PENSKE

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By Alameda County Environmental Health at 3:56 pm, Jan 16, 2014

January 14, 2014

Ms. Karel Detterman
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: No Further Action Request
Former Penske Truck Leasing Facility
725 Julie Ann Way, Oakland, California
Alameda County Site ID RO0000354

Dear Ms. Detterman:

Enclosed with this cover letter is the No Further Action Request for the above-referenced former Penske Truck Leasing location.

As an authorized representative of Penske Truck Leasing Co, LP, I offer the following statement:

> I, Chris Hawk, declare, under penalty of perjury, that the information and/or recommendations contained in the enclosed Report are true and correct to the best of my knowledge

Should you have any questions, please contact me at 610-775-6123.

Best Regards,

Chris Hawk
Environmental Engineer

Penske Truck Leasing
Rt. 10 Green Hills, PO Box 7635
Reading, PA 19603-7635

Tel 610 775 6298
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GoPenske.com

No Further Action Request
Former Penske Truck Leasing Facility

725 Julie Ann Way
Oakland, California
PN: 185702640

Stantec

January 14, 2014

Limitations and Certifications

This report was prepared in accordance with the scope of work outlined in Stantec's contract and with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the site. It was prepared for the exclusive use of Penske Truck Leasing Company for the express purpose stated above. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to Stantec. To the extent that this report is based on information provided to Stantec by third parties, Stantec may have made efforts to verify this third party information, but Stantec cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied are made by Stantec.

Prepared by:

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Senior Geologist

Reviewed by:

Neil Doran, PG.
Senior Geologist

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

Licensed Reviewer:

Neil Doran, P.G., #8503
Senior Geologist

PROFESSIONAL GEOLOGIST
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Abbreviations and Acronyms

ACEH	Alameda County Environmental Health
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and xylene
COC	chemical of concern
CRWQCB	California Regional Water Quality Control Board
CSM	Conceptual Site Model
DCA	dichloroethane
EBMUD	East Bay Municipal Utilities District
EDB	ethylene dibromide
EDR	Environmental Data Resources, Inc.
EPC	exposure point concentration
ESL	Environmental Screening Level
HHRA	human health risk assessment
HI	hazard index
ILECR	individual lifetime excess cancer risk
J&E	Johnson and Ettinger
LNAPL	Light Non-Aqueous Phase Liquid
LTCP	Low-Threat Closure Policy
mg/kg	milligrams per kilogram
MRL	method reporting limit
MtBE	methyl tertiary-butyl ether
NFAR	No Further Action Request
ORC	Oxygen-releasing compound
PAH	poly-aromatic hydrocarbon
Penske	Penske Truck Leasing Company
RME	reasonable maximum exposure
RWQCB	Regional Water Quality Control Board
SCM	Site Conceptual Model
SFB	San Francisco Bay
SPH	separate-phase hydrocarbon
Stantec	Stantec Consulting Services Inc.
TOG	total oil and grease
TPHd	total petroleum hydrocarbons as diesel
TPHg	total petroleum hydrocarbons as gasoline
µg/L	micrograms per liter
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey

Abbreviations and Acronyms – continued

UST	underground storage tank
VOC	volatile organic compound
WQO	Water Quality Objective

1.0 Introduction

Facility:	Former Penske Truck Leasing Facility
Site Address:	725 Julie Ann Way, Oakland, California
Contact:	Mr. Chris Hawk Penske Truck Leasing Company (Penske) Rt. 10 Green Hills, PO Box 7635 Reading, PA 19603-7635
Consulting Company:	Stantec Consulting Services Inc. (Stantec) – Ms. Eva Hey
Stantec Project No.:	185702640
Primary Agency / Contact:	Alameda County Environmental Health Services (ACEHS) Ms. Karel Detterman

Stantec Consulting Services Inc. (Stantec), on behalf of Penske Truck Leasing Company (Penske), has prepared this No Further Action Request (NFAR) for Former Penske Truck Leasing Facility located at 725 Julie Ann Way in Oakland, California (the Site; see Figure 1). This report demonstrates that the Site should be granted No Further Action status pursuant to the State Water Resources Control Board's Low-Threat Underground Storage Tank Case Closure Policy (Low-Threat Closure Policy) adopted by the State Water Board in May 2012 and effective August 17, 2012.

The Low-Threat Closure Policy (LTCP) provides general and media–specific criteria for cases that pose a low threat to human health, safety, and the environment and are appropriate for closure pursuant to Health and Safety Code section 25296.10. This report provides a summary of previous remedial investigations and actions performed at the Site, a summary of Site geologic and hydrologic conditions, a review of historical soil data, current groundwater concentrations and overall trends, and an assessment of potential current and future sensitive receptors, all of which show that the Site meets both general and media–specific criteria of the LTCP and supports the basis of closure of the Site.

2.0 Site Description

The Site currently operates as a Right Away Ready Mix concrete truck yard and corporate office. The Site previously operated as a Penske Truck Leasing Facility. Three fuel underground storage tanks (USTs) and one waste oil UST were removed from the Site in 1989 (see Figures 1 and 2). The subject property is paved concrete and asphalt. An unnamed drainage ditch is located immediately west of the Site, parallel to Coliseum Way. The ditch drains to a larger engineered water channel located northwest of the Site, which appears to drain to San Leandro Bay.

Land use immediately surrounding the Site is industrial and commercial. The Site is bound to the east by industrial properties, beyond which are railroad tracks; to the south by Julie Ann Way; to the west by Coliseum Way; and to the north by the engineered drainage channel.

2.1 SITE BACKGROUND

The Site previously operated as a Penske Truck Leasing Facility. The Site configuration in 1989 included one 10,000-gallon unleaded gasoline UST, one 10,000-gallon diesel UST, one 1,000-gallon diesel UST, and one 550-gallon waste oil UST, a repair shop/office located east of the USTs, and a carport located west of the USTs (see Figure 2). All four USTs were removed from the Site in October 1989.

3.0 Site Conceptual Model

Presented below is the current Site Conceptual Model (SCM) based on historic and current Site conditions.

3.1 GEOLOGIC SETTING

3.1.1 Regional Geology and Hydrology

The Site is located approximately a half-mile east of San Leandro Bay and three miles east of San Francisco Bay. The area of the Site was historically a tidal marsh area which has been subsequently filled for development (U.S. Geological Survey 1979). Open surface drainage channels border the Site to the west and northwest.

The Site is located within an area of regional subsidence bordered to the east by the Oakland Hills. The highlands that include Berkeley – Oakland Hills are part of the Franciscan Formation which is composed of sandstone, chert, and metamorphosed basalt. The erosion of the uplands during the last 10,000 to 20,000 years before present has deposited alluvial fill material of interbedded sands, silts, clays, and gravel to the west, towards San Francisco Bay. Interfingering with and overlying the alluvial material are Holocene estuarine bay mud deposits. The younger bay muds are locally interbedded with silt, sand, and gravels deposited within the local alluvial environments (U.S. Geological Survey 1979).

The Site is located within the East Bay Plain Sub-basin of the Santa Clara Valley Groundwater Basin. The East Bay Plain Sub-basin is a northwest-trending alluvial plain bounded on the north by San Pablo Bay, on the east by the contact with Franciscan Basement rock, and on the south by the Niles Cone Groundwater Basin. The East Bay Plain Basin extends beneath San Francisco Bay to the west (CDWR 2004).

3.1.2 Site Geology

Soils beneath the Site consist primarily of clay, sand, silty sand, clayey sand, and sandy clay to a depth of approximately 31.5 feet below ground surface (bgs), the total depth explored. Well construction details are summarized in Table 1. Generalized geologic cross-sections are included as Appendix A. Boring logs are included as Appendix B.

3.1.3 Site Hydrology

Depth-to-groundwater beneath the Site has fluctuated between approximately 4.0 and 7.3 feet bgs since monitoring was initiated in February 1997. Groundwater flow direction beneath the Site has varied from northwest to southwest. Current and historical groundwater elevation data are included in Table 2. A groundwater elevation contour map constructed from measurements collected in March 2013 is included as Figure 3.

3.2 SITE HISTORY AND PREVIOUS INVESTIGATIONS

Current and former Site features are illustrated on Figure 2. The following summary of previously performed environmental work is based on a review of documents available to Stantec.

1989

In October 1989, one 10,000-gallon unleaded gasoline USTs, one 10,000-gallon diesel UST, one 1,000-gallon diesel UST, and one 550-gallon waste-oil UST were removed from the Site. Following collection of confirmation soil samples, two over-excavations were conducted to remove residual hydrocarbons residing in subsurface soils (SECOR 2002). The soil was stockpiled on-Site and approximately 235 tons of soil was subsequently transported to the GSX Services disposal facility located in Buttonwillow, California. The four USTs were shipped to H&H Environmental Services at 220 China Basin Street in San Francisco, California (Scott Co. Mechanical Contractors 1989). Historical soil analytical data collected during the UST excavation activities is included in Table 3.

Following excavation activities and under the direction of the Alameda County Health Care Services Agency, later renamed Alameda County Environmental Health (ACEH), the former UST excavations were backfilled with clean pea gravel and capped with asphalt. During the backfilling operations, a discontinuous sheen of separate-phase hydrocarbons (SPH) was observed on the water in the excavation from which the gasoline and diesel tanks were removed. Approximately 300 gallons of water was purged from the excavation and transported to Refinery Services located in Patterson, California (Geraghty & Miller, Inc. 1990).

Soil samples collected from the limits of the former UST cavity detected concentrations of total petroleum hydrocarbons as gasoline (TPHg) ranging from 22.4 milligrams per kilogram (mg/kg) to 2,100 mg/kg. Concentrations of total petroleum hydrocarbons as diesel (TPHd) ranged from 240 mg/kg to 13,000 mg/kg. Oil and grease were detected in two of the samples collected from the gasoline and diesel UST excavations at concentrations of 54 mg/kg and 35 mg/kg. The maximum benzene, toluene, ethylbenzene and xylene (BTEX) concentrations were 36 mg/kg, 110 mg/kg, 38 mg/kg, and 185 mg/kg, respectively (Geraghty & Miller, Inc. 1990).

1990

During September 1990, six soil borings were advanced in and around the former UST excavations to investigate the extent of impacted soil and groundwater (MW-1 through MW-3 and BH-1 through BH-3). Three groundwater monitoring wells were installed (MW-1 through MW-3) in the vicinity of the former USTs. Multiple soil samples were collected from each of the six borings. The soil samples were analyzed for TPHg, TPHd, and BTEX. The soil samples collected from the borings drilled in the vicinity of the former waste oil UST (MW-2 and BH-2) were also analyzed for volatile organic compounds (VOCs) and total oil and grease (TOG). TPHg was detected in soil samples collected from five of the six borings at concentrations ranging from 1 to 820 mg/kg at depths ranging from 5 to 20 feet bgs. TPHd was detected in one or more samples from each of the soil borings at concentrations ranging from 32 to 980 mg/kg at depths ranging from 5 to 20 feet bgs. Benzene was also detected in each of the soil borings at concentrations ranging from 0.01 to 3.2 mg/kg. TOG was detected in soil samples collected from MW-2 at a maximum concentration of 1,400 mg/kg. With the exception of acetone in a sample collected from MW-2 at 5 feet bgs (0.072 mg/kg), VOCs were not detected above laboratory method reporting limits (MRLs) in MW-2 and BH-2. TPHg was detected in groundwater from monitoring well MW-1 at a maximum concentration of 170 micrograms per liter (µg/L). Groundwater samples collected from monitoring wells MW-2 and MW-3 were below the laboratory MRL for TPHg. TPHd in groundwater samples collected from all three of the newly installed monitoring wells at concentrations ranging from 80 to 2,900 µg/L. Benzene was detected in all of the groundwater samples collected at concentrations ranging from 0.4 to 20 µg/L (Geraghty & Miller, Inc. 1990).

1993

In February 1993, groundwater monitoring wells MW-4 and MW-5 were installed to better define the extent of groundwater impact. The locations of these monitoring wells are depicted on Figure 2. TPHg was detected in soil samples collected from monitoring well MW-4 at concentrations ranging from 6 to 400 mg/kg at depths ranging from 5 to 15 feet bgs. TPHd was detected in soil samples collected from monitoring wells MW-4 and MW-5 at concentrations ranging from 21 to 4,100 mg/kg at depths between 5 and 15 feet bgs (Geraghty & Miller, Inc. 1993).

1994

A site assessment was conducted in July 1994 to further define the extent of soil and groundwater impacts both downgradient (to the west) and crossgradient (to the north and southwest) of the former USTs. Four additional soil borings were drilled, three of which were converted to groundwater monitoring wells MW-6, MW-7, and MW-8. TPHg was detected in soil samples collected from borings MW-6, MW-7, MW-8, and BH-4 at concentrations ranging from 1 mg/kg (boring MW-8 at 15.5 feet bgs) to 31 mg/kg (boring MW-7 at 15 feet bgs). TPHd was detected in soil samples collected from boring MW-7, MW-8 and BH-4 at concentrations ranging from 41 mg/kg (boring MW-8 at 10.5 feet bgs) to 5,500 mg/kg (boring MW-7 at 15 feet bgs).

Benzene was detected in soil samples collected from borings MW-7, MW-8, and BH-4 at maximum concentrations ranging from 0.008 mg/kg (boring BH-4 at 5 feet bgs) to 0.039 mg/kg (boring MW-8 at 5.5 feet bgs).

Based on these results, a non-attainment-type zone was established with the concurrence of the ACEH. Concentrations of benzene reported in monitoring wells MW-7 and MW-8 (2.7 µg/L) were much lower than the 21 µg/L limit established by the Regional Water Quality Control Board (RWQCB) to protect nearby estuary waters. The ACEH was also in concurrence with this limit. The concentrations of benzene within groundwater samples collected from monitoring wells MW-3, MW-6, MW-7, and MW-8 located to the northwest and west of the former USTs were below the limit established by the ACEH and the RWQCB to protect possible down-gradient receptors (Geraghty & Miller, Inc. 1994).

1997

On May 22, 1997, two observation wells (OW-1 and OW-2) were installed within the former gasoline UST excavation. The two observation wells were drilled to depths of 16 feet bgs and screened between 6 and 16 feet bgs. Groundwater samples were collected from the wells on June 24, 1997, and analyzed for petroleum hydrocarbons and bioremediation parameters. Based on the results of the groundwater and biodegradation parameter testing data, it appeared that enhancement of the natural biodegradation would be necessary to promote the degradation of petroleum hydrocarbons in groundwater. Oxygen-releasing compound (ORC) socks were placed in observation wells OW-1 and OW-2. A total of ten 12-inch ORC socks were hung end to end in each well to span the 10 feet of well screen in each well. The ORC socks remained in OW-1 and OW-2 for six months. At the end of six months, groundwater analytical results indicated that petroleum hydrocarbon concentrations in downgradient well MW-4 showed a decreasing trend (Arcadis 1998).

2000

In order to reduce overall hydrocarbon concentrations in the highly impacted zones, Fenton's Reagent treatment was conducted at the Site in October 2000. The program consisted of injecting Fenton's Reagent into approximately 50 direct-push injection points throughout the contaminated zone, but concentrated in the area of highest observed impacts (see historical figures included in Appendix C). Fenton's Reagent is a strong oxidizer consisting of hydrogen peroxide, sulfuric acid, and ferrous iron, which oxidizes hydrocarbons upon contact to carbon dioxide and water (SECOR 2001). Post-treatment monitoring confirmed that chemical oxidation was successful in significantly reducing the amount of free-phase product in wells MW-1 and MW-7, and in reducing concentrations of dissolved-phase petroleum hydrocarbons in groundwater across the Site (SECOR 2002).

2004–2008

Stantec, on behalf of Penske, submitted a document entitled, *"Request for Conditional Site Closure,"* dated March 2, 2004. The document requested conditional site closure from the ACEH based on the results of the chemical oxidation program and on the agency's previous concurrence that groundwater protection standards should be protective of aquatic life, but not drinking water (SECOR 2004). The ACEH responded to the document in a letter dated April 8, 2008, denying regulatory case closure based, in part, on the presence of petroleum hydrocarbon sheen in well MW-1 during post-remediation monitoring in December 2002. The ACEH requested that Penske perform post-remediation source area characterization, evaluate the ability of Site monitoring wells to effectively monitor the presence of free-phase product on groundwater, complete a preferential pathway and receptor survey, gauge Site wells for presence of free product on a semi-annual basis, and upload Site data to the state's GeoTracker® database.

2009

Stantec submitted the Work Plan for Additional Soil and Groundwater Investigation (Work Plan), dated February 5, 2009, which included a proposed plan for evaluation of preferential pathway potentially associated with the former USTs. The preferential pathway study and proposed scope of work were approved in ACEH correspondence dated March 16, 2009, with additional requests to sample soil and groundwater for naphthalene and lead scavengers (Stantec 2009a).

On April 21 and 22, 2009, soil borings SB-1 through SB-8 were advanced for the collection of soil and grab groundwater samples. The locations of the soil borings are illustrated on Figure 2. Soil borings SB-2, SB-5, and SB-6, were located directly adjacent to monitoring wells MW-1, MW-4, and MW-7, wells that have historically reported the highest concentrations of petroleum hydrocarbons. Soil borings SB-1, SB-3, SB-4, and SB-7 were advanced at representative locations as illustrated on Figure 2, to evaluate soil conditions in the former Fenton's treatment area, evaluate vadose-zone soil conditions for the presence of coarse-grained materials which may influence subsurface migration of contaminants, and evaluate soil conditions in locations near subsurface features that may have been associated with previous underground tank operations. Soil boring SB-8 was advanced in the vicinity of previously unidentified lines that may have been associated with the use of the former USTs. Soil borings were advanced to first-encountered groundwater with the total depth of investigation ranging from 10 to 20 feet bgs. Groundwater was encountered most consistently at depths of 9 to 10.5 feet bgs in soil borings SB-2, SB-3, and SB-4. During advancement of soil borings SB-5, SB-6, and SB-7, water-bearing sediments were not observed during drilling, but static groundwater was measured in the boreholes at depths ranging from 9 to 11 feet bgs. Groundwater was encountered at 5.5 feet bgs in coarse-grained suspected backfill materials in soil boring SB-1, and static water was observed at 19 feet bgs in soil boring SB-8. Based on the observed conditions, depth to first-encountered groundwater at the time of investigation appeared to be approximately 10 feet bgs.

The preferential pathway study presented in the Work Plan identified subsurface conduits extending from the former unleaded UST excavation and western-most diesel UST excavation toward the on-Site building. The depth(s) of the lines could not be determined. Soil boring SB-8 was advanced to a depth of 17 feet near the northern terminus of the two lines (***Figure 2***) to evaluate the potential for the conduit or related backfill materials to act as preferential pathways for migration of contaminants or impacted groundwater. Soil boring SB-7, advanced to a depth of 16 feet within the former diesel tank pit, was also located in the general vicinity of the abandoned lines. Soil boring SB-7 encountered intervals of sand and gravel between the ground surface and 8.5 feet bgs. Static groundwater was measured at depths of 11 and 19 feet bgs, respectively in soil borings SB-7 and SB-8. The utilities do not intersect groundwater; therefore, preferential flow pathways are not present in this area of the Site.

Up to four soil samples from each soil boring were retained for chemical analysis. Detectable concentrations of TPHd were reported in all samples analyzed, at concentrations up to 210 mg/kg. TPHg was reported in 23 of the 28 samples analyzed at concentrations up to 12,000 mg/kg, and naphthalene was reported in 10 samples at concentrations up to 0.610 mg/kg. Benzene was reported in samples from soil boring SB-4 at a maximum concentration of 4.0 mg/kg, and ethylbenzene was reported in one sample from this location at 1.0 mg/kg. The highest concentrations of petroleum hydrocarbons and related constituents in soil were reported at soil boring SB-6, advanced adjacent to well MW-4, and soil boring SB-4, advanced within the Fenton's reagent treatment area between wells MW-1 and MW-7. In general, the highest concentrations of TPHd were reported in samples from 5 feet bgs. Lead scavengers ethylene dichloride (1,2-DCA) and ethylene dibromide (EDB) were not detected at or above laboratory MRLs. Soil analytical data collected during the 2009 assessment activities are presented in Table 4 and on figures in Appendix C.

TPHd was reported at elevated concentrations in each of the seven grab groundwater samples analyzed. Concentrations ranged from 43,000 µg/L to 4,000,000 µg/L. Concentrations of TPHg ranged from 54 µg/L to 300,000 µg/L. Benzene was detected in three grab groundwater samples at concentrations ranging from 6.2 to 12,000 µg/L. Ethylbenzene and methyl tertiary-butyl ether (MTBE) were reported in two samples each at low concentrations and naphthalene was reported in one sample at 950 µg/L. The highest concentrations of petroleum hydrocarbons in groundwater were reported in samples from soil borings SB-4 and SB-5. A table presenting historical grab groundwater analytical data is presented as Table 5 and the 2009 groundwater analytical results are included on a figure in Appendix C.

2010

Stantec's September 1, 2009, Soil and Groundwater Investigation and Groundwater Monitoring Report (Report), concluded that monitoring wells MW-1 and MW-7 were screened below the static groundwater level, rendering them inappropriate for monitoring the potential presence of free-phase fuel product on the groundwater table (Stantec 2009b). Stantec submitted the document entitled, *"Monitoring Well Installation Work Plan,"* dated October 27, 2009, for replacement of MW-1 and MW-7. The Report and October 27, 2009, Work Plan were approved by the ACEH in a letter dated December 17, 2009.

In January 2010, wells MW-1 and MW-7 were destroyed and replaced with wells MW-1R and MW-7R. The wells were installed adjacent to the former wells. Both wells were completed at depths of 20 feet bgs with screen intervals of 3.5 feet bgs to 20 feet bgs. The construction of approximately 1.5 feet of unsaturated screen above the static groundwater level, would allow for seasonal fluctuations of groundwater elevation. Soil samples were collected from each borehole at 5 feet bgs. TPHg was detected at 29 mg/kg in MW-7R. TPHd was detected at 31 mg/kg in MW-1R and 730 mg/kg in MW-7R. BTEX and MTBE were not detected above laboratory MRLs (Stantec 2010). Soil analytical data is presented in Table 4.

3.3 DISTRIBUTION OF RESIDUAL PETROLEUM HYDROCARBONS

3.3.1 Extent of Petroleum Hydrocarbons in Soil

The lateral and vertical extent of petroleum hydrocarbon impact to the soil has been characterized by assessment activities performed at the Site. Based on these analytical results, summarized in Tables 3 and 4, the primary chemicals of concern (COCs) in soil at the Site are TPHd, TPHg, and benzene. Historical analytical results indicate that the majority of the petroleum hydrocarbon impact to the soil appears to be located in the vicinity of and downgradient of the former diesel and gasoline USTs with the greatest concentrations located between 5 and 8 feet bgs.

Based on the most recent soil analytical data collected during 2009 assessment activities and 2010 well installation activities, the highest concentrations of petroleum hydrocarbons and related constituents in soil were reported in soil boring SB-6, advanced adjacent to well MW-4, and soil boring SB-4, advanced within the Fenton's reagent treatment area between wells MW-1 and MW-7. In general, the highest concentrations of TPHd were reported in samples from 5 feet bgs. Historical soil analytical data collected prior to the application of Fenton's Reagent in 2000 are presented in Table 3. Soil analytical data collected after the application of Fenton's Reagent treatment are presented in Table 4. Soil sample and soil boring locations are presented in historical figures included in Appendix C.

3.3.2 Extent of Petroleum Hydrocarbons in Soil Vapor

A human health risk assessment (HHRA) was completed in July 2013 to estimate potential health risks to current and future on-Site commercial/industrial workers and hypothetical future on-Site residents as a result of potential vapor intrusion from soil and groundwater to indoor air. Soil data collected from soil borings (SB-1 through SB-7) during the 2009 assessment activities and the maximum detected groundwater concentrations from the three most current rounds of groundwater sampling (March 22, 2012, September 24, 2012, and March 4, 2013) were used as the exposure point concentrations (EPCs) in the HHRA. The advanced groundwater and soil gas Johnson and Ettinger (J&E) models were used to estimate potential indoor health risks for the reasonable maximum exposure (RME) scenarios. All of the calculated RME individual lifetime excess cancer risks (ILECRs) to all receptors were below 1E-05 and all RME hazard indexes (HI) were below one. According to the United States Environmental Protection Agency (U.S. EPA), an ILECR of 1×10^{-6} is considered as the point of departure while the ILECR ranged between 1×10^{-4} to 1×10^{-6} may be acceptable. If the HI is equal to or less than one, exposures to COCs are not expected to result in a systemic toxic response. Therefore, it is expected that the Site is suitable for commercial and residential land uses without any significant risks to on-Site receptors from vapor intrusion. The HHRA is included as Appendix D.

3.3.3 Extent of Petroleum Hydrocarbons in Groundwater

The primary COCs in groundwater at the Site are TPHd, TPHg, benzene, and MTBE. Free product (Light Non-Aqueous Phase Liquid [LNAPL]) has not been detected in any of the Site wells since February 2010. Current and historical groundwater analytical results are included in Tables 6 and 7. A figure showing the latest groundwater analytical data plotted on a Site map is included as Figure 4.

The California Regional Water Quality Control Board – San Francisco Bay (CRWQCB-SFB's) Basin Plan (Basin Plan, last revision December 2011), considers all groundwater to be a potential drinking water source and requires cleanup to background concentrations, if technically and economically feasible. If background levels cannot be achieved, the Basin Plan provides Water Quality Objectives (WQOs) for commonly occurring contaminants. The WQOs for TPHd, TPHg, benzene, and MTBE are as follows:

Constituents of Concern	Water Quality Objective (µg/L)
TPHd	100
TPHg	100
Benzene	1.0
MTBE	5.0

µg/L = micrograms per liter
WQO = Environmental Screening Level (ESL), from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, CRWQCB – SFB Region, Interim Final – November 2007 (Revised May 2013). Table F-1 – Groundwater Screening Levels – Shallow Soils (groundwater is current or potential source of drinking water).

Currently, the concentrations of TPHd, TPHg, and MTBE exceed their respective WQOs as follows:

- In March 2013, TPHd was reported in five of the seven wells at concentrations ranging from 350 µg/L (OW-1) to 4,000 µg/L (MW-7R), which are above the WQO of 100 µg/L. TPHd was not detected above laboratory MRLs in monitoring wells MW-2 and MW-8.
- In March 2013, TPHg concentrations exceeded the WQO of 100 µg/L in only well (OW-2) at a concentration of 110 µg/L.
- In March 2013, BTEX constituents were below laboratory MRLs in all wells.
- In March 2013, MTBE concentrations exceeded the WQO of 5 µg/L in only one well (OW-1) at a concentration of 8.1 µg/L.

3.3.4 Groundwater Concentration Trends

Current and historical groundwater data indicate the plume is generally stable or decreasing in size and concentration. With the exception of TPHd, COCs have decreased to near to or below WQOs in all Site wells. Decreasing TPHd trends are observed in wells MW-1R, MW-4, MW-7R, OW-1, and OW-2. TPHd concentrations have decreased to below the WQO in wells MW-2 and MW-8. As shown in the following table, TPHd concentrations have declined a minimum of 67 percent since 2009 (when groundwater monitoring at the Site was resumed following Fenton's Reagent treatment in 2000 and cessation of post-treatment monitoring in 2002).

Well	Maximum TPHd Concentration Since 2009 (µg/L)	Current TPHd Concentration (µg/L)	Percent Decrease
MW-1R	5,800*	1,500	74%
MW-4	26,000	550	98%
MW-7R	12,000*	4,000	67%
OW-1	17,000	350	98%
OW-2	10,000	1,300	87%

* Maximum TPHd concentrations since first sampling event in February 2010.

Plots depicting concentrations trends since 2009 are included as Figures 5 through 8. Historical concentration plots depicting data from February 1997 through March 2013 are included in Appendix E.

3.3.5 Timeframe to Meet Water Quality Objectives

As shown in Figure 5 TPHd concentrations are decreasing in wells MW-1R, MW-4, OW-1, and OW-2. Fluctuating, but generally decreasing, TPHd concentrations have been observed in MW-7R since installation in January 2010. An analysis was conducted to determine the time it will take for the dissolved-phase TPHd concentrations in wells MW-1R, MW-4, OW-1, and OW-2 to meet the WQO. Due to fluctuating TPHd concentrations in MW-7R, a timeframe to reach the WQO could not be calculated; however, concentrations have decreased over 67 percent in the well from the historical maximum concentration of 12,000 µg/L in July 2010.

An analysis was also conducted to determine the time it will take for the dissolved-phase TPHg in well OW-2 and dissolved-phase MtBE in well OW-1 to meet the WQO.

3.3.6 Assumptions

Attenuation of dissolved-phase hydrocarbon concentrations at fuel hydrocarbon sites generally follows a first-order decay trend once the majority of hydrocarbon source material has been removed. As a result, decay rates can be estimated for wells within a plume using first-order trend graphs. The decay rates can then be subsequently used to estimate plume lifetime.

To be consistent with U.S. EPA terminology, these decay rates will be referred to as point decay rate constants. A point decay rate is specific to the petroleum hydrocarbon and well for which it was calculated and should not be extrapolated to other wells at the Site or other petroleum hydrocarbons in any well. The point decay rate constant is the slope of the regression line, provided the slope is negative.

Point decay rates can be used to estimate how quickly a WQO will be met at a particular point within the plume. Point decay rate constants represent the change in source strength over time (if the source is still present) with contribution from other attenuation processes such as dispersion and biodegradation (Newell et al. 2002).

3.3.7 Model Results

The times remaining for TPHd to reach the WQO in wells MW-1R, MW-4, OW-1, and OW-2 based on data collected from 2009 to the present were calculated from the first-order decay equation, as shown in Appendix F.

To provide a range of timeframe estimates, calculations were performed using the mean concentration from the last four sampling events as well as the maximum concentration from the last four sampling events. R2 values provide an indication of the reliability of a relationship identified by regression analysis. A trendline is considered more reliable when its R^2 value is at or near 1. The R2 values for the analyses conducted at the Site ranged from 0.0141 to 0.5536.

A summary of the timeframe analysis results follows:

- TPHd concentrations are estimated to reach the WQO in approximately 7.8 to 8.8 years in well MW-1R.
- TPHd concentrations are estimated to reach the WQO in approximately 3.1 to 4.0 years in well MW-4.
- TPHd concentrations are estimated to reach the WQO in approximately 4.6 to 6.3 years in well OW-1.
- TPHd concentrations are estimated to reach the WQO in approximately 6.7 to 8.4 years in well OW-2.
- TPH-g concentrations are estimated to reach the WQO in approximately 1 year in well OW-2.
- MtBE concentrations are estimated to reach the WQO in approximately 1.3 to 1.7 years in well OW-1.

3.4 SENSITIVE RECEPTORS AND EXPOSURE PATHWAYS

3.4.1 Sources of Impacts

The Site is a former Penske Truck Leasing Facility. The primary source of hydrocarbon contamination beneath the Site appears to be the result of leaks and spills associated with historical UST use. The majority of the petroleum hydrocarbon impact appears to be in the vicinity of and downgradient of the former diesel and gasoline USTs (MW-R, MW-4, and MW-7R).

3.4.2 Surface Water

The Site is approximately 2,300 feet northwest of the confluence of Lion and Arroyo Viejo Creeks, approximately a half-mile east of San Leandro Bay, and three miles east of San Francisco Bay. An unnamed drainage ditch is located immediately west of the site, parallel to Coliseum Way. The ditch drains to a larger engineered water channel located northwest of the Site, which appears to drain to San Leandro Bay.

Well MW-8 is the furthest downgradient well and between the dissolved plume and the drainage ditch. TPHg and BTEX constituents have been below laboratory MRLs since February 1998. MTBE concentrations have remained below the WQO in MW-8, and 1,2-DCA, EDB, and naphthalene have historically been below laboratory MRLs in the well. TPHd concentrations in MW-8 have been below laboratory MRLs since July 2011. The drainage ditch is likely impacted by runoff from the adjacent roadways and rail spurs. It is unlikely that the residual petroleum hydrocarbon plume beneath the Site would impact the drainage ditch or any other surface body of water in the vicinity, as the dissolved plume is decreasing in areal extent and in concentration.

3.4.3 Well Survey

According to the water well search report (GeoCheck Report) conducted by Environmental Data Resources, Inc. (EDR), no production wells were found within a 1 mile radius of the Site. The sources/databases searched were: Public Water Systems – Environmental Protection Agency (EPA)/Office of Drinking Water, Public Water Systems Violation and Enforcement Data – EPA/Office of Drinking Water, United States Geological Survey (USGS) Water Wells, California Drinking Water Quality Database, California Oil and Gas Well Locations for Districts 2, 3, 5 and 6. The EDR report is included as Appendix G.

3.4.4 Potential Exposure Pathways and Sensitive Receptors

Potential sources for exposure include residual hydrocarbons in subsurface soils, dissolved hydrocarbons in the groundwater, and volatilization of hydrocarbon compounds to indoor/outdoor air.

On-Site Industrial/Commercial Worker

This receptor represents a full-time worker at the Site that does not perform activities that would involve soil excavation or other work that would require disturbance of the existing or future asphalt and concrete cover of the Site. Although petroleum hydrocarbons have been detected in soil and groundwater beneath the Site, exposure to petroleum hydrocarbon contamination via direct contact/ingestion of soil or groundwater is unlikely because the Site surface is capped with concrete and asphalt. Ingestion of petroleum hydrocarbons via tap water is unlikely because there are no municipal water-supply wells that are likely to be impacted by the residual dissolved phase hydrocarbon plume beneath the Site, and potable water in this area is supplied by the East Bay Municipal Utilities District (EBMUD). The HHRA performed in July 2013 showed that the vapor intrusion to indoor air will not cause significant risk to on-site receptors.

Current or Future On-Site Construction Worker

This receptor represents a worker involved with construction, redevelopment, or underground utility maintenance activities at the Site that may include work such as soil excavation over a limited period of time. It is assumed that depth of excavation or other soil disturbance would be no greater than 15 feet bgs. Current or future construction workers involved in excavation could be exposed to petroleum hydrocarbon contamination through dermal contact or inhalation of volatile hydrocarbons. However, as detailed in Section 4.2.3, the concentrations of detected petroleum hydrocarbon constituents (benzene, ethylbenzene, and naphthalene) in 2009 are significantly less than the utility worker screening levels.

Off-Site Residents/Commercial Workers

It is unlikely that off-Site residents and commercial workers would be exposed to petroleum hydrocarbon impact through direct contact/ingestion of groundwater or soil, or inhalation of volatile petroleum hydrocarbons as petroleum hydrocarbon contamination of the soil and groundwater appear to be limited and contained to Site boundaries to the north, east, and west and potentially partially beneath Julie Ann Way to the south and southeast of the Site. Ingestion of petroleum hydrocarbons via tap water is unlikely as there is no mechanism for deliberate consumption of the groundwater (no on-Site or nearby downgradient water supply wells).

3.5 FATE AND TRANSPORT

Potentially-complete exposure pathways associated with the secondary sources at this Site include the potential for volatilization of hydrocarbon compounds and dermal contact or ingestion of hydrocarbon impacted soil during subsurface construction activities at the Site. An exposure pathway model for the Site is presented in Figure 9.

4.0 No Further Action Request

Based on the information and data presented herein, the Site meets the criteria for closure under the LTCP adopted by the State Water Board in May 2012 and effective August 17, 2012. The LTCP provides general and media–specific criteria for cases that pose a low threat to human health, safety, and the environment and are appropriate for closure pursuant to Health and Safety Code section 25296.10. Cases that meet the criteria in the policy do not require further corrective action and shall be issued a uniform closure letter consistent with Health and Safety Code section 2529.10.

4.1 GENERAL CRITERIA

The unauthorized release is located within the service area of a public water system. The Site is located at the northeast corner of Julie Ann Way and Coliseum Way in the City of Oakland. The EBMUD provides water to the residents and businesses through its municipal water-supply system.

- The unauthorized release consists only of petroleum. The unauthorized release is presumed to be from former USTs, dispensers, and associated product piping. Soil and groundwater sampling results document that the contamination is limited to petroleum hydrocarbons.

- The unauthorized release has been stopped. All USTs (one 10,000-gallon, one 1,000-gallon diesel UST, one 10,000-gallon gasoline UST, and one 550-gallon waste-oil UST) were excavated and removed from the Site in October 1989.

- Free product has been removed to the maximum extent practicable. Measureable amounts of free product have not been reported in the Site wells since February 2010.

- A Conceptual Site Model (CSM) that assesses the nature, extent, and mobility of the release has been developed. This report includes the updated Conceptual Site Model in Section 3.

- Secondary source removal has been addressed. The majority of shallow unsaturated soils (235 tons) containing significant concentrations of petroleum hydrocarbons were excavated from the Site at the time of the UST excavations and removal in 1989. Additionally in October 2000, the vadose zone, saturated soils, and groundwater in the source area and the vicinity of MW-1/MW-1R and MW-7/MW-7R were treated with Fenton's Reagent which significantly reduced petroleum hydrocarbon concentrations.

- Soil and groundwater have been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15. Soil and groundwater samples have been analyzed for MTBE. MTBE has not reported above laboratory MRLs in any soil samples collected from the Site. MTBE was detected in the groundwater at a maximum concentration of 9.9 µg/L in OW-2 in July 2011. MTBE concentrations have declined to be below the WQO in all wells, with the exception of OW-2. The MTBE concentration reported for OW-2 was 8.1 µg/L, and as presented in Section 3.3.5, it is projected to reach WQO in less than two years.

- Nuisance as defined by Water Code section 13050 does not exist at the Site. Conditions at the Site are not injurious to human health, are not offensive to the senses, do not pose an obstruction to the free use of property, will not interfere with the comfortable enjoyment of life, and will not impact the community.

4.2 MEDIA-SPECIFIC CRITERIA

The LTCP includes three media-specific criteria (groundwater, vapor intrusion to indoor air, and direct contact and outdoor air exposure) that must be satisfied. The Site meets all of the media-specific criteria as discussed below.

4.2.1 Groundwater

To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds WQOs must be stable or decreasing in areal extent and meet all of the additional characteristics of one of the five classes of Sites listed in the Low-Threat Closure Policy. As discussed in Section 3.3.4 and 3.3.5, the dissolved petroleum hydrocarbon plume beneath the Site and in the Site vicinity is decreasing in areal extent and concentration. With the exception of TPHd, COCs have decreased to near to or below WQOs in all Site wells. Decreasing TPHd trends are observed in wells MW-1R, MW-4, MW-7R, OW-1, and OW-2. TPHd concentrations have decreased to below WQOs in wells MW-2 and MW-8. TPHd has historically not been detected in wells MW-3, MW-5, and MW-6. TPHd concentrations have declined a minimum of 67 percent since 2009 (when groundwater monitoring at the Site was resumed following Fenton's reagent treatment in 2000 and cessation of post-treatment monitoring in 2002). Additionally, the Site meets Class 5 of groundwater media-specific criteria.

The Class 5 groundwater criteria apply to plumes of all sizes and requires closure if 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, safety, and the environment and that WQOs will be achieved within a reasonable time frame." There are two criteria for Class 5 compliance:

1. The plume poses a low threat to human health, safety and the environment.

- The Site is a former Penske truck leasing facility. All USTs were removed from the Site in 1989. The Site is currently operated as a concrete supply facility. Site features include a paved parking lot, a covered multi-carport, a structure that appears to house a garage and an office, and other miscellaneous storage structures. Because the Site is capped with concrete, the Site poses a low threat to human health and safety due to direct contact with soil and/or groundwater. The Site is in an industrial area and there is no expected change to future land use.

- The remaining petroleum hydrocarbon plume appears to be limited and contained to Site boundaries to the north, east, and west and potentially partially beneath Julie Ann Way to the south and southeast of the Site. With the exception of TPHd, COCs have decreased to near to or below WQOs in all Site wells. Decreasing TPHd trends are observed in wells MW-1R, MW-4, MW-7R, OW-1, and OW-2. TPHd concentrations have decreased to below WQOs in wells MW-2 and MW-8. TPHd concentrations have declined a minimum of 67 percent since 2009.

- There is no free product present at the Site. Measureable amounts of free product have not been reported in Site wells since February 2010.

- There are no municipal wells within 1,000 feet from the defined plume boundary. An unnamed drainage ditch is located immediately west of the Site, parallel to Coliseum Way. The ditch drains to a larger engineered water channel located northwest of the Site, which appears to drain to the bay; however, petroleum hydrocarbon concentrations in MW-8, the furthest downgradient well located between the dissolved plume and the drainage ditch have been below WQOs since July 2011. Therefore, it is unlikely that the residual petroleum hydrocarbon plume beneath the Site would impact the drainage ditch or any other surface body of water in the vicinity, as the dissolved plume is decreasing in areal extent and in concentration.

2. WQOs will be achieved in a "reasonable time frame."

- This criterion is also met – WQOs will be achieved within a reasonable time. This "reasonable time frame" requirement has been interpreted to mean "prior to any potential beneficial use" of the impacted groundwater. As discussed previously in Section 3.3.5, the trend analysis preformed on TPHd concentrations in MW-1R, MW-4, OW-1, and OW-2 indicates that WQOs will be met within nine years. Due to fluctuating TPHd concentrations in MW-7R, a timeframe to reach WQOs could not be calculated; however, concentrations have decreased over 67 percent in the well from the historical maximum concentration of 12,000 µg/L in July 2010. In terms of potential beneficial use, it is highly improbable that the groundwater in the immediate vicinity will have any beneficial use. There are no active water-supply wells located within 1,000 feet of the Site.

4.2.2 Vapor Intrusion to Indoor Air

To satisfy the media-specific criteria for vapor intrusion to indoor air, one of three listed criteria must be met. The Site meets the following criteria for vapor intrusion to indoor air:

A Site-specific risk assessment for the vapor intrusion pathway is conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency.

A HHRA was performed in July 2013 to estimate potential health risks to current and future on-Site commercial workers and hypothetical future residents as a result of potential vapor intrusion emanating from both soil and groundwater. To be conservative, the maximum detected concentration of all COCs were used as the EPCs. The advanced groundwater and soil gas J&E models were used to estimate potential indoor health risks for the RME scenarios for an on-Site commercial/industrial worker and a hypothetical on-Site resident. All of the calculated RME ILECRs to all receptors were below 1E-05 and all RME His are below one. Therefore, the Site is suitable for commercial and residential land uses without any significant risks to on-Site receptors from vapor intrusion. Stantec's full HHRA report is included as Appendix D.

4.2.3 Direct Contact and Outdoor Air

To satisfy the media-specific criteria for direct contact and outdoor air, one of three listed criteria must be met. The Site meets the following criteria for direct contact and outdoor air:

Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 in the Low-Threat Closure Policy for the specified depth bgs. The concentration limits for 0 to 5 feet bgs protect from ingestion of soil, dermal contact with soil, and inhalation of volatile soil emissions and inhalation of particulate emissions. The 5 to 10 feet bgs concentration limits protect from inhalation of volatile soil emissions. Both the 0 to 5 and 5 to 10 feet bgs concentration limits for the appropriate site classification (Residential or Commercial) shall be satisfied. In addition, if exposure to construction workers or utility trench workers is reasonably anticipated, the concentration limits for Utility Worker shall also be satisfied.

The Site is currently operated as a concrete company corporate office and truck yard; therefore, commercial/Industrial concentration limits from Table 1 of the Low Threat Closure Policy are listed in the table below and are compared to maximum concentrations detected in soil samples collected at the Site.

Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health per Low-Threat Closure Policy

Chemical	Commercial/ Industrial[1] 0 to 5 feet bgs (mg/kg)	Commercial/ Industrial[1] 5 to 10 feet bgs (mg/kg)	Utility Worker[1] 0 to 10 feet bgs (mg/kg)	Maximum Concentration Detected[2] 0 to 5 feet bgs (mg/kg)	Maximum Concentration Detected[3] 5 to 10 feet bgs (mg/kg)
Benzene	8.2	12	14	1.6	36
Ethylbenzene	89	134	314	0.13	78
Naphthalene	45	45	219	0.085	0.610
PAH	0.063	0.68	NA	NA	NA

Notes:

1. Soil screening levels are from the Low-Threat Underground Storage Tank Case Closure Policy (Table 1) adopted in May 2012 and effective August 17, 2012 (Commercial / Industrial concentration limits).
2. Maximum detected concentrations are for soil samples collected at the site between 0-5 feet bgs.
3. Maximum detected concentrations are for soil samples collected at the site between 5-10 feet bgs.

NA = not analyzed.

As summarized in the table above, benzene, ethylbenzene, and naphthalene have not been detected at concentrations above commercial land use screening levels between the depths of 0 and 5 feet bgs. Additionally, ethylbenzene and naphthalene have not been detected at concentrations above commercial screening levels at depths between 5 and 10 feet bgs. Benzene was detected over the 5 to 10 feet bgs screening level of 12 mg/kg in two soil samples collected at 8 feet bgs during UST removal activities in 1989 (32 mg/kg in sample #3 and 36 mg/kg in sample #4). However, the UST samples were collected a quarter-century ago and concentrations have most likely decreased due to natural attenuation. Additionally, the remedial action (Fenton's reagent treatment) performed at the Site in 2000, reduced petroleum hydrocarbon concentrations in the subsurface. Following the remedial action, only one boring in the 2009 soil assessment reported detections of benzene and ethylbenzene (SB-4). The detected benzene and ethylbenzene concentrations of 4.8 mg/kg and 1.0 mg/kg, respectively, were less than the utility worker screening levels at depths between the surface and 10 feet bgs (see Table 4). The maximum detected soil concentration of naphthalene in 2009 was 0.61 mg/kg, significantly less than the utility worker screening level of 219 mg/kg for depths between the surface and 10 feet bgs.

5.0 Recommendations

Based on an evaluation of Site-specific data, this Site does not appear to pose a significant threat to human health, safety, or the environment. Site conditions meet all the general and media-specific criteria established in the LTCP; they satisfy the case-closure requirements of Health and Safety Code section 25296.10; and they are consistent with Resolution 92-49 that requires that cleanup goals be met within a reasonable timeframe. A UST Case Closure Summary Form and LTCP Checklist are included as Appendix H.

Upon receiving approval of this NFAR from the ACEH, Stantec will prepare and submit a work plan for the destruction of the groundwater monitoring wells (MW-1R, MW-2 through MW-6, MW-7R, MW-8, OW-1, and OW-2) associated with the Site.

6.0 References

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TABLES

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec

TABLE 1

WELL CONSTRUCTION DETAILS

Former Penske Truck Leasing Facility -
725 Julie Ann Way , Oakland, California

Well	Latitude	Longitude	Total Depth (feet bgs)	Casing Diameter (inches)	Screen Slot Size (inches)	Screen Length (feet)	Screen Interval (feet bgs)	Top of Casing Elevation
MW-1R	37.7597443	-122.20913	20	2	0.02	16.5	3.5 - 20.0	11.02
MW-2	37.7599047	-122.20890	30	2	0.02	20	10.0 - 30.0	11.87
MW-3	37.7599598	-122.20902	35	2	0.02	25	10.0 - 35.0	11.79
MW-4	37.7598508	-122.20922	33.5	2	0.02	27	6.5 - 33.5	10.88
MW-5	37.7600163	-122.20942	35	2	0.02	25	6.0 - 31.0	10.41
MW-6	37.7601553	-122.20923	25	2	0.02	10	15.0 - 25.0	11.05
MW-7R	37.7597618	-122.2092	20	2	0.02	16.5	3.5 - 20.0	10.84
MW-8	37.7598006	-122.20932	28	2	0.02	18	10.0 - 28.0	10.75
OW-1	37.7598218	-122.20913	16.0	2	0.02	10	6.0 - 16.0	10.75
OW-2	37.7598650	-122.20911	16.0	2	0.02	10	6.0 - 16.0	11.03

California State Plane Coordinates, NAVD88; survey conducted by Mid Coast Engineers, Watsonville, California, April 26, 2011.

ft. bgs = feet below ground surface

TABLE 2
GROUNDWATER ELEVATION DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	Elevation (Feet)[(a)]	Depth to Water (Feet)	Groundwater Elevation (Feet)
MW-1	02/20/97	11.02	5.41	5.61
	05/28/97		5.98	5.04
	09/19/97		6.45	4.57
	11/17/97		6.14	4.88
	02/27/98		4.83	6.19
	05/27/98		6.42	4.60
	10/01/98		6.49	4.53
	12/22/98		6.35	4.67
	03/14/00		4.95	6.07
	06/28/00		5.54	5.48
	09/14/00		6.41	4.61
	12/11/00		6.08	4.94
	03/14/01		6.11	4.91
	06/13/01		5.68	5.34
	08/29/01		6.13	4.89
	12/12/01		5.31	5.71
	04/11/02		5.21	5.81
	12/05/02		5.85	5.17
	04/22/09		5.03	5.99
	Well MW-1 abandoned on January 11, 2010 and replaced with well MW-1R on January 12, 2010.			
MW-1R	02/08/10	11.02	4.41	6.61
	05/10/10		4.58	6.44
	07/16/10		4.98	6.04
	10/04/10		5.57	5.45
	02/03/11		4.92	6.10
	04/11/11		4.40	6.62
	07/25/11		4.84	6.18
	12/06/11		5.29	5.73
	03/22/12		4.35	6.67
	09/24/12		5.60	5.42
	03/04/13		5.15	5.87
MW-2	02/20/97	11.87	6.26	5.61
	05/28/97		6.65	5.22
	09/19/97		6.90	4.97
	11/17/97		6.75	5.12
	02/27/98		5.31	6.56
	05/27/98		5.87	6.00
	10/01/98		6.95	4.92
	12/22/98		6.70	5.17
	03/15/00		5.45	6.42
	06/28/00		6.37	5.50
	09/14/00		6.86	5.01
	12/11/00		7.33	4.54
	03/14/01		5.75	6.12
	06/13/01		6.33	5.54
	08/29/01		6.71	5.16
	12/12/01		5.92	5.95
	04/11/02		5.88	5.99
	12/05/02		6.56	5.31
	04/22/09		5.52	6.35
	02/08/10		5.28	6.59
	05/10/10		5.46	6.41
	07/16/10		5.80	6.07
	10/04/10		5.32	6.55
	02/03/11		5.83	6.04
	04/11/11		5.35	6.52
	07/25/11		5.76	6.11
	12/06/11		6.16	5.71
	03/22/12		5.40	6.47
	09/24/12		6.38	5.49
	03/04/13		5.95	5.92

TABLE 2
GROUNDWATER ELEVATION DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	Elevation (Feet)[(a)]	Depth to Water (Feet)	Groundwater Elevation (Feet)
MW-3	02/20/97	11.79	6.36	5.43
	05/28/97		6.62	5.17
	09/19/97		6.83	4.96
	11/17/97		6.77	5.02
	02/27/98		5.38	6.41
	05/27/98		6.05	5.74
	10/01/98		6.95	4.84
	12/22/98		6.73	5.06
	03/14/00		NM	NM
	06/28/00		6.37	5.42
	09/14/00		7.06	4.73
	12/11/00		6.68	5.11
	03/14/01		5.85	5.94
	06/13/01		6.34	5.45
	08/29/01		6.70	5.09
	12/12/01		5.95	5.84
	04/11/02		5.86	5.93
	12/05/02		6.55	5.24
	04/22/09		NM	NM
	02/08/10		5.31	6.48
	05/10/10		5.52	6.27
	07/16/10		5.90	5.89
	10/04/10		6.28	5.51
	02/03/11		5.33	6.46
	04/11/11		5.37	6.42
	07/25/11		5.71	6.08
	12/06/11		6.17	5.62
	03/22/12		5.36	6.43
	09/24/12		6.38	5.41
	03/04/13		6.00	5.79
MW-4	02/20/97	10.88	5.29	5.59
	05/28/97		5.66	5.22
	09/19/97		6.00	4.88
	11/17/97		6.06	4.82
	02/27/98		4.66	6.22
	05/27/98		5.98	4.90
	10/01/98		5.23	5.65
	12/22/98		6.57	4.31
	03/14/00		4.86	6.02
	06/28/00		5.55	5.33
	09/14/00		6.05	4.83
	12/11/00		5.93	4.95
	03/14/01		5.04	5.84
	06/13/01		5.25	5.63
	08/29/01		5.89	4.99
	12/12/01		5.14	5.74
	04/11/02		4.96	5.92
	12/05/02		5.68	5.20
	04/22/09		4.67	6.21
	02/08/10		4.71	6.17
	05/10/10		4.55	6.33
	07/16/10		5.12	5.76
	10/04/10		5.49	5.39
	02/03/11		5.13	5.75
	04/11/11		4.29	6.59
	07/25/11		4.04	6.84
	12/06/11		5.34	5.54
	03/22/12		4.67	6.21
	09/24/12		5.50	5.38
	03/04/13		5.05	5.83

TABLE 2
GROUNDWATER ELEVATION DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	Elevation (Feet)[(a)]	Depth to Water (Feet)	Groundwater Elevation (Feet)
MW-5	02/20/97	10.41	4.68	5.73
	05/28/97		5.21	5.20
	09/19/97		5.43	4.98
	11/17/97		5.28	5.13
	02/27/98		4.10	6.31
	05/27/98		5.40	5.01
	10/01/98		5.42	4.99
	12/22/98		5.40	5.01
	03/14/00		NM	NM
	06/28/00		5.11	5.30
	09/14/00		NM	NM
	12/11/00		5.48	4.93
	03/14/01		4.57	5.84
	06/13/01		5.05	5.36
	08/29/01		5.34	5.07
	12/12/01		4.79	5.62
	04/11/02		4.66	5.75
	12/05/02		5.32	5.09
	04/22/09		NM	NM
	02/08/10		4.13	6.28
	05/10/10		4.20	6.21
	07/16/10		4.44	5.97
	10/04/10		4.97	5.44
	02/03/11		4.51	5.90
	04/11/11		4.00	6.41
	07/25/11		4.44	5.97
	12/06/11		4.82	5.59
	03/22/12		4.18	6.23
	09/24/12		5.06	5.35
	03/04/13		4.69	5.72
MW-6	02/20/97	11.05	5.38	5.67
	05/28/97		5.93	5.12
	09/19/97		6.15	4.90
	11/17/97		6.06	4.99
	02/27/98		4.74	6.31
	05/27/98		5.40	5.65
	10/01/98		6.37	4.68
	12/22/98		6.06	4.99
	03/14/00		NM	NM
	06/28/00		6.71	4.34
	09/14/00		6.17	4.88
	12/11/00		NM	NM
	03/14/01		5.11	5.94
	06/13/01		6.65	4.40
	08/29/01		6.00	5.05
	12/12/01		5.33	5.72
	04/11/02		5.15	5.90
	12/05/02		5.90	5.15
	04/22/09		NM	NM
	02/08/10		4.56	6.49
	05/10/10		4.79	6.26
	07/16/10		5.03	6.02
	10/04/10		5.57	5.48
	02/03/11		5.24	5.81
	04/11/11		4.71	6.34
	07/25/11		5.05	6.00
	12/06/11		5.49	5.56
	03/22/12		4.74	6.31
	09/24/12		5.61	5.44
	03/04/13		5.35	5.70

TABLE 2
GROUNDWATER ELEVATION DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	Elevation (Feet)[(a)]	Depth to Water (Feet)	Groundwater Elevation (Feet)
MW-7	02/20/97	10.84	5.70	5.14
	05/28/97		5.46	5.38
	09/19/97		5.91	4.93
	11/17/97		5.59	5.25
	02/27/98		4.68	6.16
	05/27/98		5.17	5.67
	10/01/98		5.80	5.04
	12/22/98		5.78	5.06
	03/14/00		4.50	6.34
	06/28/00		5.51	5.33
	09/14/00		5.93	4.91
	12/11/00		5.72	5.12
	03/14/01		4.58	6.26
	06/13/01		5.18	5.66
	08/29/01		5.53	5.31
	12/12/01		4.73	6.11
	04/11/02		4.68	6.16
	12/05/02		5.25	5.59
	04/22/09		4.58	6.26
	Well MW-7 abandoned on January 11, 2010 and replaced with well MW-7R on January 12, 2010.			
MW-7R	02/08/10	10.84	4.28	6.56
	05/10/10		4.55	6.29
	07/16/10		4.82	6.02
	10/04/10		5.42	5.42
	02/03/11		4.98	5.86
	04/11/11		4.63	6.21
	07/25/11		4.78	6.06
	12/06/11		5.28	5.56
	03/22/12		4.32	6.52
	09/24/12		5.44	5.40
	03/04/13		5.19	5.65
MW-8	02/20/97	10.75	5.10	5.65
	05/28/97		5.68	5.07
	09/19/97		5.95	4.80
	11/17/97		5.91	4.84
	02/27/98		4.50	6.25
	05/27/98		6.10	4.65
	10/01/98		6.13	4.62
	12/22/98		6.10	4.65
	03/14/00		5.01	5.74
	06/28/00		5.47	5.28
	09/14/00		5.99	4.76
	12/11/00		5.84	4.91
	03/14/01		4.90	5.85
	06/13/01		5.40	5.35
	08/29/01		5.80	4.95
	12/12/01		5.05	5.70
	04/11/02		4.95	5.80
	12/05/02		5.42	5.33
	04/22/09		4.94	5.81
	02/08/10		4.31	6.44
	05/10/10		4.54	6.21
	07/16/10		4.80	5.95
	10/04/10		5.38	5.37
	02/03/11		5.93	4.82
	04/11/11		4.45	6.30
	07/25/11		4.81	5.94
	12/06/11		5.32	5.43
	03/22/12		4.46	6.29
	09/24/12		5.55	5.20
	03/04/13		5.09	5.66

TABLE 2
GROUNDWATER ELEVATION DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	Elevation (Feet)[(a)]	Depth to Water (Feet)	Groundwater Elevation (Feet)
OW-1	03/15/00	10.75	4.47	6.28
	06/29/00		4.95	5.80
	08/29/01		5.01	5.74
	09/14/00		5.31	5.44
	12/11/00		5.17	5.58
	03/14/01		4.54	6.21
	06/13/01		4.75	6.00
	12/12/01		4.80	5.95
	04/11/02		4.52	6.23
	12/05/02		5.13	5.62
	04/22/09		4.19	6.56
	02/08/10		4.20	6.55
	05/10/10		4.13	6.62
	07/16/10		4.31	6.44
	10/04/10		4.64	6.11
	02/03/11		4.45	6.30
	04/11/11		4.01	6.74
	07/25/11		4.21	6.54
	12/06/11		4.55	6.20
	03/22/12		4.55	6.20
	09/24/12		4.70	6.05
	03/04/13		4.49	6.26
OW-2	03/15/00	11.03	4.76	6.27
	06/29/00		5.15	5.88
	09/14/00		5.60	5.43
	12/11/00		5.45	5.58
	03/14/01		4.77	6.26
	06/13/01		5.01	6.02
	08/29/01		5.31	5.72
	12/12/01		5.10	5.93
	04/11/02		4.83	6.20
	12/05/02		5.42	5.61
	04/22/09		4.52	6.51
	02/08/10		4.41	6.62
	05/10/10		4.49	6.54
	07/16/10		4.47	6.56
	10/04/10		4.93	6.10
	02/03/11		4.65	6.38
	04/11/11		4.28	6.75
	07/25/11		4.51	6.52
	12/06/11		4.85	6.18
	03/22/12		4.58	6.45
	09/24/12		5.00	6.03
	03/04/13		4.83	6.20

Notes:

(a) - All well elevations surveyed to the NAV 88 datum on April 26, 2011.
Destroyed wells MW-1 and MW-7 were assumed to have the same elevation as the replacement wells.
NM - Not Measured

TABLE 3
Historical Soil Analytical Results - 1989 through 1994
Former Penske Truck Leasing Facility
725 Julie Ann Way, Oakland, California

			Method 8015 Purge and Trap (mg/kg)	Method 8015B Extraction (mg/kg)	503E (mg/kg)	Method 8020 - Purge and Trap (mg/kg)				Method 6010 (mg/kg)				Method 8240 (mg/kg)	Sample Location
Sample ID	Depth (feet bgs)	Date	TPHg	TPHd	TOG	Benzene	Ethylbenzene	Toluene	Xylenes	Total Cadmium	Total Chromium	Total Lead	Total Zinc	VOCs	
Underground Storage Tanks Excavation Soil Samples															
1	9	10/10/1989	**161**	**2,300**	--	**0.46**	**0.27**	<0.05	**0.09**	--	--	--	--	--	diesel UST excavation
2	9	10/10/1989	**430**	**4,400**	--	**10.3**	**21.2**	**6.5**	**36**	--	--	--	--	--	gasoline UST excavation
3	8	10/10/1989	**1,410**	**13,000**	**54***	**32**	**79**	**9.1**	**66**	--	--	--	--	--	diesel UST excavation
4	8	10/10/1989	**2,100**	**2,800**	--	**36**	**110**	**38**	**185**	--	--	--	--	--	gasoline UST excavation
5	8	10/10/1989	**830**	**4,200**	**35***	**12**	**38**	**11**	**61**	--	--	--	--	--	diesel UST excavation
6	9.5	10/10/1989	**22.4**	**840**	--	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	diesel UST excavation
7	7.5	10/10/1989	**97**	**240**	**7***	**0.16**	**0.08**	**0.05**	<0.05	<0.5*	**46***	**11***	**36***	ND (A,B)	waste-oil UST excavation
Soil Borings															
MW-1	5	9/25/1990	**2.0**	<10	--	**0.04**	**0.015**	**0.01**	**0.051**	--	--	--	--	--	down-gradient of diesel UST
	10	9/25/1990	**820**	**760**	--	**1**	**0.56**	**0.46**	**4.1**	--	--	--	--	--	
	15	9/25/1990	**2.0**	**980**	--	**0.53**	**2.2**	**0.93**	**4.5**	--	--	--	--	--	
MW-2	5	9/26/1990	**1.0**	**170**	**1,400**	**0.14**	**0.02**	**0.006**	0.031	--	--	--	--	C	waste-oil UST excavation
	10	9/26/1990	<1	**32**	<50	<0.003	<0.003	<0.003	<0.003	--	--	--	--	ND (A)	
	15	9/26/1990	**4.0**	**85**	**68**	<0.003	<0.003	<0.003	<0.003	--	--	--	--	ND (A)	
MW-3	5	9/27/1990	<1	<10	--	**0.005**	<0.003	<0.003	<0.003	--	--	--	--	--	diesel UST excavation
	10	9/27/1990	**26**	**190**	--	<0.003	**0.018**	**0.007**	**0.096**	--	--	--	--	--	
	15	9/27/1990	**44**	**150**	--	**0.025**	**0.18**	**0.087**	**0.33**	--	--	--	--	--	
	20	9/27/1990	<1	<10	--	<0.003	**0.017**	<0.003	**0.005**	--	--	--	--	--	
BH-1	10	9/25/1990	<1	<10	--	**0.01**	<0.003	<0.0033	**0.006**	--	--	--	--	--	gasoline UST excavation
	15	9/25/1990	**380**	**460**	--	**3.2**	**15**	**4.4**	**28**	--	--	--	--	--	
	20	9/25/1990	**150**	<10	--	**2.1**	**8.1**	**2.1**	**12**	--	--	--	--	--	
BH-2	10	9/27/1990	<1	<10	<50	<0.003	<0.003	<0.003	<0.003	--	--	--	--	ND (A)	waste-oil UST excavation
	15	9/27/1990	<1	**36**	<50	<0.003	<0.003	<0.003	<0.003	--	--	--	--	ND (A)	
BH-3	5	9/28/1990	<1	**56**	--	**0.004**	**0.13**	**0.004**	**0.019**	--	--	--	--	--	gasoline UST excavation
	10	9/28/1990	**22**	**54**	--	<0.003	**0.015**	**0.006**	**0.057**	--	--	--	--	--	
	15	9/28/1990	**35**	**200**	--	**0.049**	**0.44**	**0.33**	**1.9**	--	--	--	--	--	
MW-4	5	2/2/1993	**410**	**4,100**	--	**1.6**	<0.15	**8.3**	**1.4**	--	--	--	--	--	down-gradient of diesel UST
	10	2/2/1993	**26**	**320**	--	**0.38**	**0.009**	**0.7**	**0.56**	--	--	--	--	--	
	15	2/2/1993	**6.0**	**170**	--	**0.022**	**0.045**	**0.045**	**0.15**	--	--	--	--	--	
MW-5	5	2/2/1993	<1	**21**	--	<0.003	<0.003	<0.003	<0.003	--	--	--	--	--	north portion of site
	10	2/2/1993	<1	<1	--	<0.003	<0.003	<0.003	<0.003	--	--	--	--	--	
	15	2/2/1993	<1	**130**	--	<0.003	<0.003	<0.003	<0.003	--	--	--	--	--	
BH-4	5	7/27/1994	**5.0**	<10	--	**0.008**	**0.100**	<0.005	**0.16**	--	--	--	--	--	diesel UST excavation
	10	7/27/1994	**5.0**	**1,300**	--	<0.005	**0.018**	**0.013**	**0.079**	--	--	--	--	--	
	15	7/27/1994	**11**	**1,200**	--	**0.009**	**0.098**	**0.037**	**0.31**	--	--	--	--	--	

TABLE 3
Historical Soil Analytical Results - 1989 through 1994
Former Penske Truck Leasing Facility
725 Julie Ann Way, Oakland, California

			Method 8015 Purge and Trap (mg/kg)	Method 8015B Extraction (mg/kg)	503E (mg/kg)	Method 8020 - Purge and Trap (mg/kg)				Method 6010 (mg/kg)				Method 8240 (mg/kg)	Sample Location
Sample ID	Depth (feet bgs)	Date	TPHg	TPHd	TOG	Benzene	Ethylbenzene	Toluene	Xylenes	Total Cadmium	Total Chromium	Total Lead	Total Zinc	VOCs	
Soil Borings (continued)															
MW-6	7	7/27/1994	**7.0**	<10	--	<0.005	**0.03**	**0.006**	**0.067**	--	--	--	--	--	north portion of site
	11	7/27/1994	**2.0**	<10	--	<0.005	**0.013**	<0.005	**0.036**	--	--	--	--	--	
	13	7/27/1994	<1	<10	--	<0.005	**0.017**	<0.005	**0.032**	--	--	--	--	--	
MW-7	5	7/27/1994	<1	**90**	--	<0.005	**0.016**	**0.006**	**0.030**	--	--	--	--	--	down-gradient of diesel UST
	10	7/27/1994	<1	**3,300**	--	**0.011**	**0.017**	**0.005**	**0.031**	--	--	--	--	--	
	15	7/27/1994	**31**	**5,500**	--	<0.025	**0.16**	**0.200**	**0.65**	--	--	--	--	--	
MW-8	5.5	7/26/1994	**18**	**50**	--	**0.039**	**0.23**	**0.3**	**0.85**	--	--	--	--	--	west portion of site
	10.5	7/26/1994	**5.0**	**41**	--	<0.005	**0.011**	<0.005	**0.20**	--	--	--	--	--	
	15.5	7/26/1994	**1.0**	<10	--	<0.005	**0.013**	**0.005**	**0.037**	--	--	--	--	--	

Notes:
mg/kg - milligrams per kilogram
TPHd- Total Petroleum Hydrocarbons as diesel
TPHg - Total Petroleum Hydrocarbons as gasoline
TOG - Total Oil and Gas
VOCS - Volatile Organic Compounds
Bold values indicate values that exceed the method reporting limit.
* = Analysis method unknown
A = For detection limits of individual compounds, see certified laboratory reports
B = Sample also analyzed for Purgeable Hydrocarbons by EPA 8010 - all analytes were non-detect
C = Detected: acetone (0.072 mg/kg); benzene (0.045 mg/kg); toluene (0.03 mg/kg); xylenes (0.015 mg/kg)
-- = Analysis not performed on sample
< - indicates sample detected at concentration less than the reporting limit indicated

TABLE 4
Historical Soil Analytical Results - Post Remediation
Former Penske Truck Leasing Facility
725 Julie Ann Way, Oakland, California

			Method 8260B* (mg/kg)	Method 8015B (mg/kg)	Method 8260B* (mg/kg)							Method 8260B (µg/kg)
Sample ID	Depth (feet bgs)	Date	TPHg	TPHd	Benzene	Ethylbenzene	Toluene	Xylenes	MTBE	Ethylene Dichloride**	Ethylene Dibromide	Naphthalene
Soil Borings												
SB-1	4	4/21/2009	**210**	**170**	<0.99	<0.99	<0.99	<2.0	<0.99	<0.99	<0.99	**0.085**
	8	4/21/2009	**64**	**460**	<0.98	<0.99	<0.99	<2.0	<0.99	<0.99	<0.99	<0.036
	8.5	4/21/2009	**7.8**	**530**	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<0.048
SB-2	5	4/21/2009	<0.24	**9.7**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.004	<0.004	<0.0098
	8	4/21/2009	**97**	**370**	<0.98	<0.98	<0.98	<2.0	<0.98	<0.98	<0.98	<0. 45
	12	4/21/2009	**5.0**	**250**	<0.016	<0.016	<0.016	<0.033	<0.016	<0.016	<0.016	<0.43
SB-3	5	4/21/2009	**0.26**	**20**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.004	<0.004	<0.0097
	8	4/21/2009	<1.2	**2.5**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.004	<0.004	<0.0097
	9	4/21/2009	**55**	**370**	<0.99	<0.99	<0.99	<2.0	<0.99	<50	<50	<0.050
	12	4/21/2009	**20**	**270**	<0.022	<0.022	<0.022	<0.043	<0.022	<0.022	<0.022	**0.06**
SB-4	4.5	4/21/2009	**3.1**	**1,600**	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<0.040
	6.5	4/21/2009	**190**	**470**	**4.8**	**1.0**	<0.98	<2.0	<0.98	<0.98	<0.98	**0.61**
	8.5	4/21/2009	**320**	**450**	**2.8**	<0.94	<0.94	<1.9	<0.094	<0.094	<0.094	**0.37**
	12	4/21/2009	**15**	**280**	**0.025**	<0.023	<0.023	<0.046	<0.023	<0.023	<0.023	**0.13**
SB-5	5	4/21/2009	**95**	**1,000**	<0.94	<0.94	<0.94	<1.9	<0.94	<0.94	<0.94	**0.052**
	6.5	4/21/2009	**170**	**490**	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	**0.055**
	8.5	4/21/2009	**87**	**820**	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<0.97	**0.055**
	12	4/21/2009	**9.3**	**33**	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.049
SB-6	5	4/22/2009	**210**	**12,000**	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	**0.063**
	6.5	4/22/2009	**230**	**500**	<0.96	<0.96	<0.96	<1.9	<0.96	<0.96	<0.96	**0.069**
SB-7	5	4/22/2009	<0.25	**130**	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.0049	<0.0049	<0.0098
	8	4/22/2009	**1.9**	**670**	<0.0047	<0.0047	<0.0047	<0.0093	<0.0047	<0.0047	<0.0047	<0.049
	12	4/22/2009	**4.7**	**54**	<0.011	<0.011	<0.011	<0.021	<0.0011	<0.0011	<0.0011	<0.048
	16	4/22/2009	**66**	**170**	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.043
SB-8	5	4/22/2009	<0.24	**120**	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.0048	<0.0048	<0.0099
	7.5	4/22/2009	**4.1**	**220**	<0.0047	<0.0047	<0.0047	<0.0095	<0.0047	<0.0047	<0.0047	<0.010
	12	4/22/2009	**1.4**	**110**	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0047	<0.0047	<0.0099
	17	4/22/2009	**<0.25**	**2.3**	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	<0.0050	<0.0098

TABLE 4
Historical Soil Analytical Results - Post Remediation
Former Penske Truck Leasing Facility
725 Julie Ann Way, Oakland, California

Sample ID	Depth (feet bgs)	Date	Method 8260B* (mg/kg)	Method 8015B (mg/kg)	Method 8260B* (mg/kg)							Method 8260B (µg/kg)
			TPHg	TPHd	Benzene	Ethylbenzene	Toluene	Xylenes	MTBE	Ethylene Dichloride**	Ethylene Dibromide	Naphthalene
Soil Borings												
MW-1R	5	1/11/2010	<0.96	**31**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	--	--
MW-7R	5	1/11/2010	**29**	**730**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	--	--

Notes:
*: Method 8260B with California Leaking Underground Fuel Test Method
** Ethylene dichloride reported as 1,2-Dichloroethane
TPHd- Total Petroleum Hydrocarbons as diesel
TPHg - Total Petroleum Hydrocarbons as gasoline
MtBE - methyl tertiary butyl ether
mg/kg - milligrams per kilogram
ug/kg - Micrograms per kilogram
Bold values indicate values that exceed the method reporting limit.
< - indicates sample detected at concentration less than the reporting limit indicated

TABLE 5
Grab Groundwater Analytical Results
Former Penske Truck Leasing Facility
725 Julie Ann Way, Oakland, California

Sample ID	Date	Static Depth to Water (ft. bgs)	Method 8260B* (µg/L)	Method 8015B (µg/L)	Method 8260B* (µg/L)							Method 8260B* (µg/L)
			TPHg	TPHd	Benzene	Ethylbenzene	Toluene	Xylenes	MTBE	Ethylene Dichloride	Ethylene Dibromide	Naphthalene
SB-1-W	4/21/2009	5.5	**3400** H	**43,000**	**6.2** H	**6.0** H	<5.0 H	<10 H	**5.9** H	<5.0 H	<5.0 H	<10 H
SB-2-W	4/21/2009	9.0	**5,600**	**72,000**	<25	<25	<25	<50	<25	<25	<25	<50
SB-3-W	4/21/2009	9.5	**17,000**	**190,000**	<25	<25	<25	<50	<25	<25	<25	<50
SB-4-W	4/21/2009	10.5	**100,000**	**800,000**	**12,000**	**190**	<100	<200	<100	<100	<100	**950**
SB-5-W	4/21/2009	9.5	**300,000**	**4,000,000**	<500	<500	<500	<1,000	<500	<500	<500	<1,000
SB-6-W	4/22/2009	9.0	**37,000**	**730,000**	<50	<50	<50	<100	<50	<50	<50	<100
SB-7-W	4/22/2009	11	<1,000	**90,000**	**37**	<10	<10	<20	<10	<10	<10	<20
SB-8-W	4/22/2009	19	**54**	--	<0.50	<0.50	<0.50	<1.0	**0.68**	<0.50	<0.50	<1.0

Notes:
*: Method 8260B with California Leaking Underground Fuel Test Method
ft. bgs - feet below ground surface
µg/L - Micrograms per Liter
Bold values indicate values that exceed the method reporting limit.
< - indicates sample detected at concentration less than the reporting limit indicated
H=Sample was prepped or analyzed beyond the specified holding time

TABLE 6
FIELD PARAMETER DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	pH (unitless)	DO (mg/L)	ORP (millivolts)
MW-1	12/28/99	7.92	0.87	-211
	03/14/00	7.29	1.12	-23
	06/28/00	8.26	0.55	-248
	09/14/00	6.92	0.36	-316
	12/11/00	7.05	1.34	-55
	03/14/01	7.07	1.24	-66
	06/13/01	7.05	1.20	-109
	08/29/01	7.78	NM	-63
	12/12/01	6.93	1.28	-4
	04/12/02	6.72	0.37	-56
	12/05/02	7.01	NM	-79
	04/22/09	6.94	0.08	-57/102
	Well MW-1 abandoned on January 11, 2010 and replaced with well MW-1R on January 12, 2010.			
MW-1R	02/08/10	7.27	1.07	NM
	07/16/10	7.14	0.15	-139/-152
	02/03/11	6.92	0.59	-225/-234
	07/25/11	7.32	0.20	-155/-139
	03/22/12	6.84	0.83/0.50	-4/-58
	09/24/12	6.55	0.81/0.62	-114/-129
	03/04/13	6.84	0.47/0.81	46/-13
MW-2	12/28/99	7.94	0.96	-38
	03/15/00	7.28	1.43	-255
	06/28/00	7.52	0.89	-221
	09/14/00	7.44	0.61	-310
	12/11/00	7.28	1.96	24
	03/14/01	7.34	1.46	11
	06/13/01	7.07	0.95	-12
	08/29/01	7.24	NM	70
	12/12/01	7.13	0.88	13
	04/11/02	7.25	0.66	126
	12/05/02	7.01	0.14	-32
	04/22/09	6.91	0.17	143/-12
	02/08/10	6.91	3.56	NM
	07/16/10	7.19	0.40	104/72
	02/04/11	7.36	1.03	174/196
	07/25/11	6.97	0.29	132/-8
	03/22/12	7.36	0.48/0.79	215/227
	09/24/12	7.08	0.53/0.59	-8/14
	03/04/13	6.97	1.09/1.31	216/189

TABLE 6
FIELD PARAMETER DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	pH (unitless)	DO (mg/L)	ORP (millivolts)
MW-4	12/28/99	7.38	0.80	-201
	03/14/00	6.97	2.11	35
	06/28/00	6.87	3.57	-34
	09/14/00	7.23	1.06	16
	12/11/00	6.99	2.27	74
	03/14/01	6.81	1.28	-91
	06/13/01	6.97	0.97	-30
	08/29/01	7.45	NM	104
	12/13/01	6.88	0.34	199
	04/12/02	6.77	0.95	12
	12/05/02	6.81	0.56	-13
	04/22/09	6.71	0.16	-67/-68
	02/08/10	6.92	2.38	NM
	02/04/11	7.68	0.77	-7/80
	07/25/11	7.41	0.51	-118/-123
	03/22/12	7.81	1.01/0.29	119/171
	09/24/12	6.80	0.93/0.32	78/37
	03/04/13	6.79	0.60/0.58	126/98
MW-5	12/28/99	7.55	1.14	-118
	06/28/00	7.57	1.79	-103
	12/11/00	7.28	4.14	-11
	06/13/01	7.04	3.61	-44
	12/13/01	7.05	3.26	52
	04/11/02	7.04	2.28	-524
MW-6	07/16/10	6.99	0.47	-107/-124
MW-7	12/28/99	7.94	1.30	-58
	03/14/00	7.23	1.05	-260
	06/28/00	7.18	5.76	-164
	09/14/00	7.06	0.65	-306
	12/12/00	7.02	1.25	-70
	03/14/01	7.10	0.94	-6
	06/13/01	7.03	1.77	-94
	08/29/01	7.34	NM	58
	12/12/01	7.09	0.98	47
	04/12/02	6.60	0.71	0
	12/05/02	6.96	0.14	10
	04/22/09	7.09	0.17	-37/-98
	Well MW-7 abandoned on January 11, 2010 and replaced with well MW-7R on January 12, 2010.			
MW-7R	02/08/10	7.43	2.32	NM
	07/16/10	7.28	0.12	-148/-105
	02/04/11	7.47	1.03	56/50
	07/25/11	7.74	0.27	-109/-99
	03/22/12	7.32	0.48/0.57	119/43
	09/24/12	7.29	0.63/0.53	-94/-81
	03/04/13	7.20	0.57/0.49	75/3

TABLE 6
FIELD PARAMETER DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	pH (unitless)	DO (mg/L)	ORP (millivolts)
MW-8	12/28/99	7.79	0.42	-136
	03/14/00	7.05	1.53	-27
	06/28/00	8.86	1.87	-77
	09/14/00	7.32	1.07	-166
	12/12/00	7.05	1.16	-61
	03/14/01	7.21	2.55	16
	06/13/01	7.10	2.43	-21
	08/29/01	7.52	NM	9
	12/13/01	7.15	1.55	12
	04/12/02	6.58	1.83	-10
	12/05/02	6.91	0.07	-88
	04/22/09	7.13	2.72	98/30
	02/08/10	7.09	3.58	NM
	07/16/10	7.26	0.29	68/0
	02/04/11	7.47	1.88	151/123
	07/25/11	7.38	0.36	-44/-59
	03/22/12	7.02	0.63/0.40	248/236
	09/24/12	6.92	0.70/0.52	4/-1
	03/04/13	6.91	2.94/0.94	187/174
OW-1	12/28/99	7.67	0.99	-89
	03/15/00	7.31	1.16	-55
	06/29/00	6.34	3.29	-48
	09/14/00	7.02	0.98	-115
	12/12/00	6.94	1.98	-5
	03/14/01	7.04	2.89	-5
	06/13/01	6.76	1.11	-58
	08/29/01	7.04	NM	-39
	12/12/01	6.83	1.17	-46
	04/11/02	7.19	0.75	-31
	12/05/02	6.88	0.03	-79
	04/22/09	6.80	0.29	-77/-88
	02/08/10	6.98	2.91	NM
	07/16/10	7.03	0.41	-81/-118
	02/04/11	7.10	1.10	-42/-89
	07/25/11	7.06	0.37	-108/-121
	03/22/12	6.71	0.03/1.00	52/18
	09/24/12	8.88	0.70/0.83	-99/-103
	03/04/13	6.83	0.63/0.50	-19/-27

TABLE 6
FIELD PARAMETER DATA
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	pH (unitless)	DO (mg/L)	ORP (millivolts)
OW-2	12/28/99	7.69	1.79	-58
	03/15/00	7.25	0.99	-35
	06/29/00	6.44	2.39	-66
	09/14/00	7.21	1.33	-89
	12/12/00	6.90	1.44	-76
	03/14/01	7.16	2.68	-54
	06/13/01	6.97	1.15	-92
	08/29/01	7.16	NM	-93
	12/12/01	6.81	1.36	-61
	04/11/02	7.08	0.89	-44
	12/05/02	6.85	0.01	-95
	04/22/09	6.89	0.35	-103/-90
	02/08/10	7.10	2.12	NM
	07/16/10	7.11	0.38	-107/-13
	02/04/11	7.24	1.06	13/-89
	07/25/11	7.17	0.42	-144/-121
	03/22/12	6.81	0.71/0.58	102/-6
	09/24/12	6.89	0.80/0.61	-105/-104
	03/04/13	6.91	0.75/0.52	-41/-40

Notes:

DO - Dissolved Oxygen
mg/L - milligrams per liter
ORP - Oxidation Reduction Potential
NM - Not Measured
Multiple values represent pre- and post-purge measurements.

