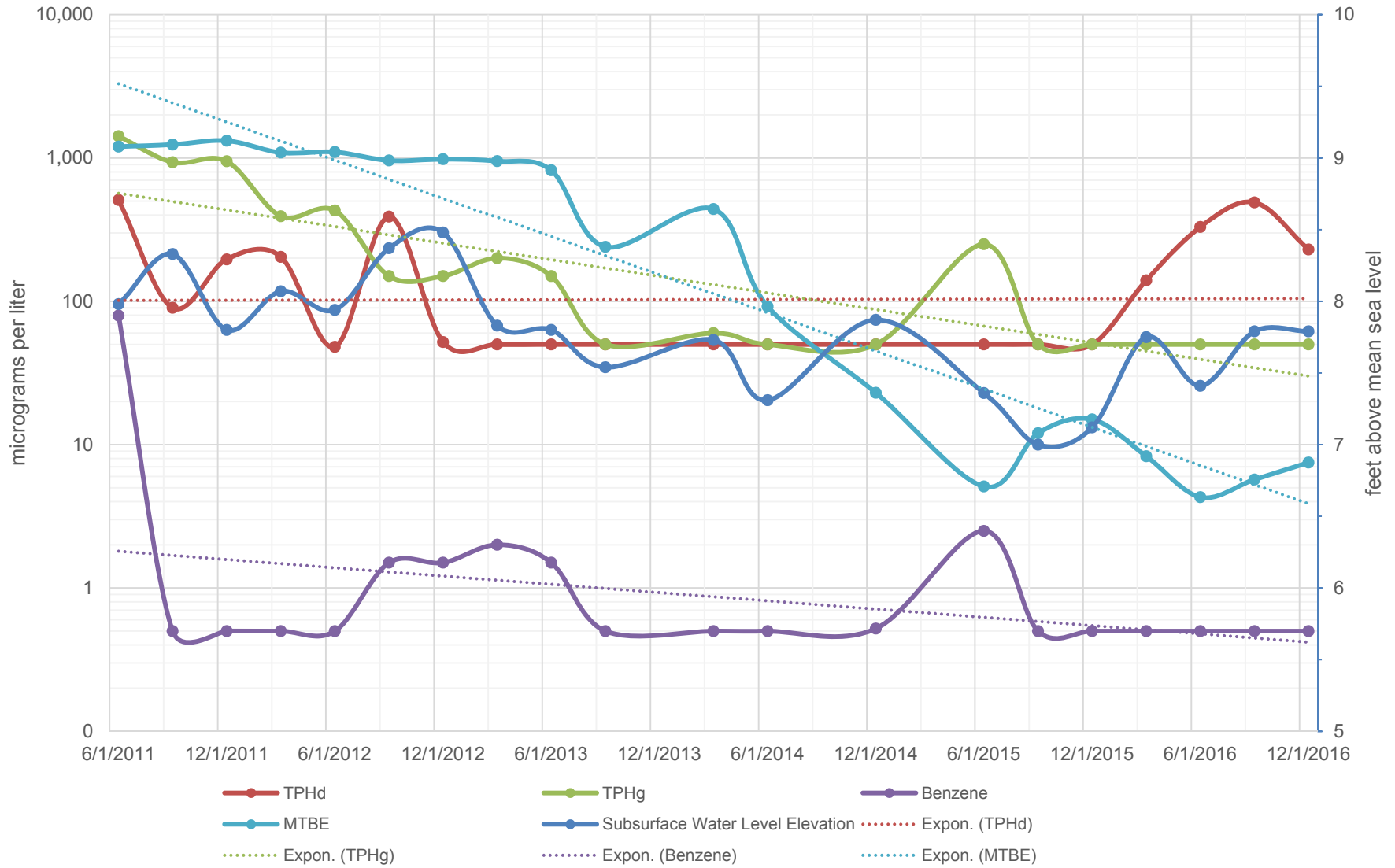
Monitoring Well MW-15 -2011 Through 2016



Time Series Graph 13

76 Station No. 5191/5043

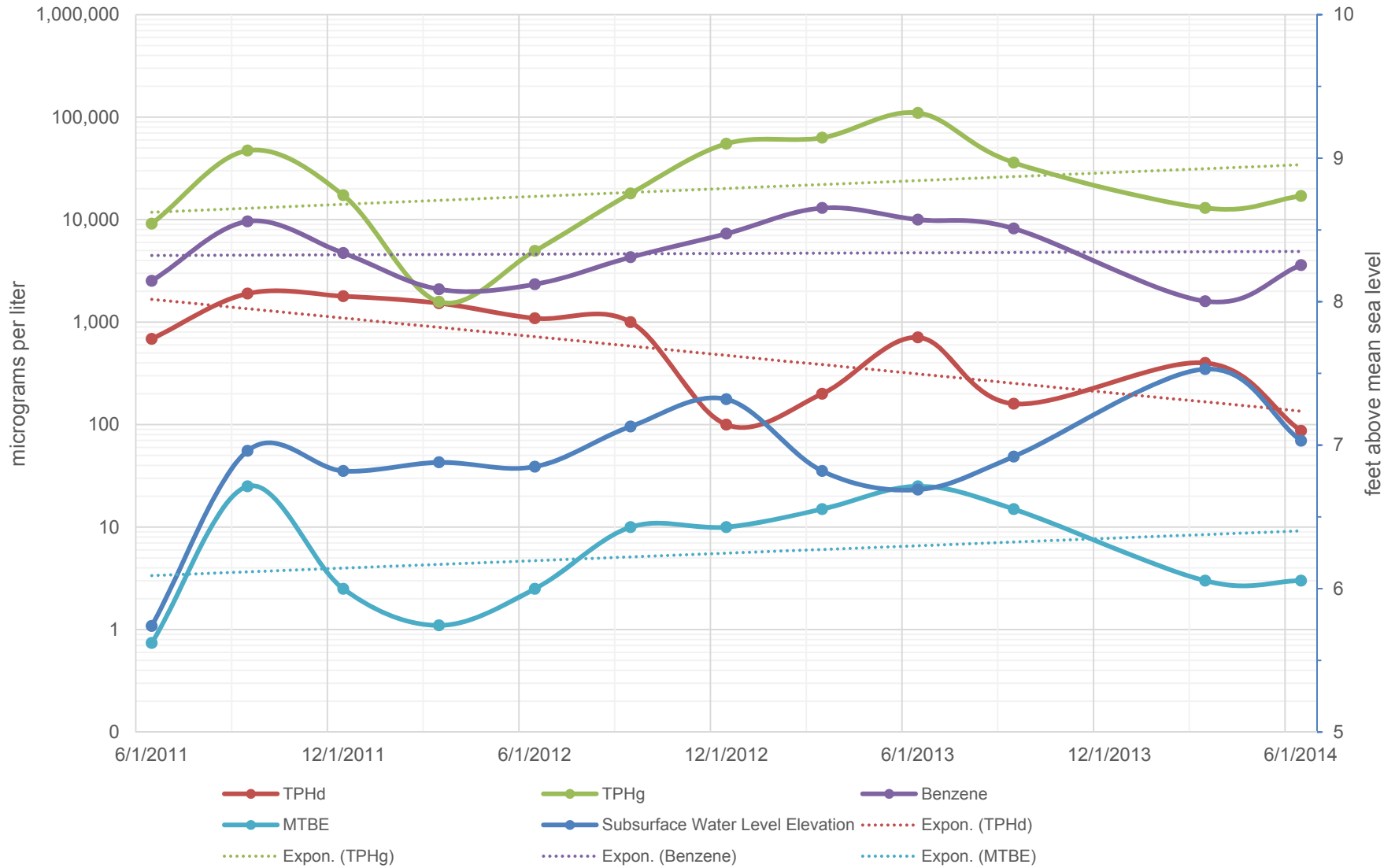
Monitoring Well MW-16 -2011 Through 2016



Time Series Graph 14

76 Station No. 5191/5043

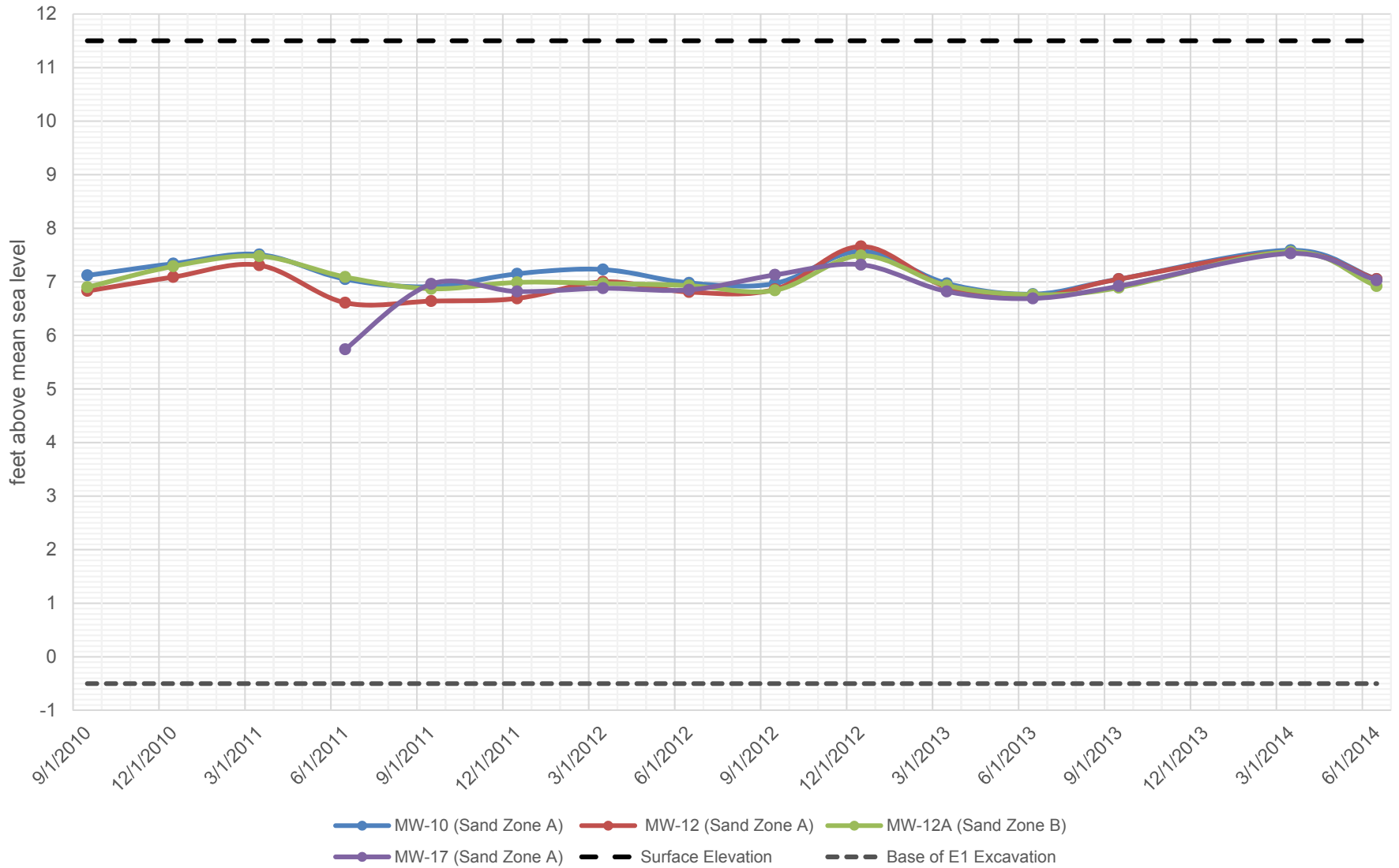
Monitoring Well MW-17 -2011 Through 2014



Time Series Graph 15

76 Station No. 5191/5043

Subsurface Water Elevations



*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix I

Mann Kendal Test Results

TABLE I-1
MANN-KENDALL ANALYSIS RESULTS SUMMARY
LABORATORY RESULTS FROM THE TWENTY MOST RECENT SUBSURFACE WATER SAMPLING EVENTS
76 SERVICE STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

Well	Location	Direction	Data Range	Number of Sampling Events	TPH-d	TPH-g	Benzene	MTBE
MW-3	Onsite northwest of USTs and dispenser islands	Up Gradient	June 2008 - December 2016	20	Decreasing	Stable/No Trend	Stable/No Trend	Decreasing
MW-6	Onsite southwest of current station building, USTs, and dispenser islands	Down to Cross Gradient	June 2010 - June 2015	20	Decreasing	Stable/No Trend	Stable/No Trend	Stable/No Trend
MW-7	Offsite south of station building and dispenser islands	Down Gradient	September 2006 - June 2014	20	Stable/No Trend	Stable/No Trend	Stable/No Trend	Stable/No Trend
MW-8	Offsite west of station building and dispenser islands	Down to Cross Gradient	September 2006 - June 2014	20	Decreasing	Stable/No Trend	Stable/No Trend	Stable/No Trend
MW-9	Onsite northwest of USTs and dispenser islands	Up Gradient	September 2008 - December 2016	20	Stable/No Trend	Stable/No Trend	Stable/No Trend	Stable/No Trend
MW-10	Onsite southeast of dispenser islands	Down to Cross gradient	May 2009 - June 2014	20	Decreasing	Stable/No Trend	Stable/No Trend	Stable/No Trend
MW-11	Onsite south of the dispenser islands	Down Gradient	June 2011 - December 2016	20	Stable/No Trend	Stable/No Trend	Stable/No Trend	Decreasing
MW-12	Onsite immediately adjacent to eastside dispenser islands	Down to Cross Gradient	July 2010 - June 2014	16	Decreasing	Decreasing	Decreasing	Decreasing
MW-12A	Onsite immediately adjacent to eastside dispenser islands	Down to Cross Gradient	July 2010 - June 2014	16	Stable/No Trend	Stable/No Trend	Stable/No Trend	Stable/No Trend
MW-13	Onsite south of dispenser islands	Down Gradient	June 2011 - December 2016	20	Stable/No Trend	Decreasing	Stable/No Trend	Decreasing
MW-14	Onsite southwest of current station building, USTs, and dispenser islands	Down to Cross Gradient	June 2011 - June 2015	14	Stable/No Trend	Decreasing	Stable/No Trend	Stable/No Trend
MW-15	Onsite immediately adjacent to the Westside of the dispenser islands	Down to Cross Gradient	June 2011 - December 2016	20	Stable/No Trend	Stable/No Trend	Stable/No Trend	Decreasing
MW-16	Onsite immediately adjacent to southern side dispenser islands	Down Gradient	June 2011 - December 2016	20	Stable/No Trend	Decreasing	Stable/No Trend	Decreasing
MW-17	Onsite immediately adjacent to eastside dispenser islands	Down to Cross Gradient	June 2011 - June 2014	12	Decreasing	Stable/No Trend	Stable/No Trend	Stable/No Trend

MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

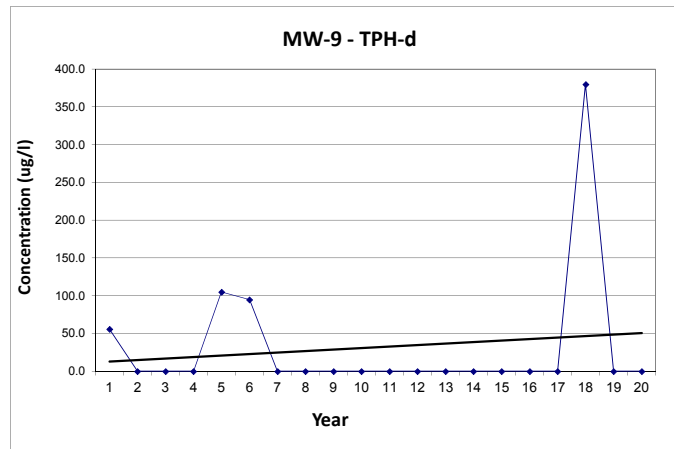
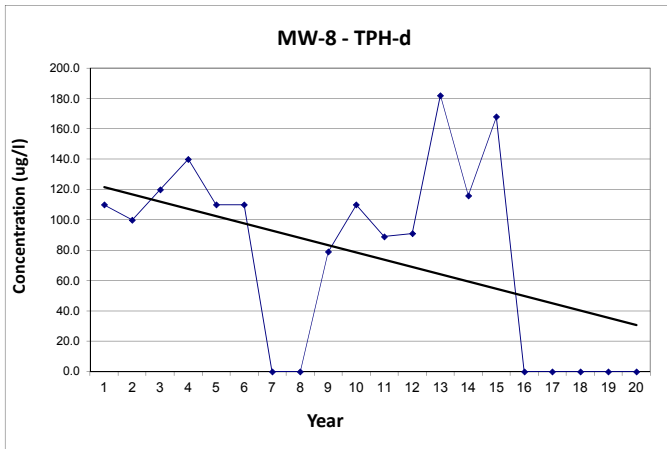
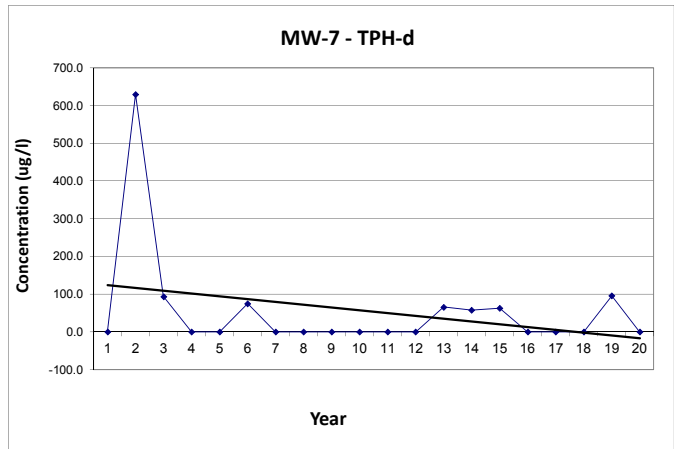
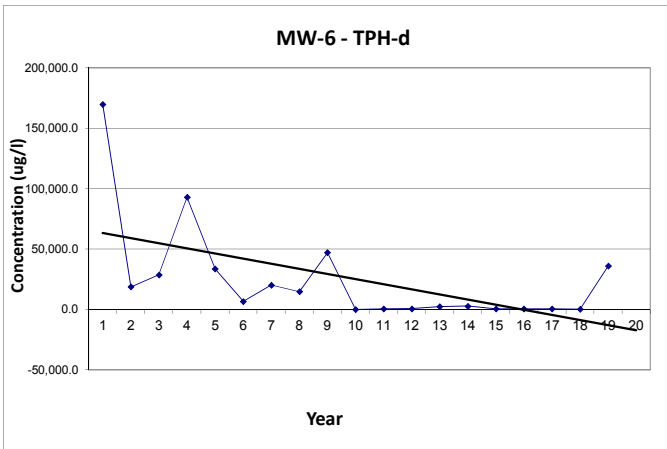
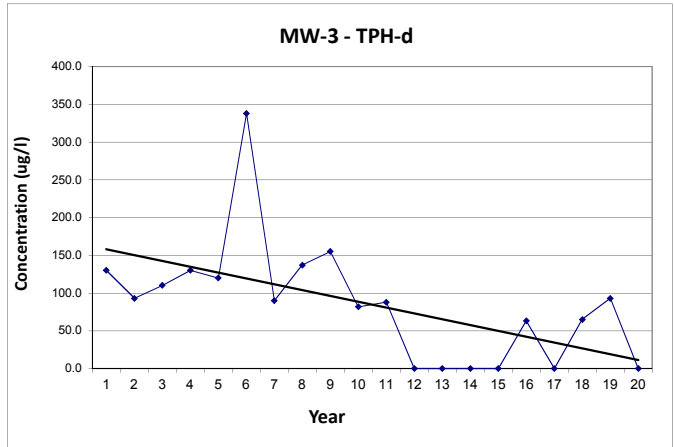
OAKLAND, CALIFORNIA

Contaminant: **TPH-d**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-3	MW-6	MW-7	MW-8	MW-9
	Decreasing	Decreasing	Stable/No Trend	Decreasing	Stable/No Trend

Monitoring Wells					
	MW-3	MW-6	MW-7	MW-8	MW-9
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	130.0	170,000.0	0.0	110.0	56.0
2	93.0	18,800.0	630.0	100.0	0.0
3	110.0	28,700.0	94.0	120.0	0.0
4	130.0	93,000.0	0.0	140.0	0.0
5	120.0	33,700.0	0.0	110.0	105.0
6	338.0	6,780.0	75.0	110.0	95.0
7	89.7	20,200.0	0.0	0.0	0.0
8	137.0	14,800.0	0.0	0.0	0.0
9	155.0	47,100.0	0.0	79.0	0.0
10	81.7	0.0	0.0	110.0	0.0
11	87.9	470.0	0.0	89.0	0.0
12	0.0	680.0	0.0	91.0	0.0
13	0.0	2,400.0	66.0	182.0	0.0
14	0.0	2,800.0	57.7	116.0	0.0
15	0.0	470.0	63.0	168.0	0.0
16	63.0	580.0	0.0	0.0	0.0
17	0.0	570.0	0.0	0.0	0.0
18	65.0	250.0	0.0	0.0	380.0
19	93.0	36,000.0	96.0	0.0	0.0
20	0.0		0.0	0.0	0.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

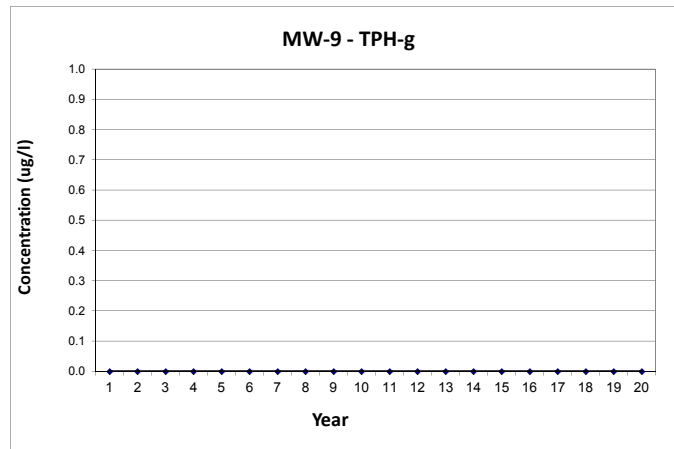
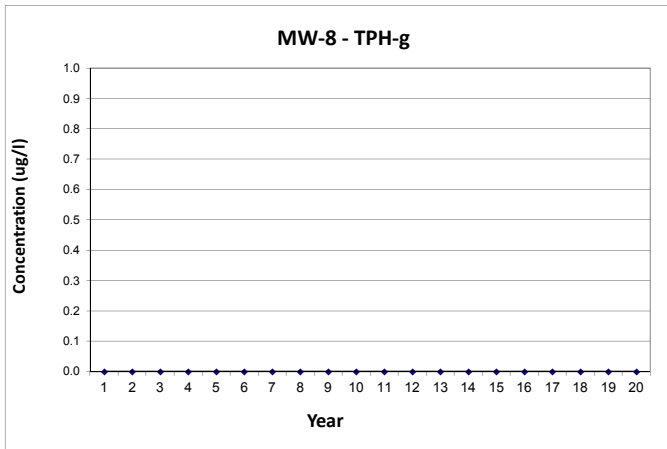
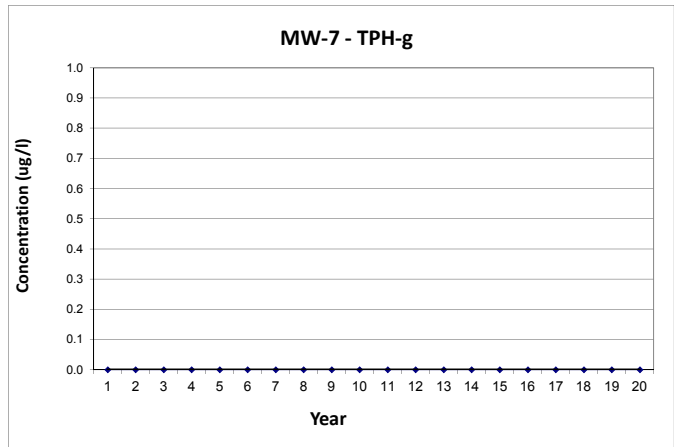
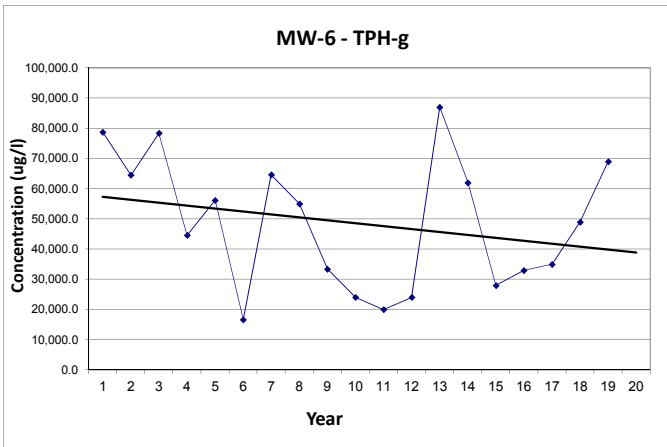
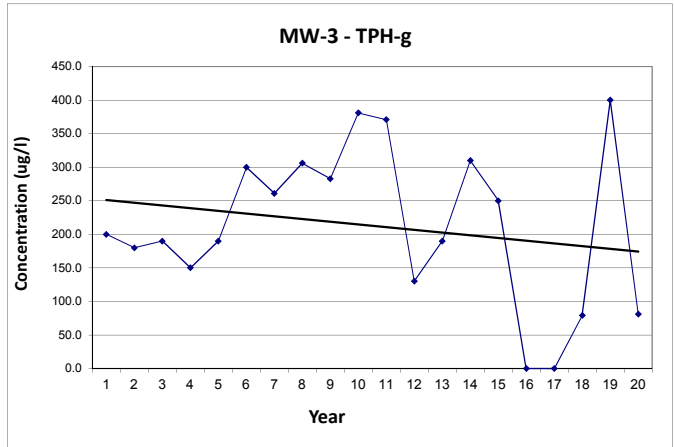
OAKLAND, CALIFORNIA

Contaminant: **TPH-g**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-3	Stable/No Trend
	MW-6	Stable/No Trend
	MW-7	Stable/No Trend
	MW-8	Stable/No Trend
	MW-9	Stable/No Trend

Monitoring Wells					
	MW-3	MW-6	MW-7	MW-8	MW-9
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	200.0	78,700.0	0.0	0.0	0.0
2	180.0	64,500.0	0.0	0.0	0.0
3	190.0	78,400.0	0.0	0.0	0.0
4	150.0	44,600.0	0.0	0.0	0.0
5	190.0	56,200.0	0.0	0.0	0.0
6	300.0	16,600.0	0.0	0.0	0.0
7	261.0	64,600.0	0.0	0.0	0.0
8	306.0	55,000.0	0.0	0.0	0.0
9	283.0	33,400.0	0.0	0.0	0.0
10	381.0	24,000.0	0.0	0.0	0.0
11	371.0	20,000.0	0.0	0.0	0.0
12	130.0	24,000.0	0.0	0.0	0.0
13	190.0	87,000.0	0.0	0.0	0.0
14	310.0	62,000.0	0.0	0.0	0.0
15	250.0	28,000.0	0.0	0.0	0.0
16	0.0	33,000.0	0.0	0.0	0.0
17	0.0	35,000.0	0.0	0.0	0.0
18	79.0	49,000.0	0.0	0.0	0.0
19	400.0	69,000.0	0.0	0.0	0.0
20	81.0		0.0	0.0	0.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

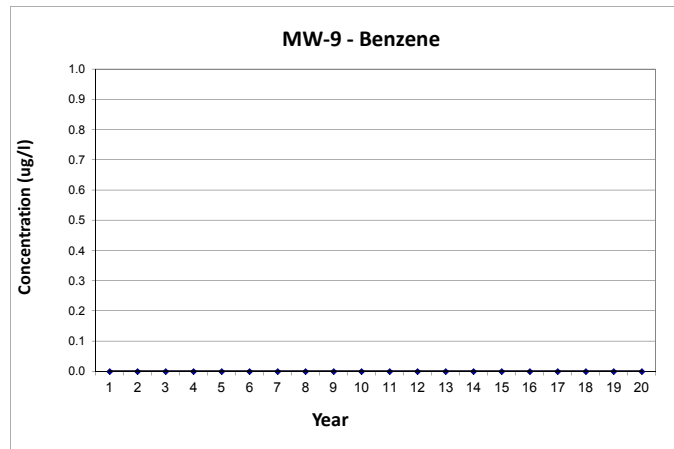
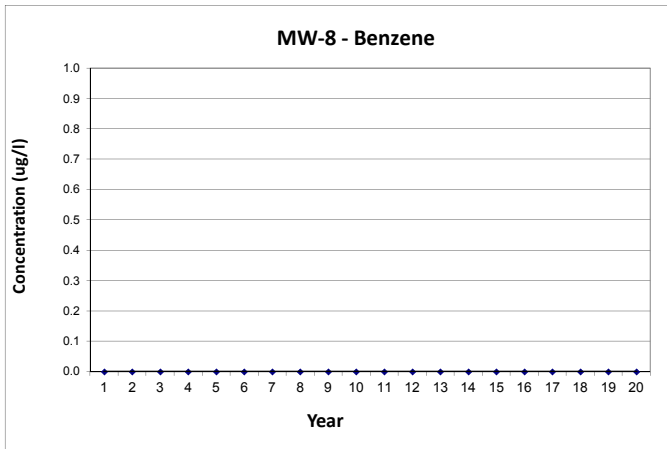
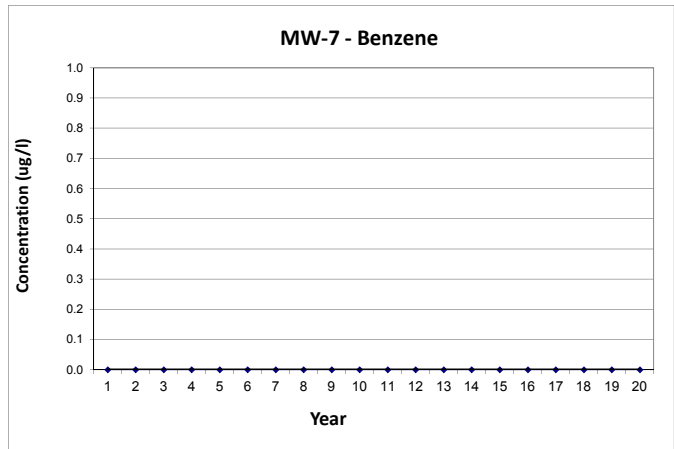
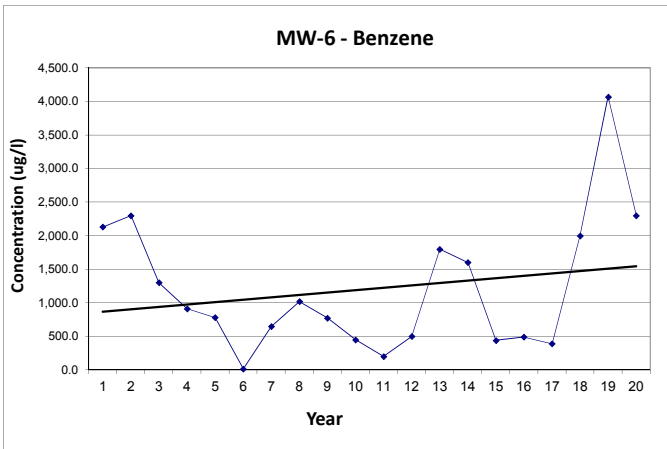
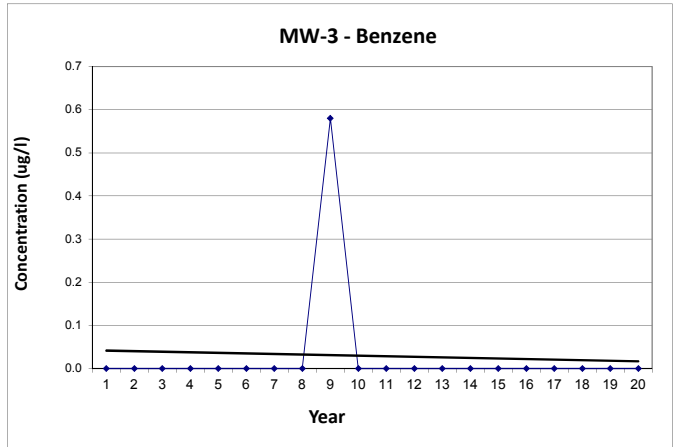
OAKLAND, CALIFORNIA

Contaminant: **Benzene**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-3	MW-6	MW-7	MW-8	MW-9
	Stable/No Trend	Stable/No Trend	Stable/No Trend	Stable/No Trend	Stable/No Trend

Monitoring Wells					
	MW-3	MW-6	MW-7	MW-8	MW-9
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	0.0	2,130.0	0.0	0.0	0.0
2	0.0	2,300.0	0.0	0.0	0.0
3	0.0	1,300.0	0.0	0.0	0.0
4	0.0	912.0	0.0	0.0	0.0
5	0.0	780.0	0.0	0.0	0.0
6	0.0	15.6	0.0	0.0	0.0
7	0.0	646.0	0.0	0.0	0.0
8	0.0	1,020.0	0.0	0.0	0.0
9	0.6	773.0	0.0	0.0	0.0
10	0.0	450.0	0.0	0.0	0.0
11	0.0	200.0	0.0	0.0	0.0
12	0.0	500.0	0.0	0.0	0.0
13	0.0	1,800.0	0.0	0.0	0.0
14	0.0	1,600.0	0.0	0.0	0.0
15	0.0	440.0	0.0	0.0	0.0
16	0.0	490.0	0.0	0.0	0.0
17	0.0	390.0	0.0	0.0	0.0
18	0.0	2,000.0	0.0	0.0	0.0
19	0.0	4,070.0	0.0	0.0	0.0
20	0.0	2,300.0	0.0	0.0	0.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

