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ACEH Low Threat Closure Policy Checklist and Site Conceptual Model
Former BP Station #11109,
4280 Foothill Blvd
Oakland, California
ACEH Case #RO0000426

ENVIRONMENT

"I declare that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Date:
June 28, 2013

Submitted by:

ARCADIS U.S., Inc

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Executive Summary

This Alameda County Environmental Health (ACEH) Low Threat Closure (LTC) Policy Checklist and Site Conceptual Model (SCM) was prepared by ARCADIS U.S., Inc. (ARCADIS) on behalf of Atlantic Richfield Company (ARCO), a BP affiliated company, for the former BP service station No.11109 located at 4280 Foothill Boulevard in Oakland, California (the Site; Appendix A). This report has been prepared in response to discussions between ARCADIS and ACEH during a meeting on March 26, 2013. In the meeting ACEH presented ARCADIS with a draft version of ACEH's LTC Policy Checklist and stated that the LTC Policy Checklist, along with a SCM would be required to determine if the Site is a candidate for closure as a low-threat fuel site.

This report package presents relevant site background information, summarizes previous site investigations, lists the removal action activities and results, presents an assessment of risk to public health and the environment, and includes an evaluation of site conditions relevant to the State Water Resources Control Board (State Water Board) *Low-Threat Underground Storage Tank Case Closure Policy*, adopted by the State Water Board on May 1, 2012 (State Water Board 2012) per the ACEH-provided LTC Policy Checklist.

The objective of this report is to provide the documentation required for ACEH to approve site closure as a low-risk fuel site as described in the LTC Policy (State Water Board 2012). This report is organized into the following sections:

Section 1 - Executive Summary

Section 2 – SCM and Appendices

Section 3 – ACEH LTC Policy Checklists

- General Criteria A through H
- Media Specific Criteria – Groundwater
- Media Specific Criteria – Petroleum Vapor Intrusion to Indoor Air
- Media Specific Criteria – Direct Contact and Outdoor Air Exposure

Section 4 – Supplemental ACEH SCM Forms

- Site Well Construction Details
- Well Survey

Site data collected to date has demonstrated that both the general and applicable media-specific criteria are satisfied according to the measures described in the State Water Board LTC Policy, and therefore, the leaking

UST case is generally considered to present a low threat to human health, safety, and the environment for the following reasons:

- Petroleum hydrocarbon sources, including free product and other potential secondary sources, have been removed to the extent practical.

- Current groundwater concentrations are: Gasoline Range Organics (GRO) ranging from below detection (<50 micrograms per liter [µg/L]) to 16,000 µg/L, benzene ranging from below detection (<0.50 µg/L) to 250 µg/L, toluene ranging from below detection (<0.50 µg/L) to 620 µg/L, ethylbenzene ranging from below detection (<0.50 µg/L) to 680 µg/L, xylenes ranging from below detection (<1.0 µg/L) to 2,200 µg/L, and methyl tert-butyl ether (MTBE) ranging from below detection (<0.50 µg/L) to 17 µg/L. Concentrations of constituents of potential concern (COPCs) above screening levels are limited to the site and not migrating off-site, as indicated by historical data collected at downgradient monitoring well, C-10, located on the adjacent Chevron Site (ACEH Case #RO0000427).

- The Site has been adequately characterized.

- The dissolved GRO, benzene, and MTBE plumes are stable and/or decreasing and do not exceed the maximum extents from the point of release as specified in the LTC Policy.

- Sensitive receptors are not likely to be impacted, including surface-water bodies, municipal wells and drinking water sources based on the limited historical extent of the dissolved GRO, benzene, and MTBE plumes and plume stability.

- The Site presents no current or potential risk to human health or the environment.

Petroleum-hydrocarbon affected groundwater appears to be limited to monitoring wells located at the southern extent of the site (MW-5, MW-10, MW-11 and MW-12), which have reported the highest historical groundwater concentrations. Concentrations of COPCs above ESLs were also detected at MW-4, which is downgradient of the dispenser islands. Separate phase hydrocarbons (SPH) were detected in the most recent monitoring event (March 2013) in monitoring locations MW-5, MW-10, and MW-12, located onsite the southwestern corner of the site and downgradient of the USTs.

In 17 monitoring events conducted between the First Quarter 2006 through the First Quarter 2013 both a southwest and northwest groundwater flow direction were reported at the Site. Historical interpretation of groundwater monitoring data by previous consultants indicated a shift in the groundwater flow direction from southwest to northwest in the third quarter 2009. However, review of historical field notes and groundwater contours indicates that the interpretation of groundwater contours following 2009 did not consider groundwater measurements from the adjacent property, and thus the observed shift in flow direction is not an accurate depiction of local groundwater flow direction. Groundwater elevations collected onsite in March 2013 and groundwater elevations collected at the adjacent Chevron Site during the first quarter 2013, support the current interpretation that the overall groundwater flow direction in the vicinity of the Site is to the southwest, as observed prior to 2009. No data for the site was available prior to 2006.

A cumulative 187 gallons of free product and free product/water mixture have been removed from the site to date. SPH was detected on-site during the most recent monitoring event (March 2013) at thicknesses ranging from sheen to 0.04 feet in monitoring wells MW-5, MW-10, and MW-12. Absorbent socks were placed in each of these wells in May 2013 to remove the minimal SPH observed in March 2013. Results from dual-phase extraction and SPH bail-down events presented in the summary letter submitted to ACEH in June 2013 indicate that SPH remaining at the site is limited in extent and mobility. Additionally, historical SPH has not been detected at off-site monitoring well C-10 (adjacent Chevron Site) located downgradient of the impacted wells, indicating that SPH is not migrating.