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Ethylene Dichloride (µg/L)	Ethylene Dibromide (µg/L)	Naphthalene (µg/L)
MW-1	02/20/97	200,000	2,900	260	61	42	96	NA	NA	NA	NA
	05/28/97	28,000	2,100	230	42	55	110	NA	NA	NA	NA
	09/19/97	2,700,000	110,000	230	140	250	700	ND	NA	NA	NA
	11/17/97	950,000	40,000	240	190(c)	270(c)	880(c)	ND(c)	NA	NA	NA
	02/27/98	1,200,000	380,000	50	50	200	800	ND	NA	NA	NA
	05/27/98	280,000	13,000	110	13	66	390	ND	NA	NA	NA
	10/01/98	63,000	1,300	43	1.2	15	84	ND	NA	NA	NA
	12/22/98	79,000	2,000	32	ND(e)	23(e)	130(e)	ND	NA	NA	NA
	12/28/99	43,000	1,700	49	1.3	11	24	ND	NA	NA	NA
	03/14/00	4,300	540	59	1.3	12	23	NA	NA	NA	NA
	06/28/00	290,000	1,300	26	ND	ND	23	ND	NA	NA	NA
	09/14/00	770,000	1,100	34	ND	3.9	17	ND	NA	NA	NA
	12/11/00	28,000	2,000	10	ND	ND	9.3	ND	NA	NA	NA
	03/14/01	8,400	350	12	ND	ND	ND	ND	NA	NA	NA
	06/13/01	13,000	340	6.4	ND	ND	1.6	ND	NA	NA	NA
	08/29/01	26,000	140	0.5	ND	ND	ND	ND	NA	NA	NA
	12/12/01	5,600	160	0.65	ND	ND	ND	ND	NA	NA	NA
	04/12/02	23,000	260	3.4	ND	ND	ND	NA	NA	NA	NA
	12/05/02	17,000	340	2.2	ND	ND	ND	6.0	NA	NA	NA
	04/22/09	3,200	240	<0.50	<0.50	<0.50	<1.0	2.6	<0.50	<0.50	<0.50
	DUP	12,000	310	<0.50	<0.50	<0.50	<1.0	2.8	<0.50	<0.50	<0.50
	Well MW-1 abandoned on January 11, 2010 and replaced with well MW-1R on January 12, 2010.										
MW-1R	02/08/10	5,600	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dup	02/08/10	5,800	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/16/10	770	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dup	07/16/10	960	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
9 feet	02/03/11	420	97 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
18 feet	02/03/11	860	98 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
std	02/03/11	910	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	500	83 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dup	07/25/11	1,000	88 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	810	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
Dup	03/22/12	1,300	94 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	590(k)	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
Dup	09/24/12	510(k)	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	03/04/13	1,500	87(k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5
MW-2	02/20/97	1,000(h)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	3,700(b,h)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	4100	ND	ND	ND	ND	ND	ND	NA	NA	NA
	11/17/97	1300	ND	ND	ND	ND	ND	ND	NA	NA	NA
	02/27/98	340	ND	ND	0.9	ND	ND	ND	NA	NA	NA
	05/27/98	1300	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	3,500(i)	3,200	ND	ND	ND	ND	ND	NA	NA	NA
	12/22/98	1,200(j,k)	67(d)	ND	ND	ND	ND	ND	NA	NA	NA
	12/28/99	750	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/15/00	92	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/28/00	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	09/14/00	120	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/01	75	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	08/29/01	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/12/01	150(j)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/12/02	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	57(j)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	140	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50
	02/08/10	870(k)	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50
	07/16/10	<50	<50	<0.50	<0.50	<0.50	<1.0	1.5	<0.50	<0.50	<0.50
	02/04/11	90(k)	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	03/04/13	<50	<50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	<2.0
ESLs		100	100	1.0	40	30	20	5.0	0.5	0.05	6.2

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Ethylene Dichloride (µg/L)	Ethylene Dibromide (µg/L)	Naphthalene (µg/L)
MW-3	02/20/97	**140**(h)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	**240**(b,h)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	ND	ND	0.7	ND	ND	ND	ND	NA	NA	NA
	11/17/97	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	02/27/98	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	05/27/98	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	56(l)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/22/98	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/28/99	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	03/14/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	06/28/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	09/14/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/11/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	03/14/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	06/13/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	08/29/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/13/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	04/11/02	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/05/02	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	Well MW-3 no longer included in sampling program										
MW-4	02/20/97	**470,000**	**64,000**	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	**1,000,000**	**11,000**	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	**2,600,000**	**37,000**	**260**	ND	ND	ND	ND	NA	NA	NA
	11/17/97	**57,000**	**4,400**	**25**	ND(c)	ND(c)	ND(c)	ND(c)	NA	NA	NA
	02/27/98	**9,300**	**580**	**2.7**	0.8	0.8	3	ND	NA	NA	NA
	05/27/98	**11,000**	**3,900**	**1.4**	0.6	ND	ND	ND	NA	NA	NA
	10/01/98	**670,000**	**2,400**	**5.7**	ND	ND	4.6	ND	NA	NA	NA
	12/22/98	**3,700**	**200**	ND(p)	ND(p)	ND(p)	ND(p)	ND(p)	NA	NA	NA
	12/28/99	**5,800**	**1,000**	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/00	**4,800**	**350**	ND	ND	ND	ND	NA	NA	NA	NA
	06/28/00	**8,400**	**120**	ND	ND	ND	ND	ND	NA	NA	NA
	09/14/00	**19,000**	**130**	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	**730**	**120**	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/01	**580**	50	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**260**	54	ND	ND	ND	ND	ND	NA	NA	NA
	08/29/01	**30,000**	**940**	ND	ND	ND	ND	ND	NA	NA	NA
	12/13/01	**260**	50	ND	ND	ND	ND	ND	NA	NA	NA
	04/12/02	**230**	50	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**1,500**	50	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	**13,000**	**480**	<0.50	<0.50	<0.50	<0.50	3.0	<0.50	<0.50	<0.50
	02/08/10	**12,000**	**120** (k)	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<0.50
	07/16/10	**2,700**	**210** (k)	<0.50	<0.50	<0.50	<0.50	4.2	<0.50	<0.50	<0.50
	02/04/11	**26,000**	**1600** (k)	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50
	07/25/11	**720**	<50	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	<0.50
	03/22/12	**2,500** (k)	<50	<0.50	<0.50	<0.50	<0.50	0.9	<0.50	<0.50	<2.0
	09/24/12	**1,200** (k)	<50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	<2.0
	03/04/13	**550**	<50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<2.0
MW-5	02/20/97	**1,100**(h)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	**560**(b,q)	60(m)	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	**1,000**	70	ND	ND	ND	ND	ND	NA	NA	NA
	11/17/97	**1,100**	70	0.6	0.7	0.5	ND	5.0	NA	NA	NA
	02/27/98	**ND**	ND	ND	ND	ND	ND	5.0	NA	NA	NA
	05/27/98	**770**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	**630**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/22/98	**890**(i)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/28/99	**440**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/28/00	**110**(l)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	**130**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**120**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/13/01	**530**(l)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/11/02	**230**(l)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	Well MW-5 no longer included in sampling program										
ESLs		100	100	1.0	40	30	20	5.0	0.5	0.05	6.2

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Ethylene Dichloride (µg/L)	Ethylene Dibromide (µg/L)	Naphthalene (µg/L)
MW-7	02/20/97	**1,500,000**	**15,000**	**81**	**51**	ND	ND	NA	NA	NA	NA
	05/28/97	**440,000**	**390,000**	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	**910,000**	**3,600**	**110**	**64**	**37**	ND	ND	NA	NA	NA
	11/17/97	**18,000,000**	**15,000**	**110**	**41[c]**	12[c]	**110[c]**	ND[c]	NA	NA	NA
	02/27/98	**290,000**	**45,000**	**80**	**60**	ND	ND	ND	NA	NA	NA
	05/27/98	**1,600**	**140**	**2.3**	0.9	0.9	3	ND	NA	NA	NA
	10/01/98	**89,000**	**710**	**39**	2.4	11	**31**	ND	NA	NA	NA
	12/22/98	**240,000**	**3,900**	**51**	ND	ND	ND	ND	NA	NA	NA
	12/28/99	**300,000**	**2,300**	**51**	5.3	13	**27**	ND	NA	NA	NA
	03/14/00	**640,000**	**620**	**31**	5.3	9.9	**31**	NA	NA	NA	NA
	06/28/00	**2,900,000**	**3,200(k)**	**15**	ND	3.2	**30**	ND	NA	NA	NA
	09/14/00	**15,000,000**	**1,900**	**11**	ND	10	**39**	ND	NA	NA	NA
	12/12/00	**340,000**	**4,500**	**5**	ND	ND	17	ND	NA	NA	NA
	03/14/01	**170,000**	**8,000**	**5**	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**19,000**	100	0.99	ND	ND	ND	**6.2**	NA	NA	NA
	08/29/01	**27,000**	**120**	**3.9**	ND	ND	ND	5.0	NA	NA	NA
	12/12/01	**6,900**	**610**	0.5	ND	ND	ND	ND	NA	NA	NA
	04/12/02	**2,600**	**110**	0.5	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**9,100**	**290**	0.5	ND	ND	ND	**5.7**	NA	NA	NA
	04/22/09	**1,900**	56	<0.50	<0.50	<0.50	<1.0	3.4	<0.50	<0.50	<2.0
	Well MW-7 abandoned on January 11, 2010 and replaced with well MW-7R on January 12, 2010.										
MW-7R	02/08/10	**560**	52 [k]	0.63	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	<0.50
	07/16/10	**12,000**	**4,000 [k]**	**2.6**	<50	0.8	6.9	2.5	<50	<50	<50
9 feet	02/03/11	**690**	60 [k]	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50
18 feet	02/03/11	**430**	59[k]	<0.50	<0.50	<0.50	<0.50	2.0	<0.50	<0.50	<0.50
std	02/03/11	**1,200**	**120 [k]**	<0.50	<0.50	<0.50	<0.50	2.0	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50
	03/22/12	**2,800**	**320 [k]**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	**1,200[k]**	**110[k]**	**1.2**	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	<2.0
	03/04/13	**4,000**	55	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<2.0
MW-8	02/20/97	**2,500**	**340[a]**	**2.1**	**53**	7.1	**94**	NA	NA	NA	NA
	05/28/97	**200[b,s]**	**480[a]**	**2.5**	12	ND	**76**	NA	NA	NA	NA
	09/19/97	**7,000**	**1,000**	0.8	5	0.5	**130**	ND	NA	NA	NA
	11/17/97	**520**	**250**	**1.4**	2.1	0.7	3	ND	NA	NA	NA
	02/27/98	**150**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	05/27/98	70	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	**440[i]**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/28/99	**130**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/00	**170**	ND	ND	ND	ND	ND	NA	NA	NA	NA
	06/28/00	**300[i]**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	09/14/00	**310**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	**15,000**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/01	**130**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	100	ND	ND	ND	ND	ND	ND	NA	NA	NA
	08/29/01	**160[i]**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/13/01	97[i]	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/12/02	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	97	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	<50	<50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<0.50	<0.50
	02/08/10	**360 [k]**	<50	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	<0.50
	07/16/10	<50	<50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<0.50
	02/04/11	62 [k]	<50	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50
	03/22/12	<50	<50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	<2.0
	09/24/12	<50	<50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<2.0
	03/04/13	<50	<50	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	<2.0
ESLs		100	100	1.0	40	30	20	5.0	0.5	0.05	6.2

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Ethylene Dichloride (µg/L)	Ethylene Dibromide (µg/L)	Naphthalene (µg/L)
OW-1	12/28/99	**7,700**	**3,400**	**11**	ND	ND	2.6	ND	NA	NA	NA
	03/15/00	**5,300**	**700**	**1.7**	ND	ND	ND	ND	NA	NA	NA
	06/29/00	**1,300(k)**	**140(k)**	**4.0**	ND	ND	2.2	**6.6**	NA	NA	NA
	09/14/00	**5800(k)**	**180**	ND	ND	ND	ND	ND	NA	NA	NA
	12/12/00	**230**	**110**	**3.4**	ND	ND	ND	ND	NA	NA	NA
	03/14/01	**2200(k)**	**110**	**4.0**	ND	ND	0.5	ND	NA	NA	NA
	06/13/01	**1500(k)**	**120**	**2.5**	ND	ND	ND	ND	NA	NA	NA
	08/29/01	**1,200(k)**	**130(k)**	ND	ND	ND	ND	ND	NA	NA	NA
	12/12/01	**3,100(k)**	76(k)	ND	ND	ND	ND	ND	NA	NA	NA
	04/11/02	**3,600(k)**	**300(k)**	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**490(k)**	78(k)	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	**1,600**	130	<0.50	<0.50	<0.50	<1.0	**8.9**	<0.50	<0.50	<0.50
	02/08/10	**11,000**	<50	<0.50	<0.50	<0.50	<0.50	**5.1**	<0.50	<0.50	<0.50
	07/16/10	85	57 (k)	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	<0.50	<0.50
	02/04/11	**17,000**	**140 (k)**	<0.50	<0.50	<0.50	<0.50	**5.9**	<0.50	<0.50	<0.50
	07/25/11	**210**	70 (k)	<0.50	<0.50	<0.50	<0.50	**10**	<0.50	<0.50	<0.50
	03/22/12	**710**	81 (k)	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	<0.50	<2.0
	09/24/12	**1,200(k)**	**140(k)**	<0.50	<0.50	<0.50	<0.50	3.7	<0.50	<0.50	<2.0
	03/04/13	**350**	<50	<0.50	<0.50	<0.50	<0.50	4.7	<0.50	<0.50	<2.0
OW-2	12/28/99	**3,300**	**770**	**36**	ND	ND	1.7	**16**	NA	NA	NA
	03/15/00	**1,100**	**350**	**24**	ND	ND	ND	**9.3**	NA	NA	NA
	06/29/00	**850**	**160**	**7.4**	ND	ND	ND	**13**	NA	NA	NA
	09/14/00	**6,300**	**590**	**26**	0.79	ND	1.7	**17**	NA	NA	NA
	12/12/00	**320**	**210**	**6.6**	ND	ND	ND	**7.4**	NA	NA	NA
	03/14/01	**960**	**320**	**5.6**	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**900**	**250**	**2.9**	ND	ND	ND	**10**	NA	NA	NA
	08/29/01	**1,400**	**270**	**5.3**	ND	ND	ND	ND	NA	NA	NA
	12/12/01	**4,100**	**280**	**14**	ND	ND	ND	**11**	NA	NA	NA
	04/11/02	**4,100**	**820**	**6.4**	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**500**	**230**	0.5	ND	ND	ND	**5.6**	NA	NA	NA
	04/22/09	**2,100**	**210**	<0.50	<0.50	<0.50	<1.0	**6.8**	<0.50	<0.50	<0.50
	02/08/10	**10,000**	**140 (k)**	<0.50	<0.50	<0.50	<0.50	**4.9**	<0.50	<0.50	<0.50
	07/16/10	**2,000**	**210 (k)**	<0.50	<0.50	<0.50	<0.50	**5.7**	<0.50	<0.50	<0.50
	02/04/11	**2,200**	**260 (k)**	<0.50	<0.50	<0.50	<0.50	**6.2**	<0.50	<0.50	<0.50
	07/25/11	**250**	**170 (k)**	<0.50	<0.50	<0.50	<0.50	**9.9**	<0.50	<0.50	<0.50
	03/22/12	**680**	56 (k)	<0.50	<0.50	<0.50	<0.50	**6.0**	<0.50	<0.50	<2.0
	09/24/12	**1,900(k)**	**380(k)**	<0.50	<0.50	<0.50	<0.50	**10**	<0.50	<0.50	<2.0
	03/04/13	**1,300**	**110(k)**	<0.50	<0.50	<0.50	<0.50	**8.1**	<0.50	<0.50	<2.0
TB	02/08/10	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/16/10	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/03/11	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA
	09/24/12	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA
	03/04/13	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA
ESLs		100	100	1.0	40	30	20	5.0	0.5	0.05	6.2

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Ethylene Dichloride (µg/L)	Ethylene Dibromide (µg/L)	Naphthalene (µg/L)
EB	02/08/10	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/16/10	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	03/04/13	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
ESLs		100	100	1.0	40	30	20	5.0	0.5	0.05	6.2

Notes:

µg/L - micrograms per liter
TPHd - Total Petroleum Hydrocarbons as diesel
TPHg - Total Petroleum Hydrocarbons as gasoli
MTBE - Methyl tert butyl ether
ND - Not detected at or above the laboratory detection limit
NA - Not analyzed
EB - Equipment blank
< - Indicates constituent not detected at or above specified reporting limit
ESLs Regional Water Quality Control Board, San Francisco Bay Region, Environmental Screening Levels, presented in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (May 2013).
for Commercial/Industrial Sites, Shallow Soil, and Drinking Water Resource
Bold text indicates that the value exceeds the ESL.

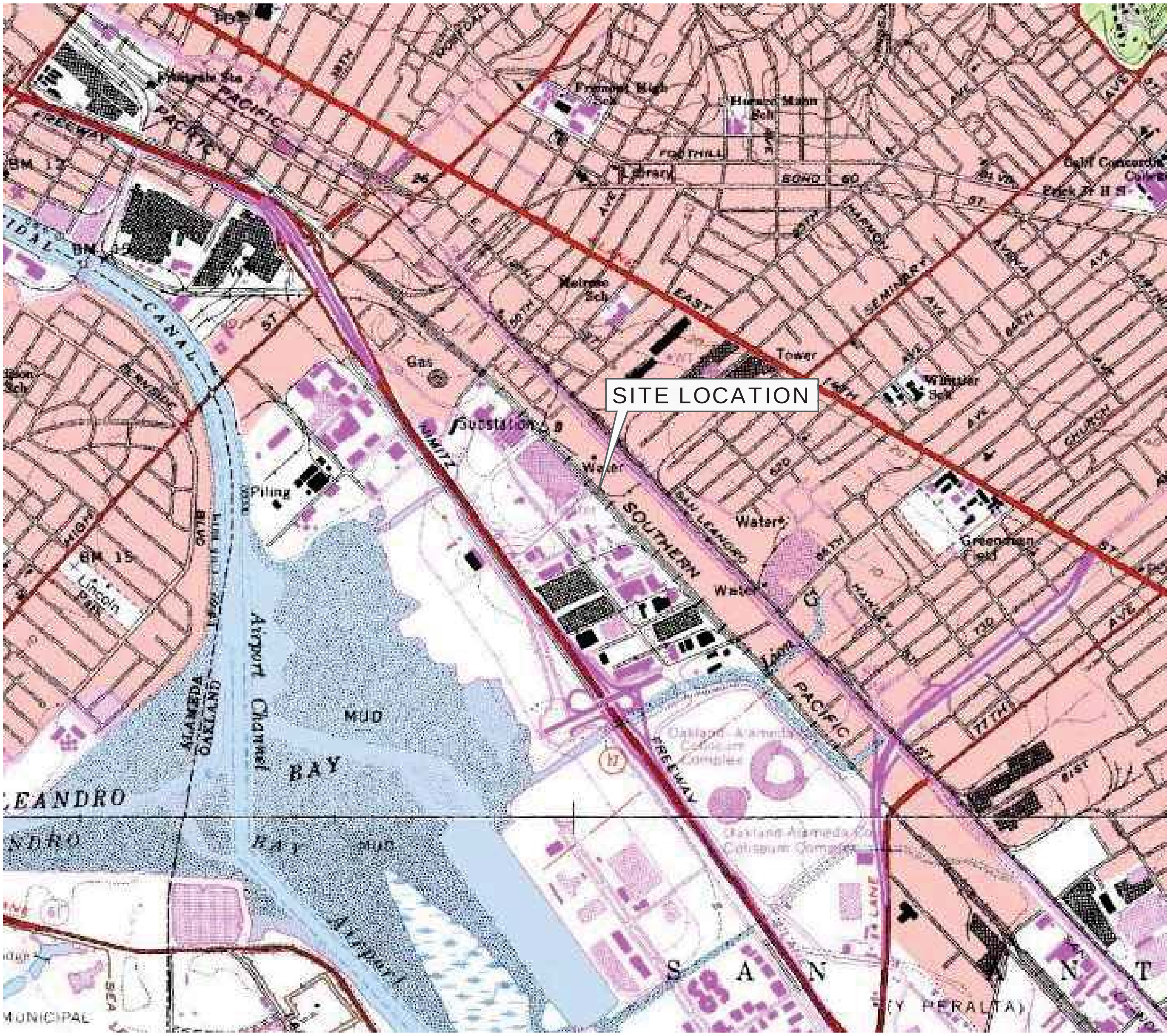
(a) - Laboratory reports that chromatogram indicates gasoline and unidentified hydrocarbons >C8.
(c) - Laboratory reports reporting limits for diesel and gas/BTEX elevated due to high levels of target compound. Samples run at dilution.
(d) - Laboratory reports the peak pattern present in this sample represents an unknown mixture atypical of gasoline in the range of n-C09 to greater than n-C12. Quantitation is based on a gasoline reference in the range of n-C07 to n-C12 only.
(e) - Laboratory reports reporting limit(s) raised due to high level of analyte present in sample.
(f) - Laboratory reports the hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C09 to n-C36. Quantitation is based on a diesel reference between n-C10 and n-C24 only.
(g) - Laboratory reports that chromatogram indicates diesel and unidentified hydrocarbons >C20.
(h) - Analyzed by USEPA Method 8015, modified.
(i) - Analyzed by USEPA Method 8020.
(j) - Diesel range concentration reported. A nonstandard diesel pattern was observed in the chromatogram.
(k) - Sample exhibits chromatographic pattern that does not resemble standard.
Ethylene dichloride reported as 1,2-Dichloroethane
Ethylene dibromide reported as 1,2-Dibromoethane

FIGURES

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec



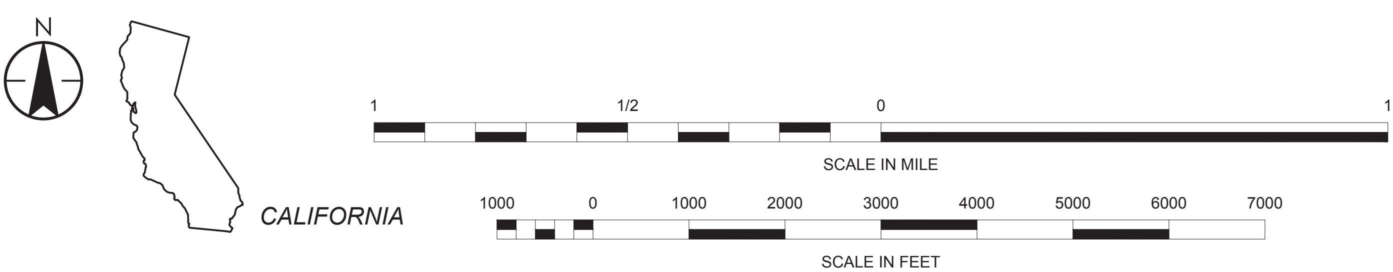
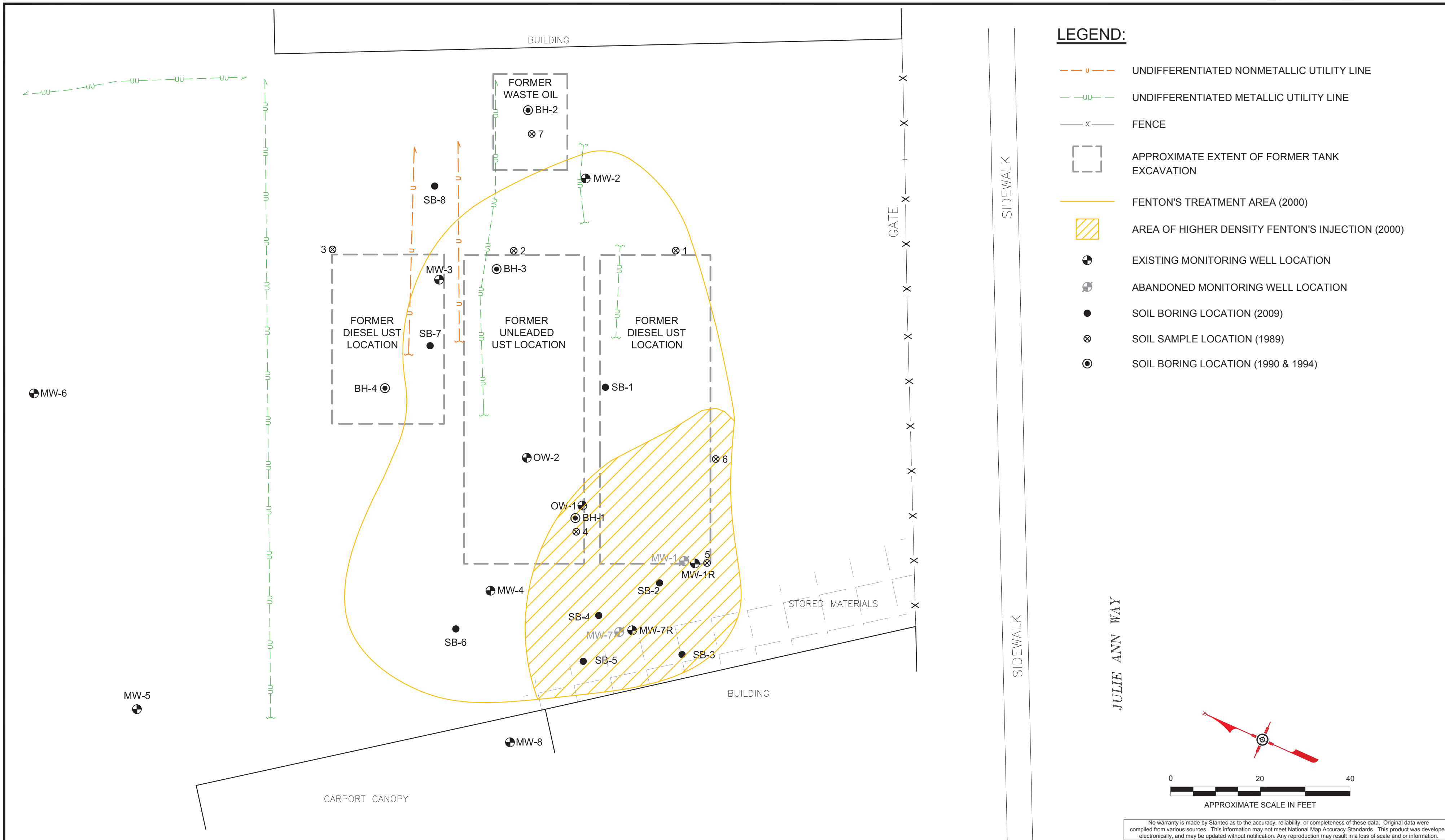


Image courtesy of the U.S. Geological Survey and Microsoft TerraService OpenGIS Map Server

	FOR:			FIGURE:
Stantec 1340 Treat Boulevard, Suite 300 Walnut Creek, CA 94597 PHONE: (925) 941-1400 FAX: (925) 941-1401	PENSKE 725 JULIE ANN WAY OAKLAND, CALIFORNIA		SITE LOCATION MAP	1
	JOB NUMBER: 185702640.200.0001	DRAWN BY: RRR	CHECKED BY: EH	APPROVED BY: EH/GH/AM	DATE: 01/14/13

FILEPATH:M:\Penske\OAKLAND\185702640.200.0004\GW-MONITORING-NFA-F1.DWG|rroggasch|Jan 14, 2014 at 11:23|Layout: SITE LOCATION MAP



LEGEND:

- UNDIFFERENTIATED NONMETALLIC UTILITY LINE
- UNDIFFERENTIATED METALLIC UTILITY LINE
- FENCE
- APPROXIMATE EXTENT OF FORMER TANK EXCAVATION
- FENTON'S TREATMENT AREA (2000)
- AREA OF HIGHER DENSITY FENTON'S INJECTION (2000)
- EXISTING MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION
- SOIL BORING LOCATION (2009)
- SOIL SAMPLE LOCATION (1989)
- SOIL BORING LOCATION (1990 & 1994)

REFERENCE:

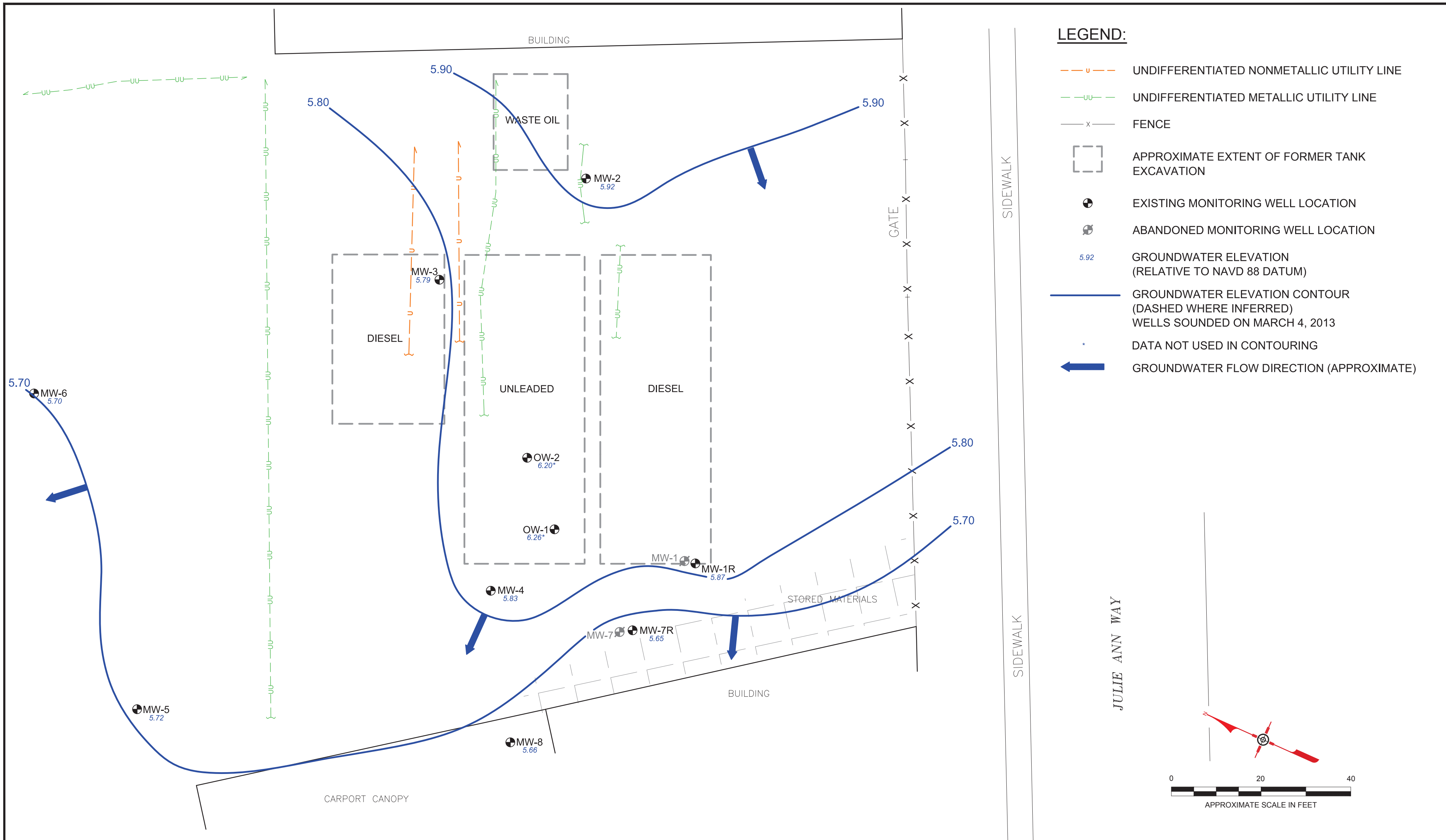
UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC. PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011; TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
PHONE: (925) 941-1400 FAX: (925) 941-1401

FOR:		SITE PLAN		FIGURE:
PENSKE 725 JULIE ANN WAY OAKLAND, CALIFORNIA				2
JOB NUMBER: 185702640.200.0001	DRAWN BY: RRR/STA	CHECKED BY: KC	APPROVED BY: ND	DATE: 01/14/13

FILEPATH:M:\Penske\OAKLAND\185702640.200.0004\FIG 2_SITE PLAN_09-12-2013-STA.dwg|rroggasch|Jan 14, 2014 at 14:10|Layout: 11X17



REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC. PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011; TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

Stantec

1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
PHONE: (925) 941-1400 FAX: (925) 941-1401

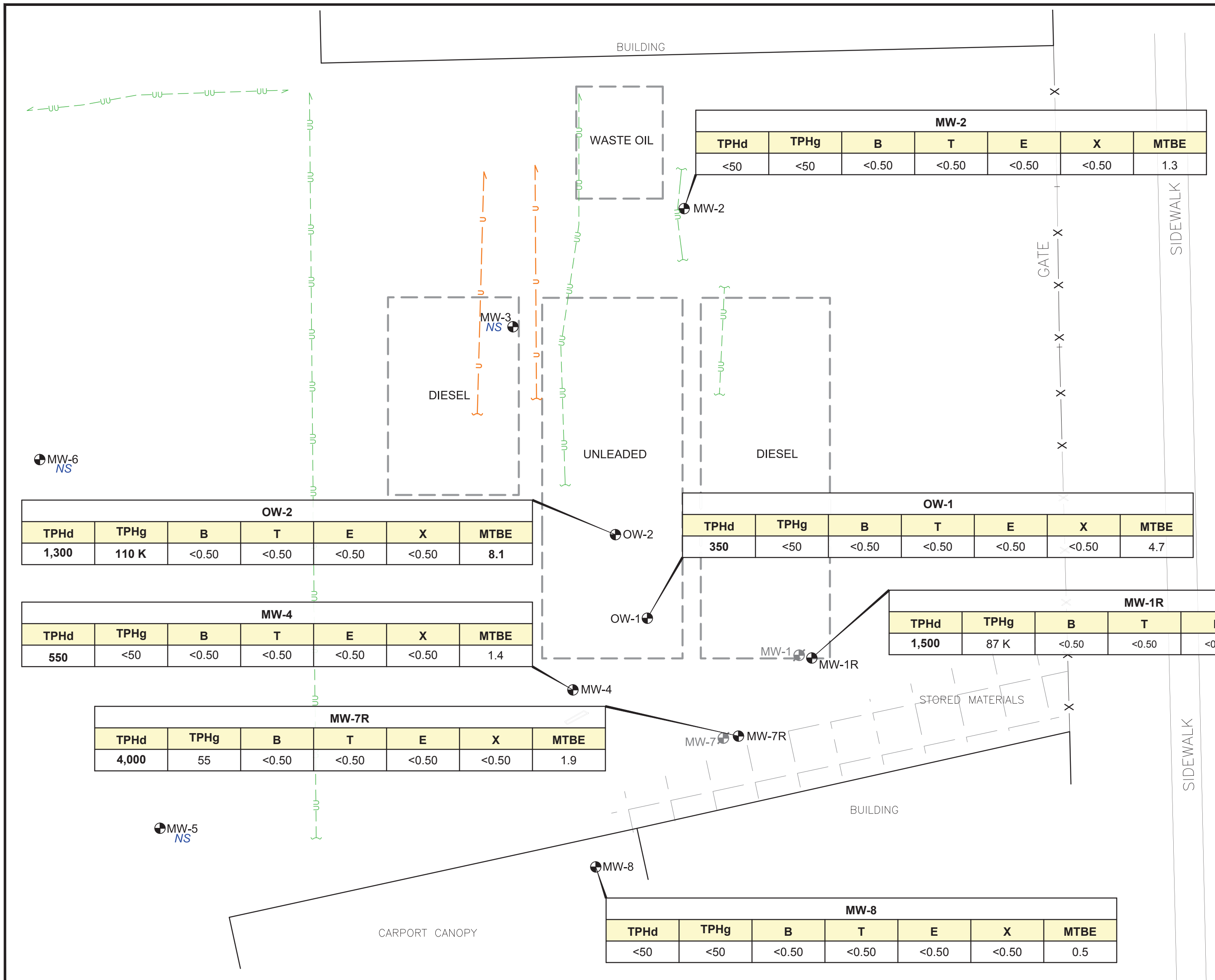
FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION SURFACE CONTOUR MAP
MARCH 2013

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185702640.200.0001	RRR	EH	EH	06/10/13

FILEPATH:M:\Penske\OAKLAND\185702640.200.0004\GW-MONITORING-NFA-F2 F3 F4.DWG|rroggasch|Jan 14, 2014 at 11:24|Layout: F3-1Q13



MW-2

TPHd	TPHg	B	T	E	X	MTBE
<50	<50	<0.50	<0.50	<0.50	<0.50	1.3

OW-2

TPHd	TPHg	B	T	E	X	MTBE
1,300	**110 K**	<0.50	<0.50	<0.50	<0.50	**8.1**

OW-1

TPHd	TPHg	B	T	E	X	MTBE
350	<50	<0.50	<0.50	<0.50	<0.50	4.7

MW-4

TPHd	TPHg	B	T	E	X	MTBE
550	<50	<0.50	<0.50	<0.50	<0.50	1.4

MW-1R

TPHd	TPHg	B	T	E	X	MTBE
1,500	87 K	<0.50	<0.50	<0.50	<0.50	<0.50

MW-7R

TPHd	TPHg	B	T	E	X	MTBE
4,000	55	<0.50	<0.50	<0.50	<0.50	1.9

MW-8

TPHd	TPHg	B	T	E	X	MTBE
<50	<50	<0.50	<0.50	<0.50	<0.50	0.5

LEGEND:

- UNDIFFERENTIATED NONMETALLIC UTILITY LINE
- UNDIFFERENTIATED METALLIC UTILITY LINE
- FENCE
- APPROXIMATE EXTENT OF FORMER TANK EXCAVATION
- EXISTING MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION

ABBREVIATIONS:

TPHd	- Total Petroleum Hydrocarbons as diesel
TPHg	- Total Petroleum Hydrocarbons as gasoline
B	- Benzene
T	- Toluene
E	- Ethylbenzene
X	- Total Xylenes
MTBE	- Methyl tert-butyl ether
NS	- Not Sampled
K	- Sample exhibits chromatographic pattern that does not resemble standard.

NOTE:

1. All results in micrograms per liter (µg/L).
2. Samples collected MARCH 4, 2013.
3. **BOLD** values exceed Regional Water Quality Control Board, San Francisco Bay Region, Environmental Screening Levels (May 2013).
4. Environmental Screening Levels (ESLs);

TPHd	=	100 µg/L
TPHg	=	100 µg/L
Benzene	=	1.0 µg/L
Toluene	=	40 µg/L
Ethylbenzene	=	30 µg/L
Total Xylenes	=	20 µg/L
MTBE	=	5.0 µg/L

REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC. PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011; TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
PHONE: (925) 941-1400 FAX: (925) 941-1401

FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

FUEL HYDROCARBON CONSTITUENTS IN GROUNDWATER
MARCH 2013

FIGURE: 4

JOB NUMBER: 185702640.200.0001 | DRAWN BY: RRR | CHECKED BY: EH | APPROVED BY: EH | DATE: 06/10/13

FIGURE 5
TPHd versus Time
725 Julie Ann Way, Oakland, CA

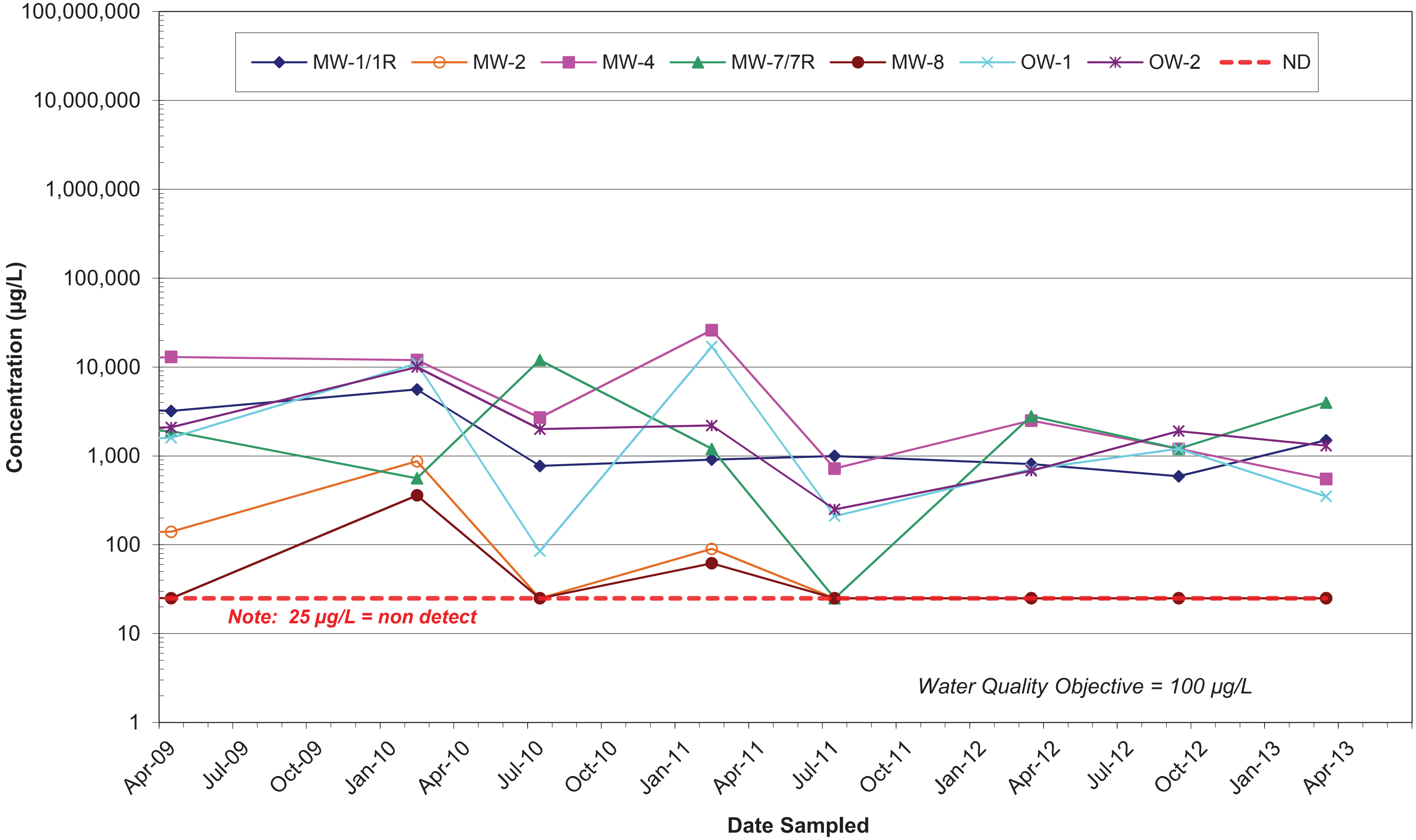


FIGURE 6
TPHg versus Time
725 Julie Ann Way, Oakland, CA

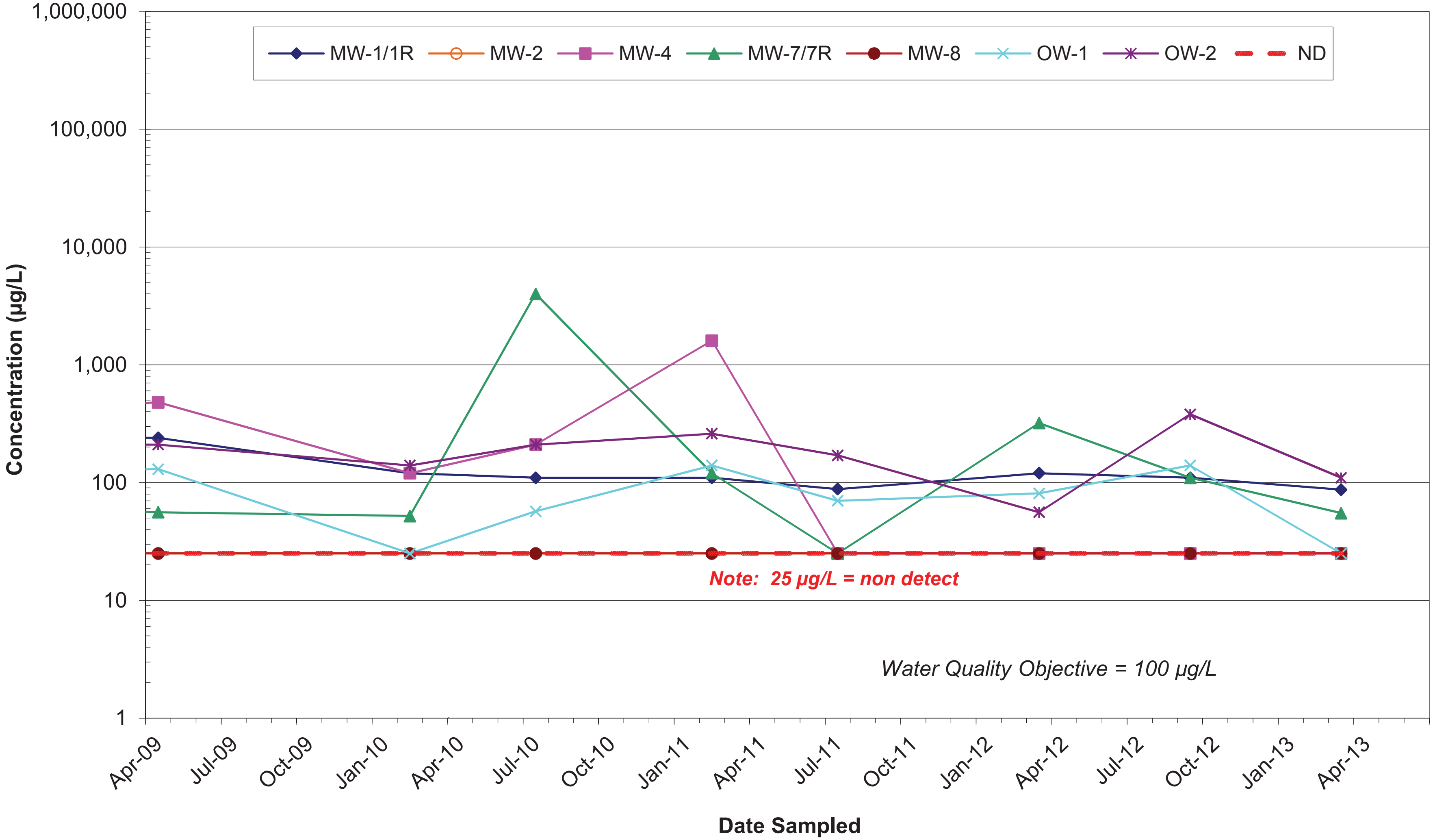


FIGURE 7
Benzene versus Time
725 Julie Ann Way, Oakland, CA

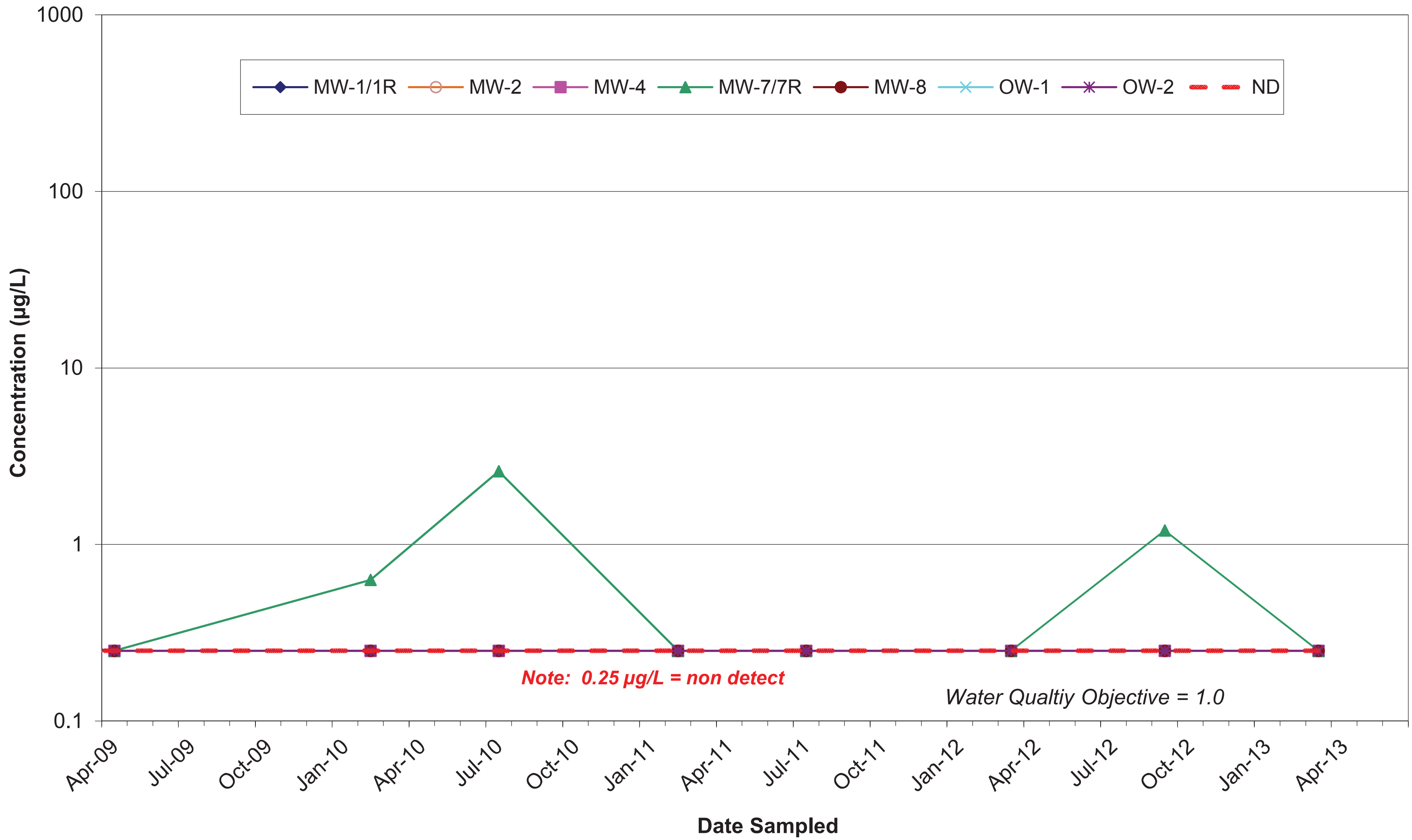


FIGURE 8
MTBE versus Time
725 Julie Ann Way, Oakland, CA

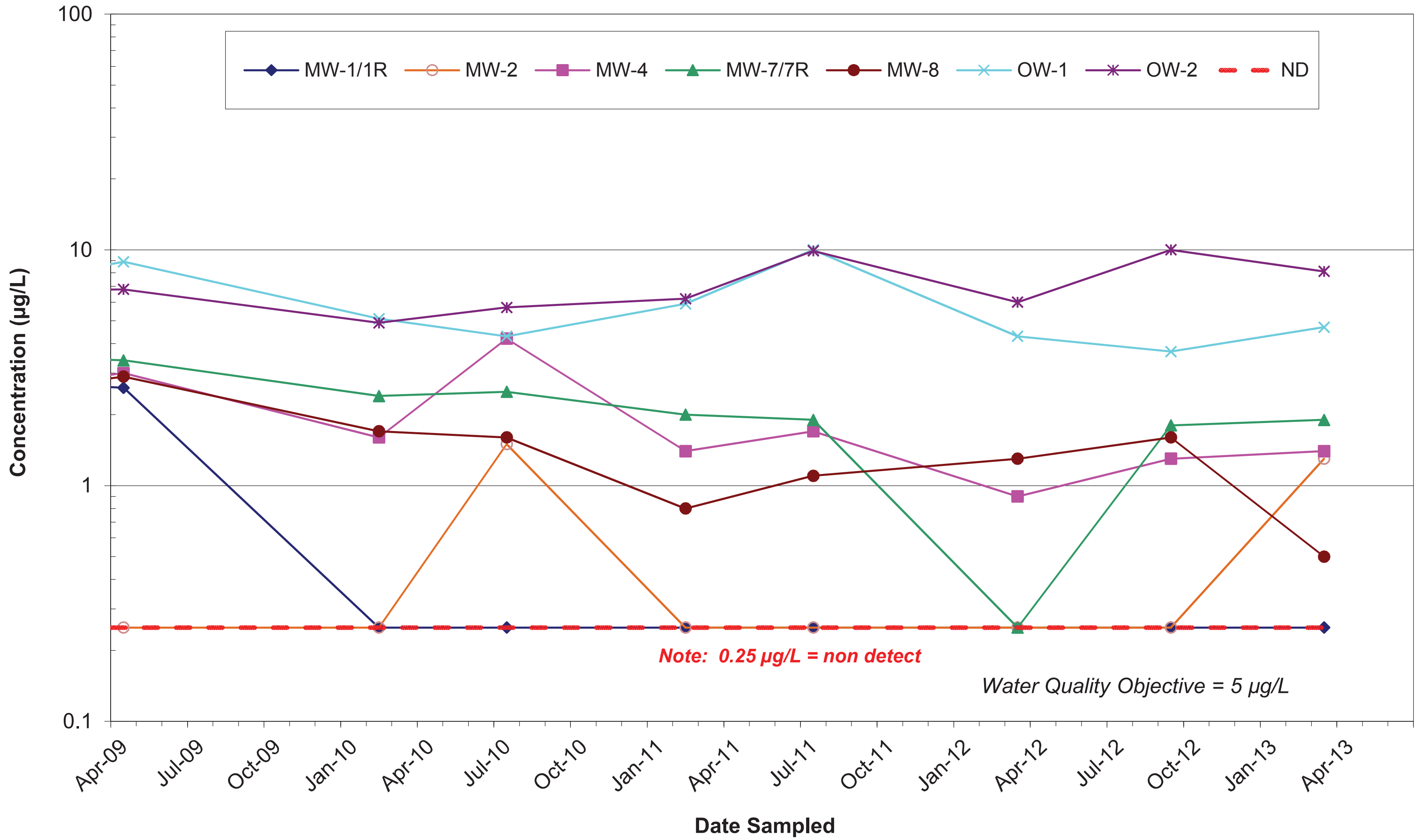
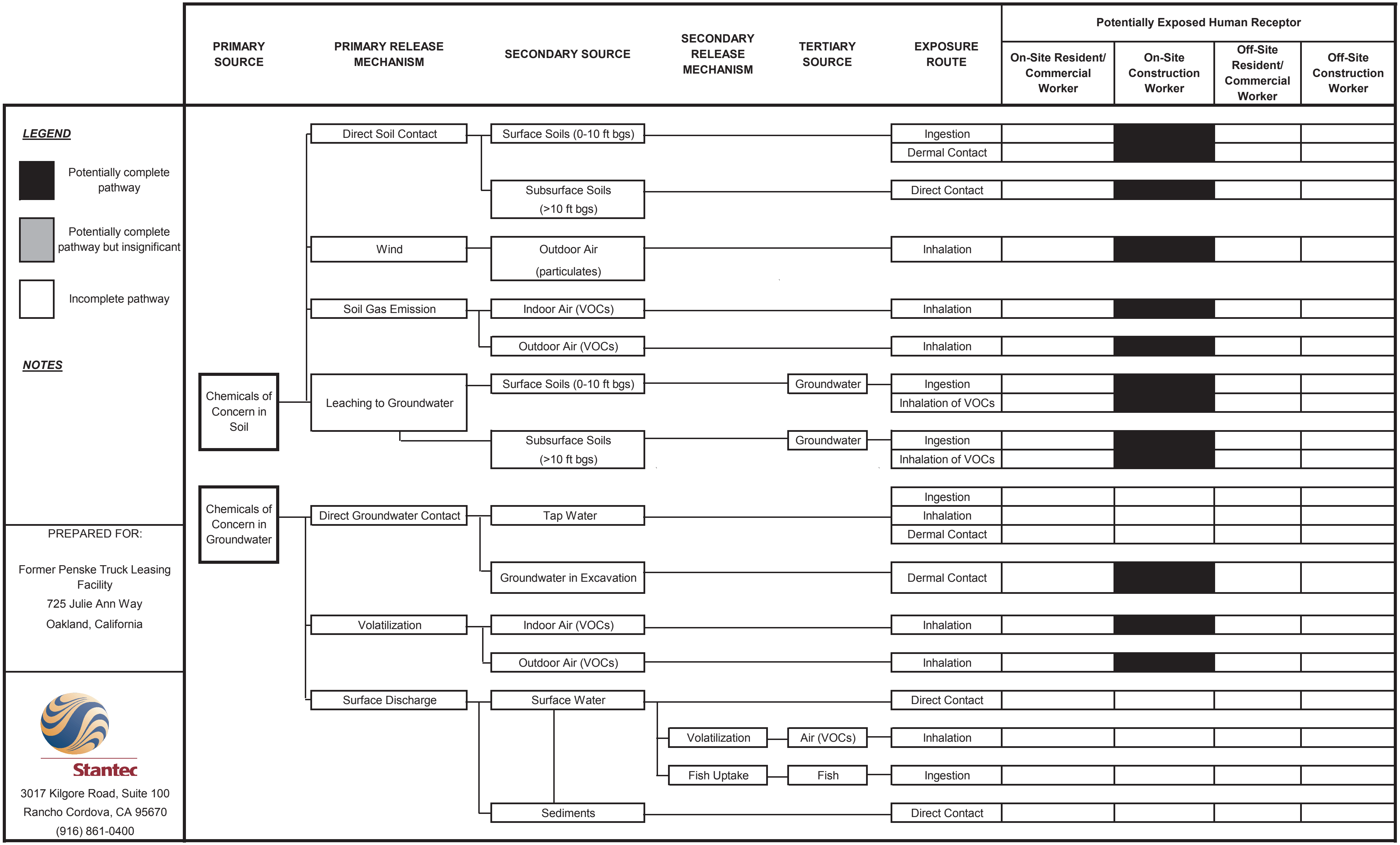