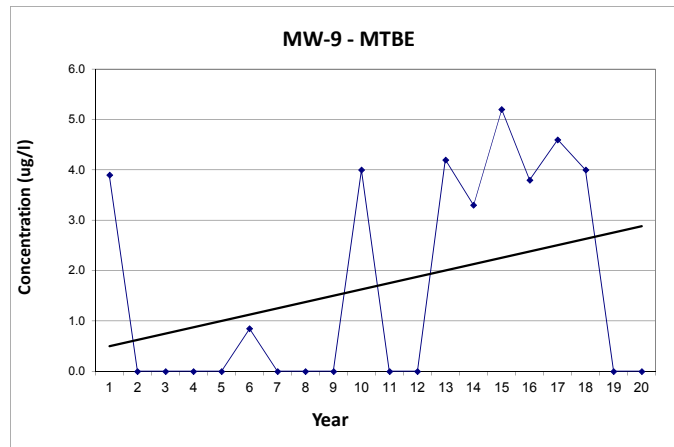
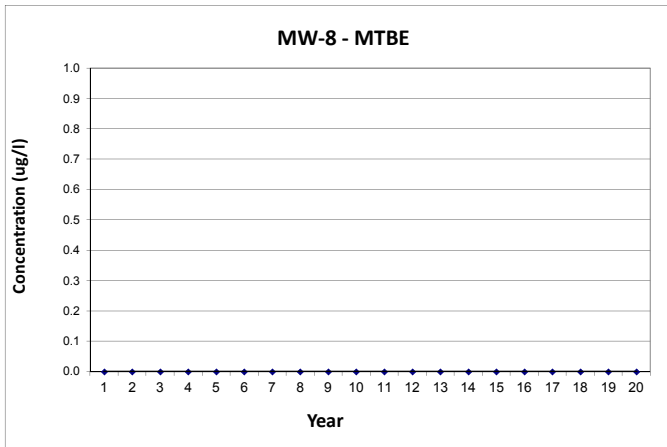
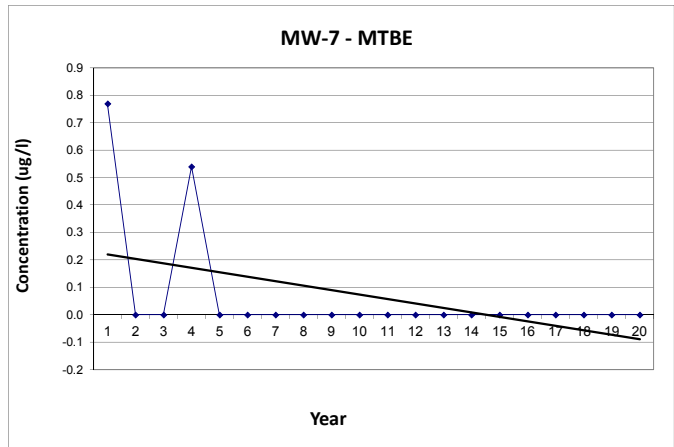
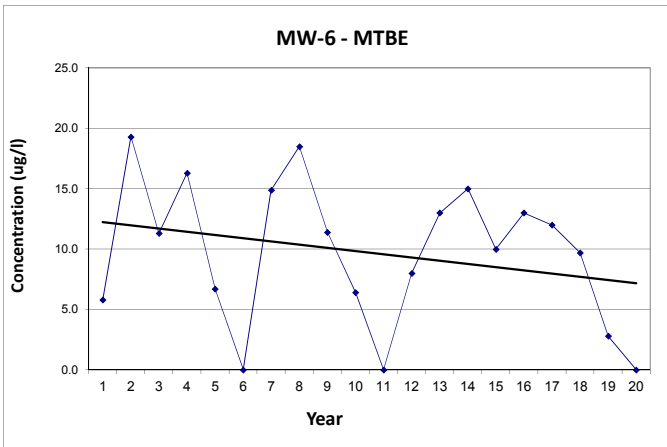
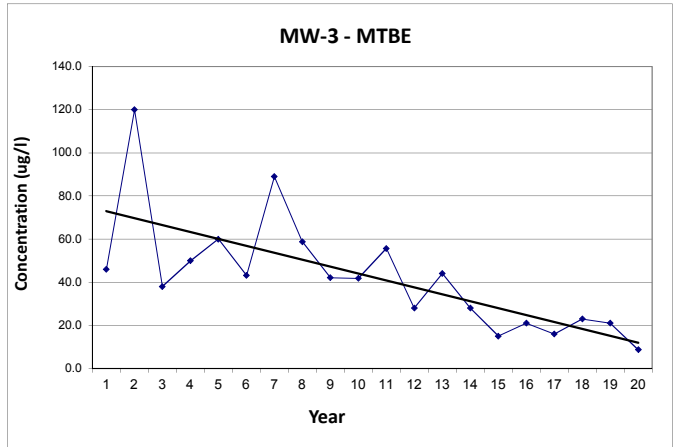
OAKLAND, CALIFORNIA

Contaminant: **MTBE**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-3	Decreasing
	MW-6	Stable/No Trend
	MW-7	Stable/No Trend
	MW-8	Stable/No Trend
	MW-9	Stable/No Trend

Monitoring Wells					
	MW-3	MW-6	MW-7	MW-8	MW-9
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	46.0	5.8	0.8	0.0	3.9
2	120.0	19.3	0.0	0.0	0.0
3	38.0	11.3	0.0	0.0	0.0
4	50.0	16.3	0.5	0.0	0.0
5	60.0	6.7	0.0	0.0	0.0
6	43.1	0.0	0.0	0.0	0.9
7	89.0	14.9	0.0	0.0	0.0
8	58.8	18.5	0.0	0.0	0.0
9	42.1	11.4	0.0	0.0	0.0
10	41.8	6.4	0.0	0.0	4.0
11	55.7	0.0	0.0	0.0	0.0
12	28.0	8.0	0.0	0.0	0.0
13	44.0	13.0	0.0	0.0	4.2
14	28.0	15.0	0.0	0.0	3.3
15	15.0	10.0	0.0	0.0	5.2
16	21.0	13.0	0.0	0.0	3.8
17	16.0	12.0	0.0	0.0	4.6
18	23.0	9.7	0.0	0.0	4.0
19	21.0	2.8	0.0	0.0	0.0
20	8.7	0.0	0.0	0.0	0.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

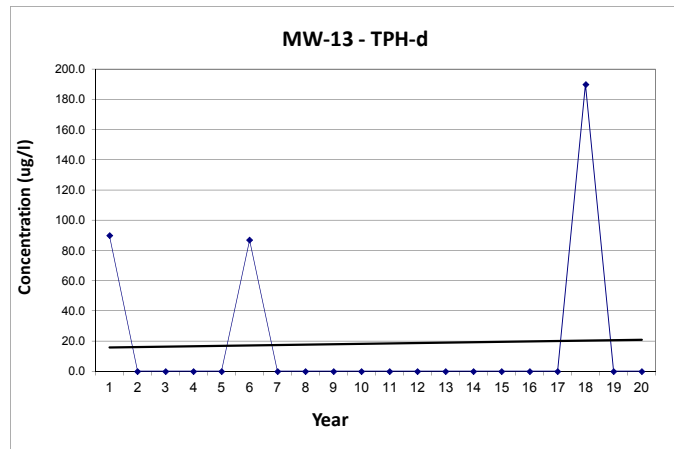
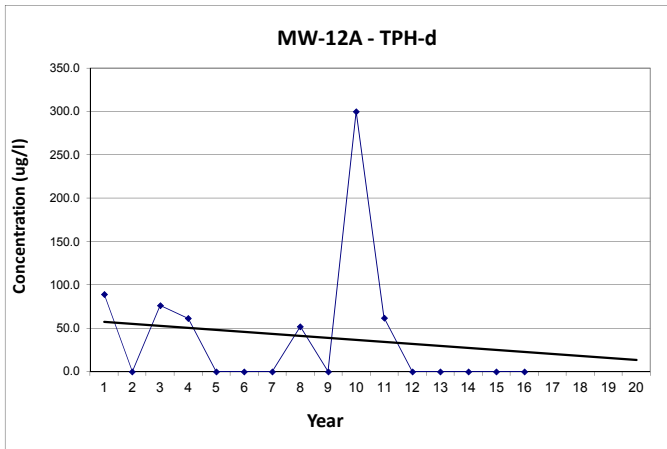
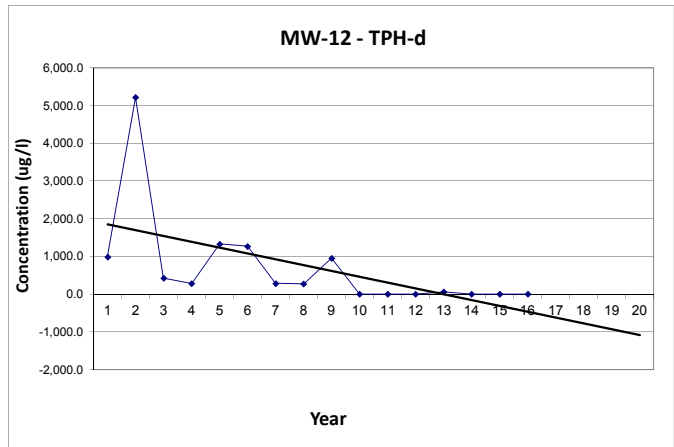
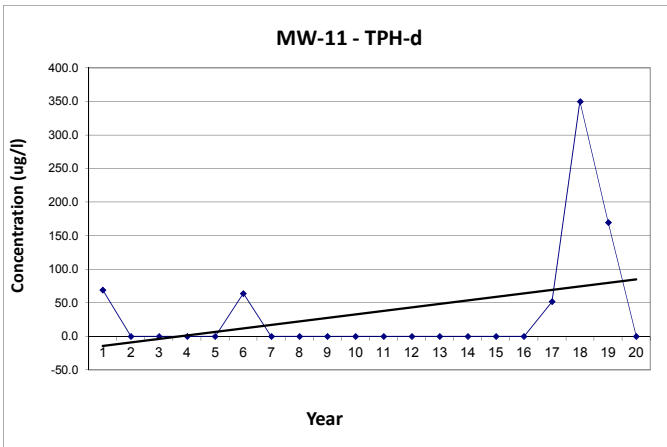
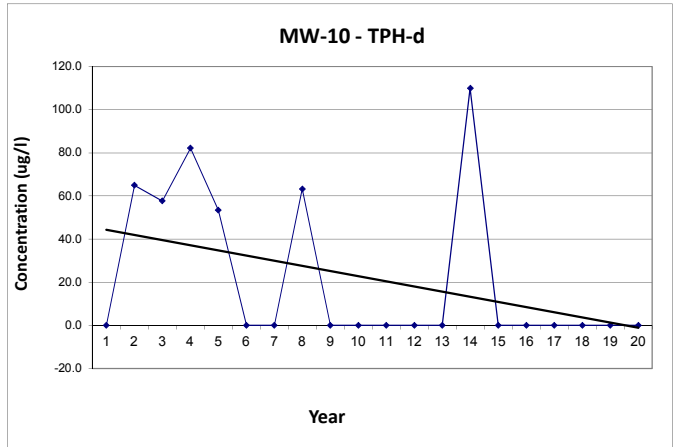
OAKLAND, CALIFORNIA

Contaminant: **TPH-d**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-10	Decreasing
	MW-11	Stable/No Trend
	MW-12	Decreasing
	MW-12A	Stable/No Trend
	MW-13	Stable/No Trend

Monitoring Wells					
	MW-10	MW-11	MW-12	MW-12A	MW-13
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	0.0	69.0	990.0	89.3	89.9
2	65.0	0.0	5,220.0	0.0	0.0
3	57.7	0.0	428.0	76.4	0.0
4	82.2	0.0	283.0	61.5	0.0
5	53.4	0.0	1,330.0	0.0	0.0
6	0.0	64.0	1,270.0	0.0	87.0
7	0.0	0.0	286.0	0.0	0.0
8	63.3	0.0	272.0	52.0	0.0
9	0.0	0.0	957.0	0.0	0.0
10	0.0	0.0	0.0	300.0	0.0
11	0.0	0.0	0.0	62.0	0.0
12	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	62.0	0.0	0.0
14	110.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0
17	0.0	52.0			0.0
18	0.0	350.0			190.0
19	0.0	170.0			0.0
20	0.0	0.0			0.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

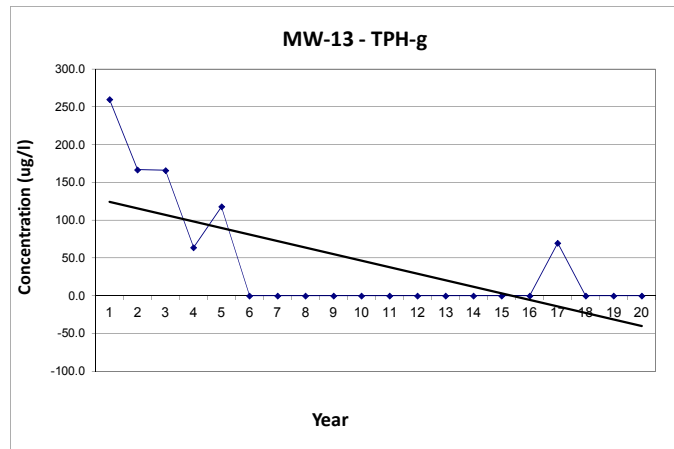
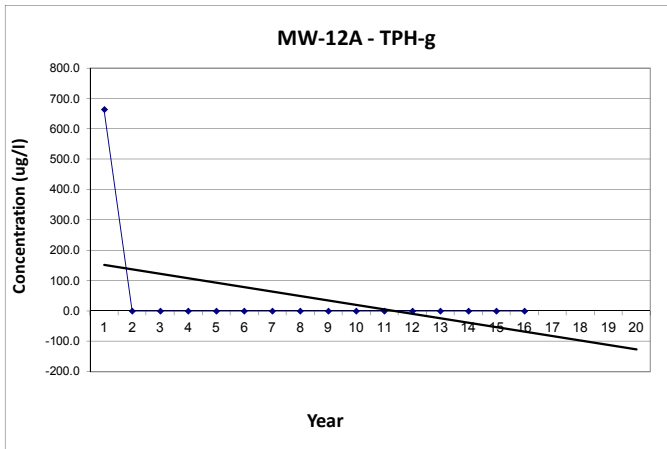
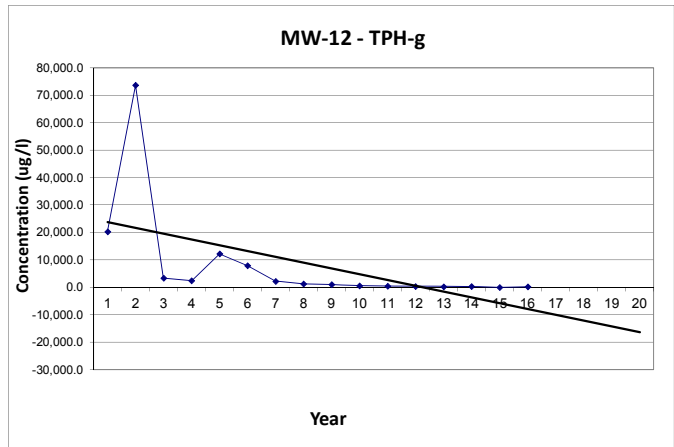
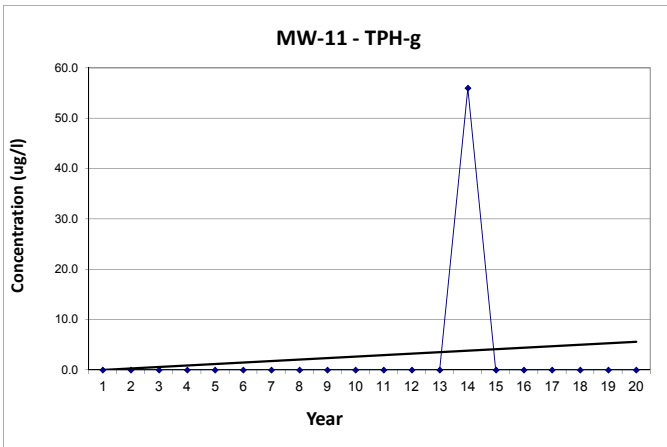
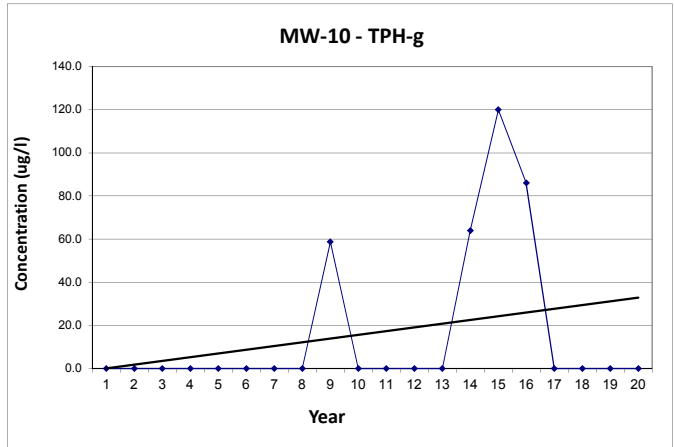
OAKLAND, CALIFORNIA

Contaminant: **TPH-g**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-10	MW-11	MW-12	MW-12A	MW-13
	Stable/No Trend	Stable/No Trend	Decreasing	Stable/No Trend	Decreasing

Monitoring Wells					
	MW-10	MW-11	MW-12	MW-12A	MW-13
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	0.0	0.0	20,300.0	664.0	260.0
2	0.0	0.0	73,700.0	0.0	167.0
3	0.0	0.0	3,350.0	0.0	166.0
4	0.0	0.0	2,420.0	0.0	63.9
5	0.0	0.0	12,200.0	0.0	118.0
6	0.0	0.0	7,900.0	0.0	0.0
7	0.0	0.0	2,240.0	0.0	0.0
8	0.0	0.0	1,260.0	0.0	0.0
9	58.7	0.0	1,030.0	0.0	0.0
10	0.0	0.0	580.0	0.0	0.0
11	0.0	0.0	480.0	0.0	0.0
12	0.0	0.0	370.0	0.0	0.0
13	0.0	0.0	290.0	0.0	0.0
14	64.0	56.0	340.0	0.0	0.0
15	120.0	0.0	0.0	0.0	0.0
16	86.0	0.0	200.0	0.0	0.0
17	0.0	0.0			70.0
18	0.0	0.0			0.0
19	0.0	0.0			0.0
20	0.0	0.0			0.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

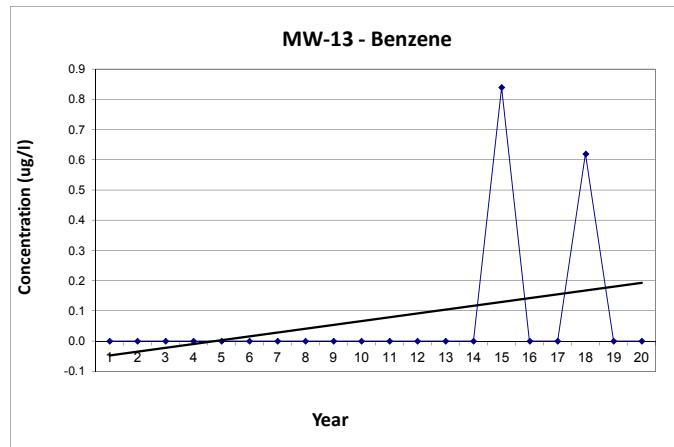
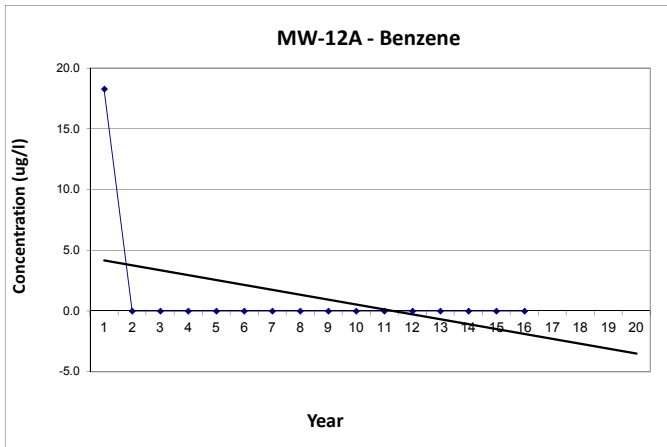
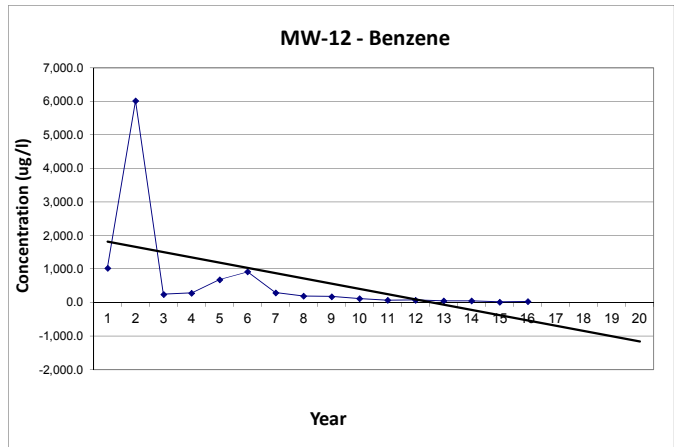
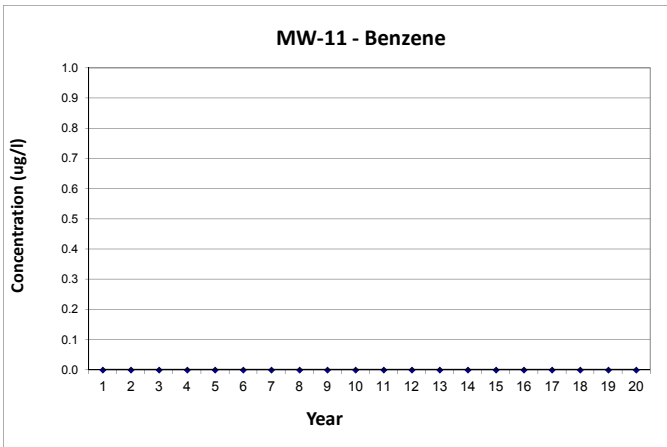
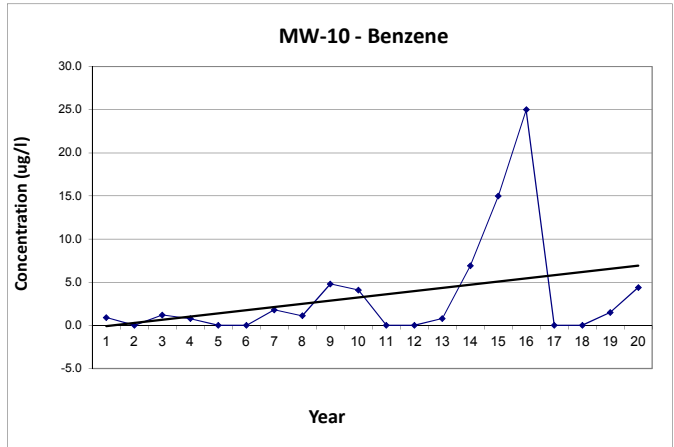
OAKLAND, CALIFORNIA

Contaminant: **Benzene**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-10	MW-11	MW-12	MW-12A	MW-13
	Stable/No Trend	Stable/No Trend	Decreasing	Stable/No Trend	Stable/No Trend

Monitoring Wells					
	MW-10	MW-11	MW-12	MW-12A	MW-13
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	0.9	0.0	1,030.0	18.3	0.0
2	0.0	0.0	6,020.0	0.0	0.0
3	1.2	0.0	249.0	0.0	0.0
4	0.8	0.0	287.0	0.0	0.0
5	0.0	0.0	688.0	0.0	0.0
6	0.0	0.0	920.0	0.0	0.0
7	1.8	0.0	296.0	0.0	0.0
8	1.1	0.0	193.0	0.0	0.0
9	4.8	0.0	178.0	0.0	0.0
10	4.1	0.0	120.0	0.0	0.0
11	0.0	0.0	70.0	0.0	0.0
12	0.0	0.0	76.0	0.0	0.0
13	0.8	0.0	51.0	0.0	0.0
14	6.9	0.0	52.0	0.0	0.0
15	15.0	0.0	19.0	0.0	0.8
16	25.0	0.0	30.0	0.0	0.0
17	0.0	0.0			0.0
18	0.0	0.0			0.6
19	1.5	0.0			0.0
20	4.4	0.0			0.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

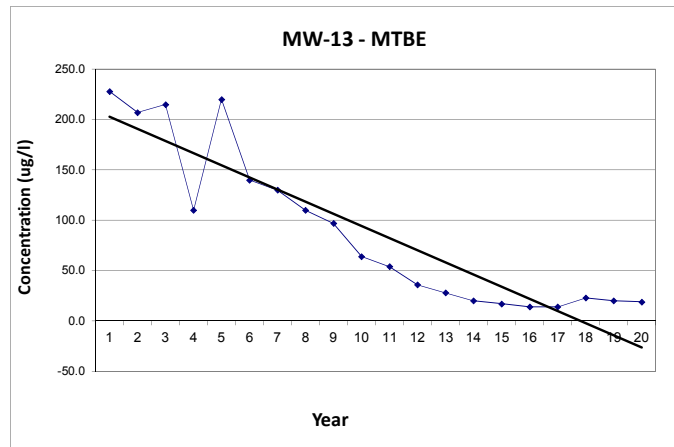
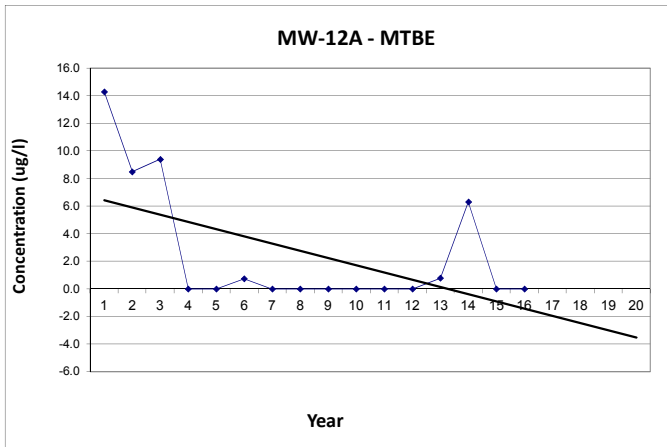
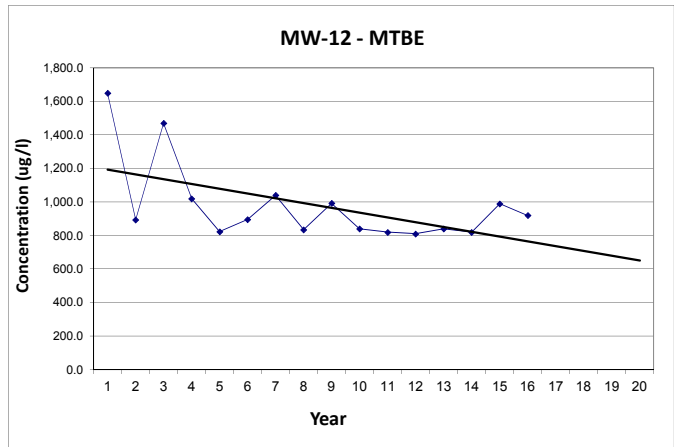
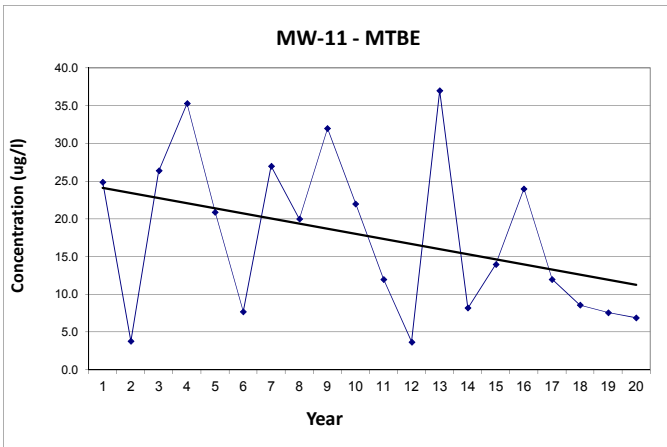
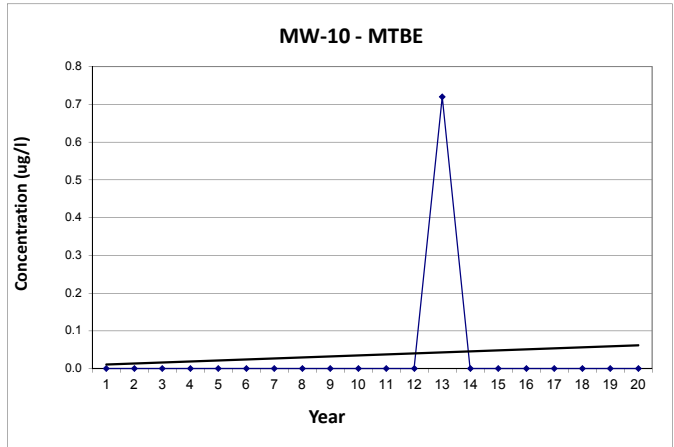
OAKLAND, CALIFORNIA

Contaminant: **MTBE**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-10	MW-11	MW-12	MW-12A	MW-13
		Stable/No Trend	Decreasing	Decreasing	Stable/No Trend
		Decreasing	Decreasing	Stable/No Trend	Decreasing
		Stable/No Trend	Decreasing	Stable/No Trend	Decreasing
		Decreasing	Decreasing	Stable/No Trend	Decreasing

Monitoring Wells					
	MW-10	MW-11	MW-12	MW-12A	MW-13
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	0.0	24.9	1,650.0	14.3	228.0
2	0.0	3.8	894.0	8.5	207.0
3	0.0	26.4	1,470.0	9.4	215.0
4	0.0	35.3	1,020.0	0.0	110.0
5	0.0	20.9	824.0	0.0	220.0
6	0.0	7.7	896.0	0.7	140.0
7	0.0	27.0	1,040.0	0.0	130.0
8	0.0	20.0	835.0	0.0	110.0
9	0.0	32.0	993.0	0.0	97.0
10	0.0	22.0	840.0	0.0	64.0
11	0.0	12.0	820.0	0.0	54.0
12	0.0	3.7	810.0	0.0	36.0
13	0.7	37.0	840.0	0.8	28.0
14	0.0	8.2	820.0	6.3	20.0
15	0.0	14.0	990.0	0.0	17.0
16	0.0	24.0	920.0	0.0	14.0
17	0.0	12.0			14.0
18	0.0	8.6			23.0
19	0.0	7.6			20.0
20	0.0	6.9			19.0



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

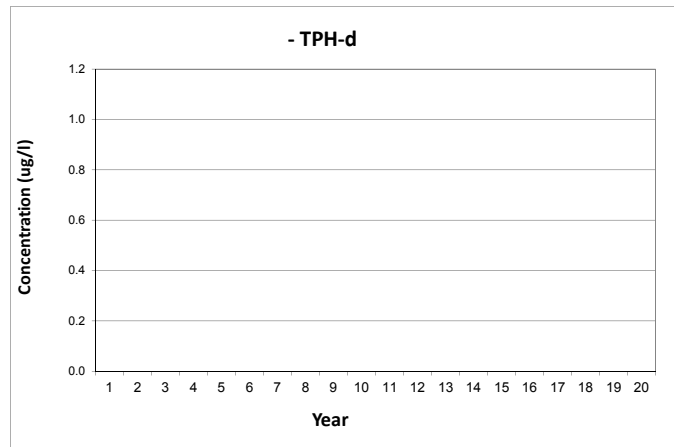
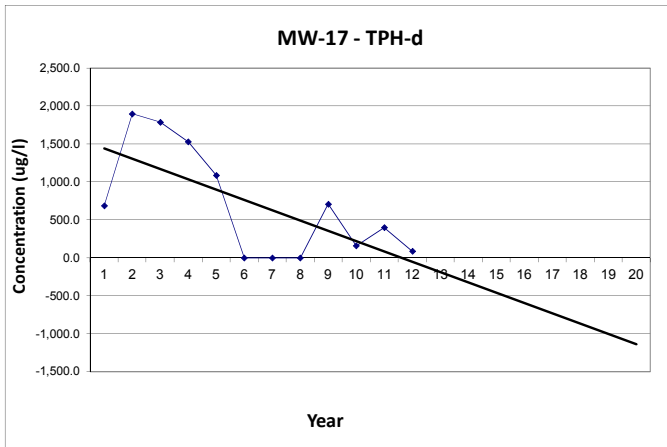
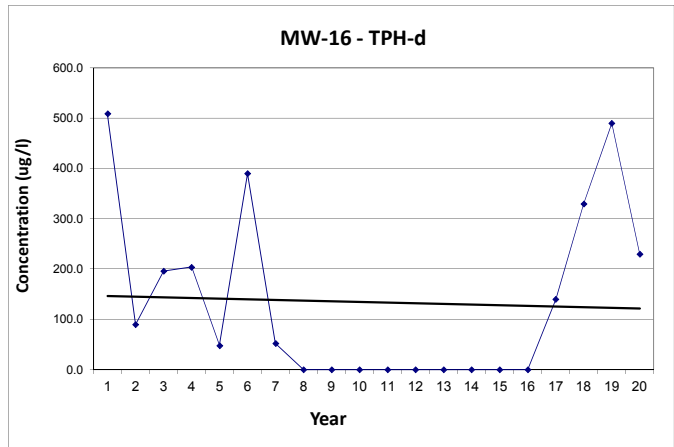
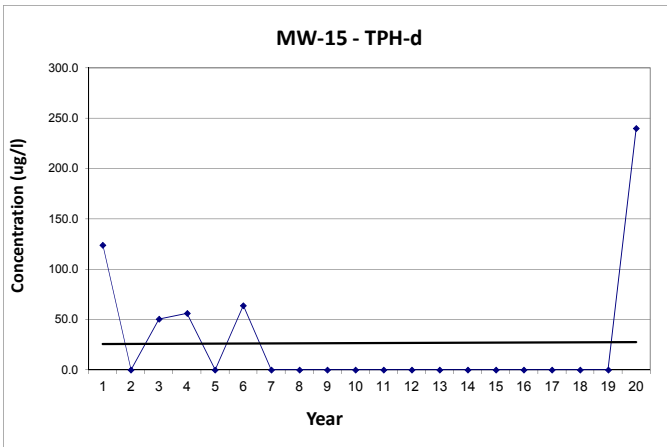
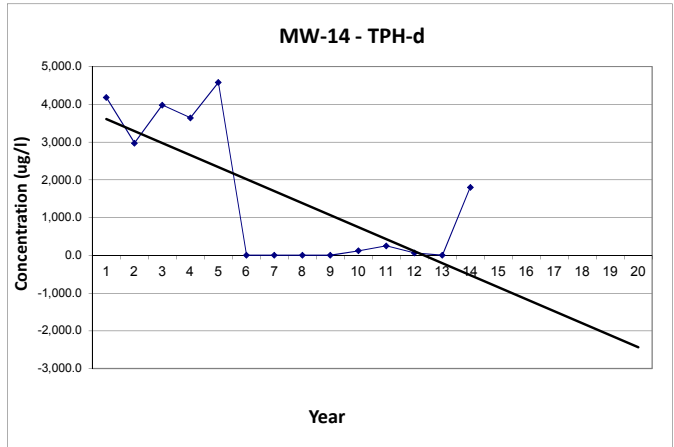
OAKLAND, CALIFORNIA

Contaminant: **TPH-d**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-14	MW-15	MW-16	MW-17	0
	Stable/No Trend	Stable/No Trend	Stable/No Trend	Decreasing	Stable/No Trend

Monitoring Wells					
	MW-14	MW-15	MW-16	MW-17	
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	4,180.0	124.0	509.0	687.0	
2	2,970.0	0.0	90.0	1,900.0	
3	3,980.0	50.5	196.0	1,790.0	
4	3,640.0	56.2	204.0	1,530.0	
5	4,580.0	0.0	48.1	1,090.0	
6	0.0	64.0	390.0	0.0	
7	0.0	0.0	52.0	0.0	
8	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.0	710.0	
10	120.0	0.0	0.0	160.0	
11	250.0	0.0	0.0	400.0	
12	64.0	0.0	0.0	87.0	
13	0.0	0.0	0.0		
14	1,800.0	0.0	0.0		
15		0.0	0.0		
16		0.0	0.0		
17		0.0	140.0		
18		0.0	330.0		
19		0.0	490.0		
20		240.0	230.0		



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

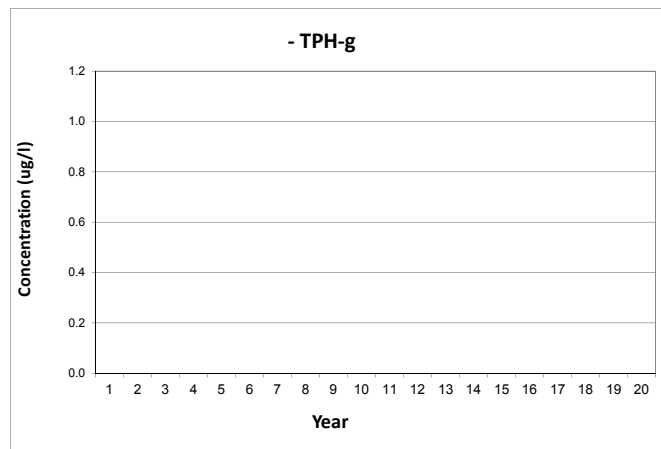
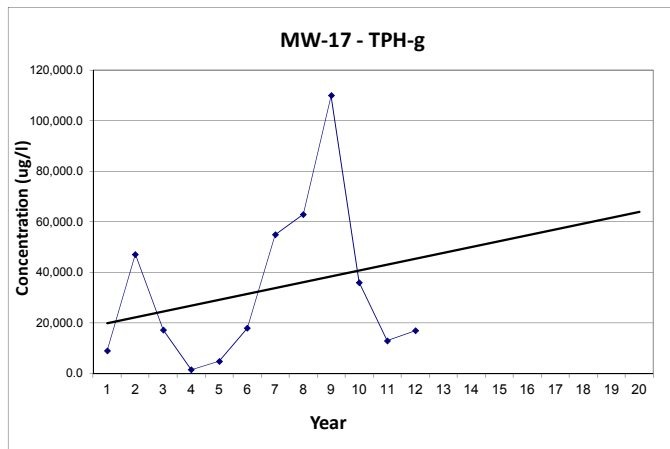
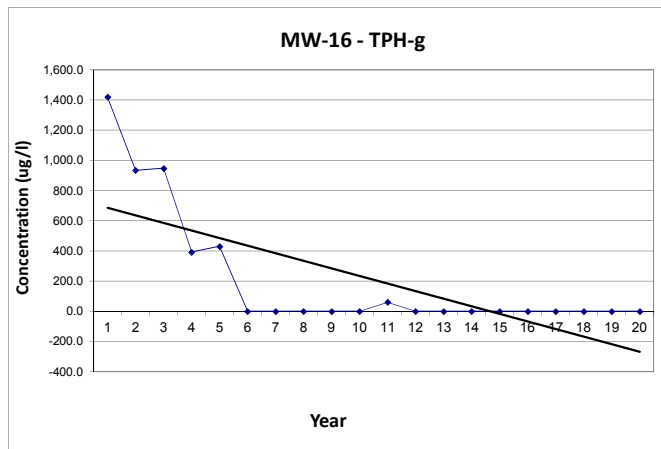
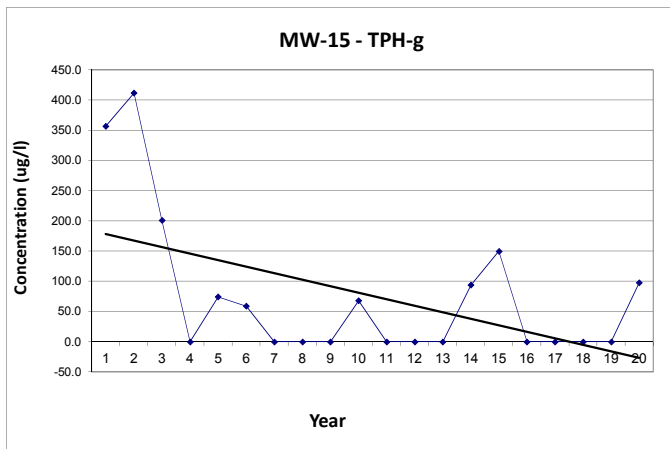
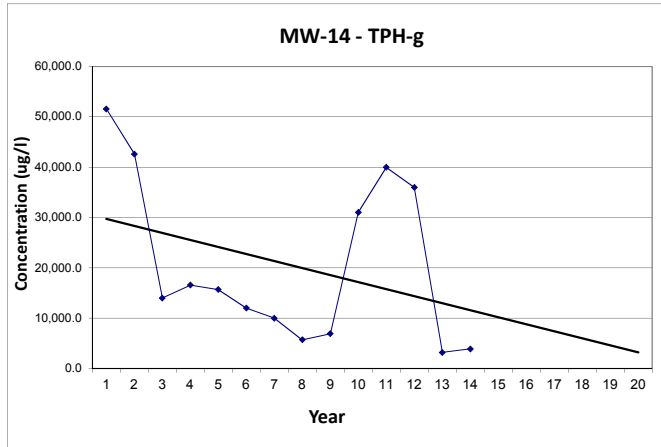
OAKLAND, CALIFORNIA

Contaminant: **TPH-g**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-14	MW-15	MW-16	MW-17	0
	Decreasing	Stable/No Trend	Decreasing	Stable/No Trend	Stable/No Trend

Monitoring Wells					
	MW-14	MW-15	MW-16	MW-17	
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	51,600.0	357.0	1,420.0	9,130.0	
2	42,600.0	412.0	934.0	47,200.0	
3	14,000.0	201.0	948.0	17,300.0	
4	16,600.0	0.0	392.0	1,580.0	
5	15,700.0	74.3	430.0	4,950.0	
6	12,000.0	59.0	0.0	18,000.0	
7	10,000.0	0.0	0.0	55,000.0	
8	5,700.0	0.0	0.0	63,000.0	
9	6,900.0	0.0	0.0	110,000.0	
10	31,000.0	68.0	0.0	36,000.0	
11	40,000.0	0.0	60.0	13,000.0	
12	36,000.0	0.0	0.0	17,000.0	
13	3,200.0	0.0	0.0		
14	3,900.0	94.0	0.0		
15		150.0	0.0		
16		0.0	0.0		
17		0.0	0.0		
18		0.0	0.0		
19		0.0	0.0		
20		98.0	0.0		



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

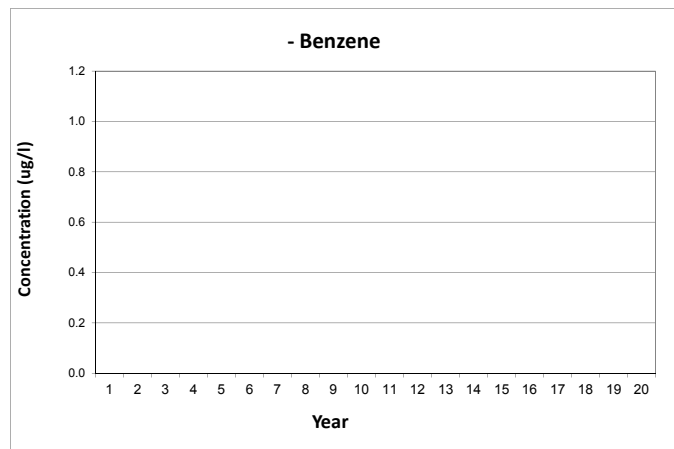
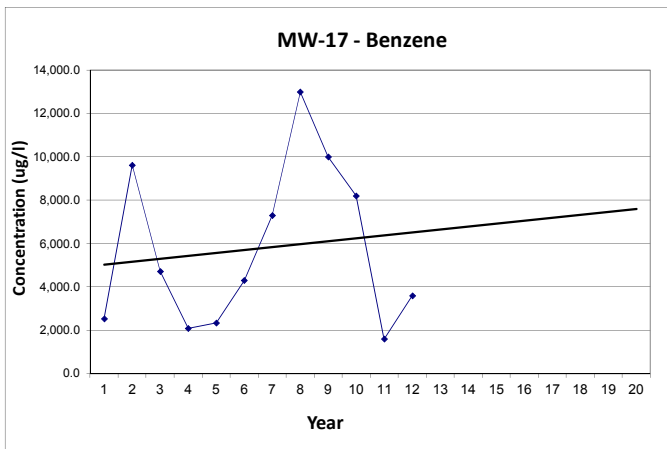
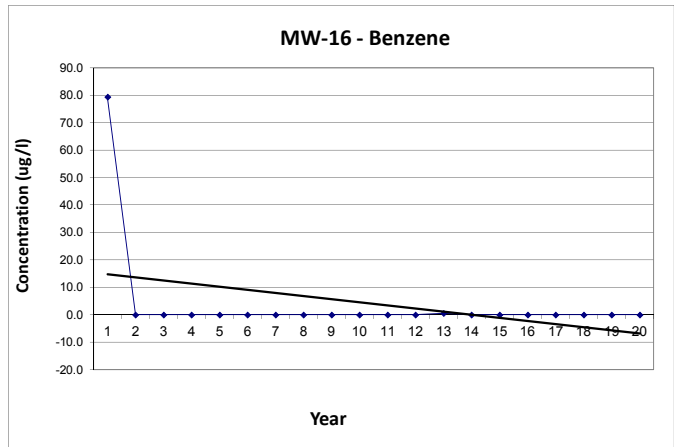
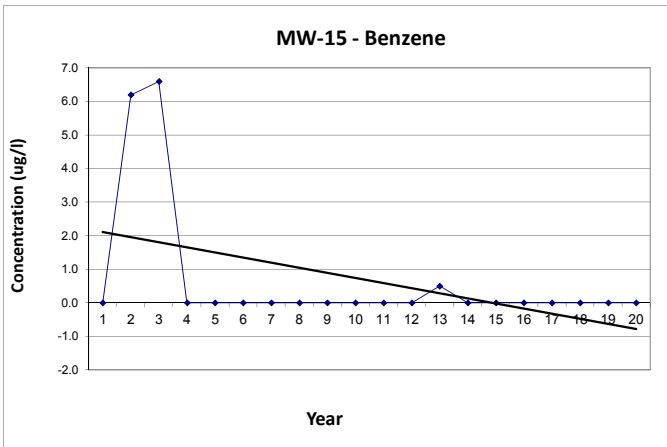
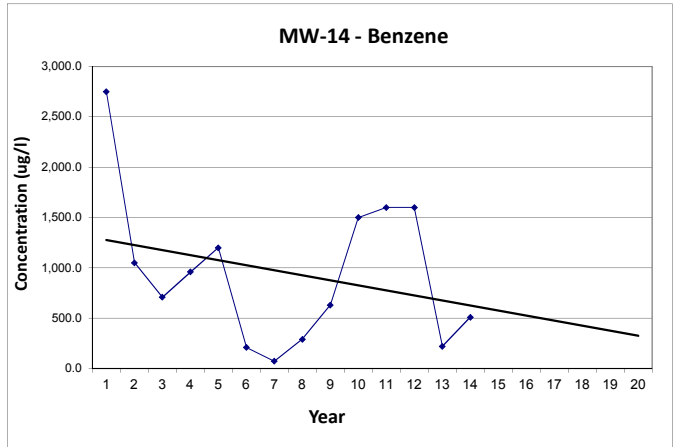
OAKLAND, CALIFORNIA

Contaminant: **Benzene**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-14	Stable/No Trend
	MW-15	Stable/No Trend
	MW-16	Stable/No Trend
	MW-17	Stable/No Trend
	0	Stable/No Trend

Monitoring Wells					
	MW-14	MW-15	MW-16	MW-17	
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	2,750.0	0.0	79.4	2,530.0	
2	1,050.0	6.2	0.0	9,620.0	
3	709.0	6.6	0.0	4,720.0	
4	959.0	0.0	0.0	2,090.0	
5	1,200.0	0.0	0.0	2,340.0	
6	210.0	0.0	0.0	4,300.0	
7	72.0	0.0	0.0	7,300.0	
8	290.0	0.0	0.0	13,000.0	
9	630.0	0.0	0.0	10,000.0	
10	1,500.0	0.0	0.0	8,200.0	
11	1,600.0	0.0	0.0	1,600.0	
12	1,600.0	0.0	0.0	3,600.0	
13	220.0	0.5	0.5		
14	510.0	0.0	0.0		
15		0.0	0.0		
16		0.0	0.0		
17		0.0	0.0		
18		0.0	0.0		
19		0.0	0.0		
20		0.0	0.0		



MANN-KENDALL TREND ANALYSIS RESULTS SUMMARY

76 SERVICE STATION NO. 5191/5043

449 HEGENBERGER ROAD

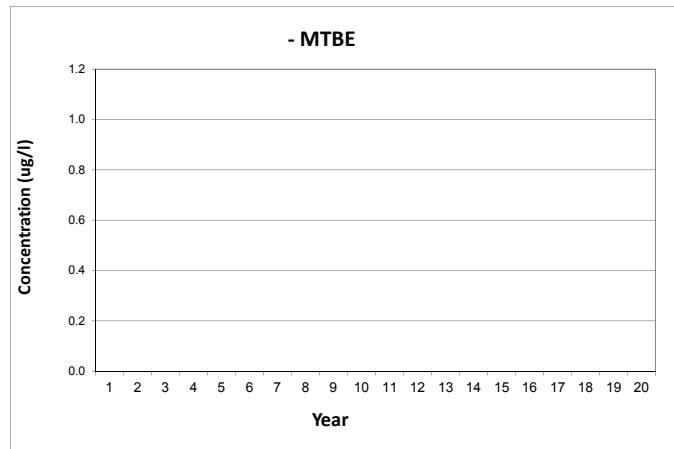
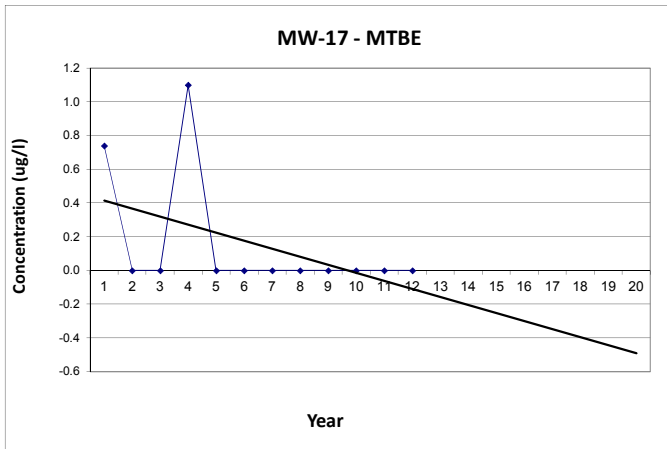
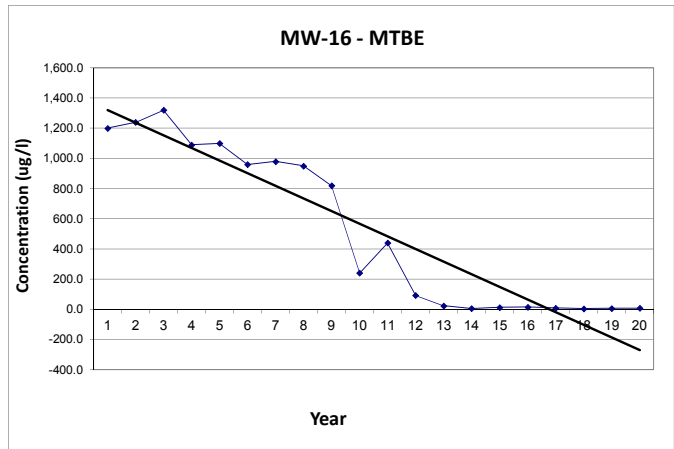
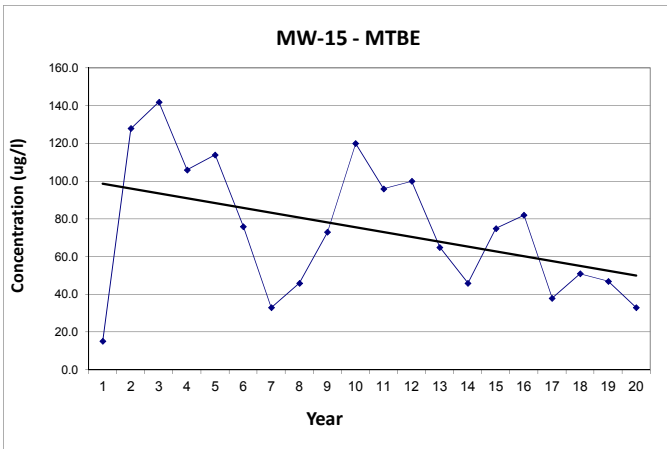
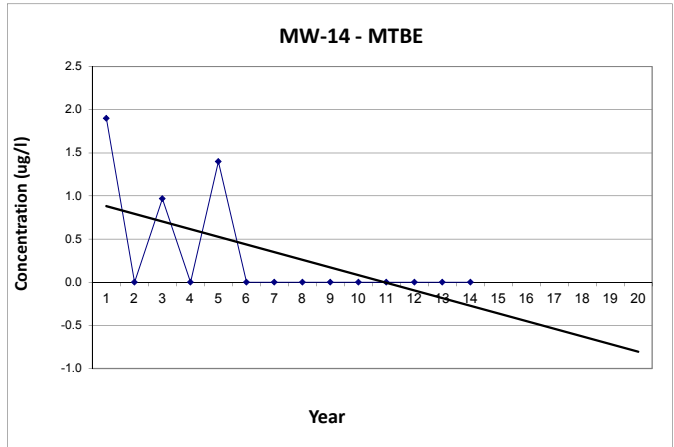
OAKLAND, CALIFORNIA

Contaminant: **MTBE**

Menu Selection Cell
Data Entry Cell

Mann-Kendall Results:	MW-14	MW-15	MW-16	MW-17	0
	Stable/No Trend	Decreasing	Decreasing	Stable/No Trend	Stable/No Trend

Monitoring Wells					
	MW-14	MW-15	MW-16	MW-17	
Year	ug/l	ug/l	ug/l	ug/l	ug/l
1	1.9	15.2	1,200.0	0.7	
2	0.0	128.0	1,240.0	0.0	
3	1.0	142.0	1,320.0	0.0	
4	0.0	106.0	1,090.0	1.1	
5	1.4	114.0	1,100.0	0.0	
6	0.0	76.0	960.0	0.0	
7	0.0	33.0	980.0	0.0	
8	0.0	46.0	950.0	0.0	
9	0.0	73.0	820.0	0.0	
10	0.0	120.0	240.0	0.0	
11	0.0	96.0	440.0	0.0	
12	0.0	100.0	92.0	0.0	
13	0.0	65.0	23.0		
14	0.0	46.0	5.1		
15		75.0	12.0		
16		82.0	15.0		
17		38.0	8.3		
18		51.0	4.3		
19		47.0	5.7		
20		33.0	7.5		



*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*



Appendix J


Boring and Well Logs

BORING LOG

Project No. KEI-P91-1004	Boring & Casing Diameter 8" 2"	Logged By D.L.
Project Name Unocal Oakland, Hegenberger	Well Cover Elevation 7.78 feet	Date Drilled 2/5/91
Boring No. MW1	Drilling Method Hollow-stem Auger	Drilling Company West Hazmat

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
				Clay with silt, stiff, moist, olive gray, pocketed with poorly graded sand, medium-grained, dark greenish gray, moist: fill
5/5/4			SW	Well graded sand with gravel, loose, very moist to saturated, very dark greenish gray, fill?
2 for 18"		5	OL/ OH	Clayey silt, highly organic, very soft, wet, very dark greenish gray, with plant fibers and organic matter, lensed with peat: bay mud.
2/4/6		10	CH	Silty clay, firm to stiff, very moist, black, with plant fibers and organic matter.
6/10/13			CL	Sandy clay, stiff to very stiff, moist, olive gray and olive brown, mottled with root holes.
		15		TOTAL DEPTH: 13.5'
		20		

BORING LOG

Project No. KEI-P91-1004	Boring & Casing Diameter 8" 2"		Logged By D.L. <i>JRF</i>	
Project Name Unocal Oakland, Hegenberger		Well Cover Elevation 8.96 feet		Date Drilled 2/5/91
Boring No. MW2		Drilling Method Hollow-stem Auger	Drilling Company West Hazmat	
Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
			CH	Silty clay, stiff, moist, dark greenish gray, pocketed with silty sand and well graded sand, moist to very moist: fill
11/6/3			MH	Sandy silt, sand is very fine-grained, very soft, very moist to wet, dark greenish gray, lensed with very fine-grained sand.
2 for 18"		5	OL/ OH	Very silty clay, very soft, very moist, black, with abundant plant fibers and organic matter: bay mud.
			CH	Silty clay, stiff, moist, black, with plant fibers and organic matter.
4/6/8		10	CH	Silty clay, trace fine-grained sand, very stiff, moist, olive gray and olive brown, mottled with root holes.
8/9/9			CL	Sandy clay, estimated at 10 to 15% silt, sand is fine- to medium-grained, stiff to very stiff, moist, olive gray and olive brown mottled.
3/7/12		15		TOTAL DEPTH: 15'
		20		

BORING LOG

Project No. KEI-P91-1004	Boring & Casing Diameter 8" 2"	Logged By D.L.
Project Name Unocal Oakland, Hegenberger	Well Cover Elevation 7.67 feet	Date Drilled 2/5/91
Boring No. MW3	Drilling Method Hollow-stem Auger	Drilling Company West Hazmat

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
			SP	Poorly graded sand, trace silt, medium-grained, loose, very moist, dark greenish gray: fill?
1/1/1			ML	Sandy silt, sand is very fine-grained, very soft, very moist to wet, dark greenish gray with organic matter.
2/2/2		5	MH	Clayey silt, very soft to soft, very moist to wet, dark greenish gray.
			OL	Peat, soft, wet, dark greenish gray, spongy feel..
			OH	Silty clay, highly organic, firm, moist, black, with plant remains.
3/4/5		10	CH	Silty clay, with an estimated 10 to 15% fine- to medium-grained sand content, firm to stiff, moist, dark greenish gray, with plant remains and organic matter.
7/9/10			CH	Silty clay, with an estimated 10 to 15% fine- to medium-grained sand content, stiff, to very stiff, moist, olive gray and olive brown, with root holes.
		15		TOTAL DEPTH: 14'
		20		

BORING LOG

Project No. KEI-P91-1004	Boring Diameter 9"	Logged By <i>JGG</i> D.L. <i>CEG 1633</i>
	Casing Diameter 2"	
Project Name Unocal S/S #5043 449 Hegenberger Rd., Oakland	Well Cover Elevation	Date Drilled 8/21/92
Boring No. MW4	Drilling Method Hollow-stem Auger	Drilling Company West Hazmat

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement.
				Gravelly clay with sand, stiff, moist, black (5Y 2.5/1) and olive gray (5Y 5/3), disturbed (fill).
7/7/8			CH	Silty clay, trace sand, stiff, moist, black (5Y 2.5/1) with thin lenses of fine-grained sand, olive gray (5Y 5/3).
	▼	5		
8/15/15			ML	Sandy silt, firm, wet, black (5Y 2.5/1) with organic matter, sand is medium to fine-grained.
2/2/5			SW	Well graded sand, loose, saturated, very dark gray (5Y 3/1).
			CH	Silty clay, stiff, moist, black (5Y 2.5/1), organic matter (bay mud).
3/4/8		10	CH/ SW	Silty clay, firm, moist, black (5Y 2.5/1) lensed with well graded sand, loose, saturated, very dark gray (5Y 3/1).
6/6/9			CH	Silty clay, stiff, moist, black (5Y 2.5/1) with organic matter, grades to dark greenish gray (5G 4/1), becomes stiffer with depth.
		15		TOTAL DEPTH 13.5'
		20		

BORING LOG

Project No. KEI-P91-1004	Boring Diameter 9"	Logged By JGG D.L. CEG/633
	Casing Diameter 2"	
Project Name Unocal S/S #5043 449 Hegenberger Rd., Oakland	Well Cover Elevation	Date Drilled 8/21/92
Boring No. MW5	Drilling Method Hollow-stem Auger	Drilling Company West Hazmat

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement.
				Intermixed clays, silts and sands, stiff, moist, many colors, disturbed (fill).
3/5/7			CH	Clay with silt, stiff, moist, very dark gray (5Y 3/1), lensed with poorly graded sand.
5/9/14		5	ML/ GM	Clayey silt, firm, very moist, black (5Y 2.5/1), interbedded with silty, poorly graded gravel, loose, wet, black (5Y 2.5/1).
4/3/3	▼ =		Pt	Peat with trace clayey silt, soft, very moist, brown and black, fibrous.
6/8/8			OL	Clayey silt, trace sand, stiff, very moist, black (5Y 2.5/1), abundant organic matter.
		10	OH	Clay with silt, stiff, moist, black (2.5YR 2.5/0), abundant organic matter.
4/5/9			CH	Silty clay, stiff, moist, black (5Y 2.5/1), organic matter.
5/8/12			CH	Silty clay, trace fine-grained sand, very stiff, moist, dark greenish gray (5GY 4/1), organic matter.
		15		TOTAL DEPTH 13.5'
		20		

BORING LOG

Project No. KEI-P91-1004	Boring Diameter 9"	Logged By <i>JGG</i> D.L. <i>CEG 1653</i>
	Casing Diameter 2"	
Project Name Unocal S/S #5043 449 Hegenberger Rd., Oakland	Well Cover Elevation	Date Drilled 8/21/92
Boring No. MW6	Drilling Method Hollow-stem Auger	Drilling Company West Hazmat

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
				Gravelly clay with sand, stiff, moist, black and olive gray, disturbed (fill).
3/4/4			CH	Clay with silt, stiff, moist, black (5Y 2.5/1) lensed with poorly graded and well graded sand.
4/5/7	▼	5	ML	Silt with very fine-grained sand, stiff, moist to wet, dark greenish gray (5GY 4/1), lensed with clayey silt between 4.5 and 5.5 feet.
3/3/4			OL	Clayey silt, stiff, moist, black (5Y 2.5/1) and very dark gray (5Y 3/1) mottled, with abundant organic matter (bay mud).
5/7/8		10	OH	Silty clay, stiff, moist, black (2.5YR 2.5/0), with abundant organic matter.
5/7/9			CH	Silty clay, stiff, moist, very dark gray (5Y 3/1), with organic matter.
				Silty clay, trace fine-grained sand, stiff, moist, dark greenish gray (5GY 4/1).
		15		TOTAL DEPTH 13.5'
		20		

BORING LOG

Project No. KEI-P 91-1004.P8	Boring Diameter 8.5" Casing Diameter 2"	Logged By <i>JGG</i> D.L. <i>CEG 1633</i>
Project Name Unocal S/S #5043 499 Hegenberger Road Oakland, California	Well Cover Elevation <p style="text-align: center;">N/A</p>	Date Drilled <p style="text-align: center;">4/21/97</p>
Boring No. MW8	Drilling Method Hollow-stem Auger	Drilling Company Woodward Drilling

Penetration blows/6''	G.W. level	O.V.M. (P.P.M.)	Depth (feet) Samples	Stratigraphy USCS	Description
			0		A.C. pavement over sand and gravel base.
					Pocketed clay, silt and sand, firm to stiff, moist, dark olive gray and dark greenish gray (fill and or disturbed native soil).
					Silty gravel, medium dense, moist to very moist, (fill).
2/2/4			5		Silty very fine to fine-grained sand, estimated at 20-30% silt, firm to stiff, very moist, dark gray.
2/2/2	▽			ML	Clayey silt, firm, very moist to wet, black and dark greenish gray, with abundant plant remains lensed with black sandy silt, wet.
2/5/6			10	CL	Silty clay, stiff, moist, black, with minor plant remains, root holes common.
6/12/24			15	MH	Clayey silt, estimated at 30-40% silt, trace fine-grained sand, stiff to very stiff, moist, dark greenish gray and olive, mottled, with occasional root holes and plant fibers, clay content increases with depth.
					TOTAL DEPTH: 15'
			20		

BORING LOG

Project No. KEI-P 91-1004.P8	Boring Diameter 8.5" Casing Diameter 2"	Logged By JBC D.L. CEG 1633
Project Name Unocal S/S #5043 499 Hegenberger Road Oakland, California	Well Cover Elevation N/A	Date Drilled 4/21/97
Boring No. MW7	Drilling Method Hollow-stem Auger	Drilling Company Woodward Drilling

Penetration blows/6"	G.W level	O.V.M. (P.P.M.)	Depth (feet) Samples	Stratigraphy USCS	Description
			0		A.C. pavement over sand and gravel base.
	▽			SP	Poorly graded sand, predominantly medium-grained, loose, moist grading to saturated, brown (fill).
			5	SW	Well graded sand with gravel, loose, saturated, very dark grayish brown (fill).
				ML	Clayey silt, soft, wet, black and dark greenish gray, mottled. Sandy silt, soft, wet, dark greenish gray.
1/1/1				Pt	Peat, variable silt and clay content, soft, fibrous, wet, brown and black.
				ML	Clayey silt, soft, wet, black, with abundant plant remains.
			10		
6/7/9				CH	Silty clay, stiff, moist, dark gray, with plant remains and root holes.
					TOTAL DEPTH: 13'
			15		
			20		

BORING LOG

Project No. KEI-P 91-1004		Boring Diameter 8.5" Casing Diameter 2"		Logged By JGG D.L. CEG 1633	
Project Name Unocal S/S #5043 499 Hegenberger road Oakland, California		Well Cover Elevation N/A		Date Drilled 1/25/95	
Boring No. MW9		Drilling Method Hollow-stem Auger		Drilling Company V & W Drilling	
Pene- tration blows/6"	G.W. level	O.V.M. (P.P.M.)	Depth (feet) Samples	Stratigraphy USCS	Description
			0		A.C. pavement over sand and gravel base.
				CI/ ML	Pocketed clayey silt and silty clay, stiff, moist, black and dark greenish gray, with organic matter (fill and/or disturbed native soil).
1/2/2	▽			SP	Poorly graded sand, predominantly fine to medium-grained, loose, moist grading to saturated, dark greenish gray.
			5	ML	Silt, estimated at 5-15% variable clay content, soft, wet, dark greenish gray.
1/2/2				PT	Peat with variable clay and silt content to 30%, soft, fibrous, wet, brown and black.
				ML	Clayey silt, soft, wet, black, with abundant plant fibers and organic matter.
2/4/5			10	CL	Silty clay, firm to stiff, moist, black, with plant fibers and organic matter.
13/15/18					Silty clay, estimated at 10-15% sand, trace gravel, very stiff to hard, moist, olive and dark olive gray, mottled with olive brown below 12-1/2 feet.
					TOTAL DEPTH: 13'
			15		
			20		

BORING LOG

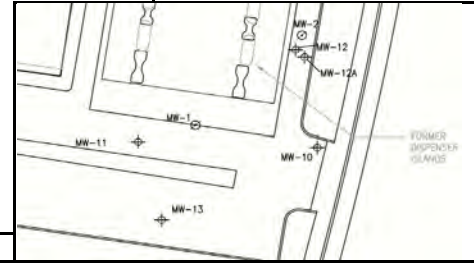
Project No. KEI-P 91-1004	Boring Diameter 8.5"	Logged By J66
	Casing Diameter 2"	D.L. CEG 1633
Project Name Unocal S/S #5043 499 Hegenberger Road Oakland, California	Well Cover Elevation N/A	Date Drilled 1/25/95
Boring No. MW10	Drilling Method Hollow-stem Auger	Drilling Company V & W Drilling

Pene- tration blows/6"	G.W. level	O.V.M. (P.P.M.)	Depth (feet) Samples	Stratigraphy USCS	Description
	▽		0		A.C. pavement over sand and gravel base. Perched water at base of gravel base.
4/4/5			1	CL/ ML	Pocketed clayey silt and silty clay, trace-15% sand and gravel, stiff, very moist, black and dark greenish gray, with abundant plant fibers and organic matter (fill and disturbed native soil).
1/2/2			5	OL/ OH	Silty clay, soft to firm, wet, black, with abundant plant fibers and organic matter.
3/5/5			10	CL	Silty clay, stiff, moist, black, grades to dark greenish gray below 10 feet, with plant fibers and organic matter, trace sand below 10 feet.
9/11/13			13	SC	Clayey sand, estimated at 20-25% clay and 10-15% silt, trace gravel, medium dense, moist, dark greenish gray, with plant fibers and organic matter.
TOTAL DEPTH: 13'					
			15		
			20		

Delta Consultants

Project No: I42705191 Client: Delta/ELT
 Logged By: Jonathan Fillingame Location: 449 Hegenberger Road, Oakland
 Driller: Gregg Date Drilled: 6/22/2010
 Drilling Method: Hollow Stem Auger Hole Diameter: 11"
 Sampling Method: Direct Push Hole Depth: 20'
 Casing Type: Sch 40 PVC Well Diameter: 4"
 Slot Size: 0.020 Well Depth: 20'
 Gravel Pack: #3 Monterey Sand ▽ First Water Depth: 3'
 ▽ Static Water Depth: 2.5'

Well No: MW-11
 Page 1 of 1



Elevation: Northing: Easting:

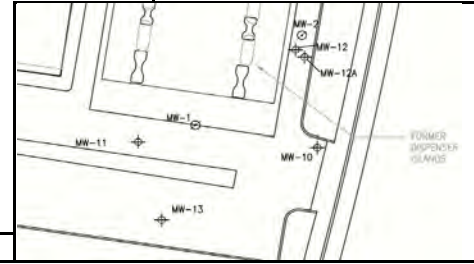
Well Completion Backfill Casing	Water Level	Blow Counts	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
Neat Cement	▼			Air-Knife	1			4" Asphalt	
	▼				2			Clayey SAND (SC); brown, 60% fine to coarse sand, dense, 30% clay, medium plasticity, 10% fine gravel, damp.	
					3			Clayey GRAVEL with Sand (GC); brown, 60% fine to coarse gravel, loose, 20% clay, 20% fine to coarse sand, wet.	
					4				
					5			Clayey GRAVEL with Sand (GC); brown, 50% fine to coarse gravel, loose, 30% clay, 20% fine to coarse sand, wet.	
			0.2		6				
					7				
					8				
					9				
				MW-11 @10	10			Clayey GRAVEL (GC); brown, 60% fine gravel, loose, 30% clay, 10% fine to coarse sand, moist.	
			0.7		11				
					12			Clayey GRAVEL (GC); brown, 60% fine gravel, loose, 30% clay, 10% fine to coarse sand, wet.	
					13				
					14				
			0.4		15			Lean CLAY (CL); green-grey, medium plasticity, stiff, moist.	
					16				
					17			No Recovery	
					18				
					19			Poorly Graded GRAVEL with Sand (GP); brown, 80% fine gravel, loose, 20% medium to coarse sand, wet.	
			4.6	MW-11 @20	20				
					21				
					22				

Delta Consultants

Project No: I42705191 Client: Delta/ELT
 Logged By: Jonathan Fillingame Location: 449 Hegenberger Road, Oakland
 Driller: Gregg Date Drilled: 6/22/2010
 Drilling Method: Hollow Stem Auger Hole Diameter: 11"
 Sampling Method: Direct Push Hole Depth: 20'
 Casing Type: Sch 40 PVC Well Diameter: 4"
 Slot Size: 0.020 Well Depth: 20'
 Gravel Pack: #3 Monterey Sand ▽ First Water Depth: 5.5'
 ▽ Static Water Depth: 4.5'

Well No: MW-12

Page 1 of 1

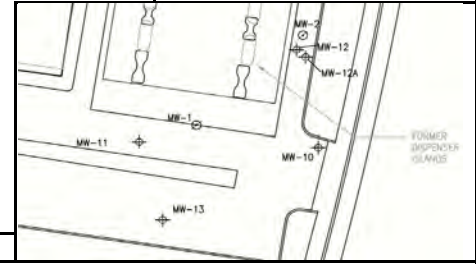


Well Completion		Water Level	Blow Counts	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing									
Neat Cement					Air-Knife	1			4" Asphalt	Fill (Silty SAND with Gravel); brown, 60% fine to coarse sand, 20% silt, 20% fine to coarse gravel, chunks of asphalt, damp.
						2				
						3				Lean CLAY (CL); dark greenish grey, 95% clay, medium stiff, medium plasticity, 5% fine sand, moist.
						4				Lean CLAY (CL); dark brownish grey and black, 90% clay, stiff, medium plasticity, 5% fine sand, 5% organics/roots, moist, hydrocarbon odor.
		▼		32.9		5				Lean CLAY with Gravel (CL); dark brownish grey, 80% clay, stiff, low plasticity, 20% fine gravel, moist.
		▽				6				Clayey GRAVEL (GC); dark brown, 50% fine gravel, loose, 40% clay, low plasticity, 10% fine to coarse sand, moist.
				2365	MW-12 @8	8				
						9				
					MW-12 @10	10				Lean CLAY (CL); dark grey to black, soft, medium plasticity, wet, hydrocarbon odor.
				203		11				
						12				
						13				
						14				Lean CLAY with Sand (CL); green grey, 85% clay, stiff, medium plasticity, 15% fine to medium sand, moist.
				160		15				Color Change to Brown.
						16				
						17				Fat CLAY (CH); black, very soft, high plasticity, wet.
						18				Fat CLAY (CH); greenish grey, 90% clay, soft, high plasticity, 10% fine sand, moist.
						19				
					MW-12 @20	20				Lean CLAY (CL); brown with black spots, very stiff, medium plasticity, damp.
				335		21				
						22				

Delta Consultants

Project No: 142705191 Client: Delta/ELT
 Logged By: Jonathan Fillingame Location: 449 Hegenberger Road, Oakland
 Driller: Gregg Date Drilled: 6/23/2010
 Drilling Method: Hollow Stem Auger Hole Diameter: 8"
 Sampling Method: Direct Push Hole Depth: 44'
 Casing Type: Sch 40 PVC Well Diameter: 2"
 Slot Size: 0.020 Well Depth: 34'
 Gravel Pack: #3 Monterey Sand ▽ First Water Depth: 5.5'
 ▼ Static Water Depth: 6'

Well No: MW-12A
 Page 2 of 2



Elevation: _____ Northing: _____ Easting: _____

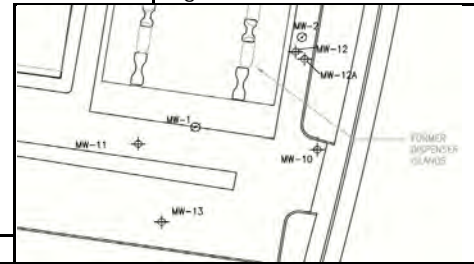
Well Completion Backfill Casing	Water Level	Blow Counts	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
Neat Cement			1277	MW-12A @26	23				No recovery
					24				
			3400	MW-12A @32	26				Fat CLAY (CH) ; black, soft, high plasticity, wet, hydrocarbon odor.
					27				
			47.9	MW-12A @34	28				Lean CLAY (CL) ; brown, greenish grey, 90% clay, stiff, medium plasticity, 10% fine to coarse sand, moist.
					29				
					30				
					31				
					32				Sandy Lean CLAY (CL) ; brown, 70% clay, stiff, medium plasticity, 30% fine to coarse sand, moist.
					33				
					34				Clayey SAND (SC) ; brown, 60% fine to medium sand, loose, 40% clay, stiff, medium plasticity, wet.
					35				
					36				Well Graded SAND with Clay (SW-SC) ; brown, 90% fine to coarse sand, dense, 10% clay, wet.
					37				
					38				Clayey SAND (SC) ; brown, 60% fine to medium sand, 40% clay, wet.
					39				
					40				Well Graded SAND (SW) ; brown, fine to coarse, wet.
					41				
Sand Caved in while Augers were removed (slough)					42				Well Graded SAND (SW) ; brown, 90% medium to coarse sand, loose, 10% fine gravel, wet.
					43				
					44				Well Graded SAND (SW) ; brown, 95% fine to coarse sand, loose, 5% clay, wet.
									Well Graded SAND (SW) ; brown, 95% fine to coarse sand, loose, 5% fine gravel, wet.
									Clayey SAND (SC) ; brown, 60% fine to medium sand, loose, 40% clay, wet.