Figure 9 - EXPOSURE PATHWAY MODEL

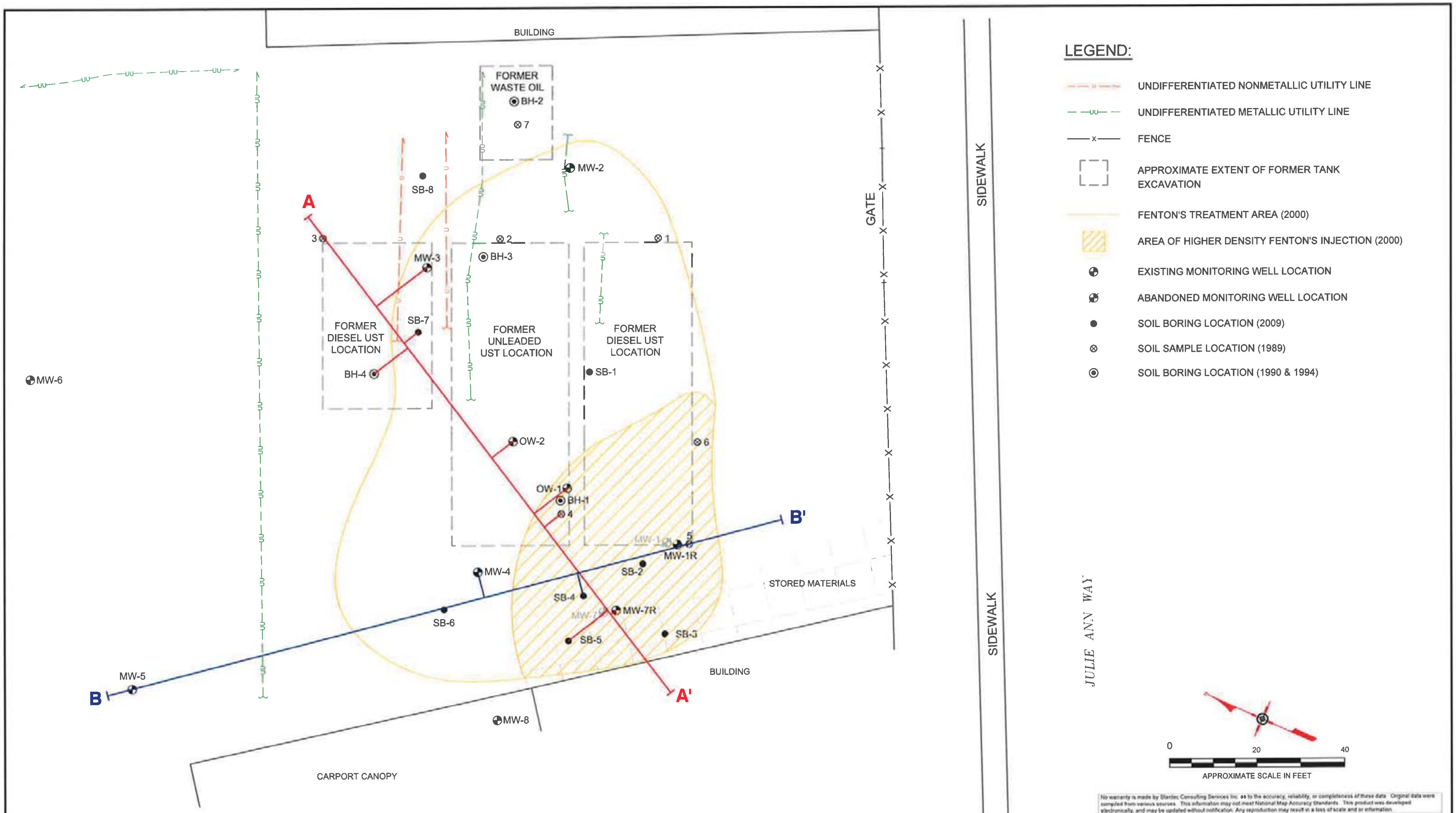


APPENDIX A
Historical Generalized Geologic Cross-Sections

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec



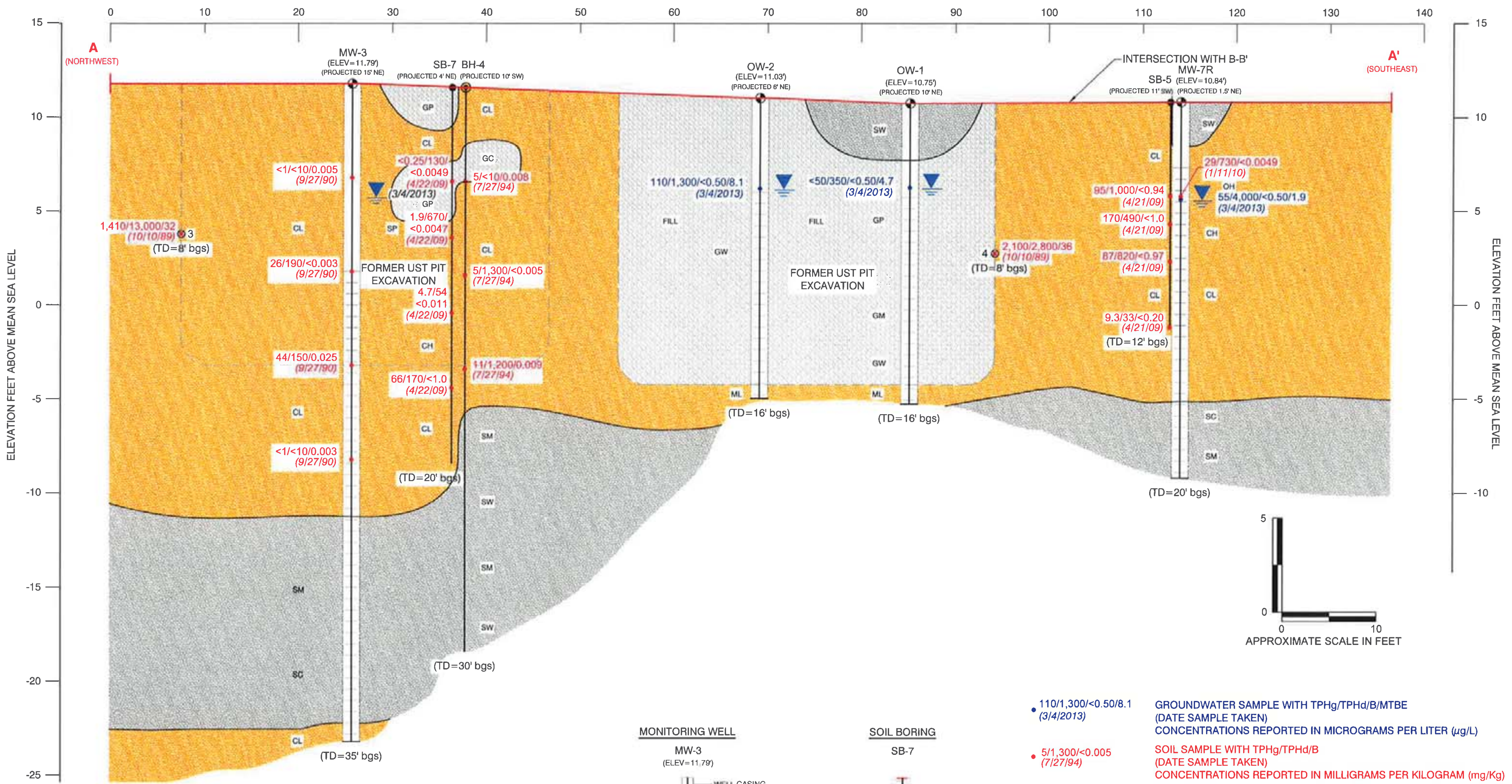
REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC. PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011; TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

Stantec 1340 Treat Boulevard, Suite 300 Walnut Creek, CA 94597 PHONE: (925) 941-1400 FAX:(925) 941-1401	FOR: PENSKE 725 JULIE ANN WAY OAKLAND, CALIFORNIA	SITE PLAN WITH CROSS SECTIONS A-A' AND B-B'	FIGURE: 2
JOB NUMBER: 185702640.200.0001	DRAWN BY: RRR/STA	CHECKED BY: KC / APPROVED BY: ND	DATE: 01/14/13

FILEPATH:M:\Penske\OAKLAND\185702640.200.0004\XFIG 2_SITE PLAN WITH CROSS SECTIONS_09-18-2013-sta.dwg | Layout Tab: 11X17L | Drafter: rroggasch | Jan 14, 2014 at 14:49



LEGEND:

	EXISTING MONITORING WELL LOCATION
	SOIL BORING LOCATION (2009)
	SOIL SAMPLE LOCATION (1989)
	SOIL BORING LOCATION (1990 & 1994)
	STATIC GROUNDWATER DEPTH
TD	TOTAL DEPTH

	SAND (SP,SM,SW,SC)
	SILT AND CLAY (ML,CL,CH,OH)
	FILL/GRAVEL (GP,GM,GW,GC)
	INTERPRETED SOIL STRATIGRAPHIC BOUNDARY

MONITORING WELL

MW-3
(ELEV=11.79')
WELL CASING
<1/<10/0.003
(9/27/90)
SCREEN INTERVAL
(TD=35' bgs)

SOIL BORING

SB-7
66/170/<1.0
(4/22/09)
(TD=20' bgs)

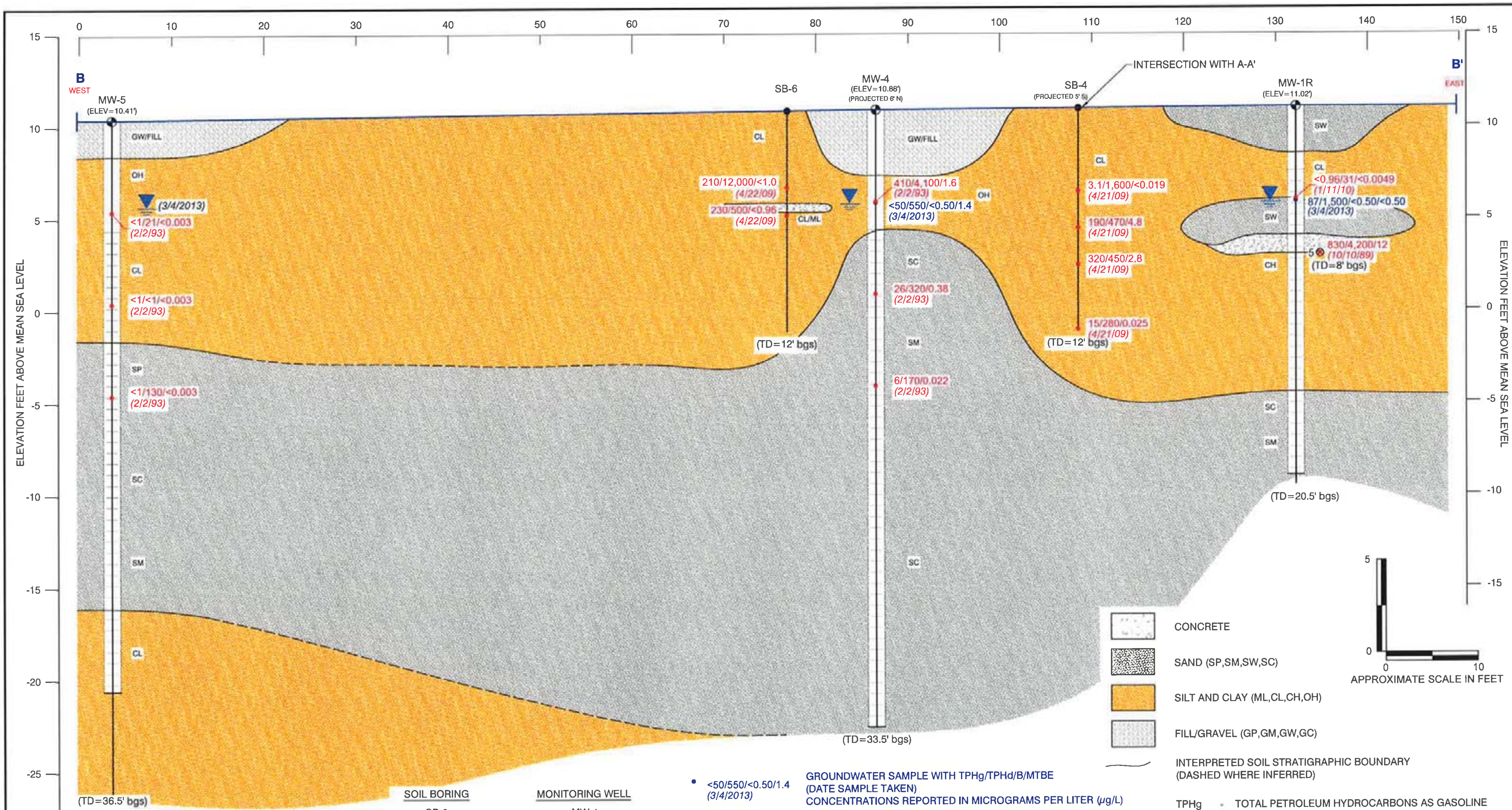
110/1,300/<0.50/8.1 (3/4/2013) — GROUNDWATER SAMPLE WITH TPHg/TPHd/B/MTBE (DATE SAMPLE TAKEN) CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L)

5/1,300/<0.005 (7/27/94) — SOIL SAMPLE WITH TPHg/TPHd/B (DATE SAMPLE TAKEN) CONCENTRATIONS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/Kg)

TPHg - TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
TPHd - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
B - BENZENE
MTBE - METHYL TERT-BUTYL ETHER

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
PHONE: (925) 941-1400 FAX: (925) 941-1401

FOR: PENSKE 725 JULIE ANN WAY OAKLAND, CALIFORNIA	CROS SECTION A-A'	FIGURE: A
JOB NUMBER: 185702640.200.0001	DRAWN BY: RRR/STA	CHECKED BY: KC	APPROVED BY: ND	DATE: 01/14/13



CONCRETE

SAND (SP,SM,SW,SC)

SILT AND CLAY (ML,CL,CH,OH)

FILL/GRAVEL (GP,GM,GW,GC)

INTERPRETED SOIL STRATIGRAPHIC BOUNDARY (DASHED WHERE INFERRED)

LEGEND:

- EXISTING MONITORING WELL LOCATION
- SOIL BORING LOCATION (2009)
- SOIL SAMPLE LOCATION (1989)
- SOIL BORING LOCATION (1990 & 1994)
- STATIC GROUNDWATER DEPTH
- TD TOTAL DEPTH

SOIL BORING
SB-6
66/170/<1.0
(4/22/09)
(TD=20' bgs)

MONITORING WELL
MW-4
(ELEV=10.88')
WELL CASING
<1/<10/0.003
(9/27/90)
SCREEN INTERVAL
(TD=35' bgs)

<50/550/<0.50/1.4 (3/4/2013) — GROUNDWATER SAMPLE WITH TPHg/TPHd/B/MTBE (DATE SAMPLE TAKEN) CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L)

15/280/0.025 (4/21/09) — SOIL SAMPLE WITH TPHg/TPHd/B (DATE SAMPLE TAKEN) CONCENTRATIONS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/Kg)

TPHg - TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
TPHd - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
B - BENZENE
MTBE - METHYL TERT-BUTYL ETHER

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
PHONE: (925) 941-1400 FAX: (925) 941-1401

FOR: PENSKE 725 JULIE ANN WAY OAKLAND, CALIFORNIA		CROS SECTION B-B'		FIGURE: B
JOB NUMBER: 185702640.200.0001	DRAWN BY: RRR/STA	CHECKED BY: KC	APPROVED BY: ND	DATE: 01/14/13

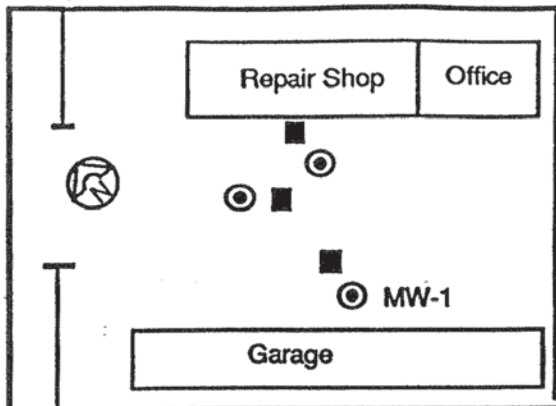
FILEPATH:M:\Penske\OAKLAND\185702640.200.0004\FIG 1_SITE PLAN WITH CROSS SECTIONS_09-30-2013-STA.dwg | Layout Tab: B-B' | Drafter: rroggasch | Jan 14, 2014 at 14:20

APPENDIX B
Soil Boring Logs

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec



Julie Ann Way

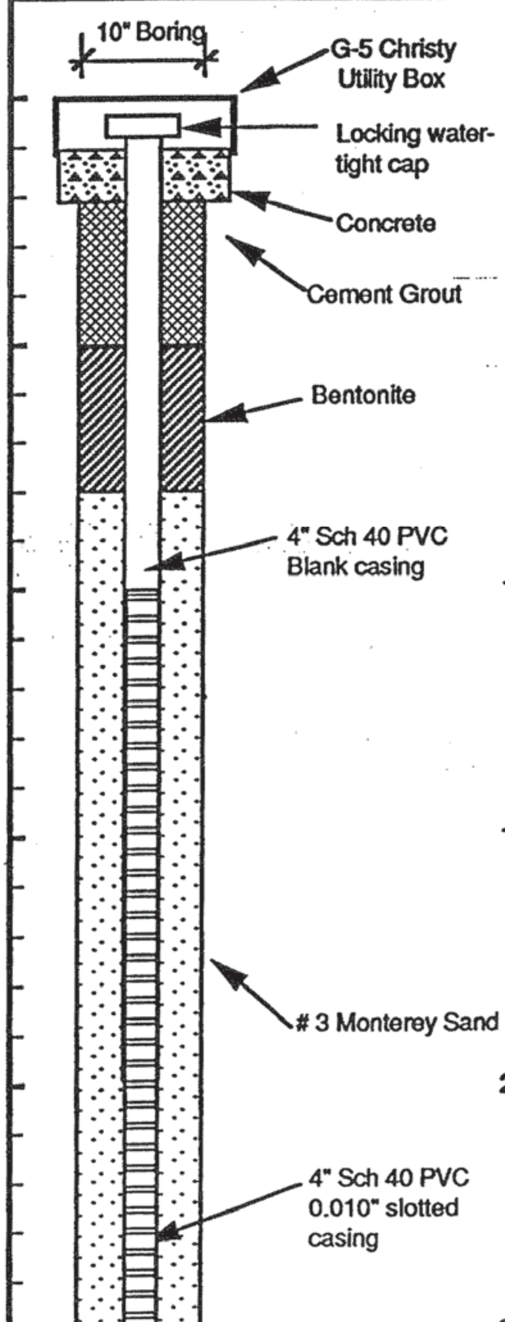
LOG OF BORING MW-1

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 25, 1990
Drilling Method: 10" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP	Samples
0			
5	21	500	
10	20	60	
15	36	125	
20	43	50	
25			

Graphic

DESCRIPTION

Surface Elevation:5.42'
Casing Elevation:4.98'

Asphalt

CLAY (CL), red brick, sand, gravel and clay fill. Light yellowish brown silty, sandy clay w/<10% fine gravel; mixed with layers of dark brwn silty ,sandy clay; Gravel to cobbles increase to 20 to 30% at bottom.

@5 feet, Sandy to silty, dark brown, w/10% fine gravel; Very stiff; Slight odor.

@5-10 Feet: Interbedded sand and gravel;Dark gray to black; moderate odor.

@10 feet, Silty to very slighty sandy clay w/ 10% fine gravel; Medium grey to medium olive green; Minor interbedded sandy lenses; Very stiff; Moderate odor.

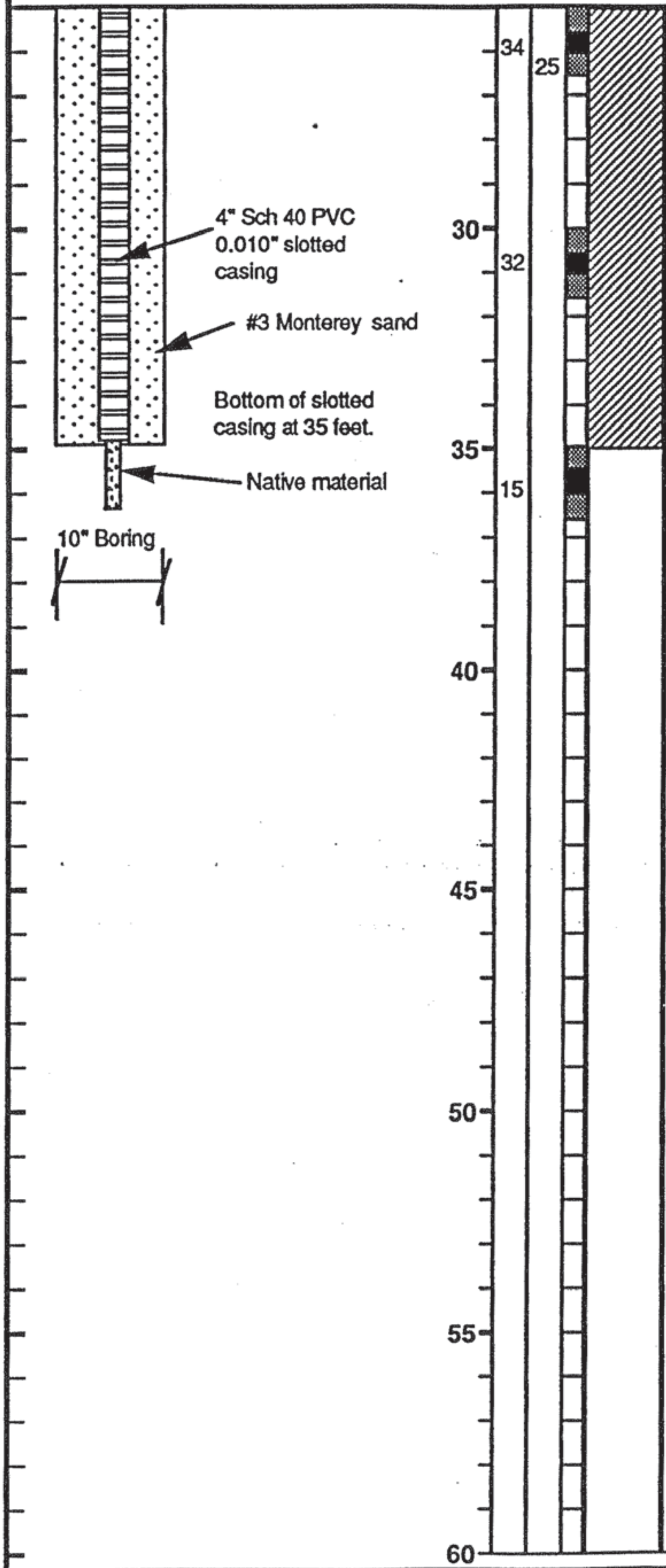
@ 10-15 feet: Sandy lenses; dark grey to black.

@15 feet,, same as above; interbedded layers of sandy silt to silty sand (light brwn) & dark grey to black clay to silty,sandy clay; Slighty moist; Hard; Slight odor.

@15-20 feet: Interbedded silty, sandy clay (dark grey) and light to medium reddish brwn fine grained to very fine grained silty sand.

SILTY SAND (SM), light brwn to reddish brwn, interbedded with light to medium brwn fine to coarse sand with subangular fine gravel; Reddish brwn stain; Dense; Slight odor.

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	EXP	Samples	Graphic	LOG OF BORING MW-1 (continued) DESCRIPTION



CLAY (CL), Lght brwnish grey to greyish brwn; Fine grained silty w/minor fg sand; Scattered rusty patches and streaks. Hard; Wet.

@ 30 feet, Silty, reddish brwn (5YR;4/3); Very stiff; Slight odor; Wet.

@ 35 feet, Interbedded silty clay, yellowish brown (5RY;4/3), with small pieces of coarse sand to fg silty sand ; Stiff; Sticky, hard drilling.

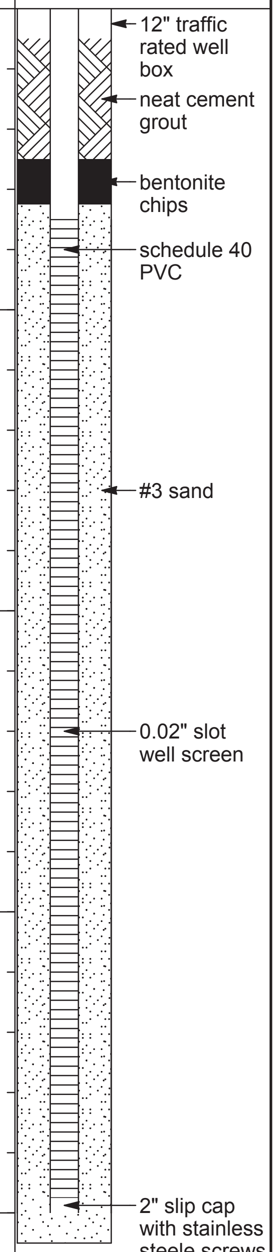
Bottom of Boring: 36.5 Feet.
Time: 10:20 AM
Date: 9/25/90

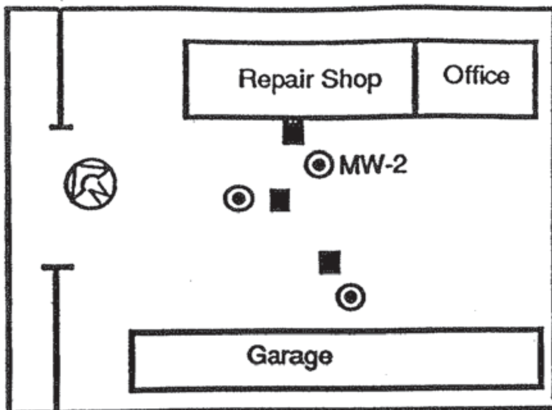
PROJECT: **Penske**	WELL / PROBEHOLE / BOREHOLE NO:
LOCATION: **725 Julie Ann Way, Oakland CA**	**MW-1R** PAGE 1 OF 1
PROJECT NUMBER: **185702145**	Stantec

DRILLING: STARTED **1/11/10** COMPLETED: **1/12/10**	NORTHING (ft):	EASTING (ft):	
INSTALLATION: STARTED **1/11/10** COMPLETED: **1/12/10**	LATITUDE:	LONGITUDE:	
DRILLING COMPANY: **Gregg Drilling**	GROUND ELEV (ft):	TOC ELEV (ft):	
DRILLING EQUIPMENT: **(LAR) Limited Access Rig**	INITIAL DTW (ft): **17 1/11/10**	BOREHOLE DEPTH (ft): **20.5**	
DRILLING METHOD: **Auger**	STATIC DTW (ft): **4.55 1/12/10**	WELL DEPTH (ft): **20.0**	
	WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **8**	
SAMPLING EQUIPMENT: **Macrocore**	LOGGED BY: **CM**	CHECKED BY: **Eva Hey**	

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Cr+6 Screen Time Sample ID	Measured Recov. (ft)	Blow Count	Headspace PID (ppmv)	Depth (feet)
		SW	**GRAVELLY SAND** ; SW; 5Y4/4 olive; fine to coarse-grained; loose; dry; well graded; Fill; 30% gravel						
		CL	**LEAN CLAY WITH GRAVEL** ; CL; 10YR3/1 very dark gray; medium plasticity; stiff; dry; 10% gravel; glass at 4.5 ft.; fill		--			0.0	
1210 5									5
		SW	**GRAVELLY SAND** ; SW; 5Y6/3 pale olive; fine to coarse-grained; loose; dry; moderate petroleum odor; subrounded; well graded; 30% gravel		1210 MW-1R, 5'			5	
			Very hard; Concrete; possible burried slab		--			34	
1215		CH	**FAT CLAY** ; CH; 10Y4/1 dark greenish gray; high plasticity; very stiff; moist; moderate petroleum odor; Water filled rootholes; staining along rootholes						
10					--			67	10
		CL	**SILTY LEAN CLAY** ; CL; 5Y4/3 olive; medium plasticity; hard; dry; moderate petroleum odor; 30% silt						
1220					--			12	
					--			45	
15									15
1225		SC	**CLAYEY SAND** ; SC; 5Y4/3 olive; fine-grained; medium dense; moist; moderate petroleum odor; 40% clay						
		SM	**SILTY SAND** ; SM; 5Y4/4 olive; fine-grained; medium dense; wet; moderate petroleum odor; 40% silt		--			67	
1230									
20									20
			Boring terminated at 20.5 feet.						

Borehole Backfill





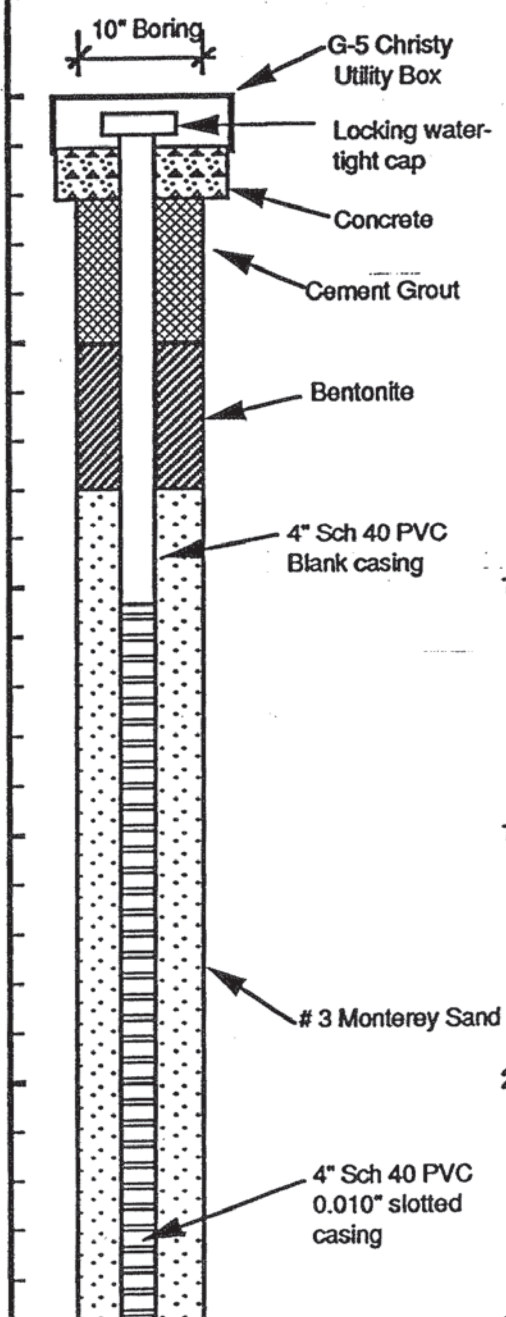
LOG OF BORING MW-2

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 26, 1990
Drilling Method: 10" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP
5	50 6"	260
10	16	100
15	29	60
20	63	40
25		

DESCRIPTION

Surface Elevation: 6.21'
Casing Elevation: 5.85'

Asphalt

CLAY (CL), clay, red brick and backfill material as part of fill under parking lot. Red brick pieces in cuttings to appro. 4.5 feet.

@ 5 feet: Silty, Dark grey to black to dark olive grey; With pieces of red brick in sample; Hard; Slight odor.

@5-10 Feet: Clayey, Light olive green to brwn to dark grey; With red brick pieces; moderate odor.

@ 10 feet: Silty, pale olive (5Y;6/3), to olive grey; Stiff; Slight odor.

@ 10-15 feet: Med to light grey; With<5% fine gravel. Slight to mod odor.

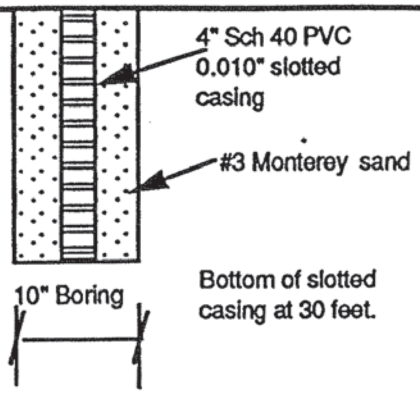
@ 15 feet: Silty, Light olive grey (5Y;6/2); Very stiff; Tight; Dry to moist.

SAND (SW), Pale brwn (10YR;6/3), fine to med grained with 10-40% fine rounded to sudangular gravel; Dense; Wet; Slight odor.

@ 22 feet: CLAY (CL), Light olive brwn; sandy to silty with fine gravel.

LOG OF BORING MW-2
(continued)

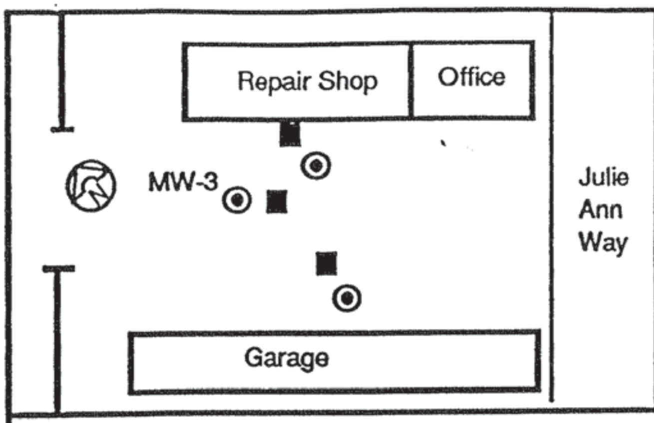
WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	EXP	Samples	Graphic	DESCRIPTION
4" Sch 40 PVC 0.010" slotted casing; #3 Monterey sand		34	25			SAND (SW), Yellowish brwn (10YR;5/4); Med to coarse grained ; With 10% clay and 20% subangular to rounded 1/4" gravel; Dense; Wet; Very slight odor.
						No sample collected. Sticking, heaving mud and flowing sands prevent sample collection or further drilling advance. Trouble pulling out sample tube and inner drill rods. Boring stopped at 30-feet.
Bottom of slotted casing at 30 feet. 10" Boring	30					
	35					
	40					
	45					
	50					
	55					
	60					



Bottom of Boring: 30 Feet.
Time: 11:20 AM
Date: 9/26/90

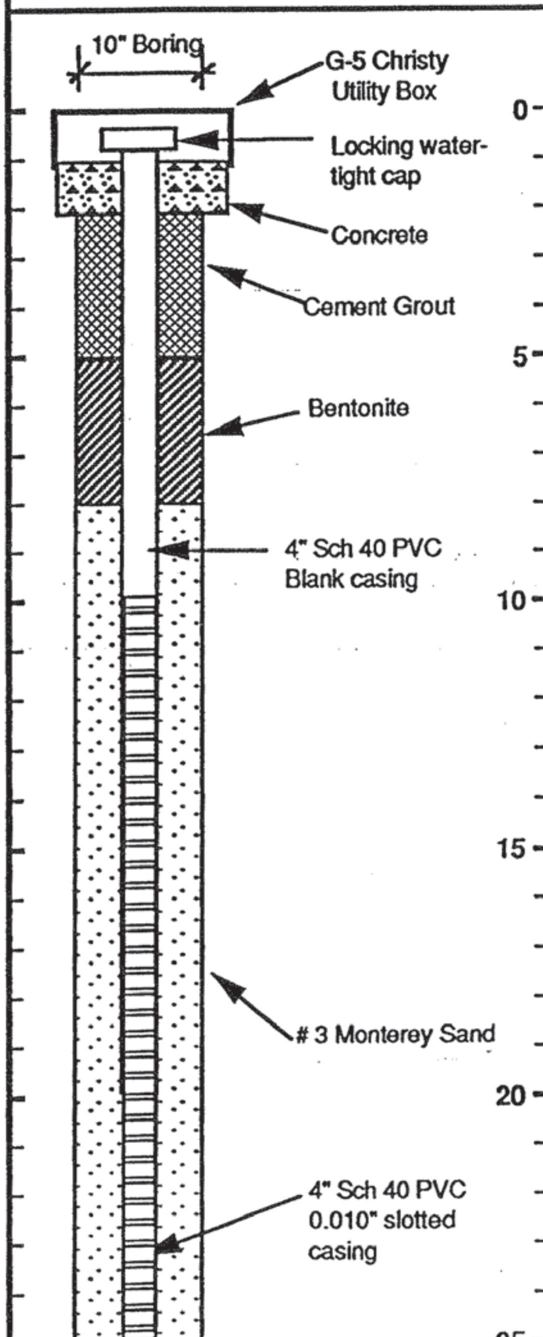
LOG OF BORING MW-3

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California



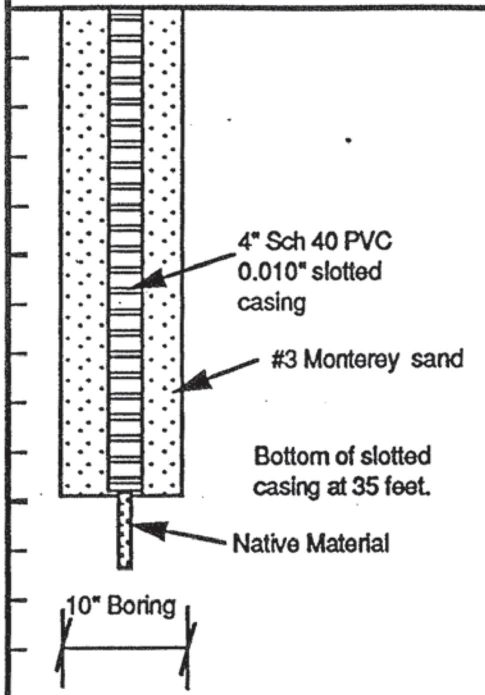
Project No.: RC01903	Date Drilled: September 27, 1990
Logged By: Paul V. Hehn	Drilling Method: 10" Hollow Stem Auger.
Drilling Co.: West HazMat	Sampling Method: 2" Split spoon
Driller: Mark Thorp	Inclination: Vertical

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP	DESCRIPTION
			Surface Elevation: 6.10' Casing Elevation: 5.69'
0			Asphalt
			CLAY (CL), Light to med brwn silty sand to silty clay to dark grey to black sandy clay w/ pieces of wood in cuttings. Fill. Minor amount of red brick in cuttings.
5	43		@ 5 feet: Light to dark grey to black; Interbedded fine to med grained gravel; Hard; Very slight odor.
			@8 feet: Change from fill to native formation; With <5% fine gravel; Slight odor.
10	29	115	@ 10 feet: Olive grey to blue grey (5Y;5/2); With interbedded gravel; Some pieces of wood; Very stiff; Damp; Slight odor.
15	38	200	@ 15 feet: Sandy, Light olive grey (5Y;6/2); sandy to silty clay; Thin interbedded gravelly sand lense in upper part; Rust to grey colored patches; Hard; Slight odor.
			@15-20 feet: Light to med olive grey;
20	44	120	@ 20 feet: Silty to sandy, Very pale brwn (10YR;7/4); With fine gravel and interbedded sandy layer w/ gravel; Hard; No odor.
			@ 23 feet: Silty sand, reddish to yellowish brwn; With sandy clay and <5% subrounded gravel.
25			

WELL CONSTRUCTION



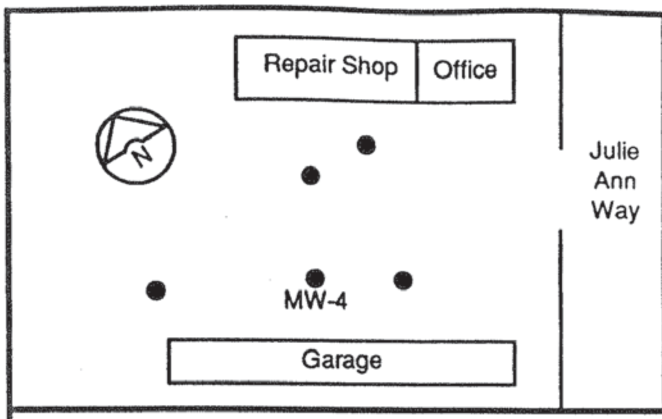
LOG OF BORING MW-3
(continued)

DESCRIPTION

Depth (ft.)	Blows/ft.	EXP	Description
	21	80	SAND (SM), Brown (7.5YR;5/2), fine to med grained; Intebedded with silty sand and dark grey fine to coarse gravel lenses; Medium dense; Slight odor. @ 25-30 feet: Silty sand to sandy silts; Drilling getting tight; trouble pulling rods.
30	33	60	SAND (SC), Light brwn (10YR;6/4); With silty to sandy clays; Very fine grained; Very fluid, flowing sands; Dense; Wet.
			CLAY (CL), Yellowish brwn (10YR;6/4); Sandy to silty ; Hard; Wet.
35	48	45	Bottom of Boring: 36.5 Feet. Time: 12:00 PM Date: 9/27/90
40			
45			
50			
55			
60			

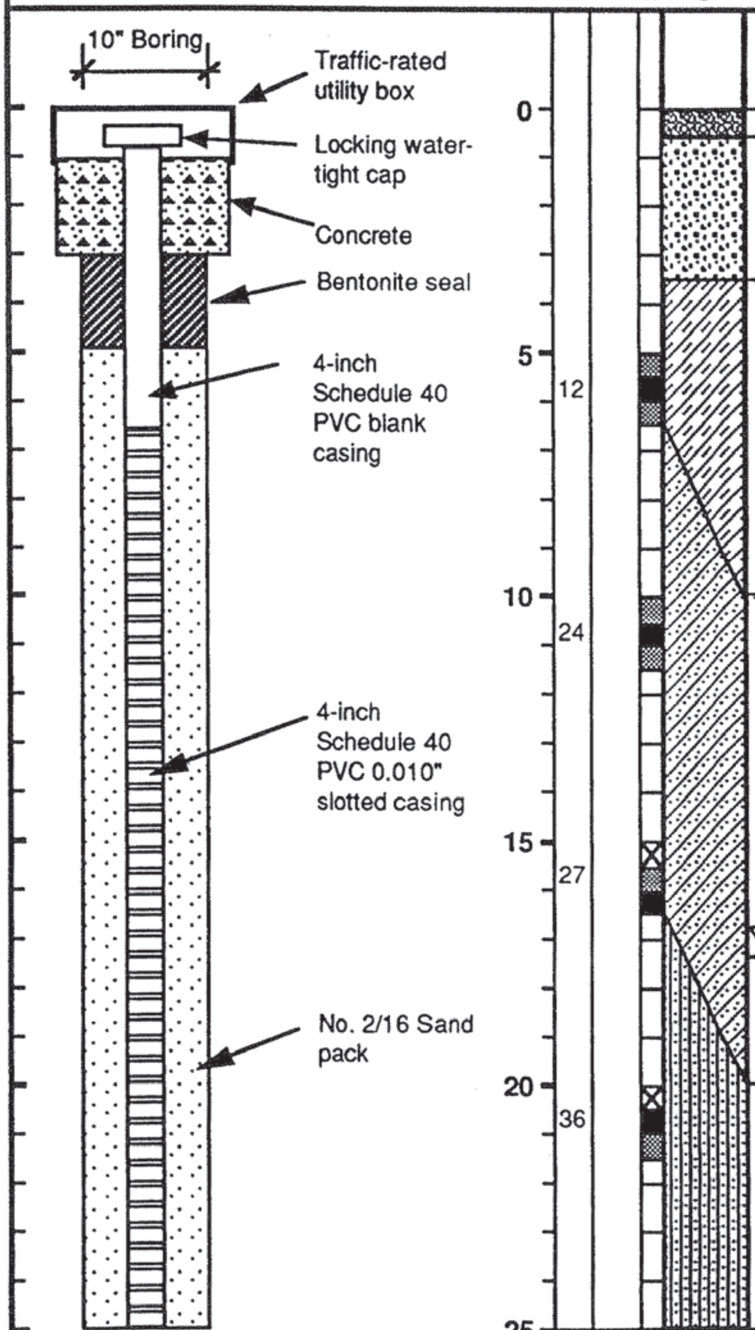
LOG OF BORING MW-4

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California



Project No.: RC01906
Logged By: M. M. Bessette
Drilling Co.: West Hazmat
Driller: Bill Smith
Date Drilled: February 2, 1993
Drilling Method: 10" Hollow stem auger
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	DESCRIPTION



Surface Elevation: 5.55 feet
Casing Elevation: 5.18 feet

Asphaltic Concrete

FILL: Gravel, rubble and brick

ORGANIC CLAY (OH); black (10YR 2/1); trace fine sand; abundant roots; stiff; moist.

CLAYEY SAND (SC); yellowish brown (10YR 5/4); poorly sorted; 50-60% fine sand, 30-40% clay, 5-15% medium sand; roots; medium dense; moist.

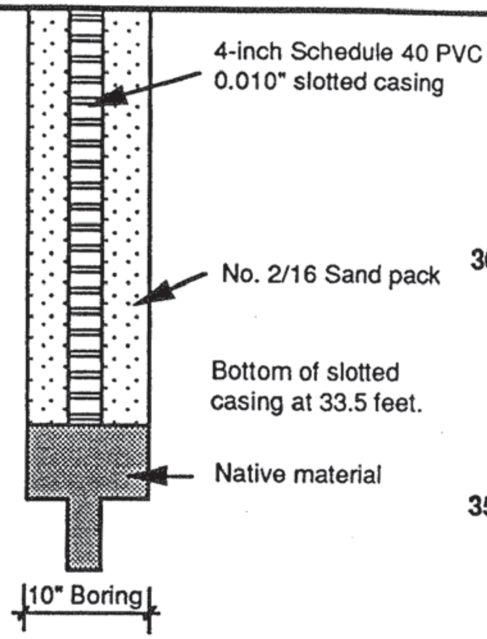
@ 15 feet: yellowish brown (10YR 5/6); 75-85% fine sand; 10-15% clay; 5-10% medium sand; trace fine gravel.

SAND (SM); yellowish brown (10YR 5/4); moderately sorted; 70-80% fine sand; 20-30% silt; trace medium sand; iron oxidation; medium dense; moist.

WELL CONSTRUCTION

LOG OF BORING MW-4 (continued)

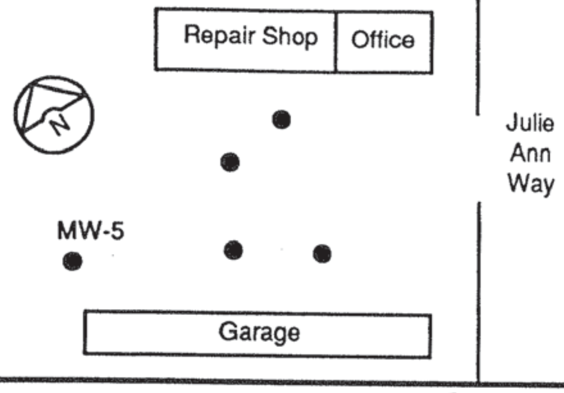
DESCRIPTION



Depth (ft.)	Blows/ft.	Description
20	20	@ 26 feet: wet.
30	13	
35	58	CLAYEY SAND (SC); yellowish brown (10YR 5/6); poorly sorted; 50-60% fine sand; 30-40% clay; 5-15% silt; dense; wet.
		Bottom of Boring: 36.5 Feet. Time: 10:12 AM Date: 2/2/93
40		
45		
50		
55		
60		

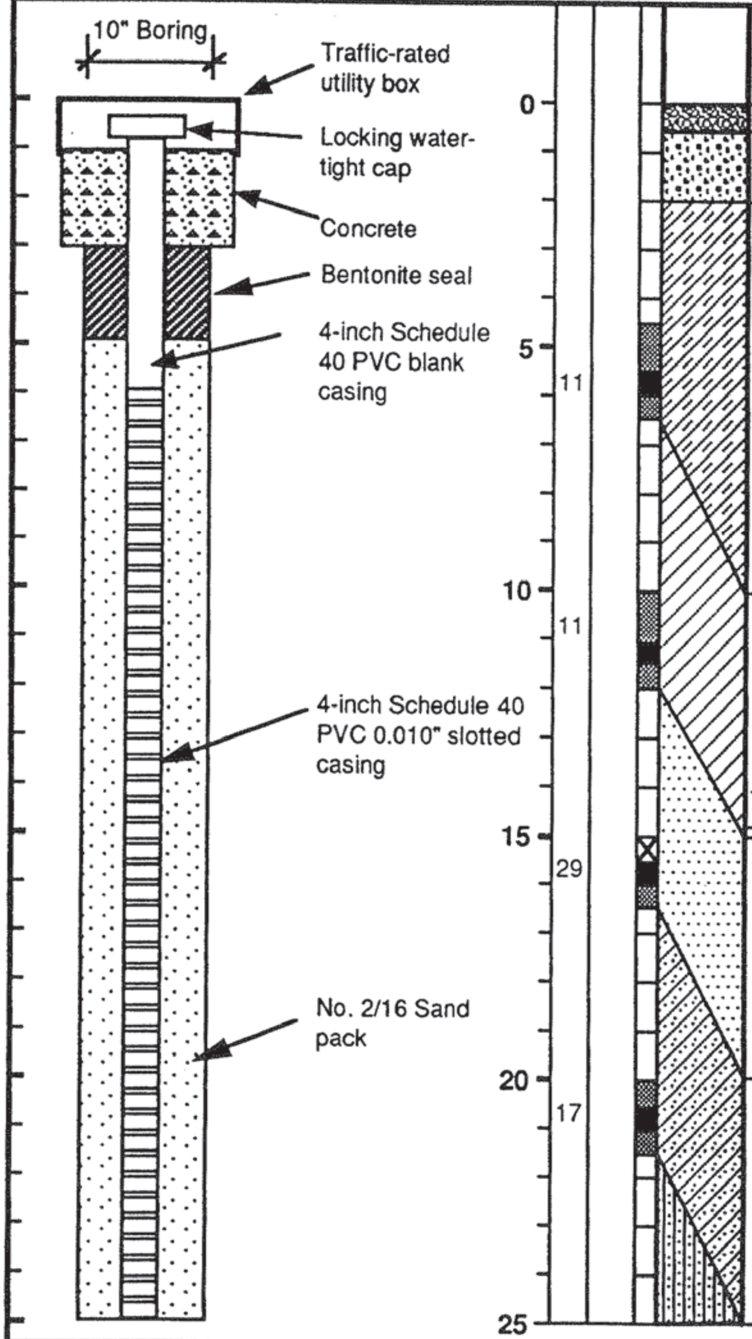
LOG OF BORING MW-5

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California



Project No.: RC01906	Date Drilled: February 2, 1993
Logged By: M. M. Bessette	Drilling Method: 10" Hollow stem auger
Drilling Co.: West Hazmat	Sampling Method: 2" Split spoon
Driller: Bill Smith	Inclination: Vertical

WELL CONSTRUCTION | Depth (ft.) | Blows/ft. | Samples | Graphic | **DESCRIPTION**



Surface Elevation: 4.95 feet
Casing Elevation: 4.71 feet

Asphaltic Concrete

FILL: Gravel and rubble

ORGANIC CLAY (OH); black (10YR 2/1): trace fine sand; abundant roots; stiff; moist.

CLAY (CL); dark greenish gray (5GY 4/1): trace medium grained sand; abundant roots; stiff; moist.

SAND (SP); yellowish brown (10YR 5/4); well sorted; 85-95% fine sand; 5-10% silt; medium dense; wet.

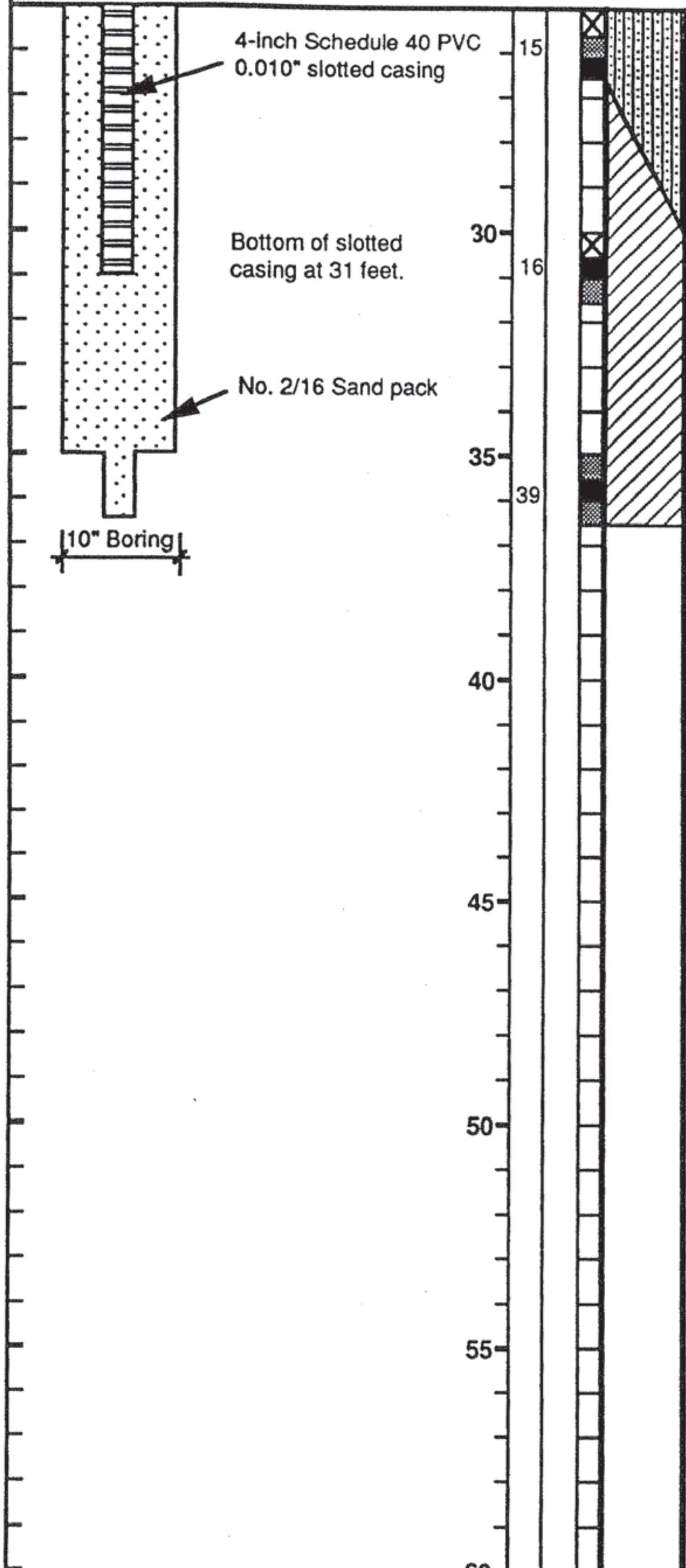
CLAYEY SAND (SC); brownish yellow (10YR 6/6); poorly sorted; 55-65% fine sand; 35-45% clay; finely laminated (>1mm); medium dense; wet.

WELL CONSTRUCTION

LOG OF BORING MW-5 (continued)

Depth (ft.) | Blows/ft. | Samples | Graphic

DESCRIPTION

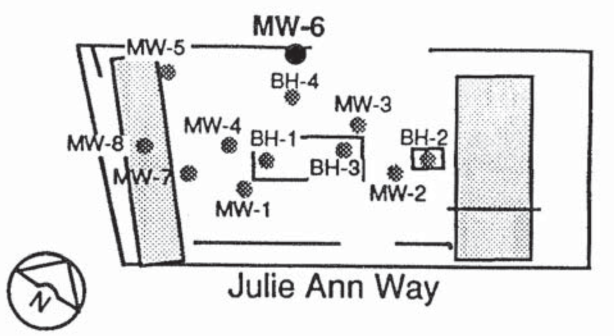


SILTY SAND (SM); yellowish brown (10YR 5/4); poorly sorted; 65-75% fine sand; 25-35% silt; trace clay; loose; moist.

SANDY CLAY (CL); yellowish brown (10YR 5/4); poorly sorted; 65-75% clay; 25-35% fine sand; finely laminated; stiff; moist.

@ 35 feet: 80-90% clay; 10-20% fine sand; trace silt; very stiff.

Bottom of Boring: 36.5 Feet.
Time: 2:36 PM Date: 2/2/93

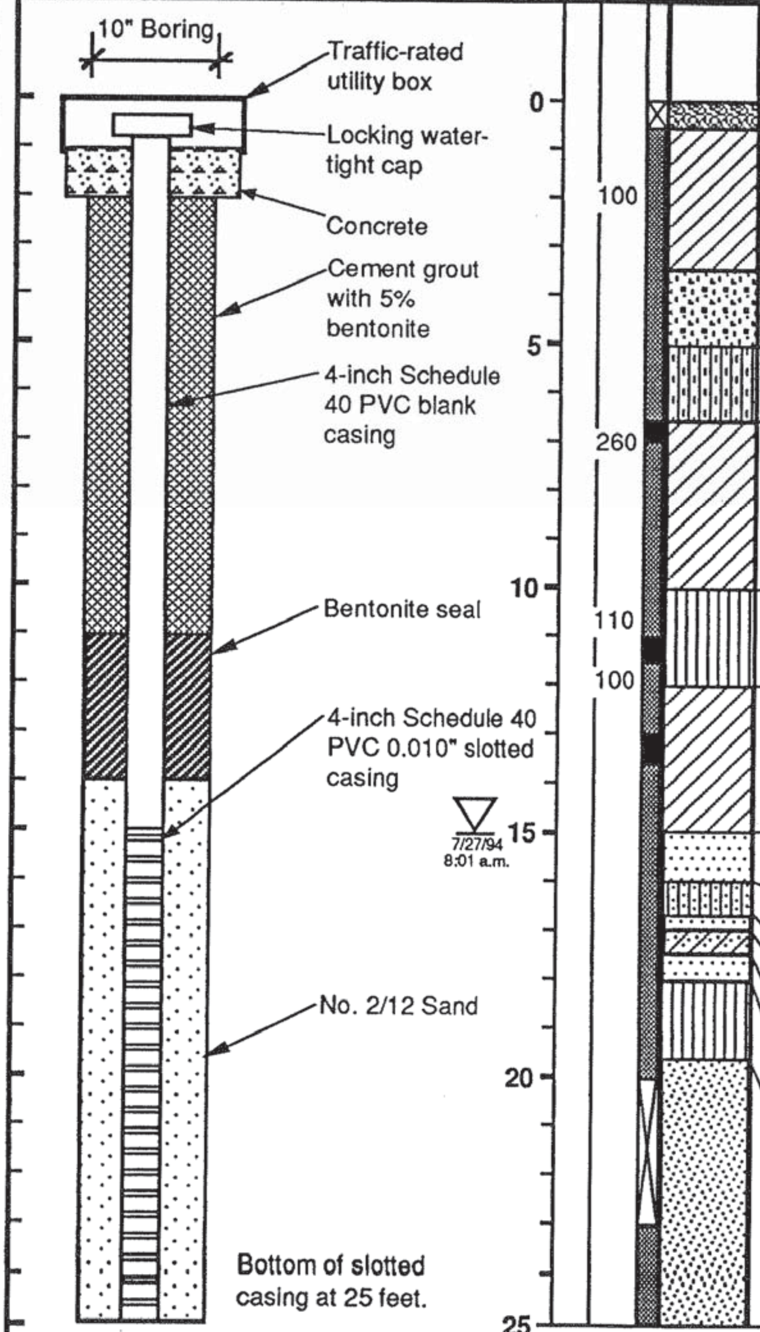


LOG OF BORING MW-6
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007
Logged By: C. Sean Bisch
Drilling Co.: West Hazmat
Driller: Scott Irwin

Date Drilled: July 27, 1994
Drilling Method: 10" Hollow stem auger
Sampling Method: Continuous core
Driller's License: 554979

WELL CONSTRUCTION | Blows/ft. | PPM | Samples | Graphic | **DESCRIPTION**



3" Asphaltic Concrete

CLAY (CL); very dark grayish brown (2.5Y 3/2); mottled with grayish green (5G 5/2); 10-15% fine to coarse-grained sand; 10-15% angular gravel; wood fragments; possible fill material; moist.

GRAVEL (GW); light olive brown (2.5Y 5/4); 80-90% angular gravel; 10-20% fine to coarse-grained sand; dry.

ORGANIC CLAY (OL); black (2.5Y 2/0); 10-20% decaying organic matter; wood fragments; moist.

SANDY CLAY (CL); very dark grayish brown (2.5Y 3/2); 25-35% fine to coarse-grained sand; root traces; moist.

SANDY SILT (ML); yellowish brown (10YR 5/4); 25-35% fine-grained sand; moist.

CLAY (CL); dark greenish gray (5GY 4/1); 10-20% fine to coarse-grained sand; roots; moist.

@ 14.5 feet: very dark gray (5Y 3/1); 5-15% fine to coarse-grained sand; wet.

SAND (SP); yellowish brown (10YR 5/4); medium to coarse-grained, angular sand; 0-5% fines; wet.

SILTY SAND (SM); yellow brown (10YR 5/4); fine-grained sand; 10-20% fines; moist.

SAND (SP); coarse-grained; wet.

CLAYEY SAND (SC); yellowish brown (10YR 5/4); fine to medium-grained sand; 5-15% fines; wet.

SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; 5-15% fines; wet.

SILT (ML); olive (5Y 5/4); trace fine-grained sand; moist.

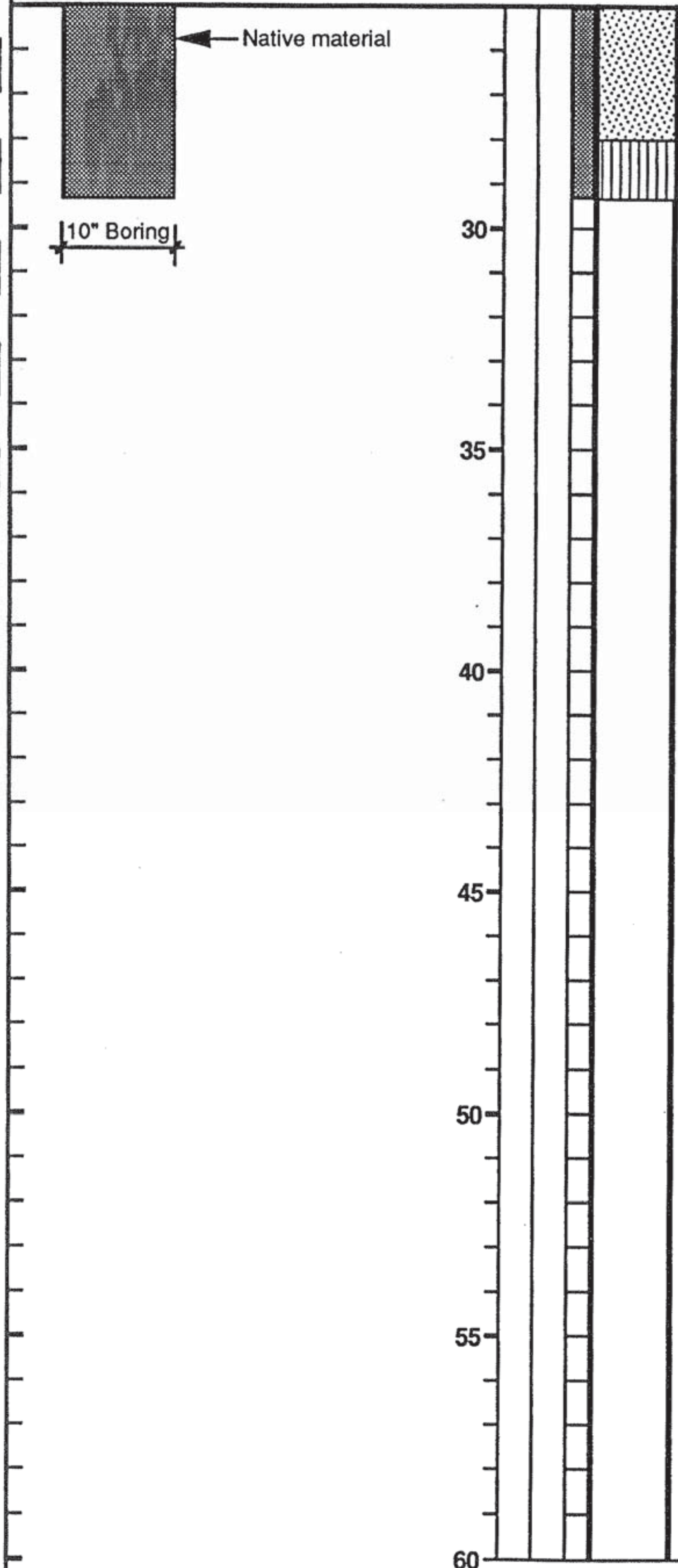
SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained angular sand; trace fines; wet.

WELL CONSTRUCTION

Depth (ft.) | Blows/ft. | Samples | Graphic

LOG OF BORING MW-6 (continued)

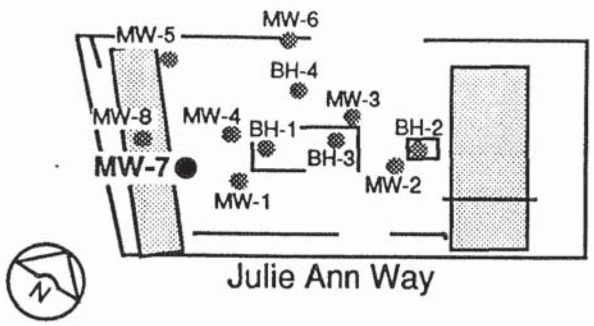
DESCRIPTION



SAND (SW); continued.

CLAYEY SILT (ML); olive (5Y 5/3); 95-100% fines; 0-5% fine-grained sand; moist.

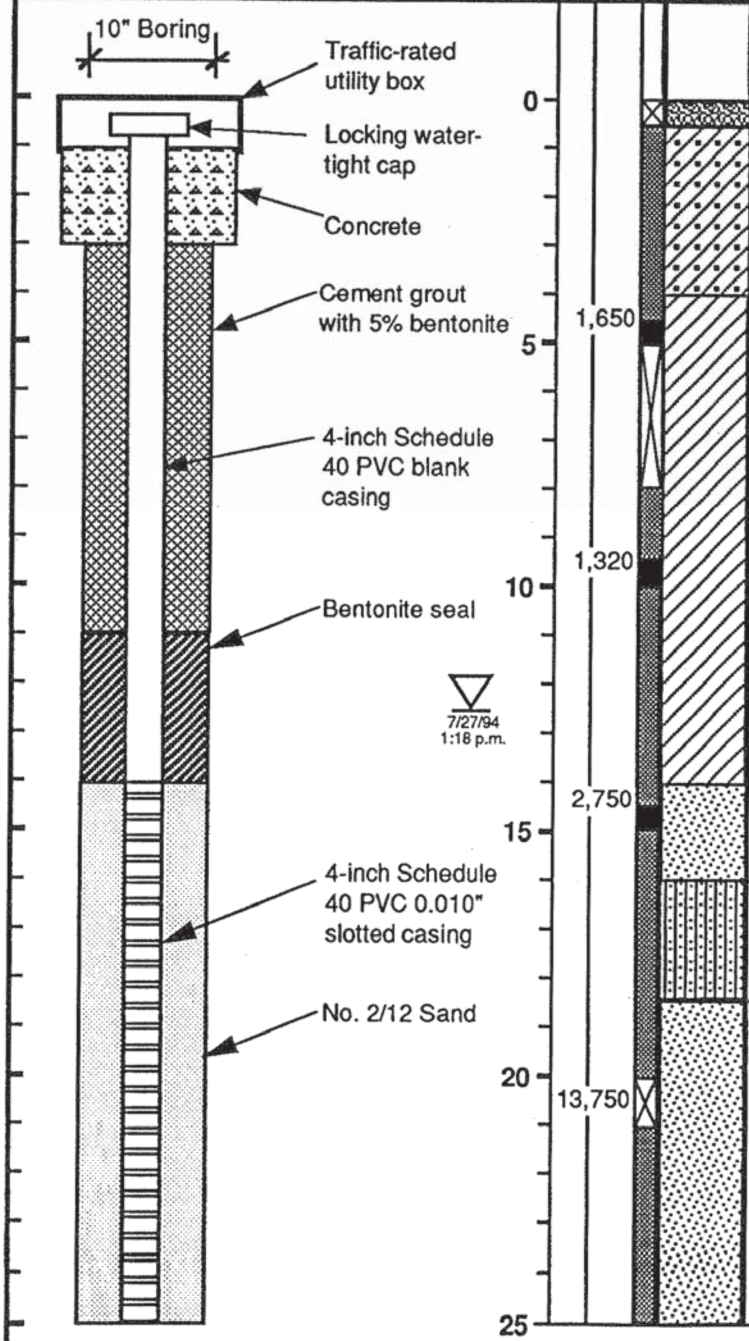
Total Depth Explored: 29.25 feet
Date: July 27, 1994



LOG OF BORING MW-7
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007
Logged By: C. Sean Bisch
Drilling Co.: West Hazmat
Driller: Scott Irwin
Date Drilled: July 27, 1994
Drilling Method: 10" Hollow stem auger
Sampling Method: Continuous core
Driller's License: 554979

WELL CONSTRUCTION | Blows/ft | PPM | Samples | Graphic | **DESCRIPTION**



6" Asphaltic Concrete

CLAYEY GRAVEL (GC); olive (5Y 4/4); fine to coarse, subangular gravel; 25-35% fines; 10-20% fine to medium-grained sand; brick fragment; moist.

SILTY CLAY (CL); black (10YR 2/1); 80-90% fines; 10-20% fine to coarse-grained sand; trace coarse-grained, subangular gravel; trace roots; moist.

@ 9 feet: abundant wood fragments; hydrocarbon odor; wet.

@ 10 feet: gray (5Y 5/1); 5-15% fine to coarse-grained sand; petroleum hydrocarbons; wood fragments; moist.

@ 13 feet: yellowish brown (10YR 5/4); mottled; trace coarse-grained sand.

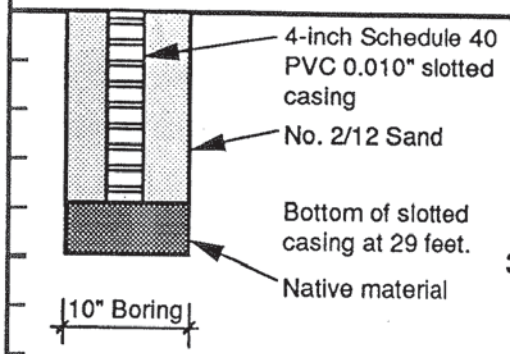
SAND (SW); very dark gray (5Y 3/1); fine to coarse-grained, angular sand; 5-15% fines; petroleum hydrocarbons; wet.

SILTY SAND (SM); yellowish brown (10YR 5/4); fine-grained sand; 10-20% fines; wet.

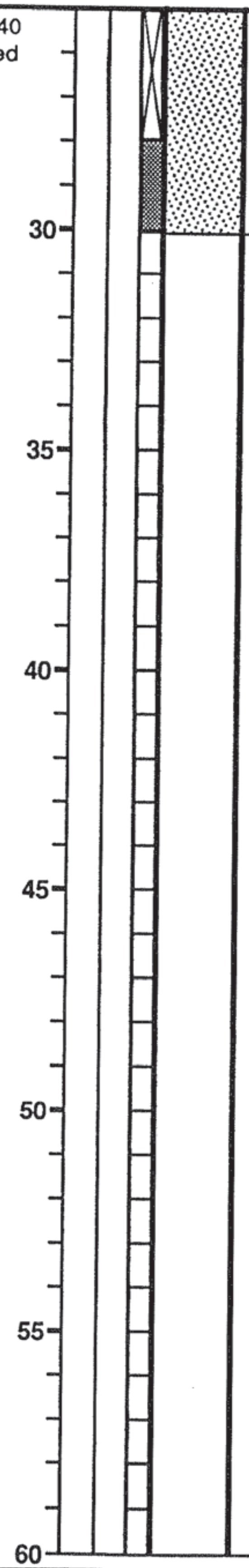
SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; 0-5% fines; wet.

@ 23 feet: iron-oxide lamination.

WELL CONSTRUCTION



PID (PPM) | Samples | Graphic



LOG OF BORING MW-7 (continued)

DESCRIPTION

SAND (SW); continued.

Total Depth Explored: 30 feet
Date: July 27, 1994 Time: 1420

PROJECT: **Penske**
LOCATION: **725 Julie Ann Way, Oakland CA**
PROJECT NUMBER: **185702145**

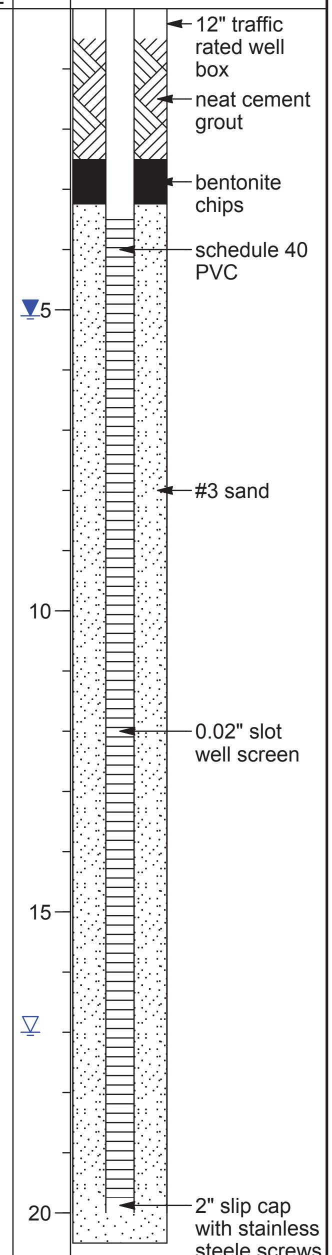
WELL / PROBEHOLE / BOREHOLE NO:
MW-7R

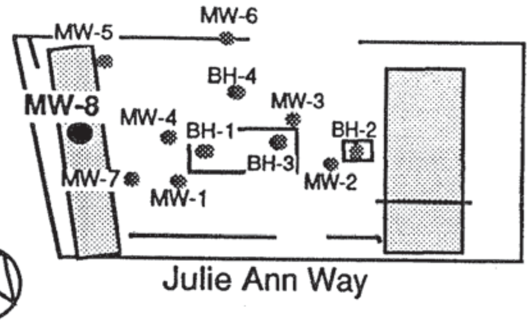
Stantec

DRILLING: STARTED **1/11/10**	COMPLETED: **1/12/10**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **1/11/10**	COMPLETED: **1/12/10**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**		GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **(LAR) Limited Access Rig**		INITIAL DTW (ft): **17 1/11/10**	BOREHOLE DEPTH (ft): **20.5**
DRILLING METHOD: **Auger**		STATIC DTW (ft): **5.1 1/12/10**	WELL DEPTH (ft): **20.0**
		WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **8**
SAMPLING EQUIPMENT: **Macrocore**		LOGGED BY: **CM**	CHECKED BY: **Eva Hey**

Time & Depth (feet)	USCS	Description	Cr+6 Screen Time Sample ID	Measured Recov. (ft)	Blow Count	Headspace PID (ppmv)
	SW	**GRAVELLY SAND** ; SW; 5Y4/4 olive; fine to coarse-grained; loose; dry; well graded; Fill; 30% gravel				
	OH	**FAT CLAY** ; OH; N2.5/0 black; high plasticity; stiff; dry; slight petroleum odor; organic rich clay	--			12
		Brick				
1110 5			1110 MW-7R, 5'			74
		Same as above; moist; strong petroleum odor	--			85
1115	CH	**FAT CLAY** ; CH; 10Y4/1 dark greenish gray; high plasticity; very stiff; moist; strong petroleum odor	--			81
			--			74
10			--			49
1120	CL	**SILTY LEAN CLAY** ; CL; 10Y4/1 dark greenish gray; medium plasticity; hard; dry; moderate petroleum odor; 10% sand; 20% silt	--			27
			--			89
15			--			0
1125	SC	**CLAYEY SAND** ; SC; 10YR5/6 yellowish brown; fine-grained; dense; moist; 40% clay				
	SM	**SILTY SAND WITH GRAVEL** ; SM; 10YR4/6 dark yellowish brown; fine to medium-grained; dense; wet; subangular; 10% gravel; 30% silt	--			0
			--			0
20		Boring terminated at 20.5 feet.				