Delta Consultants

Project No: I42705191 Client: Delta/ELT
 Logged By: Jonathan Fillingame Location: 449 Hegenberger Road, Oakland
 Driller: Gregg Date Drilled: 6/22/2010
 Drilling Method: Hollow Stem Auger Hole Diameter: 8"
 Sampling Method: Direct Push Hole Depth: 15'
 Casing Type: Sch 40 PVC Well Diameter: 2"
 Slot Size: 0.020 Well Depth: 15'
 Gravel Pack: #3 Monterey Sand ▽ First Water Depth: 3.5'
 ▼ Static Water Depth: 4.5'

Well No: MW-13

Page 1 of 1



Elevation: Northing: Easting:

Well Completion		Water Level	Blow Counts	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing									
Neat Cement					Air-Knife					4" Asphalt
						1				Well Graded SAND with Clay and Gravel (SW-SC); brown, 50% fine to coarse sand, 40% fine gravel 10% clay, moist.
						2				Fat CLAY with Sand (CL); dark greenish grey, 80% Clay, soft, high plasticity, 20% fine to coarse sand, moist.
						3				Lean CLAY (CL); brown, 85% clay, stiff, medium plasticity, 10% medium sand, 5% peat, damp.
						4				Clayey GRAVEL with Sand (GC); brown, 50% fine to coarse gravel, loose, 30% clay, 20% fine to coarse sand, wet.
						5				Clayey SAND (SC); grey, 70% fine to medium sand, loose, 30% clay, wet.
						6				
						7				
				2.8	MW-13 @8	8				Clayey SAND (SC); grey, 60% fine to medium sand, loose, 30% clay, 10% fine gravel, wet.
						9				Clayey SAND (SC); grey, 60% fine to medium sand, loose, 40% clay, wet.
						10				Sandy Lean CLAY (CL); grey, 60% clay, stiff, medium plasticity, 40% fine sand, wet.
						11				
				0.2		12				Lean CLAY (CL); dark grey, 90% clay, stiff, medium plasticity, 10% fine sand, moist.
						13				Clayey SAND (SC); grey, 60% fine to medium sand, dense, 40% clay, wet.
						14				
				0.1	MW-13 @15	15				Lean CLAY (CL); dark grey to black, 90% clay, stiff, medium plasticity, 10% fine sand, moist.
						16				
						17				
						18				
						19				
						20				
						21				
						22				



Project No: 142705101
 Logged By: ETW
 Driller: Gregg Drilling
 Drilling Method: HSA
 Sampling Method: Direct Push
 Casing Type: Sch. 40 PVC
 Slot Size: 0.02
 Gravel Pack: #3

Client: COP-ELT
 Location: 44W Hejzenberger Road
 Date Drilled: 5/17/2011
 Hole Diameter: 8"
 Hole Depth: 17'
 Well Diameter: 2"
 Well Depth: 13'
 First Water Depth: 7.5'
 Static Water Depth:

Boring/Well No: MW-14
 Page 1 of 1



Elevation: Northing: Easting:







Well Completion Backfill Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
					1			Asphalt (6" Thick)
					2			Class II AB
					3			Rocky Fill
					4		SC	Clayey sand; 55% fine sand, 45% clay, Olive green, moist, no odor
					5			
					6	X		
					7	X		
	▼		38.4	MW-14d7	7	X O		Wet
					8	X	CL	Lean Clay; 90% clay, 10% fine sand, black, wet, medium plasticity, slight odor
					9	X		
					10	X		
			43.6	MW-14d10	10	X O		
					11	X		Brown from 11 to 12 feet
					12	X		Organics material, plant roots
					13	X		Black at 13 feet, strong odor
			56.3	MW-14d13	13	X O		
					14			
					15			
					16			
					17			
					18			
					19			
					20			
					21			
					22			



Project Name and Location:
 76 Station No. 5191/5043
 Site Address: 449 Hegenberger Road
 City, State: Oakland, California

DEPTH (ft. bgs)	MW-14 CONSTRUCTION DETAILS	
0	GROUND SURFACE	Flush Mounted Well Box Locking Well Cap
1		Concrete = 0 ft. to 0.5 ft. Bentonite Grout = 0.5 ft. to 1 ft.
2		Bentonite Seal = 1 ft. to 2 ft. 2" Sch. 40 Blank PVC casing set from 0 ft. to 3 ft.
3		
13		RMC Lonestar Sand #3 Filter Pack set from 2 ft. to 13 ft. 2" Sch. 40, 0.02 inch slotted PVC screen set from 3 ft. to 13 ft. Threaded PVC End Cap

Total Depth of boring at 20 feet below ground surface (bgs)

-  Concrete
-  Bentonite Grout
-  Two inch diameter 0.02-inch Slotted PVC Screen
-  Two inch diameter PVC well casing grouted in place
-  RMC Lonestar Sand #3 Filter Pack
-  Bentonite Chip Seal



Project No: 142705191 Client: COPPELL
 Logged By: JTW Location: 419 Hegenberger Road Boring/Well No: MW-15
 Driller: Gregg Drilling Date Drilled: 5/17/2011 Page 1 of 1
 Drilling Method: HSA Hole Diameter: 8"
 Sampling Method: Direct Push Hole Depth: 13'
 Casing Type: Sch. 40 PVC Well Diameter: 2"
 Slot Size: 0.02 Well Depth: 13'
 Gravel Pack: #3 First Water Depth: 4.5'
 Static Water Depth:

Elevation: Northing: Easting:

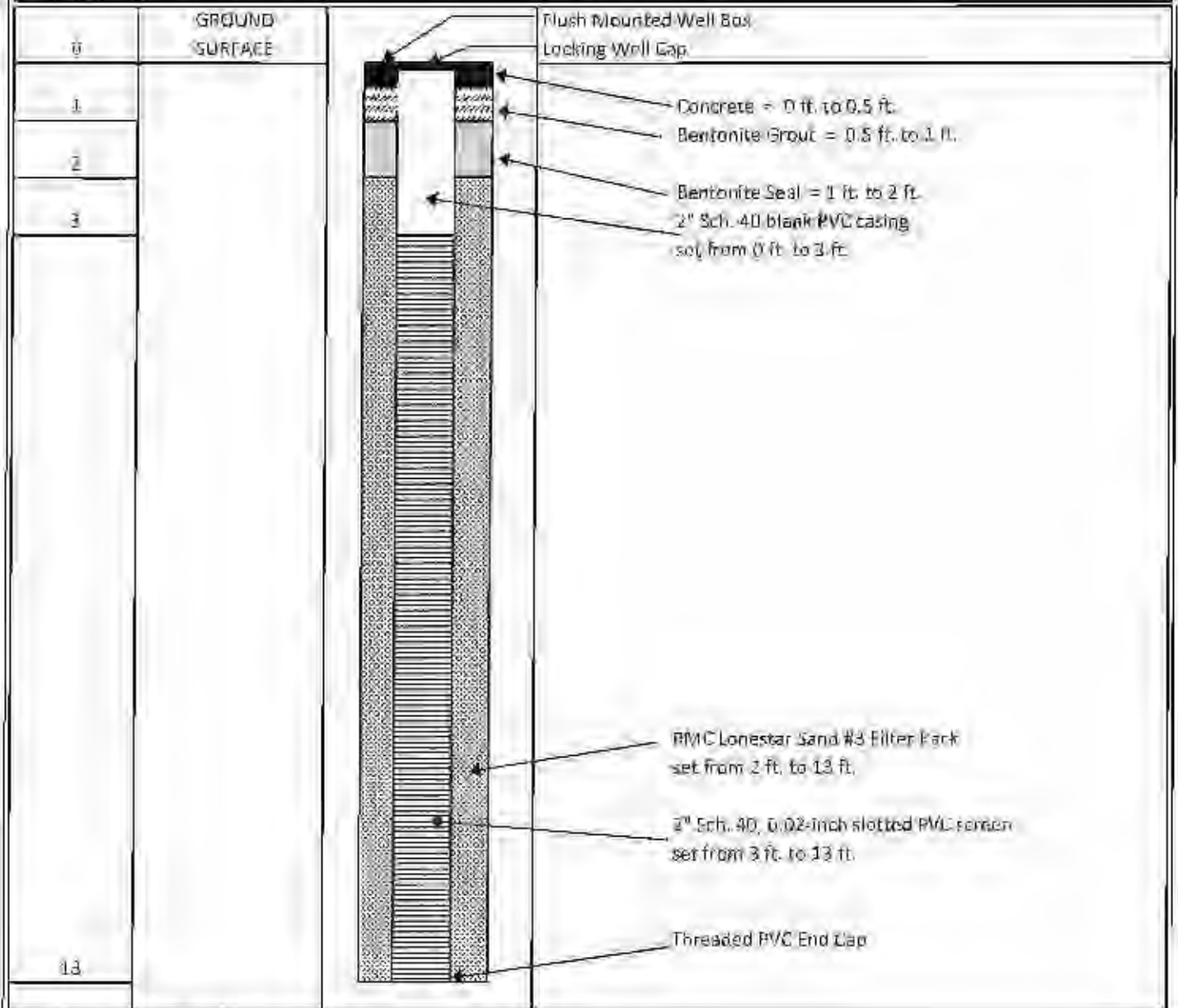


Well Completion	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Soil Type	LITHOLOGY / DESCRIPTION
Backfill Casing					1			Asphalt (6" Thick)
					2			Class II AB
					3			Rocky Fill
					4			
					5			Wet
					6			
					7	X		
			18.7	MW-15d8	8	X	O	CL Lean Clay; 95% clay, 5% fine sand, black, wet, medium plasticity, no odor
					9	X		
					10	X		
					11	X		
					12	X		Organic material, plant roots
			37.1	MW-15d13	13	X	O	
					14			
					15			
					16			
					17			
					18			
					19			
					20			
					21			
					22			



Project Name and Location:
 76 Station No. 5191/5043
 Site Address: 449 Hegenberger Road
 City, State: Oakland, California

DEPTH (ft bgs)	MW-15 CONSTRUCTION DETAILS
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Total Depth of boring at 20 feet below ground surface (bgs)

	Concrete
	Bentonite Grout
	Two inch diameter 0.02-inch Slotted PVC screen
	Two inch diameter PVC well casing grouted in place
	RMC Lonestar Sand #3 Filter Pack
	Bentonite Chip Seal



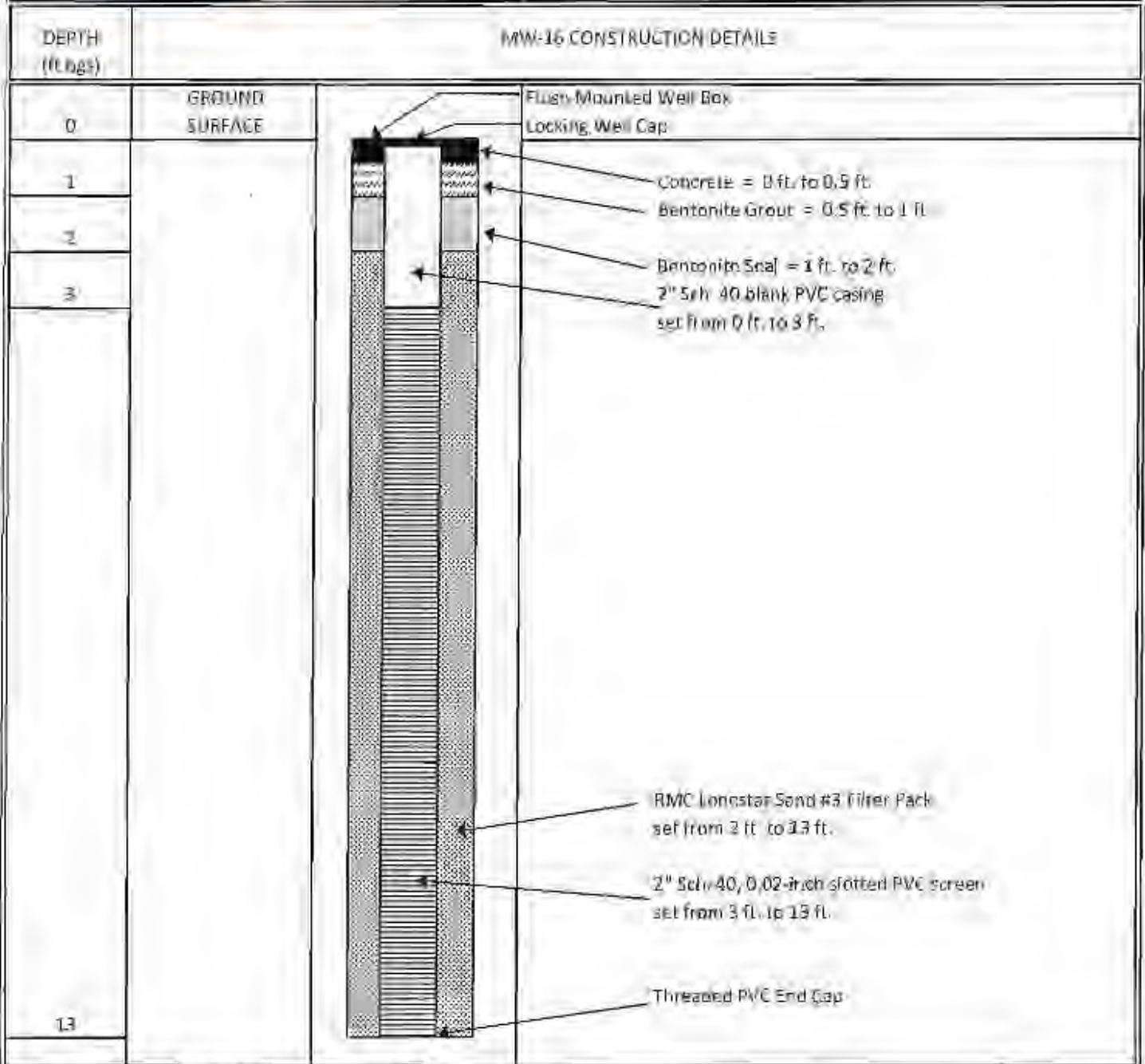
Project No: I42705191 Client: COP-ELT Boring/Well No: MW-16
 Logged By: ETW Location: 449 Hegenberger Road Page 1 of 1
 Driller: Gregg Drilling Date Drilled: 5/17/2011 Location Map:
 Drilling Method: HSA Hole Diameter: 8"
 Sampling Method: Direct Push Hole Depth: 13"
 Casing Type: Sch. 40 PVC Well Diameter: 2"
 Slot Size: 0.02 Well Depth: 13'
 Gravel Pack: #3 First Water Depth: 5'
 Static Water Depth:

Elevation: Northing: Easting:







Well Completion Backfill Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Interval	Soil Type	LITHOLOGY / DESCRIPTION
					1				Concrete (12" Thick)
					2				Class II AB Rocky Fill Moist
					3				
					4				
					5				Wet
					6				
					7				
			9.6	MW-1688	8	X	O	CL	Lean Clay; 95% clay, 5% fine sand, black, wet, medium plasticity, no odor
					9	X			
					10	X			
					11	X			
					12	X			Olive green color No odor
			10.1	MW-16813	13	X	O		
					14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				



Project Name and Location:
 76 Station No. S191/S043
 Site Address: 449 Hegenberger Road
 City, State: Oakland, California



Total Depth of boring at 20 feet below ground surface (bgs)

-  Concrete
-  Bentonite Grout
-  Two inch diameter 0.02-inch Slotted PVC Screen
-  Two inch diameter PVC well casing grouted in place
-  RMC Lonestar Sand #3 Filter Pack
-  Bentonite Chip Seal



Project No: 142705191 Client: COP-ELT Boring/Well No: MW-17
 Logged By: ETW Location: 449 Hegenberger Road Page 1 of 1
 Driller: Gregg Drilling Date Drilled: 5/18/2011
 Drilling Method: HSA Hole Diameter: 8" Location Map
 Sampling Method: Direct Push Hole Depth: 13'
 Casing Type: Sch. 40 PVC Well Diameter: 2" Well Depth: 13'
 Slot Size: 0.02 First Water Depth:
 Gravel Pack: #3 Static Water Depth:

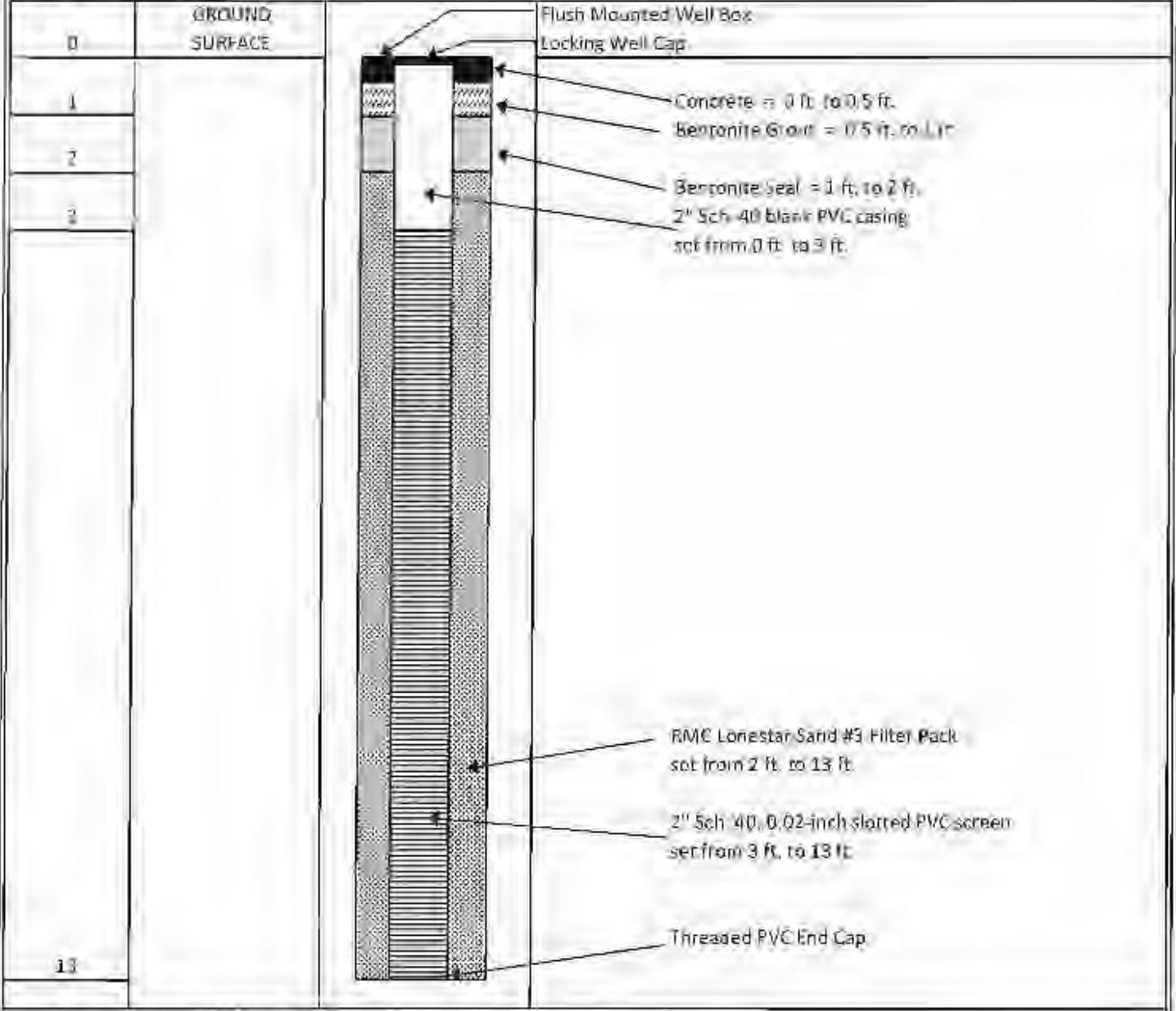
Elevation: Northing: Easting:

Well Completion Backfill Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample		Soil Type	LITHOLOGY / DESCRIPTION
						Recovery	Interval		
					1				Top Soil and fill
					2				CL Lean Clay , 95% clay, 5% fine sand, black, moist, medium plasticity, no odor
					3				
					4				
					5				
					6				
					7				Wet
					8	X			Olive green color, slight odor
			23.7	MW-17d9	9	X	O		
					10				
					11	X			
					12	X			wet
					13	X	O		Black color, slight odor
			28.4	MW-17d13	14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				



Project Name and Location:
 76 Station No: 5191/5043
 Site Address: 449 Hegenberger Road
 City, State: Oakland, California

DEPTH (ft bgs) MW-27 CONSTRUCTION DETAILS



Total Depth of boring at 20 feet below ground surface (bgs)

	Concrete
	Bentonite Grout
	Two inch diameter 0.02-inch Slotted PVC Screen
	Two inch diameter PVC well casing grouted in place
	RMC Lonestar Sand #3 Filter Pack
	Bentonite Chip Seal

Delta Consultants

Project No: I42705191 Client: ELT
 Logged By: E. Weyrens Location: 449 Hegenberger Rd.
 Driller: Gregg Date Drilled: 12/17/2009
 Drilling Method: Direct Push Hole Diameter: 2"
 Sampling Method: Hole Depth: 20'
 Casing Type: NA Well Diameter: NA
 Slot Size: NA Well Depth: NA
 Gravel Pack: NA ▼ First Water Depth: 3'
 ∇ Static Water Depth: 13'

Boring No. B-4

Page 1 of 1

Location Map

Elevation: Northing: Easting:

Well Completion Backfill Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Interval	Soil Type	LITHOLOGY / DESCRIPTION
									4" of Asphalt
					1			CL	6" of Aggregate Base
					2			SM	Lean Clay, 95% clay, 5% fine sand, olive green, moist
		▼			3			CL	Silty Sand w/ gravel, 60% sand, 25% silt, 15% gravel, medium sand, olive green, loose, moist
					4			CL	Lean Clay, 95% clay, 5% fine sand, olive green, wet, strong odor
					5	X			
			15.6	B-4@6 10:50	6	X	0		
					7	X			
					8	X			
			37.5		8	X	0	SC	Clayey Sand, 80% fine sand, 20% clay, black wet, loose
					9	X			
					10	X			
					11	X			
			2.4		11	X	0	CL	Lean Clay, 95% clay, 5% fine sand, black, medium stiff, wet, root particles
					12	X		SC	Clayey Sand, 85% fine sand, 15% clay, black, Loose, wet
		∇			13	X			
					14	X			
					15	X			
			38.4	B-4@15 11:05	15	X	0	CL	Lean Clay, 95% clay, 5 % fine sand, olive green, medium stiff, wet
					16	X		SC	Clayey Sand, 85% fine sand, 15% clay, black, loose, wet
					17	X			
					18	X			
					19	X		CL	Lean Clay, 95% clay, 5% fine sand, olive green, wet, medium stiff
			2.0	B-4@20 11:13	20	X	0	CL	Lean Clay, 95% clay, 5% fine sand, light brown medium stiff, moist
					21				Boring terminated at 20 feet bgs.
					22				

Delta Consultants

Project No: I42705191 Client: ELT
 Logged By: E. Weyrens Location: 449 Hegenberger Rd
 Driller: Gregg Date Drilled: 12/17/2009
 Drilling Method: Direct Push Hole Diameter: 2"
 Sampling Method: Hole Depth: 32'
 Casing Type: NA Well Diameter: NA
 Slot Size: NA Well Depth: NA
 Gravel Pack: NA

Boring No: B-5
 Page 1 of 2



Elevation: _____ Northing: _____ Easting: _____

Well Completion Backfill Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Interval	Soil Type	LITHOLOGY / DESCRIPTION
									4" of Asphalt
					1			SM	Silty Sand, 60% sand, 40% silt, brown, moist
					2			CL	Lean Clay, 95% clay, 5% fine sand, moist, black
					3				
					4				
					5				odor encountered at 4 fbg
		▼	25.4		5	X	0		Lean Clay, 95% clay, 5% fine sand, moist, black, soft
					6	X			
					7	X			
					8	X	0		Oily substance on soil at 8 fbg
			885	B-5@8 12:59	8	X			
					9	X			
					10	X			
					11	X			
					11	X		SC	Clayey Sand, 65% fine sand, 35% clay, olive brown, loose, wet
					12	X		CL	Lean Clay, 95% Clay, 5 % fine sand, olive brown to black, soft, wet, plant material
			89.5		12	X			more oily substance at 13.5 fbg
					13	X			
					14	X	0		color and density change at 14 fbg
			265		14	X			light olive green color, medium stiff
					15	X			Lean Clay w/ sand 75% clay, 25% fine sand moist
					16	X			
					17	X			
					17	X			
		▽	710	B-5@17.5 13:20	18	X	0		Lean Clay, 90% clay, 10% fine sand, light brown, very stiff, moist, no plant material
					18	X			
					19	X			
					20	X	0		
			149		20	X			Lean Clay w/ sand, 75% clay, 25% fine sand, light brown, soft, wet, strong odor
					21	X			
					21	X			
					22	X			



Project No: 142705191 Client: COP-ELT
 Logged By: ETW Location: 449 Hegenberger Road Boring/Well No: B-6
 Driller: Gregg Drilling Date Drilled: 5/18/2011 Page 1 of 2
 Drilling Method: Direct Push Hole Diameter: 3" Location: 449
 Sampling Method: Direct Push Hole Depth: 26' Location: 449
 Casing Type: Well Diameter: Location: 449
 Sizer Size: Well Depth: Location: 449
 Gravel Pack: First Water Depth: 7.3'
 Static Water Depth:

Elevation: Northing: Easting:

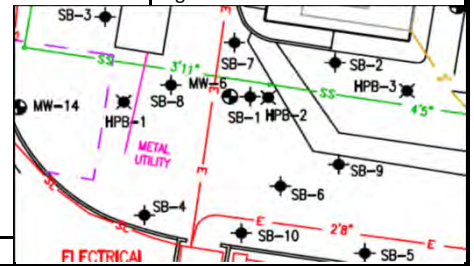
Well Completion Backfill Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Interval	Soil Type	LITHOLOGY / DESCRIPTION
									Asphalt (6" Thick)
					1				AB
					2				Rocky Fill, 50% sand, 25% gravel, 25% clay, brown, moist, gravel is angular, sand is 50% fine 50% coarse
					3			CL	Lean Clay; 95% clay, 5% fine sand, black, moist, medium plasticity, no odor
					4				
					5				
					6				
					7	X			
					8	X			
			28.1	B-6d9	9	X	O	CL	Lean Clay; 85% clay, 15% fine sand, black, wet, medium plasticity, strong odor
					10	X			
					11	X			
					12	X			
					13	X		CL	Lean Clay; 95% clay, 5% fine sand, moist, black, medium plasticity, strong odor
			42.6	H-6d14	14	X	O		Change to light green color Black color at 13.5 feet, Wet Light green color at 14 feet, moist
					15	X			
					16	X			
					17	X			
					18	X			Change to light brown color, moist
					19	X			
					20	X			
					21	X	O	CL	Lean Clay; 95% clay, 5% fine sand, light brown, moist, medium plasticity, strong odor
			21.9	B-6d21	22	X			



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/25/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**

Boring No: **SB-1**
 Page 1 of 1



▽ First Water Depth: 5 ft
 ▼ Static Water Depth: NA

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
					0			4" Asphalt	
					1			Gravel Fill	
					2			Lean CLAY (CL) - black, 95% clay 5% fine to medium sand medium plasticity, stiff moist.	
			5		3			Lean CLAY (CL) - greenish grey, 95% clay, 5% fine to medium sand medium plasticity, stiff moist.	
					4				
			1370	SB-1d5.5	5			Clayey SAND (SC) - dark grey, 80% fine to medium sand, 20% clay, dense, wet, hydrocarbon odor.	
			80		6				
			78		7				
					8			Lean CLAY (CL) - black, 100% clay, medium plasticity, soft, wet, hydrocarbon odor.	
			199.0	SB-1d11	9				
			6.8		10			Organic SOIL (OL) - black with brown organics, 70% clay, 30% plant matter (roots or grass), medium plasticity, soft, wet.	
			21.5	SB-1d12	11			Lean CLAY (CL) - dark grey, 100% clay, medium plasticity, very stiff, moist.	
			18.5		12				
					13			Lean CLAY (CL) - blueish grey, 100% clay, medium plasticity, very stiff, moist.	
			9.5	SB-1d15	14				
					15			Total Depth 15 feet below ground surface	
					16				
					17				
					18				
					19				
					20				
					21				
					22				

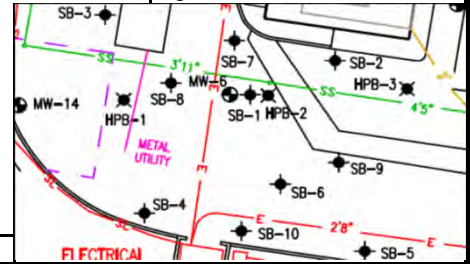
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/25/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**

Boring No: **SB-2**
 Page 1 of 1



▽ First Water Depth: 4.5 ft
 ▼ Static Water Depth: NA

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Sample Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
			0	SB-2d1	1			4" Asphalt	
			0	SB-2d3	3			Well Graded Gravel with sand (GW) - reddish brown, 60% fine to coarse gravel, 30% fine to coarse sand, 10% clay, moist.	
			0	SB-2d5	5			Poorly Graded Gravel with sand (GP) - reddish brown, 65% fine gravel, 35% fine to coarse sand, wet.	
			0	SB-2d7.5	7			Lean Clay (CL) - greenish grey, 90% clay, 10% fine to coarse sand, low plasticity, stiff, wet.	
			0.1		8			Organic SOIL (OL) - black, 60% plant matter (roots or grass), 40% clay, low plasticity, soft, wet.	
			0.3	SB-2d11	11			Lean CLAY (CL) - black, 90% clay, 10% plant matter medium plasticity, stiff, moist.	
			0.1	SB-2d15	15			Lean CLAY (CL) - greenish grey, 95-100% clay, <5% plant matter medium plasticity, stiff, moist.	
					15			Total Depth 15 feet below ground surface	
					16				
					17				
					18				
					19				
					20				
					21				
					22				

neat cement



Project No: I42705191

Logged By: Jonathan Fillingame

Driller: Cascade Drilling

Drilling Method: Direct Push

Sampling Method: Continuous

Client: COP/ELT

Location: 449 Hegenberger Road, Oakland

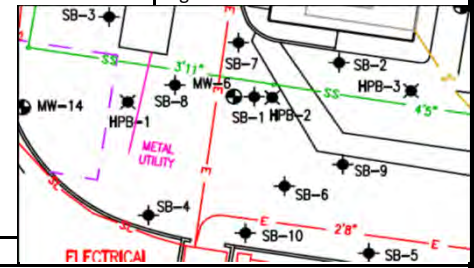
Date Drilled: 7/25/2013

Hole Diameter: 2 in

Hole Depth: 15 ft

Boring No: SB-3

Page 1 of 1



▽ First Water Depth: 4.75 ft

▼ Static Water Depth: NA

Elevation:

Northing:

Easting:

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Sample Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
			0		0				4" Asphalt
					1				Poorly Graded Gravel with sand (GP) - brown, 60% fine gravel, 35% fine to coarse sand, 5% clay, dense, moist.
					2				
			0		3				Lean CLAY (CL) - dark grey, 90% clay, 5% fine to medium sand, 5% organics, medium plasticity, stiff, moist.
					4				Lean CLAY (CL) - dark grey, 90% clay, 15% fine to medium sand, medium plasticity, stiff, wet.
			0		5				Clayey SAND (SC) - reddish brown, 60% fine to coarse sand, 40% clay, loose, wet.
			98		6				Lean Clay (CL) - grey, 95% clay, 5% fine to medium sand, medium plasticity, soft, wet.
			167	SB-3d7.5	7				Lean Clay (CL) - dark grey, 95% clay, 5% fine to medium sand, low plasticity, medium stiff, wet.
			17.8		8				Organic SOIL (OL) - brown, grey, 90% plant matter (roots or grass), 10% clay, soft, wet.
			3.4		9				Organic SOIL (OL) - dark grey, 70% clay, 30% plant matter (roots or grass), low plasticity, medium stiff, wet.
			0.2	SB-3d11	10				Lean CLAY (CL) - black, 90% clay, 10% plant matter, medium plasticity, stiff, moist.
			0.2		11				Lean CLAY (CL) - black, 95-100% clay, 5% organics, medium plasticity, stiff, moist.
			0		12				
			0		13				Lean CLAY (CL) - greenish grey 95-100% clay, 5% organics, low plasticity, very stiff, moist.
			0		14				
			0	SB-3d15	15				Total Depth 15 feet below ground surface
					16				
					17				
					18				
					19				
					20				
					21				
					22				

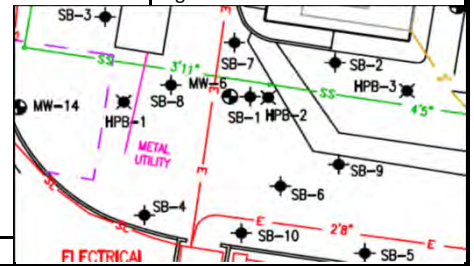
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/25/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**

Boring No: **SB-4**
 Page 1 of 1



▽ First Water Depth: 2.9 ft
 ▼ Static Water Depth: NA

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
			0	SB-4d1	1			4" Asphalt	
			0	SB-4d3	3			Poorly Graded Gravel with sand (GP) - light grey, 60% fine gravel, 40% fine to coarse sand, medium dense, dry.	
			0	SB-4d5	5			Lean CLAY (CL) - dark grey, 90% clay, 5% fine to medium sand, 5% organics, medium plasticity, stiff, moist.	
			0	SB-4d5	5			Clayey SAND (SC) - grey, 70% fine to medium sand, 30% clay, loose, wet.	
			0	SB-4d5	5			Clayey SAND (SC) - grey, 55% fine to medium sand, 45% clay, loose, wet.	
			2.9	SB-4d5	6			Clayey SAND (SC) - grey, 70% fine to medium sand, 30% clay, loose, wet.	
			1338	SB-4d8	8			Lean Clay (CL) - black, 95% clay, 5% fine sand, low plasticity, very stiff, moist.	
			1.2	SB-4d11	11			Poorly graded SAND (SP) - black, 100% medium sand, dense, wet, oil odor.	
			1.2	SB-4d11	11			Lean CLAY (CL) - grey, 100% clay, medium plasticity, soft, moist.	
			0.4	SB-4d15	15			Lean CLAY (CL) - black, 95% clay, 5% organics, medium plasticity, stiff, moist.	
			0.1	SB-4d15	15			Lean CLAY (CL) - grey, 100% clay, low plasticity, stiff, moist.	
			0	SB-4d15	15			Lean CLAY (CL) - greenish grey, 95% clay, 5% fine to medium sand, low plasticity, very stiff, moist.	
					15			Total Depth 15 feet below ground surface	
					16				
					17				
					18				
					19				
					20				
					21				
					22				

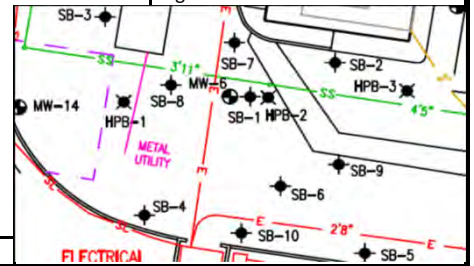
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/25/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**

Boring No: **SB-5**
 Page 1 of 1



▽ First Water Depth: **4 ft**
 ▼ Static Water Depth: **NA**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
			0		0			4" Asphalt	
					1			●●●●	Poorly Graded Gravel with sand (GP) - reddish brown, 60% fine gravel, 30% fine to coarse sand, 10% clay, moist.
			0		3			▨▨▨▨	Lean CLAY (CL) - brown, 90% clay, 10% fine to coarse sand, stiff, low plasticity, moist.
	▽		0		4			●●●●	Well graded SAND (SW) - grey, 100% fine to coarse sand, loose, wet.
			78.0	SB-5d6.5	6			▨▨▨▨	Lean CLAY (CL) - grey, 90% clay, 10% fine to coarse sand, stiff, medium plasticity, wet.
			12.4		7			●●●●	Organic SOIL (OL) - grey, 90% clay, 10% organics, soft, wet.
			4.0		8			▨▨▨▨	Poorly Graded Sand (SP) - grey, 95% medium sand, 5% clay, loose wet.
			1.8		9			▨▨▨▨	Organic SOIL (OL) - grey, 60% organics, 40% clay, medium plasticity, medium stiff, wet.
			2.3		10			▨▨▨▨	Lean CLAY (CL) - dark grey, 90% clay, 10% organics, soft, medium plasticity, wet.
			0.3	SB-5d11	11			▨▨▨▨	Lean CLAY (CL) - dark grey, 90% clay, 10% organics, stiff, medium plasticity, wet.
			0.1		12			▨▨▨▨	Lean CLAY (CL) - dark grey, 100% clay, stiff, medium plasticity, moist.
			0		13			▨▨▨▨	Lean CLAY (CL) - dark grey, 95% clay, 5% organics, very stiff, medium plasticity, moist.
			0		14			▨▨▨▨	Lean CLAY (CL) - greenish grey, 100% clay, very stiff, medium plasticity, moist.
			0	SB-5d15	15			▨▨▨▨	Lean CLAY (CL) - greenish grey, 100% clay, very stiff, medium plasticity, moist.
					16				Total Depth 15 feet below ground surface
					17				
					18				
					19				
					20				
					21				
					22				

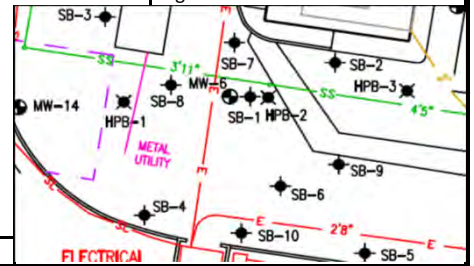
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/26/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**

Boring No: **SB-6**
 Page 1 of 1



▽ First Water Depth: **4.5 ft**
 ▼ Static Water Depth: **NA**

Elevation: _____ Northing: _____ Easting: _____

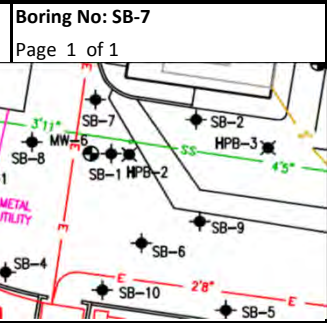
Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
									4" Asphalt
			0.1		1				Poorly Graded Gravel with sand (GP) - reddish brown, 60% fine gravel, 30% fine to coarse sand, 10% clay, moist.
			0		2				Clayey SAND (SC) - greenish grey, 60% fine to medium sand, 40% clay, medium dense, moist.
					3				Lean CLAY (CL) - greenish grey, 80% clay, 20% fine to medium sand, stiff, low plasticity, moist.
			0.1		4				Lean CLAY (CL) - greenish grey, 95% clay, 5% fine to medium sand, stiff, medium plasticity, wet.
			16		5				
			40		6				Poorly Graded Sand (SP) - grey, 100% medium sand, medium dense, wet, hydrocarbon odor. 1 or 2 inches thick
			2567	SB-6d6.5	6				Clayey Sand (SC) - dark grey, 60% fine to medium sand, 40% clay, medium dense, wet.
			33.5		7				Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, soft, medium plasticity, wet.
			29.2		8				Poorly Graded Sand (SP) - grey, 93% medium sand, 5% clay, 2% organics, medium dense, wet.
			2.9		9				Lean CLAY (CL) - dark grey, 90% clay, 10% organics, stiff, medium plasticity, wet.
			1.9		10				Lean CLAY (CL) - dark grey, 100% clay, stiff, medium plasticity, moist.
			1.8	SB-6d11	11				Lean CLAY (CL) - dark grey, 95% clay, 5% organics, very stiff, medium plasticity, moist.
			0.1		12				Lean CLAY (CL) - greenish grey, 100% clay, very stiff, medium plasticity, moist.
			0.2		13				
			0.1	SB-6d15	14				
					15				Total Depth 15 feet below ground surface
					16				
					17				
					18				
					19				
					20				
					21				
					22				

neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/26/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**



▽ First Water Depth: **4 ft**
 ▼ Static Water Depth: **NA**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
			0		0			X	4" Asphalt
			0		1				Poorly Graded Gravel with sand (GP) - reddish brown, 60% fine gravel, 30% fine to coarse sand, 10% clay, moist.
			0		2				Clayey Gravel with sand (GC) - brown, 50% fine to coarse gravel, 25% fine to coarse sand, 25% clay (in clumps), moist.
			0		3				Clayey Gravel with sand (GC) - grey, 50% fine to coarse gravel, 25% fine to coarse sand, 25% clay (in clumps), moist. - brown,
			0		4				50% fine to coarse gravel, 25% fine to coarse sand, 25% clay (in clumps), moist.
			0		5				Lean CLAY (CL) - grey, 90% clay, 10% fine to coarse sand, soft, medium plasticity, wet.
			0.4	SB-7d6	6				Clayey Sand (SC) - grey, 60% fine to medium sand, 40% clay, dense, wet.
			0.4		7				Lean CLAY (CL) - grey, 100% clay, soft, medium plasticity, wet.
			2.9		8				Lean CLAY (CL) - dark grey, 95% clay, 5% fine to coarse sand, soft, medium plasticity, wet.
			7.6		9				Lean CLAY (CL) - dark grey, 95% clay, 5% fine to coarse sand, stiff, low plasticity, moist.
			14.8	SB-7d11	10				Lean CLAY (CL) - dark grey, 90% clay, 5% fine to coarse sand, 5% organics, stiff, low plasticity, moist.
			4.9		11				Lean CLAY (CL) - dark grey, 93% clay, 5% fine to coarse sand, 2% organics, stiff, low plasticity, moist.
			42.2	SB-7d13	12				Lean CLAY (CL) - greenish grey, 93% clay, 5% fine to coarse sand, 2% organics, very stiff, low plasticity, moist.
			0.9		13				
			0.6		14				
					15				Total Depth 15 feet below ground surface
					16				
					17				
					18				
					19				
					20				
					21				
					22				

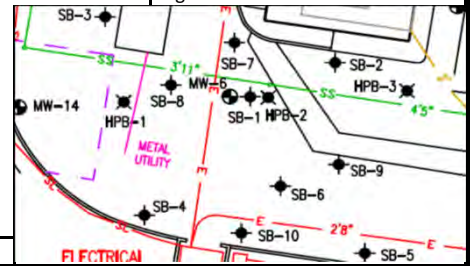
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/26/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**

Boring No: **SB-8**
 Page 1 of 1



▽ First Water Depth: **5 ft**
 ▼ Static Water Depth: **NA**

Elevation: _____ Northing: _____ Easting: _____

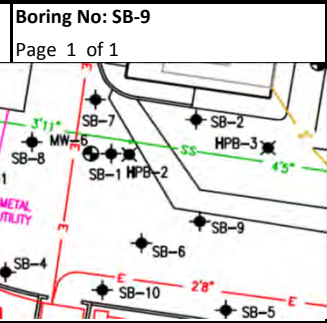
Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
									4" Asphalt
			0.1		1				Poorly Graded Gravel with sand (GP) - reddish brown, 60% fine gravel, 30% fine to coarse sand, 10% clay, moist.
					2				Clayey Gravel with sand (GC) - brown, 50% fine to coarse gravel, 25% fine to coarse sand, 25% clay (in clumps), moist.
			0.4		3				Well Graded SAND (SW) - grey, 95% fine to coarse sand, 5% clay, loose, moist.
			0.1		4				Clayey Sand (SC) - grey, 80% fine to medium sand, 20% clay, medium dense, moist.
					5				Wet at 5 feet.
			7.2		6				Lean CLAY (CL) - grey, 100% clay, stiff, medium plasticity, moist.
			144		7				Lean CLAY (CL) - dark grey, 100% clay, stiff, medium plasticity, moist.
			1207	SB-8d8	8				Poorly Graded SAND (SP) - dark grey to black, 100% fine sand, dense, wet, hydrocarbon odor.
			4.7		9				Lean CLAY (CL) - dark grey, 100% clay, soft, medium plasticity, wet.
			1.1		10				Piece of wood in clay < 1 inch thick at 9.5 feet below grade
			1.1	SB-8d11	11				Lean CLAY (CL) - dark grey, 100% clay, stiff, medium plasticity, moist.
			0.4		12				Lean CLAY (CL) - grey, 100% clay, very stiff, medium plasticity, moist.
			0.2		13				Lean CLAY (CL) - greenish grey, 100% clay, very stiff, medium plasticity, moist.
			0.3		14				Lean CLAY (CL) - greenish grey, 100% clay, very stiff, medium plasticity, moist.
			0.5		15				Total Depth 15 feet below ground surface
					16				
					17				
					18				
					19				
					20				
					21				
					22				

neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/26/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**



▽ First Water Depth: **4.5 ft**
 ▼ Static Water Depth: **NA**

Elevation: _____ Northing: _____ Easting: _____

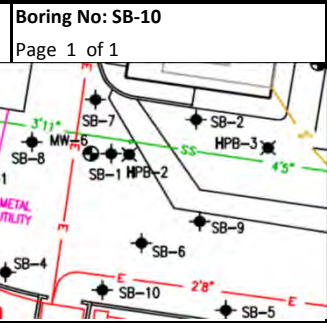
Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
					0				4" Asphalt
			0		1				Poorly Graded Gravel with sand (GP) - reddish brown, 60% fine gravel, 30% fine to coarse sand, 10% clay, moist.
			0		2				
					3				Well Graded Gravel with sand (GW) - reddish brown, 60% fine to coarse gravel, 30% fine to coarse sand, 10% clay, moist.
			0		4				
			27.0	SB-9d6	5				Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, stiff, medium plasticity, wet.
			0.1		6				Clayey SAND (SC) - grey, 80% fine to coarse sand, 20% clay, dense, wet.
			0.1		7				Lean CLAY (CL) - grey, 100% clay, soft, medium plasticity, wet.
			0		8				Lean CLAY (CL) - grey, 95% clay, 5% fine to coarse sand, soft, medium plasticity, wet.
			0.2	SB-9d9	9				Lean CLAY (CL) - dark grey, 100% clay, medium stiff, medium plasticity, moist.
					10				Lean CLAY (CL) - grey, 100% clay, stiff, medium plasticity, moist.
			0.1		11				
					12				Lean CLAY (CL) - grey, 100% clay, very stiff, medium plasticity, moist.
			0		13				Lean CLAY (CL) - grey, 100% clay, hard, medium plasticity, moist.
					14				
			0	SB-9d15	15				Total Depth 15 feet below ground surface
					16				
					17				
					18				
					19				
					20				
					21				
					22				

neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Cascade Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/26/2013**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**



▽ First Water Depth: **4.75 ft**
 ▼ Static Water Depth: **NA**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
									4" Asphalt
			0		1				Poorly Graded Gravel with sand (GP) - grey, 60% fine to coarse gravel, 40% fine to coarse sand, dry.
			0		2				
			0		3				Poorly Graded SAND (SP) - brown, 100% fine sand, loose, moist.
			0		4				Lean CLAY (CL) - grey, brown, 90% clay, 10% fine to medium sand, very stiff, low plasticity, wet.
			0		5				Clayey SAND (SC) - grey, 60% fine to medium sand, 40% clay, medium dense, wet.
			0		6				Lean CLAY (CL) - grey, 100% clay, stiff, low plasticity, wet.
			0		7				
			0	SB-10d8	8				Poorly Graded SAND (SP) - grey, 95% fine sand, 5% clay, dense, wet.
			0		9				Sandy Lean CLAY (CL) - grey, 70% clay, 30% fine sand, soft, low plasticity, wet.
			0		10				Lean CLAY (CL) - grey, 90% clay, 5% fine sand, 5% organics, stiff, medium plasticity, moist.
			0	SB-10d11	11				Lean CLAY (CL) - dark grey, 90% clay, 5% fine sand, 5% organics, stiff, medium plasticity, moist.
			0		12				
			0		13				Lean CLAY (CL) - greenish grey, 90% clay, 5% fine sand, 5% organics, very stiff, medium plasticity, moist.
			0		14				
			0		15				Total Depth 15 feet below ground surface
					16				
					17				
					18				
					19				
					20				
					21				
					22				

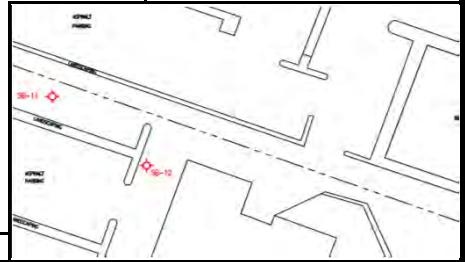
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/8/2015**
 Hole Diameter: **2 inches**
 Hole Depth: **20 feet**

Boring No: **SB-11**
 Page 1 of 1



▽ First Water Depth: **8.5 feet**
 ▼ Static Water Depth: **3.9 feet**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Analyzed	Soil Type	LITHOLOGY / DESCRIPTION				
neat cement	▼		0	Hand Auger	1			Asphalt	Asphalt				
					2			Poorly Graded GRAVEL (FILL) - brown, 70% fine gravel, 30% fine to medium sand, dense, dry.	Poorly Graded GRAVEL (FILL) - brown, 70% fine gravel, 30% fine to medium sand, dense, dry.				
					3			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.				
					4								
				SB-11d9	▽		0	SB-11d9	5				
									6				
									7			Clayey SAND (SC) - grey, 70% fine to medium sand, 30% clay, dense, moist. (Two 1 inch thick layers)	Clayey SAND (SC) - grey, 70% fine to medium sand, 30% clay, dense, moist. (Two 1 inch thick layers)
									8			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.
									9			Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, soft, medium plasticity, wet.	Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, soft, medium plasticity, wet.
									10			Lean CLAY (CL) - dark grey, 90% clay, 10% fine to medium sand, stiff, medium plasticity, trace roots, wet.	Lean CLAY (CL) - dark grey, 90% clay, 10% fine to medium sand, stiff, medium plasticity, trace roots, wet.
									11			Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, medium stiff, medium plasticity, trace roots, wet.	Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, medium stiff, medium plasticity, trace roots, wet.
									12			Lean CLAY (CL) - black, 90% clay, 10% fine to medium sand, medium stiff, low plasticity, trace roots, wet.	Lean CLAY (CL) - black, 90% clay, 10% fine to medium sand, medium stiff, low plasticity, trace roots, wet.
									13			Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, stiff, low plasticity, moist.	Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, stiff, low plasticity, moist.
									14			Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, very stiff, low plasticity, moist.
									15			Lean CLAY (CL) - mottled grey and light grey, 90% clay, 10% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - mottled grey and light grey, 90% clay, 10% fine to medium sand, very stiff, low plasticity, moist.
									16			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.
									17			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, stiff, low plasticity, trace roots, moist.	Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, stiff, low plasticity, trace roots, moist.
									18			Lean CLAY (CL) - black, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - black, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.
									19			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.
									20			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.
									21				
									22				

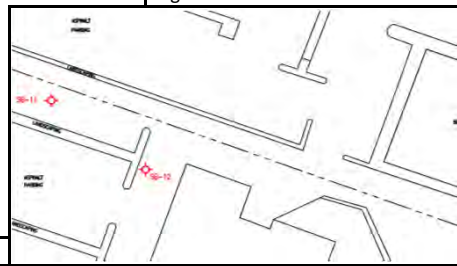
Total depth 20 feet



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/8/2015**
 Hole Diameter: **2 inches**
 Hole Depth: **20 feet**

Boring No: **SB-12**
 Page 1 of 1



▽ First Water Depth: **6.75 feet**
 ▼ Static Water Depth: **4.8 feet**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Sample Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
			0	Hand Auger	1			Asphalt	
					2			Well Graded GRAVEL (FILL) - brown, 60% fine to coarse gravel, 40% fine to coarse sand, dense, dry.	
					3			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	
					4				
					5				
			0	SB-12d7	6			Clayey SAND (SC) - brown, 60% fine to medium sand, 40% clay, dense, wet.	
			0		7			Sandy Lean CLAY (CL) - grey, 70% clay, 30% fine to medium sand, medium stiff, low plasticity, wet.	
			0		8			Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, soft, medium plasticity, wet.	
			0		9			Lean CLAY (CL) - grey, 100% clay, very stiff, medium plasticity, trace organics, moist.	
			0		10			Lean CLAY (CL) - grey, 95% clay, 5% fine sand, very stiff, medium plasticity, trace organics, moist.	
			5.0	SB-12d11	11			40% organics from 10.8 to 11 feet Lean CLAY (CL) - dark grey, 100% clay, soft, medium plasticity, trace organics, wet.	
			0.2		12			Lean CLAY (CL) - dark grey, 100% clay, stiff, medium plasticity, trace organics, wet.	
			0		13			Lean CLAY (CL) - dark grey, 100% clay, stiff, medium plasticity, trace organics, wet.	
			0		14			Lean CLAY (CL) - grey, 100% clay, very stiff, medium plasticity, trace organics, moist.	
			0		15			Lean CLAY (CL) - grey, 100% clay, very stiff, medium plasticity, trace organics, moist.	
			0		16			Lean CLAY (CL) - grey, 95% clay, 5% fine sand, very stiff, medium plasticity, trace organics, moist.	
			0		17			Lean CLAY (CL) - grey, 95% clay, 5% fine sand, very stiff, medium plasticity, trace organics, moist.	
			0		18			Lean CLAY (CL) - grey, 95% clay, 5% fine sand, very stiff, medium plasticity, trace organics, moist.	
			0		19			Lean CLAY (CL) - brown, 95% clay, 5% fine sand, stiff, medium plasticity, trace organics, moist.	
			0	SB-12d20	20			Lean CLAY (CL) - brown, 95% clay, 5% fine sand, stiff, medium plasticity, trace organics, moist.	
					21			Total depth 20 feet	
					22				

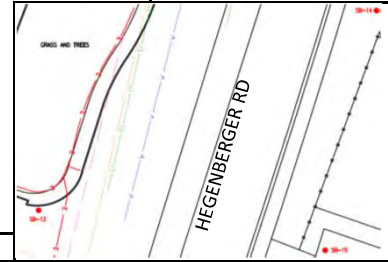
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **9/23/2014**
 Hole Diameter: **2 in**
 Hole Depth: **20 ft**

Boring No: **SB-13**
 Page 1 of 1



▽ First Water Depth: **8 ft**
 ▼ Static Water Depth: **5.85 ft**

Elevation: _____ Northing: _____ Easting: _____

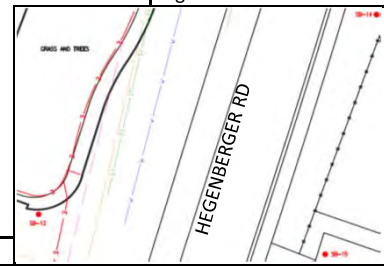
Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Analyzed	Soil Type	LITHOLOGY / DESCRIPTION			
neat cement	▼			Air Knife	1			Concrete				
					2			Poorly Graded GRAVEL with Sand (GP) - brown, 70% fine to coarse gravel, 30% fine to coarse sand, dense, moist, fill material.				
					3			Silty GRAVEL (GM) - brown, 70% fine gravel, 20% silt, 10% fine to coarse sand, dense, dry.				
				Hand Auger	4			Well Graded SAND (SW) - grey, 95% fine to coarse sand, 5% fine gravel, dense, dry.				
					5			Lean CLAY (CL) - black, 98% clay, 2% fine to medium sand, medium plasticity, stiff, moist.				
								6			No recovery 5 to 8 feet below ground surface (bgs)	
								7				
						0	SB-13d8.5	8			Lean CLAY (CL) - black, 98% clay, 2% fine to medium sand, medium plasticity, stiff, wet.	
						0		9			Lean CLAY (CL) - grey, 98% clay, 2% roots or organics, low plasticity, stiff, moist.	
						0		10				
						0		11			Lean CLAY (CL) - dark grey, 98% clay, 2% roots or organics, low plasticity, stiff, moist.	
						0		12				
						0	SB-13d15	14			Lean CLAY (CL) - dark grey, 100% clay, medium plasticity, stiff, wet.	
						0		15			Stop at 15 feet bgs, no water in boring after more than 2 hours advance to 20 feet bgs.	
						0		17			Lean CLAY (CL) - dark grey, 95% clay, 5% fine to medium sand, medium plasticity, stiff, moist.	
						0		18			Lean CLAY (CL) - dark grey, 95% clay, 5% fine to medium sand, medium plasticity, stiff, wet.	
						0	SB-13d20	19			Lean CLAY with Sand (CL) - dark grey, 80% clay, 20% fine to medium sand, medium plasticity, stiff, moist.	
						0		20			Well Graded SAND with Gravel (SW) - brown, 60% fine to coarse sand, 40% fine to coarse gravel, very dense, wet.	
								21			Total Depth 20 feet bgs.	
								22				



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **9/23/2014**
 Hole Diameter: **2 in**
 Hole Depth: **15 ft**

Boring No: **SB-14**
 Page 1 of 1



▽ First Water Depth: **NA**
 ▼ Static Water Depth: **5.6 ft**

Elevation: _____ Northing: _____ Easting: _____

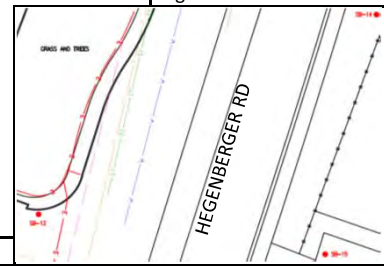
Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION			
neat cement	▼			Air Knife	1			○	Silty SAND with Gravel (SM) - pale brown, 40% fine to coarse sand, 40% silt, 20% fine gravel, dense, dry, soil.			
					2			○	Gravelly SILT with Sand (ML) - brown, 60% silt, 25% fine gravel, 15% fine to coarse sand, moist.			
					3			●	Silty GRAVEL (GM) - brown, 60% fine gravel, 30% silt, 10% fine to coarse sand, moist.			
				Hand Auger	4			■	Sandy Lean CLAY (CL) - dark grey, 70% clay 25% fine to coarse sand, 5% fine gravel, low plasticity, very stiff, moist.			
					5							
					6							
					7						No recovery 5 to 11 feet bgs	
					8							
					9							
					10							
					11	0		SB-14d12		■		Lean CLAY (CL) - brown, dark grey, 95% clay, 5% fine to medium sand low plasticity, stiff, moist.
					12							
					13							
					14	0		SB-14d15		■		Lean CLAY, (CL) - brown, dark grey, 95% clay, 5% fine to medium sand, low plasticity, stiff, moist.
					15							Total depth 15 feet bgs
					16							
					17							
					18							
					19							
					20							
					21							
					22							



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **9/23/2014**
 Hole Diameter: **2 in**
 Hole Depth: **16 ft**

Boring No: **SB-15**
 Page 1 of 1



▽ First Water Depth: **13.2 ft**
 ▼ Static Water Depth: **11 ft**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
				Air Knife	1				2 inches Asphalt
				Hand Auger	2				Well Graded GRAVEL (GW) - light grey, 90% fine gravel, 10% fine to coarse sand, very dense, dry.
					3				Lean CLAY (CL) - dark grey, 90% clay, 5% gravel, 5% fine to medium sand, low plasticity, stiff, moist.
				SB-15d6	4				Lean CLAY (CL) - dark grey, 95% clay, 5% fine to medium sand, medium plasticity, stiff, moist.
			0		5				Lean CLAY (CL) - black, 85% clay, 15% fine to medium sand, low plasticity, stiff, moist.
			0		6				Lean CLAY (CL) - black, 90% clay, 10% fine to medium sand, low plasticity, stiff, moist.
			0		7				Lean CLAY (CL) - black, 90% clay, 10% fine to medium sand, low plasticity, stiff, moist.
				SB-15d13.5	8				Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, low plasticity, stiff, moist.
			0		9				Sandy Lean CLAY (CL) - dark grey, 70% clay, 30% fine to coarse sand, low plasticity, stiff, moist.
			0		10				Clayey SAND (SC) - brown, 70% fine to coarse sand, medium dense, wet.
			0		11				Lean CLAY (CL) - dark grey, 90% clay, 10% fine to medium sand, medium plasticity, stiff, wet.
				SB-15d16	12				
			0		13				Total Depth 16 feet bgs
					14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				

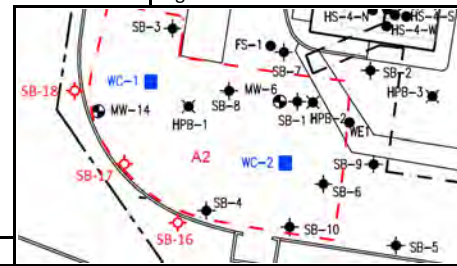
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/8/2015**
 Hole Diameter: **2 inches**
 Hole Depth: **15 feet**

Boring No: **SB-16**
 Page 1 of 1



▽ First Water Depth: **5.0 feet**
 ▼ Static Water Depth: **N/A**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION	
neat cement	▽		0.2	Hand Auger	1				Silty SAND with Gravel (SM) - brown, 60% fine to coarse sand, 25% fine gravel, 15% silt, dense, roots, dry.	
					2					
					3					
					4					Silt (ML) - grey, 90% silt, 10% fine sand, dense, moist.
					5					Lean CLAY (CL) - grey, 90% clay, 10% fine sand, soft, low plasticity, wet.
					6					
					7					Lean CLAY (CL) - black, 90% clay, 10% fine sand, stiff, low plasticity, wet.
					8					
					9					Poorly Graded SAND (SP) - black, 95% fine sand, 5% clay, dense, wet, hydrocarbon odor.
					10					Lean CLAY (CL) - grey, 90% clay, 10% fine sand, soft, low plasticity, wet, sticky.
					11					Lean CLAY (CL) - dark grey, 90% clay, 10% fine sand, stiff, low plasticity, wet, sticky.
					12					
					13					
					14					Lean CLAY (CL) - dark grey, 90% clay, 10% fine sand, very stiff, low plasticity, wet, sticky.
					15					Total depth 15 feet
					16					
					17					
					18					
					19					
					20					
					21					
					22					



Project No: **I42705191**

Logged By: **Jonathan Fillingame**

Driller: **Gregg Drilling**

Drilling Method: Direct Push

Sampling Method: Continuous

Client: **COP/ELT**

Location: **449 Hegenberger Road, Oakland**

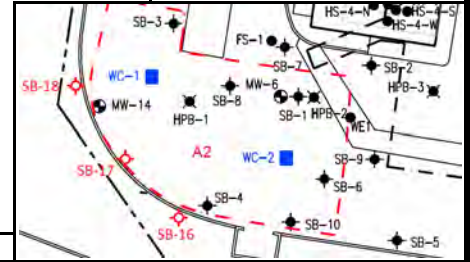
Date Drilled: **7/8/2015**

Hole Diameter: **2 inches**

Hole Depth: **15 feet**

Boring No: **SB-17**

Page 1 of 1



▽ First Water Depth: N/A
 ▼ Static Water Depth: N/A

Elevation: _____ Northing: _____ Easting: _____

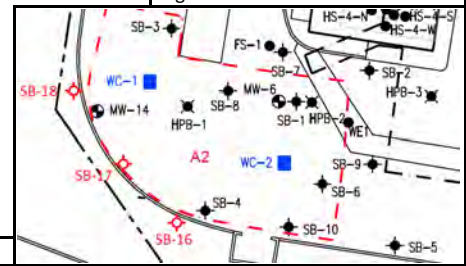
Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION			
neat cement	▽		0	Hand Auger	1			Asphalt	Well Graded SAND with Gravel (SW) - brown, 60% fine to coarse sand, 35% fine gravel, 5% silt, dense, dry.			
					2							
					3							
					4							
									5			Lean CLAY (CL) - grey, 100% clay, very stiff, medium plasticity, dry.
									6			Well graded SAND (SW) - grey, 100% fine to medium sand, dense, dry, multiple lenses.
									7			CLAY change to medium stiff; SAND change to moist
									8			Lean CLAY (CL) - dark grey to black, 100% clay, soft, medium plasticity, moist.
									9			
									10			
									11			Lean CLAY (CL) - black, 100% clay, stiff, medium plasticity, roots, moist, hydrocarbon odor.
									12			Lean CLAY (CL) - dark grey, 100% clay, stiff, medium plasticity, moist, hydrocarbon odor.
									13			
									14			Lean CLAY (CL) - grey, 95% clay, 5% fine sand, stiff, medium plasticity, moist.
									15			Total depth 15 feet
					16							
					17							
					18							
					19							
					20							
					21							
					22							



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/8/2015**
 Hole Diameter: **2 inches**
 Hole Depth: **15 feet**