Borehole Backfill

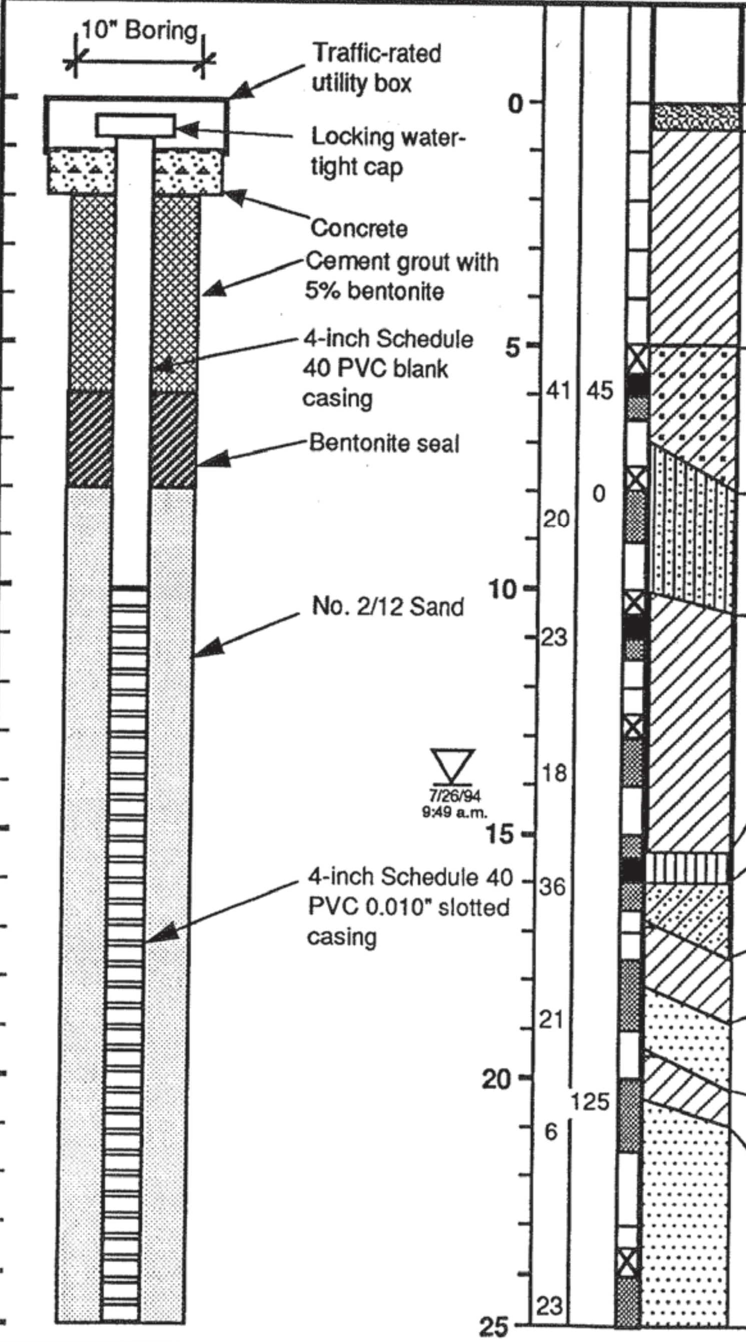




LOG OF BORING MW-8
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007
Logged By: C. Sean Bisch
Drilling Co.: West Hazmat
Driller: George
Date Drilled: July 26, 1994
Drilling Method: 10" Hollow stem auger
Sampling Method: Continuous core
Driller's License: 554979

WELL CONSTRUCTION	Blows/ft.	PPM	Samples	Graphic	DESCRIPTION



3" Asphaltic Concrete

CLAY (CL); black (7.5YR 2/0); 0-5% fine-grained sand; hydrocarbon odor; moist.

CLAYEY GRAVEL (GC); black (7.5YR 2/0); fine gravel; 30-40% fines; 10-15% fine-grained sand; dense; moist.

SILTY SAND (SM); brown (7.5YR 5/4); fine to coarse-grained, angular sand; 20-30% fines; 5-15% fine, subangular gravel; medium dense; moist.

CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; trace medium to coarse-grained sand; very stiff; moist.

SANDY SILT (ML); dark brown (10YR 4/3); 25-35% fine-grained, angular sand; hard; wet.

CLAYEY SAND (SC); dark gray (10YR 4/1); fine to coarse-grained, angular sand; 25-35% fines; medium dense; wet.

CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; very stiff; moist.

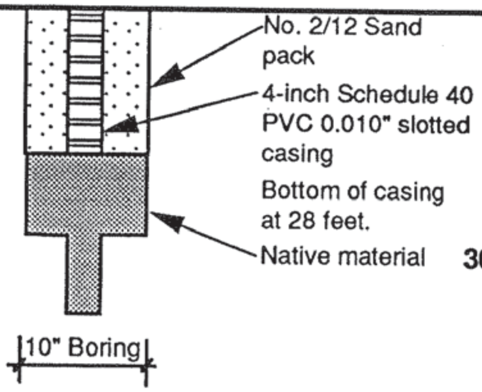
SAND (SP); dark yellowish brown (10YR 4/4); fine-grained sand; 5-15% fines; iron oxide staining; medium dense; wet.

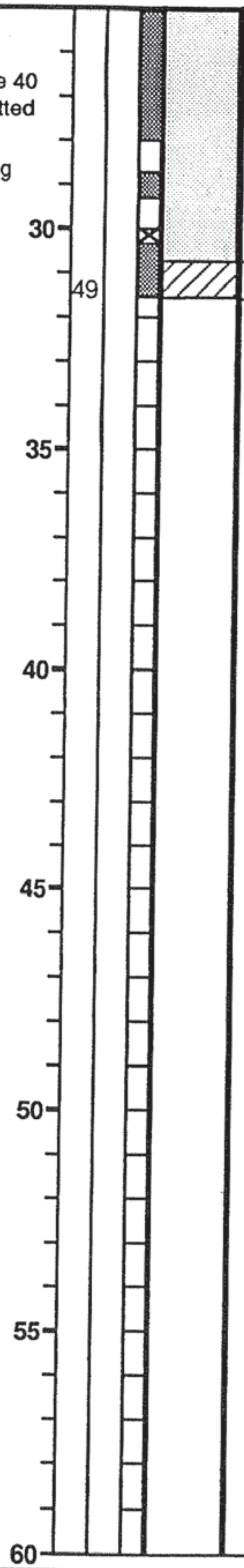
CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; very stiff; moist.

SAND (SP); dark yellowish brown (10YR 4/4); fine-grained sand; 5-15% fines; loose; wet.

@ 24 feet: medium dense.

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	LOG OF BORING MW-8 (continued) DESCRIPTION





SAND (SP); continued.

CLAY (CL); grayish brown (10YR 5/2); hard; moist.

Total Depth Explored: 31.5 feet
Date: July 26, 1994 Time: 11:12 a.m.

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-1

Stantec

DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009**	NORTHING (ft):
TIME: STARTED COMPLETED:	EASTING (ft):
DRILLING COMPANY: **Gregg Drilling**	LATITUDE:
DRILLING EQUIPMENT: **Geoprobe**	LONGITUDE:
DRILLING METHOD: **Direct Push**	GROUND ELEV (ft):
SAMPLING EQUIPMENT: **Acetate Sleeve**	TOC ELEV (ft):
	INITIAL DTW (ft): **N/A**
	BOREHOLE DEPTH (ft): **10.0**
	STATIC DTW (ft): **5.5 4/21/09**
	WELL DEPTH (ft): **---**
	WELL CASING DIAMETER (in): **---**
	BOREHOLE DIAMETER (in): **2.25**
	LOGGED BY: **K. Chuop**
	CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		Asphalt						Concrete cap
	CL	**SANDY CLAY WITH GRAVEL** ; CL; 2.5Y4/2 dark grayish brown; moist; strong HC odor; gravel up to 1-inch in diameter; observed staining and product sheen; possible backfill material						
	CH	**CLAY** ; CH; 10YR2/1 black; high plasticity; stiff; moist; strong HC odor; no dilatancy At 3.5 feet below ground surface (bgs), 30-50% gravel, up to 1.5-inch in length, angular						
	CH	**CLAY WITH GRAVEL** ; CH; 2.5Y4/2 dark grayish brown; high plasticity; stiff; moist; moderate HC odor; At 4 feet bgs, found a large piece of red brick	0830 SB-1-4'	1/4		1,058		
5	GP	**GRAVEL** ; GP; wet; poorly graded; loose gravel From approximately 5.5-8 feet bgs, no recovery		0.5/4			5	Bentonite Cement Backfill
	CH	**CLAY WITH GRAVEL** ; CH; 2.5Y4/2 dark grayish brown; high plasticity; stiff; moist; moderate HC odor	0832 SB-1-8'	1/2		--		
	GP	**GRAVEL** ; GP; poorly graded From 9 to 10 feet bgs, no recovery	0840 SB-1-8.5'			--		
10		Hole terminated at 10 feet.					10	
15							15	
20							20	

PROJECT: **Former Penske Truck Leasing Facility** LOCATION: **725 Julie Ann Way** PROJECT NUMBER: **185701155.200.0003**	WELL / PROBEHOLE / BOREHOLE NO: **SB-2** PAGE 1 OF 1 Stantec
DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009** TIME: STARTED COMPLETED: DRILLING COMPANY: **Gregg Drilling** DRILLING EQUIPMENT: **Geoprobe** DRILLING METHOD: **Direct Push** SAMPLING EQUIPMENT: **Acetate Sleeve**	NORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): **N/A** BOREHOLE DEPTH (ft): **12.0** STATIC DTW (ft): **9 4/21/09** WELL DEPTH (ft): **---** WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **2.25** LOGGED BY: **K. Chuop** CHECKED BY: **N. Doran**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
0			Asphalt							Concrete cap
		CL	**SANDY CLAY WITH GRAVEL** ; CL; 2.5Y4/2 dark grayish brown; medium plasticity; moist; gravel is fine, subangular							
5		CL	**CLAY WITH GRAVEL** ; CL; 2.5Y2.5/1 black; stiff; dry; little organic material		1400 SB-2-5'	3/3		1.1	5	Bentonite Cement Backfill
		CH	**CLAY** ; CH; stiff; moderate HC odor; hydrocarbon staining; 2.5Y2.5/1 black with 10YR4/1 dark gray mottles; trace 10YR3/4 dark yellowish brown mottles; some organic material, wood 2-3 inches in length		1402 SB-2-8'			30.8	▼ (9)	
10		CH	**CLAY** ; CH; very stiff; moist; Gley1 4/5GY greenish gray with 7.5YR4/3 brown mottles; little fine gravel; little pieces of wood		1404 SB-2-12'	4/4		17	10	
			Hole terminated at 12 feet.							
15									15	
20									20	

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-3

Stantec

DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009**
TIME: STARTED COMPLETED:
DRILLING COMPANY: **Gregg Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeve**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **N/A** BOREHOLE DEPTH (ft): **12.0**
STATIC DTW (ft): **9.5 4/21/09** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **2.25**
LOGGED BY: **K. Chuop** CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
0		Asphalt layer						Concrete cap
	CL	**SANDY CLAY** ; CL; 2.54/2 dark grayish brown; very stiff; little fine gravel up to 0.1-inch in diameter						
5	CH	**FAT CLAY** ; CH; 2.5Y2.5/1 black; soft; wet; little wood (bark); little gravel up to 0.75-inch in diameter, subangular	1240 SB-3-5'			0.1	5	
	CL	**CLAY** ; CL; 10YR3/1 very dark gray; soft; moist; some organic material (roots)		3/3				Bentonite Cement Backfill
			1243 SB-3-8'			0.1		
	GP	**GRAVEL WITH SAND AND CLAY** ; GP; 2.5Y2.5/1 black; wet; gravel is fine to medium; some organic material	1245 SB-3-9'			1.0	▼ (9.5)	
10	CH	**FAT CLAY** ; CH; 2.5Y2.5/1 black; moist; trace fine gravel		4/4			10	
	CH	**FAT CLAY** ; CH; high plasticity; very stiff; GLEY2 4/5BG dark greenish gray; 5YR4/4 reddish brown mottles; trace fine gravel; trace organic material	1250 SB-3-12'			2.0		
		Hole terminated at 12 feet.						
15							15	
20							20	

PROJECT: **Former Penske Truck Leasing Facility** LOCATION: **725 Julie Ann Way** PROJECT NUMBER: **185701155.200.0003**	WELL / PROBEHOLE / BOREHOLE NO: **SB-4** PAGE 1 OF 1
DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009** TIME: STARTED COMPLETED: DRILLING COMPANY: **Gregg Drilling** DRILLING EQUIPMENT: **Geoprobe** DRILLING METHOD: **Direct Push** SAMPLING EQUIPMENT: **Acetate Sleeve**	NORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): **N/A** BOREHOLE DEPTH (ft): **12.0** STATIC DTW (ft): **10.5 4/21/09** WELL DEPTH (ft): **---** WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **2.25** LOGGED BY: **K. Chuop** CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Borehole Backfill
		Asphalt layer					Concrete cap
	CL	**SANDY CLAY** ; CL; 10YR4/3 brown; medium plasticity; moist; gravel is fine to medium, angular					
	CH	**FAT CLAY** ; CH; 10YR5/3 brown; high plasticity; moist; little staining					
	CH	**FAT CLAY** ; CH; 10YR2/1 black; medium plasticity; moist; some fine gravel up to 1.5-inch in diameter					
	CH	**FAT CLAY** ; CH; same as above, except no gravel; high plasticity; found broken fragments of brown glass					
5	CH	**FAT CLAY** ; CH; 10YR2/1 black; high plasticity; very stiff; strong organic odor At 5.5 feet below ground surface (bgs), clay is soft; almost wet	1240 SB-4-5'	3.5/3.5		0.1	Bentonite Cement Backfill
			1243 SB-4-6.5'			0.1	
		At 7.5 bgs, moist; stiff					
	CH	**FAT CLAY** ; CH; 2.5Y4/1 dark gray; high plasticity; very stiff; moist	1245 SB-4-8.5'			1.0	
10				4/4			
	CH	**FAT CLAY** ; CH; same as above, except stiff	1250 SB-4-12'			2.0	
		Hole terminated at 12 feet.					
15							
20							

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-5

PAGE 1 OF 1

Stantec

DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009**	NORTHING (ft): / EASTING (ft):
TIME: STARTED COMPLETED:	LATITUDE: / LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**	GROUND ELEV (ft): / TOC ELEV (ft):
DRILLING EQUIPMENT: **Geoprobe**	INITIAL DTW (ft): **8 4/21/09** / BOREHOLE DEPTH (ft): **12.0**
DRILLING METHOD: **Direct Push**	STATIC DTW (ft): **9.5 4/21/09** / WELL DEPTH (ft): **---**
SAMPLING EQUIPMENT: **Acetate Sleeve**	WELL CASING DIAMETER (in): **---** / BOREHOLE DIAMETER (in): **2.25**
	LOGGED BY: **K. Chuop** / CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Borehole Backfill
0		Asphalt layer					Concrete cap
	CL	**SANDY CLAY** ; CL; 2.5Y4/2 dark grayish brown; medium plasticity; very stiff; moist; gravel is fine to medium up to 1" in diameter					Bentonite Cement Backfill
		At 4 feet below ground surface (bgs), slight hydrocarbon odor					
5	CL	**FAT CLAY** ; CL; 2.5Y4/1 dark gray; high plasticity; very stiff; no dilatancy; little sand	1140 SB-5-5'			30	
	CL	**FAT CLAY** ; CL; 2.5Y3/1 very dark gray; high plasticity; stiff; no dilatancy; moist; some gley2 4/1 dark greenish gray mottling; hydrocarbon odor	1142 SB-5-6.5'	3/3		120	
	CL	CL; At 5.5 feet bgs, prescence of little organic matter (roots); soft; strong hydrocarbon odor					
	CL	**SILTY CLAY** ; CL; 2.5Y2.5/1 black; medium plasticity; soft; moist; medium dilatancy; trace fine gravel; trace 5YR4/4 reddish brown brick; moist	1145 SB-5-8.5'			20	
	CL	**CLAY** ; CL; 2.5Y3/1 very dark gray; medium plasticity; soft; moist; medium dilatancy; some silt; hydrocarbon odor At 8 feet bgs, wet		4/4			
10	CL	**FAT CLAY** ; CL; GLEY 4/5 dark grayish green; high plasticity; very stiff; moist; 5YR4/4 reddish brown mottling; trace fine gravel; trace organic material	1150 SB-5-12'			9.8	
		Hole terminated at 12 feet.					
15							
20							

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-6

Stantec

DATE: STARTED **4/22/2009** COMPLETED: **4/22/2009**	NORTHING (ft):
TIME: STARTED COMPLETED:	EASTING (ft):
DRILLING COMPANY: **Gregg Drilling**	LATITUDE:
DRILLING EQUIPMENT: **Geoprobe**	LONGITUDE:
DRILLING METHOD: **Direct Push**	GROUND ELEV (ft):
SAMPLING EQUIPMENT: **Acetate Sleeve**	TOC ELEV (ft):
	INITIAL DTW (ft): **6 4/22/09**
	BOREHOLE DEPTH (ft): **12.0**
	STATIC DTW (ft): **9 4/22/09**
	WELL DEPTH (ft): **---**
	WELL CASING DIAMETER (in): **---**
	BOREHOLE DIAMETER (in): **2.25**
	LOGGED BY: **K. Chuop**
	CHECKED BY: **N. Doran**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
0			Asphalt layer							Concrete cap
		CL	**SANDY CLAY** ; CL; 2.5Y4/2 dark grayish brown; medium plasticity; very stiff; moist; gravel is fine to medium up to 1" in diameter							
5			At 5 feet bgs, encountered 4-inch concrete layer		1100 SB-6-5'	2/3		28.4	5	
		CL	**GRAVELLY CLAY** ; CL; 5Y3/1 very dark gray; medium plasticity; gravel is medium							Bentonite Cement Backfill
		ML	At 6 feet below ground surface (bgs), presence of 2.5YR4/6 red brick; wet		1101 SB-6-6.5'			337		
			SILT ; ML; 5YR2.5/1 black; medium plasticity; strong hydrocarbon odor; little staining; some clay							
			No recovery from 7-8 feet bgs							
			No recovery from 8-12 feet bgs							
10						0/4			10	
12			Hole terminated at 12 feet.							
15									15	
20									20	

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-7

DATE: STARTED **4/22/2009** COMPLETED: **4/22/2009**	NORTHING (ft):
TIME: STARTED COMPLETED:	EASTING (ft):
DRILLING COMPANY: **Gregg Drilling**	LATITUDE:
DRILLING EQUIPMENT: **Geoprobe**	LONGITUDE:
DRILLING METHOD: **Direct Push**	GROUND ELEV (ft):
SAMPLING EQUIPMENT: **Acetate Sleeve**	TOC ELEV (ft):
	INITIAL DTW (ft): **N/A**
	BOREHOLE DEPTH (ft): **20.0**
	STATIC DTW (ft): **11 4/22/09**
	WELL DEPTH (ft): **---**
	WELL CASING DIAMETER (in): **---**
	BOREHOLE DIAMETER (in): **2.25**
	LOGGED BY: **K. Chuop**
	CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Borehole Backfill
0		Asphalt layer					Concrete cap
	GP	**GRAVEL** ; GP; 2.5Y2.5/1 black; poorly graded; very strong hydrocarbon odor					
	CL	**SANDY CLAY** ; CL; with silt					
	GP	**GRAVEL** ; GP; 2.5Y2.5/1 black; poorly graded; very strong hydrocarbon odor					
5	SP	**SAND** ; SP; 10YR6/4 light yellowish brown; dry; poorly graded; sand is fine- to medium-grained; trace mica; trace black staining; some clay; some silt	0950 SB-7-5'	3/3		0.3	
	SP	**SAND** ; SP; 10YR3/1 very dark gray; poorly graded; moist, almost wet; little coarse gravel, hydrocarbon odor; little brick pieces					
	CH	**FAT CLAY** ; CH; 2.5Y4/1 dark gray; high plasticity; little dilatancy; no sand; interbedded with gley 2 4/5BG greenish gray color; moist	0955 SB-7-8'	0.5/4		15.5	
	GP	**GRAVEL** ; GP; poorly graded; coarse gravel From 8.5-12 feet bgs, no recovery					
10							Bentonite Cement Backfill
	CH	**FAT CLAY** ; CH; 2.5Y4/1 dark gray; high plasticity; little dilatancy; no sand; interbedded with gley 2 4/5BG greenish gray color; moist At 13.5 feet bgs, color change to gley2 4/5BG greenish gray At 17.5 feet bgs, color change to 2.5YR4/4 olive brown At 18 feet bgs, color change to 2.5Y4/1 dark gray From 18.25-18.5 feet bgs, prescence of little brick and approximate 1-inch layer of calcium carbonate	0959 SB-7-12' 1000 SB-7-16'	4/4 4/4		9.2 11.1	
	CL	**SANDY CLAY** ; CL; 2.5Y4/1 dark gray; high plasticity; stiff; moist; sand is fine-grained; slow dilatancy					
20		Hole terminated at 20 feet.					

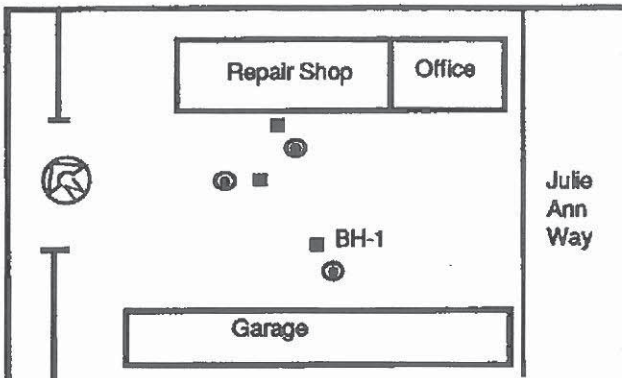
PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-8

Stantec

DATE: STARTED **4/22/2009** COMPLETED: **4/22/2009**	NORTHING (ft):	EASTING (ft):
TIME: STARTED COMPLETED:	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**	GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **Geoprobe**	INITIAL DTW (ft): **N/A**	BOREHOLE DEPTH (ft): **20.0**
DRILLING METHOD: **Direct Push**	STATIC DTW (ft): **19 4/22/09**	WELL DEPTH (ft): **---**
SAMPLING EQUIPMENT: **Acetate Sleeve**	WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **2.25**
	LOGGED BY: **K. Chuop**	CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		Asphalt						Concrete cap
	ML	**SANDY SILT** ; ML; GLEY1 5/10Y greenish gray; low plasticity; dry; sand is medium-grained; little clay; little fine gravel						
	CH	**SANDY FAT CLAY** ; CH; GLEY1 4/10Y dark greenish gray; high plasticity; with gravel and silt; sand is fine-grained; gravel is fine; slight hydrocarbon odor						
	GW-GM	**GRAVEL WITH SILT** ; GW-GM; poorly graded; gravel is angular; with clay; some fine-grained sand						
5	CH	**SANDY FAT CLAY** ; CH; GLEY1 4/10Y dark greenish gray; high plasticity; with gravel and silt; sand is fine-grained; gravel is fine	0840 SB-8-5'			2.1	5	
	CL	**CLAY** ; CL; GLEY1 4/10Y dark greenish gray; medium plasticity; stiff; no dilatancy; trace red brick pieces		3/3				
		Encountered more red brick	0843 SB-8-7.5'			6.2		
				2/4				
10		From 10 to 12 feet below ground surface (bgs), no recovery					10	Bentonite Cement Backfill
	CL	**CLAY** ; CL; GLEY1 4/10Y dark greenish gray; medium plasticity; stiff; no dilatancy	0855 SB-8-12'	1.5/4		0.4		
		At 13 feet bgs, color change to 7.5YR4/2 brown						
		From 13.5 to 16 feet bgs, no recovery						
15							15	
	CH	**FAT CLAY** ; CH; GLEY1 4/10Y dark greenish gray; high plasticity; interbedded with color 7.5YR4/2 brown; trace fine gravel; trace mica; trace red brick	0900 SB-8-17'	4/4		0.2		
		At 18.5 feet bgs, small area of staining						
	CL	**SANDY CLAY** ; CL; 10YR5/4 yellowish brown; medium plasticity; sand is fine-grained; little silt						
20		Hole terminated at 20 feet.					20	



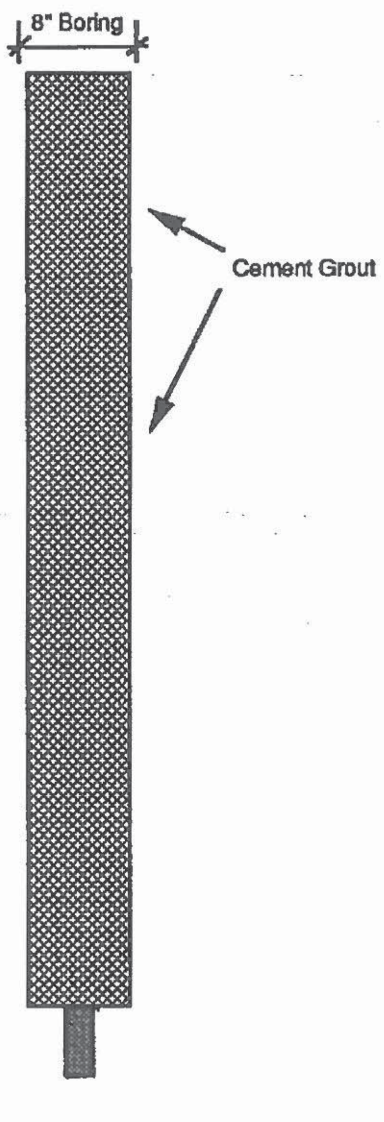
LOG OF BORING BH-1

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

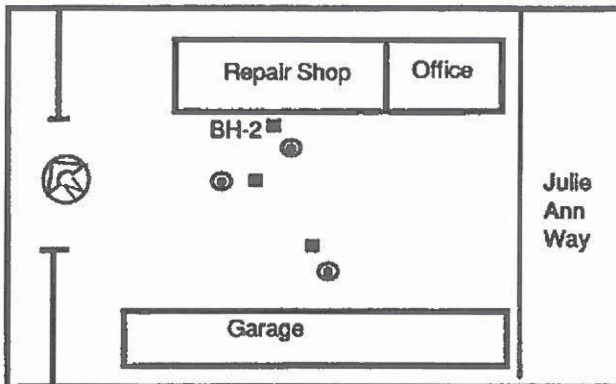
Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 25, 1990
Drilling Method: 8" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP	DESCRIPTION
			Surface Elevation:5.69' Casing Elevation: NA
0			Asphalt
			GRAVEL (GP), Well sorted 1/4' to 1/2' backfill of fine to medium gravel; Slight odor.
5	4		No sample collected; Sample fell out of sampler; Very loose.
			@5-10 Feet: Change from gravel to fine to medium sand with product; Strong odor.
10	20	450	SAND (SP), Grey; Med to fine grained, well sorted; Medium dense; Moist to wet; Moderate odor.
			GRAVEL (GP), Reddish brwn to med grey; Med grained; Moist to wet; Strong odor and product on gravel.
15	46	325	Upper part: SAND (SP), fine to med grained grey sand backfill. Lower part: SILT (ML), reddish brwn to grey sandy silt; grey and rust colored patchs; Hard; Very strong odor.
			SAND (SP), reddish brown, med to coarse grained; Very dense; Wet.
20	50/5"	100	Bottom of Boring : 21.5 Feet. Time: 1:30 PM Date: 9/25/90
25			



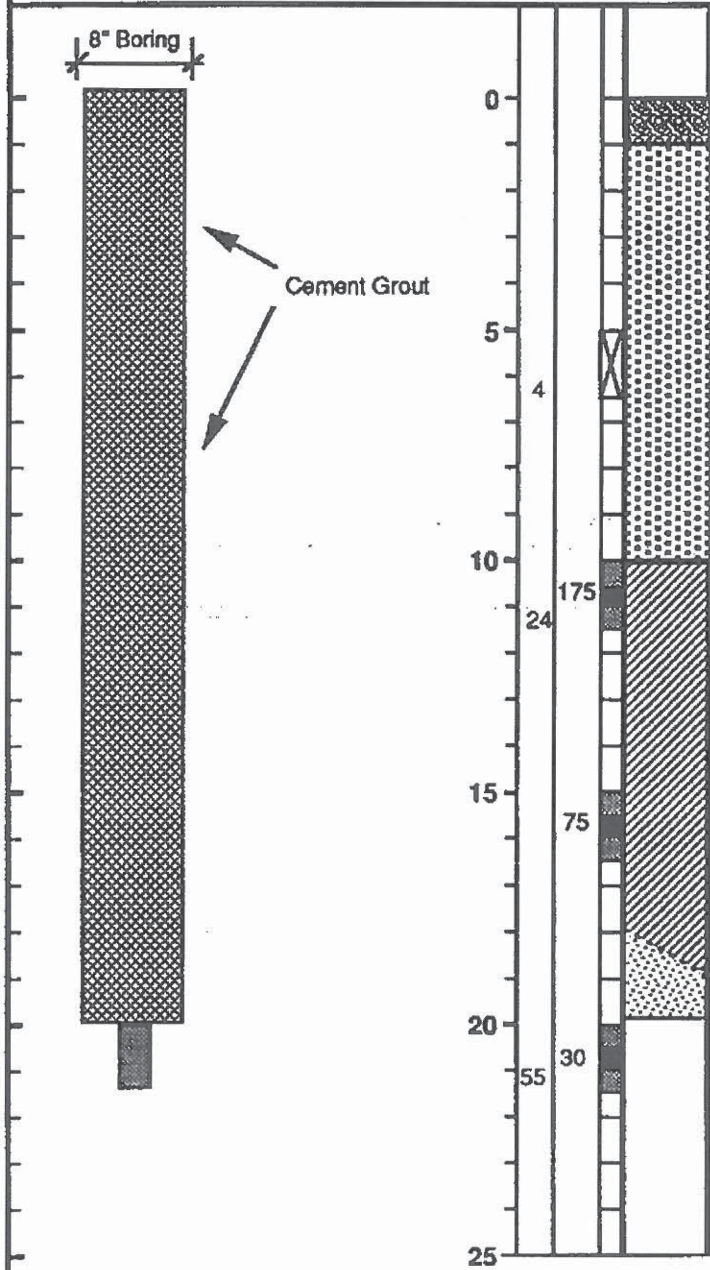
LOG OF BORING BH-2

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 27, 1990
Drilling Method: 8" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	EXP	Samples	Graphic	DESCRIPTION



Surface Elevation: 6.66'
Casing Elevation: NA

Asphalt

GRAVEL (GP), light reddish brwn to light grey fine to medium gravel and sand fill - 75% gravel and 25% sand.

No sample collected; Sample fell out of sampler even with catcher screen in place; Very loose.

@5-10 Feet: Mix of drk brwn to greenish silty sand (30%), silty clay (20%), and gravel (50%) backfill; Slight odor (old oil smell).

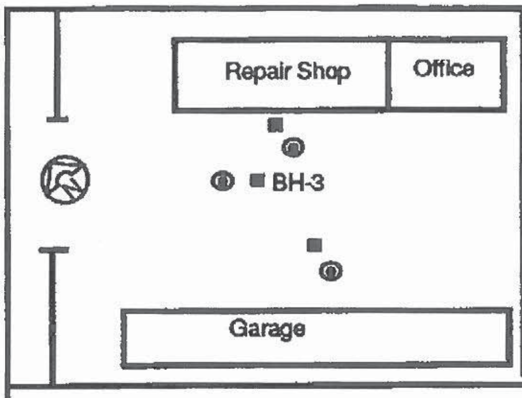
CLAY (CL), olive grey to olive brwn (5y;5/2)silty clay with <5% rounded to subangular fine gravel; Very stiff; Moderate odor.

@ 10-15 feet: upper part is drk grey to black vfg silty clay w/ moderate odor; Lower part is light to med grey clay w/ weak to no odor; Water at 13-15 feet.

@ 15': light yellow brwn (10YR;5/3),w/ grey patches; Hard; Slight odor.

SAND (SW), brown (10YR;5/3), poorly sorted, med to coarse grained sand and fine gravel; Subrounded to subangular; Very dense; Wet.

Bottom of Boring : 21.5 Feet.
Time: 9:10 AM
Date: 9/27/90



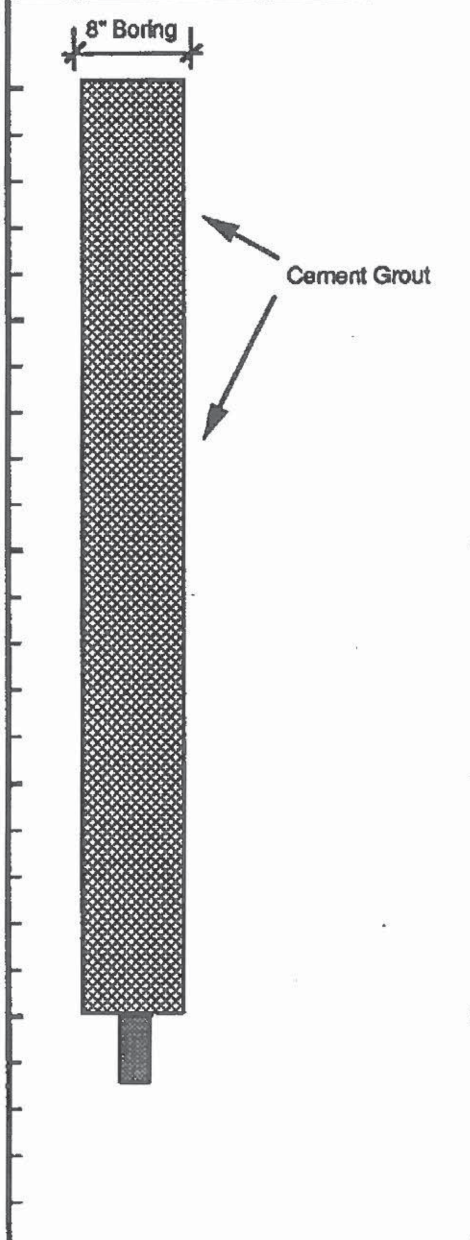
LOG OF BORING BH-3

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

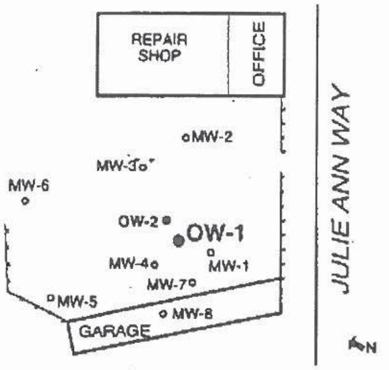
Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 28, 1990
Drilling Method: 8" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION



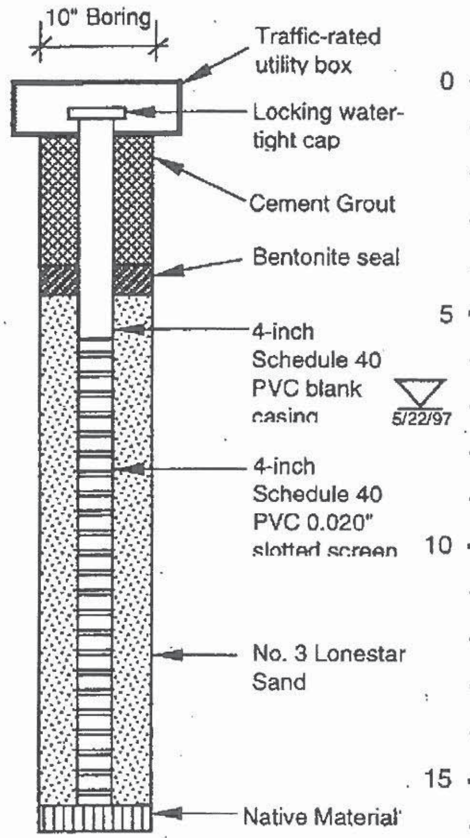
Depth (ft.)	Blows/ft.	EXP	DESCRIPTION
			Surface Elevation: 6.44' Casing Elevation: NA
0			Asphalt
			GRAVEL (GP), Reddish brwn to dark grey sandy to silty gravel and clayey sand to sandy clay; Slight odor.
5	43	75	@ 5'; Silty Gravel, yellowish brwn (10YR;5/4); silty sand backfill material; Dense; Slight odor.
			@5-10 feet: As above w/ pieces of red brick in gravel and minor black clay; Slight to moderate odor.
10	29	130	CLAY (CL), Pale brwn (10YR;6/3), to grey brwn ; silty w/ 10% subrounded fine gravel; Very stiff;. Slight odor.
			@ 10-15 feet, Dark grey to black to olive grey silty clay w/ 5% fine gravel.
			@ 15', Silty clay,light brwnish grey (2.5YR; 6/2); Rust to grey patches; Hard; Slight odor.
15	60	225	@ 15-20 feet: Sand, fine to med grained; interbedded with sandy to silty clay and fine gravel.
			SAND (SP), Brown (10YR;5/3), 95% fine to med, well sorted and 5% fine to coarse gravel; Flowing sands; Medium dense; Wet.
20	13	60	Bottom of Boring : 21.5 Feet. Time: 9:30 AM Date: 9/28/90
25			



LOG OF BORING OW-1
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

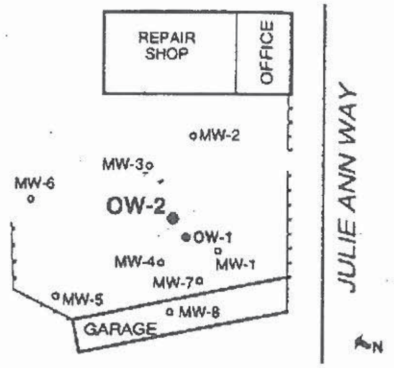
Project No.: RC019.011	Date Drilled: May 22, 1997
Logged By: Jeff Hawkins	Drilling Method: 10" Hollow stem auger
Drilling Co.: West Hazmat	Sampling Method: California split-spoon
Driller: Joe McNulty	Driller's License: C57-554979

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	DESCRIPTION
0		Asphaltic Concrete
		FILL: GRAVELLY SAND (SW); 20-40% fine to coarse gravel; damp.
		FILL: GRAVEL (GP); medium-grained; 5 to 10% fines.
5	45	FILL: SILTY GRAVEL (GM); fine to coarse gravel; 15-20% fines; damp to moist.
10	50	FILL: GRAVEL (GW); fine to coarse grained; 5-10% fines; wet.
15	57	SANDY SILT (ML); 15-30% fine-grained sand; trace coarse-grained sand to fine gravel; moist to wet.

Total Depth Explored: 16 Feet.
Date: 5/22/97

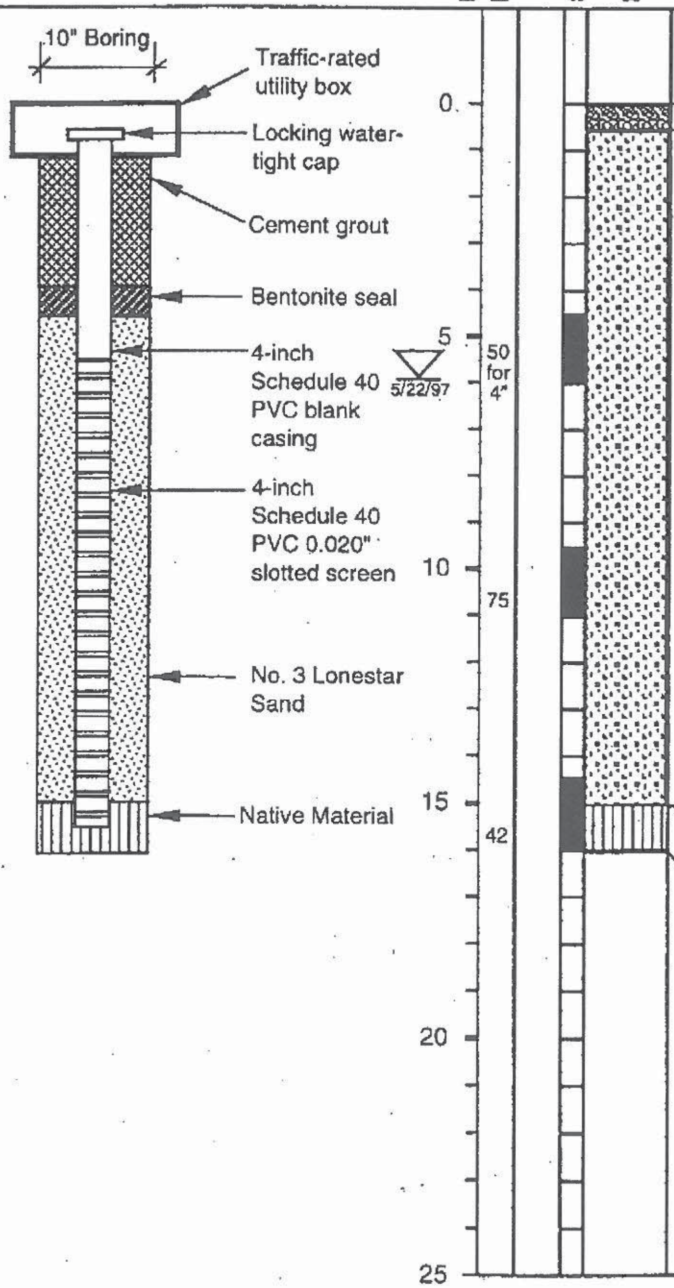


LOG OF BORING OW-2
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC019.011
Logged By: Jeff Hawkins
Drilling Co.: West Hazmat
Driller: Joe McNulty

Date Drilled: May 22, 1997
Drilling Method: 10" Hollow stem auger
Sampling Method: California split-spoon
Driller's License: C57-554979

WELL CONSTRUCTION | Depth (ft.) | Blows/ft. | Samples | Key | DESCRIPTION



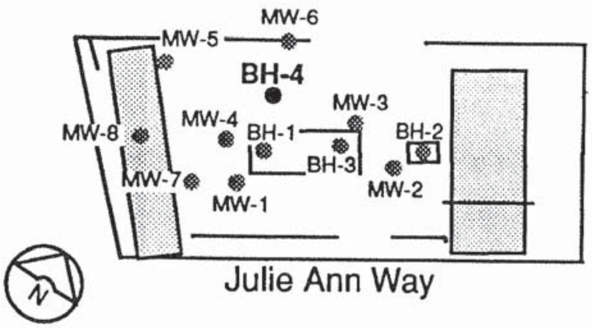
Asphaltic Concrete

FILL: GRAVEL (GW); fine to coarse-grained; 5-15% fine to medium-grained sand; moist.

@ 6 feet: wet.

SILT (ML); 5-15% fine to medium-grained sand; moist to wet.

Total Depth Explored: 16 Feet.
Date: 5/22/97

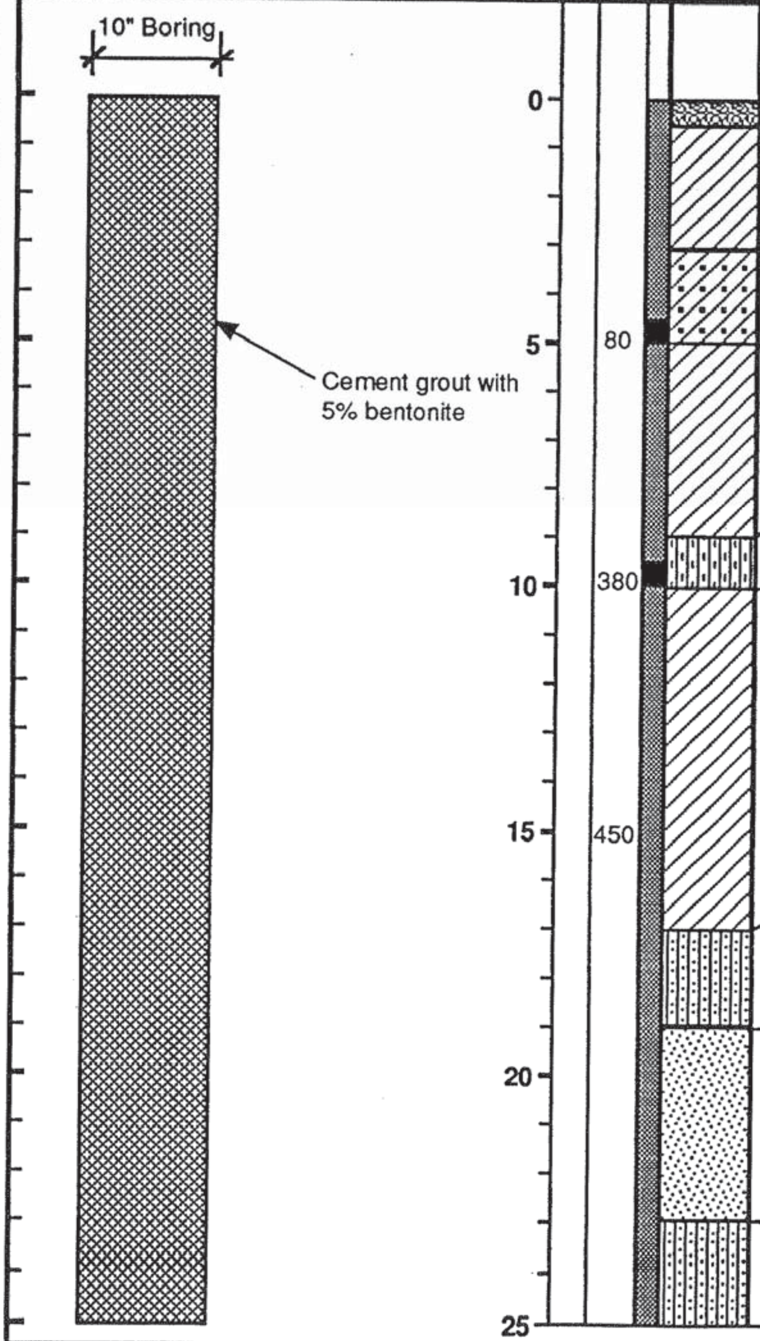


LOG OF BORING BH-4
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007
Logged By: C. Sean Bisch
Drilling Co.: West Hazmat
Driller: Scott Irwin

Date Drilled: July 27, 1994
Drilling Method: 10" Hollow stem auger
Sampling Method: Continous Core
Driller's License: 554979

WELL CONSTRUCTION	Blows/ft.	PID (ppm)	Samples	Graphic	DESCRIPTION



3" Asphaltic Concrete

CLAY (CL); very dark grayish brown (2.5Y 3/2); 10-15% fine to coarse-grained sand; 10-15% gravel; moist.

GRAVEL (GC); black (5Y 2.5/1); angular gravel; 10-20% fines; moist.

SILTY CLAY (CL); black (5Y 2.5/1); 0-5% fine to coarse-grained sand; moist.

ORGANIC CLAY (OL); black (5Y 2.5/1); 10-20% decaying organic matter; wood fragments; roots; hydrocarbon odor; moist.

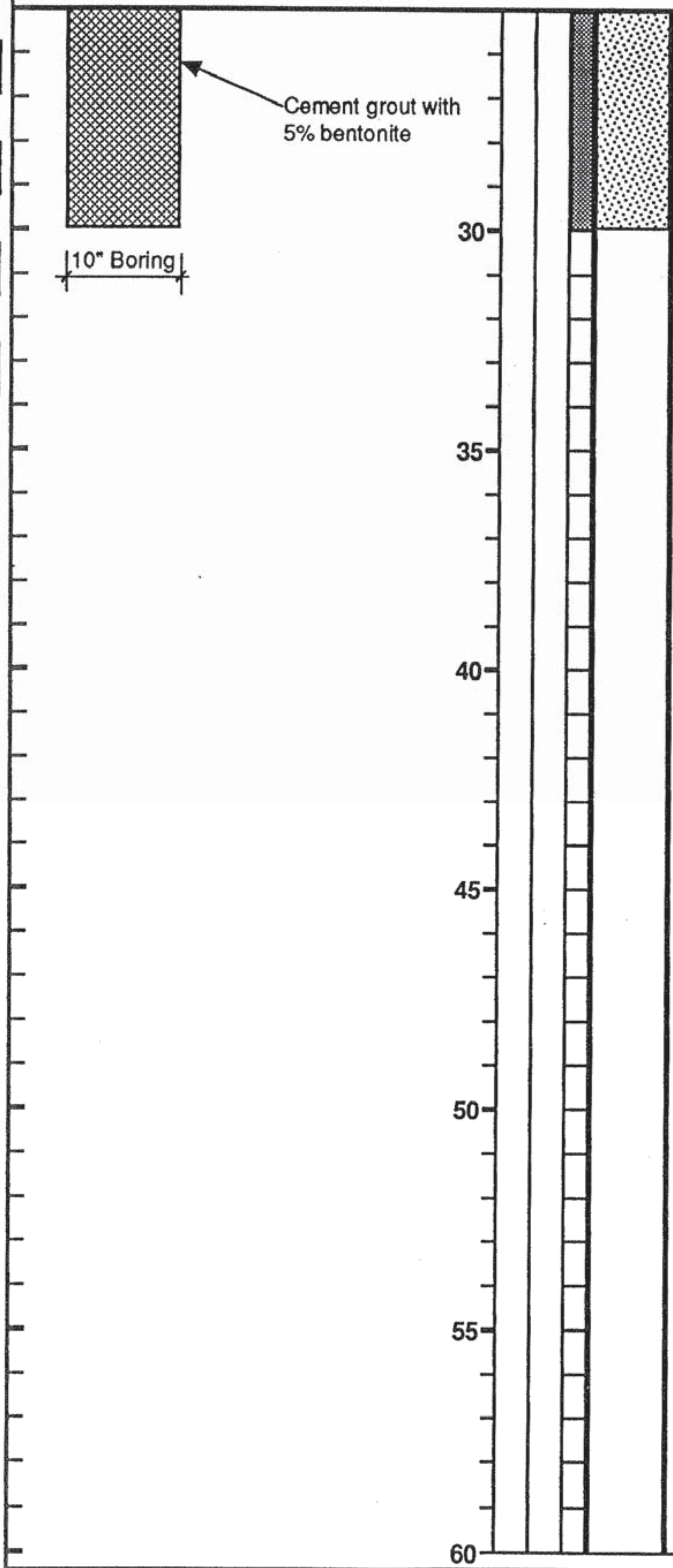
CLAY (CL); dark greenish gray (5GY 4/1); 10-20% fine to coarse-grained, angular sand; trace gravel; hydrocarbon odor; moist.
@ 11 feet: Sandy Silty Clay (CL); yellowish brown (10YR 5/4); mottled with dark greenish gray (5GY 4/1); 20-30% fine-grained sand; iron oxide staining; moist;

CLAYEY SILTY SAND (SM); yellowish brown (10YR 5/4); mottled with dark greenish gray (5GY 4/1); fine-grained sand; 40-50% fines; localized iron-oxide and manganese oxide staining; moist.

SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; trace fines; grades from fine to coarse-grained sand from 19 to 23 feet; wet.

SILTY SAND (SM); yellowish brown (10YR 5/4); fine-grained sand; 25-35% fines; finely laminated iron-oxide staining; moist.

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	LOG OF BORING BH-4 (continued) DESCRIPTION



SAND (SW); yellow brown (10YR 5/4); 95-100% fine to coarse-grained sand; 0-5% fines; grades from fine to coarse-grained sand from 25 to 30 feet; wet.

@ 29 feet: iron-oxide staining.

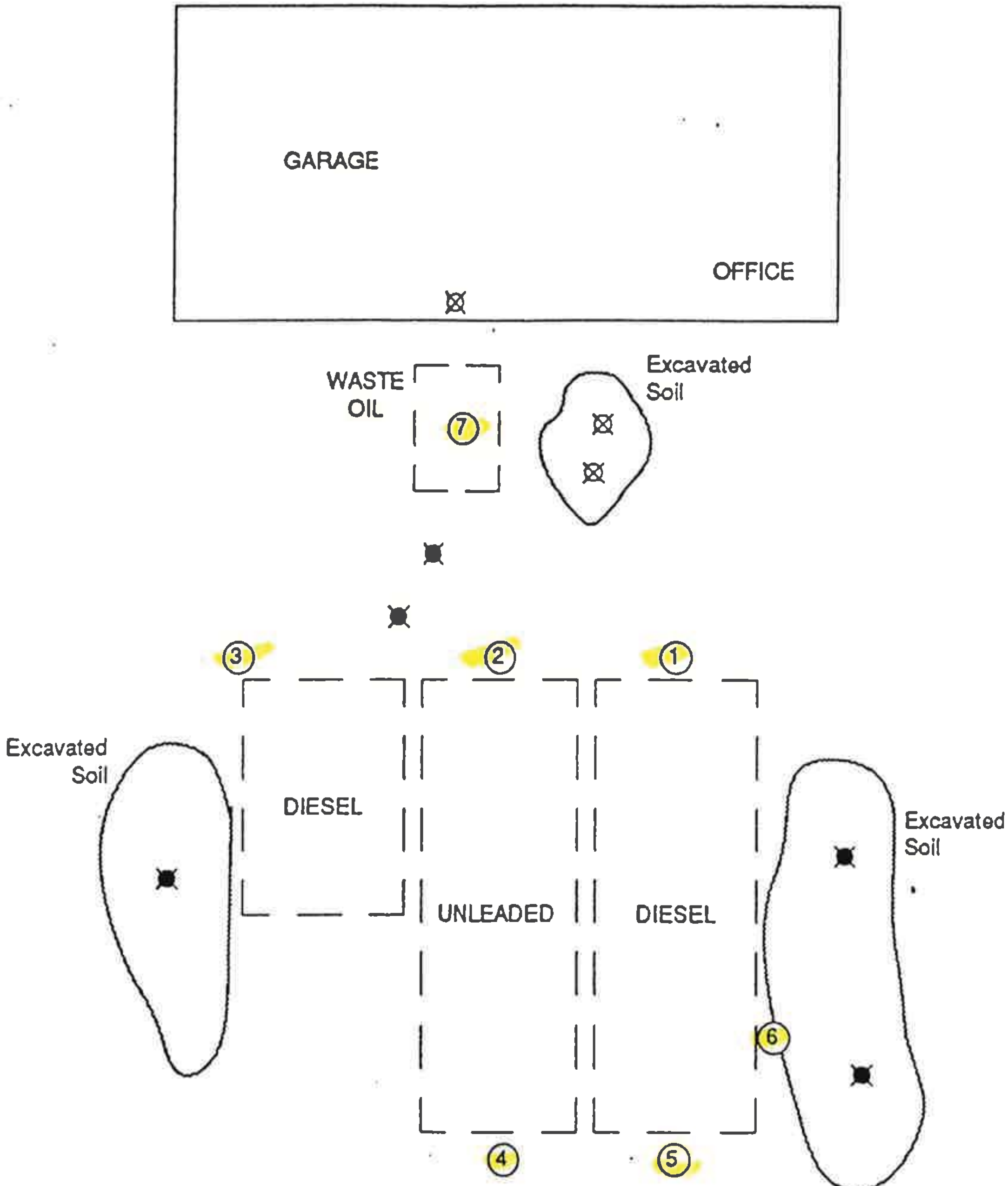
Total Depth Explored: 30 feet.
Date: July 27, 1994 Time: 1145

APPENDIX C
Historical Figures

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec



Samples that need to be taken and analyzed for TPH gas and diesel - 5030
oil and grease - 503 DYE
BTXE and Chlorinated Hydrocarbons - 824
ICAP or AA for Cd, Cr, Pb, Zn

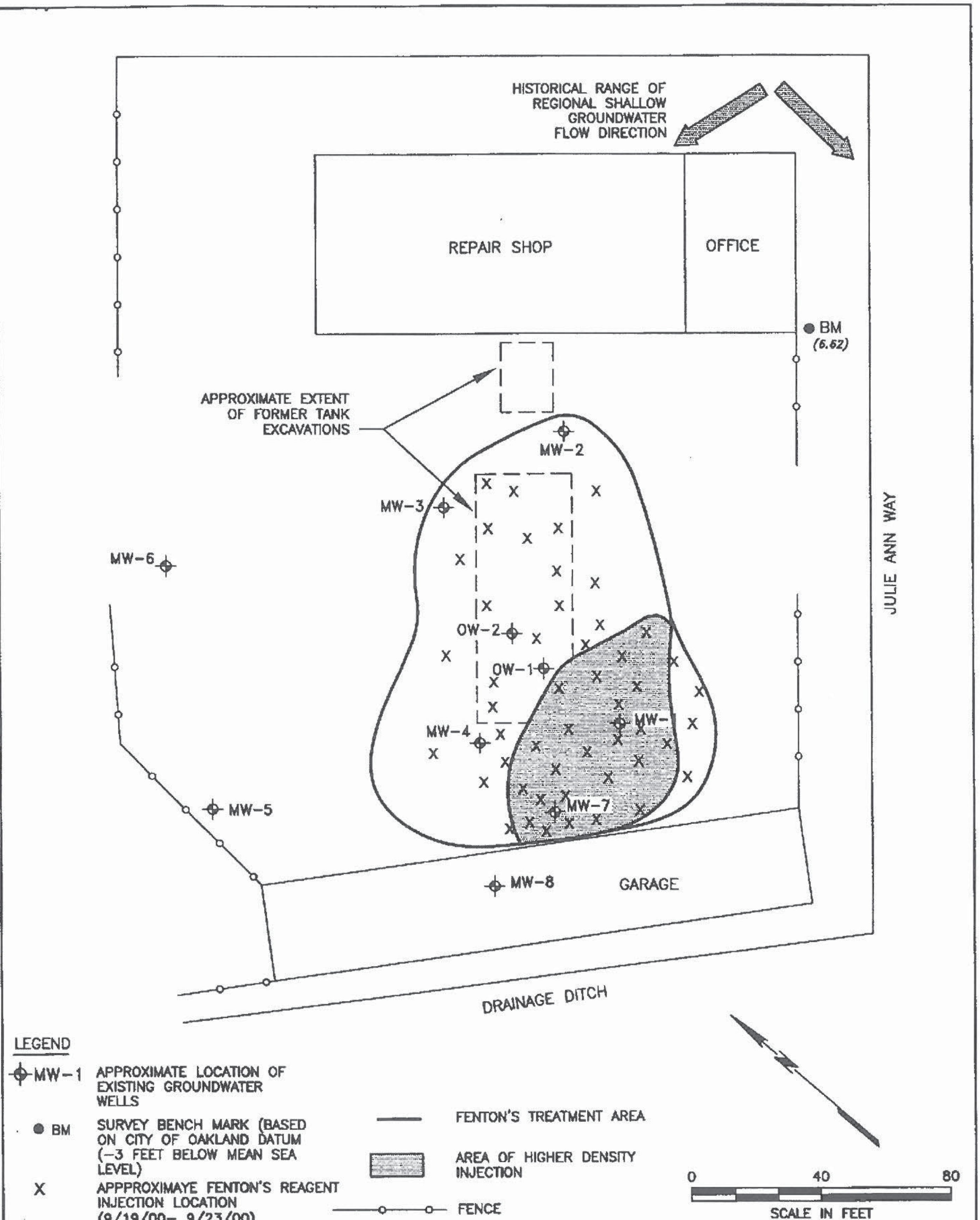
Samples that need to be taken and analyzed for TPH gas and diesel - 5030
BTXE - 8020

NOT TO SCALE

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
41 Lafayette Circle
Lafayette, CA. 94549

Drawn	Date
Reviewed CWB	Date 10-23-89

Figure 2. Map of sample locations, Hertz Penske, 10 October 1989.