Boring No: **SB-18**
 Page 1 of 1



▽ First Water Depth: **9.5 feet**
 ▼ Static Water Depth: **N/A**

Elevation: _____ Northing: _____ Easting: _____

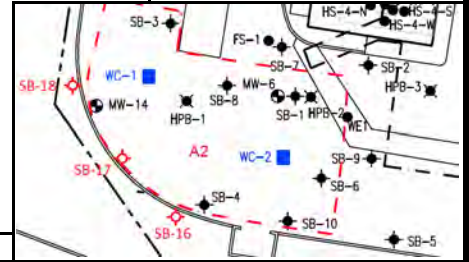
Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION				
neat cement	▽			Hand Auger	1				Well Graded SAND with Gravel (SW) - brown, 85% fine to coarse sand, 15% fine gravel, dense, roots, dry.				
					2				Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand very stiff, low plasticity, dry.				
					3								
					4								
				SB-18d11			0.2 0 0	SB-18d11	5				Well Graded SAND with Gravel (SW) - brown, 85% fine to coarse sand, 15% fine gravel, dense, roots, dry.
									6				Lean CLAY (CL) - grey, 100% clay, stiff, medium plasticity, moist, 0.5 cm lenses of fine sand.
									7				Lean CLAY (CL) - brown, 100% clay, stiff, medium plasticity, moist.
									8				Lean CLAY (CL) - black, 95% clay, 5% fine sand, stiff, medium plasticity, wet.
									9				Lean CLAY (CL) - black, 95% clay, 5% fine sand, stiff, medium plasticity, wet.
									10				Poorly Graded SAND (SP) - black, 95% fine sand, 5% clay, dense, wet, hydrocarbon odor.
									11				Organic SOIL/Peat (OL) - brown, 60% plant matter, 40% clay, stiff, wet.
									12				Poorly Graded SAND (SP) - black, 95% fine sand, 5% clay, loose, wet, hydrocarbon odor.
									13				Lean CLAY (CL) - black, 95% clay, 5% fine sand, stiff, medium plasticity, moist.
									14				Lean CLAY (CL) - grey, 95% clay, 5% fine sand, very stiff, medium plasticity, wet.
									15				Total depth 15 feet
16													
17													
18													
19													
20													
21													
22													



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/7/2015**
 Hole Diameter: **2 inches**
 Hole Depth: **12 feet**

Boring No: **WC-1**
 Page 1 of 1



▽ First Water Depth: **6.0 feet**
 ▼ Static Water Depth: **6.0 feet**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
					1			Asphalt	
				Hand Auger	2			Sandy Lean CLAY (CL) - brownish grey, 70% clay, 30% fine to coarse sand, stiff, low plasticity, moist.	
				Hand Auger	3			Lean CLAY (CL) - dark grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	
				Hand Auger	4				
				Hand Auger	5			Lean CLAY (CL) - grey, 90% clay, 10% fine to medium sand, very stiff, medium plasticity, moist.	
	0.7	0		WC-1 Comp	6			Lean CLAY (CL) - grey, 100% clay, soft, medium plasticity, moist.	
		1.3			7			Clayey SAND (SC) - grey, 85% fine sand, 15% clay, dense, wet.	
		5.2			8			Lean CLAY (CL) - dark grey, 100% clay, soft, medium plasticity, wet.	
		5.8			9			Lean CLAY (CL) - dark grey, 100% clay, medium stiff, medium plasticity, wet.	
		3.2			10				
		1.3			11				
		39			12				
		8.6			13				Total depth 12 feet
					14				
					15				
					16				
					17				
				18					
				19					
				20					
				21					
				22					

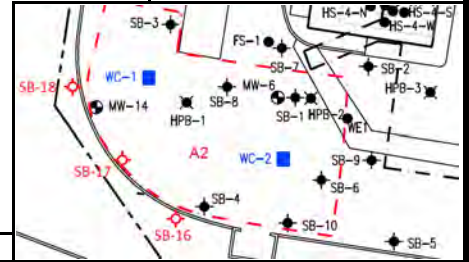
neat cement



Project No: **I42705191**
 Logged By: **Jonathan Fillingame**
 Driller: **Gregg Drilling**
 Drilling Method: Direct Push
 Sampling Method: Continuous

Client: **COP/ELT**
 Location: **449 Hegenberger Road, Oakland**
 Date Drilled: **7/7/2015**
 Hole Diameter: **2 inches**
 Hole Depth: **12 feet**

Boring No: **WC-2**
 Page 1 of 1



▽ First Water Depth: **4.5 feet**
 ▼ Static Water Depth: **11.0 feet**

Elevation: _____ Northing: _____ Easting: _____

Boring Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery	Analyzed	Soil Type	LITHOLOGY / DESCRIPTION	
neat cement	▽ ▼		1.4 0.7 0.0 0.9 0.8 44 26 451 0.7	Hand Auger	1				Asphalt	Sandy Lean CLAY (CL) - brownish grey, 70% clay, 30% fine to coarse sand, stiff, low plasticity, moist.
					2				Lean CLAY (CL) - dark grey, 95% clay, 5% fine to medium sand, very stiff, low plasticity, moist.	
					3					
					4					
					5					Sandy Lean CLAY (CL) - grey, 60% clay, 40% fine sand, soft, medium plasticity, wet.
					6					Poorly Graded SAND (SP) - grey, 95% fine sand, 5% clay, dense, wet.
					7					Clayey SAND (SC) - grey, 80% fine to medium sand, 20% clay, dense, wet.
					8					
					9					
					10					Lean CLAY (CL) - grey, 95% clay, 5% fine to medium sand, very soft, medium plasticity, wet.
					11					Lean CLAY (CL) - dark grey, 95% clay, 5% fine to medium sand, stiff, medium plasticity, wet, hydrocarbon odor, roots.
					12			WC-2 Comp		
					13			Total depth 12 feet		
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					



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 F:(925) 849-6973
 www.vironex.com

Boring Name: HPB-1

Total Depth (ft):

13.1

Notes: Air knife to 5 feet bgs.

GW Depth (ft): —
 Depth of GW Provided by Client

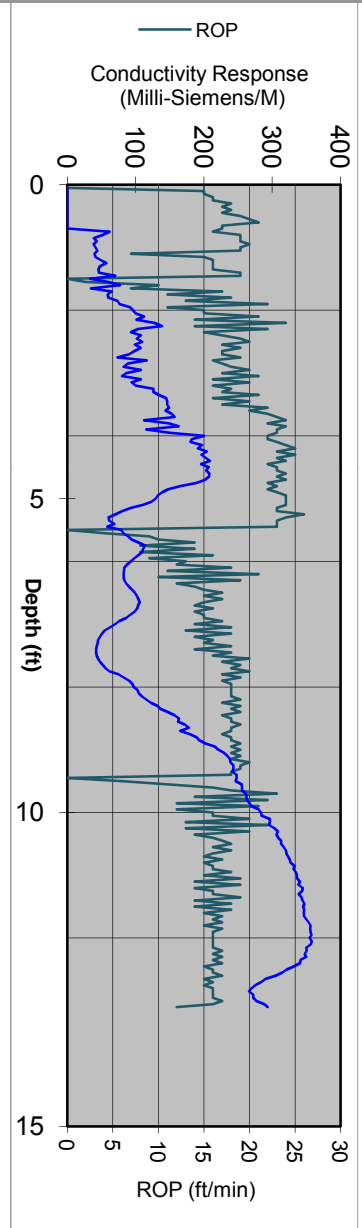
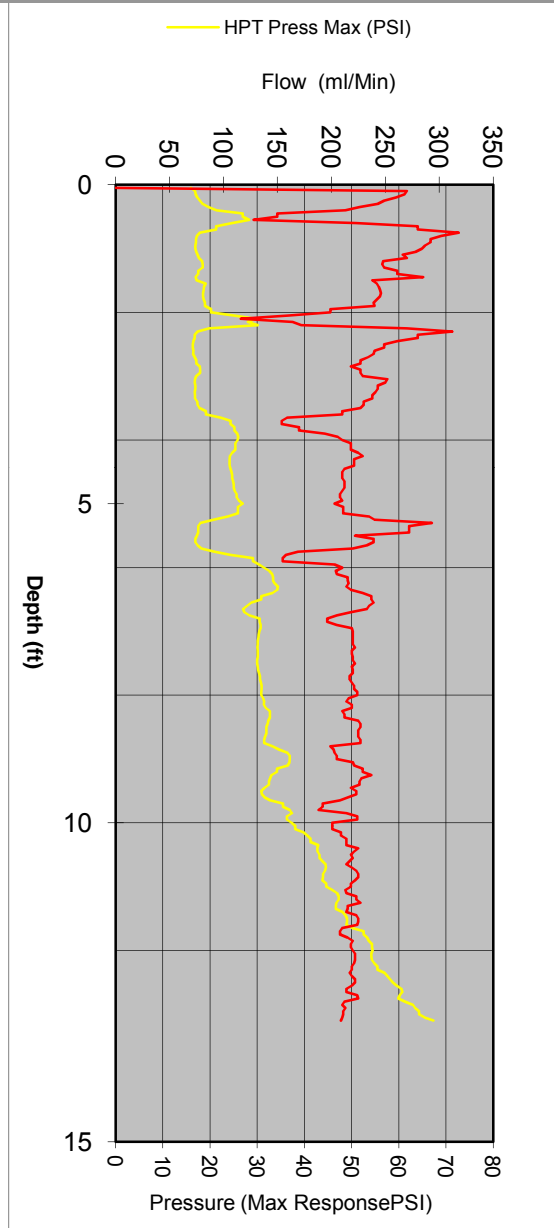
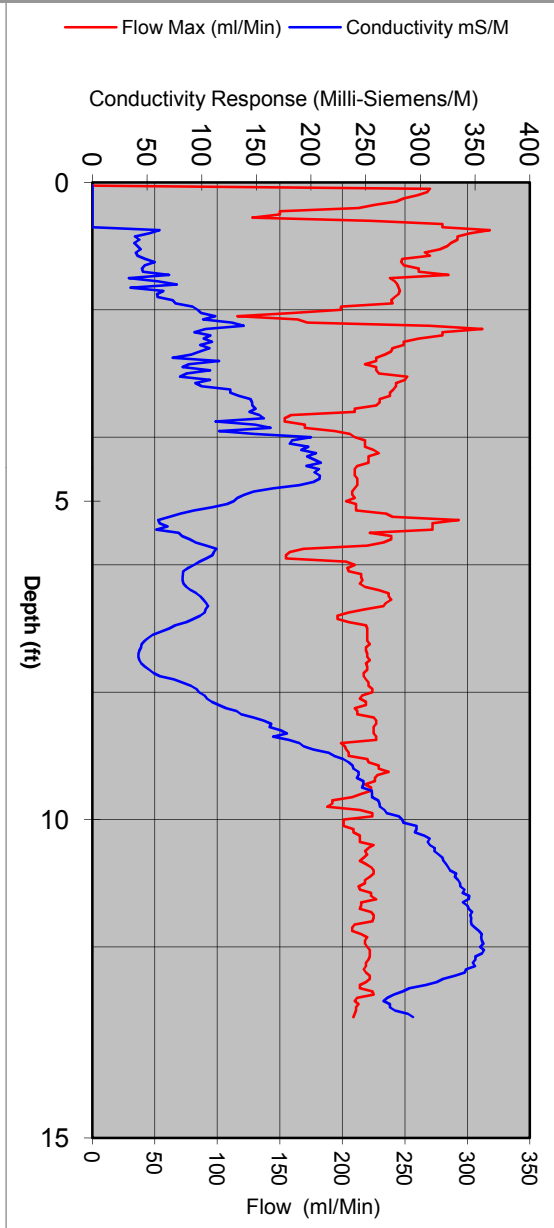
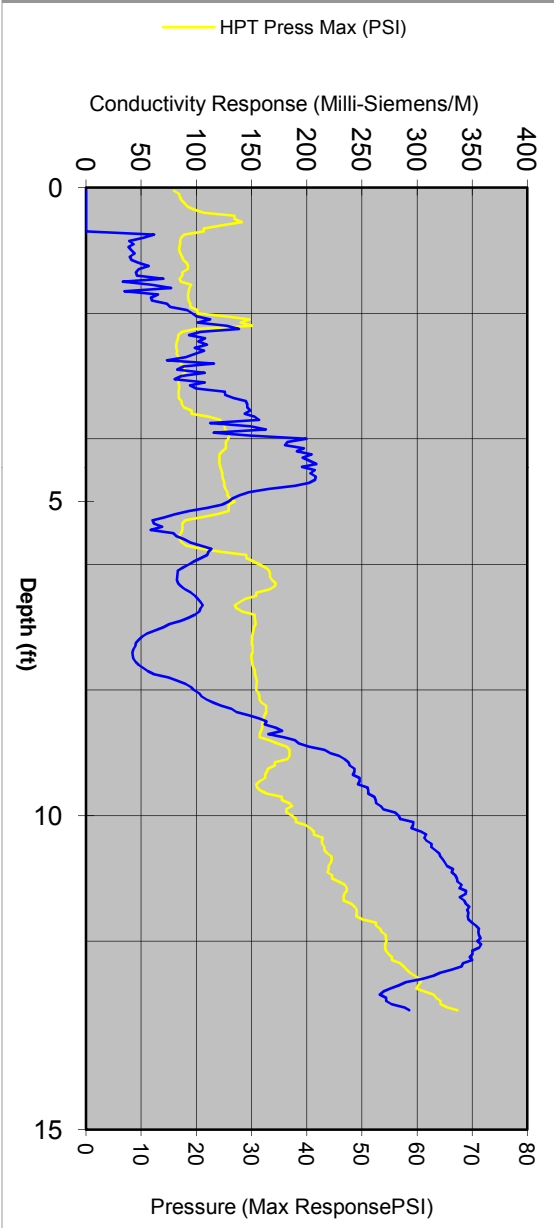
Job Information

MIP Sampling Information

Client Company: ANTEA
 Project Name: 76 Station No. 5191
 Site Address: 449 Hegenberger RD, Oakland, CA

Trunkline Length: 150
 Probe Type: Wenner - HPT
 Rig Type: GREGG DP 13

Start Boring Time: Tue Mar 06 2012 11:33
 End Boring Time: Tue Mar 06 2012 11:51
 HPT Specialist: Jeff Paul





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Boring Name: HPB-2

Total Depth (ft):

13.2

Notes: Air knife to 5 feet bgs.

GW Depth (ft): —
 Depth of GW Provided by Client

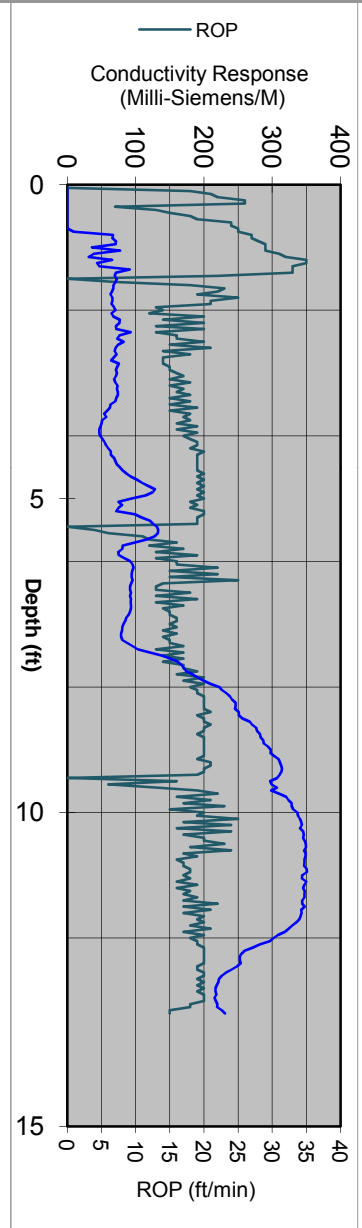
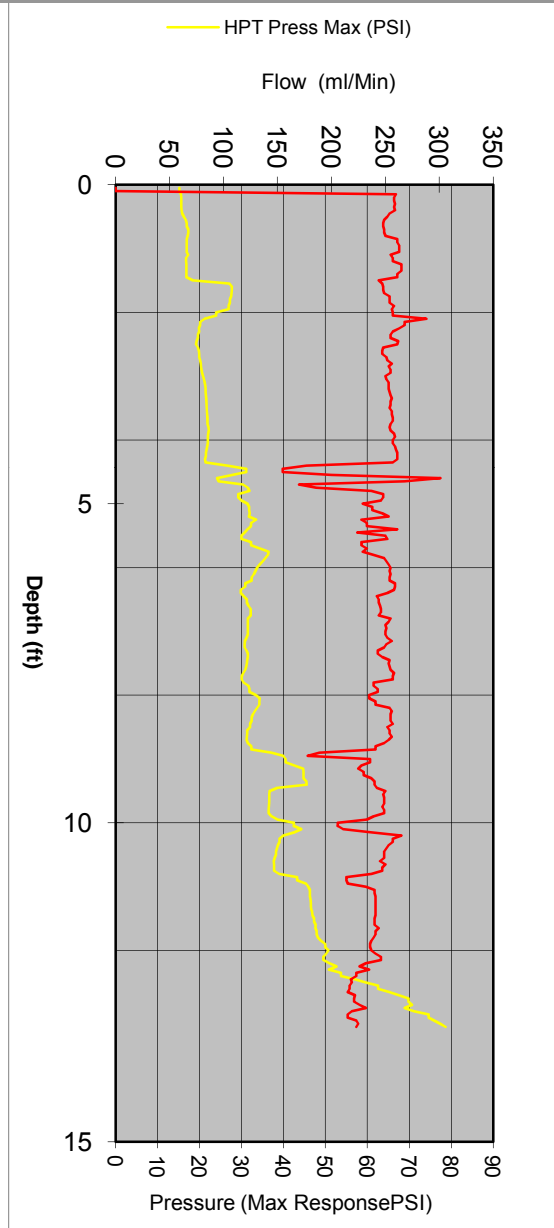
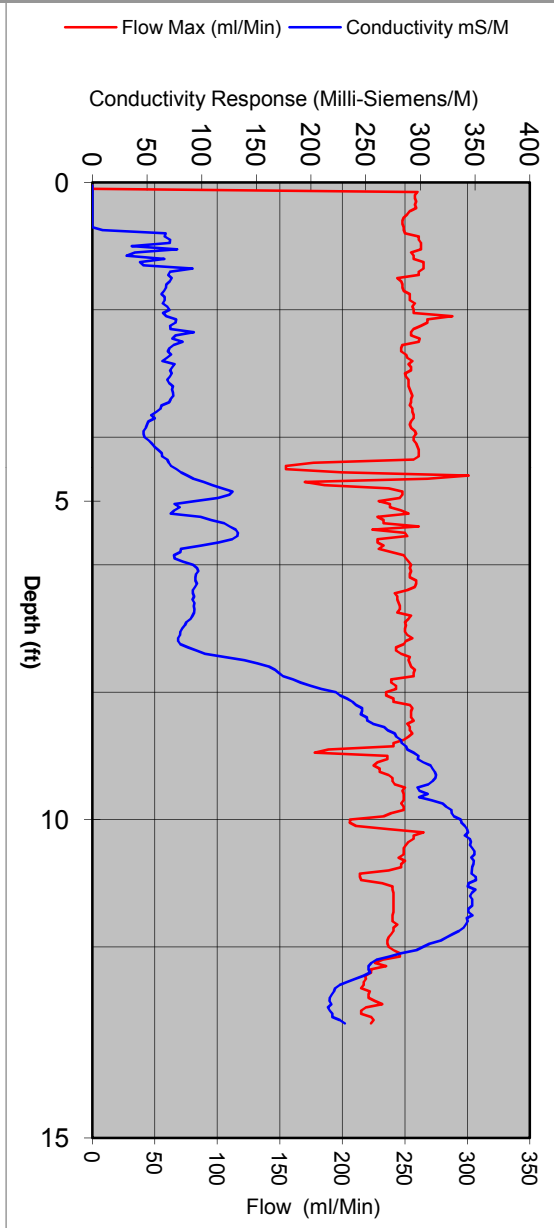
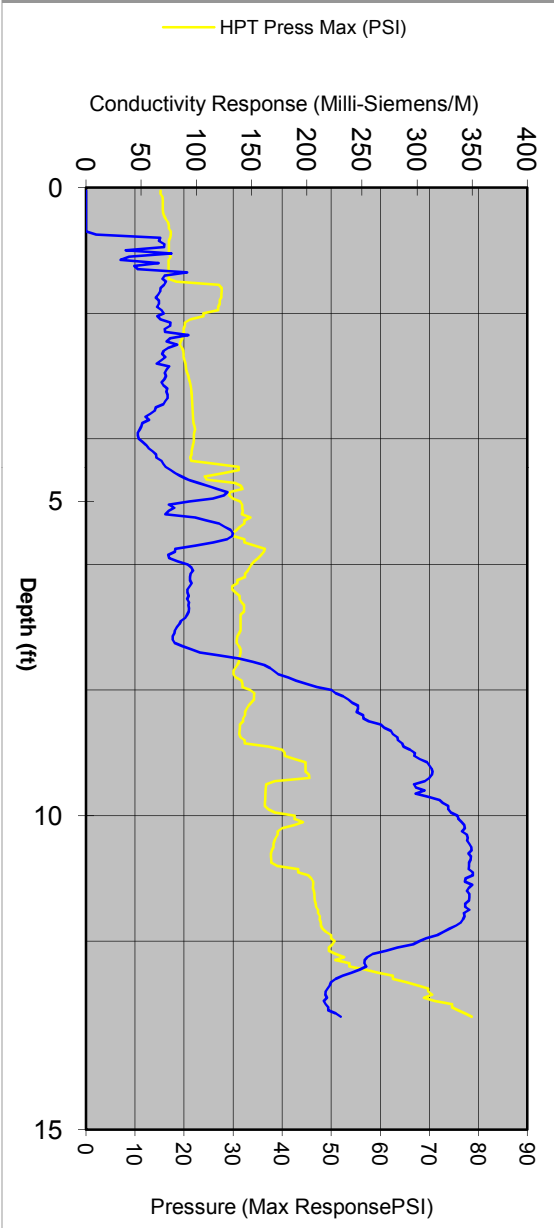
Job Information

MIP Sampling Information

Client Company: ANTEA
 Project Name: 76 Station No. 5191
 Site Address: 449 Hegenberger RD, Oakland, CA

Trunkline Length: 150
 Probe Type: Wenner - HPT
 Rig Type: GREGG DP 13

Start Boring Time: Tue Mar 06 2012 14:52
 End Boring Time: Tue Mar 06 2012 15:05
 HPT Specialist: Jeff Paul





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Boring Name: HPB-3

Total Depth (ft):

13.1

Notes: Air knife to 5 feet bgs.

GW Depth (ft): —
 Depth of GW Provided by Client

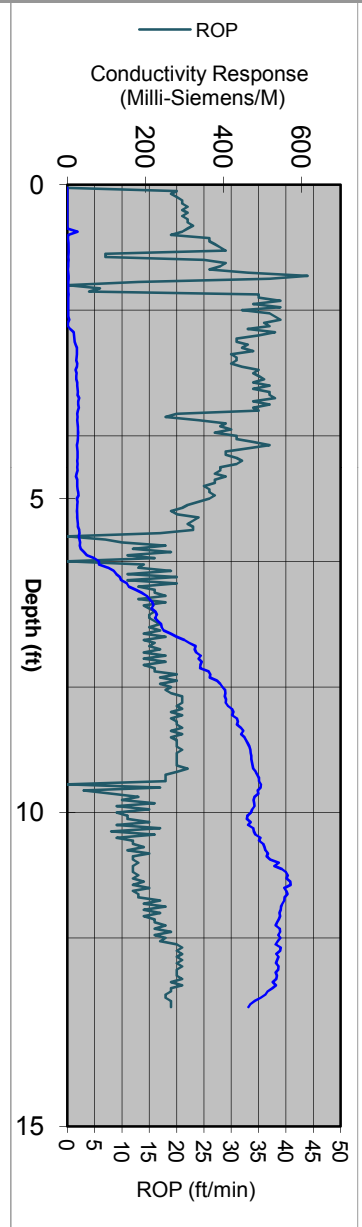
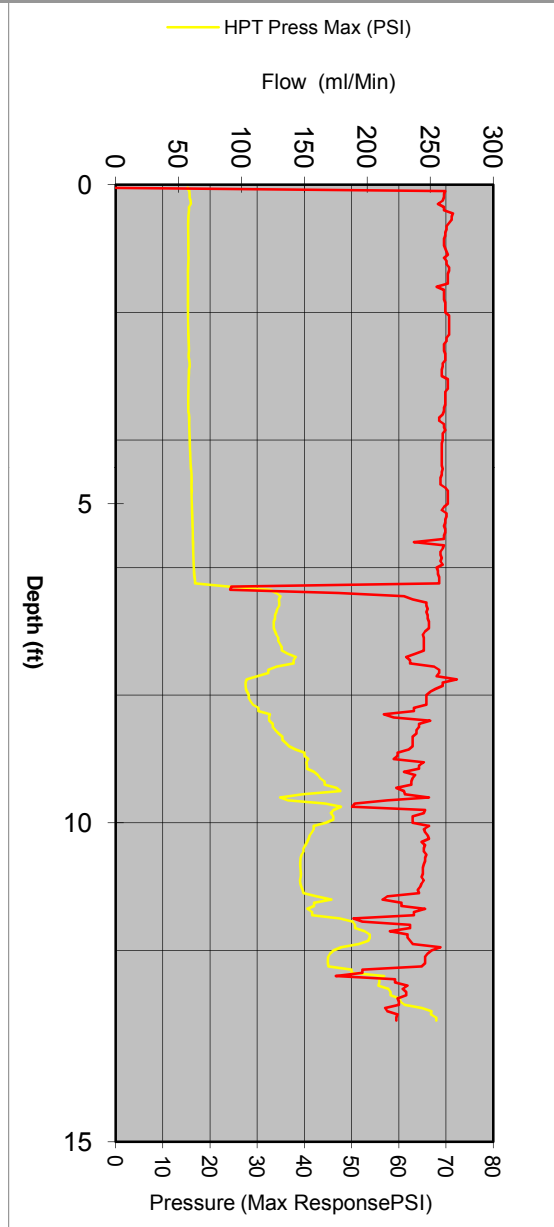
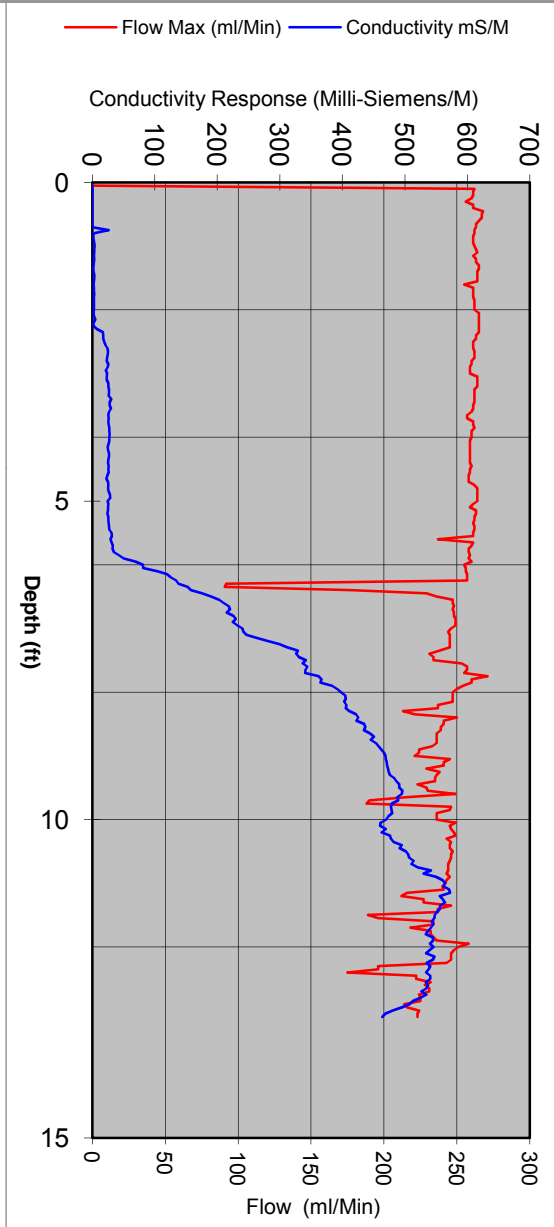
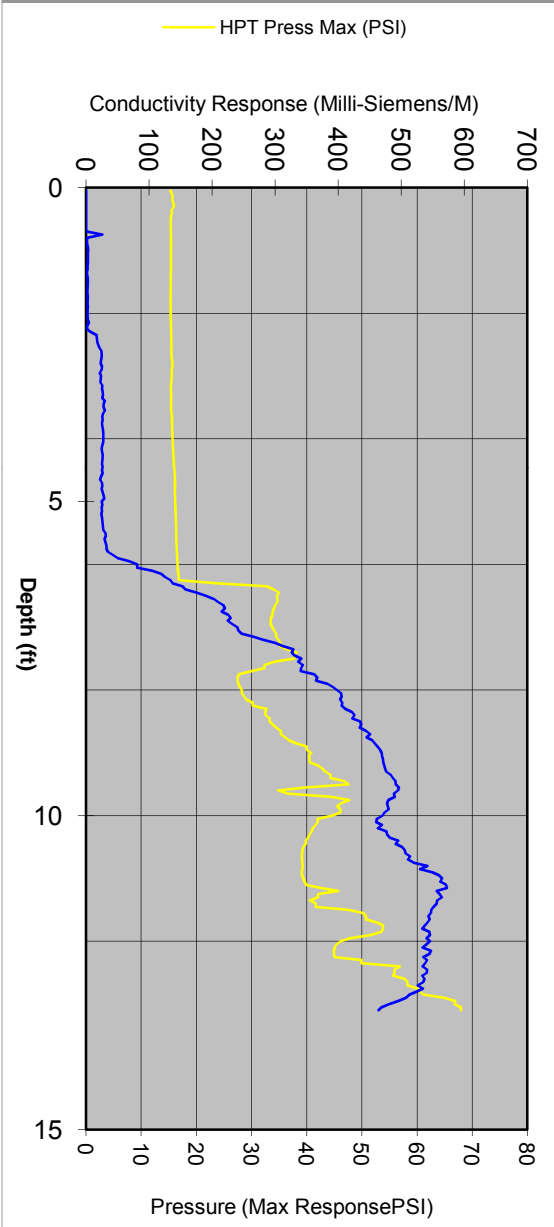
Job Information

MIP Sampling Information

Client Company: ANTEA
 Project Name: 76 Station No. 5191
 Site Address: 449 Hegenberger RD, Oakland, CA

Trunkline Length: 150
 Probe Type: Wenner - HPT
 Rig Type: GREGG DP 13

Start Boring Time: Tue Mar 06 2012 14:03
 End Boring Time: Tue Mar 06 2012 14:17
 HPT Specialist: Jeff Paul





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Boring Name: HPB-4

Total Depth (ft):

13

Notes: Air knife to 5 feet bgs.

GW Depth (ft): —
 Depth of GW Provided by Client

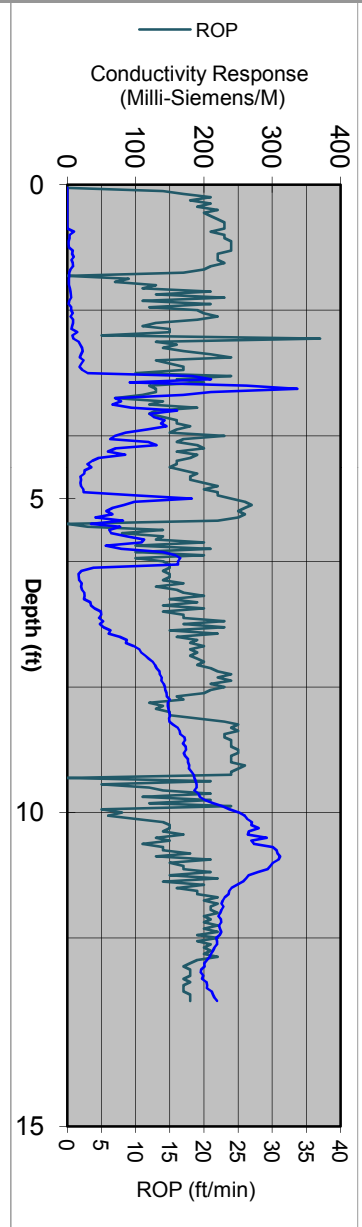
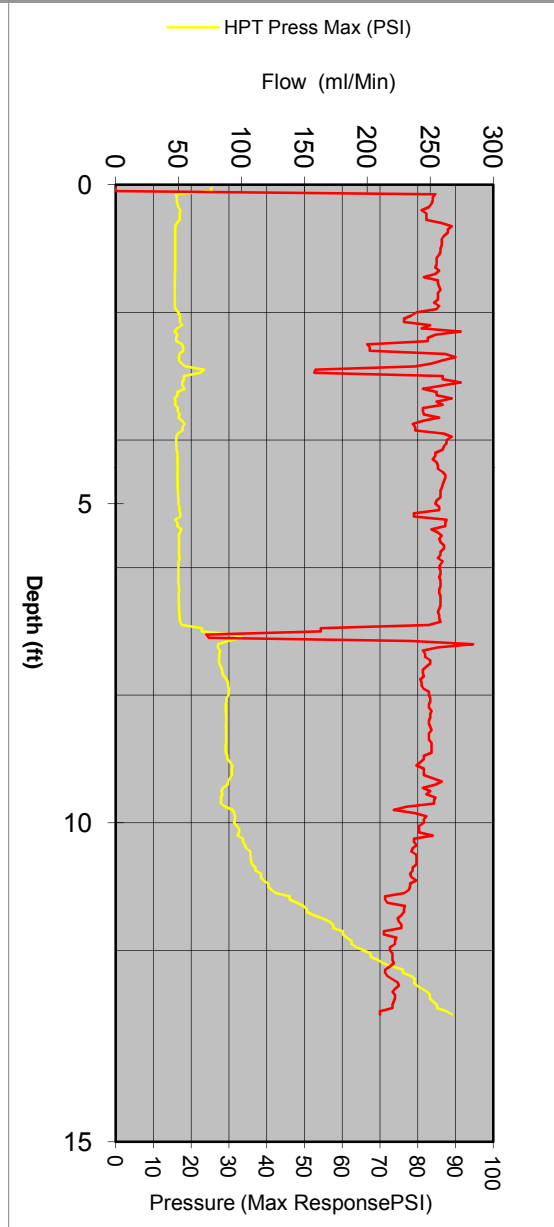
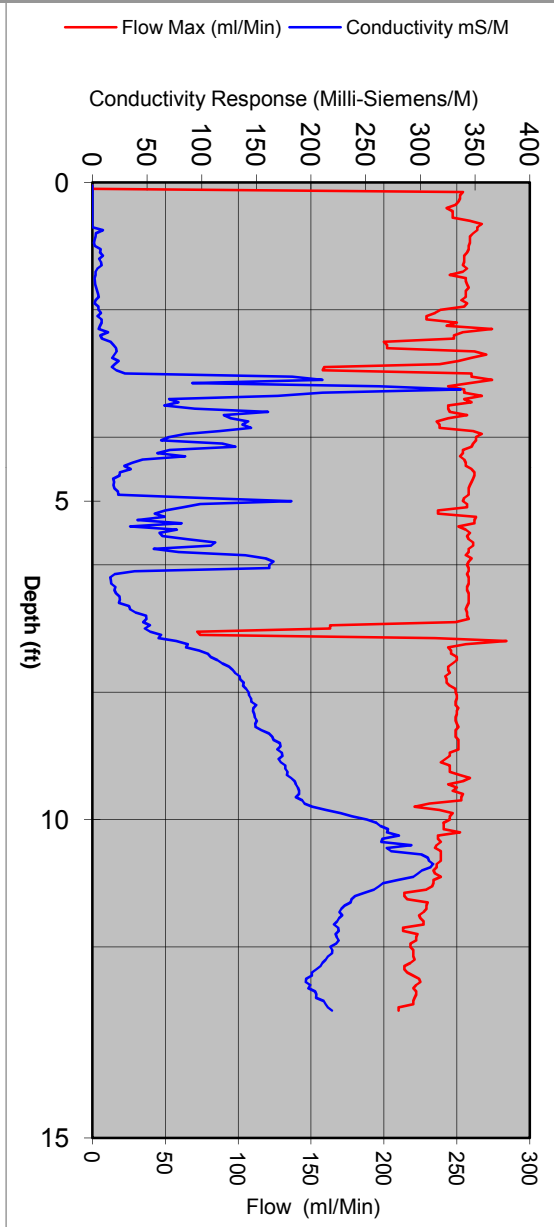
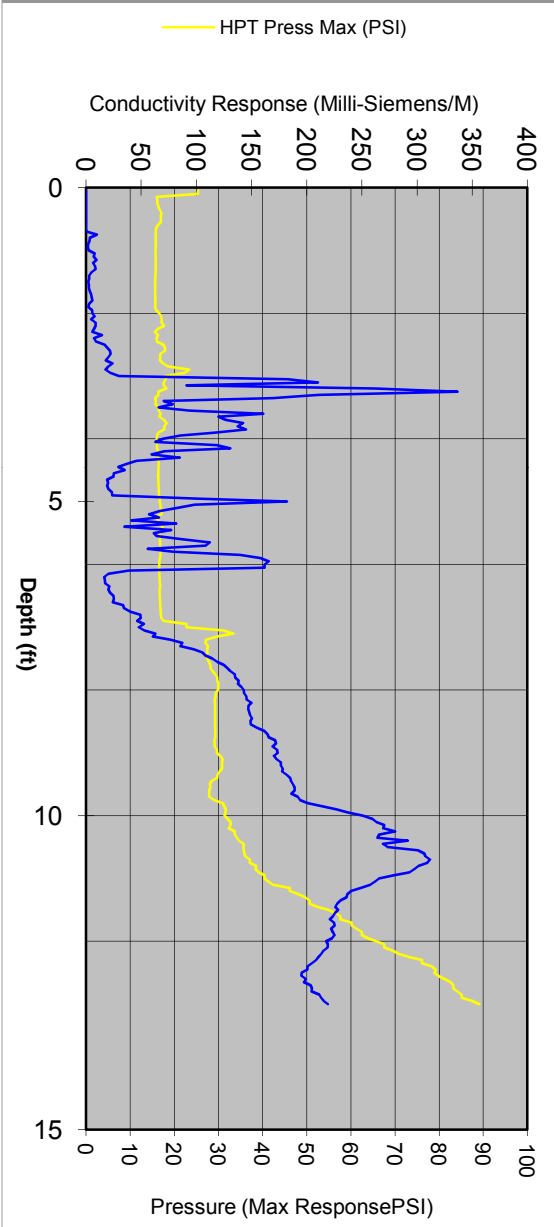
Job Information

MIP Sampling Information

Client Company: ANTEA
 Project Name: 76 Station No. 5191
 Site Address: 449 Hegenberger RD, Oakland, CA

Trunkline Length: 150
 Probe Type: Wenner - HPT
 Rig Type: GREGG DP 13

Start Boring Time: Tue Mar 06 2012 13:19
 End Boring Time: Tue Mar 06 2012 13:37
 HPT Specialist: Jeff Paul





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 F:(925) 849-6973
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Boring Name: HPB-5

Total Depth (ft):

13.1

Notes: Air knife to 5 feet bgs.

GW Depth (ft): —
 Depth of GW Provided by Client

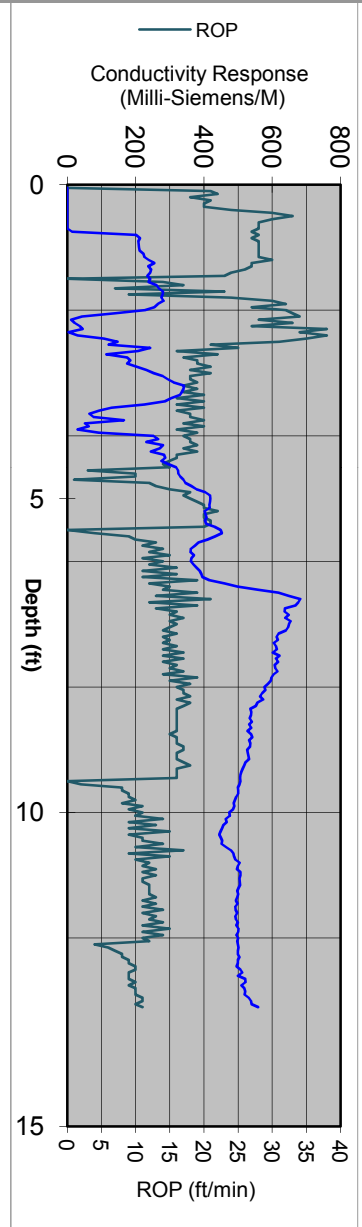
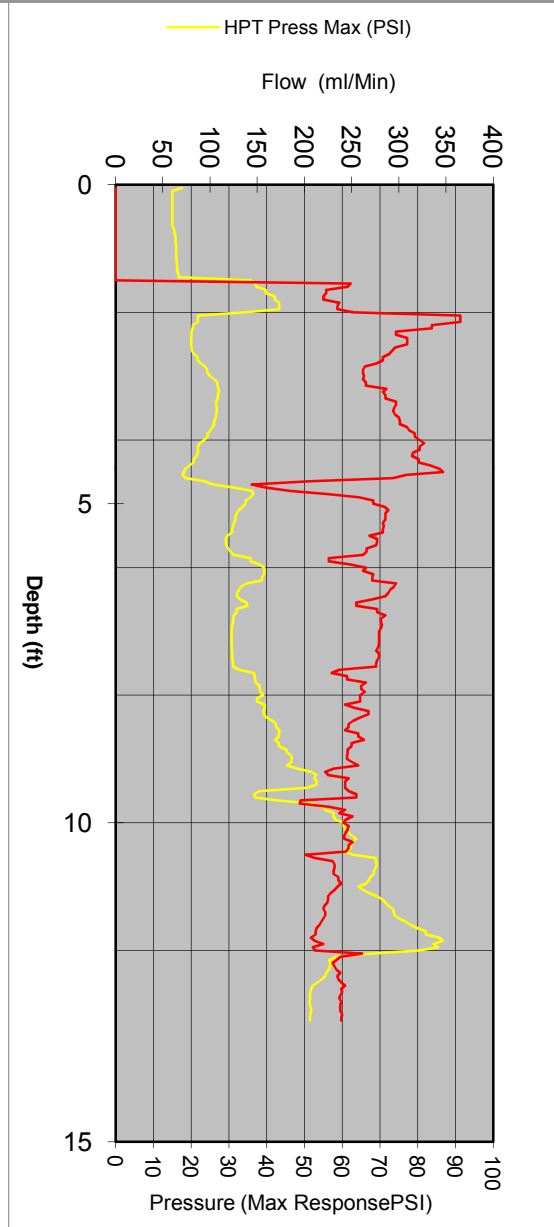
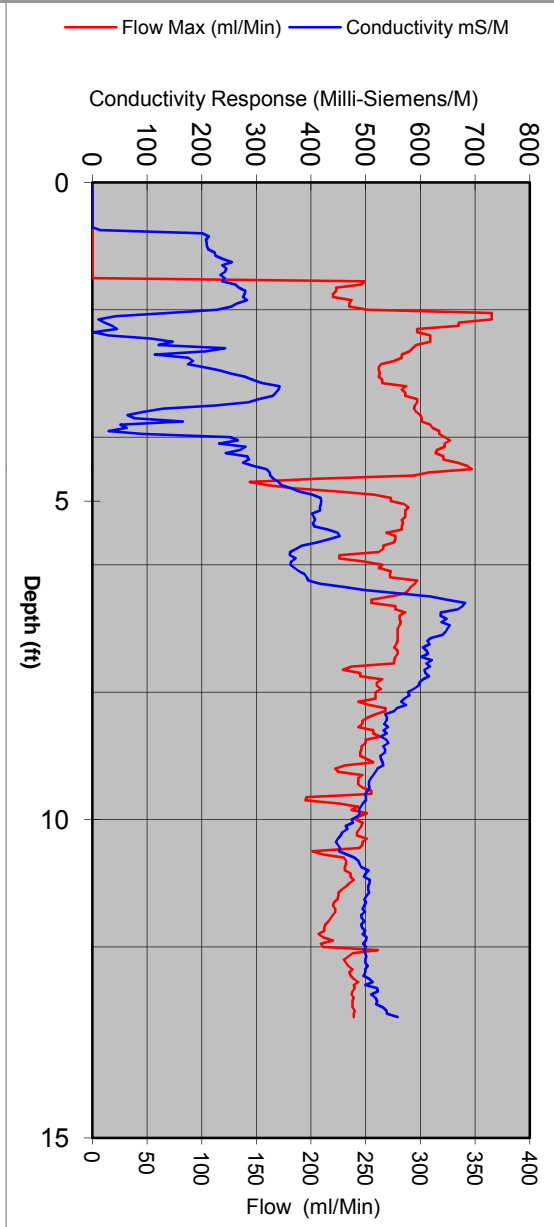
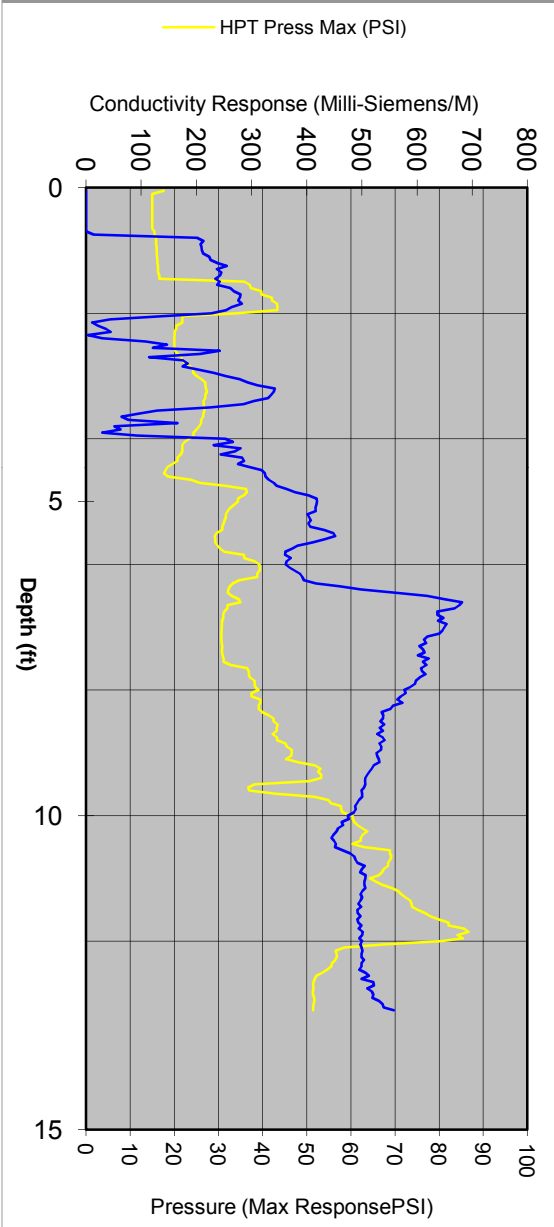
Job Information

MIP Sampling Information

Client Company: ANTEA
 Project Name: 76 Station No. 5191
 Site Address: 449 Hegenberger RD, Oakland, CA

Trunkline Length: 150
 Probe Type: Wenner - HPT
 Rig Type: GREGG DP 13

Start Boring Time: Mon Mar 06 2012 09:51
 End Boring Time: Mon Mar 06 2012 10:29
 HPT Specialist: Jeff Paul



*Low-Threat Case Closure Request
76 Station No. 5043 (aka 2705191)
449 Hegenberger Road, Oakland, California
Antea Group Project No. I42705191*

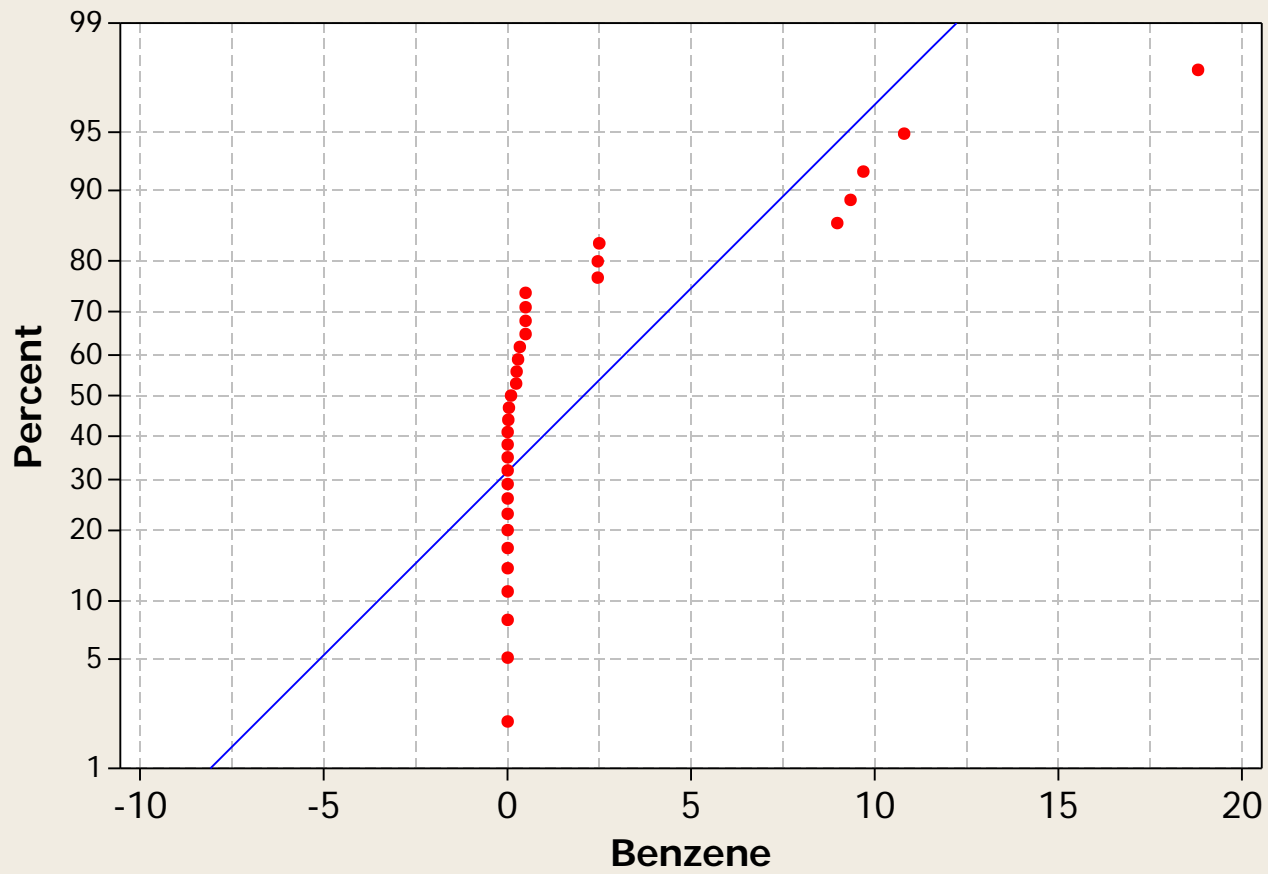


Appendix K

Statistical Analysis Results

2705191 Benzene

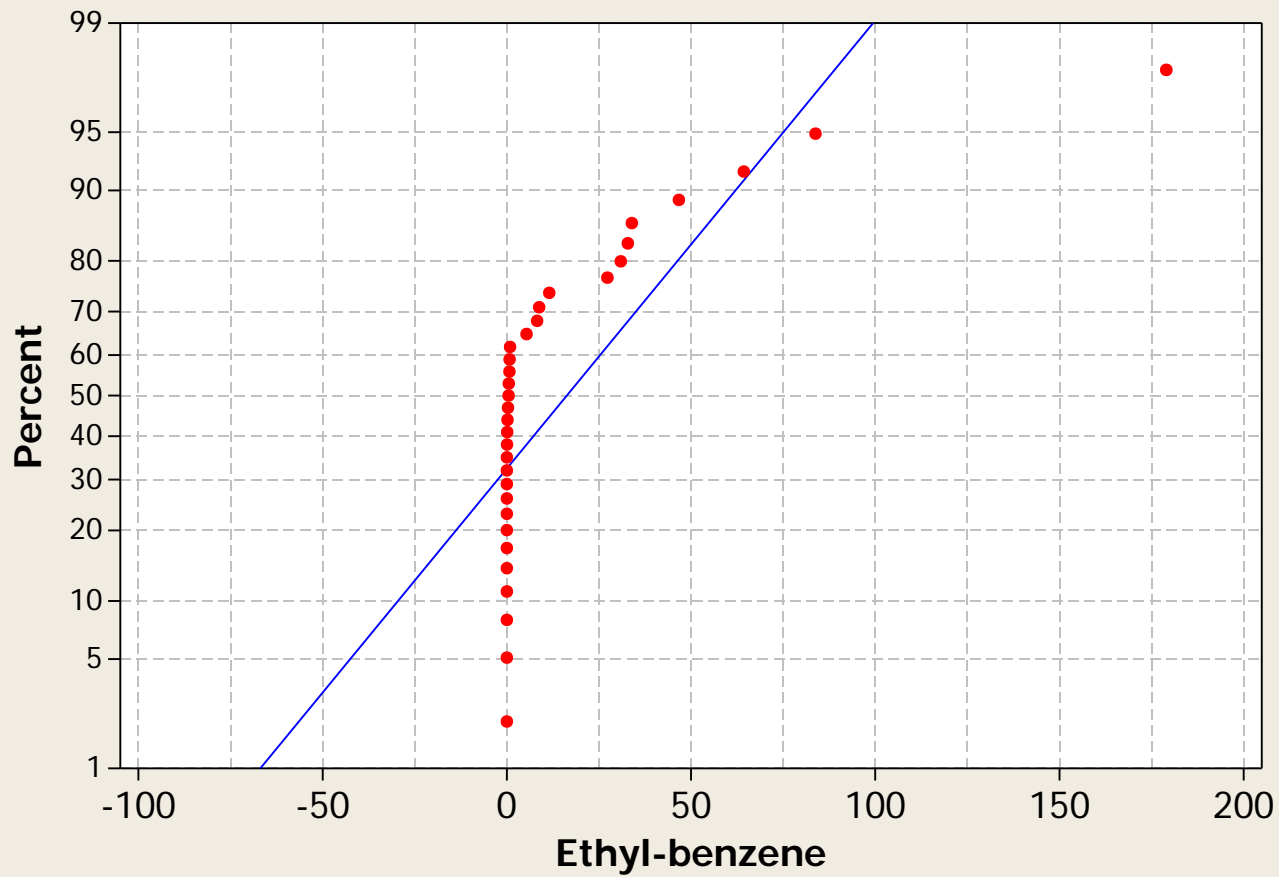
Normal



Mean	2.071
StDev	4.366
N	33
AD	6.602
P-Value	<0.005

2705191 Ethylbenzene

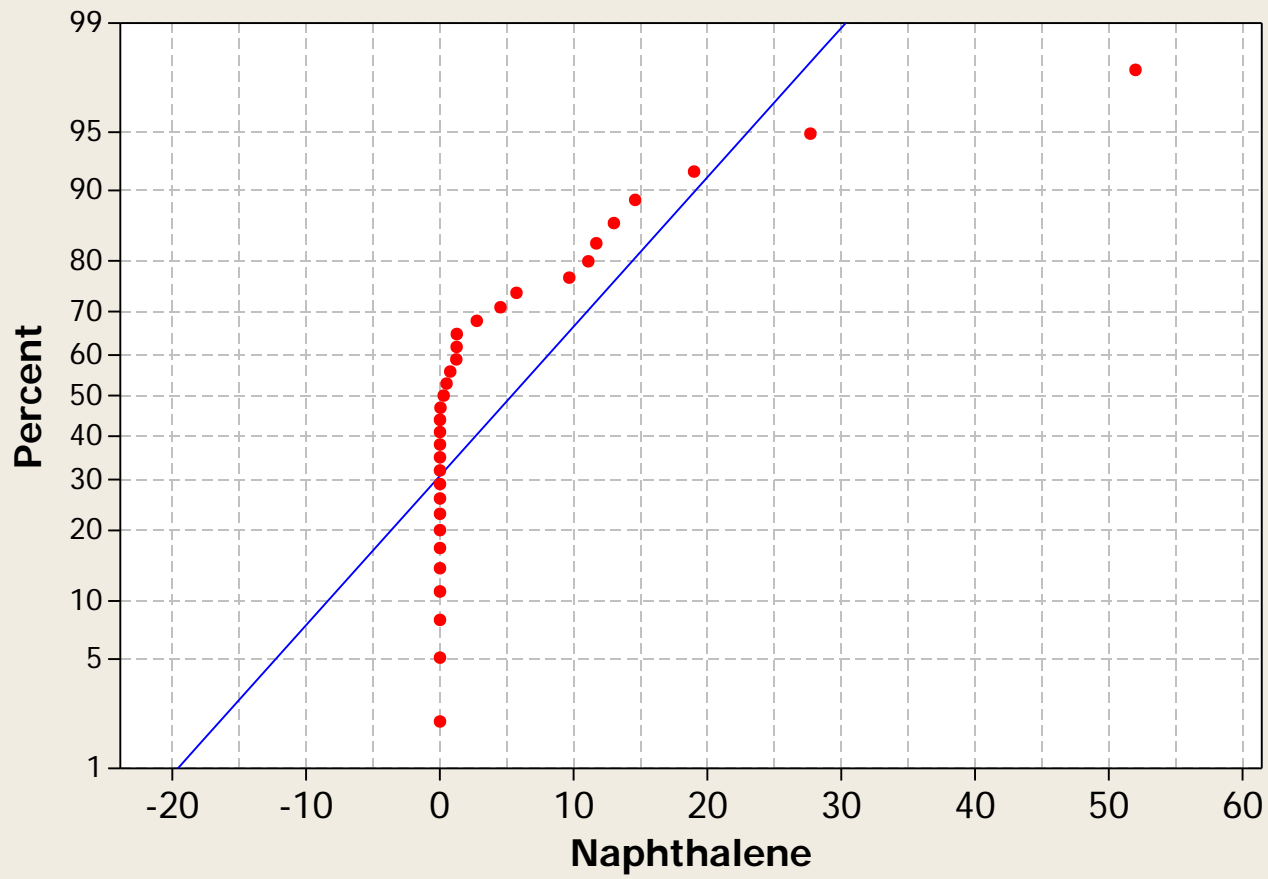
Normal



Mean	16.25
StDev	35.75
N	33
AD	5.697
P-Value	<0.005

2705191 Naphthalene

Normal



Mean	5.370
StDev	10.73
N	33
AD	5.048
P-Value	<0.005

	A	B	C	D	E	F	G	H	I	J	K	L
1	Background Statistics for Uncensored Full Data Sets											
2	User Selected Options											
3	Date/Time of Computation	ProUCL 5.19/12/2016 9:48:33 AM										
4	From File	WorkSheet.xls										
5	Full Precision	OFF										
6	Confidence Coefficient	95%										
7	Coverage	95%										
8	New or Future K Observations	1										
9	Number of Bootstrap Operations	2000										
10												
11	Benzene											
12												
13	General Statistics											
14	Total Number of Observations	33				Number of Distinct Observations	20					
15	Minimum	0.0049				First Quartile	0.0049					
16	Second Largest	10.8				Median	0.0963					
17	Maximum	18.8				Third Quartile	0.496					
18	Mean	2.071				SD	4.366					
19	Coefficient of Variation	2.108				Skewness	2.525					
20	Mean of logged Data	-2.326				SD of logged Data	2.987					
21												
22	Critical Values for Background Threshold Values (BTVs)											
23	Tolerance Factor K (For UTL)	2.176				d2max (for USL)	2.787					
24												
25	Normal GOF Test											
26	Shapiro Wilk Test Statistic	0.547				Shapiro Wilk GOF Test						
27	5% Shapiro Wilk Critical Value	0.931				Data Not Normal at 5% Significance Level						
28	Lilliefors Test Statistic	0.398				Lilliefors GOF Test						
29	5% Lilliefors Critical Value	0.152				Data Not Normal at 5% Significance Level						
30	Data Not Normal at 5% Significance Level											
31												
32	Background Statistics Assuming Normal Distribution											
33	95% UTL with 95% Coverage	11.57				90% Percentile (z)	7.666					
34	95% UPL (t)	9.578				95% Percentile (z)	9.252					
35	95% USL	14.24				99% Percentile (z)	12.23					
36												
37	Gamma GOF Test											
38	A-D Test Statistic	2.401				Anderson-Darling Gamma GOF Test						
39	5% A-D Critical Value	0.888				Data Not Gamma Distributed at 5% Significance Level						
40	K-S Test Statistic	0.232				Kolmogorov-Smirnov Gamma GOF Test						
41	5% K-S Critical Value	0.169				Data Not Gamma Distributed at 5% Significance Level						
42	Data Not Gamma Distributed at 5% Significance Level											
43												
44	Gamma Statistics											
45	k hat (MLE)	0.235				k star (bias corrected MLE)	0.234					
46	Theta hat (MLE)	8.817				Theta star (bias corrected MLE)	8.861					
47	nu hat (MLE)	15.5				nu star (bias corrected)	15.43					
48	MLE Mean (bias corrected)	2.071				MLE Sd (bias corrected)	4.284					
49												
50	Background Statistics Assuming Gamma Distribution											
51	95% Wilson Hifferty (WH) Approx. Gamma UPL	8.205				90% Percentile	6.243					
52	95% Hawkins Wixley (HW) Approx. Gamma UPL	8.501				95% Percentile	10.23					

A	B	C	D	E	F	G	H	I	J	K	L
105			Lilliefors Test Statistic	0.325			Lilliefors GOF Test				
106			5% Lilliefors Critical Value	0.152			Data Not Normal at 5% Significance Level				
107							Data Not Normal at 5% Significance Level				
108											
109			Background Statistics Assuming Normal Distribution								
110			95% UTL with 95% Coverage	94.04			90% Percentile (z)	62.07			
111			95% UPL (t)	77.72			95% Percentile (z)	75.05			
112			95% USL	115.9			99% Percentile (z)	99.42			
113											
114			Gamma GOF Test								
115			A-D Test Statistic	1.772			Anderson-Darling Gamma GOF Test				
116			5% A-D Critical Value	0.914			Data Not Gamma Distributed at 5% Significance Level				
117			K-S Test Statistic	0.195			Kolmogorov-Smirnov Gamma GOF Test				
118			5% K-S Critical Value	0.171			Data Not Gamma Distributed at 5% Significance Level				
119							Data Not Gamma Distributed at 5% Significance Level				
120											
121			Gamma Statistics								
122			k hat (MLE)	0.191			k star (bias corrected MLE)	0.194			
123			Theta hat (MLE)	85.06			Theta star (bias corrected MLE)	83.82			
124			nu hat (MLE)	12.61			nu star (bias corrected)	12.8			
125			MLE Mean (bias corrected)	16.25			MLE Sd (bias corrected)	36.91			
126											
127			Background Statistics Assuming Gamma Distribution								
128			95% Wilson Hilferty (WH) Approx. Gamma UPL	66.47			90% Percentile	49.14			
129			95% Hawkins Wixley (HW) Approx. Gamma UPL	71.47			95% Percentile	84.42			
130			95% WH Approx. Gamma UTL with 95% Coverage	107.3			99% Percentile	182			
131			95% HW Approx. Gamma UTL with 95% Coverage	129.3							
132			95% WH USL	184.2			95% HW USL	254.2			
133											
134			Lognormal GOF Test								
135			Shapiro Wilk Test Statistic	0.843			Shapiro Wilk Lognormal GOF Test				
136			5% Shapiro Wilk Critical Value	0.931			Data Not Lognormal at 5% Significance Level				
137			Lilliefors Test Statistic	0.227			Lilliefors Lognormal GOF Test				
138			5% Lilliefors Critical Value	0.152			Data Not Lognormal at 5% Significance Level				
139							Data Not Lognormal at 5% Significance Level				
140											
141			Background Statistics assuming Lognormal Distribution								
142			95% UTL with 95% Coverage	1435			90% Percentile (z)	46.18			
143			95% UPL (t)	248.2			95% Percentile (z)	186.4			
144			95% USL	14977			99% Percentile (z)	2556			
145											
146			Nonparametric Distribution Free Background Statistics								
147			Data do not follow a Discernible Distribution (0.05)								
148											
149			Nonparametric Upper Limits for Background Threshold Values								
150			Order of Statistic, r	33			95% UTL with 95% Coverage	179			
151			Approx, f used to compute achieved CC	1.737			Approximate Actual Confidence Coefficient achieved by UTL	0.816			
152							Approximate Sample Size needed to achieve specified CC	59			
153			95% Percentile Bootstrap UTL with 95% Coverage	179			95% BCA Bootstrap UTL with 95% Coverage	179			
154			95% UPL	112.4			90% Percentile	44.14			
155			90% Chebyshev UPL	125.1			95% Percentile	72.1			
156			95% Chebyshev UPL	174.4			99% Percentile	148.5			

57 95% USL 179

58
 59 Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
 60 Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
 61 and consists of observations collected from clean unimpacted locations.

62 The use of USL tends to provide a balance between false positives and false negatives provided the data
 63 represents a background data set and when many onsite observations need to be compared with the BTV.