SECOR
International Incorporated

DRAWN	GEL
APPR	AEM
DATE	10 APRIL 01
JOB NO.	014.07694.005

FIGURE 2
FORMER PENSKE TRUCKING LEASING FACILITY
725 JULIE ANN WAY
OAKLAND, CALIFORNIA
SITE PLAN AND FENTON'S REAGENT TREATMENT AREA

199812.271039 X:\OAKLAND\ACAD\PENSKE\PENSKE-014.07694.001-001.DWG 4/10/01

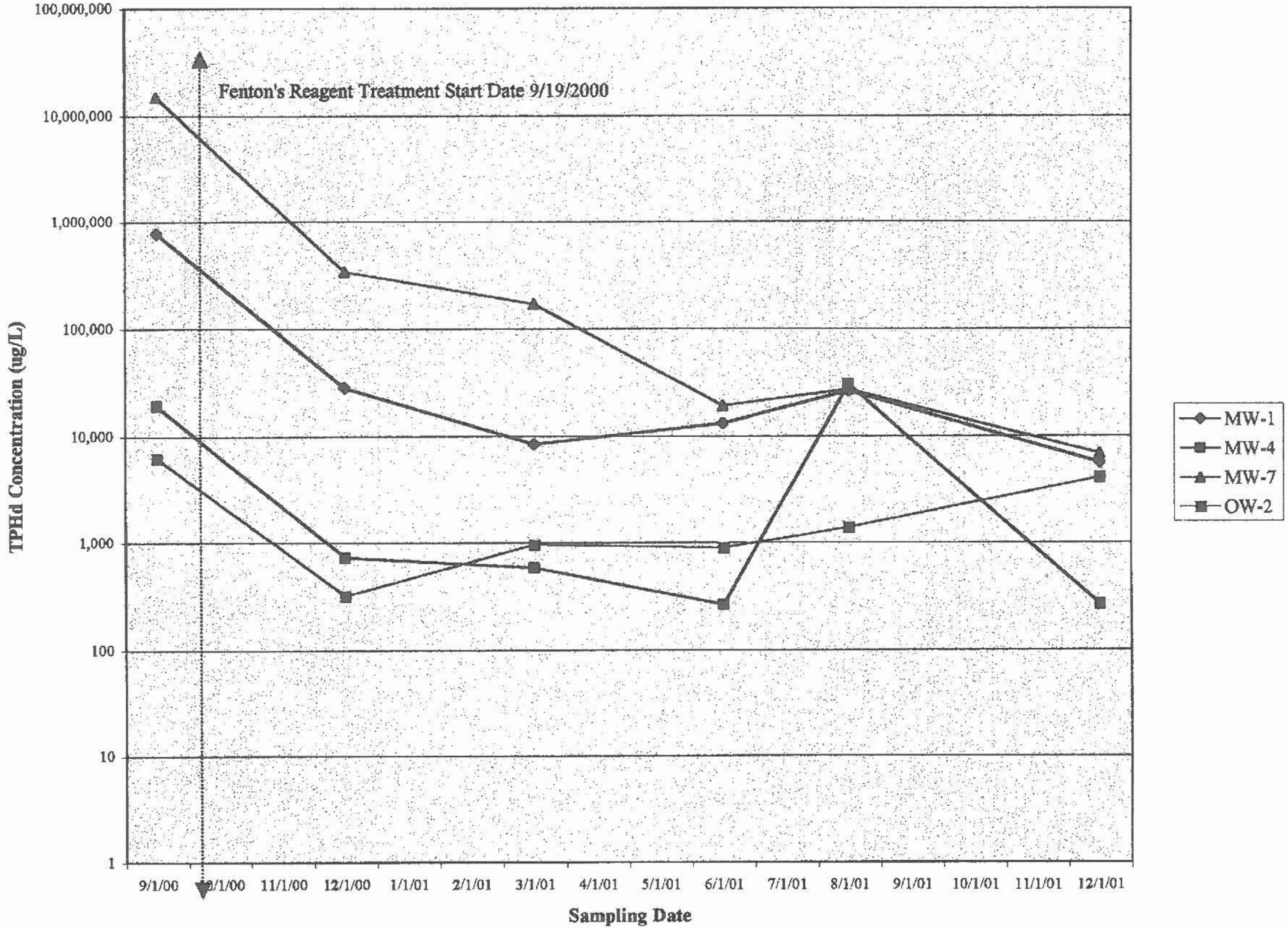
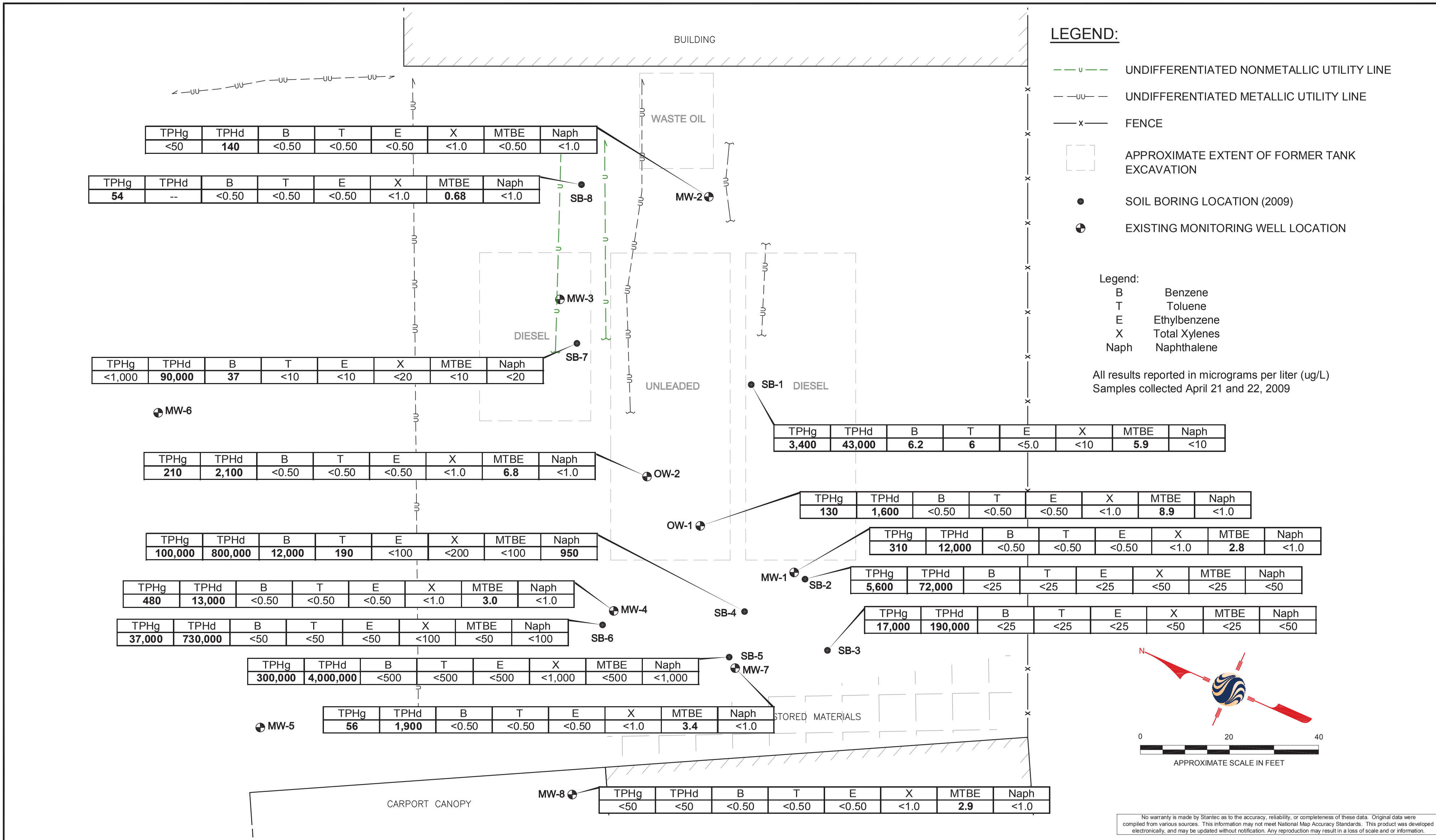


Figure 3: TPHd Concentration Trends - Baseline and Post-Treatment Results



Location	TPHg	TPHd	B	T	E	X	MTBE	Naph
MW-2	<50	**140**	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0
SB-8	**54**	--	<0.50	<0.50	<0.50	<1.0	**0.68**	<1.0
SB-7	<1,000	**90,000**	**37**	<10	<10	<20	<10	<20
OW-2	**210**	**2,100**	<0.50	<0.50	<0.50	<1.0	**6.8**	<1.0
SB-4	**100,000**	**800,000**	**12,000**	**190**	<100	<200	<100	**950**
MW-4	**480**	**13,000**	<0.50	<0.50	<0.50	<1.0	**3.0**	<1.0
SB-6	**37,000**	**730,000**	<50	<50	<50	<100	<50	<100
SB-5	**300,000**	**4,000,000**	<500	<500	<500	<1,000	<500	<1,000
MW-7	**56**	**1,900**	<0.50	<0.50	<0.50	<1.0	**3.4**	<1.0
SB-1	**3,400**	**43,000**	**6.2**	**6**	<5.0	<10	**5.9**	<10
OW-1	**130**	**1,600**	<0.50	<0.50	<0.50	<1.0	**8.9**	<1.0
MW-1	**310**	**12,000**	<0.50	<0.50	<0.50	<1.0	**2.8**	<1.0
SB-2	**5,600**	**72,000**	<25	<25	<25	<50	<25	<50
SB-3	**17,000**	**190,000**	<25	<25	<25	<50	<25	<50
MW-8	<50	<50	<0.50	<0.50	<0.50	<1.0	**2.9**	<1.0

NOTE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL INC. (2008)

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Lafayette, California, 94549
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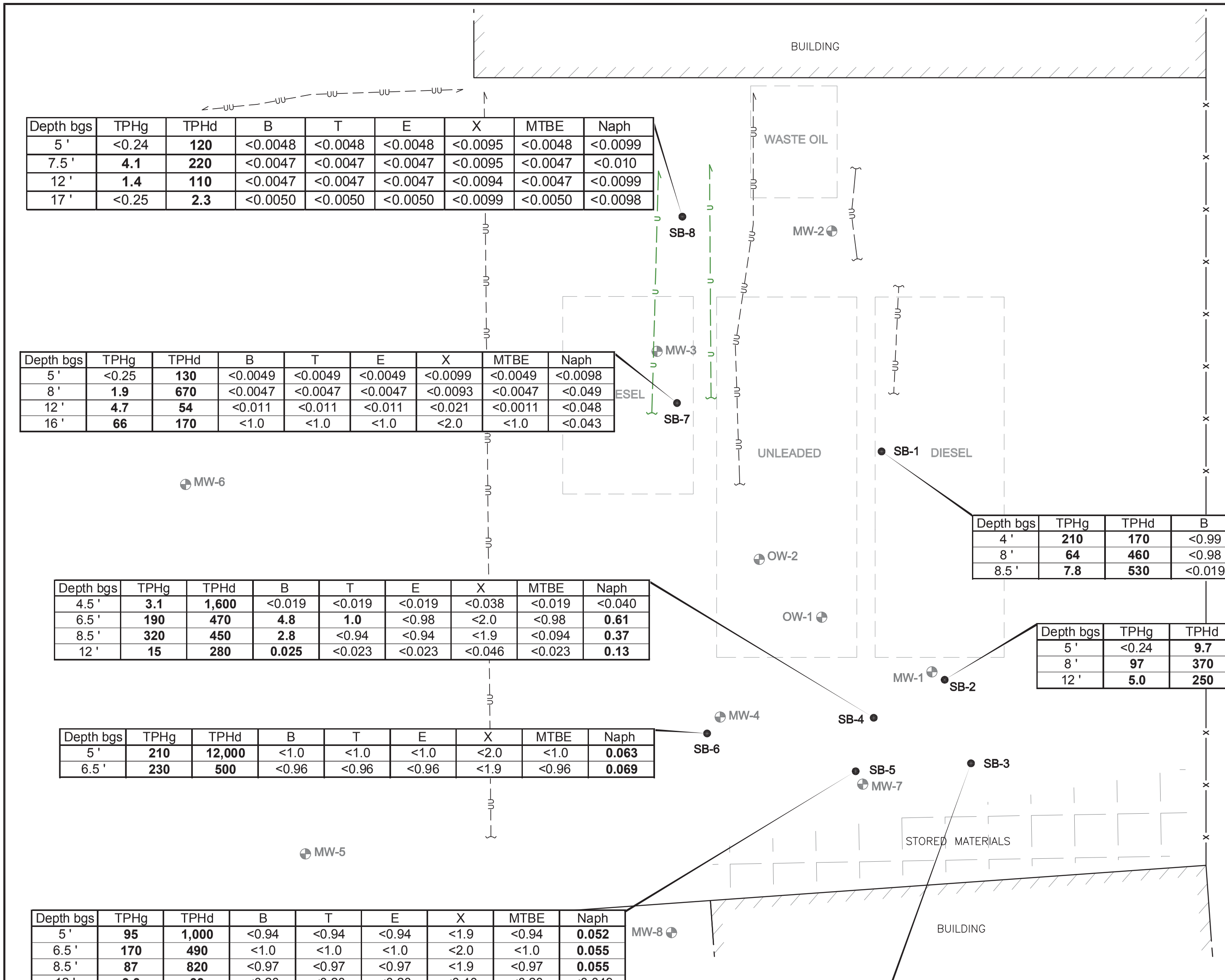
PREPARED FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

TPH CONSTITUENTS IN GROUNDWATER

FIGURE: 5

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185701155.200.0005	JBL	KC	AEM	06/15/09



LEGEND:

UNDIFFERENTIATED NONMETALLIC UTILITY LINE

UNDIFFERENTIATED METALLIC UTILITY LINE

FENCE

APPROXIMATE EXTENT OF FORMER TANK EXCAVATION

SOIL BORING LOCATION (2009)

EXISTING MONITORING WELL LOCATION

Legend:
- B Benzene
- T Toluene
- E Ethylbenzene
- X Total Xylenes
- Naph Naphthalene

All results reported in milligrams per kilogram (mg/kg)
Samples collected April 21 and 22, 2009

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
5 '	<0.24	**120**	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.0099
7.5 '	**4.1**	**220**	<0.0047	<0.0047	<0.0047	<0.0095	<0.0047	<0.010
12 '	**1.4**	**110**	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0099
17 '	<0.25	**2.3**	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0098

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
5 '	<0.25	**130**	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.0098
8 '	**1.9**	**670**	<0.0047	<0.0047	<0.0047	<0.0093	<0.0047	<0.049
12 '	**4.7**	**54**	<0.011	<0.011	<0.011	<0.021	<0.0011	<0.048
16 '	**66**	**170**	<1.0	<1.0	<1.0	<2.0	<1.0	<0.043

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
4 '	**210**	**170**	<0.99	<0.99	<0.99	<2.0	<0.99	**0.085**
8 '	**64**	**460**	<0.98	<0.99	<0.99	<2.0	<0.99	<0.036
8.5 '	**7.8**	**530**	<0.019	<0.019	<0.019	<0.038	<0.019	<0.048

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
4.5 '	**3.1**	**1,600**	<0.019	<0.019	<0.019	<0.038	<0.019	<0.040
6.5 '	**190**	**470**	**4.8**	**1.0**	<0.98	<2.0	<0.98	**0.61**
8.5 '	**320**	**450**	**2.8**	<0.94	<0.94	<1.9	<0.094	**0.37**
12 '	**15**	**280**	**0.025**	<0.023	<0.023	<0.046	<0.023	**0.13**

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
5 '	<0.24	**9.7**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.0098
8 '	**97**	**370**	<0.98	<0.98	<0.98	<2.0	<0.98	<0.045
12 '	**5.0**	**250**	<0.016	<0.016	<0.016	<0.033	<0.016	<0.043

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
5 '	**210**	**12,000**	<1.0	<1.0	<1.0	<2.0	<1.0	**0.063**
6.5 '	**230**	**500**	<0.96	<0.96	<0.96	<1.9	<0.96	**0.069**

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
5 '	**95**	**1,000**	<0.94	<0.94	<0.94	<1.9	<0.94	**0.052**
6.5 '	**170**	**490**	<1.0	<1.0	<1.0	<2.0	<1.0	**0.055**
8.5 '	**87**	**820**	<0.97	<0.97	<0.97	<1.9	<0.97	**0.055**
12 '	**9.3**	**33**	<0.20	<0.20	<0.20	<0.40	<0.20	<0.049

Depth bgs	TPHg	TPHd	B	T	E	X	MTBE	Naph
5 '	**0.26**	**20**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.0097
8 '	<1.2	**2.5**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.0097
9 '	**55**	**370**	<0.99	<0.99	<0.99	<2.0	<0.99	<0.050
12 '	**20**	**270**	<0.022	<0.022	<0.022	<0.043	<0.022	**0.059**

NOTE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL INC. (2008)

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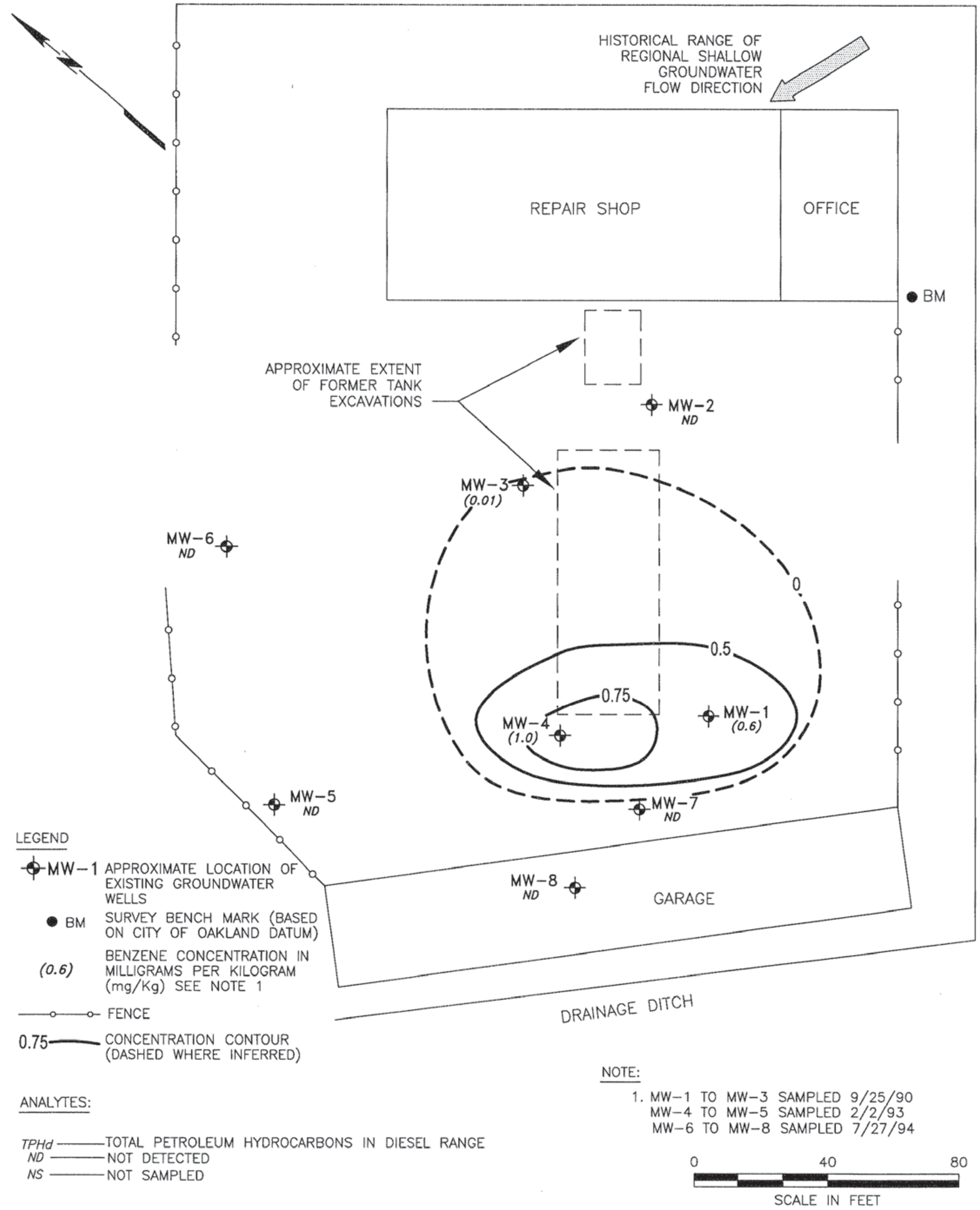
PREPARED FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

TPH CONSTITUENTS IN SOIL

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185701155.200.0005	JBL	KC	AEM	06/15/09

FILEPATH:M:\00_OTHER OFFICES\005-San Francisco\Penske\DWG\p1_SiteMap_FPenskeTrucking_Oakland-2.dwg|lieberman|Jun 26, 2009 at 8:04|Layout: FIG-4



SECOR

DRAWN	RRR
APPR	MGT
DATE	20 MARCH 2003
JOB NO.	050T.50034.00

FIGURE 7

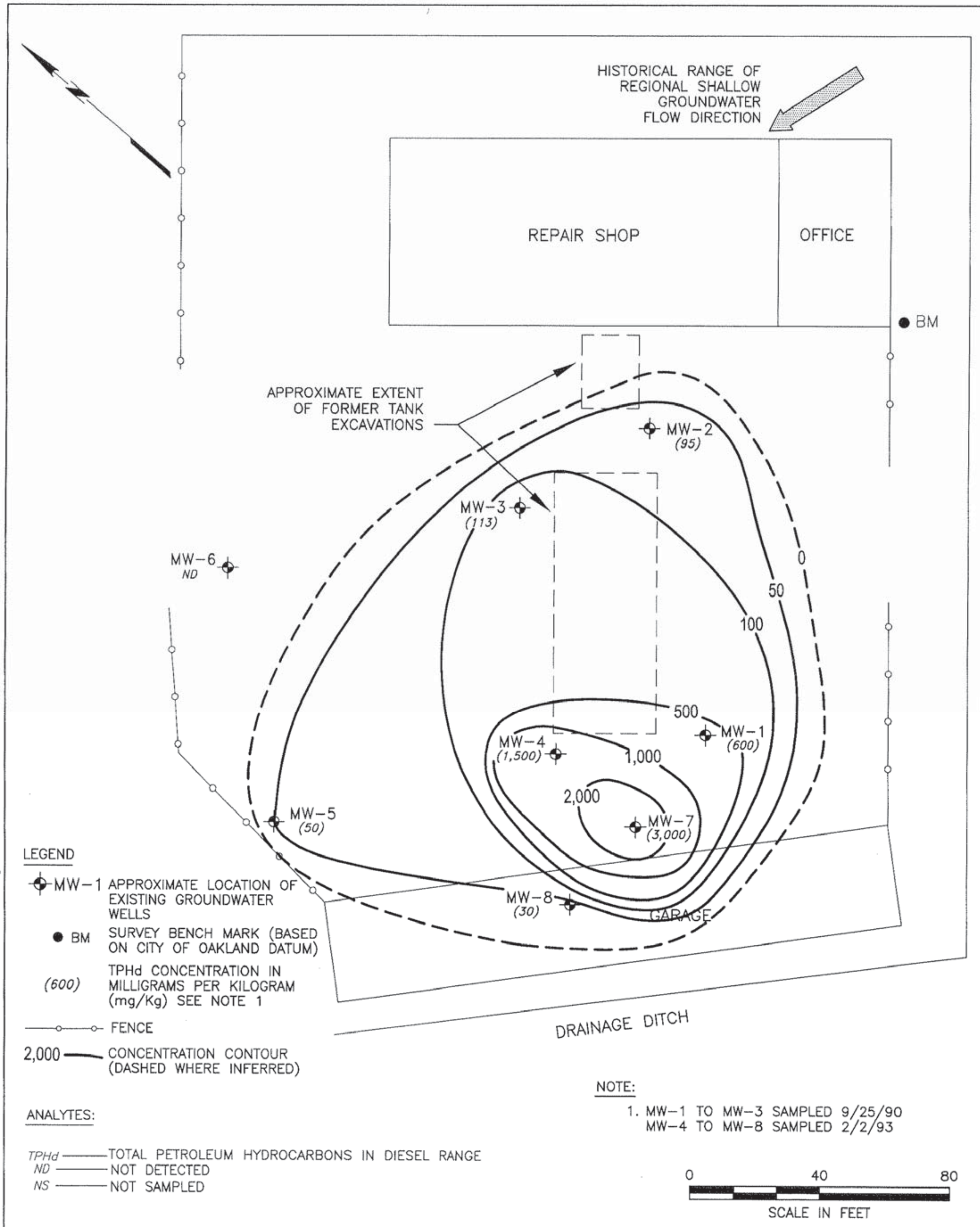
FORMER PENSKE TRUCKING COMPANY

725 JULIE ANN WAY

OAKLAND, CALIFORNIA

HISTORICAL BENZENE CONCENTRATIONS IN SOIL

20031209.1426012 K:\Penske\OAKLAND\050T.50043.00-2ND ANNUAL EVENT.dwg



SECOR

DRAWN	RRR
APPR	MGT
DATE	20 MARCH 2003
JOB NO.	050T.50034.00

FIGURE 8
FORMER PENSKE TRUCKING COMPANY
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

HISTORICAL TPHd CONCENTRATIONS IN SOIL

20030324.1548026 E:\Penske\OAKLAND\050T.50043.00-2ND ANNUAL EVENT.dwg

APPENDIX D
Human Health Risk Assessment

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec

Human Health Risk Assessment
Former Penske Site
725 Julie Ann Way
Oakland, California

Penske Truck Leasing
Route 10, Green Hills, PO Box 7635
Reading, Pennsylvania 19603
Stantec PN: 185762330

Stantec

October 2013

Limitations and Certifications

This report was prepared in accordance with the scope of work outlined in Stantec's contract, and with generally accepted professional engineering and environmental consulting practices existing when this report was prepared and applicable to the site location. This report was prepared for the exclusive use of the Penske Truck Leasing Company. Any re-use of this report by others not identified above shall be at the user's sole risk without liability to Stantec. To the extent that this report is based on information provided to Stantec by third parties, Stantec may have made efforts to verify this third party information, but Stantec cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied are made by Stantec.

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

Prepared by:

Tony Giglini
Associate Risk Assessor/Toxicologist
Risk Assessment &Toxicology Practice

Reviewed by:

Patrick H. Vaughan, MS, CEM
Principal, Facility Assessment
Risk Assessment &Toxicology Practice

Executive Summary

The objective of this HHRA is to estimate potential health risks to current and future onsite commercial/industrial workers and hypothetical future onsite residents as a result of potential indoor vapor intrusion from soil and groundwater at the former Penske Site located at 725 Julie Ann Way, Oakland, California (hereafter referred to as the site, Figure 1). This HHRA was conducted using risk assessment methods generally accepted by the California Environmental Protection Agency (Cal-EPA), Office of Environmental Health and Hazard Assessment (OEHHA), Department of Toxic Substances and Control (DTSC), and the U.S. Environmental Protection Agency (USEPA).

Groundwater monitoring activities have been performed at this site since February 1997. Penske has conducted additional site characterization activities since 2008 until present, as requested by the Alameda County Environmental Health Services (ACEHS). Post-remediation confirmation sampling completed in 2009 suggests that shallow soils remain impacted by weathered and/or degraded petroleum hydrocarbons (Stantec, 2013). Chemical impacts to soil and groundwater are limited to petroleum hydrocarbons in the western portion of the site adjacent to the former underground storage tanks (USTs). Contaminants include low concentrations of total petroleum hydrocarbons (TPH) present as TPH diesel (TPHd), TPH as gasoline (TPHg), benzene (SB-04 and MW-7R only), naphthalene, and methyl-tert butyl ether (MTBE). The concentrations of petroleum hydrocarbons in groundwater have generally decreased since treatment with Fenton's reagent in 2000. Phase-separated hydrocarbons have not been detected in any wells since February 2010. Stantec considers chemical impacts at the site to be well-defined soil and groundwater chemical data from soil-borings and wells to accurately represent site conditions (Stantec, 2013).

All chemicals detected in soil or groundwater were considered chemicals of potential concern (COPCs) and the maximum detected concentrations in both media were used as exposure point concentrations (EPCs) for the reasonable maximum exposure (RME) scenario. The Johnson and Ettinger (J&E) model was used to estimate health risks due to vapor intrusion. J&E modeling was performed using standard model default values and also with a site-specific value for annual average water filled soil porosity. The HHRA results indicate that the RME cancer risks to all receptors of concern are below 1E-06 using site-specific values for annual average water filled porosity and slightly exceed the target level using the model default water filled porosity (8.3E-06); the RME hazard indices (HIs) are below one. It should be noted that all calculated risks are below the Cal-EPA 2013a Proposition 65 Safe Harbors "No Significant Risk Level" of 1E-05 for individuals based on a 70 year life expectancy. As a result, it is expected that the site should be considered for closure.

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LIST OF APPENDICES

List of Acronyms

ACEHS	Alameda County Environmental Health Services
ADEC	Alaska Department of Environmental Conservation
ASTM	American Society for Testing and Materials
AT	Averaging Time
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	Below Ground Surface
Cal-EPA	California Environmental Protection Agency
CDI	Chronic Daily Intake
CHHSL	California Human Health Screening Level
COPC	Chemicals of Potential Concern
CTE	Central Tendency Exposure
DTSC	Department of Toxic Substances and Control
ED	Exposure Duration
EF	Exposure Frequency
EPC	Exposure Point Concentrations
g/cm^3	Grams per Cubic Centimeter
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IARC	International Agency for Research on Cancer
ILECR	Individual Lifetime Excess Cancer Risk
IRIS	Integrated Risk Information System
IUR	Inhalation Unit Risk
LMS	Linearized Multistage Model
LOAEL	Lowest-Observed-Adverse-Effect-Level
MADEP	Massachusetts Department of Environmental Protection
MCL	Maximum Contaminant Level
MF	Modifying Factor
mg/m^3	Milligrams per Cubic Meter
mg/L	Milligrams per Liter
MTBE	Methyl-tert-butyl Ether
NCEA	National Center for Environmental Assessment
NCI	National Cancer Institute
NOAEL	No-Observed-Adverse-Effect-Level
NRC	National Research Council

List of Acronyms - continued

OEHHA	Office of Environmental Health and Hazard Assessment
PAHs	Polycyclic Aromatic Hydrocarbons
QA/QC	Quality Assurance/Quality Control
RAGS	Risk Assessment Guidance for Superfund
RfC	Reference Concentration
RfD	Reference Dose
RME	Reasonable Maximum Exposure
ROD	Record of Decision
SL	Screening Level
SSTL	Site-specific Target Level
Stantec	Stantec Consulting Services Inc.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbon
TPHg	Total Petroleum Hydrocarbon as Gasoline
TPHd	Total Petroleum Hydrocarbon as Diesel
UF	Uncertainty Factor
URF	Unit Risk Factor
UST	Underground Storage Tank
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WRCC	Western Regional Climate Center
$\mu g/m^3$	Micrograms per Cubic Meter
$(\mu g/m^3)^{-1}$	Individual Lifetime Excess Cancer Risk per Micrograms per Cubic Meter

1.0 Introduction

Stantec Consulting Services Inc. (Stantec) was contracted by the Penske Truck Leasing Company to conduct a Human Health Risk Assessment (HHRA) for the former Penske Site located at 725 Julie Ann Way, Oakland, California (hereafter referred to as the site, **Figure 1**). The objective of this HHRA is to estimate potential health risks to current and future onsite commercial/industrial workers and hypothetical future onsite residents as a result of potential indoor vapor intrusion from soil and groundwater. This HHRA was conducted using risk assessment methods generally accepted by the California Environmental Protection Agency (Cal-EPA; Cal-EPA, 1996 and 2011a), Office of Environmental Health and Hazard Assessment (OEHHA), Department of Toxic Substances and Control (DTSC), and the United States Environmental Protection Agency (USEPA; USEPA, 1989a, 2004a, and 2009).

1.1 SITE BACKGROUND

Two fuel storage underground storage tanks (USTs) and one waste oil UST were removed from the Site in 1989. Following removal, over-excavation resulted in remediation of petroleum hydrocarbon-impacted soils; however, subsequent investigations revealed the presence of concentrations of fuel hydrocarbons in soils and groundwater, primarily in the southern corner of the Site in the vicinity of existing monitoring wells MW-1 and MW-7. Groundwater monitoring wells were installed at the Site beginning in 1990, and quarterly groundwater monitoring was conducted between 1997 and 2002. Free-phase product was observed in groundwater monitoring wells MW-1 and MW-7, and elevated concentrations of dissolved-phase fuel hydrocarbons and associated compounds were typically present in wells MW-1, MW-4, and MW-7.

In order to reduce or eliminate the presence of free-phase product in groundwater and saturated soils, Stantec (previously SECOR International Incorporated) implemented a chemical oxidation treatment program at the Site in September 2000. The program consisted of injecting Fenton’s reagent into approximately 50 direct-push injection points throughout the contaminated zone, but concentrated in the area of highest observed impacts (Stantec, 2009). Fenton’s reagent is a strong oxidizer consisting of hydrogen peroxide, sulfuric acid, and ferrous iron, which oxidizes hydrocarbons upon contact to carbon dioxide and water. Post-treatment monitoring confirmed that chemical oxidation was successful in significantly reducing the amount of free-phase product in wells MW-1 and MW-7, and in reducing concentrations of dissolved-phase petroleum hydrocarbons in groundwater across the Site.

Post-remediation confirmation sampling completed in 2009 suggests that shallow soils remain impacted by weathered and/or degraded petroleum hydrocarbons. To characterize site soil, eight soil borings were advanced in April 2009 and sampled at multiple intervals ranging from 4 feet below ground surface (bgs) to 17 feet bgs (Stantec, 2013).

Petroleum impacts to groundwater are limited to the western portion of the site adjacent to the former underground storage tanks (USTs), and are limited to low concentrations total petroleum hydrocarbons (TPH) present as TPH diesel (TPHd), TPH as gasoline (TPHg), benzene (MW-7R only) and methyl-tert butyl ether (MTBE). Concentrations of petroleum hydrocarbons in groundwater have generally decreased since treatment with Fenton's reagent in 2000. Phase-separated hydrocarbons have not been detected in any wells since February 2010. Stantec considers chemical impacts at the site to be well-defined and ground water chemical data from site wells to accurately represent site conditions (Stantec, 2013).

1.2 REPORT ORGANIZATION

The remainder of this HHRA report is divided into seven sections organized as follows:

- Identification of Chemical of Potential Concern (COPC; Section 2.0) – Includes selection of COPC and uncertainties associated with COPC identification;
- Exposure Assessment (Section 3.0) – Discusses site physical settings, land use specific exposure scenarios, potential receptors, complete pathways, fate and transport modeling, quantification of exposure, and uncertainties associated with exposure assessment;
- Toxicity Assessment (Section 4.0) – Presents toxicity values for COPC and relevant information on toxicity, including uncertainties associated with toxicity assessment;
- Risk Characterization (Section 5.0) – Provides algorithms for calculating carcinogenic risks and non-carcinogenic hazards to human health, using exposure intake and dose-response data, and includes a discussion of the uncertainty associated with the risk estimates;
- Summary and Conclusions (Section 6.0) – Presents the main points of the HHRA; and,
- References (Section 7.0).

As recommended by the National Research Council (NRC) and USEPA (NRC, 1983, 1994; USEPA, 1992a and 1992b), information on assessment methodologies, alternative interpretations, and working assumptions are also included in the HHRA, together with numerical health risk results.

2.0 Identification of Chemical of Potential Concern

COPCs are defined as chemicals that are potentially site-related and for which data are of sufficient quality for use in a quantitative risk assessment (USEPA, 1989a). The identification of COPCs is a process that involves reviewing the procedures used for collecting, organizing, and evaluating environmental data in order to identify the relevant data sets, and to focus the subsequent effort of the risk assessment process on site-related contaminants that potentially pose significant risks to human health.

2.1 RELEVANT DATASETS

Eight soil borings were advanced at the site in April 2009. Soil samples were taken from multiple intervals ranging in depth from 4 to 17 feet below ground surface (ft bgs). These samples were analyzed for TPHg, benzene, toluene, ethylbenzene and xylenes (collectively BTEX), MTBE, ethylene dichloride, ethylene dibromide, and naphthalene using EPA Method 8260B and for TPHd using EPA Method 8015B. Soil samples collected from the top 10 ft bgs in each boring were utilized for the HHRA. Table 1 shows the relevant soil data

There currently are ten on-site groundwater monitoring wells associated with the site (Figure 2). The groundwater samples were analyzed for the following constituents:

- TPHg and TPHd by EPA Method 8015B (samples for TPHd analysis were subjected to silica gel cleanup); and
- BTEX, MTBE, ethylene dichloride, ethylene dibromide, and naphthalene by EPA Method 8260B.

Only five onsite wells have detected concentrations of analytes tested in 2012 and 2013 (MW-1R, MW-4, MW-7R, OW-1, and OW-2). Table A-1 of Appendix A shows historical groundwater data. **Table 2** presents the relevant groundwater dataset for the site.

Quality assurance/quality control (QA/QC) parameters for the 2012-2013 groundwater samples are within the acceptable limits, indicating that data are useable for risk assessment purposes. Target constituents were not detected in trip blanks.

2.2 SELECTION OF CHEMICALS OF POTENTIAL CONCERN

In 2011, Cal-EPA-DTSC rescinded their Interim Guidance for Evaluating Human Health Risks from TPH dated June 16, 2009. Until final guidance on the subject is released, DTSC recommends that TPH be evaluated using data for specific toxic constituents of TPH including benzene, toluene, ethylbenzene, and xylene (BTEX), hexane, other volatile fuel components, polycyclic aromatic hydrocarbons (PAHs), and metals. Therefore, the HHRA addresses potential risk due to TPH using data available for BTEX and other the TPH constituents.

For soil, chemicals detected in the top 10 feet of eight soil borings (SB-1 through SB-8) advanced in April 2009 were considered as chemicals of potential concern (COPCs), except TPH which was addressed as described above. These compounds include benzene, ethylbenzene, and naphthalene.

For groundwater, chemicals detected in the onsite monitoring wells MW-1R, MW-4, MW-7R, OW-1 and OW-2 during the last three rounds of samplings were selected as COPCs. These five wells are the most impacted wells and are located within a radius of about 40 to 50 feet (ft). Groundwater sampling was conducted in March 2012, September 2012, and March 2013. Detected compounds include benzene and MTBE.

2.3 UNCERTAINTIES ASSOCIATED WITH COPC IDENTIFICATION

As previously stated, identification of COPCs in soil was based upon the 2009 soil boring analytical results and for groundwater the 2012-2013 analytical results. Uncertainties associated with the evaluation of COPCs are inherent to data collection and data evaluation processes, including appropriate sample locations, adequate sample quantities, laboratory analyses, and QA/QC measures.

The lab report for soil analysis lists the sample preparation method as EPA Method 5030B which is designed for use on samples containing low levels of VOCs (e.g. purge and trap method). However, the soil samples were not collected using 5035-compliant methods. Not using Method 5035 collection techniques may have allowed for the loss of some VOCs resulting in non-detected constituents or lower analytical results for the COPCs. Since petroleum impacts at the site have weathered since they were released, it is likely that some VOC contamination had already volatilized or been degraded which would lessen the impact of this uncertainty. Also, using the maximum concentration of each COPC detected in soil as the EPC may compensate for some of the lost VOCs.

For groundwater, only the uppermost water bearing zone encountered in the subsurface has the potential to produce a vapor intrusion risk. The HHRA quantified the vapor intrusion risk due to groundwater using analytical results from five wells located at the center of the plume (MW-1R, MW-4, MW-7R, OW-1, and OW-2) with an average depth to groundwater of 4.89 feet below ground surface (bgs). The screen length in OW-1 and OW-2 are unknown. The screen length in the remaining wells varied from 16.5 to 27 feet. Monitoring wells with long well screens are not optimal for vapor intrusion evaluations because sampling from wells with long screens, clean water entering the well screen at depth may dilute the contaminated groundwater near the top of the screen, biasing the sampling results and the associated risk determination. Hence, short screen lengths are preferred for monitoring wells that will be used to make vapor intrusion evaluations. Using the maximum detected concentration of each COPC detected in groundwater as the EPC may compensate for less than optimal screen lengths in the monitoring wells.

The potential for uncertainty also exists in current analytical technologies. Although standard analytical methods were used to analyze the samples, quantifying this variation is practically impossible. The QA/QC parameters for these soil and groundwater samples are within the acceptable limits.

3.0 Exposure Assessment

Exposure is defined in the USEPA risk assessment guidelines as contact of a receptor with a chemical or physical agent (USEPA, 1989a and 1992a). The goal of the exposure assessment is to identify and quantify known and hypothetical exposure pathways and to determine the quantities or concentrations of COPCs received by the potentially exposed populations (USEPA, 1992a). Exposure assessment at a contaminated site involves estimating human exposures from relevant intake/uptake routes through a combination of direct measurements and mathematical models.

3.1 CHARACTERIZATION OF EXPOSURE SETTINGS

In this section, information on physical settings, such as geology, hydrogeology, land uses, and potentially-exposed populations is presented.

3.1.1 Geology

The site is located in Alameda County, California. Available boring logs at the site (**Appendix B**) show that soils from the ground surface to the groundwater table are mostly clay with gravel and silt. The amount of gravel at SB-1 was 30 - 50%. To be conservative, the HHRA assumed site soil to be sandy clay, defined by the USEPA as soils with 52% of sand, 7% of silt, and 42% of clay (USEPA, 2004a).

3.1.2 Hydrogeology

The site is located about 1,700 feet east of the San Francisco Bay. Monitoring data collected in 2012 – 2013 from the site showed that the average depth to groundwater at the five wells at the center of the plume (MW-1R, MW-4, MW-7R, OW-1, and OW-2) is 4.89 feet below ground surface (bgs) or 149 centimeters (cm). Site groundwater is not tidally influenced.

3.1.3 Climate

The site has a Mediterranean climate typical of northern California. Most of the precipitation falls during the winter months (Western Research Climate Center [WRCC], 2013). At the Oakland WSO Station (No.

046335), the average yearly minimum and maximum temperatures are 50 degrees Fahrenheit (°F) and 65°F, respectively (monitoring period from 7/01/1948 to 9/30/2012). The average annual precipitation is 18.03 inches per year (WRCC, 2013).

3.1.4 Land Uses

The site is located in a commercial area and land use at the site is currently commercial/industrial. There are no residences located immediately next to the site.

3.1.5 Potentially-Exposed Populations

This HHRA assessed potential exposures to current and future onsite commercial/industrial workers. To be protective of other future uses the HHRA also assessed potential exposure to hypothetical future residents.

3.2 IDENTIFICATION OF POTENTIALLY COMPLETE EXPOSURE PATHWAYS

A complete exposure pathway consists of the following elements (USEPA, 1989a):

- ❑ A contaminated source of chemical;
- ❑ A mechanism by which the chemical is released;
- ❑ A retention or transport medium through which a chemical travels from the point of release to the receptor location; and,
- ❑ A route of exposure (ingestion, inhalation, or dermal contact) by which the chemical enters the receptors' body and causes potential adverse health effect.

If any of these elements do not exist, the exposure pathway is considered incomplete and further evaluation of the health risks associated with the incomplete pathway is not required. In some instances, a complete or potentially complete exposure pathway may be considered a minor or insignificant pathway (meaning a pathway that is not expected to contribute significantly to the overall exposure and risk; USEPA, 1992a) and its evaluation is not warranted.

In this HHRA, potential indoor inhalation of VOCs emanating from the soil and shallow groundwater was considered to be the most significant complete exposure pathways. Direct contact with soil and groundwater pathways (e.g., dermal contact, incidental ingestion and inhalation of dust and VOCs from soil or VOCs released from groundwater) were not evaluated because these exposure routes result in an insignificant exposure when compared to the vapor intrusion to indoor air pathway.

3.3 QUANTIFICATION OF EXPOSURE

In this HHRA, one deterministic exposure case was evaluated: the reasonable maximum exposure (RME), which is the maximum exposure that is reasonably expected at a site. The central tendency exposure (CTE), or average exposure (USEPA, 1989a, 1992a, and 1992b), was not evaluated because risk management decisions are usually based on RME health risks (USEPA, 1989a).

3.3.1 Estimation of Exposure Point Concentrations

The USEPA defines exposure point concentrations (EPCs) as the average chemical concentration a receptor may contact at an exposure site over the exposure period (USEPA, 1989a). The EPC is the single concentration used to represent the RME for each COPC in an environmental medium. Analytical results for soil and groundwater are listed in Tables 1 and 2, respectively. The EPCs for both soil and groundwater are identified in Table 3. Since plausible receptors at the site are likely to be exposed randomly across the site, and both residential and commercial development would result in the moving/mixing of soil across the area, the maximum detected concentrations in soil and groundwater from the sampling events and soil interval identified in Section 2.2 were used as the EPC for each COPC.

3.3.2 Screening Level HHRA

This HHRA was implemented in a tiered approach, similar to the American Testing and Standard Materials (ATSM) risk-based corrective actions (RBCAs) to provide a consistent decision-making process for the assessment and response to small petroleum-contaminated sites, based on protection of human health and the environment. Upon completion of each tier, the results are evaluated and, if warranted, conservative default assumptions of the earlier tier are replaced with site-specific data and the analysis proceeds to the next tier (ASTM, 2002).

In the Screening Level HHRA, concentrations of all detected analytes were compared to the applicable federal, state, or local water quality objectives and screening levels (SLs) for the impacted media (e.g., soil and groundwater) to determine if site conditions satisfy the criteria for a quick regulatory closure or warrant a more site-specific evaluation. While maximum contaminant levels (MCLs) (Cal-EPA, 2012, 2013a) and public health goals (PHGs) (Cal-EPA, 2013b) are evaluated for potentially potable groundwater, other SLs used in the Screening Level HHRA may include other health-based levels such as California Regional Water Quality Control Board–San Francisco Region (CRWQCB-SFR) Environmental Screening Levels (ESLs) (Cal-EPA, 2013a), USEPA Region 3, 6, and 9's Regional Screening Levels (RSLs) (USEPA, 2012), USEPA's Vapor Intrusion Screening Levels (VISLs) (USEPA, 2011a), or Department of Health Services' (DHS's) notification levels (NLs) (Cal-EPA, 2013c) when there are no established regulatory limits or criteria.

It should be noted that SLs used in the Screening Level HHRA are not regulatory cleanup standards and the presence of a chemical at concentrations which exceed SLs does not necessarily indicate that adverse impacts to human health and the environment are occurring, or will occur in the future. It merely indicates that further evaluation may be warranted (Cal-EPA, 2005, 2010, and 2013a; USEPA, 2012). Further evaluation may include additional sampling, consideration of ambient levels, or reassessment of the assumptions used to calculate the SLs (Cal-EPA, 2005 and 2010) used in the Screening Level HHRA.

The applicable SLs to be used in the Screening Level HHRA are dependent on the potentially complete exposure pathways (e.g., volatilization of VOCs from soil and groundwater into indoor air) at the site, which are determined by developing a site conceptual model (SCM). The SCM contains a graphical and narrative description showing the extent of known soil and groundwater contamination related to the leaking UST and potential receptors, as shown in Figure 3. Although the concentrations of site contaminants in groundwater may exceed the CRWQCB's water quality objectives (WQOs), there are no potentially complete exposure pathways (e.g., groundwater is not used as a potable source and there are no anticipated future uses of the impacted groundwater.

Generic SLs are provided for multiple exposure pathways and for chemicals with both carcinogenic and non-carcinogenic effects. Table 4 contains SLs corresponding to either a 1E-06 risk level for carcinogens or a Hazard Quotient (HQ) of 1 for non-carcinogens. When an SL is exceeded in a Screening Level HHRA and a potentially complete exposure pathway exists, a site-specific HHRA analysis is conducted using simple fate and transport models with site-specific data (e.g., soil type, site-specific water-filled soil porosity, etc.) and USEPA or Cal-EPA exposure factors and toxicity values, as shown later in Section 3.4. These simple fate and transport models can be used to predict the actual and potential exposures at the receptors' locations. Potential health risks can be estimated in the site-specific HHRA to determine if current site conditions pose unacceptable health risks to potentially exposed populations, without site-specific target levels (SSTLs) being derived (as in the case of this HHRA). This forward risk calculation can be simpler than the backward calculation of medium-specific SSTLs when different fate and transport models are used in several exposure pathways.

3.3.2.1 Selection of SLs

Soil

In 2007 the CRWQCB-SFR dropped the ESLs for soil based on the vapor intrusion to indoor air pathway to be consistent with USEPA (USEPA, 2002, 2012b) and Cal-EPA OEHHA (Cal-EPA, 2005 and 2010) guidance.

Groundwater

Typically, in California, the Basin Plan requirements and Resolution No. 88-63 (Source of Drinking Water Policy) (CRWQCB, 2011) which states in part “All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards, with the exception of surface and ground waters where:

- The total dissolved solids (TDS) exceed 3,000 milligrams per liter (mg/L) and it is not reasonably expected by the Regional Boards to supply a public water system, or
- There is contamination, either by natural processes or by human activities (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices, or
- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.”

When there are no data regarding the TDS levels in groundwater at a site and the average shallow aquifer production rate, the shallow groundwater at a site must conservatively be assumed to be a potentially potable source. In this case, chemical concentrations in the shallow groundwater at a site must first be compared to applicable WQOs for potentially potable water (CRWQCB, 2004 and 2013), which are California’s primary or secondary MCLs (Cal-EPA, 2012), PHGs (Cal-EPA, 2013b), or California DHS NLs, (known as action levels [ALs] through 2004) (Cal-EPA, 2013c).

Therefore, initial SLs for the site groundwater are the California primary and secondary MCLs (Cal-EPA, 2012) for the ingestion pathway – to satisfy the CRWQCB’s WQOs. In addition, the USEPA Regions 3, 6, and 9 RSLs for tap water (USEPA, 2012), CRWQCB-SFR’s ESLs (Cal-EPA, 2013a), and USEPA’s VISLs (USEPA, 2011a) for protection of potable groundwater and the indoor air inhalation pathway for the onsite commercial/industrial workers and residents were also identified as groundwater SLs. It is noted that groundwater ESLs for protection of the indoor air inhalation pathway may be adequately protective at the site since the depth to the groundwater table was assumed to be 10 ft bgs in the J&E modeling effort used to establish the ESLs (Cal-EPA, 2013a). ESLs based on ceiling values (odor and taste) and based on protection of estuary aquatic habitat are also listed for references. In addition, ESLs for protection of drinking water source and ceiling values based on odor and taste are also used. To be conservative, residential, commercial/industrial, and construction ESL and RSL values are presented (Cal-EPA, 2013a; USEPA, 2012).

The CRWQCB-SFR's pathway- and land-use specific ESLs are based on the methodology used in the derivation of USEPA Region 9's preliminary remediation goals (PRGs) (USEPA, 2004b) or USEPA Region 3, 6, and 9 RSLs (USEPA, 2012). The ESLs were calculated using Cal-EPA toxicological data and incorporate inhalation of vapors from soil gas or groundwater not included in the PRGs; they have been recently updated (Cal-EPA, 2013a).

In general, chemical-specific PRGs, RSLs, CHHSLs, VISLs, and ESLs based on carcinogenic effects reflect a target individual lifetime excess cancer risk (ILECR) value of 1E-06. While chemical-specific PRGs, RSLs, VISLs, CHHSLs, and ESLs based on non-carcinogenic effects reflect a target hazard quotient (HQ) of 1. Per the USEPA (USEPA, 1990a and 1991a), the acceptable multi-chemical and multi-pathway ILECR range is from 1E-04 to 1E-06, with 1E-06 being point of departure; and the acceptable multi-pathway non-carcinogenic HQ for a single chemical or multi-chemical and multi-pathway hazard index (HI) (segregated by toxic effects) for all COPCs is 1.0 (the HI is calculated by summing the chemical-specific and/or pathway-specific HQs).

3.3.2.2 Screening Level HHRA Results

Consistent with the methodology of a Screening Level HHRA, RME EPCs of chemicals detected in onsite soil and groundwater were compared to their appropriate SLs as described above. The Screening Level HHRA results are presented in **Table 4** and discussed below.

The EPCs for soil (maximum detected concentrations from the top three meters of eight onsite soil borings, SB-1 through SB-8) were compared to the USEPA Regional Screening Level values and the California ESL values for residential and industrial soil. Both the RSLs and ESL for soil are calculated based on toxicity to humans assuming direct exposure including incidental ingestion, dermal contact and inhalation of vapors or dust particles in outdoor air. Soil EPCs also were compared to the California ESLs for shallow soil (<3 m bgs) protective of groundwater where groundwater is a current or potential drinking water resource. Groundwater is currently not used as a potable supply, nor are there plans to do so, so this is a conservative screening. The EPC for benzene in soil (4.8 mg/kg) exceeds the residential RSL (1.1 mg/kg) and all four California ESLs. The EPCs for ethylbenzene (1.0 mg/kg) and naphthalene (0.61 mg/kg) in soil do not exceed SLs for either residential or industrial land use.

Onsite groundwater EPCs (maximum detected concentrations from most current three rounds of sampling at five onsite wells MW-1R, MW-4, MW-7R, OW-1, and OW-2) were compared to California MCLs and groundwater ESLs based on drinking water toxicity, indoor air impact, and ceiling values (odor, taste, etc.) for onsite commercial/industrial workers and hypothetical residents (CRWQCB, 2013; USEPA, 2012; and Cal-EPA, 2013a to 2013c) (Table 4). The EPC for benzene (1.2 µg/L) exceeds the California MCL and ESL and the RSL based on drinking water. The EPC for MTBE (10 µg/L) exceeds CRWQCB-SFR's ESLs based on ceiling values (odor, taste). It is important to note that none of the available CRWQCB-SFBR ESLs or USEPA VISLs based on vapor intrusion to indoor air impact were exceeded.

This Screening Level HHRA comparison for groundwater is conservative for the following reasons:

- The site is currently used for commercial/industrial use. Redevelopment for residential use, or for a different commercial/industrial use, would require construction and site grading. These activities are bound to release VOCs measured in the shallow surface soil, further reducing the likelihood for vapor intrusion exposures.
    - Even without construction or site grading, onsite soil contamination is expected to decrease due to treatment with Fenton's Reagent in 2000.

- Groundwater is not a potential exposure route at the Site:
    - There are no current or anticipated uses of the impacted shallow groundwater.
    - There are currently no water supply wells that are impacted by contamination from the site.
    - Surface water is not believed to be impacted by site contamination given the distance to surface water features and the presence of inter-lying down gradient wells which showed no chemical contamination.
    - Onsite contamination is decreasing due to active remediation, weathering since the contaminant release, and considerable biodegradation.

3.3.3 Johnson and Ettinger Indoor Air Modeling

The USEPA (USEPA, 2004) developed the J&E model to provide a set of screening-level, one-dimensional analytical models that incorporate both convective and diffusive mechanisms for estimating the transport of contaminant vapors emanating from either subsurface soils, groundwater, or shallow soil vapor into indoor spaces located directly above the source of contamination. Inputs to the J&E models include chemical properties of the chemicals, saturated, and unsaturated zone soil properties, and structural properties of the building. The J&E models are provided as Microsoft Excel spreadsheets and each model is constructed of five worksheets:

1. DATAENTER (Data Entry Sheet for single chemical of interest);
2. CHEMPROPS (Chemical Properties Sheet for single chemical of interest);
3. INTERCALCS (Intermediate Calculations Sheet);
4. RESULTS (Results Sheet); and
5. VLOOKUP (Lookup Tables – Physical and chemical data and toxicity values for a list of chemicals).

For the HHRA, the advanced J&E groundwater and soil gas models (GW-ADV and SG-ADV-031403-DTSC.xls, version 3.1), modified by the Cal-EPA DTSC) dated 2/04 (Cal-EPA, 2004), were used to estimate indoor air concentrations and potential health risks for the current and future onsite commercial/industrial workers and hypothetical residents, using the soil matrix and groundwater data. For the soil matrix, concentrations measured in soil were first converted to a concentration in soil gas using an equation similar to the one presented in Cal-EPA guidance for vapor intrusion (Cal-EPA 2011d), as described below. Toxicity values in these spreadsheets were updated in accordance with the latest Cal-EPA and USEPA data (Cal-EPA, 2011b, 2013a; USEPA, 2012, 2013).

The J&E model was modified to allow modeling of multiple chemicals at once. Unsaturated soil zone properties and default structural properties of buildings are described in Table 5 and Appendix B. Boring logs available for the site showed that the average soil type for the site was estimated to be sandy clay for 0 - 4.89 feet bgs. Site-specific water-filled soil porosity for sandy clay was estimated using USEPA models (USEPA, 1985 and 1996a) and is presented in Appendix B. In addition to the default model inputs, J&E modeling was conducted with a more conservative water-filled soil porosity (θ_w) for sandy clay was also used in this HHRA to provide a range of health risks.

Indoor Air Exchange Value

Typically, J&E Model default, Cal-EPA OEHHA, and DTSC use an indoor air exchange rate of 0.5/hour for the residential scenario and 1/hour for the industrial/commercial scenario for California (Cal-EPA, 2005 and 2010). However, due to the moderate climate of the bay area and Oakland in general, Stantec assumed a residential indoor air exchange rate of one exchange per hour and industrial/commercial indoor air exchange rate of two exchanges per hour (Cal-EPA, 2008) per the CRWQCB-SFR. It has also been noted that for Northern California, the City of Oakland used a residential indoor air exchange rate of two exchanges per hour and a industrial/commercial indoor air exchange rate of five exchanges per hour (City of Oakland, 2000). Thus, even an industrial/commercial indoor air exchange rate of two per hour and a residential air exchange rate of one per hour should still be considered conservative of the Penske site in Oakland, California.

One difference is the use of a higher, assumed indoor air exchange rate in the ESL model, due to the more moderate climate of the San Francisco Bay Area (1.0 and 2.0 exchanges per hour for residences and commercial/industrial settings, respectively, versus 0.5 and 1.0 exchanges per hour referenced in the CHHSLs document). As a result, soil gas screening levels presented in the CHHSLs document are roughly half of those presented in the ESL document at similar target risk goals for comparative site scenarios.

DTSC has modified two USEPA J&E Vapor Intrusion Model spreadsheets, the models for soil gas and for groundwater, by including Cal-EPA OEHHA toxicity factors and California-specific building properties. For soil matrix data, the predicted soil gas concentrations were estimated using the partitioning equations provided in the *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (Cal-EPA 2011).

$$C_{sg} = H_c * C_{soil} * \rho_b / \Theta_w + (K_s * \rho_b) + (K_h * \Theta_a) * 1000$$

Where:

C_{sg} = concentration in soil gas (μg/m^3)

H_c = Henry's Constant (Dimensionless, compound-specific)

C_{soil} = concentration in soil (mg/kg)

ρ_b = Soil Bulk Density (1.4 g/m^3 for sandy clay)

Θ_w = Soil Water Filled Porosity (cm^3/cm^3)

K_s = Soil-Water Distribution Coefficient (cm^3/g)

Θ_a = Soil Air-Filled Porosity (cm^3/cm^3)

The conversion results are presented in Table 6.

3.4 UNCERTAINTIES RELATED TO EXPOSURE ASSESSMENT

Exposure assessment is a step in the HHRA process that uses a wide array of information sources and techniques. In the absence of site-specific sources of data, the exposure assessment uses assumptions and inferences which lead to varying degrees of uncertainties (USEPA, 1992a). Where uncertainty exists the exposure assessment uses assumptions and inferences selected to make the HHRA more conservative and protective of human health. Sources of uncertainty in exposure assessment include the degrees of completeness and confidence in: 1) modeled indoor air concentrations using the J&E model and soil and groundwater concentrations; 2) time of contact identification (for example, exposure scenario characterization, target population identification, and population stability over time); and, 3) the methodology for chemical exposure calculation. Variability or heterogeneity in exposure routes and exposure dynamics, such as age, gender, behavior, genetic constitution, state of health, and random movement of the potentially exposed populations, also result in uncertainty of the exposure estimates.

Assuming that the detected concentrations in the environmental media (*e.g.,* soil or groundwater) is the same as the EPC is a source of potential uncertainty in the exposure analysis. In this HHRA, characterization of the EPC was accomplished indirectly through sampling and measuring the concentrations in environmental media and then applying fate and transport models to estimate the concentration in indoor air. This results in uncertainties related to the EPC due to the vapor intrusion modeling. The exposure assessment also assumes that the EPC is constant throughout the exposure period and does not account for changes due to source depletion and biodegradation. Seasonal variation in groundwater concentrations were minimized because groundwater was sampled at different times of the year.

The USEPA vapor intrusion guidance document (USEPA, 2002) does not provide soil matrix screening concentrations. USEPA (2002) specifically addresses soil matrix samples, stating that "soil (as opposed to soil gas) sampling and analysis is not currently recommended for assessing whether or not the vapor intrusion pathway is complete". Soil matrix data are less than ideal for evaluating vapor intrusion risk because of the uncertainty associated with using partitioning equations and the potential loss of volatile chemicals during sample collection. However, since groundwater at the site occurs above five feet below grade, the collection of soil gas samples would be difficult. In this instance, USEPA recommends that, at a minimum, both groundwater and soil matrix sampling be conducted. Soil matrix data, as a sole line of evidence, is not recommended for evaluating risk from vapor intrusion. However, the soil matrix was paired with groundwater data to reduce uncertainty.

The exposure assessment estimates time of contact (exposure time, exposure frequency, and exposure duration) to identify who is exposed and to estimate the degree to which they are exposed. The HHRA does this indirectly through use of national demographic data and behavioral observations, some of which were not site-specific and may lead to overestimation or underestimation of exposure. The averaging process for daily exposure also assumes that repeated dosing continues to add to the risk potential.

4.0 Toxicity Assessment

Toxicity assessment is the process of using existing toxicity information from human or animal studies to identify potential health risks at various dose levels in exposed populations (USEPA, 1989a). The purpose of toxicity assessment is to collect and weigh available evidence regarding the potential for particular contaminants to cause adverse effects in exposed individuals and to provide an estimate of the relationship between the extent of exposure to a contaminant and the increased likelihood and/or severity of adverse effects. To estimate these potential health risks, the relationship between exposure to a chemical (in terms of intake or dose) and an adverse effect (in terms of bodily response) must be quantified. Without these dose-response (or toxicity) values, risk-based decision-making for human health protection purposes cannot be achieved.

Toxicity assessments for COPCs found at contaminated sites generally consist of two steps: 1) hazard identification; and 2) dose-response assessment (USEPA, 1989a). Hazard identification is a qualitative process of determining whether exposure to a chemical agent can cause adverse health effects, especially in humans. The dose-response assessment involves characterizing the relationship between the administered and/or the absorbed dose of a chemical and the magnitude or likelihood of the adverse health effects (USEPA, 1989a). For chemicals that are known or suspected to cause cancer, the dose-response assessment process defines the relationship between the dose of the chemical and the probability of induction of carcinogenic effects in humans or animal species of interest. For systemic toxicants, or chemicals that give rise to toxic endpoints other than cancer and gene mutations (called non-carcinogenic effects), the dose-response assessment process determines a threshold value below which adverse non-carcinogenic effects are not expected to occur in the general population, including sensitive subgroups.

The toxicity values used in the HHRA were selected based on the San Francisco Bay RWQCB guidance, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (2007) supplemented by values published in USEPA's Regional Screening Level tables available at http://www.epa.gov/region9/superfund/prg/ (USEPA 2012).

4.1 CARCINOGENIC DOSE RESPONSE ASSESSMENT METHODOLOGY

The USEPA assumes that a relatively small number of molecular events can elicit changes in a cell, ultimately resulting in uncontrolled cellular proliferation and cancer. This is referred to as the non-threshold theory of chemical carcinogenesis. On the basis of this theory, the USEPA uses a two-part evaluation in evaluating the carcinogenic effects of contaminants: 1) assigning a weight-of-evidence classification; and 2) calculating a slope factor (SF) or a unit risk factor (URF) per medium, such as inhalation unit risk (IUR) in air (USEPA, 1989a and 2005).

The system for assigning a weight-of-evidence classification is adapted from the approach taken by the International Agency for Research on Cancer (IARC). It describes the likelihood that a chemical is a human carcinogen, based on the supporting evidence of carcinogenicity in human and animal studies (USEPA, 1986 and 2005). The USEPA weight-of-evidence classification system for carcinogenicity is as follows (USEPA, 1989a):

- A Human carcinogen;
- B1 or B2 Probable human carcinogen;
- C Possible human carcinogen;
- D Not classifiable as to human carcinogenicity; and,
- E Evidence of non-carcinogenicity for humans.

In the 2005 *Guidelines for Carcinogen Risk Assessment* (USEPA, 2005), the USEPA proposed five new standard descriptors for likelihood of carcinogenic effects to humans:

1. Carcinogenic to Humans
2. Likely to be Carcinogenic to Humans
3. Suggestive Evidence of Carcinogenic Potential
4. Inadequate Information to Assess Carcinogenic Potential
5. Not Likely to Be Carcinogenic to Humans

Not all carcinogenic chemicals have switched to the new standard descriptors, so Cal-EPA still uses the USEPA 1986 weight-of-evidence classification system in its Toxicity Criteria Database (Cal-EPA, 2013b). Therefore, the 1986 classification system is used in this HHRA. For exposures through air, the USEPA and Cal-EPA estimate chemical-specific IURs, in units of increased lifetime excess cancer risk (ILECR) per unit of chemical concentration in the air, expressed as ILECR per µg of chemical per cubic meter of air, or $(\mu g/m^3)^{-1}$.

4.2 NONCARCINOGENIC DOSE RESPONSE ASSESSMENT METHODOLOGY

In assessing the potential for non-cancer health effects, USEPA assumes there is a toxicological threshold below which no adverse health effects are observable (USEPA 1993). These toxicological thresholds are represented by reference doses (RfDs) for oral exposures and reference concentrations (RfCs) for inhalation exposures. The RfDs and RfCs are estimates (with uncertainty spanning in some cases an order of magnitude) of daily exposures to the human population (including sensitive subgroups) that are likely to be without an appreciable risk of deleterious effects during a lifetime. USEPA derives RfDs and RfCs using a standardized approach, which considers available information from human and animals studies indicating the levels below which toxicological effects are not observed and the uncertainties inherent in the available information (USEPA 1993a).

The RfD, in units of mg/kg-day, or RfC, in units of mg/m^3, is derived using the following equation (USEPA, 1996b):

$$\text{RfD or RfC} = \frac{\text{NOAEL}}{\text{UF x MF}}$$

(Eq. 1)

Where:

NOAEL	=	No-observed-adverse-effect-level;
UF	=	Uncertainty factor; and,
MF	=	Modifying factor.

The NOAEL is the key datum in the non-carcinogenic dose-response assessment process. It is defined as the highest experimental dose of a chemical at which there is no statistical or biologically significant increase in frequency or severity of adverse effects between the exposed population and its appropriate control. Effects may be produced at this level, but they are not considered to be adverse. Adverse effects are defined as functional impairment or pathological lesions which may affect the performance of the whole organism, or which reduce an organism's ability to respond to an additional challenge (USEPA, 1989b). The RfD or RfC approach, in short, is based on the assumption that if the critical toxic effect is prevented, then all other toxic effects are prevented.

4.3 TOXICITY VALUES FOR COPC

In this HHRA, the following hierarchy of available sources was used to select COPC-specific toxicity values:

- California Cancer Potency Factors Table or Toxicity Criteria Database (Cal-EPA, 2013b);
- USEPA's Integrated Risk Information System (IRIS) database (USEPA, 2013);
- USEPA's Regional Screening Levels (RSLs) (USEPA, 2012) which also includes some values from the California Toxicity Criteria Database (Cal-EPA, 2013b);
- National Center for Environmental Assessment (NCEA) risk assessment issue papers.

This hierarchy is similar to the USEPA's recommendation (USEPA, 2003).

For COPCs at the site, the weight-of-evidence cancer classification, toxicity values for carcinogenic and non-carcinogenic effects for the inhalation exposure route are presented in **Table 7**. Chemical-specific toxicity values are continually being revised by the USEPA. Typically, updates in the toxicity values are refinements rather than extensive changes. Also, for vapor intrusion in California, DTSC prefers the use of more conservative USEPA toxicity values if available (Cal-EPA, 2011b).

The assessment of TPH fractions published in DTSC's "*Interim Guidance for Evaluating Human Health Risks from TPH*" released in 2009 was rescinded in 2011 (Cal EPA 2011b). Until final guidance is released DTSC recommends that in HHRA TPH be evaluated using data for specific toxic constituents of TPH (e.g. BTEX, hexane, other VOCs, PAHs, and metals). Therefore, risk associated with the other COPCs identified in soil and groundwater (e.g. benzene, ethylbenzene naphthalene) are used as surrogates for specific TPH fractions.

4.4 UNCERTAINTIES RELATED TO TOXICITY ASSESSMENT

Toxicity assessment is a critical step in the development of risk estimates for potentially exposed populations. If no toxicity data are available, there are few options on how to evaluate risks, except using structure-activity relationships or awaiting more data. In general, the greatest sources of uncertainty associated with toxicity values used in a HHRA include some of the following: 1) using dose-response information from animal studies to predict effects in humans; 2) using dose-response information from effects observed at high experimental doses to predict adverse effects that may occur following human exposure to low levels encountered in the ambient environment; 3) using dose-response information from short-term exposure studies to predict the effects of long-term exposures and vice versa; and, 4) using the dose-response information from homogeneous animal populations or healthy human populations to predict the effects likely to be observed in the general population consisting of individuals with a wide range of sensitivities.

Toxicity values for most of COPCs at the site were derived based on animal data, with considerable uncertainty factors. The use of animal data to estimate human response introduces a large degree of uncertainty, stemming from the differences in life span, genetic sensitivity, body size, tissue distribution and detoxification pathways, and exposure regimens. Thus, special attention should be paid not only to the numerical toxicity values, but also to the qualitative evaluation of the relative uncertainty inherent in the toxicity values as reflected by the reported weight-of-evidence or confidence levels for each chemical. These qualifiers generally describe how strongly the experimental data support the potential for adverse health effects in humans.

Currently, the USEPA uses a linear multi-stage (LMS) model to derive carcinogenic toxicity values, with an assumption that no threshold exists. That is to say, that the linear relationship still holds at the low-dose region. Carcinogenicity is also assumed to be independent of the exposure period, meaning once exposed, people remain at risk for the remainder of their lives. Note that Cal-EPA and USEPA differ in opinion about one carcinogenic chemical at the site (MTBE). MTBE is considered carcinogenic by Cal-EPA with a proposed IUR, whereas USEPA does not currently have an IUR for MTBE.

Another source of uncertainty in toxicity assessment is the use of dose-response information from homogeneous animal populations or healthy human populations to predict the effects likely to be observed in the general population consisting of individuals with a wide range of sensitivities and variability. These include differences in sex, age, dietary habits, genetic makeup, metabolic capacity, and special susceptibility.

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5.0 Risk Characterization

Risk characterization is the culmination of the risk assessment process (USEPA, 1992a and 1992b) which integrates results of the identification of COPCs, exposure assessment, and toxicity assessment to describe risks to individuals and populations in terms of extent and severity of probable adverse health risks under both current and future land-use conditions. The overall quality of the assessment, including the confidence on the risk estimates, is discussed in Section 5.4 (Uncertainties Associated with Risk Characterization).

In the HHRA, the health risk characterization process involves integrating the exposure concentrations and the toxicity values to estimate two types of potential health effects, carcinogenic and non-carcinogenic. Because the development of carcinogenic and non-carcinogenic effects is assumed to be caused by different mechanisms of action, different methods are used to evaluate these effects, as described below.

5.1 CARCINOGENIC RISK CHARACTERIZATION METHODOLOGY

Since the HHRA assessed risks due to vapor intrusion based on the J&E model (indoor air pathway), the IUR was used in the risk calculations. The following equation was used to estimate the ILECR (USEPA, 2004a) (for residents exposed for 24 hours/day):

$$ILECR = (IUR \times ED \times EF \times C_{building}) / (AT_c \times 365 \text{ days/year}) \quad \textbf{(Eq. 2)}$$

Where:

ILECR = Increased Lifetime Excess Cancer Risk

IUR = Inhalation Unit Risk $(\mu g/m^3)^{-1}$

ED = Exposure Duration (yrs)

EF = Exposure Frequency (days/year)

$C_{building}$ = Chemical-specific J&E modeled indoor air concentration, $\mu g/m^3$;

AT_c = Averaging Time for carcinogenic effects, equals a lifetime 70 years.

For commercial or industrial workers, the risks estimated by the J&E model were reduced by a factor of 3 to account for 8 hours of commercial/industrial worker exposure (USEPA, 2009) versus 24-hour residential exposure. The following equation was used to estimate exposure concentrations (ECs) for the commercial/industrial workers.

$$EC = (C_{building} \times ET \times EF \times ED) / AT \qquad \textbf{(Eq. 3)}$$

Where:

EC	=	Exposure Concentration, in micrograms per cubic meter (µg/m^3);
$C_{building}$	=	Chemical Concentration in indoor air (modeled from the J&E model), in µg/m^3;
ET	=	Exposure Time, in hours/day, which is 8 hours/day for commercial/industrial workers;
EF	=	Exposure Frequency, in days/year;
ED	=	Exposure Duration, in years;
AT	=	Averaging Time, in hours.

This approach to estimating inhalation risk (independent of inhalation rate and body weight) has raised concerns from OEHHA because commercial/industrial workers are known to have higher inhalation rates than residents. In the past USEPA and Cal-EPA have assumed that workers' inhalation rate is 20 m^3/day for an 8-hour work day, which is the same as the residential inhalation rate of 20 m^3/day for a 24-hour day. Until Cal-EPA OEHHA issues a new guidance or an HHRA note on this issue, an additional safety factor of 3 (24 hours of exposure time versus 8 hours of exposure time) will be taken into account with regard to commercial/industrial workers' inhalation exposure.

It should be noted that use of IUR in a risk equation does not require the age-specific exposure parameters such as intake rate (*e.g.,* inhalation rate) and body weight (USEPA, 2009, 2012). In the HHRA, ILECRs from all COPCs were combined, regardless of weight of evidence. These ILECR values are expressed in terms such as one-in-one hundred-thousand (1 x 10^{-5}, 10^{-5}, 1E-05, or 0.00001) or one-in-a-million (1 x 10^{-6}, 10^{-6}, 1E-06, or 0.000001). An ILECR of 1 x 10^{-6} means that an exposed individual may have an added one-in-one million chance of developing cancer over a lifetime, or one person among one-million-exposed people might be expected to develop cancer as a result of exposure to site COPCs.

Calculation of the ILECR is based on the assumption that the dose-response relationship is linear in the low-dose portion of the linear multi-stage model curves due to the low levels of environmental exposures. This linear equation is valid only at ILECR levels below 1 x 10^{-2} (USEPA, 1989a). The true risks associated with exposure to site-related COPCs may even be zero (USEPA, 1989a; Kostecki et al., 1993; ASTM, 2002).

Individual Lifetime Excess Cancer Risk Range.

According to the USEPA, an ILECR of 1 x 10^{-6} is considered as the point of departure, while the ILECR range between 1 x 10^{-4} to 1 x 10^{-6} may be acceptable for regulatory purposes (USEPA, 1990, 1991).

The application of risk assessment results in supporting risk management decisions and evaluating hazardous waste site remedial alternatives is addressed in the following bullet items from the USEPA memorandum "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions." (USEPA, 1991):

- Where the cumulative carcinogenic site risk to an individual based on an RME for both current and future land-use is less than 1 x 10^{-4} and the non-carcinogenic hazard quotient (HQ) is less than 1, action generally is not warranted unless there are adverse environmental impacts.
- Records of Decision (ROD) for remedial actions taken at sites posing human health risks within the 1E-04 to 1E-06 risk range must explain why remedial action is warranted.
- The upper boundary of the risk range is not absolutely set at 1E-04, although the USEPA generally uses 1E-04 in making risk management decisions. In certain cases, the USEPA may consider risk estimates that are slightly greater than 1E-04 to be protective.

In California, under the Proposition 65 program, the “no significant risk levels” represent the daily intake level calculated to result in a cancer risk not exceeding one excess case of cancer in 100,000 individuals exposed over a 70-year lifetime (Cal-EPA, 2013b). As such, Cal-EPA uses a target ILECR of 1E-05 for individual carcinogenic COPCs to warn the public of potential carcinogens in every day’s products.

Several states (including Cal-EPA *Safe Drinking Water and Toxic Enforcement Act of 1986* [Proposition 65], Alabama, Iowa, Michigan, Missouri, Ohio, South Dakota, Texas, and Utah) and USEPA are using 1E-05 as risk level of concern when they derived risk-based cleanup levels. For example, the USEPA has selected a single risk level of 1E-05 in the *Hazardous Waste Management System Toxicity Characteristics Revisions* (1995). The USEPA has cited the following rationale for justification:

> *“The chosen risk level of 1E-05 is at midpoint of the reference risk range for carcinogens (1E-04 to 1E-06) generally used to evaluate CERCLA actions. Furthermore, by setting the risk level at 1E-05 for Toxicity Characteristic carcinogens, EPA believes that it is the highest risk level that is likely to experienced, and most, if not all, risks will be below this*

> *level due to the generally conservative nature of the exposure scenario and the underlying health criteria. For these reasons, the Agency regards a 1E-05 risk level for Group A, B, and C carcinogens as adequate to delineate, under the Toxicity Characteristics, wastes that clearly pose a hazard when mismanaged."*

Cumulative carcinogenic risk of 1E-04 must not be exceeded to the exposed populations, including sensitive subgroups.

5.2 NONCARCINOGENIC RISK CHARACTERIZATION METHODOLOGY

Since the inhalation RfC was used in the HQ calculation, the following equation was used to estimate the HQ (for 24-hour exposed residents) (USEPA, 2004a):

$$HQ = \frac{EF \times ED \times \frac{1}{RfC} \times C_{building}}{AT_{nc} \times 365 \text{ days/year}} \qquad \textbf{(Eq. 4)}$$

Where:

HQ	=	Hazard Quotient
ED	=	Exposure Duration (yrs)
EF	=	Exposure Frequency (days/year)
RfC	=	Reference Concentration (mg/m^3)
$C_{building}$	=	Chemical-specific J&E modeled indoor air concentration, µg/m^3;
AT_{nc}	=	Averaging time for non-carcinogenic effects, equals exposure duration (Cal-EPA, 2011a).

As discussed above for commercial or industrial workers, the HQ estimated by the J&E model were reduced by a factor of 3 to account for only 8 hours of commercial/industrial worker exposure (USEPA, 2009) versus 24-hour residential exposure (combined in the exposure frequency Excel cell).

As with the case of carcinogenic effects, the potential additivity of non-carcinogenic hazard due to exposure to all COPCs via indoor air inhalation is quantified as a Hazard Index (HI), which is the sum of all chemical-specific HQs (USEPA, 1989a).

If the HQ or HI is greater than unity, or one, meaning the exposure level exceeds the threshold RfC, a potential for adverse non-carcinogenic health effects may exist. If the HQ or HI is equal to or less than one, exposures to the COPCs are not expected to result in a systemic toxic response. As the frequency of exposures exceeding the RfC increases, the probability for adverse effects also increases. However, a clear distinction that could categorize all exposures below the RfC as acceptable (risk-free) and all exposures in excess of the RfC as unacceptable (causing adverse effects) cannot be made (USEPA, 1996b).

It should be noted that HQs and HIs are not statistical probabilities, such as ILECR, and the level of concern does not increase linearly as the RfC is approached or exceeded. For regulatory purposes, an HI of 1 or less is considered to be an acceptable non-carcinogenic risk level (USEPA, 1989a, 1990, and 1991). If the pathway-specific or cumulative exposure HI is greater than one, segregation of the HI, based on the type of effects or mechanisms of action, may be considered in the HHRA (USEPA, 1989a).

5.3 HUMAN HEALTH RISK RESULTS

Chemical-specific and cumulative RME health risks to current and future receptors are calculated using the J&E model for vapor intrusion. For the soil matrix, the concentrations measured in soil were first converted to a concentration in soil gas as presented in Section 3.3. For both soil and groundwater the J&E model was run using default assumptions based on California guidance (Cal EPA, DTSC, 2011d or Cal-EPA 2013a) and using a site-specific soil water-filled porosity (Θw) value (See Table B-1). Commercial/industrial worker risks based on onsite soil data Θw are presented in Table 8. Resident risks based on onsite soil data are presented in Table 9. Commercial/industrial worker risks based on onsite groundwater data are presented in Table 10 and resident risks based on onsite groundwater data are presented in Table 11. The results are discussed below.

Current and Future Onsite Commercial Workers - Soil

1. As shown in **Table 8**, using the maximum detected concentrations in onsite soil converted to a soil gas concentration and a site-specific value for soil water-filled porosity for sandy clay (0.308 cm^3/cm^3), the RME ILECR to current and future onsite commercial workers is 5.4E-08 and the RME HI is 1.8E-04.
2. Using soil matrix data and the more conservative J&E model default water-filled soil porosity (0.197 cm^3/cm^3), the RME ILECR to current and future onsite commercial workers is 8.2E-07 and the RME HI is 2.6E-03.
3. All these risk values are below the target risk level of 1E-06 and an HI of one, indicating insignificant risks to current and future onsite commercial workers due to vapor intrusion from soil.

Hypothetical Future Onsite Residents – Soil

1. As shown in **Table 9**, using the maximum detected concentrations in onsite soil converted to a soil gas concentration and a site-specific value for soil water-filled porosity (0.308 cm^3/cm^3), the RME ILECR to hypothetical future onsite residents is 5.5E-07 and the RME HI is 1.5E-03.
2. Using the more conservative J&E model default water-filled soil porosity (0.197 cm^3/cm^3), the RME ILECR to hypothetical future onsite residents is 8.3E-06 and the RME HI is 2.2E-02.
3. All these risk values are below the target risk level of 1E-06 for site-specific soil water-filled porosity and below 1E-05 , considered "no significant risk level" under California Proposition 65 for individuals exposed over a 70 year lifetime (Cal-EPA 2013e), using default water-filled porosity. All values are below an HI of one, indicating insignificant risks to hypothetical future onsite residents due to vapor intrusion from soil.

Current and Future Onsite Commercial Workers - Groundwater

1. Table 10 presents risks to current and future onsite commercial workers, calculated using onsite groundwater data and a site-specific water-filled soil porosity value for sandy clay (0.308 cm^3/cm^3). The RME ILECR to commercial workers is 2E-09 and the RME HI is 4.7E-06.
2. Using the more conservative J&E model default water-filled soil porosity (0.197 cm^3/cm^3), the RME ILECR to current and future onsite commercial workers is 2E-09 and the RME HI is 7.1E-06.
3. All these risk values are below the target risk level of 1E-06 and an HI of one, indicating insignificant risks to current and future onsite commercial workers due to vapor intrusion from groundwater.

Hypothetical Future Onsite Residents – Groundwater

1. Table 11 presents risk to hypothetical future onsite residents calculated using onsite groundwater data and a site-specific water-filled soil porosity value for sandy clay (0.308 cm^3/cm^3). The RME ILECR to hypothetical future onsite residents is 2E-08 and the RME HI is 4.0E-05.
2. Using the more conservative J&E model default water-filled soil porosity (0.197 cm^3/cm^3), the RME ILECR to hypothetical future onsite residents is 2E-08 and the RME HI is 5.9E-05.
3. All these risk values are below the target risk level of 1E-06 and an HI of one, indicating insignificant risks to hypothetical future onsite residents due to vapor intrusion from groundwater.

5.4 UNCERTAINTIES RELATED TO RISK CHARACTERIZATION

Uncertainties in the risk characterization step are essentially the accumulated uncertainties associated with the methodologies used in estimating the health risk results. They are the product of many factors affecting each component of the HHRA process, namely data collection/evaluation and selection of COPCs, exposure assessment, and toxicity assessment. These factors generally include, at a minimum, measurement errors, conservative exposure and modeling assumptions, and uncertainty and variability of the values used in the assessment.

Use of the maximum detected concentrations from soil borings and from wells located at the center of the plume as the EPCs provide the first level of conservatism in this HHRA. Another uncertainty includes the conservative assumption that COPC concentrations do not decrease over time in the environment due to source depletion, but remain at the concentrations measured during the investigations.

Vapor intrusion was quantitatively evaluated in the HHRA and is considered to be the primary exposure pathway at the Site (*e.g.,* indoor inhalation). Minor or secondary pathways that may exist were not considered in the analysis (*e.g.,* outdoor inhalation). Exclusion of minor exposure pathways should have a negligible impact on cumulative risk estimates.

Another source of uncertainty in estimating exposures and health risks is the assumption that individuals within a particular receptor population will receive the same intake doses. Variability in parameters such as absorption rates, inhalation rates, activity levels, frequency and duration of exposure, body weight, and activity pattern will exist even in a narrowly defined age group or identified sensitive subpopulation (USEPA, 1992b). This range of uncertainty and variability is difficult to assess. In the HHRA, however, many USEPA and Cal-EPA standard default factors representing the upper limit of these exposure parameters for the RME case are deemed to have mostly overestimated the potential health risks.

Other uncertainties are related to the averaging times selected in estimating average daily intakes for potential carcinogenic and non-carcinogenic effects, and the assumption that the same receptor will be exposed daily to low levels of site-related contaminants. On the basis of the information discussed above, the net overall uncertainty associated with the exposure assessment is rated as low with a no observable bias toward either overestimation or underestimation of risks.

Uncertainties in this HHRA are also related to the use of Cal-EPA- and USEPA-derived toxicity values. Since DTSC-recommended Cal-EPA toxicity values are more conservative than USEPA toxicity values for some carcinogenic chemicals (e.g., MTBE), the HHRA results are conservative.

Finally, it was assumed in the risk characterization step that the health effects from multi-chemical exposures are additive. The net overall uncertainty associated with risk characterization, therefore, was given a rating of low to medium with a bias toward overestimation of risks.

6.0 SUMMARY AND CONCLUSION

The objective of this HHRA is to estimate potential health risks to current and future onsite commercial workers and hypothetical future residents as a result of potential vapor intrusion emanating from both soil and groundwater. To be conservative, the maximum detected concentration of all COPCs were used as the EPC. The Advanced groundwater and soil gas J&E models were used to estimate potential indoor health risks for the RME scenarios for an onsite Commercial/Industrial worker and a hypothetical onsite resident. In addition to J&E standard default soil water-filled porosity, the J&E model was run using a site-specific soil water-filled porosity value calculated based on site-specific annual precipitation rates. All of the calculated RME ILECRs to all receptors are below 1E-05 and all RME HIs are below one. Therefore, it is expected that the site is suitable for commercial and residential land uses without any significant risks to onsite receptors from vapor intrusion.

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TABLES

Human Health Risk Assessment
725 Julie Ann Way, Oakland, CA
Stantec PN: 185762330
October 21, 2013

TABLE 1
Soil Sample Analytical Results (0-10 ft bgs)
Penske Former Truck Leasing Facility
725 Julie Ann Way, Oakland, California

			Method 8260B* (mg/kg)	Method 8015B (mg/kg)	Method 8260B* (mg/kg)							Method 8260B (ug/kg)
Sample ID	Depth (feet bgs)	Date	TPH-g	TPH-d	Benzene	Ethylbenzene	Toluene	Xylenes	MTBE	Ethylene Dichloride**	Ethylene Dibromide	Naphthalene
SB-1-4'	4	4/21/2009	**210**	**170**	<0.99	<0.99	<0.99	<2.0	<0.99	<0.99	<0.99	**85**
SB-1-8'	8	4/21/2009	**64**	**460**	<0.98	<0.99	<0.99	<2.0	<0.99	<0.99	<0.99	<36
SB-1-8.5'	8.5	4/21/2009	**7.8**	**530**	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<48
SB-2-5'	5	4/21/2009	<0.24	**9.7**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.004	<0.004	<9.8
SB-2-8'	8	4/21/2009	**97**	**370**	<0.98	<0.98	<0.98	<2.0	<0.98	<0.98	<0.98	<45
SB-3-5'	5	4/21/2009	**0.26**	**20**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.004	<0.004	<9.7
SB-3-8'	8	4/21/2009	<1.2	**2.5**	<0.004	<0.004	<0.004	<0.009	<0.004	<0.004	<0.004	<9.7
SB-3-9'	9	4/21/2009	**55**	**370**	<0.99	<0.99	<0.99	<2.0	<0.99	<50	<50	<50
SB-4-4.5'	4.5	4/21/2009	**3.1**	**1,600**	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<40
SB-4-6.5'	6.5	4/21/2009	**190**	**470**	**4.8**	**1.0**	<0.98	<2.0	<0.98	<0.98	<0.98	**610**
SB-4-8.5'	8.5	4/21/2009	**320**	**450**	**2.8**	<0.94	<0.94	<1.9	<0.094	<0.094	<0.094	**370**
SB-5-5'	5	4/21/2009	**95**	**1,000**	<0.94	<0.94	<0.94	<1.9	<0.94	<0.94	<0.94	**52**
SB-5-6.5'	6.5	4/21/2009	**170**	**490**	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	**55**
SB-5-8.5'	8.5	4/21/2009	**87**	**820**	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<0.97	**55**
SB-6-5'	5	4/22/2009	**210**	**12,000**	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	**63**
SB-6-6.5'	6.5	4/22/2009	**230**	**500**	<0.96	<0.96	<0.96	<1.9	<0.96	<0.96	<0.96	**69**
SB-7-5'	5	4/22/2009	<0.25	**130**	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.0049	<0.0049	<9.8
SB-7-8'	8	4/22/2009	**1.9**	**670**	<0.0047	<0.0047	<0.0047	<0.0093	<0.0047	<0.0047	<0.0047	<49
SB-8-5'	5	4/22/2009	<0.24	**120**	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.0048	<0.0048	<9.9
SB-8-7.5'	7.5	4/22/2009	**4.1**	**220**	<0.0047	<0.0047	<0.0047	<0.0095	<0.0047	<0.0047	<0.0047	<10
Maximum			**320**	**12000**	**4.8**	**1**	0	0	0	0	0	**610**
Minimum			**0.26**	**2.5**	**0.025**	**1**	0	0	0	0	0	**52**
# Detects			**16**	**20**	**2**	**1**	0	0	0	0	0	**8**
Average			**62.4**	**728.7**	**0.3**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**48.6**
% Detection			**57%**	**71%**	**7%**	**4%**	0%	0%	0%	0%	0%	**29%**

Notes:
*: Method 8260B with California Leaking Underground Fuel Test Method
** Ethylene dichloride reported as 1,2-Dichloroethane
MTBE - methyl tertiary butyl ether
mg/kg - milligrams per kilogram
ug/kg - Micrograms per kilogram
Bold values indicate values that exceed the method reporting limit.
< - indicates sample detected at concentration less than the reporting limit indicated

TABLE 2
Groundwater Sample Analytical Results
Penske Former Truck Leasing Facility
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd (µg/L)	TPHg	Benzene	MTBE
MW-1 R	03/22/12	**810**	**120**	<0.5	<0.5
	09/24/12	**590**	**110**	<0.5	<0.5
	03/04/13	**1,500**	**87**	<0.5	<0.5
MW-4	03/22/12	**2,500**	<50	<0.5	**0.9**
	09/24/12	**1,200**	<50	<0.5	**1.3**
	03/04/13	**550**	<50	<0.5	**1.4**
MW-7R	03/22/12	**2,800**	**320**	<0.5	<0.5
	09/24/12	**1,200**	**110**	**1.2**	**1.8**
	03/04/13	**4,000**	**55**	<0.5	**1.9**
OW-1	03/22/12	**710**	**81**	<0.5	**4.3**
	09/24/12	**1,200**	**140**	<0.5	**3.7**
	03/04/13	**350**	<50	<0.5	**4.7**
OW-2	03/22/12	**680**	**56**	<0.5	**6.0**
	09/24/12	**1,900**	**380**	<0.5	**10**
	03/04/13	**1,300**	**110**	<0.5	**8.1**
Maximum		**4,000**	**380**	**1.2**	**10.0**
Minimum		**350**	**55**	**1.2**	**0.9**
# Detects		**15**	**11**	**1**	**11**
Average		**1,419.3**	**117.9**	**0.55**	**3.1**
% Detection		**100%**	**73%**	**7%**	**73%**

Notes:

µg/L - micrograms per liter
TPHd - Total Petroleum Hydrocarbons as diesel
TPHg - Total Petroleum Hydrocarbons as gasoline
MTBE - Methyl tert butyl ether

Bold values indicate values that exceed the method reporting limit.

< - indicates sample detected at concentration less than the reporting limit indicated

TABLE 3
Soil and Groundwater Exposure Point Concentrations
Penske Former Truck Leasing Facility
725 Julie Ann Way, Oakland, California

Chemical	**Exposure Point Concentration (EPC)**
Soil Matrix	**(mg/kg)**
Benzene	**4.8**
Ethylbenzene	**1.0**
Naphthalene	**0.61**
Groundwater	**(µg/L)**
Benzene	**1.2**
Methyl-tert-butyl ether (MTBE)	**10**

Notes:
mg/kg = milligrams/kilograms
µg/L = micrograms per liter

Exposure Point Concetrations (EPCs) are the maximum detected concentration in each media. The EPCs for soil were converted to soil gas concentrations ($\mu g/m^3$) using the equation presented on Table 6.

TABLE 4
Screening Level HHRA Results for Soil and Groundwater with Groundwater as a Potential Drinking Water Source
Penske Former Truck Leasing Facility
725 Julie Ann Way, Oakland, California

SOIL	Soil EPC[b] (mg/kg)	RSLs for Residential Soil[c] (mg/kg)	RSLs for Industrial Soil[c] (mg/kg)	ESLs for Residential Soil - Protective of Human Health[d] (mg/kg)	ESLs for Residential Soil - Protective of Groundwater[d] (mg/kg)	ESLs for Industrial Soil - Protective of Human Health[d] (mg/kg)	ESLs for Industrial Soil - Protective of Groundwater[d] (mg/kg)
Benzene	**4.8**	**1.1**	5.4	**0.5**	**0.04**	**1.6**	**0.04**
Ethylbenzene	1	5.4	27	2.9	3.3	4.9	3.3
Naphthalene	0.61	3.6	18	1.7	1.2	8.4	1.2

GROUNDWATER	Groundwater EPC[b] (µg/L)	California MCL / Federal MCL[c] (µg/L)	ESL for Drinking Water Protective of Human Health[d] (µg/L)	RSLs for Drinking Water[c] (µg/L)	Indoor-Air Impact ESL (f) (µg/L) Resident/Indust.	USEPA Indoor Air Impact VISLs[f] (µg/L)	ESL for Groundwater Protective of Estuary Aquatic Habitat (µg/L)	ESL for Groundwater Based on Ceiling Value (Odor, Taste) (µg/L)
Benzene	**1.2**	**1** / 5	**1**	**0.39**	27 / 270	1.4	46	170
MTBE	**10**	13	13	12	9,900 / 100,000	390	8000	**5**

Bold = Exceedance of Tier 1 Screening Levels
RSL = Regional Screening Level
ESL = Environmental screening level
VISL = Vapor intrusion screening level
MCL = Maximum contaminant level
µg/L = micrograms per liter
MTBE = Methyl tert-butyl ether
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
NA = Not Available

(a) Both RSLs and ESLs are calculated for a target cancer risk of 1E-06 and a non-cancer hazard index of 1.0.

(b) Soil EPCs are the maximum detected concentration from SB-1 through SB-8 collected in April 2009. Groundwater EPCs are maximum detected concentration from the three most recent groundwater sampling events in 2012-2013 at MW-1R, MW-4, MW-7R, OW-1, and OW-2.

(c) USEPA RSLs for direct contact with soil or tap water; for vapor intrusion screening levels (VISLs)(USEPA, 2011a); Primary MCL from California Department of Health Services (Cal-EPA, 2012).

(d) ESLs for Shallow Soil (<3m bgs) protective of groundwater where groundwater is a current or potential drinking water resource.

(e) Table F-1a (drinking water) (Cal-EPA, 2013a).

(f) Vapor Intrusion Screening Levels (USEPA, 2011a).

TABLE 5
Johnson and Ettinger Soil and Groundwater Modeling Parameters
Former Penske Site
725 Julie Ann Way, Oakland, CA

Modeling Parameters	Symbol	Units	CTE & RME	Source
Inhalation of VOCs in Indoor Air				
Chemical concentration in groundwater	C_W	μg/L		Table 3
Chemical concentration in soil gas	C_g	$\mu g/m^3$		Table 6
Depth below grade to bottom of enclosed space floor	L_f	cm	15.2	Default, J&E Model
Depth below grade to water table	L_{WT}	cm	149	Site-specific, 4.89 feet, 2012-2013
Average soil/groundwater temperature	T_s	^oC	16.7	Site-specific, Northern CA
Thickness of soil stratum A	h_A	cm	149	Site-specific, 4.89 feet, 2012-2013
Soil stratum A SCS soil type (for soil vapor permeability)				Sandy Clay
Stratum A soil dry bulk density	ρ_b^A	g/cm^3	1.63	J&E Model Default for Sandy Clay
Stratum A soil total porosity	n^A	cm^3/cm^3	0.385	J&E Model Default for Sandy Clay
Stratum A soil water-filled porosity - J&E Default	θ_w^A	cm^3/cm^3	0.197	Measured or Modeled Site-specific
Stratum A soil water-filled porosity - Modeled Site-specific	θ_w^A	cm^3/cm^3	0.308	See Table B-1
Enclosed space floor thickness	L_{crack}	cm	10	Default, J&E Model
Soil-building pressure differential	ΔP	$g/cm\text{-}s^2$	40	Default, J&E Model
Enclosed space floor length (Future)	L_B	cm	1,000	Default, J&E Model
Enclosed space floor width (Future)	W_B	cm	1,000	Default, J&E Model
Enclosed space height (Future)	H_B	cm	243.8	Cal-EPA, 2010 (default)
Floor-wall seam crack width	w	cm	0.1	Default, J&E Model
Average vapor flow rate into building	Q_{soil}	L/m	5	Default, J&E Model
RECEPTOR - Commercial/Industrial				
Indoor air exchange rate	ER	1/h	2	Cal-EPA, 2013a
Averaging time (Carcinogenic)	AT_C	yrs	70	Cal-EPA, 2011b, USEPA, 1990b
Averaging time (Noncarcinogenic)	AT_{NC}	yrs	25	Cal-EPA, 2011b, USEPA, 1990b
Exposure duration	ED	yrs	25	Cal-EPA, 2011b, USEPA, 1990b
Exposure frequency *	EF	days/yr	83.33	Cal-EPA, 2011b, USEPA, 2009
RECEPTOR - Residential				
Indoor air exchange rate	ER	1/h	1	Cal-EPA, 2013a
Averaging time (Carcinogenic)	AT_C	yrs	70	Cal-EPA, 2011b, USEPA, 1990b
Averaging time (Noncarcinogenic)	AT_{NC}	yrs	30	Cal-EPA, 2011b, USEPA, 1990b
Exposure duration	ED	yrs	30	Cal-EPA, 2011b, USEPA, 1990b
Exposure frequency	EF	days/yr	350	Cal-EPA, 2011b

Notes:
* Equals (250 days per year x 8 hours of exposure) / 24 hours, to adjust for worker's exposure of 8 hours/day (USEPA, 2009).

TABLE 6
Conversion of Soil Matrix Exposure Point Concentrations (mg/kg) to Soil Gas (µg/m^3)
Former Penske Site
725 Julie Ann Way, Oakland, CA

	C_{sg} (µg/m^3)	=	H'^{a} unitless	x	C_{soil} (mg/kg)	x	$\rho_s{}^{b}$ (g/cm^3)	/	$\Theta_w{}^{c}$ cm^3/cm^3	+	(	K_d (cm^3/g)	x	$\rho_s{}^{b}$ (g/cm^3)	)	+	(	H'^{a} unitless	x	$\Theta_a{}^{b}$ cm^3/cm^3	)	x	1000 cm^3/m^3	K_d cm^3/g	=	Koc g/cm^3	x	$f_{oc}{}^{b}$
Benzene	3,150	=	2.28E-01	x	4.8	x	1.66	/	0.308	+	(	1.18E-01	x	1.66	)	+	(	2.28E-01	x	0.321	)	x	1000	1.18E-01	=	5.89E+01	x	0.002
Ethylbenzene	332	=	3.23E-01	x	1.0	x	1.66	/	0.308	+	(	7.26E-01	x	1.66	)	+	(	3.23E-01	x	0.321	)	x	1000	7.26E-01	=	3.63E+02	x	0.002
Naphthalene	2.8	=	2.0E-02	x	0.60	x	1.66	/	0.308	+	(	4.00E+00	x	1.66	)	+	(	2.0E-02	x	0.321	)	x	1000	4.00E+00	=	2.00E+03	x	0.002

C_{sg} = Concentration in soil gas (µg/m^3)
C_{soil} = Concentration in soil (mg/kg)
H' = Henry's Constant (Dimensionless)
ρ_s = Soil Bulk Density (g/cm^3, Moist)
Θ_w = Soil Water Filled Porosity
K_d = Soil-Water Partition Coefficient (cm^3/g),
Θ_a = Soil Air-Filled Porosity

$K_d = K_{oc} \times f_{oc}$
where:
K_{oc} = soil organic carbon partition coefficient (cm /g), chemical-specific
f_{oc} = fraction organic carbon in soil (g/g), 0.006 (0.6%)

[a] USEPA. 2004. User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings, USEPA, Office of Emergency and Remedial Response. Washington, D.C.
[b] California Environmental Protection Agency. 2005. Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil. Office of Environmental Health Hazard Assessment, Integrated Risk Assessment Section. January 2005 (Original November 2004).
[c] Site-specific average soil water-filled porosity, estimated to be 0.308 cm^3/cm^3 for sandy clay (Table B-1 of Appendix B).

USEPA. 1996a. Soil Screening Guidance. Appendix A. Saturated hydraulic conductivity (m/year), assumed 10 m/year for sandy clay (USEPA, 1996a).

TABLE 7
Toxicity Factors for Compounds Detected in Soil or Groundwater
Former Penske Site
725 Julie Ann Way, Oakland, CA

Chemical Detected in Groundwater	CAS	USEPA Cancer Weight of Evidence	Inhalation Unit Risk ($\mu g/m^3$)$^{-1}$		Chronic Reference Concentration (mg/m^3)	
Benzene	71-43-2	A	2.9E-05	1	3.0E-02	2
Ethylbenzene	100-41-4	D	2.5E-06	1	1.0E+00	2
Naphthalene	91-20-3	C	3.4E-05	1	3.0E-03	2
Methyl-t-Butyl Ether (MTBE)	1634-04-4	NA	2.6E-07	1	3.0E+00	2

Notes:
CAS = Chemical Analytical Service
A = Known human carcinogen
B1 or B2 = Probable human carcinogen
C = Possible human carcinogen
D = Not classifiable as to human carcinogenicity
1. California EPA (OEHHA) Toxicity Criteria Database (Cal-EPA, 2013b). Available at: http://www.oehha.ca.gov/risk/ChemicalDB/
2. USEPA Integrated Risk Information System (USEPA, 2013).

TABLE 8

Potential Indoor Health Risks to Current and Future Onsite Commercial/Industrial Workers

Based on Onsite Soil Data

Former Penske Site

725 Julie Ann Way, Oakland, CA

Water-filled Soil Porosity	**J&E Default**		**Modeled Site-specific**	
Chemicals	**Individual Lifetime Excess Cancer Risk**	**Hazard Quotient**	**Individual Lifetime Excess Cancer Risk**	**Hazard Quotient**
Benzene	8.1E-07	2.6E-03	5.4E-08	1.7E-04
Ethylbenzene	6.5E-09	7.3E-06	4.1E-10	4.6E-07
Naphthalene	6.1E-10	1.7E-05	7.6E-11	2.1E-06
TOTAL	**8.2E-07**	**2.6E-03**	**5.4E-08**	**1.8E-04**

TABLE 9
Potential Indoor Health Risks to Hypothetical Future Onsite Residents
Based on Onsite Soil Data
Former Penske Site
725 Julie Ann Way, Oakland, CA

Chemicals	J&E Using Default Assumptions		J&E Using Site-specific Θ_w	
	Individual Lifetime Excess Cancer Risk	Hazard Quotient	Individual Lifetime Excess Cancer Risk	Hazard Quotient
Benzene	8.2E-06	2.2E-02	5.4E-07	1.5E-03
Ethylbenzene	6.5E-08	6.1E-05	4.1E-09	3.8E-06
Naphthalene	6.2E-09	1.4E-04	7.7E-10	1.8E-05
TOTAL	**8.3E-06**	**2.2E-02**	**5.5E-07**	**1.5E-03**

Default Assumptions based on Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) (Cal EPA, DTSC, 2011). Site-specific J&E used site-specific soil water-filled porosity (Ɵw) value (See Table B-1).

TABLE 10
Potential Indoor Health Risks to Current and Future Onsite Commercial/Industrial Workers
Based on Onsite Groundwater Data
Former Penske Site
725 Julie Ann Way, Oakland, CA

Chemicals	J&E Using Default Assumptions		J&E Using Site-specific Θ_w	
	Individual Lifetime Excess Cancer Risk	Hazard Quotient	Individual Lifetime Excess Cancer Risk	Hazard Quotient
Benzene	2.1E-09	6.7E-06	1.4E-09	4.6E-06
Methyl-tert-butyl ether (MTBE)	1.1E-10	3.8E-07	4.2E-11	1.5E-07
TOTAL	**2.2E-09**	**7.1E-06**	**1.5E-09**	**4.7E-06**

Default Assumptions based on Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) (Cal EPA, DTSC, 2011). Site-specific J&E used site-specific soil water-filled porosity (Θ_w) value (See Table B-1).

Table 11
Potential Indoor Health Risks to Hypothetical Future Onsite Residents
Based on Onsite Groundwater Data
Former Penske Site
725 Julie Ann Way, Oakland, CA

	J&E Using Default Assumptions		J&E Using Site-specific Θ_w	
Chemicals	**Individual Lifetime Excess Cancer Risk**	**Hazard Quotient**	**Individual Lifetime Excess Cancer Risk**	**Hazard Quotient**
Benzene	2.1E-08	5.6E-05	1.4E-08	3.8E-05
Methyl-tert-butyl ether (MTBE)	1.1E-09	3.2E-06	4.2E-10	1.3E-06
TOTAL	**2.2E-08**	**5.9E-05**	**1.5E-08**	**4.0E-05**

Default Assumptions based on Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) (Cal EPA, DTSC, 2011). Site-specific J&E used site-specific soil water-filled porosity (Θ_w) value (See Table B-1).

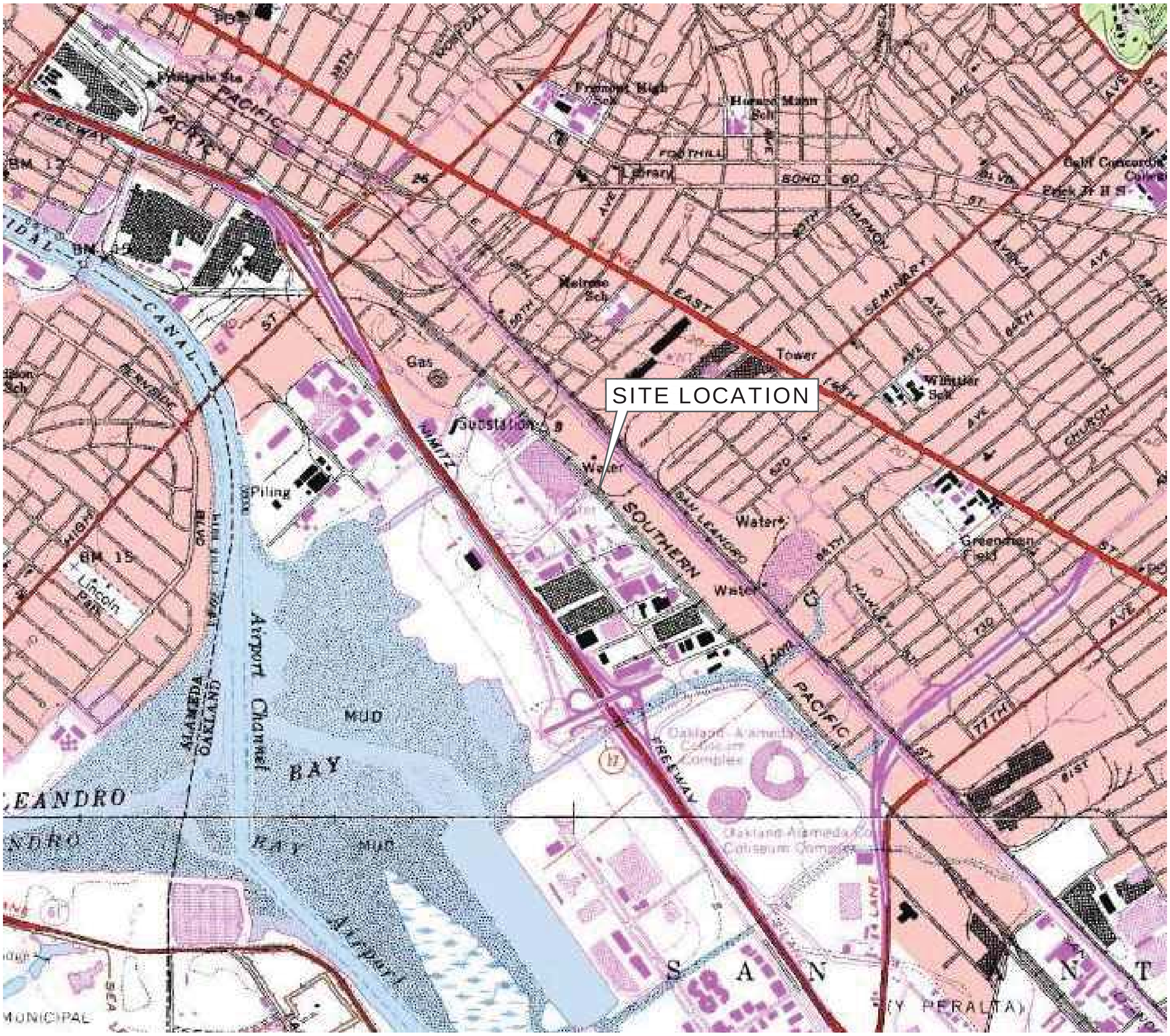
FIGURES

Human Health Risk Assessment

725 Julie Ann Way, Oakland, CA

Stantec PN: 185762330

October 21, 2013



N

1 1/2 0 1

SCALE IN MILE

1000 0 1000 2000 3000 4000 5000 6000 7000

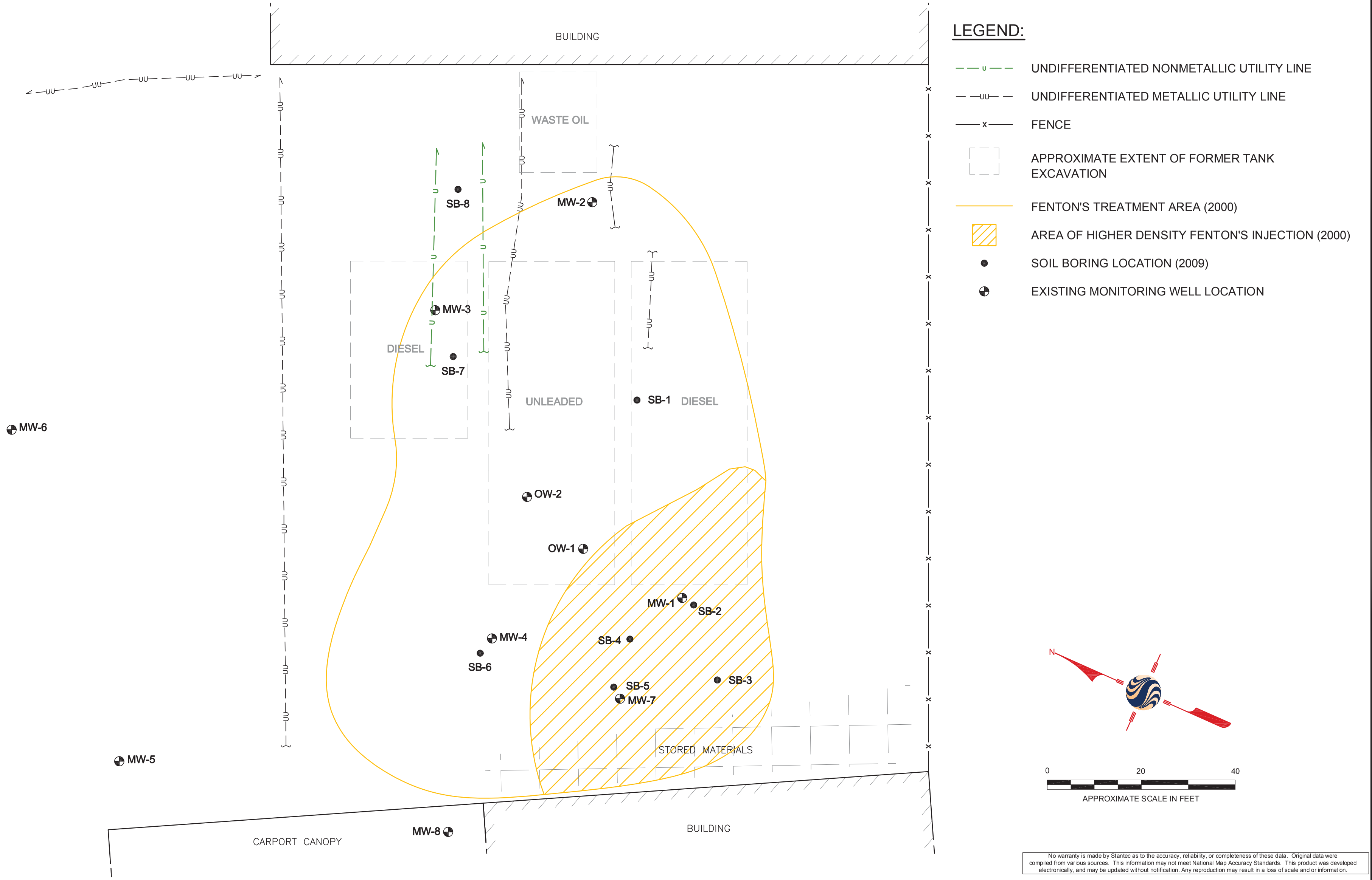
SCALE IN FEET

Image courtesy of the U.S. Geological Survey and Microsoft TerraService OpenGIS Map Server

Stantec
57 Lafayette Circle, 2nd Floor
Lafayette California
PHONE: (925) 299-9300 FAX: (925) 299-9302

FOR:		SITE LOCATION MAP		FIGURE:
PENSKE 725 JULIE ANN WAY OAKLAND, CALIFORNIA				1
JOB NUMBER: 185702640.200.0001	DRAWN BY: RRR	CHECKED BY: EH	APPROVED BY: EH/GH/AM	DATE: 03/19/13

FILEPATH:M:\Penske\OAKLAND\185702640.200.0001\GW-MONITORING-1Q13-F1.DWG|rroggasch|Mar 18, 2013 at 8:08|Layout: SITE LOCATION MAP



NOTE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL INC. (2008)

Stantec
57 Lafayette Circle, 2nd Floor
Lafayette, California, 94549
PHONE: (925) 299-9300 FAX: (925) 299-9302

PREPARED FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

SITE PLAN

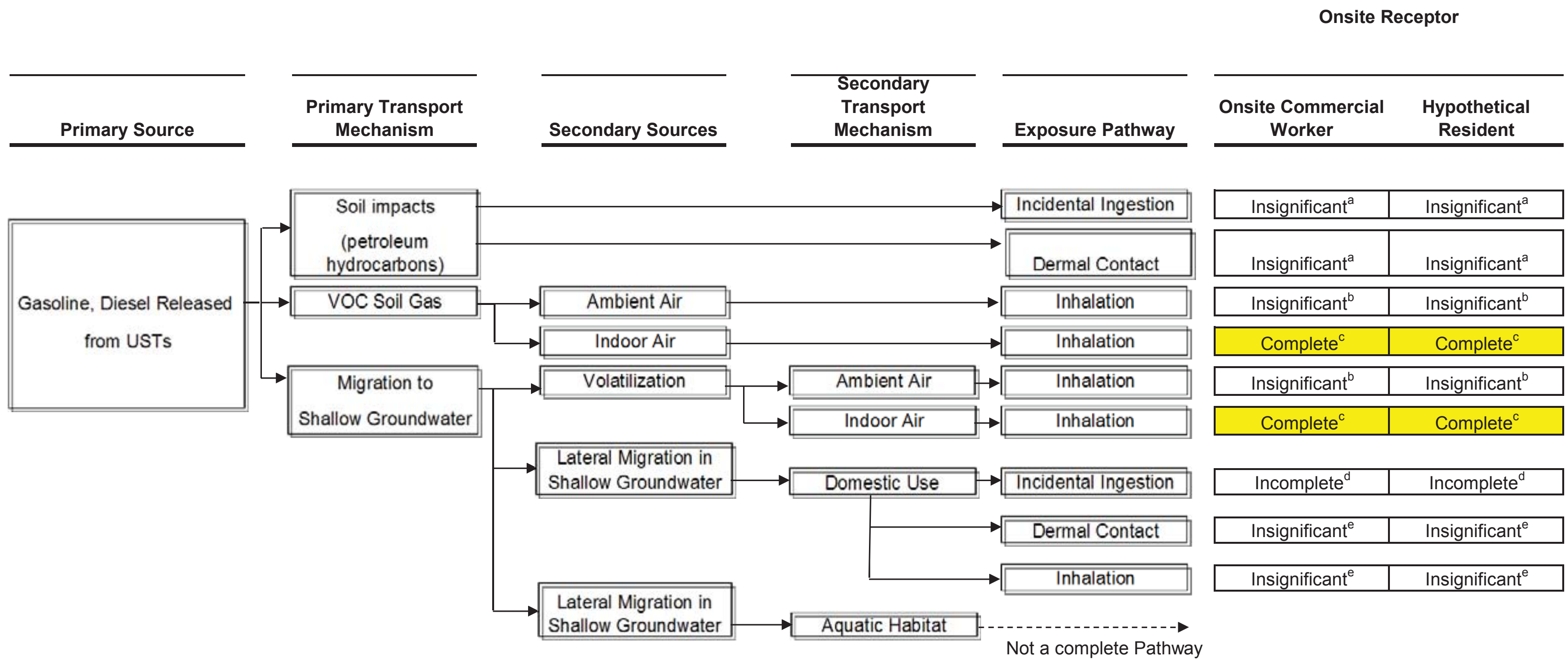
FIGURE: 2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185701155.200.0005	JBL	KC	AEM	06/15/09

FILEPATH:M:\00_OTHER OFFICES\005-San Francisco\Penske\DWG\p1_SiteMap_FPenskeTrucking_Oakland-2.dwg|lieberman| Jun 25, 2009 at 14:31| Layout: FIG-2

FIGURE 3
Site Conceptual Model

Former Penske Site
725 Julie Ann Way
Oakland, California



Complete	Receptor likely to be exposed via this route, so exposure pathway is considered complete or potentially complete.
Incomplete	Pathway is incomplete; one or more of the components required for a complete pathways is not present.
Insignificant	Pathway is complete, but insignificant (based on screening) due to low levels of contaminants or compared to other pathways.

UST = Underground storage tank

[a] Site was remediated.

[b] Although volatilization to ambient air is possible, the concentrations and risks are typically much lower than those resulting from vapor intrusion into buildings.

[c] No soil vapor data, groundwater or soil matrix data were used in the Johnson and Ettinger model to estimate indoor health risks from vapor intrusion.

[d] Shallow groundwater does not migrate to offsite potable wells.

[e] Inhalation of VOC's volatilized from groundwater in open utility trenches and dermal contact to groundwater in open trenches are typically insignificant as compared to other pathways.

APPENDIX A
HISTORICAL GROUNDWATER DATA

Human Health Risk Assessment
725 Julie Ann Way, Oakland, CA
Stantec PN: 185762330
October 21, 2013

TABLE A-1
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd	TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Ethylene Dichloride	Ethylene Dibromide	Naphthalene
		(µg/L)									
MW-1	02/20/97	200,000	2,900	260	61	42	96	NA	NA	NA	NA
	05/28/97	28,000	2,100	230	42	55	110	NA	NA	NA	NA
	09/19/97	2,700,000	110,000	230	140	250	700	ND	NA	NA	NA
	11/17/97	950,000	40,000	240	190(c)	270(c)	880(c)	ND(c)	NA	NA	NA
	02/27/98	1,200,000	380,000	50	50	200	800	ND	NA	NA	NA
	05/27/98	280,000	13,000	110	13	66	390	ND	NA	NA	NA
	10/01/98	63,000	1,300	43	1.2	15	84	ND	NA	NA	NA
	12/22/98	79,000	2,000	32	ND(e)	23(e)	130(e)	ND	NA	NA	NA
	12/28/99	43,000	1,700	49	1.3	11	24	ND	NA	NA	NA
	03/14/00	4,300	540	59	1.3	12	23	NA	NA	NA	NA
	06/28/00	290,000	1,300	26	ND	ND	23	ND	NA	NA	NA
	09/14/00	770,000	1,100	34	ND	3.9	17	ND	NA	NA	NA
	12/11/00	28,000	2,000	10	ND	ND	9.3	ND	NA	NA	NA
	03/14/01	8,400	350	12	ND	ND	ND	ND	NA	NA	NA
	06/13/01	13,000	340	6.4	ND	ND	1.6	ND	NA	NA	NA
	08/29/01	26,000	140	0.5	ND	ND	ND	ND	NA	NA	NA
	12/12/01	5,600	160	0.65	ND	ND	ND	ND	NA	NA	NA
	04/12/02	23,000	260	3.4	ND	ND	ND	NA	NA	NA	NA
	12/05/02	17,000	340	2.2	ND	ND	ND	6.0	NA	NA	NA
	04/22/09	3,200	240	<0.50	<0.50	<0.50	<1.0	2.6	<0.50	<0.50	<0.50
	DUP	12,000	310	<0.50	<0.50	<0.50	<1.0	2.8	<0.50	<0.50	<0.50
	Well MW-1 abandoned on January 11, 2010 and replaced with well MW-1R on January 12, 2010.										
MW-1R	02/08/10	5,600	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dup	02/08/10	5,800	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/16/10	770	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dup	07/16/10	960	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
9 feet	02/03/11	420	97 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
18 feet	02/03/11	860	98 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
std	02/03/11	910	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	500	83 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dup	07/25/11	1,000	88 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	810	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
Dup	03/22/12	1,300	94 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	590(k)	110 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
Dup	09/24/12	510(k)	120 (k)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	03/04/13	1,500	87(k)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	02/20/97	1,000(h)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	3,700(b,h)	ND	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	4100	ND	ND	ND	ND	ND	ND	NA	NA	NA
	11/17/97	1300	ND	ND	ND	ND	ND	ND	NA	NA	NA
	02/27/98	340	ND	ND	0.9	ND	ND	ND	NA	NA	NA
	05/27/98	1300	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	3,500(i)	3,200	ND	ND	ND	ND	ND	NA	NA	NA
	12/22/98	1,200(j,k)	67(d)	ND	ND	ND	ND	ND	NA	NA	NA
	12/28/99	750	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/15/00	92	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/28/00	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	09/14/00	120	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/01	75	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	08/29/01	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/12/01	150(j)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/12/02	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	57(j)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	140	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50
	02/08/10	870(k)	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50
	07/16/10	<50	<50	<0.50	<0.50	<0.50	<1.0	1.5	<0.50	<0.50	<0.50
	02/04/11	90(k)	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	03/04/13	<50	<50	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5

TABLE A-1
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd	TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Ethylene Dichloride	Ethylene Dibromide	Naphthalene
		(µg/L)									
MW-3	02/20/97	**140**[h]	ND	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	**240**[b,h]	ND	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	ND	ND	0.7	ND	ND	ND	ND	NA	NA	NA
	11/17/97	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	02/27/98	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	05/27/98	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	56[l]	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/22/98	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/28/99	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	03/14/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	06/28/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	09/14/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/11/00	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	03/14/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	06/13/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	08/29/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/13/01	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	04/11/02	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	12/05/02	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA
	Well MW-3 no longer included in sampling program										
MW-4	02/20/97	**470,000**	**64,000**	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	**1,000,000**	**11,000**	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	**2,600,000**	**37,000**	**260**	ND	ND	ND	ND	NA	NA	NA
	11/17/97	**57,000**	**4,400**	**25**	ND[c]	ND[c]	ND[c]	ND[c]	NA	NA	NA
	02/27/98	**9,300**	**580**	**2.7**	0.8	0.8	3	ND	NA	NA	NA
	05/27/98	**11,000**	**3,900**	**1.4**	0.6	ND	ND	ND	NA	NA	NA
	10/01/98	**670,000**	**2,400**	**5.7**	ND	ND	4.6	ND	NA	NA	NA
	12/22/98	**3,700**	**200**	ND[p]	ND[p]	ND[p]	ND[p]	ND[p]	NA	NA	NA
	12/28/99	**5,800**	**1,000**	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/00	**4,800**	**350**	ND	ND	ND	ND	NA	NA	NA	NA
	06/28/00	**8,400**	**120**	ND	ND	ND	ND	ND	NA	NA	NA
	09/14/00	**19,000**	**130**	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	**730**	**120**	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/01	**580**	50	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**260**	54	ND	ND	ND	ND	ND	NA	NA	NA
	08/29/01	**30,000**	**940**	ND	ND	ND	ND	ND	NA	NA	NA
	12/13/01	**260**	50	ND	ND	ND	ND	ND	NA	NA	NA
	04/12/02	**230**	50	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**1,500**	50	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	**13,000**	**480**	<0.50	<0.50	<0.50	<0.50	3.0	<0.50	<0.50	<0.50
	02/08/10	**12,000**	**120** [k]	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<0.50
	07/16/10	**2,700**	**210** [k]	<0.50	<0.50	<0.50	<0.50	4.2	<0.50	<0.50	<0.50
	02/04/11	**26,000**	**1600** [k]	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50
	07/25/11	**720**	<50	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	<0.50
	03/22/12	**2,500** [k]	<50	<0.50	<0.50	<0.50	<0.50	0.9	<0.50	<0.50	<2.0
	09/24/12	**1,200** [k]	<50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	<2.0
	03/04/13	**550**	<50	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5
MW-5	02/20/97	**1,100**[h]	ND	ND	ND	ND	ND	NA	NA	NA	NA
	05/28/97	**560**[b,q]	60[m]	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	**1,000**	70	ND	ND	ND	ND	ND	NA	NA	NA
	11/17/97	**1,100**	70	0.6	0.7	0.5	ND	5.0	NA	NA	NA
	02/27/98	**ND**	ND	ND	ND	ND	ND	5.0	NA	NA	NA
	05/27/98	**770**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	**630**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/22/98	**890**[i]	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/28/99	**440**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/28/00	**110**[i]	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	**130**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**120**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/13/01	**530**[i]	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/11/02	**230**[i]	ND	ND	ND	ND	ND	NA	NA	NA	NA
	Well MW-5 no longer included in sampling program										

TABLE A-1
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd	TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Ethylene Dichloride	Ethylene Dibromide	Naphthalene
		(µg/L)									
MW-7	02/20/97	**1,500,000**	**15,000**	**81**	**51**	ND	ND	NA	NA	NA	NA
	05/28/97	**440,000**	**390,000**	ND	ND	ND	ND	NA	NA	NA	NA
	09/19/97	**910,000**	**3,600**	**110**	**64**	**37**	ND	ND	NA	NA	NA
	11/17/97	**18,000,000**	**15,000**	**110**	**41(c)**	12(c)	**110(c)**	ND(c)	NA	NA	NA
	02/27/98	**290,000**	**45,000**	**80**	**60**	ND	ND	ND	NA	NA	NA
	05/27/98	**1,600**	**140**	**2.3**	0.9	0.9	3	ND	NA	NA	NA
	10/01/98	**89,000**	**710**	**39**	2.4	11	**31**	ND	NA	NA	NA
	12/22/98	**240,000**	**3,900**	**51**	ND	ND	ND	ND	NA	NA	NA
	12/28/99	**300,000**	**2,300**	**51**	5.3	13	**27**	ND	NA	NA	NA
	03/14/00	**640,000**	**620**	**31**	5.3	9.9	**31**	NA	NA	NA	NA
	06/28/00	**2,900,000**	**3,200(k)**	**15**	ND	3.2	**30**	ND	NA	NA	NA
	09/14/00	**15,000,000**	**1,900**	**11**	ND	10	**39**	ND	NA	NA	NA
	12/12/00	**340,000**	**4,500**	**5**	ND	ND	17	ND	NA	NA	NA
	03/14/01	**170,000**	**8,000**	**5**	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**19,000**	100	0.99	ND	ND	ND	**6.2**	NA	NA	NA
	08/29/01	**27,000**	**120**	**3.9**	ND	ND	ND	5.0	NA	NA	NA
	12/12/01	**6,900**	**610**	0.5	ND	ND	ND	ND	NA	NA	NA
	04/12/02	**2,600**	**110**	0.5	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**9,100**	**290**	0.5	ND	ND	ND	**5.7**	NA	NA	NA
	04/22/09	**1,900**	56	<0.50	<0.50	<0.50	<1.0	3.4	<0.50	<0.50	<0.50
	Well MW-7 abandoned on January 11, 2010 and replaced with well MW-7R on January 12, 2010.										
MW-7R	02/08/10	**560**	52 (k)	0.63	<0.50	<0.50	<0.50	2.4	<0.50	<0.50	<0.50
	07/16/10	**12,000**	**4,000 (k)**	**2.6**	<50	0.8	6.9	2.5	<50	<50	<50
9 feet	02/03/11	**690**	60 (k)	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50
18 feet	02/03/11	**430**	59(k)	<0.50	<0.50	<0.50	<0.50	2.0	<0.50	<0.50	<0.50
std	02/03/11	**1,200**	**120 (k)**	<0.50	<0.50	<0.50	<0.50	2.0	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50
	03/22/12	**2,800**	**320 (k)**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	**1,200(k)**	**110(k)**	1.2	<0.50	<0.50	<0.50	1.8	<0.50	<0.50	<2.0
	03/04/13	**4,000**	55	<0.5	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	<0.5
MW-8	02/20/97	**2,500**	**340(a)**	**2.1**	**53**	7.1	**94**	NA	NA	NA	NA
	05/28/97	**200(b,s)**	**480(a)**	**2.5**	12	ND	**76**	NA	NA	NA	NA
	09/19/97	**7,000**	**1,000**	0.8	5	0.5	**130**	ND	NA	NA	NA
	11/17/97	**520**	**250**	**1.4**	2.1	0.7	3	ND	NA	NA	NA
	02/27/98	**150**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	05/27/98	70	ND	ND	ND	ND	ND	ND	NA	NA	NA
	10/01/98	**440(i)**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/28/99	**130**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/00	**170**	ND	ND	ND	ND	ND	NA	NA	NA	NA
	06/28/00	**300(i)**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	09/14/00	**310**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/11/00	**15,000**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	03/14/01	**130**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	06/13/01	100	ND	ND	ND	ND	ND	ND	NA	NA	NA
	08/29/01	**160(i)**	ND	ND	ND	ND	ND	ND	NA	NA	NA
	12/13/01	97(i)	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/12/02	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	97	ND	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	<50	<50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<0.50	<0.50
	02/08/10	**360 (k)**	<50	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	<0.50
	07/16/10	<50	<50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<0.50
	02/04/11	62 (k)	<50	<0.50	<0.50	<0.50	<0.50	0.8	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50
	03/22/12	<50	<50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	<2.0
	09/24/12	<50	<50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<2.0
	03/04/13	<50	<50	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5

TABLE A-1
GROUNDWATER ANALYTICAL RESULTS
FORMER PENSKE TRUCK LEASING FACILITY
725 Julie Ann Way, Oakland, California

Well No.	Date	TPHd	TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Ethylene Dichloride	Ethylene Dibromide	Naphthalene
		(µg/L)									
OW-1	12/28/99	**7,700**	**3,400**	**11**	ND	ND	2.6	ND	NA	NA	NA
	03/15/00	**5,300**	**700**	**1.7**	ND	ND	ND	ND	NA	NA	NA
	06/29/00	**1,300**(k)	**140**(k)	**4**	ND	ND	2.2	**6.6**	NA	NA	NA
	09/14/00	**5800**(k)	**180**	ND	ND	ND	ND	ND	NA	NA	NA
	12/12/00	**230**	**110**	**3.4**	ND	ND	ND	ND	NA	NA	NA
	03/14/01	**2200**(k)	**110**	**4.0**	ND	ND	0.5	ND	NA	NA	NA
	06/13/01	**1500**(k)	**120**	**2.5**	ND	ND	ND	ND	NA	NA	NA
	08/29/01	**1,200**(k)	**130**(k)	ND	ND	ND	ND	ND	NA	NA	NA
	12/12/01	**3,100**(k)	76(k)	ND	ND	ND	ND	ND	NA	NA	NA
	04/11/02	**3,600**(k)	**300**(k)	ND	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**490**(k)	78(k)	ND	ND	ND	ND	ND	NA	NA	NA
	04/22/09	**1,600**	130	<0.50	<0.50	<0.50	<1.0	**8.9**	<0.50	<0.50	<0.50
	02/08/10	**11,000**	<50	<0.50	<0.50	<0.50	<0.50	**5.1**	<0.50	<0.50	<0.50
	07/16/10	85	57 (k)	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	<0.50	<0.50
	02/04/11	**17,000**	**140 (k)**	<0.50	<0.50	<0.50	<0.50	**5.9**	<0.50	<0.50	<0.50
	07/25/11	**210**	70 (k)	<0.50	<0.50	<0.50	<0.50	**10**	<0.50	<0.50	<0.50
	03/22/12	**710**	81(k)	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	<0.50	<2.0
	09/24/12	**1,200**(k)	**140**(k)	<0.50	<0.50	<0.50	<0.50	3.7	<0.50	<0.50	<2.0
	03/04/13	**350**	<50	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<0.5	<0.5
OW-2	12/28/99	**3,300**	**770**	**36**	ND	ND	1.7	**16**	NA	NA	NA
	03/15/00	**1,100**	**350**	**24**	ND	ND	ND	**9.3**	NA	NA	NA
	06/29/00	**850**	**160**	**7.4**	ND	ND	ND	**13**	NA	NA	NA
	09/14/00	**6,300**	**590**	**26**	0.79	ND	1.7	**17**	NA	NA	NA
	12/12/00	**320**	**210**	**6.6**	ND	ND	ND	**7.4**	NA	NA	NA
	03/14/01	**960**	**320**	**5.6**	ND	ND	ND	ND	NA	NA	NA
	06/13/01	**900**	**250**	**2.9**	ND	ND	ND	**10**	NA	NA	NA
	08/29/01	**1,400**	**270**	**5.3**	ND	ND	ND	ND	NA	NA	NA
	12/12/01	**4,100**	**280**	**14**	ND	ND	ND	**11**	NA	NA	NA
	04/11/02	**4,100**	**820**	**6.4**	ND	ND	ND	NA	NA	NA	NA
	12/05/02	**500**	**230**	0.5	ND	ND	ND	**5.6**	NA	NA	NA
	04/22/09	**2,100**	**210**	<0.50	<0.50	<0.50	<1.0	**6.8**	<0.50	<0.50	<0.50
	02/08/10	**10,000**	**140 (k)**	<0.50	<0.50	<0.50	<0.50	**4.9**	<0.50	<0.50	<0.50
	07/16/10	**2,000**	**210 (k)**	<0.50	<0.50	<0.50	<0.50	**5.7**	<0.50	<0.50	<0.50
	02/04/11	**2,200**	**260 (k)**	<0.50	<0.50	<0.50	<0.50	**6.2**	<0.50	<0.50	<0.50
	07/25/11	**250**	**170 (k)**	<0.50	<0.50	<0.50	<0.50	**9.9**	<0.50	<0.50	<0.50
	03/22/12	**680**	56 (k)	<0.50	<0.50	<0.50	<0.50	**6.0**	<0.50	<0.50	<2.0
	09/24/12	**1,900**(k)	**380**(k)	<0.50	<0.50	<0.50	<0.50	**10**	<0.50	<0.50	<2.0
	03/04/13	**1,300**	**110**(k)	<0.5	<0.5	<0.5	<0.5	**8.1**	<0.5	<0.5	<0.5
TB	02/08/10	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/16/10	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/03/11	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA
	09/24/12	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA
	03/04/13	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA
EB	02/08/10	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/16/10	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	07/25/11	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	03/22/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	09/24/12	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
	03/04/13	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0

Notes:

µg/L - micrograms per liter
TPHd - Total Petroleum Hydrocarbons as diesel
TPHg - Total Petroleum Hydrocarbons as gasoline
MTBE - Methyl tert butyl ether
ND - Not detected at or above the laboratory detection limit
NA - Not analyzed
EB - Equipment blank
< - Indicates constituent not detected at or above specified reporting limit
ESLs Regional Water Quality Control Board, San Francisco Bay Region, Environmental Screening Levels, presented in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (Interim Final - May 2008). for Commercial/Industrial Sites, Shallow Soil, and Drinking Water Resource

Bold text indicates that the value exceeds the ESL.

(a) - Laboratory reports that chromatogram indicates gasoline and unidentified hydrocarbons >C8.
(c) - Laboratory reports reporting limits for diesel and gas/BTEX elevated due to high levels of target compound. Samples run at dilution.
(d) - Laboratory reports the peak pattern present in this sample represents an unknown mixture atypical of gasoline in the range of n-C09 to greater than n-C12. Quantitation is based on a gasoline reference in the range of n-C07 to n-C12 only.
(e) - Laboratory reports reporting limit(s) raised due to high level of analyte present in sample.
(f) - Laboratory reports the hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C09 to n-C36. Quantitation is based on a diesel reference between n-C10 and n-C24 only.
(g) - Laboratory reports that chromatogram indicates diesel and unidentified hydrocarbons >C20.
(h) - Analyzed by USEPA Method 8015, modified.
(i) - Analyzed by USEPA Method 8020.
(j) - Diesel range concentration reported. A nonstandard diesel pattern was observed in the chromatogram.
(k) - Sample exhibits chromatographic pattern that does not resemble standard.

Ethylene dichloride reported as 1,2-Dichloroethane
Ethylene dibromide reported as 1,2-Dibromoethane

APPENDIX B
Soil Boring Logs and Site-specific Water-filled Soil Porosity

Human Health Risk Assessment

725 Julie Ann Way, Oakland, CA

Stantec PN: 185762330

October 21, 2013

Table B-1
ESTIMATION OF VOLUMETRIC WATER CONTENT USING PRECIPITATION DATA
SANDY CLAY SOIL TYPE

Site Location: Oakland Climate Summary Data (7/01/1948 to 9/30/2012)

Month	P (in)	P (cm)	Q (cm)	I (cm)	I (m)	q_w
Jan	3.71	9.42	8.83	0.59		
Feb	2.71	6.88	6.30	0.59		
Mar	2.57	6.53	5.94	0.58		
Apr	1.40	3.56	3.00	0.55		
May	0.37	0.94	0.52	0.42		
Jun	0.18	0.46	0.14	0.00		
Jul	0.04	0.10	0.00	0.00		
Aug	0.05	0.13	0.00	0.00		
Sep	0.23	0.58	0.23	0.35		
Oct	1.13	2.87	2.33	0.54		
Nov	2.51	6.38	5.79	0.58		
Dec	3.11	7.90	7.31	0.59		
Total Yearly	18.01	45.75	40.40	4.81	0.048	0.308

Notes:
For simplicity purposes, it was assumed that one primary storm/rain event occurs a month.

P =	Precipitation (rain fall + snow melt) (cm)		
Q =	Runoff (cm) = $(P - 0.2S)^2 / (P + 0.8S)$, for P >= 0.2S	0.2S is the initial precipitation abstraction.	
S =	Water retention parameter (cm) = (2540 / CN) - 25.4	0.52	
CN =	Curve number, for hard surfaces/right-of-way, moderatel	98	
I =	Infiltration rate (m/y) = P - Q		
q_w =	Volumetric water content in vadose zone soil (unitless) = $q_w = q_T * (I / K_s)^{1/(2b+3)}$		
q_T =	Total soil porosity (unitless) =	0.385	J&E Default for sandy clay
K_s =	Saturated hydraulic conductivity (m/y) =	10	for sandy clay (USEPA, 1996a)
b =	Soil-specific exponential parameter (unitless)		
1/(2b+3)	For sandy clay =	0.042	for sandy clay (USEPA, 1996a)

KEY TO BORING LOG SYMBOLS

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488				
MAJOR DIVISIONS			SYMBOL/ GRAPHIC	DESCRIPTIONS
COARSE GRAINED SOILS (>50% by weight larger than #200 sieve)	GRAVELS (More than 50% of coarse fraction is larger than the #4 sieve size.)	Clean gravels with little or no fines	GW	Well Graded Gravels, Gravel - Sand Mixtures
			GP	Poorly Graded Gravels, Gravels - Sand Mixtures
		Gravels with over 12% fines	GM	Silty Gravels, Poorly Graded Gravel - Sand - Silt Mixtures
			GC	Clayey Gravels, Poorly Graded Gravel - Sand - Clay Mixtures
	SANDS (More than 50% of coarse fraction is smaller than #4 sieve size.)	Clean sands with little or no fines	SW	Well Graded Sands, Gravelly Sands
			SP	Poorly Graded Sands, Gravelly Sands
		Sands with over 12% fines	SM	Silty Sands, Poorly Graded Sand - Silt Mixtures
			SC	Clayey Sands, Poorly Graded Sand - Clay Mixtures
FINE GRAINED SOILS (>50% smaller than #200 sieve)	SILTS AND CLAYS (liquid limit less than 50)		ML	Inorganic Silts and Very Fine Sands, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity; Gravelly, Sandy or Silty Clays; Lean Clays
			OL	Organic Clays and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS (liquid limit greater than 50)		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity, Organic Silts
HIGHLY ORGANIC SOILS			Pt	Peat and other Highly Organic Soils

Stabilized water level (date)

Water level encountered during drilling

Shaded interval represents soil sample. Blackened interval indicates portion of sample prepared for laboratory analysis.

Indicates no recovery of sample

Monitoring well

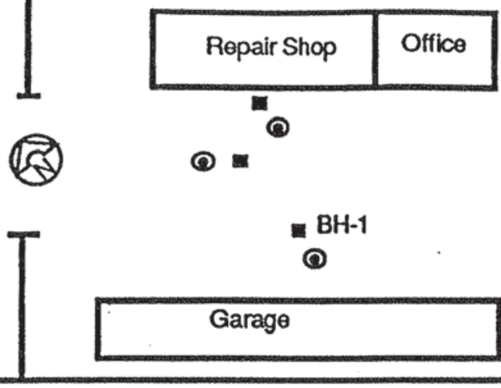
Soil boring

	Asphaltic Concrete
	Portland Cement Concrete
	Cement Grout

PID Photo-ionization detector readings (ppmv)

FID Flame-ionization detector readings (ppmv)

EXP Gastech explosimeter readings (ppmv)



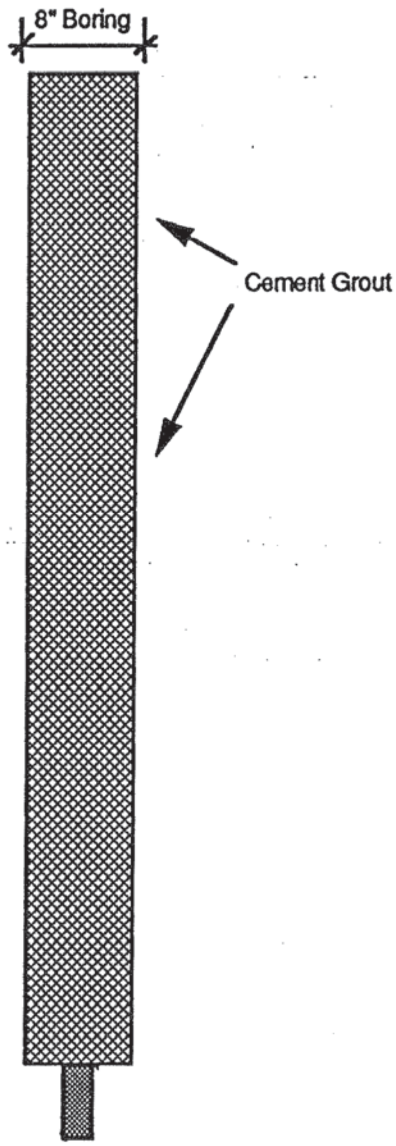
LOG OF BORING BH-1

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

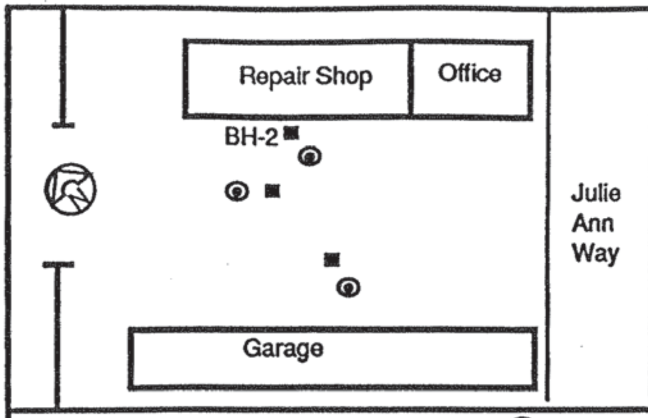
Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 25, 1990
Drilling Method: 8" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP	DESCRIPTION
			Surface Elevation:5.69' Casing Elevation: NA
0			Asphalt
			GRAVEL (GP), Well sorted 1/4' to 1/2' backfill of fine to medium gravel; Slight odor.
5	4		No sample collected; Sample fell out of sampler; Very loose.
			@5-10 Feet: Change from gravel to fine to medium sand with product; Strong odor.
10	20	450	SAND (SP), Grey; Med to fine grained, well sorted; Medium dense; Moist to wet; Moderate odor.
			GRAVEL (GP),Reddish brwn to med grey; Med grained; Moist to wet; Strong odor and product on gravel.
15	46	325	Upper part: SAND (SP), fine to med grained grey sand backfill. Lower part: SILT (ML), reddish brwn to grey sandy silt; grey and rust colored patches; Hard; Very strong odor.
			SAND (SP), reddish brown, med to coarse grained; Very dense; Wet.
20	50 5"	100	Bottom of Boring : 21.5 Feet. Time: 1:30 PM Date: 9/25/90
25			



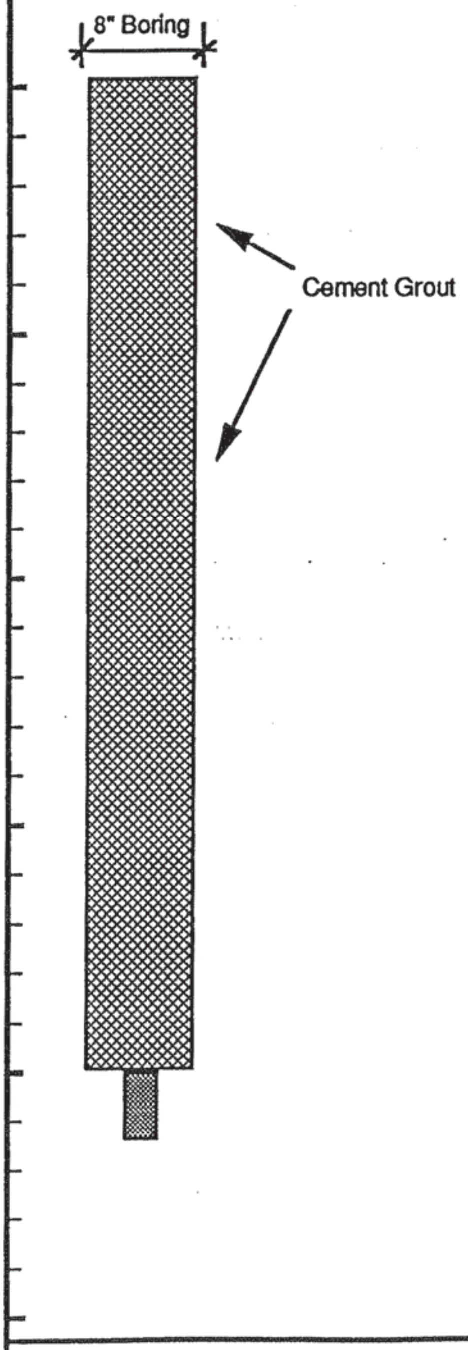
LOG OF BORING BH-2

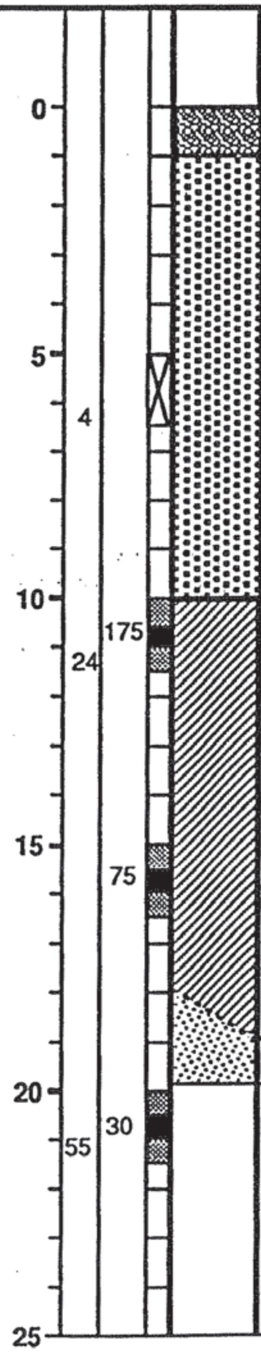
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 27, 1990
Drilling Method: 8" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION | Depth (ft.) | Blows/ft. | EXP | Samples | Graphic | **DESCRIPTION**





Surface Elevation: 6.66'
Casing Elevation: NA

Asphalt

GRAVEL (GP), light reddish brwn to light grey fine to medium gravel and sand fill - 75% gravel and 25% sand.

No sample collected; Sample fell out of sampler even with catcher screen in place; Very loose.

@5-10 Feet: Mix of drk brwn to greenish silty sand (30%), silty clay (20%), and gravel (50%) backfill; Slight odor (old oil smell).

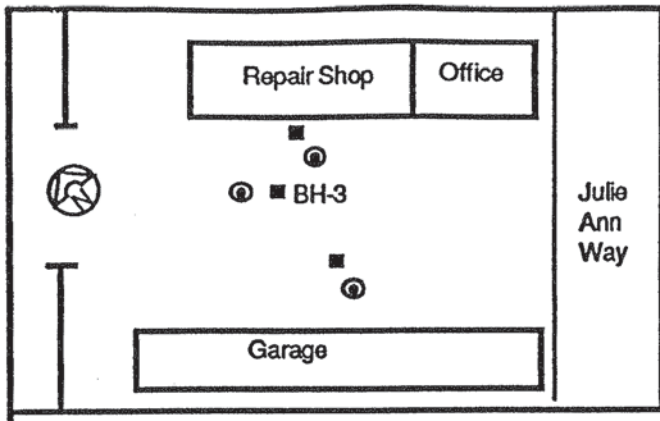
CLAY (CL), olive grey to olive brwn (5y;5/2)silty clay with <5% rounded to subangular fine gravel; Very stiff; Moderate odor.

@ 10-15 feet: upper part is drk grey to black vfg silty clay w/ moderate odor; Lower part is light to med grey clay w/ weak to no odor; Water at 13-15 feet.

@ 15': light yellow brwn (10YR;5/3),w/ grey patches; Hard; Slight odor.

SAND (SW), brown (10YR;5/3), poorly sorted, med to coarse grained sand and fine gravel; Subrounded to subangular; Very dense; Wet.