64
 65 **Naphthalene**

66
 67 **General Statistics**

68	Total Number of Observations	33	Number of Distinct Observations	23
69	Minimum	0.0049	First Quartile	0.005
70	Second Largest	27.7	Median	0.289
71	Maximum	52	Third Quartile	5.72
72	Mean	5.37	SD	10.73
73	Coefficient of Variation	1.998	Skewness	3.065
74	Mean of logged Data	-1.731	SD of logged Data	3.559

75
 76 **Critical Values for Background Threshold Values (BTVs)**

77	Tolerance Factor K (For UTL)	2.176	d2max (for USL)	2.787
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78
 79 **Normal GOF Test**

80	Shapiro Wilk Test Statistic	0.578	Shapiro Wilk GOF Test	
81	5% Shapiro Wilk Critical Value	0.931	Data Not Normal at 5% Significance Level	
82	Lilliefors Test Statistic	0.316	Lilliefors GOF Test	
83	5% Lilliefors Critical Value	0.152	Data Not Normal at 5% Significance Level	

84 Data Not Normal at 5% Significance Level

85
 86 **Background Statistics Assuming Normal Distribution**

87	95% UTL with 95% Coverage	28.71	90% Percentile (z)	19.12
88	95% UPL (t)	23.82	95% Percentile (z)	23.02
89	95% USL	35.27	99% Percentile (z)	30.33

90
 91 **Gamma GOF Test**

92	A-D Test Statistic	2.177	Anderson-Darling Gamma GOF Test	
93	5% A-D Critical Value	0.899	Data Not Gamma Distributed at 5% Significance Level	
94	K-S Test Statistic	0.271	Kolmogorov-Smirnov Gamma GOF Test	
95	5% K-S Critical Value	0.17	Data Not Gamma Distributed at 5% Significance Level	

96 Data Not Gamma Distributed at 5% Significance Level

97
 98 **Gamma Statistics**

99	k hat (MLE)	0.213	k star (bias corrected MLE)	0.214
200	Theta hat (MLE)	25.15	Theta star (bias corrected MLE)	25.06
201	nu hat (MLE)	14.09	nu star (bias corrected)	14.14
202	MLE Mean (bias corrected)	5.37	MLE Sd (bias corrected)	11.6

203
 204 **Background Statistics Assuming Gamma Distribution**

205	95% Wilson Hillferty (WH) Approx. Gamma UPL	22.63	90% Percentile	16.23
206	95% Hawkins Wixley (HW) Approx. Gamma UPL	24.91	95% Percentile	27.16
207	95% WH Approx. Gamma UTL with 95% Coverage	36.08	99% Percentile	56.93
208	95% HW Approx. Gamma UTL with 95% Coverage	44.29		

UCL Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation ProUCL 5.19/12/2016 9:56:27 AM
 From File WorkSheet.xls
 Full Precision OFF
 Confidence Coefficient 95%
 Number of Bootstrap Operations 2000

Benzene

General Statistics

Total Number of Observations	33	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	0.0049	Mean	2.071
Maximum	18.8	Median	0.0963
SD	4.366	Std. Error of Mean	0.76
Coefficient of Variation	2.108	Skewness	2.525

Normal GOF Test

Shapiro Wilk Test Statistic	0.547	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.931	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.398	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.152	Data Not Normal at 5% Significance Level	
		Data Not Normal at 5% Significance Level	

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.359	95% Adjusted-CLT UCL (Chen-1995)	3.678
		95% Modified-t UCL (Johnson-1978)	3.414

Gamma GOF Test

A-D Test Statistic	2.401	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.888	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.232	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.169	Data Not Gamma Distributed at 5% Significance Level	
		Data Not Gamma Distributed at 5% Significance Level	

Gamma Statistics

k hat (MLE)	0.235	k star (bias corrected MLE)	0.234
Theta hat (MLE)	8.817	Theta star (bias corrected MLE)	8.861
nu hat (MLE)	15.5	nu star (bias corrected)	15.43
MLE Mean (bias corrected)	2.071	MLE Sd (bias corrected)	4.284
		Approximate Chi Square Value (0.05)	7.561
Adjusted Level of Significance	0.0419	Adjusted Chi Square Value	7.277

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	4.227	95% Adjusted Gamma UCL (use when n<50)	4.392
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Lognormal GOF Test

Shapiro Wilk Test Statistic	0.828	Shapiro Wilk Lognormal GOF Test	
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	A	B	C	D	E	F	G	H	I	J	K	L
53			5% Shapiro Wilk	Critical Value	0.931			Data Not Lognormal at 5% Significance Level				
54			Lilliefors Test Statistic		0.26			Lilliefors Lognormal GOF Test				
55			5% Lilliefors	Critical Value	0.152			Data Not Lognormal at 5% Significance Level				
56								Data Not Lognormal at 5% Significance Level				
57												
58												
59												
60												
61												
62												
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Lognormal Statistics

Minimum of Logged Data	-5.319	Mean of logged Data	-2.326
Maximum of Logged Data	2.934	SD of logged Data	2.987

Assuming Lognormal Distribution

95% H-UCL	148.5	90% Chebyshev (MVUE) UCL	15.4
95% Chebyshev (MVUE) UCL	20.19	97.5% Chebyshev (MVUE) UCL	26.84
99% Chebyshev (MVUE) UCL	39.9		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	3.321	95% Jackknife UCL	3.359
95% Standard Bootstrap UCL	3.307	95% Bootstrap-t UCL	4.081
95% Hall's Bootstrap UCL	3.557	95% Percentile Bootstrap UCL	3.328
95% BCA Bootstrap UCL	3.789		
90% Chebyshev(Mean, Sd) UCL	4.351	95% Chebyshev(Mean, Sd) UCL	5.384
97.5% Chebyshev(Mean, Sd) UCL	6.818	99% Chebyshev(Mean, Sd) UCL	9.633

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL 6.818

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Ethylbenzene

General Statistics

Total Number of Observations	33	Number of Distinct Observations	23
		Number of Missing Observations	0
Minimum	0.0049	Mean	16.25
Maximum	179	Median	0.479
SD	35.75	Std. Error of Mean	6.223
Coefficient of Variation	2.199	Skewness	3.41

Normal GOF Test

Shapiro Wilk Test Statistic	0.531	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.931	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.325	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.152	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

157 In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

158

159 Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

160 Recommendations are based upon data size, data distribution, and skewness.

161 These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

162 However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

163

164

165 Naphthalene

166

General Statistics

Total Number of Observations	33	Number of Distinct Observations	23
		Number of Missing Observations	0
Minimum	0.0049	Mean	5.37
Maximum	52	Median	0.289
SD	10.73	Std. Error of Mean	1.868
Coefficient of Variation	1.998	Skewness	3.065

174

175

Normal GOF Test

Shapiro Wilk Test Statistic	0.578	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.931	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.316	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.152	Data Not Normal at 5% Significance Level	
		Data Not Normal at 5% Significance Level	

180

181

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.533	95% Adjusted-CLT UCL (Chen-1995)	9.507
		95% Modified-t UCL (Johnson-1978)	8.699

186

187

Gamma GOF Test

A-D Test Statistic	2.177	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.899	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.271	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.17	Data Not Gamma Distributed at 5% Significance Level	
		Data Not Gamma Distributed at 5% Significance Level	

192

193

Gamma Statistics

k hat (MLE)	0.213	k star (bias corrected MLE)	0.214
Theta hat (MLE)	25.15	Theta star (bias corrected MLE)	25.06
nu hat (MLE)	14.09	nu star (bias corrected)	14.14
MLE Mean (bias corrected)	5.37	MLE Sd (bias corrected)	11.6
		Approximate Chi Square Value (0.05)	6.669
Adjusted Level of Significance	0.0419	Adjusted Chi Square Value	6.405

201

202

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	11.39	95% Adjusted Gamma UCL (use when n<50)	11.86
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204

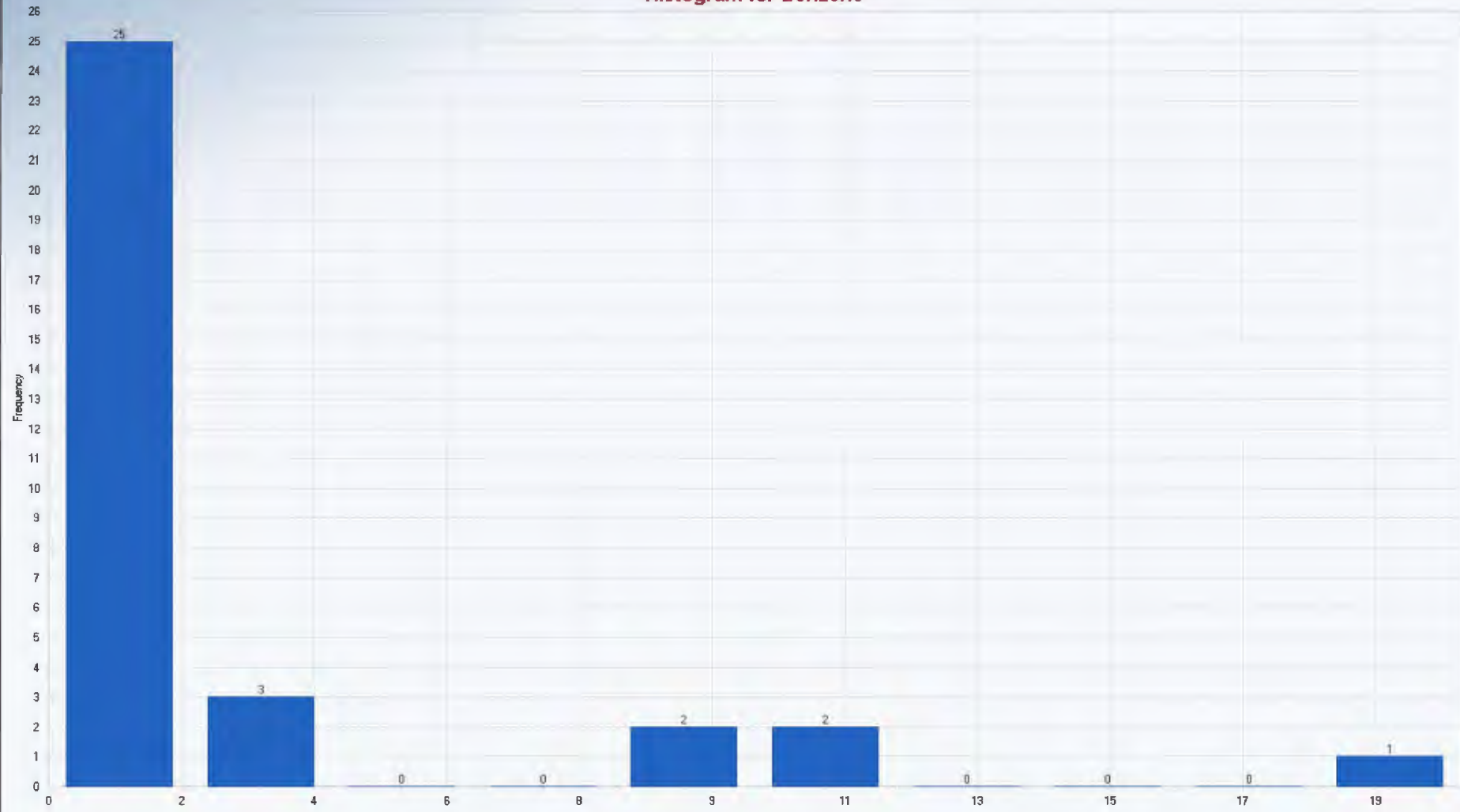
205

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.794	Shapiro Wilk Lognormal GOF Test	
5% Shapiro Wilk Critical Value	0.931	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.285	Lilliefors Lognormal GOF Test	

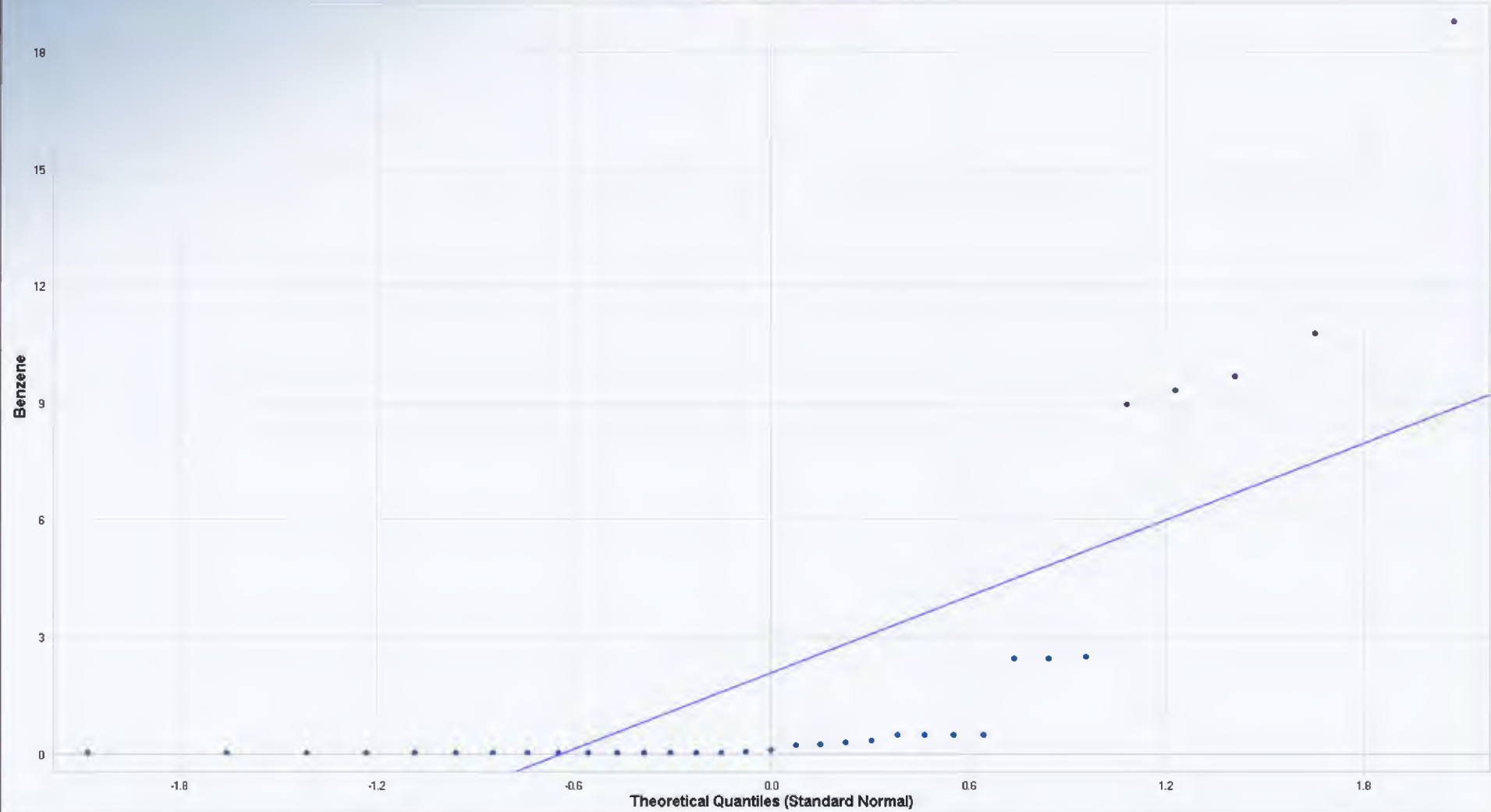
208

Histogram for Benzene



Benzene	
Number of Values	39
Minimum	0.00
Maximum	18.80
SD	4.37
Skewness	2.52
Kurtosis	6.34
<input type="checkbox"/> Mean	2.07
<input type="checkbox"/> Median	0.10
<input type="checkbox"/> Normal Distribution	
<input type="checkbox"/> Less Bins	
<input type="checkbox"/> More Bins	

Q-Q Plot for Benzene



Benzene
N = 33
Mean = 2.071
Sd = 4.366
Slope = 3.269
Intercept = 2.071
Correlation, R = 0.73

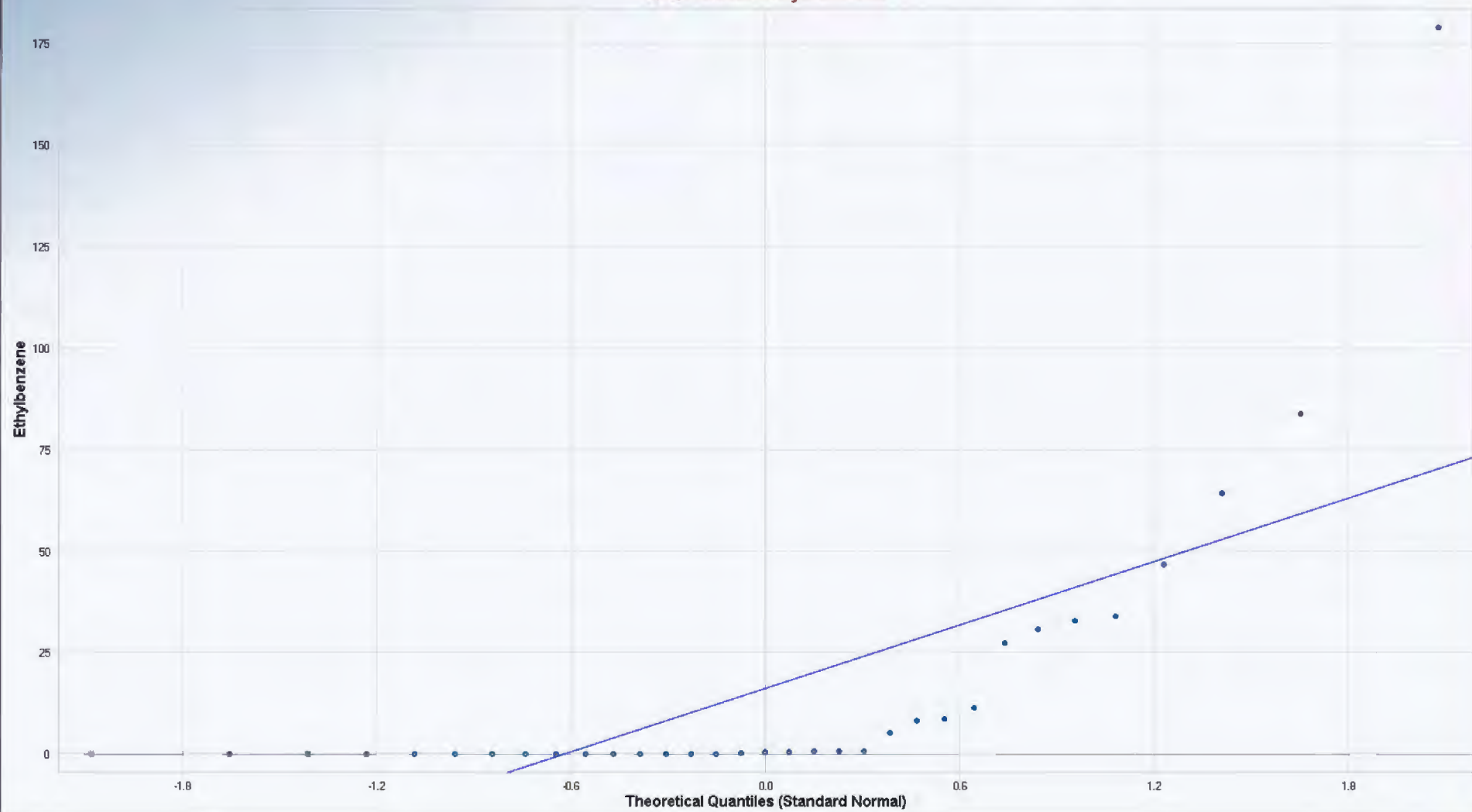
■ Best Fit Line

Histogram for Ethylbenzene



Number of Values	39
Minimum	0.00
Maximum	179.00
SD	35.75
Skewness	3.41
Kurtosis	13.55
<input type="checkbox"/> Mean	16.25
<input type="checkbox"/> Median	0.48
<input type="checkbox"/> Normal Distribution	
<input type="checkbox"/> Less Bins	
<input type="checkbox"/> More Bins	

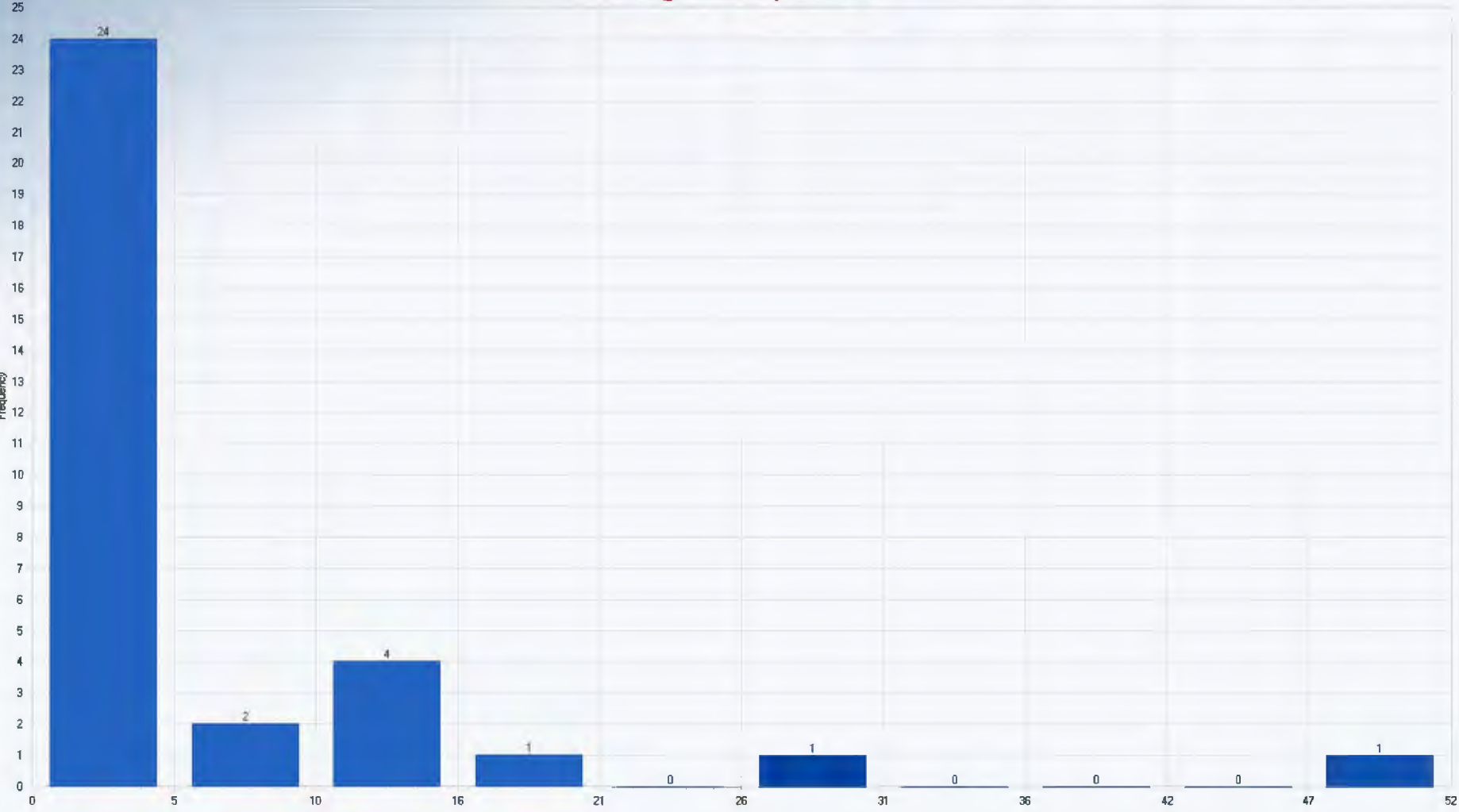
Q-Q Plot for Ethylbenzene



Ethylbenzene
N = 33
Mean = 16.25
Sd = 35.75
Slope = 26.07
Intercept = 16.25
Correlation, R = 0.711

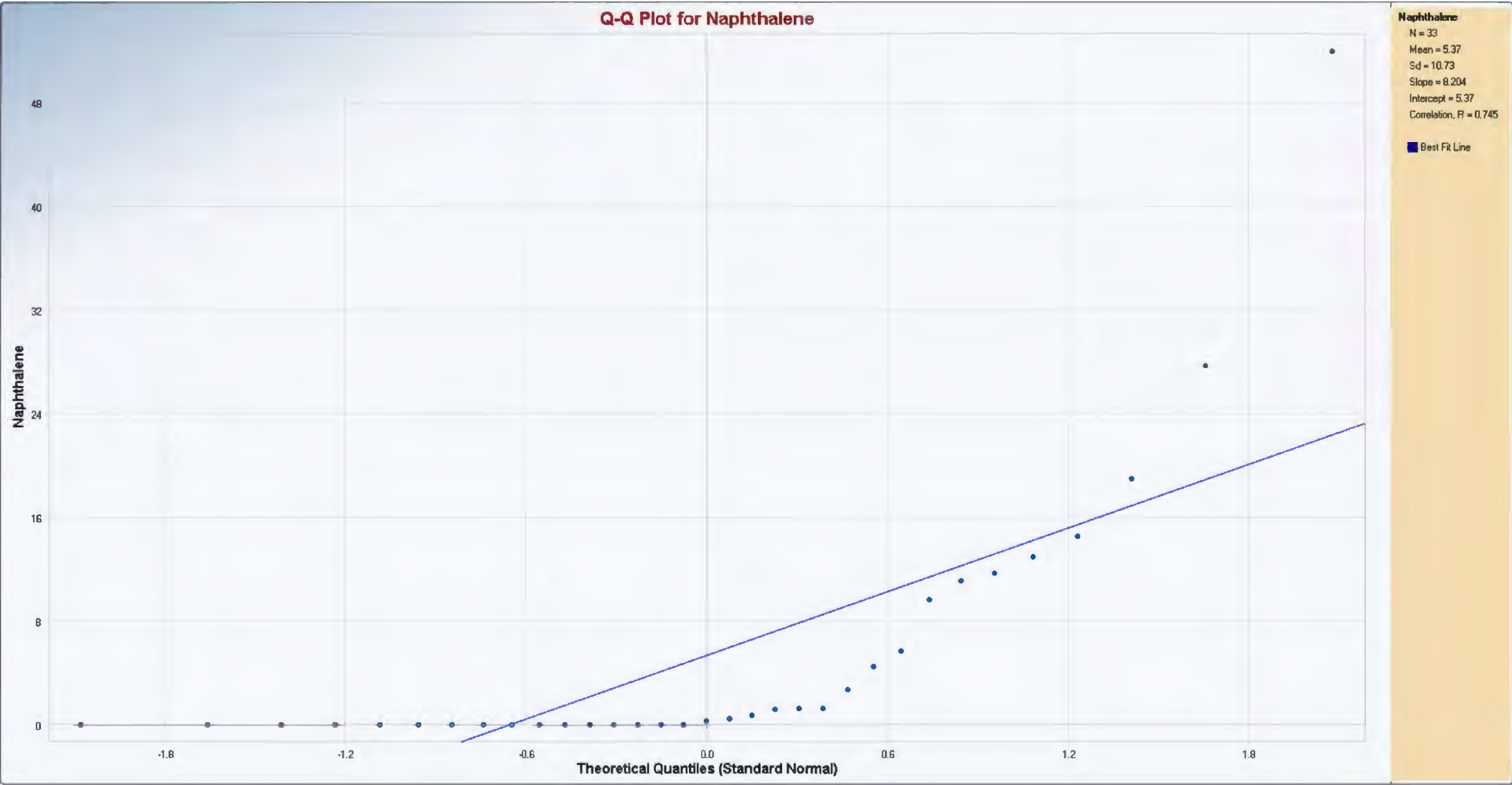
■ Best Fit Line

Histogram for Naphthalene



Number of Values	39
Minimum	0.00
Maximum	52.00
SD	10.73
Skewness	3.07
Kurtosis	11.04
<input type="checkbox"/> Mean	5.37
<input type="checkbox"/> Median	0.29
<input type="checkbox"/> Normal Distribution	
<input type="checkbox"/> Less Bins	
<input type="checkbox"/> More Bins	

Q-Q Plot for Naphthalene



A	B	C	D	E	F	G	H	I	J	K	L
1	Gamma UCL Statistics for Data Sets with Non-Detects										
2											
3	User Selected Options										
4	Date/Time of Computation		ProUCL 5.19/13/2016 8:40:21 PM								
5	From File		Union 76 5191 - ProUCL.xls								
6	Full Precision		OFF								
7	Confidence Coefficient		95%								
8	Number of Bootstrap Operations		2000								
9											
10	Benzene										
11											
12	General Statistics										
13	Total Number of Observations			33		Number of Distinct Observations			20		
14	Number of Detects			12		Number of Non-Detects			21		
15	Number of Distinct Detects			12		Number of Distinct Non-Detects			9		
16	Minimum Detect			0.0053		Minimum Non-Detect			0.0049		
17	Maximum Detect			18.8		Maximum Non-Detect			2.5		
18	Variance Detects			38.84		Percent Non-Detects			63.64%		
19	Mean Detects			5.09		SD Detects			6.232		
20	Median Detects			1.4		CV Detects			1.224		
21	Skewness Detects			1.019		Kurtosis Detects			0.246		
22	Mean of Logged Detects			-0.133		SD of Logged Detects			2.655		
23											
24	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs										
25	KM Mean			1.866		KM Standard Error of Mean			0.791		
26	KM SD			4.347		95% KM (BCA) UCL			3.306		
27	95% KM (t) UCL			3.205		95% KM (Percentile Bootstrap) UCL			3.245		
28	95% KM (z) UCL			3.166		95% KM Bootstrap t UCL			3.812		
29	90% KM Chebyshev UCL			4.238		95% KM Chebyshev UCL			5.312		
30	97.5% KM Chebyshev UCL			6.803		99% KM Chebyshev UCL			9.732		
31											
32	Gamma GOF Tests on Detected Observations Only										
33	A-D Test Statistic			0.617		Anderson-Darling GOF Test					
34	5% A-D Critical Value			0.809		Detected data appear Gamma Distributed at 5% Significance Level					
35	K-S Test Statistic			0.235		Kolmogorov-Smimov GOF					
36	5% K-S Critical Value			0.263		Detected data appear Gamma Distributed at 5% Significance Level					
37	Detected data appear Gamma Distributed at 5% Significance Level										
38											
39	Gamma Statistics on Detected Data Only										
40	k hat (MLE)			0.377		k star (bias corrected MLE)			0.339		
41	Theta hat (MLE)			13.49		Theta star (bias corrected MLE)			15.03		
42	nu hat (MLE)			9.059		nu star (bias corrected)			8.127		
43	Mean (detects)			5.09							
44											
45	Gamma ROS Statistics using Imputed Non-Detects										
46	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
47	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
48	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
49	This is especially true when the sample size is small.										
50	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
51	Minimum			0.0053		Mean			1.857		
52	Maximum			18.8		Median			0.01		

A	B	C	D	E	F	G	H	I	J	K	L
53				SD	4.417					CV	2.378
54				k hat (MLE)	0.204					k star (bias corrected MLE)	0.206
55				Theta hat (MLE)	9.108					Theta star (bias corrected MLE)	9.034
56				nu hat (MLE)	13.46					nu star (bias corrected)	13.57
57				Adjusted Level of Significance (β)	0.0419						
58				Approximate Chi Square Value (13.57, α)	6.277					Adjusted Chi Square Value (13.57, β)	6.022
59				95% Gamma Approximate UCL (use when $n \geq 50$)	4.015					95% Gamma Adjusted UCL (use when $n < 50$)	4.185
60											
61	Estimates of Gamma Parameters using KM Estimates										
62				Mean (KM)	1.866					SD (KM)	4.347
63				Variance (KM)	18.9					SE of Mean (KM)	0.791
64				k hat (KM)	0.184					k star (KM)	0.188
65				nu hat (KM)	12.16					nu star (KM)	12.39
66				theta hat (KM)	10.13					theta star (KM)	9.94
67				80% gamma percentile (KM)	2.374					90% gamma percentile (KM)	5.637
68				95% gamma percentile (KM)	9.771					99% gamma percentile (KM)	21.27
69											
70	Gamma Kaplan-Meier (KM) Statistics										
71				Approximate Chi Square Value (12.39, α)	5.485					Adjusted Chi Square Value (12.39, β)	5.249
72				95% Gamma Approximate KM-UCL (use when $n \geq 50$)	4.215					95% Gamma Adjusted KM-UCL (use when $n < 50$)	4.405
73											
74	Suggested UCL to Use										
75				Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$ but $k \leq 1$)	4.405						
76											
77	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
78	Recommendations are based upon data size, data distribution, and skewness.										
79	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
80	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
81											
82	Ethylbenzene										
83											
84	General Statistics										
85				Total Number of Observations	33					Number of Distinct Observations	23
86				Number of Detects	20					Number of Non-Detects	13
87				Number of Distinct Detects	20					Number of Distinct Non-Detects	3
88				Minimum Detect	0.0189					Minimum Non-Detect	0.0049
89				Maximum Detect	179					Maximum Non-Detect	0.496
90				Variance Detects	1856					Percent Non-Detects	39.39%
91				Mean Detects	26.79					SD Detects	43.08
92				Median Detects	8.49					CV Detects	1.608
93				Skewness Detects	2.634					Kurtosis Detects	8.08
94				Mean of Logged Detects	1.423					SD of Logged Detects	2.635
95											
96	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs										
97				KM Mean	16.24					KM Standard Error of Mean	6.288
98				KM SD	35.21					95% KM (BCA) UCL	28.51
99				95% KM (t) UCL	26.89					95% KM (Percentile Bootstrap) UCL	27.6
100				95% KM (z) UCL	26.58					95% KM Bootstrap t UCL	36.46
101				90% KM Chebyshev UCL	35.1					95% KM Chebyshev UCL	43.65
102				97.5% KM Chebyshev UCL	55.51					99% KM Chebyshev UCL	78.81
103											
104	Gamma GOF Tests on Detected Observations Only										

A	B	C	D	E	F	G	H	I	J	K	L
105	A-D Test Statistic			0.368	Anderson-Darling GOF Test						
106	5% A-D Critical Value			0.832	Detected data appear Gamma Distributed at 5% Significance Level						
107	K-S Test Statistic			0.175	Kolmogorov-Smirnov GOF						
108	5% K-S Critical Value			0.209	Detected data appear Gamma Distributed at 5% Significance Level						
109	Detected data appear Gamma Distributed at 5% Significance Level										
110											
111	Gamma Statistics on Detected Data Only										
112	k hat (MLE)			0.359	k star (bias corrected MLE)			0.338			
113	Theta hat (MLE)			74.62	Theta star (bias corrected MLE)			79.14			
114	nu hat (MLE)			14.36	nu star (bias corrected)			13.54			
115	Mean (detects)			26.79							
116											
117	Gamma ROS Statistics using Imputed Non-Detects										
118	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
119	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
120	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
121	This is especially true when the sample size is small.										
122	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
123	Minimum			0.01	Mean			16.24			
124	Maximum			179	Median			0.292			
125	SD			35.75	CV			2.202			
126	k hat (MLE)			0.197	k star (bias corrected MLE)			0.2			
127	Theta hat (MLE)			82.34	Theta star (bias corrected MLE)			81.4			
128	nu hat (MLE)			13.02	nu star (bias corrected)			13.17			
129	Adjusted Level of Significance (β)			0.0419							
130	Approximate Chi Square Value (13.17, α)			6.005	Adjusted Chi Square Value (13.17, β)			5.757			
131	95% Gamma Approximate UCL (use when $n \geq 50$)			35.61	95% Gamma Adjusted UCL (use when $n < 50$)			37.15			
132											
133	Estimates of Gamma Parameters using KM Estimates										
134	Mean (KM)			16.24	SD (KM)			35.21			
135	Variance (KM)			1240	SE of Mean (KM)			6.288			
136	k hat (KM)			0.213	k star (KM)			0.214			
137	nu hat (KM)			14.04	nu star (KM)			14.1			
138	theta hat (KM)			76.33	theta star (KM)			76.02			
139	80% gamma percentile (KM)			22.11	90% gamma percentile (KM)			49.1			
140	95% gamma percentile (KM)			82.22	99% gamma percentile (KM)			172.5			
141											
142	Gamma Kaplan-Meier (KM) Statistics										
143	Approximate Chi Square Value (14.10, α)			6.639	Adjusted Chi Square Value (14.10, β)			6.376			
144	95% Gamma Approximate KM-UCL (use when $n \geq 50$)			34.49	95% Gamma Adjusted KM-UCL (use when $n < 50$)			35.91			
145											
146	Suggested UCL to Use										
147	Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$ but $k \leq 1$)			35.91							
148											
149	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
150	Recommendations are based upon data size, data distribution, and skewness.										
151	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
152	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
153											
154	Naphthalene										
155											
156	General Statistics										

A	B	C	D	E	F	G	H	I	J	K	L
157	Total Number of Observations			33	Number of Distinct Observations			23			
158	Number of Detects			20	Number of Non-Detects			13			
159	Number of Distinct Detects			20	Number of Distinct Non-Detects			3			
160	Minimum Detect			0.0051	Minimum Non-Detect			0.0049			
161	Maximum Detect			52	Maximum Non-Detect			0.496			
162	Variance Detects			161.8	Percent Non-Detects			39.39%			
163	Mean Detects			8.833	SD Detects			12.72			
164	Median Detects			3.645	CV Detects			1.44			
165	Skewness Detects			2.358	Kurtosis Detects			6.553			
166	Mean of Logged Detects			0.364	SD of Logged Detects			2.926			
167											
168	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs										
169	KM Mean			5.356	KM Standard Error of Mean			1.888			
170	KM SD			10.57	95% KM (BCA) UCL			8.581			
171	95% KM (t) UCL			8.554	95% KM (Percentile Bootstrap) UCL			8.69			
172	95% KM (z) UCL			8.461	95% KM Bootstrap t UCL			10.74			
173	90% KM Chebyshev UCL			11.02	95% KM Chebyshev UCL			13.59			
174	97.5% KM Chebyshev UCL			17.15	99% KM Chebyshev UCL			24.14			
175											
176	Gamma GOF Tests on Detected Observations Only										
177	A-D Test Statistic			0.331	Anderson-Darling GOF Test						
178	5% A-D Critical Value			0.83	Detected data appear Gamma Distributed at 5% Significance Level						
179	K-S Test Statistic			0.127	Kolmogorov-Smirnov GOF						
180	5% K-S Critical Value			0.208	Detected data appear Gamma Distributed at 5% Significance Level						
181	Detected data appear Gamma Distributed at 5% Significance Level										
182											
183	Gamma Statistics on Detected Data Only										
184	k hat (MLE)			0.368	k star (bias corrected MLE)			0.346			
185	Theta hat (MLE)			24.02	Theta star (bias corrected MLE)			25.53			
186	nu hat (MLE)			14.71	nu star (bias corrected)			13.84			
187	Mean (detects)			8.833							
188											
189	Gamma ROS Statistics using Imputed Non-Detects										
190	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
191	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
192	For such situations, GROS method may yield incorrect values of UCLs and BTVs										
193	This is especially true when the sample size is small.										
194	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
195	Minimum			0.0051	Mean			5.357			
196	Maximum			52	Median			0.0434			
197	SD			10.73	CV			2.004			
198	k hat (MLE)			0.221	k star (bias corrected MLE)			0.221			
199	Theta hat (MLE)			24.2	Theta star (bias corrected MLE)			24.19			
200	nu hat (MLE)			14.61	nu star (bias corrected)			14.62			
201	Adjusted Level of Significance (β)			0.0419							
202	Approximate Chi Square Value (14.62, α)			6.995	Adjusted Chi Square Value (14.62, β)			6.724			
203	95% Gamma Approximate UCL (use when $n \geq 50$)			11.19	95% Gamma Adjusted UCL (use when $n < 50$)			11.64			
204											
205	Estimates of Gamma Parameters using KM Estimates										
206	Mean (KM)			5.356	SD (KM)			10.57			
207	Variance (KM)			111.8	SE of Mean (KM)			1.888			
208	k hat (KM)			0.257	k star (KM)			0.254			