Bottom of Boring : 21.5 Feet.
Time: 9:10 AM
Date: 9/27/90



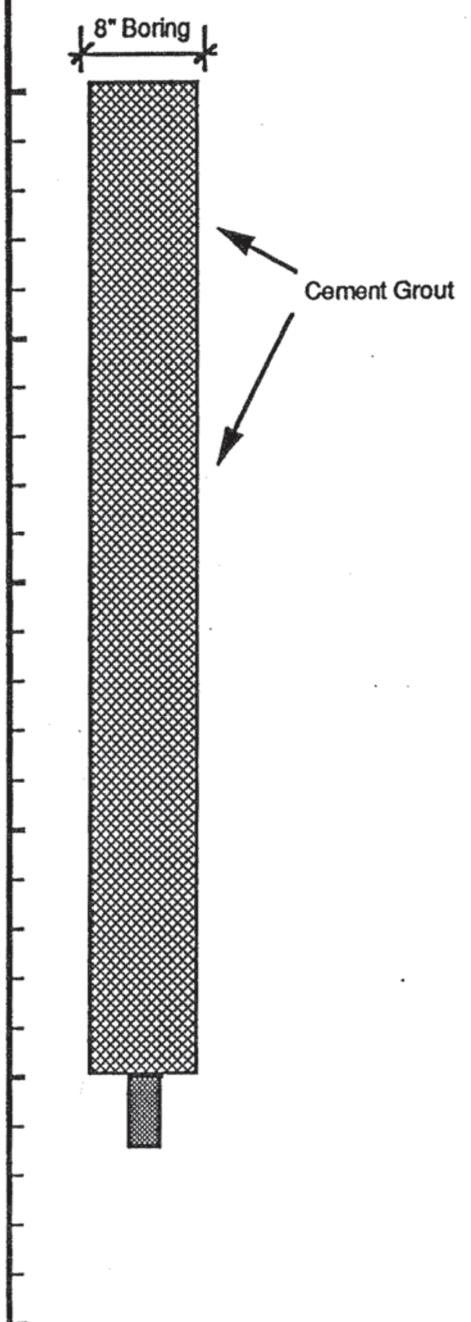
LOG OF BORING BH-3

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 28, 1990
Drilling Method: 8" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

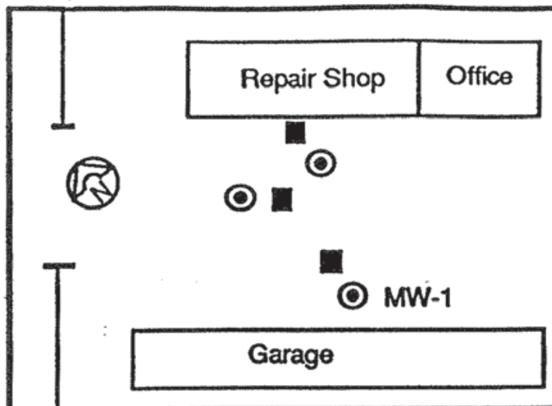
WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP	DESCRIPTION
			Surface Elevation: 6.44' Casing Elevation: NA
0			Asphalt
			GRAVEL (GP), Reddish brwn to dark grey sandy to silty gravel and clayey sand to sandy clay; Slight odor.
5	43	75	@ 5'; Silty Gravel, yellowish brwn (10YR;5/4); silty sand backfill material; Dense; Slight odor. @5-10 feet: As above w/ pieces of red brick in gravel and minor black clay; Slight to moderate odor.
10	29	130	CLAY (CL), Pale brwn (10YR;6/3), to grey brwn ; silty w/ 10% subrounded fine gravel; Very stiff;. Slight odor. @ 10-15 feet, Dark grey to black to olive grey silty clay w/ 5% fine gravel. @ 15', Silty clay,light brwnish grey (2.5YR; 6/2); Rust to grey patches; Hard; Slight odor.
15	60	225	@ 15-20 feet: Sand, fine to med grained; interbedded with sandy to silty clay and fine gravel. SAND (SP), Brown (10YR;5/3), 95% fine to med, well sorted and 5% fine to coarse gravel; Flowing sands; Medium dense; Wet.
20	13	60	Bottom of Boring : 21.5 Feet. Time: 9:30 AM Date: 9/28/90
25			

Geraghty & Miller, Inc.

Boring BH-3



Julie Ann Way

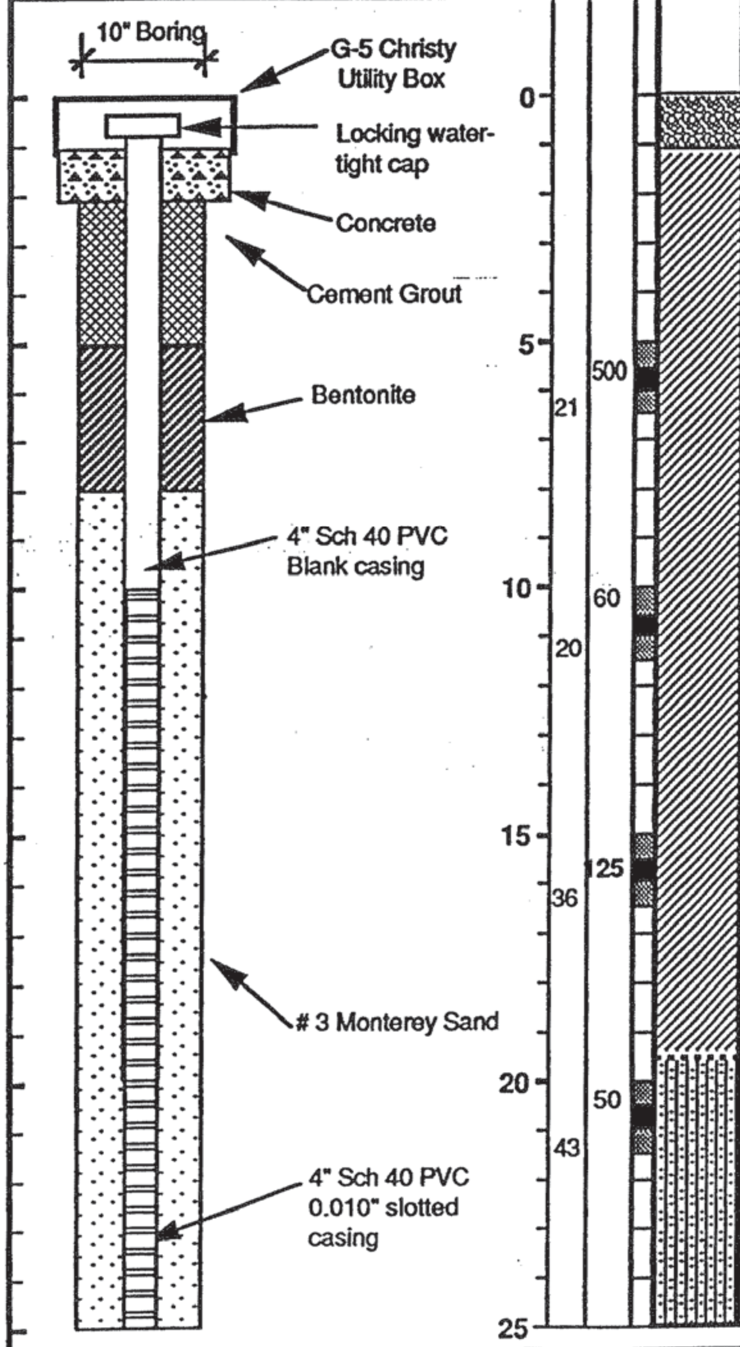
LOG OF BORING MW-1

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 25, 1990
Drilling Method: 10" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION | Depth (ft.) | Blows/ft. | EXP | Samples | Graphic | **DESCRIPTION**



Surface Elevation:5.42'
Casing Elevation:4.98'

Asphalt

CLAY (CL), red brick, sand, gravel and clay fill. Light yellowish brown silty, sandy clay w/<10% fine gravel; mixed with layers of dark brwn silty ,sandy clay; Gravel to cobbles increase to 20 to 30% at bottom.

@5 feet, Sandy to silty, dark brown, w/10% fine gravel; Very stiff; Slight odor.

@5-10 Feet: Interbedded sand and gravel;Dark gray to black; moderate odor.

@10 feet, Silty to very slighty sandy clay w/ 10% fine gravel; Medium grey to medium olive green; Minor interbedded sandy lenses; Very stiff; Moderate odor.

@ 10-15 feet: Sandy lenses; dark grey to black.

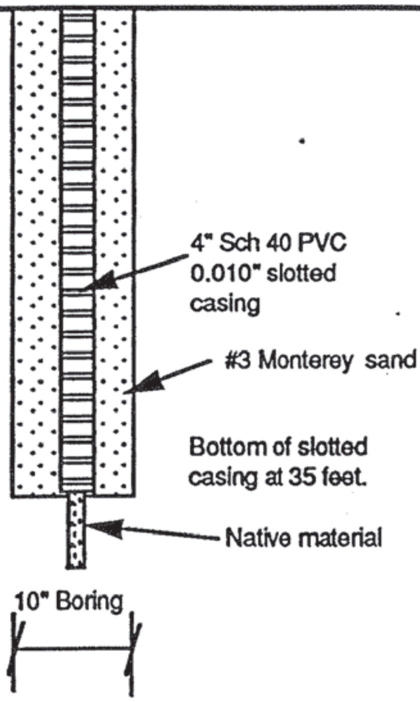
@15 feet,, same as above; interbedded layers of sandy silt to silty sand (light brwn) & dark grey to black clay to silty,sandy clay; Slighty moist; Hard; Slight odor.

@15-20 feet: Interbedded silty, sandy clay (dark grey) and light to medium reddish brwn fine grained to very fine grained silty sand.

SILTY SAND (SM), light brwn to reddish brwn, interbedded with light to medium brwn fine to coarse sand with subangular fine gravel; Reddish brwn stain; Dense; Slight odor.

LOG OF BORING MW-1 (continued)

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP	Samples	Graphic
	34	25		
30	32			
35	15			
40				
45				
50				
55				
60				

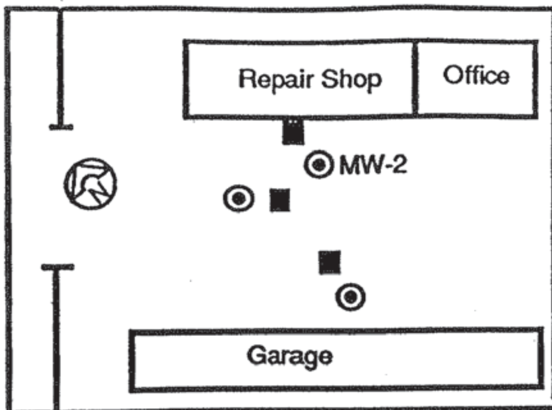
DESCRIPTION

CLAY (CL), Lght brwnish grey to greyish brwn; Fine grained silty w/minor fg sand; Scattered rusty patches and streaks. Hard; Wet.

@ 30 feet, Silty, reddish brwn (5YR;4/3); Very stiff; Slight odor; Wet.

@ 35 feet, Interbedded silty clay, yellowish brown (5RY;4/3), with small pieces of coarse sand to fg silty sand ; Stiff; Sticky, hard drilling.

Bottom of Boring: 36.5 Feet.
Time: 10:20 AM
Date: 9/25/90



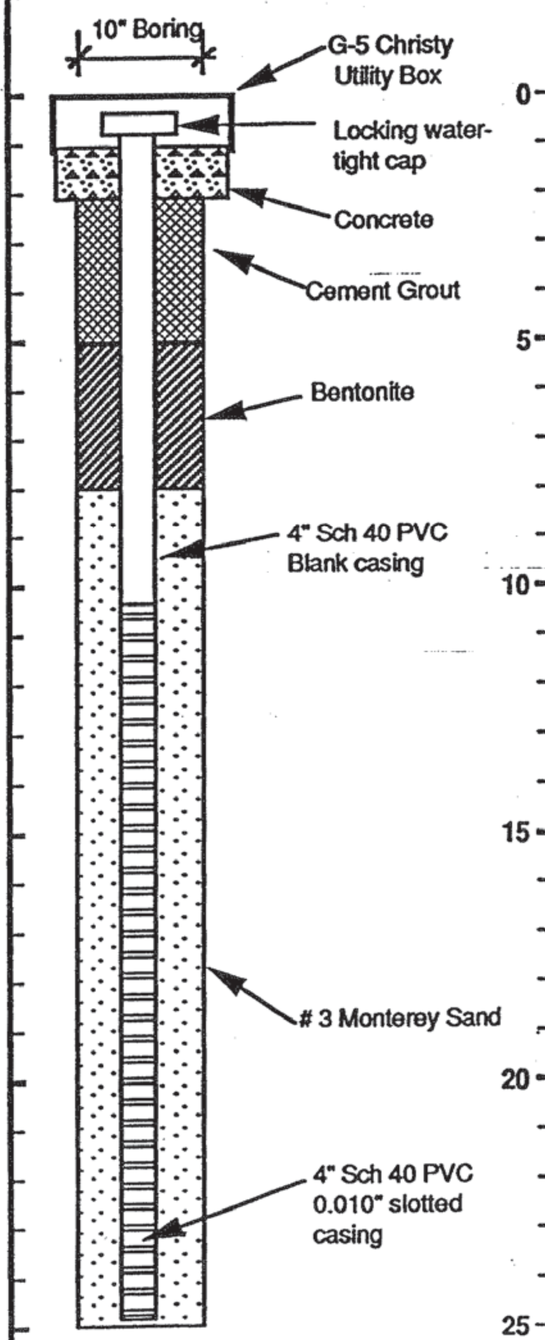
LOG OF BORING MW-2

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 26, 1990
Drilling Method: 10" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

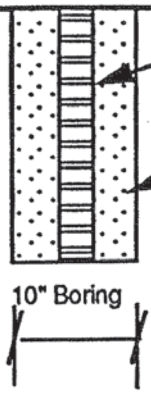
WELL CONSTRUCTION



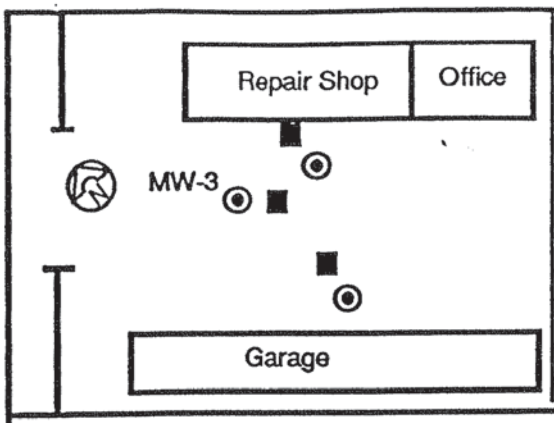
Depth (ft.)	Blows/ft.	EXP	DESCRIPTION
			Surface Elevation: 6.21' Casing Elevation: 5.85'
0			Asphalt
			CLAY (CL), clay, red brick and backfill material as part of fill under parking lot. Red brick pieces in cuttings to appro. 4.5 feet.
5	50 6"	260	@ 5 feet: Silty, Dark grey to black to dark olive grey; With pieces of red brick in sample; Hard; Slight odor.
			@5-10 Feet: Clayey, Light olive green to brwn to dark grey; With red brick pieces; moderate odor.
10	16	100	@ 10 feet: Silty, pale olive (5Y;6/3), to olive grey; Stiff; Slight odor.
			@ 10-15 feet: Med to light grey; With<5% fine gravel. Slight to mod odor.
15	29	60	@ 15 feet: Silty, Light olive grey (5Y;6/2); Very stiff; Tight; Dry to moist.
20	63	40	SAND (SW), Pale brwn (10YR;6/3), fine to med grained with 10-40% fine rounded to sudangular gravel; Dense; Wet; Slight odor.
			@ 22 feet: CLAY (CL), Light olive brwn; sandy to silty with fine gravel.
25			

LOG OF BORING MW-2
(continued)

WELL CONSTRUCTION



Depth (ft.)	Blows/ft.	EXP	Samples	Graphic	DESCRIPTION
	34	25			SAND (SW), Yellowish brwn (10YR;5/4); Med to coarse grained ; With 10% clay and 20% subangular to rounded 1/4" gravel; Dense; Wet; Very slight odor.
					No sample collected. Sticking, heaving mud and flowing sands prevent sample collection or further drilling advance. Trouble pulling out sample tube and inner drill rods. Boring stopped at 30-feet.
30					Bottom of Boring: 30 Feet. Time: 11:20 AM Date: 9/26/90
35					
40					
45					
50					
55					
60					



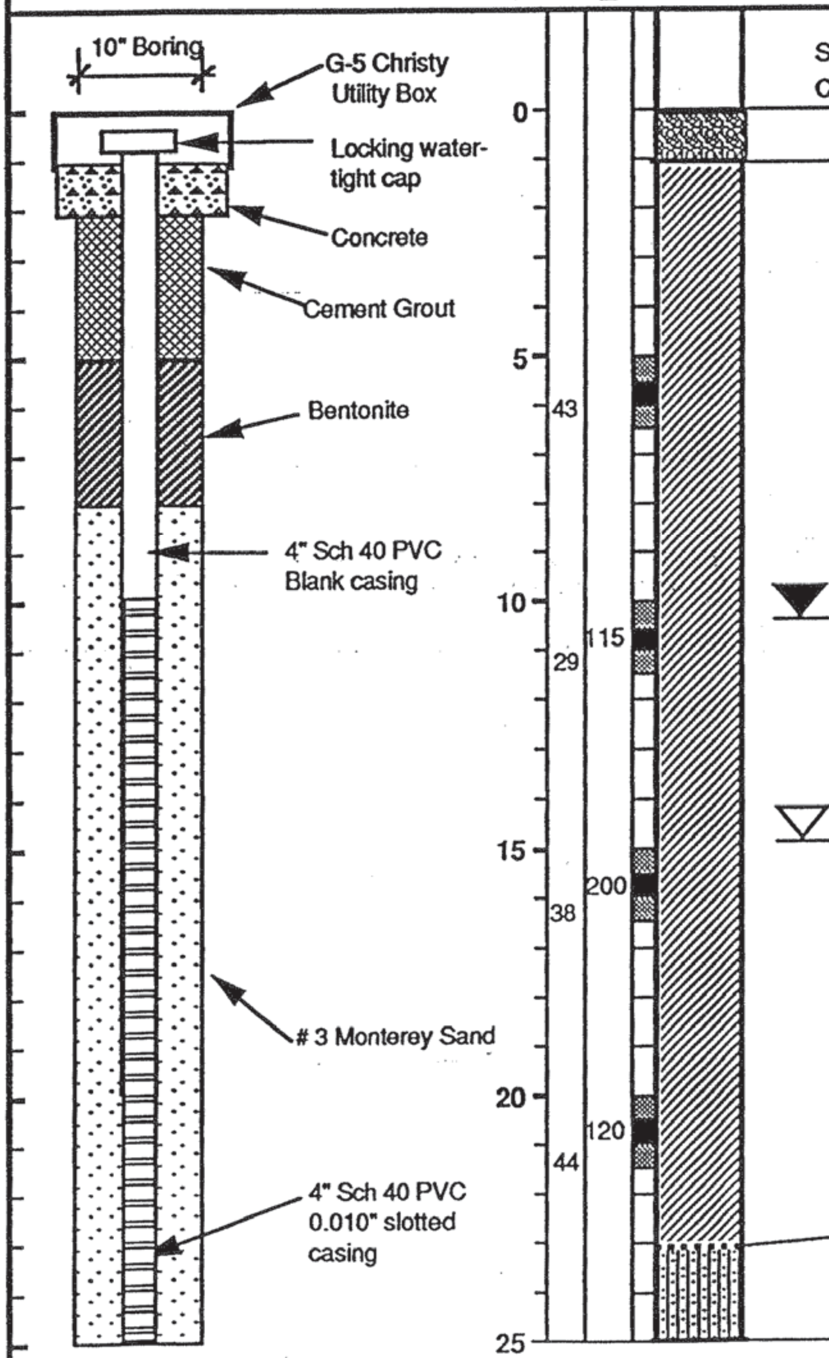
LOG OF BORING MW-3

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01903
Logged By: Paul V. Hehn
Drilling Co.: West HazMat
Driller: Mark Thorp

Date Drilled: September 27, 1990
Drilling Method: 10" Hollow Stem Auger.
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	EXP	Samples	Graphic	DESCRIPTION



Surface Elevation: 6.10'
Casing Elevation: 5.69'

Asphalt

CLAY (CL), Light to med brwn silty sand to silty clay to dark grey to black sandy clay w/ pieces of wood in cuttings. Fill. Minor amount of red brick in cuttings.

@ 5 feet: Light to dark grey to black; Interbedded fine to med grained gravel; Hard; Very slight odor.

@8 feet: Change from fill to native formation; With <5% fine gravel; Slight odor.

@ 10 feet: Olive grey to blue grey (5Y;5/2); With interbedded gravel; Some pieces of wood; Very stiff; Damp; Slight odor.

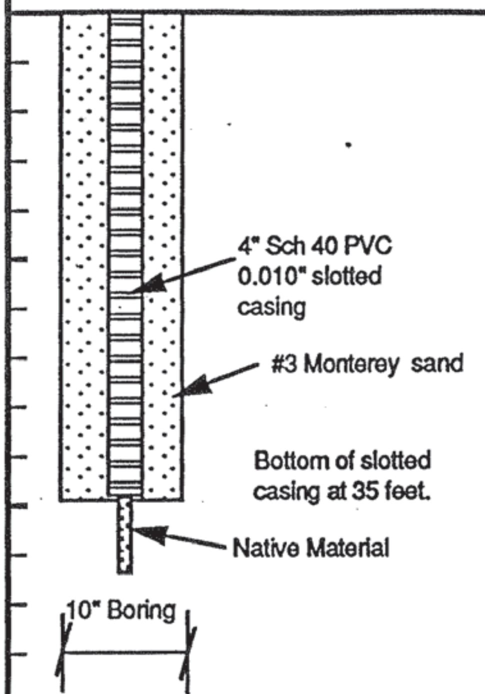
@ 15 feet: Sandy, Light olive grey (5Y;6/2); sandy to silty clay; Thin interbedded gravelly sand lense in upper part; Rust to grey colored patches; Hard; Slight odor.

@15-20 feet: Light to med olive grey;

@ 20 feet: Silty to sandy, Very pale brwn (10YR;7/4); With fine gravel and interbedded sandy layer w/ gravel; Hard; No odor.

@ 23 feet: Silty sand, reddish to yellowish brwn; With sandy clay and <5% subrounded gravel.

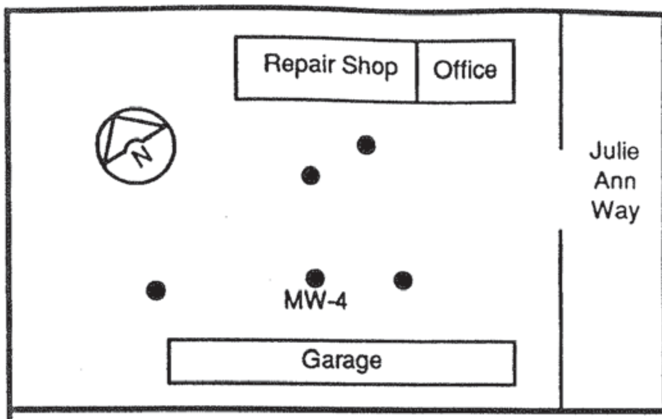
WELL CONSTRUCTION



LOG OF BORING MW-3
(continued)

DESCRIPTION

Depth (ft.)	Blows/ft.	EXP	Description
	21	80	SAND (SM), Brown (7.5YR;5/2), fine to med grained; Intebedded with silty sand and dark grey fine to coarse gravel lenses; Medium dense; Slight odor. @ 25-30 feet: Silty sand to sandy silts; Drilling getting tight; trouble pulling rods.
30	33	60	SAND (SC), Light brwn (10YR;6/4); With silty to sandy clays; Very fine grained; Very fluid, flowing sands; Dense; Wet.
			CLAY (CL), Yellowish brwn (10YR;6/4); Sandy to silty; Hard; Wet.
35	48	45	Bottom of Boring: 36.5 Feet. Time: 12:00 PM Date: 9/27/90
40			
45			
50			
55			
60			



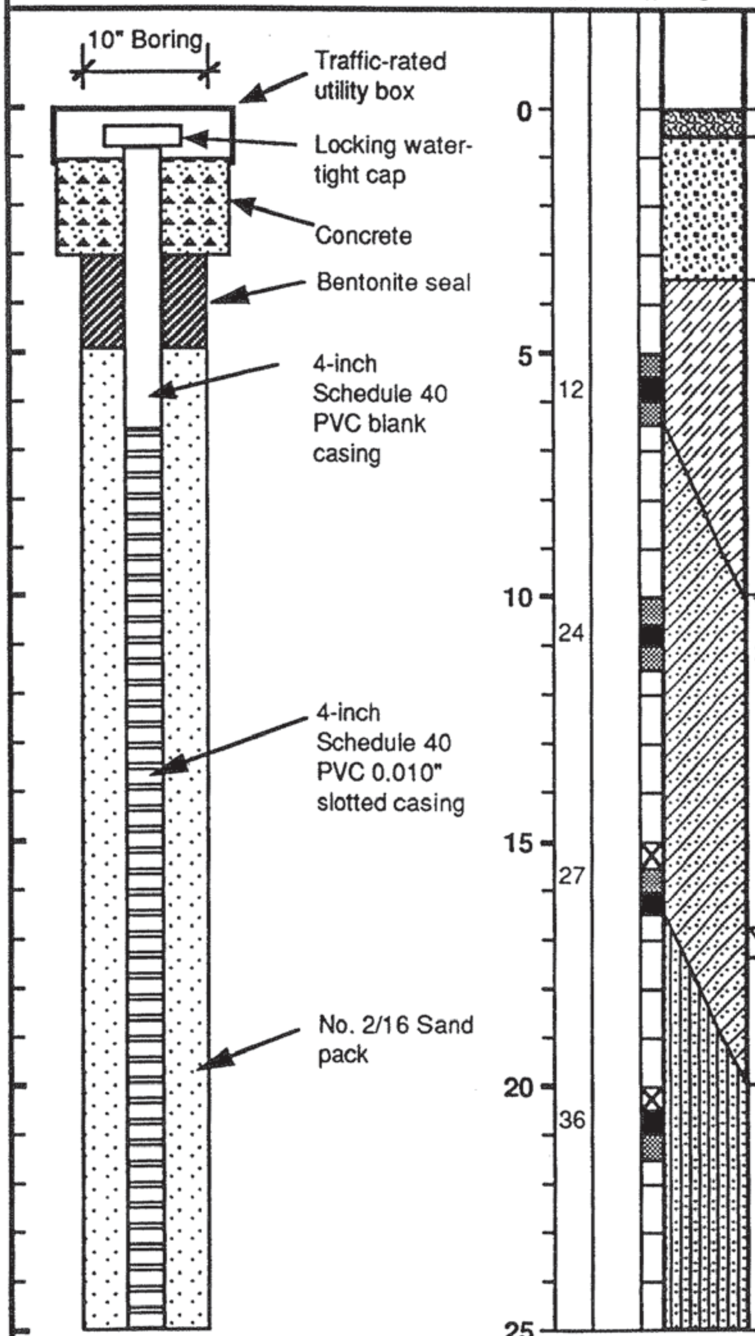
LOG OF BORING MW-4

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01906
Logged By: M. M. Bessette
Drilling Co.: West Hazmat
Driller: Bill Smith

Date Drilled: February 2, 1993
Drilling Method: 10" Hollow stem auger
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION | Depth (ft.) | Blows/ft. | Samples | Graphic | **DESCRIPTION**



Surface Elevation: 5.55 feet
Casing Elevation: 5.18 feet

Asphaltic Concrete

FILL: Gravel, rubble and brick

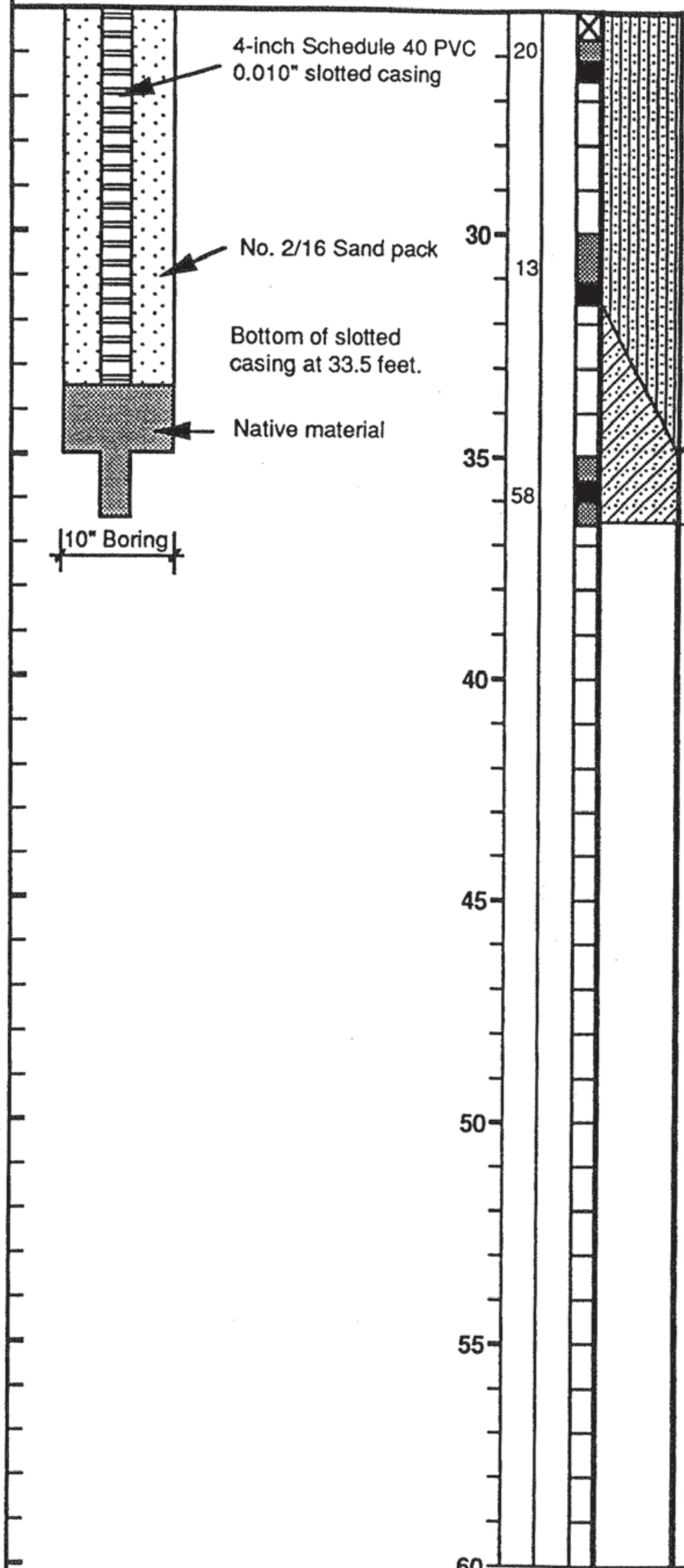
ORGANIC CLAY (OH); black (10YR 2/1); trace fine sand; abundant roots; stiff; moist.

CLAYEY SAND (SC); yellowish brown (10YR 5/4); poorly sorted; 50-60% fine sand, 30-40% clay, 5-15% medium sand; roots; medium dense; moist.

@ 15 feet: yellowish brown (10YR 5/6); 75-85% fine sand; 10-15% clay; 5-10% medium sand; trace fine gravel.

SAND (SM); yellowish brown (10YR 5/4); moderately sorted; 70-80% fine sand; 20-30% silt; trace medium sand; iron oxidation; medium dense; moist.

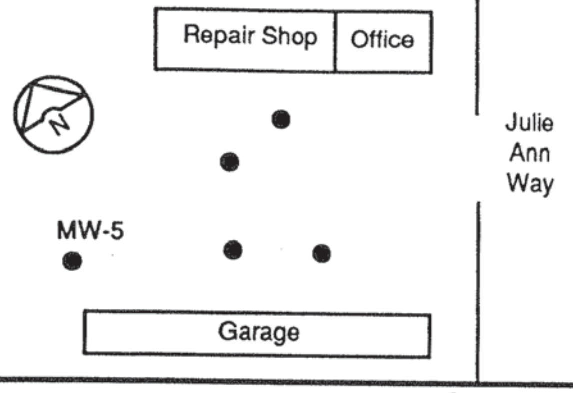
WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	LOG OF BORING MW-4 (continued) DESCRIPTION



@ 26 feet: wet.

CLAYEY SAND (SC); yellowish brown (10YR 5/6); poorly sorted; 50-60% fine sand; 30-40% clay; 5-15% silt; dense; wet.

Bottom of Boring: 36.5 Feet.
Time: 10:12 AM Date: 2/2/93



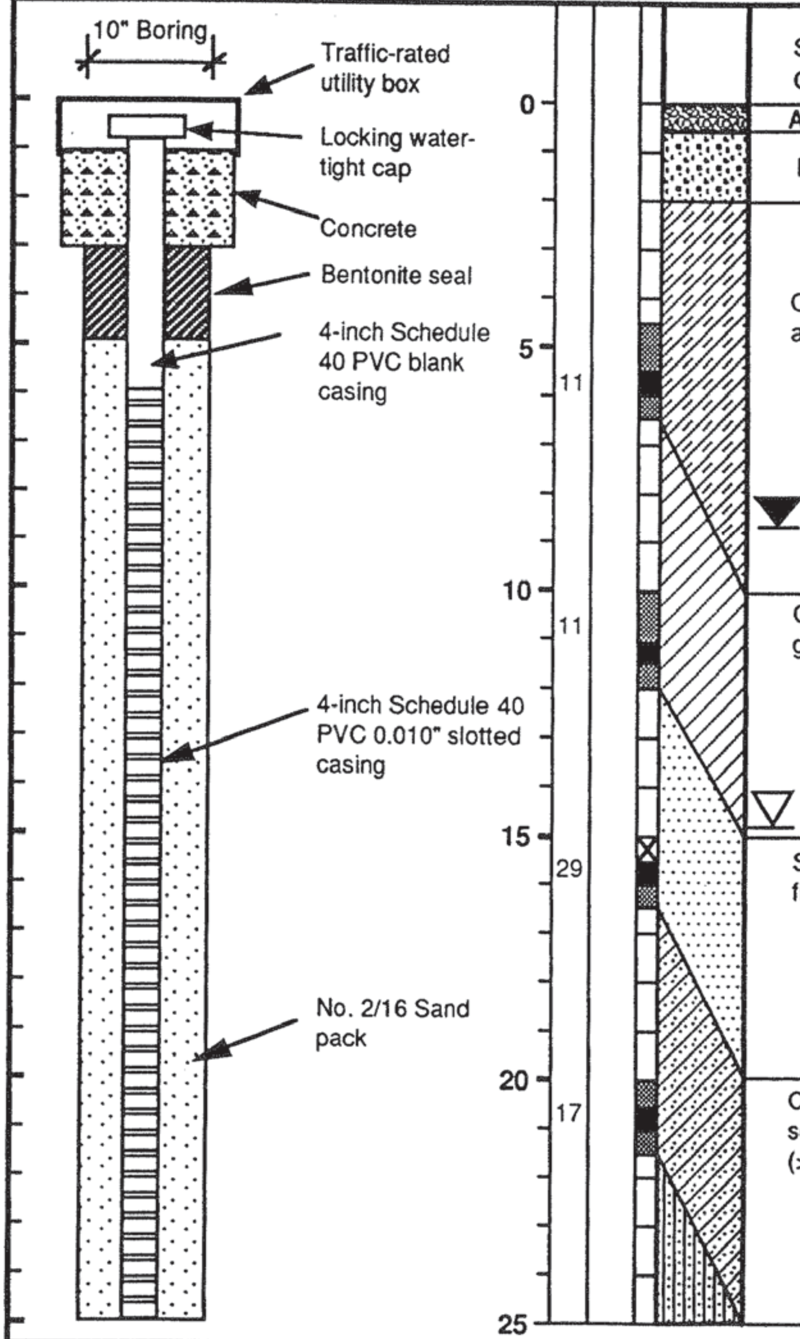
LOG OF BORING MW-5

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC01906
Logged By: M. M. Bessette
Drilling Co.: West Hazmat
Driller: Bill Smith

Date Drilled: February 2, 1993
Drilling Method: 10" Hollow stem auger
Sampling Method: 2" Split spoon
Inclination: Vertical

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	DESCRIPTION



Surface Elevation: 4.95 feet
Casing Elevation: 4.71 feet

Asphaltic Concrete

FILL: Gravel and rubble

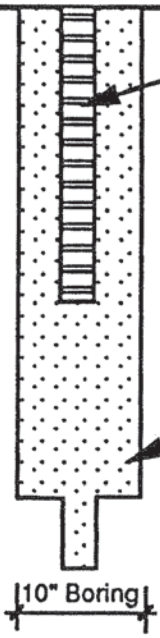
ORGANIC CLAY (OH); black (10YR 2/1): trace fine sand; abundant roots; stiff; moist.

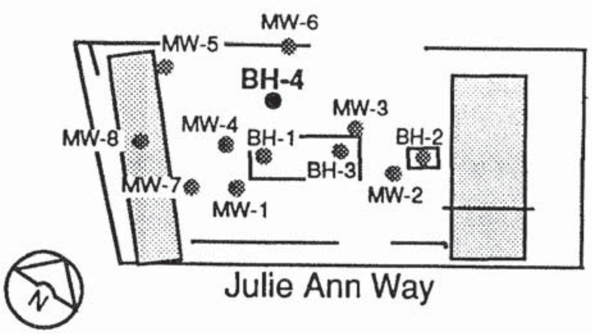
CLAY (CL); dark greenish gray (5GY 4/1): trace medium grained sand; abundant roots; stiff; moist.

SAND (SP); yellowish brown (10YR 5/4); well sorted; 85-95% fine sand; 5-10% silt; medium dense; wet.

CLAYEY SAND (SC); brownish yellow (10YR 6/6); poorly sorted; 55-65% fine sand; 35-45% clay; finely laminated (>1mm); medium dense; wet.

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	LOG OF BORING MW-5 (continued) DESCRIPTION
4-inch Schedule 40 PVC 0.010" slotted casing		15			SILTY SAND (SM); yellowish brown (10YR 5/4); poorly sorted; 65-75% fine sand; 25-35% silt; trace clay; loose; moist.
Bottom of slotted casing at 31 feet.	30	16			SANDY CLAY (CL); yellowish brown (10YR 5/4); poorly sorted; 65-75% clay; 25-35% fine sand; finely laminated; stiff; moist.
No. 2/16 Sand pack	35	39			@ 35 feet: 80-90% clay; 10-20% fine sand; trace silt; very stiff.
10" Boring					Bottom of Boring: 36.5 Feet. Time: 2:36 PM Date: 2/2/93
	40				
	45				
	50				
	55				
	60				



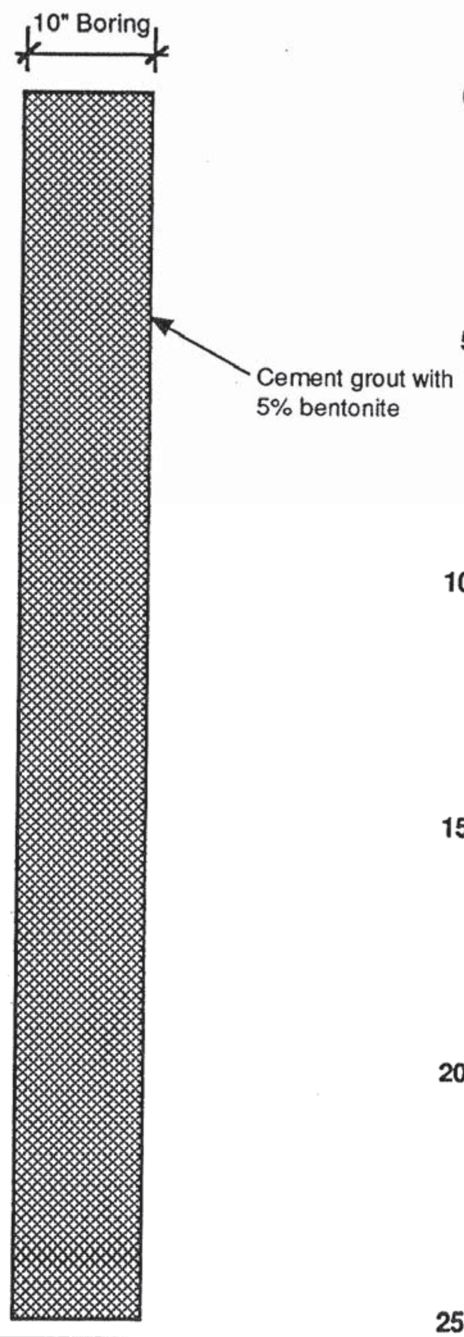


LOG OF BORING BH-4
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007
Logged By: C. Sean Bisch
Drilling Co.: West Hazmat
Driller: Scott Irwin

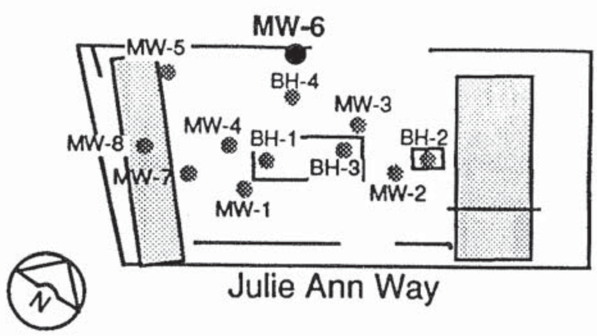
Date Drilled: July 27, 1994
Drilling Method: 10" Hollow stem auger
Sampling Method: Continous Core
Driller's License: 554979

WELL CONSTRUCTION



Depth (ft)	Blows/ft.	PID (ppm)	DESCRIPTION
0			3" Asphaltic Concrete
			CLAY (CL); very dark grayish brown (2.5Y 3/2); 10-15% fine to coarse-grained sand; 10-15% gravel; moist.
			GRAVEL (GC); black (5Y 2.5/1); angular gravel; 10-20% fines; moist.
5		80	SILTY CLAY (CL); black (5Y 2.5/1); 0-5% fine to coarse-grained sand; moist.
			ORGANIC CLAY (OL); black (5Y 2.5/1); 10-20% decaying organic matter; wood fragments; roots; hydrocarbon odor; moist.
10		380	CLAY (CL); dark greenish gray (5GY 4/1); 10-20% fine to coarse-grained, angular sand; trace gravel; hydrocarbon odor; moist. @ 11 feet: Sandy Silty Clay (CL); yellowish brown (10YR 5/4); mottled with dark greenish gray (5GY 4/1); 20-30% fine-grained sand; iron oxide staining; moist;
15		450	
			CLAYEY SILTY SAND (SM); yellowish brown (10YR 5/4); mottled with dark greenish gray (5GY 4/1); fine-grained sand; 40-50% fines; localized iron-oxide and manganese oxide staining; moist.
20			SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; trace fines; grades from fine to coarse-grained sand from 19 to 23 feet; wet.
25			SILTY SAND (SM); yellowish brown (10YR 5/4); fine-grained sand; 25-35% fines; finely laminated iron-oxide staining; moist.

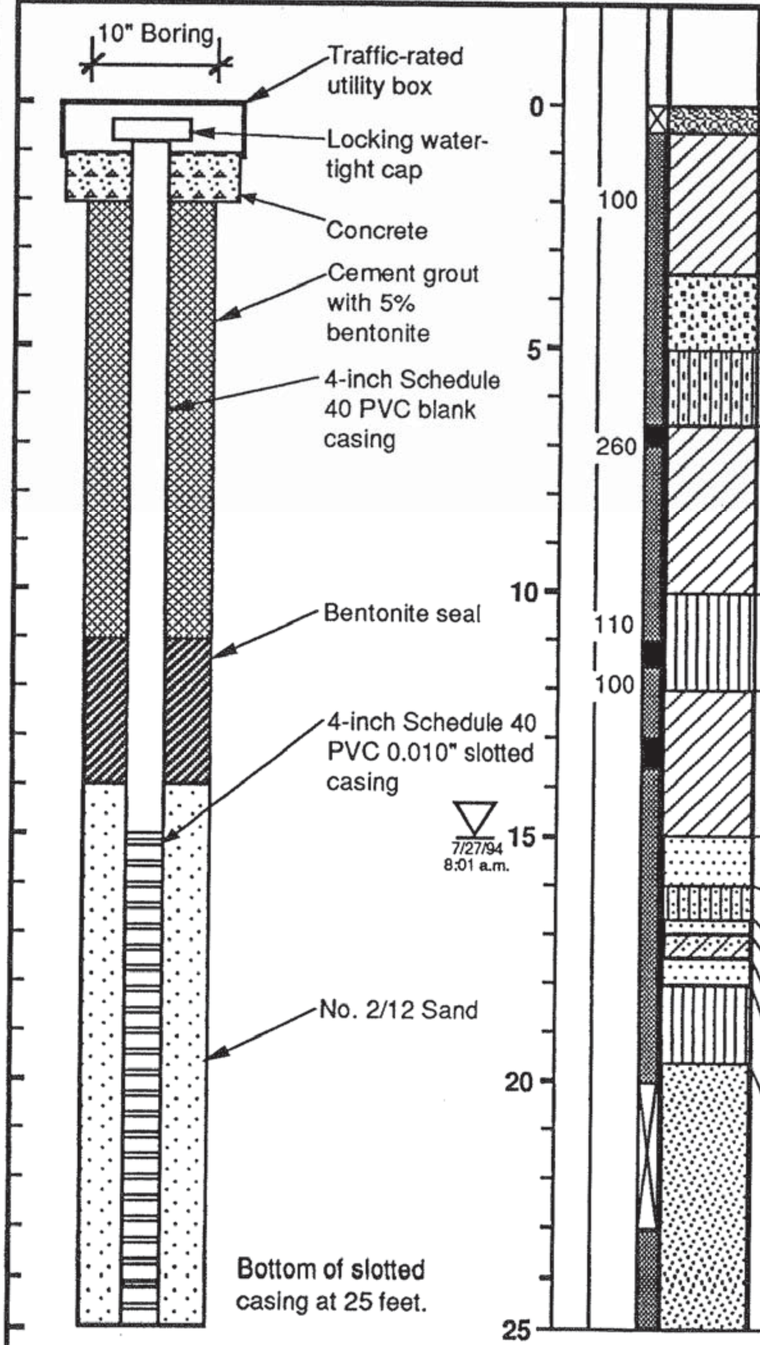
WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	DESCRIPTION
Cement grout with 5% bentonite; 10" Boring	to 30				SAND (SW); yellow brown (10YR 5/4); 95-100% fine to coarse-grained sand; 0-5% fines; grades from fine to coarse-grained sand from 25 to 30 feet; wet. @ 29 feet: iron-oxide staining.
	30				Total Depth Explored: 30 feet. Date: July 27, 1994 Time: 1145
	35				
	40				
	45				
	50				
	55				
	60				



LOG OF BORING MW-6
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007	Date Drilled: July 27, 1994
Logged By: C. Sean Bisch	Drilling Method: 10" Hollow stem auger
Drilling Co.: West Hazmat	Sampling Method: Continuous core
Driller: Scott Irwin	Driller's License: 554979

WELL CONSTRUCTION | Blows/ft. | PPM | Samples | Graphic | **DESCRIPTION**



3" Asphaltic Concrete

CLAY (CL); very dark grayish brown (2.5Y 3/2); mottled with grayish green (5G 5/2); 10-15% fine to coarse-grained sand; 10-15% angular gravel; wood fragments; possible fill material; moist.

GRAVEL (GW); light olive brown (2.5Y 5/4); 80-90% angular gravel; 10-20% fine to coarse-grained sand; dry.

ORGANIC CLAY (OL); black (2.5Y 2/0); 10-20% decaying organic matter; wood fragments; moist.

SANDY CLAY (CL); very dark grayish brown (2.5Y 3/2); 25-35% fine to coarse-grained sand; root traces; moist.

SANDY SILT (ML); yellowish brown (10YR 5/4); 25-35% fine-grained sand; moist.

CLAY (CL); dark greenish gray (5GY 4/1); 10-20% fine to coarse-grained sand; roots; moist.

@ 14.5 feet: very dark gray (5Y 3/1); 5-15% fine to coarse-grained sand; wet.

SAND (SP); yellowish brown (10YR 5/4); medium to coarse-grained, angular sand; 0-5% fines; wet.

SILTY SAND (SM); yellow brown (10YR 5/4); fine-grained sand; 10-20% fines; moist.

SAND (SP); coarse-grained; wet.

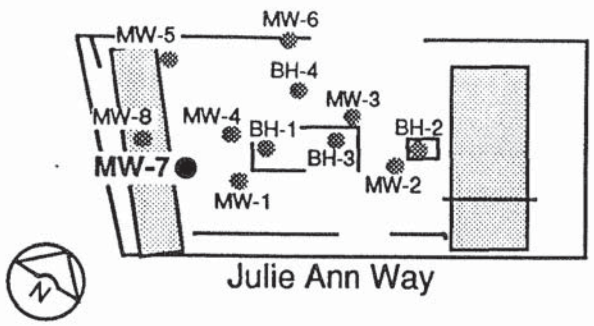
CLAYEY SAND (SC); yellowish brown (10YR 5/4); fine to medium-grained sand; 5-15% fines; wet.

SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; 5-15% fines; wet.

SILT (ML); olive (5Y 5/4); trace fine-grained sand; moist.

SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained angular sand; trace fines; wet.

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	LOG OF BORING MW-6 (continued) DESCRIPTION
Native material; 10" Boring					SAND (SW); continued.
					CLAYEY SILT (ML); olive (5Y 5/3); 95-100% fines; 0-5% fine-grained sand; moist.
	30				Total Depth Explored: 29.25 feet Date: July 27, 1994
	35				
	40				
	45				
	50				
	55				
	60				

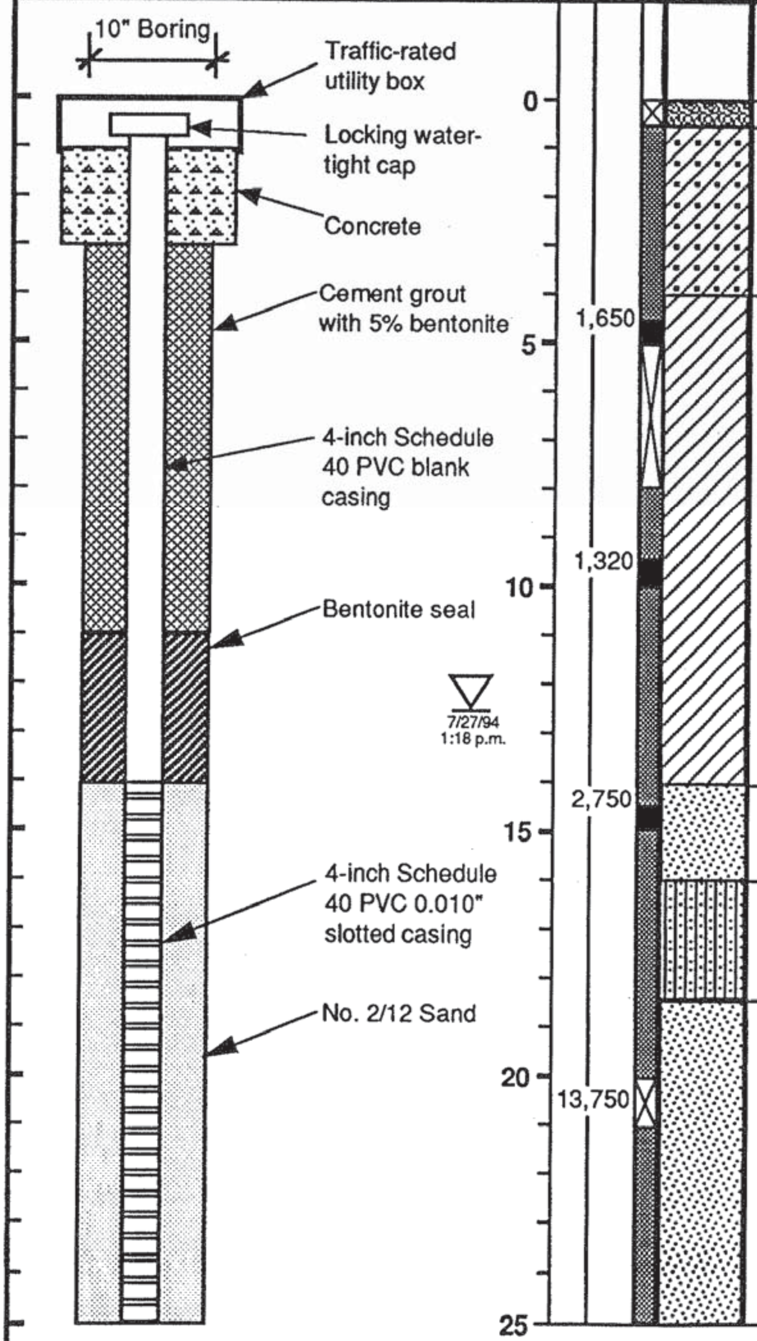


LOG OF BORING MW-7
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007
Logged By: C. Sean Bisch
Drilling Co.: West Hazmat
Driller: Scott Irwin

Date Drilled: July 27, 1994
Drilling Method: 10" Hollow stem auger
Sampling Method: Continuous core
Driller's License: 554979

WELL CONSTRUCTION | Blows/ft | PPM | Samples | Graphic | **DESCRIPTION**



6" Asphaltic Concrete

CLAYEY GRAVEL (GC); olive (5Y 4/4); fine to coarse, subangular gravel; 25-35% fines; 10-20% fine to medium-grained sand; brick fragment; moist.

SILTY CLAY (CL); black (10YR 2/1); 80-90% fines; 10-20% fine to coarse-grained sand; trace coarse-grained, subangular gravel; trace roots; moist.

@ 9 feet: abundant wood fragments; hydrocarbon odor; wet.

@ 10 feet: gray (5Y 5/1); 5-15% fine to coarse-grained sand; petroleum hydrocarbons; wood fragments; moist.

@ 13 feet: yellowish brown (10YR 5/4); mottled; trace coarse-grained sand.

SAND (SW); very dark gray (5Y 3/1); fine to coarse-grained, angular sand; 5-15% fines; petroleum hydrocarbons; wet.

SILTY SAND (SM); yellowish brown (10YR 5/4); fine-grained sand; 10-20% fines; wet.

SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; 0-5% fines; wet.

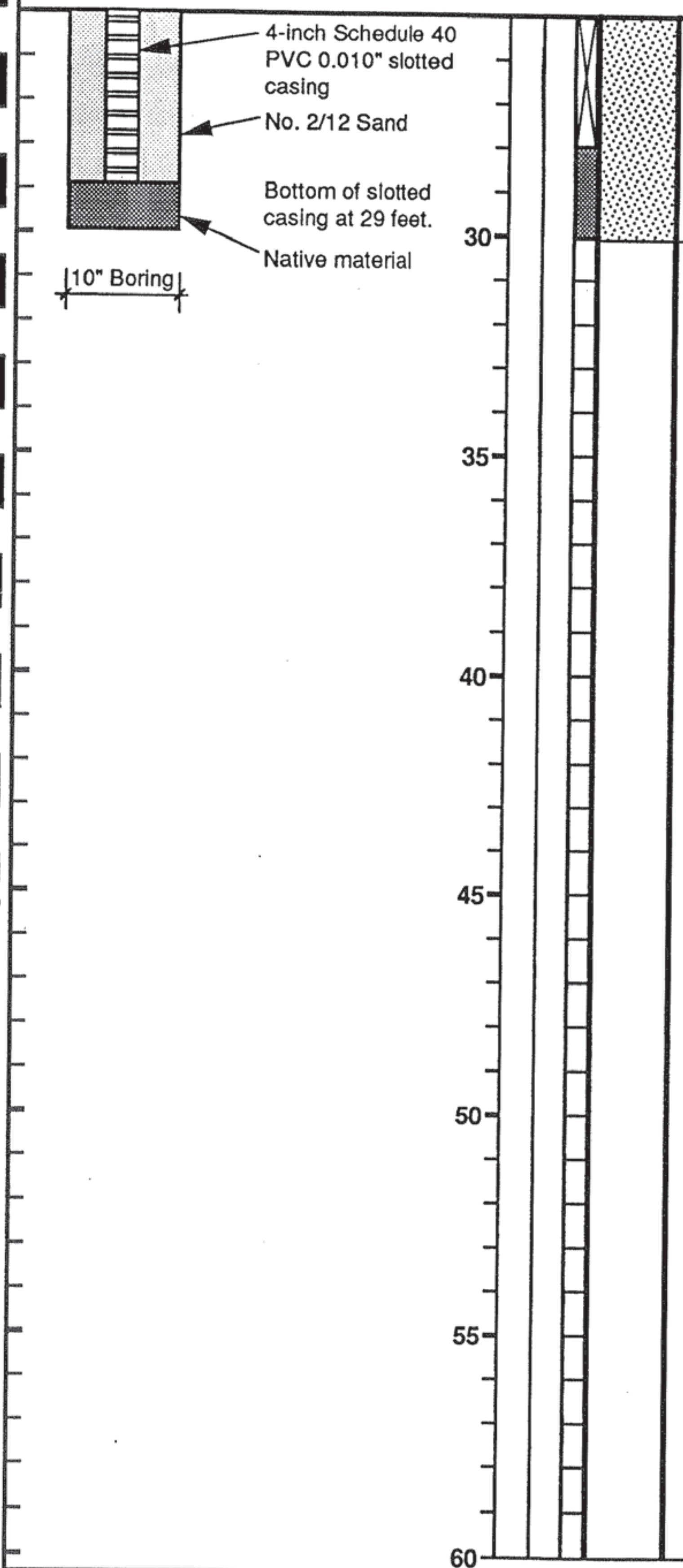
@ 23 feet: iron-oxide lamination.

WELL CONSTRUCTION

LOG OF BORING MW-7 (continued)

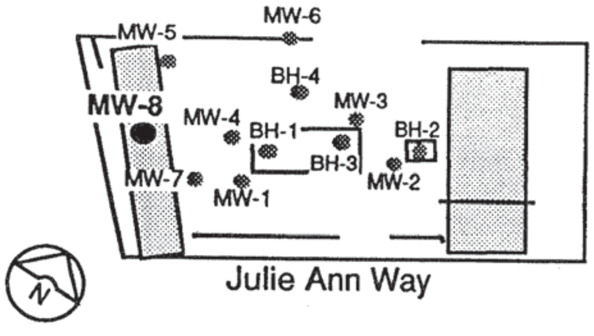
PID (PPM) | Samples | Graphic

DESCRIPTION



SAND (SW); continued.

Total Depth Explored: 30 feet
Date: July 27, 1994 Time: 1420

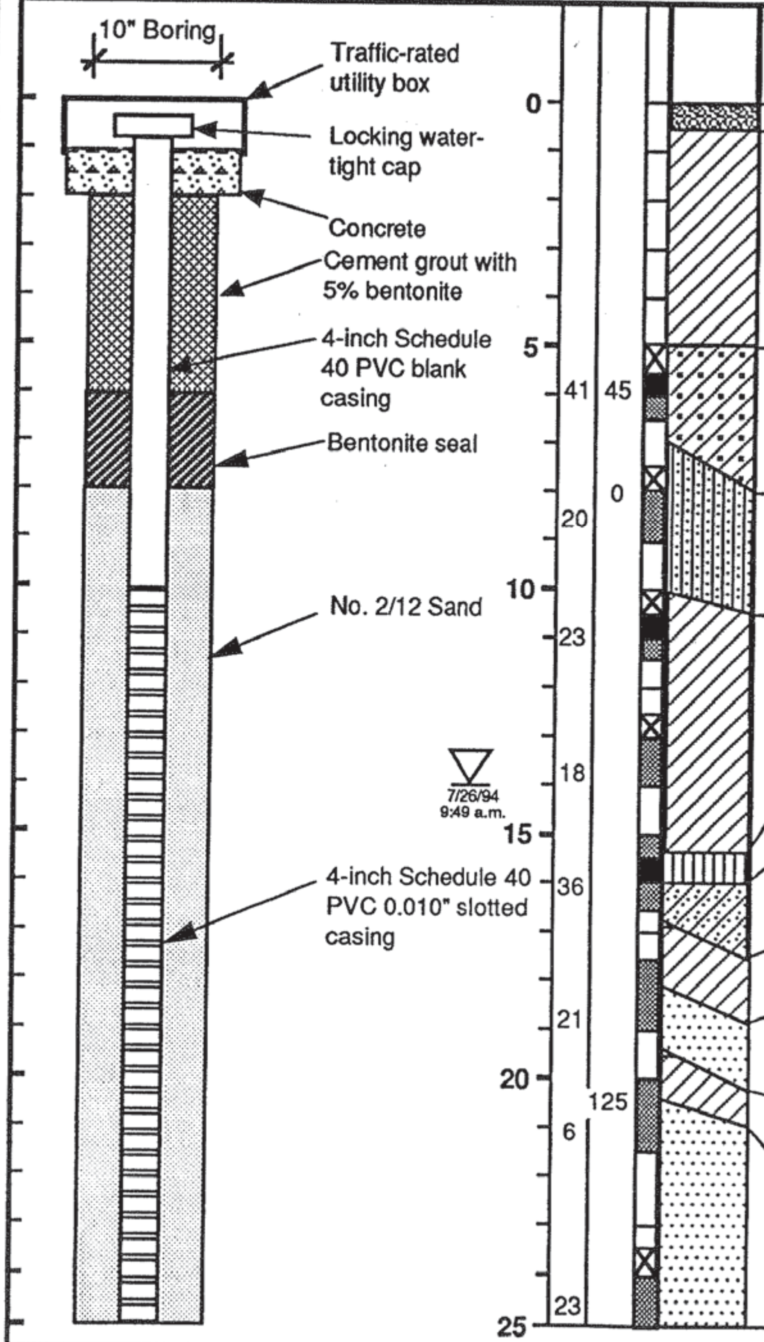


LOG OF BORING MW-8
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007
Logged By: C. Sean Bisch
Drilling Co.: West Hazmat
Driller: George

Date Drilled: July 26, 1994
Drilling Method: 10" Hollow stem auger
Sampling Method: Continuous core
Driller's License: 554979

WELL CONSTRUCTION	Blows/ft.	PPM	Samples	Graphic	DESCRIPTION



3" Asphaltic Concrete

CLAY (CL); black (7.5YR 2/0); 0-5% fine-grained sand; hydrocarbon odor; moist.

CLAYEY GRAVEL (GC); black (7.5YR 2/0); fine gravel; 30-40% fines; 10-15% fine-grained sand; dense; moist.

SILTY SAND (SM); brown (7.5YR 5/4); fine to coarse-grained, angular sand; 20-30% fines; 5-15% fine, subangular gravel; medium dense; moist.

CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; trace medium to coarse-grained sand; very stiff; moist.

SANDY SILT (ML); dark brown (10YR 4/3); 25-35% fine-grained, angular sand; hard; wet.

CLAYEY SAND (SC); dark gray (10YR 4/1); fine to coarse-grained, angular sand; 25-35% fines; medium dense; wet.

CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; very stiff; moist.

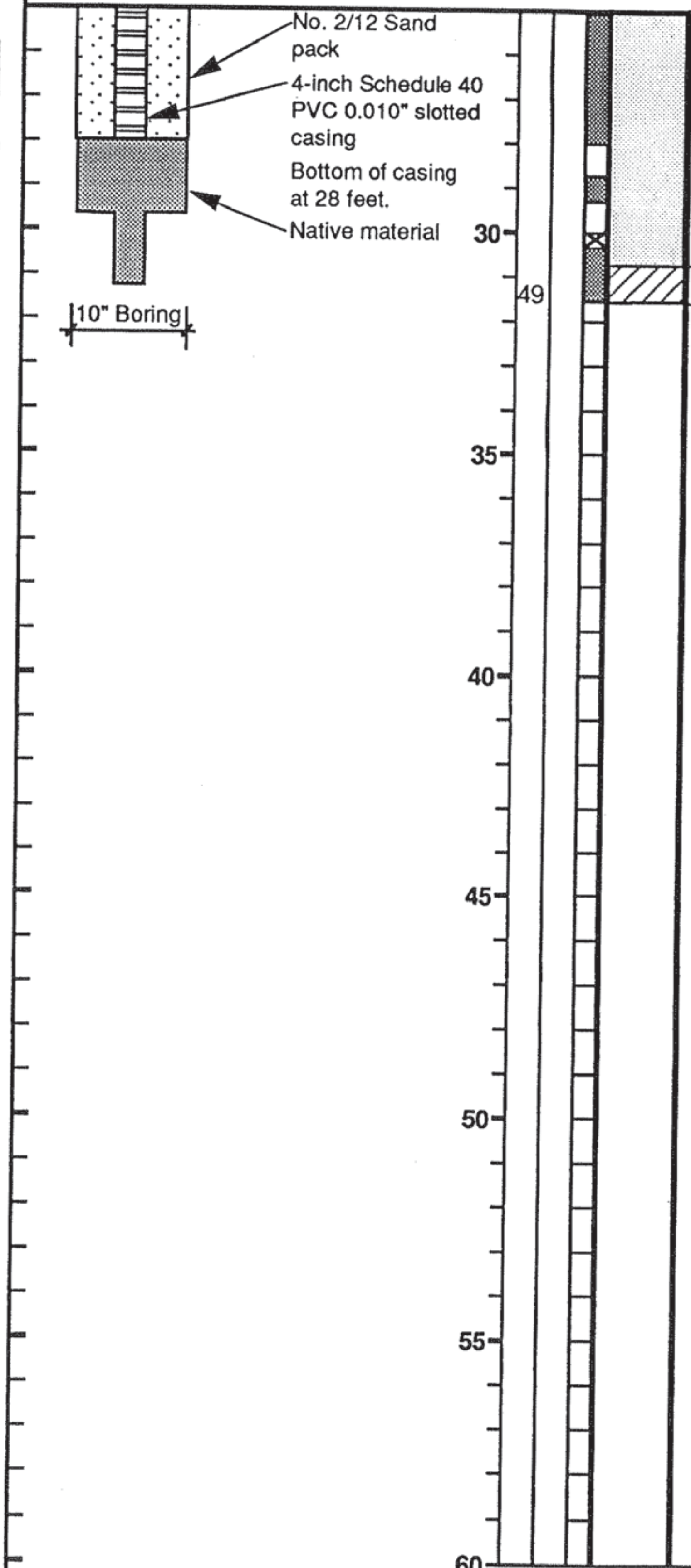
SAND (SP); dark yellowish brown (10YR 4/4); fine-grained sand; 5-15% fines; iron oxide staining; medium dense; wet.

CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; very stiff; moist.

SAND (SP); dark yellowish brown (10YR 4/4); fine-grained sand; 5-15% fines; loose; wet.

@ 24 feet: medium dense.

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	DESCRIPTION



SAND (SP); continued.

CLAY (CL); grayish brown (10YR 5/2); hard; moist.

Total Depth Explored: 31.5 feet
Date: July 26, 1994 Time: 11:12 a.m.

PROJECT: **Penske**
LOCATION: **725 Julie Ann Way, Oakland CA**
PROJECT NUMBER: **185702145**

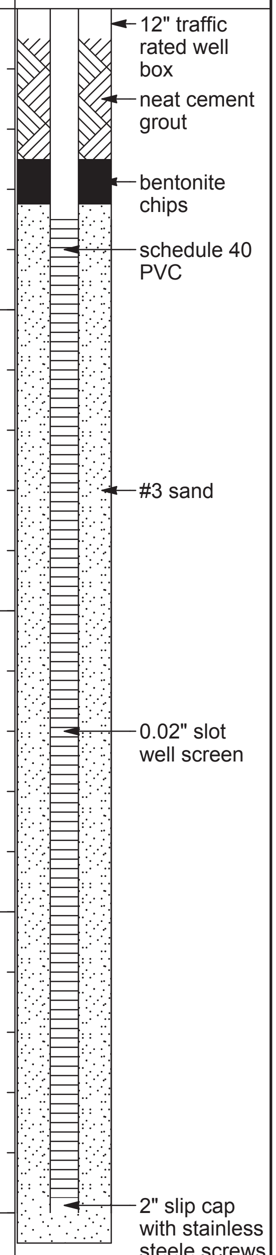
WELL / PROBEHOLE / BOREHOLE NO: **MW-1R** PAGE 1 OF 1

Stantec

DRILLING: STARTED **1/11/10**	COMPLETED: **1/12/10**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **1/11/10**	COMPLETED: **1/12/10**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**		GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **(LAR) Limited Access Rig**		INITIAL DTW (ft): **17 1/11/10**	BOREHOLE DEPTH (ft): **20.5**
DRILLING METHOD: **Auger**		STATIC DTW (ft): **4.55 1/12/10**	WELL DEPTH (ft): **20.0**
SAMPLING EQUIPMENT: **Macrocore**		WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **8**
		LOGGED BY: **CM**	CHECKED BY: **Eva Hey**

Time & Depth (feet)	USCS	Description	Cr+6 Screen Time Sample ID	Measured Recov. (ft)	Blow Count	Headspace PID (ppmv)	Depth (feet)
	SW	**GRAVELLY SAND** ; SW; 5Y4/4 olive; fine to coarse-grained; loose; dry; well graded; Fill; 30% gravel					
	CL	**LEAN CLAY WITH GRAVEL** ; CL; 10YR3/1 very dark gray; medium plasticity; stiff; dry; 10% gravel; glass at 4.5 ft.; fill	--			0.0	
1210 5	SW	**GRAVELLY SAND** ; SW; 5Y6/3 pale olive; fine to coarse-grained; loose; dry; moderate petroleum odor; subrounded; well graded; 30% gravel	1210 MW-1R, 5'			5	5
		Very hard; Concrete; possible burried slab	--			34	
1215	CH	**FAT CLAY** ; CH; 10Y4/1 dark greenish gray; high plasticity; very stiff; moist; moderate petroleum odor; Water filled rootholes; staining along rootholes					
10			--			67	10
1220	CL	**SILTY LEAN CLAY** ; CL; 5Y4/3 olive; medium plasticity; hard; dry; moderate petroleum odor; 30% silt	--			12	
			--			45	
15							15
1225	SC	**CLAYEY SAND** ; SC; 5Y4/3 olive; fine-grained; medium dense; moist; moderate petroleum odor; 40% clay					
1230	SM	**SILTY SAND** ; SM; 5Y4/4 olive; fine-grained; medium dense; wet; moderate petroleum odor; 40% silt	--			67	
20		Boring terminated at 20.5 feet.					20

Borehole Backfill



GEO FORM 304 PENSKE LOGS.GPJ SECOR INTL.GDT 3/2/10

PROJECT: **Penske**
LOCATION: **725 Julie Ann Way, Oakland CA**
PROJECT NUMBER: **185702145**

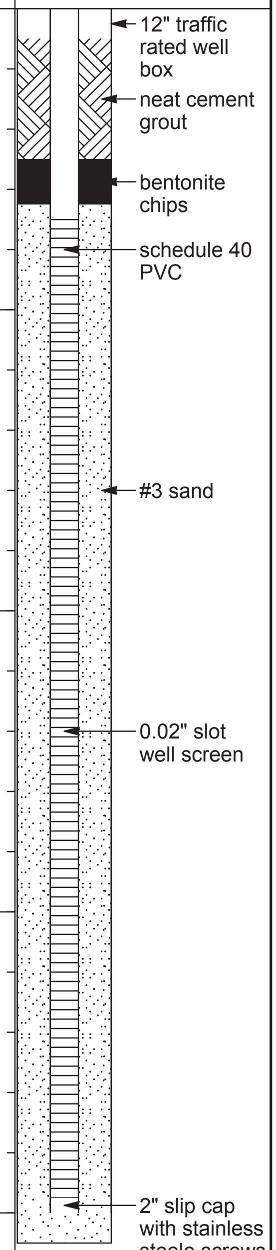
WELL / PROBEHOLE / BOREHOLE NO:
MW-7R
PAGE 1 OF 1

Stantec

DRILLING: STARTED **1/11/10**	COMPLETED: **1/12/10**	NORTHING (ft):	EASTING (ft):
INSTALLATION: STARTED **1/11/10**	COMPLETED: **1/12/10**	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**		GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **(LAR) Limited Access Rig**		INITIAL DTW (ft): **17** **1/11/10**	BOREHOLE DEPTH (ft): **20.5**
DRILLING METHOD: **Auger**		STATIC DTW (ft): **5.1** **1/12/10**	WELL DEPTH (ft): **20.0**
		WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **8**
SAMPLING EQUIPMENT: **Macrocore**		LOGGED BY: **CM**	CHECKED BY: **Eva Hey**

Time & Depth (feet)	USCS	Description
0–1		
1–3.5	SW	**GRAVELLY SAND** ; SW; 5Y4/4 olive; fine to coarse-grained; loose; dry; well graded; Fill; 30% gravel
3.5–8	OH	**FAT CLAY** ; OH; N2.5/0 black; high plasticity; stiff; dry; slight petroleum odor; organic rich clay Brick Same as above; moist; strong petroleum odor
8–11	CH	**FAT CLAY** ; CH; 10Y4/1 dark greenish gray; high plasticity; very stiff; moist; strong petroleum odor
11–16	CL	**SILTY LEAN CLAY** ; CL; 10Y4/1 dark greenish gray; medium plasticity; hard; dry; moderate petroleum odor; 10% sand; 20% silt
16–17	SC	**CLAYEY SAND** ; SC; 10YR5/6 yellowish brown; fine-grained; dense; moist; 40% clay
17–19	SM	**SILTY SAND WITH GRAVEL** ; SM; 10YR4/6 dark yellowish brown; fine to medium-grained; dense; wet; subangular; 10% gravel; 30% silt
20.5		Boring terminated at 20.5 feet.

Time	Depth (feet)	Cr+6 Screen Time Sample ID	Measured Recov. (ft)	Blow Count	Headspace PID (ppmv)
	~3	--			12
1110	5	1110 MW-7R, 5'			74
	~6	--			85
1115	8	--			81
	~8.5	--			74
	10	--			49
1120	12	--			27
	14	--			89
1125	15.5	--			0
	17	--			0
	19	--			0



PROJECT: **Former Penske Truck Leasing Facility** LOCATION: **725 Julie Ann Way** PROJECT NUMBER: **185701155.200.0003**	WELL / PROBEHOLE / BOREHOLE NO: **SB-1** PAGE 1 OF 1
DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009** TIME: STARTED COMPLETED: DRILLING COMPANY: **Gregg Drilling** DRILLING EQUIPMENT: **Geoprobe** DRILLING METHOD: **Direct Push** SAMPLING EQUIPMENT: **Acetate Sleeve**	NORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): **N/A** BOREHOLE DEPTH (ft): **10.0** STATIC DTW (ft): **5.5 4/21/09** WELL DEPTH (ft): **---** WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **2.25** LOGGED BY: **K. Chuop** CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		Asphalt						Concrete cap
	CL	**SANDY CLAY WITH GRAVEL** ; CL; 2.5Y4/2 dark grayish brown; moist; strong HC odor; gravel up to 1-inch in diameter; observed staining and product sheen; possible backfill material						
	CH	**CLAY** ; CH; 10YR2/1 black; high plasticity; stiff; moist; strong HC odor; no dilatancy At 3.5 feet below ground surface (bgs), 30-50% gravel, up to 1.5-inch in length, angular						
	CH	**CLAY WITH GRAVEL** ; CH; 2.5Y4/2 dark grayish brown; high plasticity; stiff; moist; moderate HC odor; At 4 feet bgs, found a large piece of red brick	0830 SB-1-4'	1/4		1,058		
5	GP	**GRAVEL** ; GP; wet; poorly graded; loose gravel		0.5/4			5	Bentonite Cement Backfill
		From approximately 5.5-8 feet bgs, no recovery						
	CH	**CLAY WITH GRAVEL** ; CH; 2.5Y4/2 dark grayish brown; high plasticity; stiff; moist; moderate HC odor	0832 SB-1-8'	1/2		--		
	GP	**GRAVEL** ; GP; poorly graded	0840 SB-1-8.5'			--		
		From 9 to 10 feet bgs, no recovery						
10		Hole terminated at 10 feet.					10	
15							15	
20							20	

GEO FORM 304_STANTEC037 SB-1 THROUGH SB-8.GPJ SECOR037.GDT 6/29/09

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-2

Stantec

DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009**	NORTHING (ft):
TIME: STARTED COMPLETED:	EASTING (ft):
DRILLING COMPANY: **Gregg Drilling**	LATITUDE:
DRILLING EQUIPMENT: **Geoprobe**	LONGITUDE:
DRILLING METHOD: **Direct Push**	GROUND ELEV (ft):
SAMPLING EQUIPMENT: **Acetate Sleeve**	TOC ELEV (ft):
	INITIAL DTW (ft): **N/A**
	BOREHOLE DEPTH (ft): **12.0**
	STATIC DTW (ft): **9 4/21/09**
	WELL DEPTH (ft): **---**
	WELL CASING DIAMETER (in): **---**
	BOREHOLE DIAMETER (in): **2.25**
	LOGGED BY: **K. Chuop**
	CHECKED BY: **N. Doran**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
0			Asphalt							Concrete cap
		CL	**SANDY CLAY WITH GRAVEL** ; CL; 2.5Y4/2 dark grayish brown; medium plasticity; moist; gravel is fine, subangular							Bentonite Cement Backfill
5		CL	**CLAY WITH GRAVEL** ; CL; 2.5Y2.5/1 black; stiff; dry; little organic material		1400 SB-2-5'	3/3		1.1	5	
		CH	**CLAY** ; CH; stiff; moderate HC odor; hydrocarbon staining; 2.5Y2.5/1 black with 10YR4/1 dark gray mottles; trace 10YR3/4 dark yellowish brown mottles; some organic material, wood 2-3 inches in length		1402 SB-2-8'			30.8	▼ (9)	
10		CH	**CLAY** ; CH; very stiff; moist; Gley1 4/5GY greenish gray with 7.5YR4/3 brown mottles; little fine gravel; little pieces of wood		1404 SB-2-12'	4/4		17	10	
12			Hole terminated at 12 feet.							
15									15	
20									20	

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-3

Stantec

DATE: STARTED **4/21/2009**	COMPLETED: **4/21/2009**	NORTHING (ft):	EASTING (ft):
TIME: STARTED	COMPLETED:	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**		GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **Geoprobe**		INITIAL DTW (ft): **N/A**	BOREHOLE DEPTH (ft): **12.0**
DRILLING METHOD: **Direct Push**		STATIC DTW (ft): **9.5 4/21/09**	WELL DEPTH (ft): **---**
		WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **2.25**
SAMPLING EQUIPMENT: **Acetate Sleeve**		LOGGED BY: **K. Chuop**	CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
0		Asphalt layer						Concrete cap
	CL	**SANDY CLAY** ; CL; 2.54/2 dark grayish brown; very stiff; little fine gravel up to 0.1-inch in diameter						
5	CH	**FAT CLAY** ; CH; 2.5Y2.5/1 black; soft; wet; little wood (bark); little gravel up to 0.75-inch in diameter, subangular	1240 SB-3-5'			0.1	5	
	CL	**CLAY** ; CL; 10YR3/1 very dark gray; soft; moist; some organic material (roots)		3/3				Bentonite Cement Backfill
			1243 SB-3-8'			0.1		
	GP	**GRAVEL WITH SAND AND CLAY** ; GP; 2.5Y2.5/1 black; wet; gravel is fine to medium; some organic material	1245 SB-3-9'			1.0	▼ (9.5)	
10	CH	**FAT CLAY** ; CH; 2.5Y2.5/1 black; moist; trace fine gravel		4/4			10	
	CH	**FAT CLAY** ; CH; high plasticity; very stiff; GLEY2 4/5BG dark greenish gray; 5YR4/4 reddish brown mottles; trace fine gravel; trace organic material	1250 SB-3-12'			2.0		
		Hole terminated at 12 feet.						
15							15	
20							20	

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO: **SB-4**

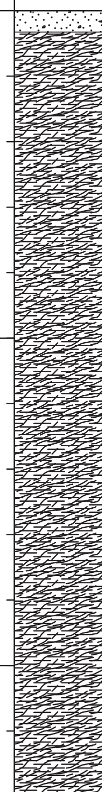
Stantec

DATE: STARTED **4/21/2009** COMPLETED: **4/21/2009**
TIME: STARTED COMPLETED:
DRILLING COMPANY: **Gregg Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeve**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **N/A** BOREHOLE DEPTH (ft): **12.0**
STATIC DTW (ft): **10.5 4/21/09** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **2.25**
LOGGED BY: **K. Chuop** CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)
		Asphalt layer					
	CL	**SANDY CLAY** ; CL; 10YR4/3 brown; medium plasticity; moist; gravel is fine to medium, angular					
	CH	**FAT CLAY** ; CH; 10YR5/3 brown; high plasticity; moist; little staining					
	CH	**FAT CLAY** ; CH; 10YR2/1 black; medium plasticity; moist; some fine gravel up to 1.5-inch in diameter					
	CH	**FAT CLAY** ; CH; same as above, except no gravel; high plasticity; found broken fragments of brown glass					
5	CH	**FAT CLAY** ; CH; 10YR2/1 black; high plasticity; very stiff; strong organic odor	1240 SB-4-5'			0.1	5
		At 5.5 feet below ground surface (bgs), clay is soft; almost wet		3.5/3.5			
			1243 SB-4-6.5'			0.1	
		At 7.5 bgs, moist; stiff					
	CH	**FAT CLAY** ; CH; 2.5Y4/1 dark gray; high plasticity; very stiff; moist	1245 SB-4-8.5'			1.0	
10				4/4			10
	CH	**FAT CLAY** ; CH; same as above, except stiff	1250 SB-4-12'			2.0	
		Hole terminated at 12 feet.					
15							15
20							20

Borehole Backfill



PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-5

Stantec

DATE: STARTED **4/21/2009**	COMPLETED: **4/21/2009**	NORTHING (ft):	EASTING (ft):
TIME: STARTED	COMPLETED:	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**		GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **Geoprobe**		INITIAL DTW (ft): **8 4/21/09**	BOREHOLE DEPTH (ft): **12.0**
DRILLING METHOD: **Direct Push**		STATIC DTW (ft): **9.5 4/21/09**	WELL DEPTH (ft): **---**
SAMPLING EQUIPMENT: **Acetate Sleeve**		WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **2.25**
		LOGGED BY: **K. Chuop**	CHECKED BY: **N. Doran**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
			Asphalt layer							Concrete cap
		CL	**SANDY CLAY** ; CL; 2.5Y4/2 dark grayish brown; medium plasticity; very stiff; moist; gravel is fine to medium up to 1" in diameter							
			At 4 feet below ground surface (bgs), slight hydrocarbon odor							
5		CL	**FAT CLAY** ; CL; 2.5Y4/1 dark gray; high plasticity; very stiff; no dilatancy; little sand		1140 SB-5-5'			30	5	
		CL	**FAT CLAY** ; CL; 2.5Y3/1 very dark gray; high plasticity; stiff; no dilatancy; moist; some gley2 4/1 dark greenish gray mottling; hydrocarbon odor		1142 SB-5-6.5'	3/3		120		Bentonite Cement Backfill
		CL	CL; At 5.5 feet bgs, prescence of little organic matter (roots); soft; strong hydrocarbon odor							
		CL	**SILTY CLAY** ; CL; 2.5Y2.5/1 black; medium plasticity; soft; moist; medium dilatancy; trace fine gravel; trace 5YR4/4 reddish brown brick; moist		1145 SB-5-8.5'			20		
10		CL	**CLAY** ; CL; 2.5Y3/1 very dark gray; medium plasticity; soft; moist; medium dilatancy; some silt; hydrocarbon odor At 8 feet bgs, wet			4/4			10	
		CL	**FAT CLAY** ; CL; GLEY 4/5 dark grayish green; high plasticity; very stiff; moist; 5YR4/4 reddish brown mottling; trace fine gravel; trace organic material		1150 SB-5-12'			9.8		
			Hole terminated at 12 feet.							
15									15	
20									20	

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO: **SB-6**

Stantec

DATE: STARTED **4/22/2009**	COMPLETED: **4/22/2009**	NORTHING (ft):	EASTING (ft):
TIME: STARTED	COMPLETED:	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**		GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **Geoprobe**		INITIAL DTW (ft): **6 4/22/09**	BOREHOLE DEPTH (ft): **12.0**
DRILLING METHOD: **Direct Push**		STATIC DTW (ft): **9 4/22/09**	WELL DEPTH (ft): **---**
		WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **2.25**
SAMPLING EQUIPMENT: **Acetate Sleeve**		LOGGED BY: **K. Chuop**	CHECKED BY: **N. Doran**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
0			Asphalt layer							Concrete cap
		CL	**SANDY CLAY** ; CL; 2.5Y4/2 dark grayish brown; medium plasticity; very stiff; moist; gravel is fine to medium up to 1" in diameter							
5			At 5 feet bgs, encountered 4-inch concrete layer		1100 SB-6-5'	2/3		28.4	5	Bentonite Cement Backfill
		CL	**GRAVELLY CLAY** ; CL; 5Y3/1 very dark gray; medium plasticity; gravel is medium							
		ML	At 6 feet below ground surface (bgs), presence of 2.5YR4/6 red brick; wet		1101 SB-6-6.5'			337		
			SILT ; ML; 5YR2.5/1 black; medium plasticity; strong hydrocarbon odor; little staining; some clay							
			No recovery from 7-8 feet bgs							
			No recovery from 8-12 feet bgs							
10						0/4			10	
			Hole terminated at 12 feet.							
15									15	
20									20	

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-7
PAGE 1 OF 1

DATE: STARTED **4/22/2009** COMPLETED: **4/22/2009**
TIME: STARTED COMPLETED:
DRILLING COMPANY: **Gregg Drilling**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Acetate Sleeve**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **N/A** BOREHOLE DEPTH (ft): **20.0**
STATIC DTW (ft): **11 4/22/09** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **2.25**
LOGGED BY: **K. Chuop** CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		Asphalt layer						Concrete cap
	GP	**GRAVEL** ; GP; 2.5Y2.5/1 black; poorly graded; very strong hydrocarbon odor						
	CL	**SANDY CLAY** ; CL; with silt						
	GP	**GRAVEL** ; GP; 2.5Y2.5/1 black; poorly graded; very strong hydrocarbon odor						
5	SP	**SAND** ; SP; 10YR6/4 light yellowish brown; dry; poorly graded; sand is fine- to medium-grained; trace mica; trace black staining; some clay; some silt	0950 SB-7-5'			0.3	5	
	SP	**SAND** ; SP; 10YR3/1 very dark gray; poorly graded; moist, almost wet; little coarse gravel, hydrocarbon odor; little brick pieces		3/3				
	CH	**FAT CLAY** ; CH; 2.5Y4/1 dark gray; high plasticity; little dilatancy; no sand; interbedded with gley 2 4/5BG greenish gray color; moist	0955 SB-7-8'	0.5/4		15.5		
	GP	**GRAVEL** ; GP; poorly graded; coarse gravel						
		From 8.5-12 feet bgs, no recovery						
10							10	Bentonite Cement Backfill
	CH	**FAT CLAY** ; CH; 2.5Y4/1 dark gray; high plasticity; little dilatancy; no sand; interbedded with gley 2 4/5BG greenish gray color; moist At 13.5 feet bgs, color change to gley2 4/5BG greenish gray	0959 SB-7-12'	4/4		9.2		
15							15	
		At 17.5 feet bgs, color change to 2.5YR4/4 olive brown At 18 feet bgs, color change to 2.5Y4/1 dark gray From 18.25-18.5 feet bgs, prescence of little brick and approximate 1-inch layer of calcium carbonate	1000 SB-7-16'	4/4		11.1		
	CL	**SANDY CLAY** ; CL; 2.5Y4/1 dark gray; high plasticity; stiff; moist; sand is fine-grained; slow dilatancy						
20		Hole terminated at 20 feet.					20	

PROJECT: **Former Penske Truck Leasing Facility**
LOCATION: **725 Julie Ann Way**
PROJECT NUMBER: **185701155.200.0003**

WELL / PROBEHOLE / BOREHOLE NO:
SB-8

Stantec

DATE: STARTED **4/22/2009**	COMPLETED: **4/22/2009**	NORTHING (ft):	EASTING (ft):
TIME: STARTED	COMPLETED:	LATITUDE:	LONGITUDE:
DRILLING COMPANY: **Gregg Drilling**		GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT: **Geoprobe**		INITIAL DTW (ft): **N/A**	BOREHOLE DEPTH (ft): **20.0**
DRILLING METHOD: **Direct Push**		STATIC DTW (ft): **19 4/22/09**	WELL DEPTH (ft): **---**
		WELL CASING DIAMETER (in): **---**	BOREHOLE DIAMETER (in): **2.25**
SAMPLING EQUIPMENT: **Acetate Sleeve**		LOGGED BY: **K. Chuop**	CHECKED BY: **N. Doran**

Time & Depth (feet)	USCS	Description	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		Asphalt						Concrete cap
	ML CH	**SANDY SILT** ; ML; GLEY1 5/10Y greenish gray; low plasticity; dry; sand is medium-grained; little clay; little fine gravel						
		SANDY FAT CLAY ; CH; GLEY1 4/10Y dark greenish gray; high plasticity; with gravel and silt; sand is fine-grained; gravel is fine; slight hydrocarbon odor						
	GW-GM	**GRAVEL WITH SILT** ; GW-GM; poorly graded; gravel is angular; with clay; some fine-grained sand						
5	CH	**SANDY FAT CLAY** ; CH; GLEY1 4/10Y dark greenish gray; high plasticity; with gravel and silt; sand is fine-grained; gravel is fine	0840 SB-8-5'			2.1	5	
	CL	**CLAY** ; CL; GLEY1 4/10Y dark greenish gray; medium plasticity; stiff; no dilatancy; trace red brick pieces		3/3				
		Encountered more red brick	0843 SB-8-7.5'			6.2		
				2/4				
10		From 10 to 12 feet below ground surface (bgs), no recovery					10	Bentonite Cement Backfill
	CL	**CLAY** ; CL; GLEY1 4/10Y dark greenish gray; medium plasticity; stiff; no dilatancy	0855 SB-8-12'			0.4		
		At 13 feet bgs, color change to 7.5YR4/2 brown		1.5/4				
		From 13.5 to 16 feet bgs, no recovery						
15							15	
	CH	**FAT CLAY** ; CH; GLEY1 4/10Y dark greenish gray; high plasticity; interbedded with color 7.5YR4/2 brown; trace fine gravel; trace mica; trace red brick	0900 SB-8-17'			0.2		
				4/4				
		At 18.5 feet bgs, small area of staining						
	CL	**SANDY CLAY** ; CL; 10YR5/4 yellowish brown; medium plasticity; sand is fine-grained; little silt						
20		Hole terminated at 20 feet.					20	

GEO FORM 304_STANTEC037 SB-1 THROUGH SB-8.GPJ SECOR037.GDT 6/29/09

APPENDIX E
Concentration Plots 1997–2013

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

FIGURE E-1
TPHd versus Time
725 Julie Ann Way, Oakland, CA

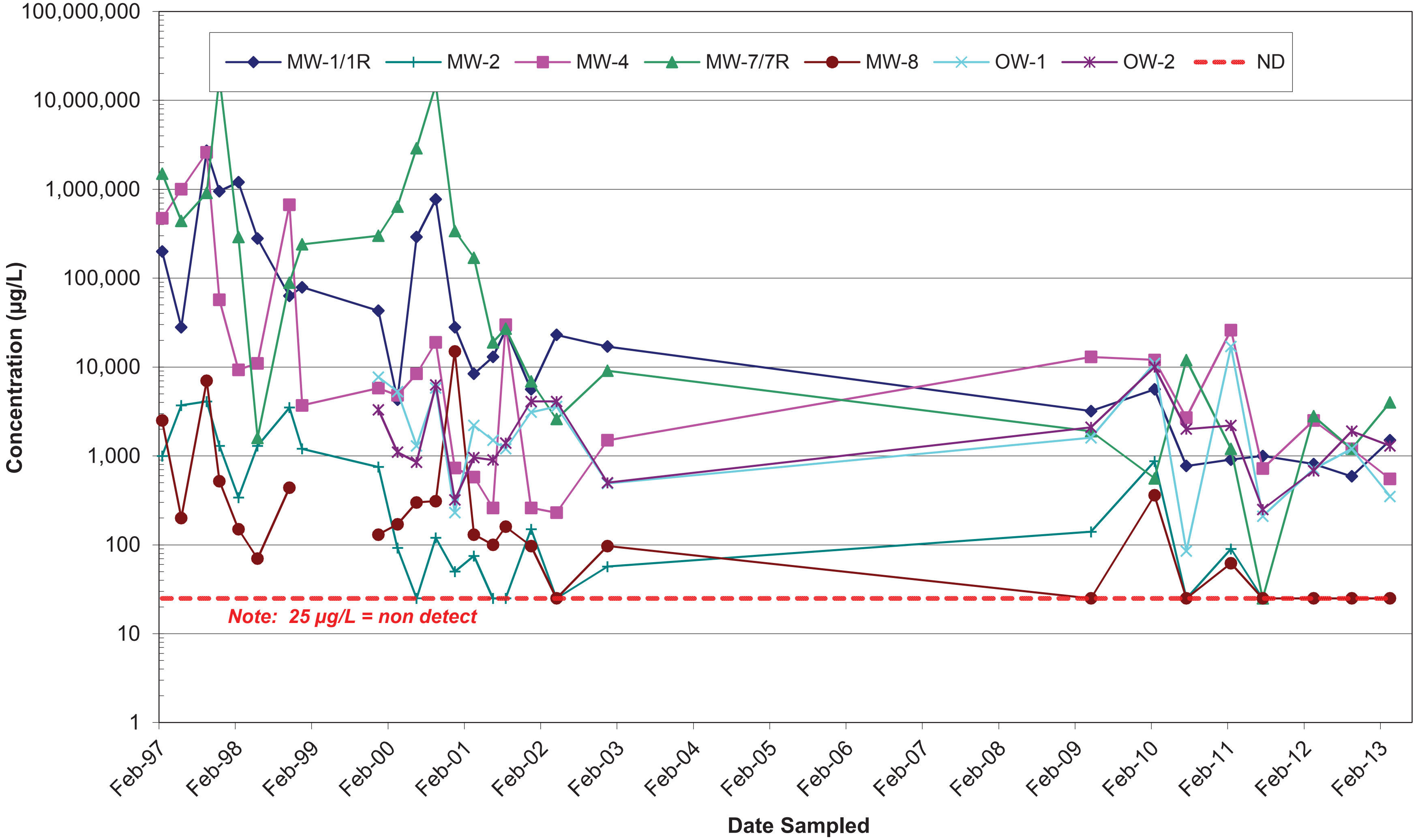


FIGURE E-2
TPHg versus Time
725 Julie Ann Way, Oakland, CA

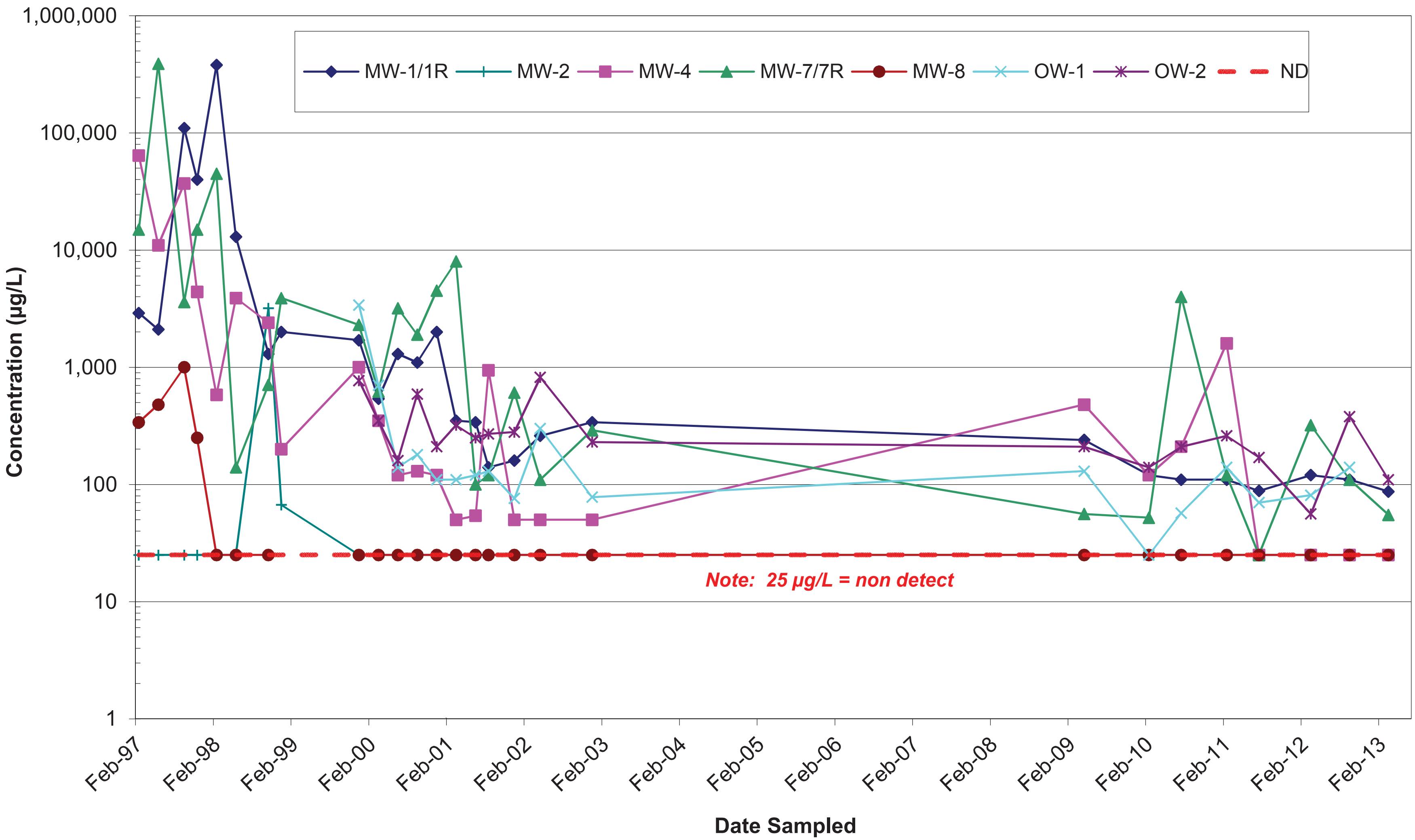


FIGURE E-3
Benzene versus Time
725 Julie Ann Way, Oakland, CA

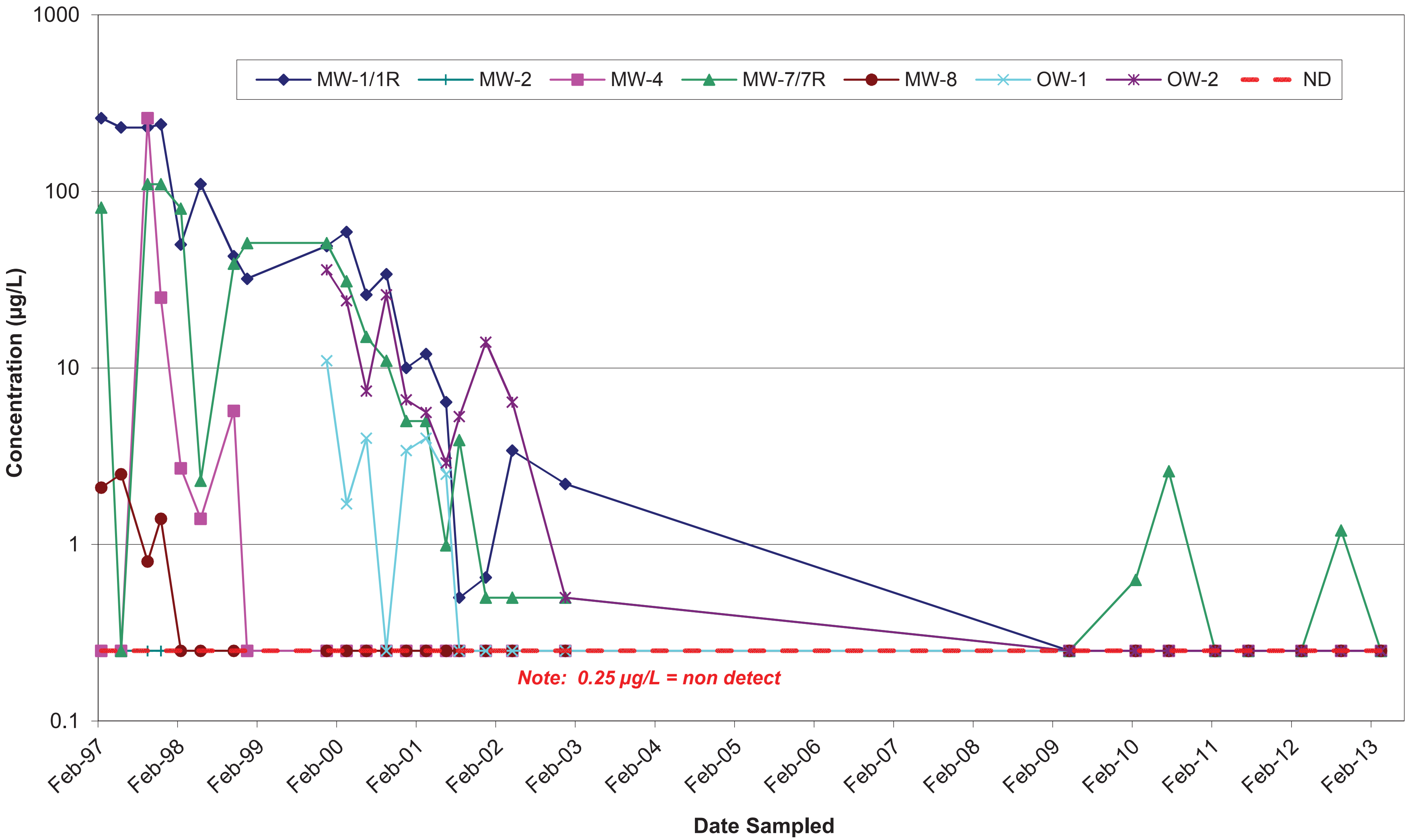
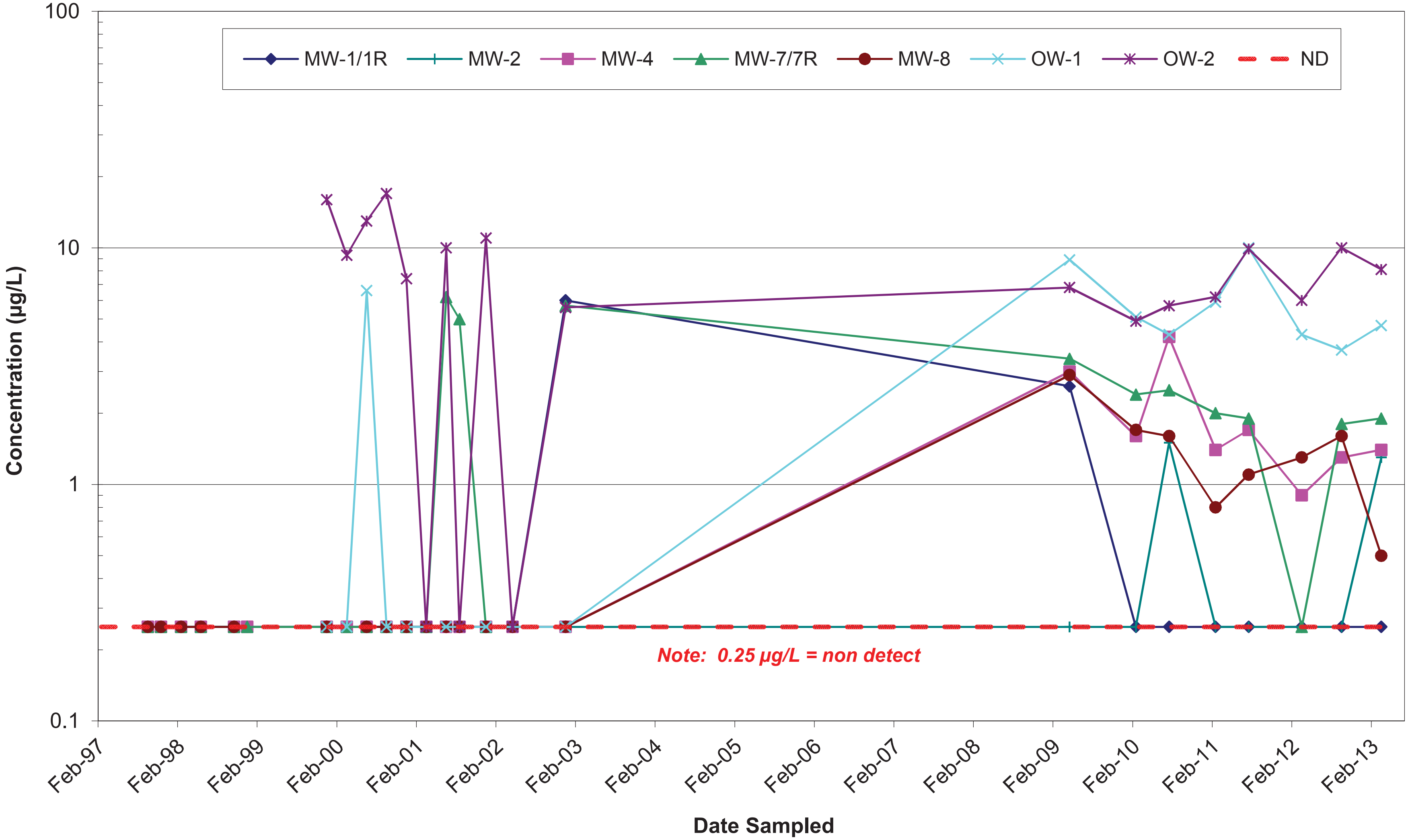


FIGURE E-4
MTBE versus Time
725 Julie Ann Way, Oakland, CA



APPENDIX F
WQO Timeline Trend Graphs

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec

State of Wisconsin
Department of Natural Resources
Remediation and Redevelopment Program

Mann-Kendall Statistical Test
Form 4400-215 (2/2001)

Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.

Site Name = Former Penske Facility | BRRTS No. = | Well Number = MW-4

	Compound ->	TPH-DRO (µg/L)					
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	4/12/2002	230					
2	12/5/2002	1500					
3	4/22/2009	13000					
4	2/8/2010	12000					
5	7/16/2010	2700					
6	2/4/2011	26000					
7	7/25/2011	720					
8	3/22/2012	2,500					
9	9/24/2012	1,200					
10	3/4/2013	550					
	Mann Kendall Statistic (S) =	-7.0	0.0	0.0	0.0	0.0	0.0
	Number of Rounds (n) =	10	0	0	0	0	0
	Average =	6040.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Standard Deviation =	8447.799	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	1.399	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected			n<4	n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		No Trend	n<4	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	n<4	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		CV > 1 NON-STABLE	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By = K.C. | Date = 26-Aug-13 | Checked By =

State of Wisconsin
Department of Natural Resources
Remediation and Redevelopment Program

Mann-Kendall Statistical Test
Form 4400-215 (2/2001)

Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.

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Site Name = Former Penske Facility | BRRTS No. = | Well Number = OW-1

Event Number	Compound -> Sampling Date (most recent last)	TPH-DRO (µg/L) Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	4/11/2002	3,600					
2	12/5/2002	490					
3	4/22/2009	1600					
4	2/8/2010	11000					
5	7/16/2010	85					
6	2/4/2011	17000					
7	7/25/2011	210					
8	3/22/2012	710					
9	9/24/2012	1,200					
10	3/4/2013	350					
	Mann Kendall Statistic (S) =	-7.0	0.0	0.0	0.0	0.0	0.0
	Number of Rounds (n) =	10	0	0	0	0	0
	Average =	3624.50	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Standard Deviation =	5739.803	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	1.584	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected			n<4	n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		No Trend	n<4	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	n<4	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at		CV > 1	n<4	n<4	n<4	n<4	n<4
80% Confidence Level		NON-STABLE	n<4	n<4	n<4	n<4	n<4

Data Entry By = K.C. | Date = 26-Aug-13 | Checked By =

State of Wisconsin
Department of Natural Resources
Remediation and Redevelopment Program

Mann-Kendall Statistical Test
Form 4400-215 (2/2001)

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Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.

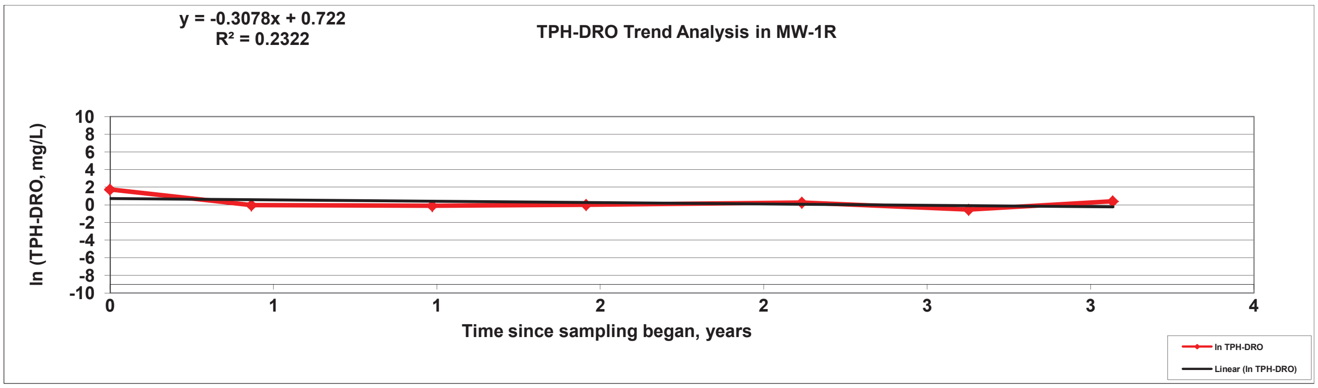
Site Name = Former Penske Facility | BRRTS No. = | Well Number = OW-2

Event Number	Compound -> / Sampling Date (most recent last)	TPH-DRO (μg/L)	TPH-GRO (μg/L)				
		Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	4/11/2002	4,100	820				
2	12/5/2002	500	230				
3	4/22/2009	2100	210				
4	2/8/2010	10000	140				
5	7/16/2010	2000	210				
6	2/4/2011	2200	260				
7	7/25/2011	250	170				
8	3/22/2012	680	56				
9	9/24/2012	1,900	380				
10	3/4/2013	1,300	110				
	Mann Kendall Statistic (S) =	-13.0	-16.0	0.0	0.0	0.0	0.0
	Number of Rounds (n) =	10	10	0	0	0	0
	Average =	2503.00	258.60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Standard Deviation =	2857.443	216.152	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	1.142	0.836	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		**DECREASING**	**DECREASING**	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	**DECREASING**	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By = K.C. | Date = 26-Aug-13 | Checked By =

TPH-DRO First Order Decay Rate Estimation and Timeframe to Meet Water Quality Objective in MW-1R
Former Penske Facility
725 Julie Ann Way
Oakland, California

Sampling Date	TPH-DRO (mg/L)	TPH-DRO (µg/L)	ln TPH-DRO (mg/L)	Elapsed time since 02/08/10 (years)
2/8/2010	5.800	5800	1.758	0.00
7/16/2010	0.960	960	-0.041	0.43
2/3/2011	0.910	910	-0.094	0.99
7/25/2011	1.000	1000	0.000	1.46
3/22/2012	1.300	1300	0.262	2.12
9/24/2012	0.590	590	-0.528	2.63
3/4/2013	1.500	1500	0.405	3.07



Formula

t = $-[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Timeframe to meet TPH-DRO Water Quality Objective in MW-1R

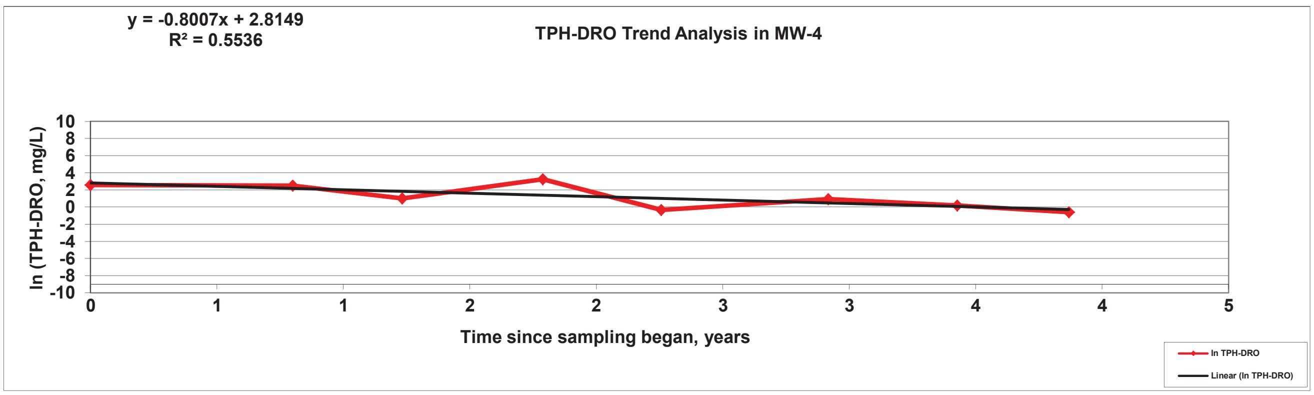
$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	1.098	Mean for last 4 Events in MW-1R	
$k_{point\ (slope\ of\ regression\ li}$	0.3078		
Time to reach cleanup level	7.8	years	

Timeframe to meet TPH-DRO Water Quality Objective in MW-1R

$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	1.500	Maximum for last 4 Events in MW-1R	
$k_{point\ (slope\ of\ regres}$	0.3078		
Time to reach cleanup level	8.8	years	

TPH-DRO First Order Decay Rate Estimation and Timeframe to Meet Water Quality Objective in MW-4
Former Penske Facility
725 Julie Ann Way
Oakland, California

Sampling Date	TPH-DRO (mg/L)	TPH-DRO (µg/L)	ln TPH-DRO (mg/L)	Elapsed time since 04/22/09 (years)
4/22/2009	13.000	13000	2.565	0.00
2/8/2010	12.000	12000	2.485	0.80
7/16/2010	2.700	2700	0.993	1.23
2/4/2011	26.000	26000	3.258	1.79
7/25/2011	0.720	720	-0.329	2.26
3/22/2012	2.500	2,500	0.916	2.92
9/24/2012	1.200	1,200	0.182	3.43
3/4/2013	0.550	550	-0.598	3.87



Formula

t = -[ln(C_{CL}/C_o)] / k_{point}

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Timeframe to meet TPH-DRO Water Quality Objective in MW-4

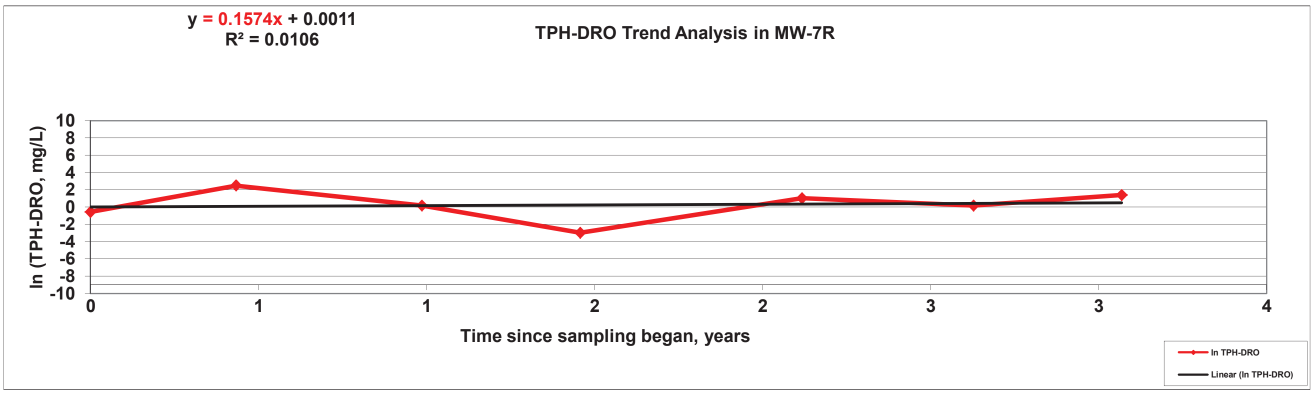
$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	1.243	Mean for last 4 Events in MW-4	
$k_{point\ (slope\ of\ regression\ li}$	0.8007		
Time to reach cleanup level		3.1	years

Timeframe to meet TPH-DRO Water Quality Objective in MW-4

$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	2.500	Maximum for last 4 Events in MW-4	
$k_{point\ (slope\ of\ regres}$	0.8007		
Time to reach cleanup level		4.0	years

TPH-DRO First Order Decay Rate Estimation and Timeframe to Meet Water Quality Objective in MW-7R
Former Penske Facility
725 Julie Ann Way
Oakland, California

Sampling Date	TPH-DRO (mg/L)	TPH-DRO (µg/L)	ln TPH-DRO (mg/L)	Elapsed time since 02/08/10 (years)
2/8/2010	0.560	560	-0.580	0.00
7/16/2010	12.000	12000	2.485	0.43
2/3/2011	1.200	1200	0.182	0.99
7/25/2011	0.050	50	-2.996	1.46
3/22/2012	2.800	2800	1.030	2.12
9/24/2012	1.200	1,200	0.182	2.63
3/4/2013	4.000	4000	1.386	3.07



Formula

t = $-[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Timeframe to meet TPH-DRO Water Quality Objective in MW-7R

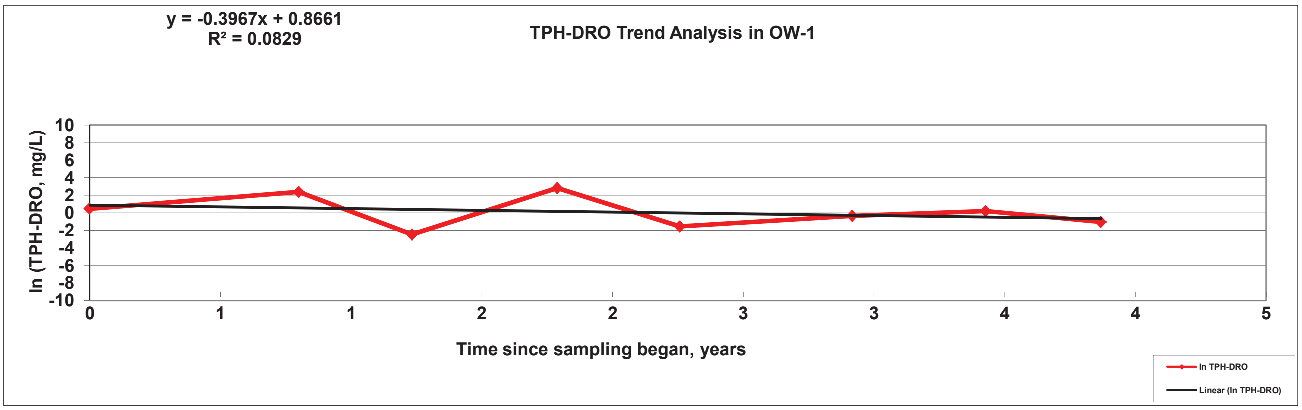
$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	2.013	Mean for last 4 Events in MW-7R	
$k_{point\ (slope\ of\ regression\ li}$	0.1574		
Time to reach cleanup level		19.1	years

Timeframe to meet TPH-DRO Water Quality Objective in MW-7R

$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	4.000	Maximum for last 4 Events in MW-7R	
$k_{point\ (slope\ of\ regres}$	0.1574		
Time to reach cleanup level		23.4	years

TPH-DRO First Order Decay Rate Estimation and Timeframe to Meet Water Quality Objective in OW-1
Former Penske Facility
725 Julie Ann Way
Oakland, California

Sampling Date	TPH-DRO (mg/L)	TPH-DRO (µg/L)	ln TPH-DRO (mg/L)	Elapsed time since 4/22/09 (years)
4/22/2009	1.600	1600	0.470	0.00
2/8/2010	11.000	11000	2.398	0.80
7/16/2010	0.085	85	-2.465	1.23
2/4/2011	17.000	17000	2.833	1.79
7/25/2011	0.210	210	-1.561	2.26
3/22/2012	0.710	710	-0.342	2.92
9/24/2012	1.200	1,200	0.182	3.43
3/4/2013	0.350	350	-1.050	3.87



Formula

t = $-[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Timeframe to meet TPH-DRO Water Quality Objective in OW-1

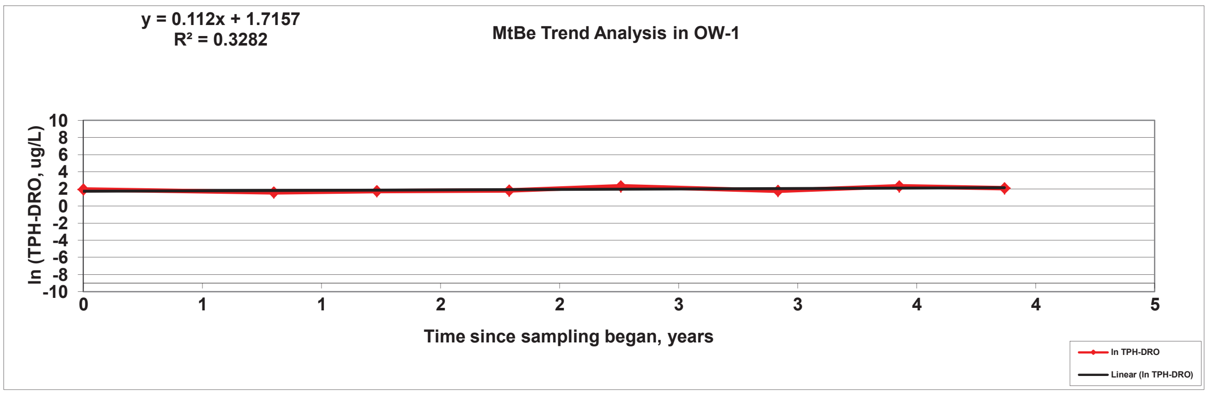
$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	0.618	Mean for last 4 Events in OW-1	
$k_{point\ (slope\ of\ regression\ li}$	0.3967		
Time to reach cleanup level		4.6	years

Timeframe to meet TPH-DRO Water Quality Objective in OW-1

$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	1.200	Maximum for last 4 Events in OW-1	
$k_{point\ (slope\ of\ regres}$	0.3967		
Time to reach cleanup level		6.3	years

MtBE First Order Decay Rate Estimation and Timeframe to Meet Water Quality Objective in OW-1
Former Penske Facility
725 Julie Ann Way
Oakland, California

Sampling Date	MtBE (µg/L)	MtBE (5g/L)	ln MtBE (µg/L)	Elapsed time since 4/22/09 (years)
4/22/2009	6.800	6.8	1.917	0.00
2/8/2010	4.900	4.9	1.589	0.80
7/16/2010	5.700	5.7	1.740	1.23
2/4/2011	6.200	6.2	1.825	1.79
7/25/2011	9.900	9.9	2.293	2.26
3/22/2012	6.000	6	1.792	2.92
9/24/2012	10.000	10	2.303	3.43
3/4/2013	8.100	8.1	2.092	3.87



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Timeframe to meet MtBE Water Quality Objective in OW-1

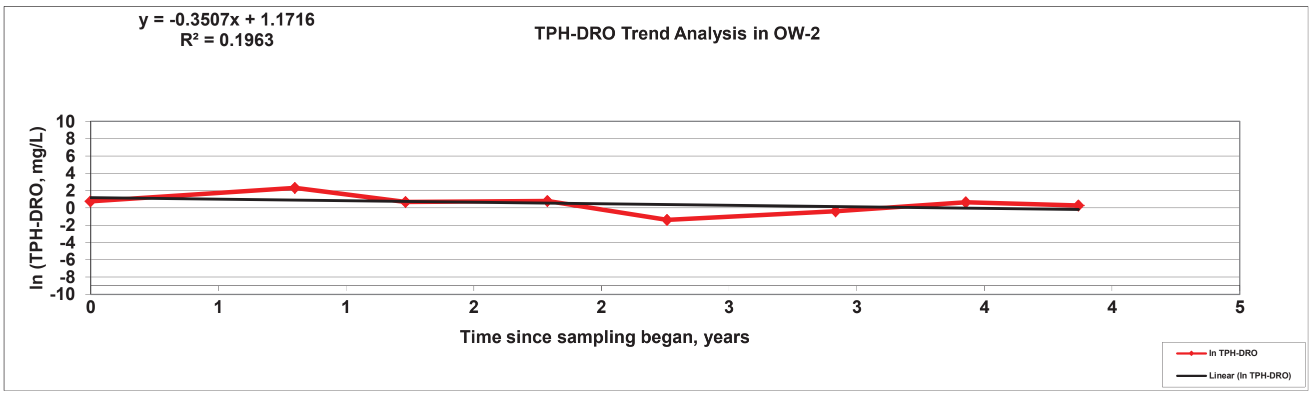
C_{CL} (ug/L)	5		
C_o (ug/L)	8.500	Mean for last 4 Events in OW-1	
k_{point} (slope of regression li	0.3967		
Time to reach cleanup level	1.3	years	

Timeframe to meet MtBE Water Quality Objective in OW-1

C_{CL} (ug/L)	5		
C_o (ug/L)	10.000	Maximum for last 4 Events in OW-1	
k_{point} (slope of regres	0.3967		
Time to reach cleanup level	1.7	years	

TPH-DRO First Order Decay Rate Estimation and Timeframe to Meet Water Quality Objective in OW-2
Former Penske Facility
725 Julie Ann Way
Oakland, California

Sampling Date	TPH-DRO (mg/L)	TPH-DRO (µg/L)	ln TPH-DRO (mg/L)	Elapsed time since 4/22/09 (years)
4/22/2009	2.100	2100	0.742	0.00
2/8/2010	10.000	10000	2.303	0.80
7/16/2010	2.000	2000	0.693	1.23
2/4/2011	2.200	2200	0.788	1.79
7/25/2011	0.250	250	-1.386	2.26
3/22/2012	0.680	680	-0.386	2.92
9/24/2012	1.900	1,900	0.642	3.43
3/4/2013	1.300	1300	0.262	3.87



Formula

t = $-[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Timeframe to meet TPH-DRO Water Quality Objective in OW-2

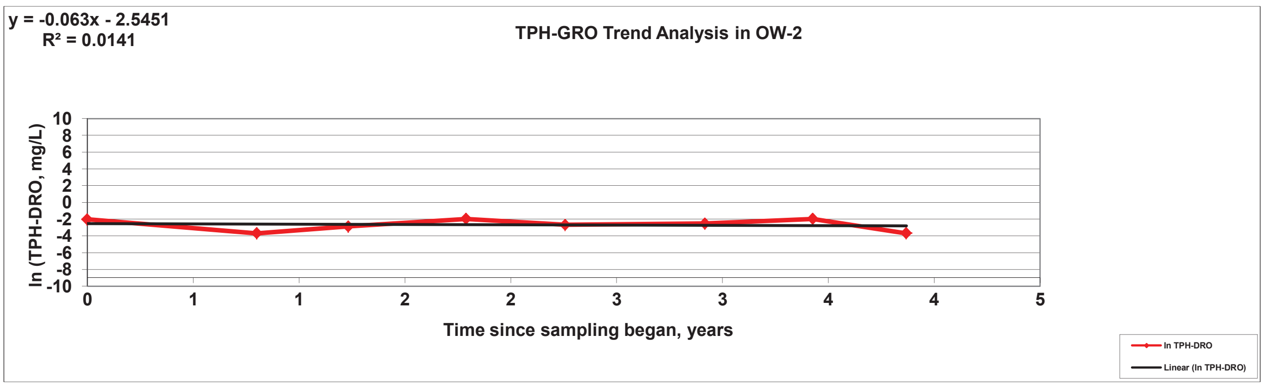
$C_{CL\ (mg/L)}$	0.1	
$C_{o\ (mg/L)}$	1.033	Mean for last 4 Events in OW-2
k_{point} (slope of regression li	0.3507	
Time to reach cleanup level	6.7	years

Timeframe to meet TPH-DRO Water Quality Objective in OW-2

$C_{CL\ (mg/L)}$	0.1	
$C_{o\ (mg/L)}$	1.900	Maximum for last 4 Events in OW-2
k_{point} (slope of regres	0.3507	
Time to reach cleanup level	8.4	years

TPH-GRO First Order Decay Rate Estimation and Timeframe to Meet Water Quality Objective in OW-2
Former Penske Facility
725 Julie Ann Way
Oakland, California

Sampling Date	TPH-GRO (mg/L)	TPH-GRO (µg/L)	ln TPH-GRO (mg/L)	Elapsed time since 4/22/09 (years)
4/22/2009	0.130	130	-2.040	0.00
2/8/2010	0.025	25	-3.689	0.80
7/16/2010	0.057	57	-2.865	1.23
2/4/2011	0.140	140	-1.966	1.79
7/25/2011	0.070	70	-2.659	2.26
3/22/2012	0.081	81	-2.513	2.92
9/24/2012	0.140	140	-1.966	3.43
3/4/2013	0.025	25	-3.689	3.87



Formula

t = $-[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Timeframe to meet TPH-GRO Water Quality Objective in OW-2

$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	0.079	Mean for last 4 Events in OW-1	
$k_{point\ (slope\ of\ regression\ li}$	0.3507		
Time to reach cleanup level		-0.7	years

Timeframe to meet TPH-GRO Water Quality Objective in OW-2

$C_{CL\ (mg/L)}$	0.1		
$C_{o\ (mg/L)}$	0.140	Maximum for last 4 Events in OW-1	
$k_{point\ (slope\ of\ regres}$	0.3507		
Time to reach cleanup level		1.0	years

APPENDIX G
EDR Report

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Stantec

The EDR GeoCheck® Report

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, CA 94621

Inquiry Number: 0924914.1r

February 11, 2003

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06890

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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APPENDICES

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

THE EDR GEOCHECK™ REPORT

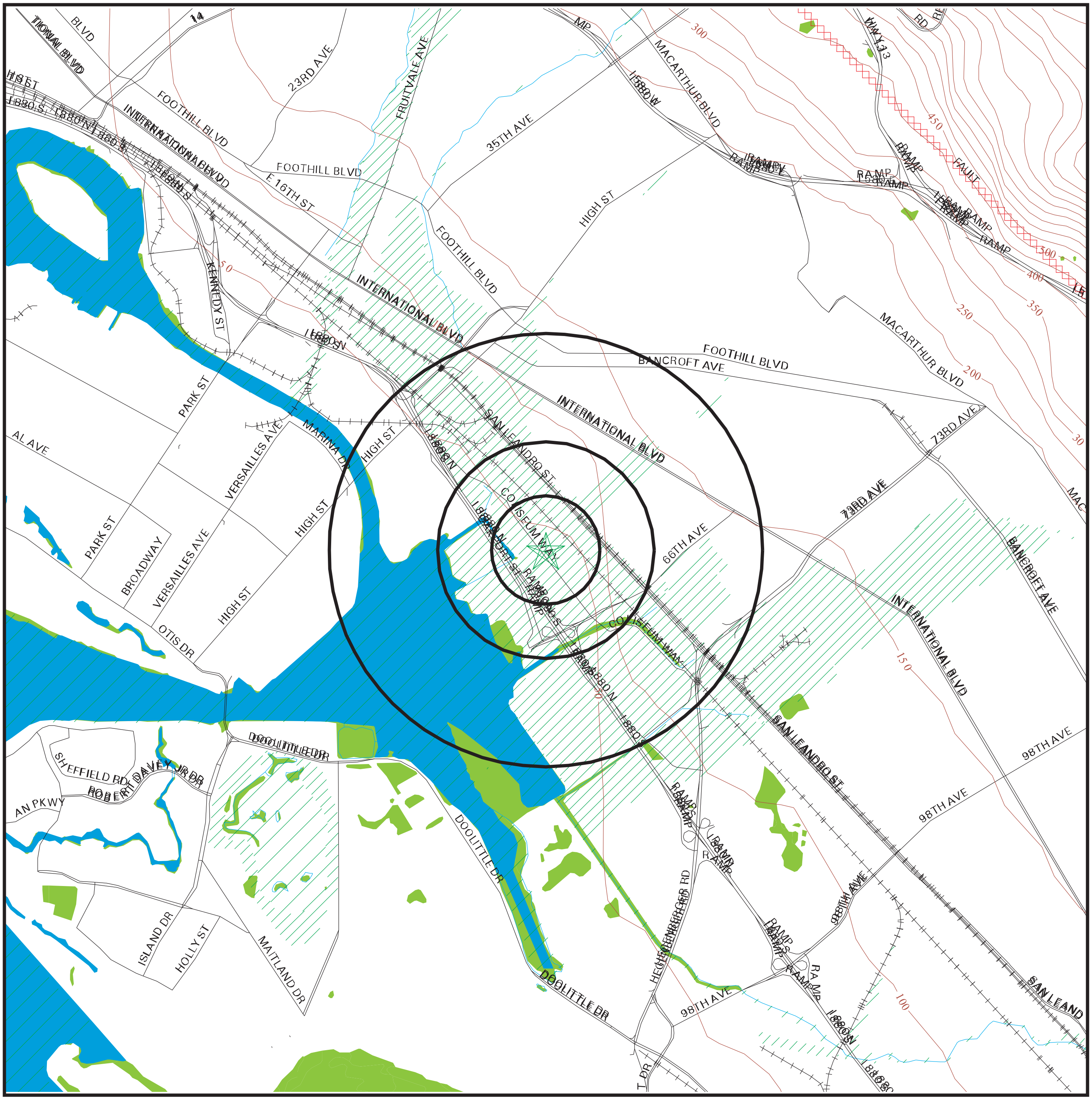
The EDR GeoCheck™ Report is a screening tool designed to assist in the hydrogeological assessment of a particular geographic area based upon publicly available information.

The EDR GeoCheck™ Report consists of the following information within a customer specified radius of the target property.

- topography (25 foot intervals unless otherwise shown)
- major roads
- surface water bodies
- railroad tracks
- flood plains (available in selected counties)
- wetlands (available in selected counties)
- wells including depth to water table and water level variability (in federal and selected state databases)
- public water supply wells (including violations information)
- geologic data
- radon data.

The EDR GeoCheck™ Report is a general area study. It may or may not be accurate at any specific location.

TOPOGRAPHIC MAP – 0924914.1r – 'SECOR/EPA, Inc.'



Source: US Geological Survey 1–Degree Digital Elevation Model
Compiled 09/15/92

0 1/2 1 2

scale in miles

N

- –Major Roads
- –Contour lines (25 foot interval unless otherwise shown)
- –Waterways
- –Wells within search distance to Target Property
- –Earthquake Epicenters (Richter 5 or greater)
- –Power lines
- –Pipe lines
- –Fault lines
- –Water
- –Wetlands
- –100–year flood zone
- –500–year flood zone

TARGET PROPERTY:	Former Penske Truck Leasing Facility	CUSTOMER:	SECOR/EPA, Inc.
ADDRESS:	725 Julie Ann Way	CONTACT:	Kit Soo
CITY/STATE/ZIP:	Oakland CA 94621	INQUIRY #:	0924914.1r
LAT/LONG:	37.7595 / 122.2092	DATE:	February 11, 2003

□ ELL SEARC□
S□MMAR□

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	Q
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary

ROC□ STRATIGRAP□IC □NIT†

Category: Stratifed Sequence

SEARC□ DISTANCE RADI□S INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal Database	1.000
State Database	1.000
PWS Database	1.000

FEDERAL DATABASE □ ELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

NO WELLS FOUND

STATE DATABASE □ ELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

NO WELLS FOUND

P□BLIC □ ATER S□PPL□ S□STEM INFORMATION

NO WELLS FOUND

AREA RADON INFORMATION

Federal EPA Radon Zone for ALAMEDA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 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%

† 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).

CALIFORNIA GOVERNMENT WELL RECORDS SEARCHED

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).

Area Radon Information
Source: USGS
Telephone: 303-202-4210
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: 202-564-9370
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. 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 more than 900,000 wells, springs, and other sources of groundwater.

California Drinking Water Quality Database
Source: Department of Health Services
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.

California Oil and Gas Well Locations for District 2□3□□□and □
Source: Department of Conservation
Telephone: 916-323-1779

STREET AND ADDRESS INFORMATION

APPENDIX H
Case Closure Summary Form and LTCP Checklist

No Further Action Request
Former Penske Truck Leasing Facility

PN: 185702640
January 14, 2014

Site Name: Former Penske Truck Leasing Facili
Site Address: 725 Julie Ann Way, Oakland, California

Site meets the criteria of the Lo□-Threat □nderground Storage Tank □□ST□Case Closure Policy as described belo□.[1]

<u>General Criteria</u> General criteria that must be satisfied by all candidate sites:	
Is the unauthori□ed release located □ithin the service area of a public □ater system□	☐ Yes ☐ No
Does the unauthori□ed release consist only of petroleum□	☐ Yes ☐ No
□as the unauthori□ed □primary□□release from the □ST system been stopped□	☐ Yes ☐ No
□as free product been removed to the ma□imum e□tent practicable□	☐ Yes ☐ No ☐ NA
□as a conceptual site model that assesses the nature□e□tent□and mobility of the release been developed□	☐ Yes ☐ No
□as secondary source been removed to the e□tent practicable□	☐ Yes ☐ No
□as soil or ground□ater been tested for MTBE and results reported in accordance □ith □ealth and Safety Code Section 2□2□□.1□□	☐ Yes ☐ No
Does nuisance as defined by □ater Code section 13□□□ e□ist at the site□	☐ Yes ☐ No
Are there uni□ue site attributes or site-specific conditions that demonstrably increase the risk associated □ith residual petroleum constituents□	☐ Yes ☐ No
<u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria: **1. Ground□ater□** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites:	
Is the contaminant plume that e□ceeds □ater □uality ob□ectives stable or decreasing in areal e□tent□	☐ Yes ☐ No ☐ NA
Does the contaminant plume that e□ceeds □ater □uality ob□ectives meet all of the additional characteristics of one of the five classes of sites□	☐ Yes ☐ No ☐ NA
If YES, check applicable class: ☐ **1** ☐ **2** ☐ **3** ☐ □ ☒ □	

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

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

Case Closure Summary
Leaking □nderground Fuel Storage Tank Program

DATE□ □anuary 1□□2□1□

I. AGENC□ INFORMATION

Agency Name: Alameda County Environmental Health Services	Address: 1131 Harbor Bay Parkway, Suite 250
City/State/Zip: Alameda, CA 94502	Phone: (510) 567-6708
Responsible staff person: Ms. Karel Detterman	Title:

II. CASE INFORMATION

Site Facility Name: Former Penske Truck Leasing Facility		
Site Facility Address: 725 Julie Ann Way, Oakland, CA		
GeoTracker Case No: Hertz-Penske	Local Case No: Alameda County EHS **□LOP□□RO□□□□3□□**	CRWQCB Case No:: SFB RWQCB (REGION 2) - ***CASE #: 01-1153***
URF file date: October 1989	Global ID No. **T□□□□1□1□□2**	
Responsible Parties:	Address:	Phone Number:
Penske Truck Leasing Company, L.P Mr. Chris Hawk	Route 10, Green Hills P.O.Box 7635 Reading, Pennsylvania 19603-7635	(610) 775-6298

Tank No.	Size in Gallons	Contents	Closed in-Place/Removed?	Date
1	10,000	Diesel	Removed	October 1989
2	10,000	Unleaded Gasoline	Removed	October 1989
3	1,000	Diesel	Removed	October 1989
4	550	Waste Oil	Removed	October 1989

III. RELEASE AND SITE C□ARACTERI□ATION INFORMATION

Cause and type of release: UST, Dispenser and product lines		
Site characterization complete? (X) YES ()NO	Date approved by oversight agency:	
Monitoring Wells Installed? (X) YES () NO	Current Number: 8 groundwater monitoring wells and 2 observation wells	Proper screen interval? (X) YES () NO
Highest GW depth below ground surface:4.0 feet bgs'	Lowest Depth: 7.33 feet bgs'	Flow; West /Southwest (Northern Portion of the Site), Undetermined /mounding (Southern Portion of the Site)
Most Sensitive Current Use: : NA/Groundwater is currently not being used for any purpose		
Are drinking water wells affected? () YES (X) NO	Aquifer name: East Plain Bay Subbasin	
Is surface water affected? () YES (X) NO	Nearest/affected An unnamed ditch is located immediately west of the site, parallel to Coliseum Way. The ditch drains to a larger ditch, which appears to drain to the bay. MW-8 is the furthest downgradient well and contains only 0.5 µg/l MTBE. All other analytes are below laboratory MRLs.. The ditch is most influenced by runoff from the adjacent roadways and rail spurs. Rainwater runoff probably results in groundwater recharge in that area during the rainy season, accounting for variability in groundwater flow direction.	
Off-site beneficial use impacts (addresses/locations): NONE		
Report(s) on file? (x) YES () NO	Where is report(s) filed Alameda County EHS	

Treatment and Disposal of Affected Material

Materials	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tanks	Two 10,000-gallon One 1,000-gallon One 550-gallon	Disposed of at H&H Ship Service Company, San Francisco, California	10/1989
Petroleum hydrocarbon – impacted groundwater	• 1,300 gallons	• Disposed of by Hydro-Chem Services at Refinery Services, Patterson, CA	• 10/1989
Soil	• 235 tons of soil	• GSX Services, Buttonwillow, CA	• 10/1989

III. RELEASE AND SITE C□ARACTERI□ATION INFORMATION □CONTIN□ED□

Maximum Documented Contaminant Concentrations--Before and After Cleanup

Contaminant ▼	Soil (mg/Kg)		Water (µg/L)		Contaminant ▼	Soil (mg/Kg)		Water (µg/L)	
	1a Before	2b After	3c Before	3d After		1a Before	2b After	3c Before	3d After
TPH (Gas)	2,100	320	390,000	4,000	Xylenes	185	ND	880	ND
TPH (Diesel)	13,000	12,000	18,000,000	110	MTBE (e)	NA	ND	16	8.1
Benzene	36	4.8	260	ND	Oil and Grease	NA	0.610	NA	NA
Toluene	110	ND	190	ND	VOCs	ND	NA	NA	ND (f)
Ethylbenzene	38	1.0	270	ND					

Comments□
-1 – Tank Removal Report, Scott Co., November 6, 1989
2 – April 2009 Site Assessment
3 – 2013 First Semi-annual Groundwater Monitoring Report
NA- Not Analyzed
ND – Not Detected
a - Soil data is based on soil samples taken after tank removal, but approximately eight years prior to Fenton's reagent treatment
b – Soil data is based on soil samples collected during soil boring advancement in 2009.
c – Groundwater data is based on samples collected from monitoring wells prior to Fentons Reagent treatment in 2000.
d – Groundwater data is based on groundwater collected in March 2013.
e - MTBE was not analyzed until the middle of September 1997 and onwards since there has never been any historical usage or storage of MTBE at the site.
F – Groundwater samples were analyzed for naphthalene from April 2009 through March 2013

I□. CLOS□RE

Does completed corrective action protect existing beneficial uses per the Regional Basin Plan? (X) YES () NO

Does the completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? (X) YES () NO

Does corrective action protect public health for current land use? (X) YES () NO

Site management requirements: None

Should corrective action be reviewed if land use changes? (X) Yes () No

Monitoring wells to be Decommissioned: (X) Yes () No () N/A	No. Decommissioned: 8 groundwater monitoring wells and 2 observation wells	No. Retained: 0

Fee Title Certification: In Progress

GeoTracker Input Verification: In Process

List Enforcement Actions Taken:

List enforcement actions rescinded: None

□. LOCAL AGENC□ REPRESENTATI□E DATA

Name: Ms. Karel Detterman	Title:
Signature:	Date:

□I. R□ □CB NOTIFICATION

Date Submitted to RB:	RB Response:	
RWQCB Staff Name: Ms.Cherie McCaulou	Title:	Date:

□II. ADDITIONAL COMMENTS□DATA□ETC.