All the wells that contain (or recently contained) COPC concentrations in groundwater generally indicate decreasing or stable trends. Groundwater samples collected from MW-11, which is located in the vicinity of MW-5, MW-10, and MW-12, during the most recent sampling event (First Quarter 2013) indicated that COPCs have decreased from initial concentrations observed following installation in 2009. Similarly, historical data indicate concentrations of MTBE at MW-4 located cross gradient of the dispenser islands have steadily decreased. Trends for COPCs in wells MW-5, MW-10, and MW-12 cannot currently be determined due to the presence of free product; however, concentrations of COPCs are anticipated to continue to decrease following removal actions discussed above and continued attenuation of residual free product. COPCs (with the exception of MTBE which was below ESLs during the most recent sampling event) have not been detected in downgradient well C-10, indicating that impacts to groundwater due to residual free product on-site are not migrating off-site.

Site data collected to date has demonstrated that both the general and applicable media-specific criteria are satisfied according to the measures within State Water Board LTC Policy, and therefore, the leaking UST case is generally considered to present a low threat to human health, safety, and the environment. As presented in Section 3 of this report, the site fulfills each of the *General Media Specific* criteria (classes A through H) in accordance with the State Water Board LTC Policy. Class A of the *Groundwater-Media Specific* criteria is fulfilled according to available site data. The Site qualifies for an exemption from the *Petroleum Vapor Intrusion to Indoor Air* criteria as the Site is an active commercial fueling facility and the historical release characteristics are comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. The Site satisfies the *Direct Contact and Outdoor Air Exposure* criteria as it fulfills the requirements in the soil 0 to 5 feet bgs, 5 to 10 feet bgs, and 0 to 10 feet bgs scenarios and Volatilization to Outdoor Air scenario.

Available data from the Site suggests that the Site is adequately characterized and there are no additional data gaps. The Site appears to be a candidate for closure as a low-risk fuel site as described in the State Water Board LTC Policy. ARCADIS recommends that a status of no further action (NFA) be granted, and the Site be granted regulatory closure. During case closure evaluation ARCADIS requests the following:

- Suspension of groundwater monitoring and reporting, which includes the August 2013 sampling event, pending approval of site closure by the ACEH.

- Preparation of a work plan for monitoring well decommissioning upon site closure approval by ACEH.

ARCADIS

SCM Table

Table 1
Site Conceptual Model
Former BP Station #11109
4280 Foothill Boulevard Oakland, California 94601
ACEH Case #RO0000426

SCM Element	SCM Sub-Element	Description	Potential Data Gaps	How To Address	References
Geology and Hydrology	Regional	**Geology:** According to the East Bay Plain Groundwater Basin Beneficial Use Evaluation Report (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub-Area contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. There are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area historically pumped one to two million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merritt sand in West Oakland was an important part of the early water supply for the City of Oakland. It is shallow (up to 60 feet), but before the turn of the last century, septic systems contaminated the water supply wells. **Hydrology:** Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of ground-water flow is from east to west or from the Hayward Fault to the San Francisco Bay. Ground-water flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction. In the southern end of the study area however, near the San Lorenzo Sub-Area, the direction of flow may not be this simple. According to information presented in East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, the small set of water level measurements available seemed to show that the ground water in the upper aquifers may be flowing south, with the deeper aquifers, the Alameda Formation, moving north. The nearest natural drainage is Peralta Creek, located approximately 1,500 feet west of the Site. Peralta Creek flows generally north to south at its closest distance from the Site.	None	NA	ARCADIS U.S. Inc. 2010. *Revised Feasibility Study and Corrective Action Plan, Former BP Service Station No. 11109. October* 8.
	Site	**Geology:** Soils underlying the Site have been consistently characterized as interbedded layers of sandy clay or silty clay, clayey silt, clayey sand, and clayey gravel with occasional sand or gravelly sand. **Hydrology:** Groundwater has typically been encountered at the site from approximately 6 to 30 feet bgs. Resulting groundwater elevations have varied from approximately 10 ft above mean sea level to 35 ft amsl. DTW measurements in the most recent sampling event (March 2013) ranged from 9.48 ft below top of casing (bTOC) at MW-10 to 14.36 ft bTOC at MW-6. Resulting groundwater surface elevations on-site ranged from 29.05 feet above mean sea level (ft msl) at MW-8 to 34.06 ft msl at MW-9. Groundwater flow at the Site has historically been reported as varying between northwest and southwest at gradients ranging from 0.05 ft/ft to 0.006 ft/ft. Historical interpretation of groundwater monitoring data by previous consultants indicated a shift in the groundwater flow direction from southwest to northwest in the third quarter 2009. However, review of historical field notes and groundwater contours indicates that the interpretation of groundwater contours following 2009 did not consider groundwater measurements from the adjacent property, and thus the observed shift in flow direction is not entirely supported. Groundwater elevations collected in March 2013 and consideration of groundwater measurements collected at the adjacent Chevron Site support the current interpretation that the overall groundwater flow direction in the vicinity of the Site is to the southwest, as observed prior to 2009. Groundwater elevations calculated for the Site and the adjacent Chevron facility yielded an average horizontal gradient of approximately 0.03 ft/ft.	None	NA	ARCADIS U.S. Inc. 2010. *Revised Feasibility Study and Corrective Action Plan, Former BP Service Station No. 11109. October* 8. ARCADIS U.S. Inc. 2013. *Fourth Quarter 2012 and First Quarter 2013 Semi-Annual Groundwater Monitoring Report, Former BP Station #11109, 4280 Foothill Blvd, Oakland, California.* April 30.
Surface Water Bodies and other potential receptors	--	The closest surface water body is Peralta Creek, located approximately 3,500 feet west of the site. No other surface water bodies are located within a one-half mile radius of the site.	None	NA	Broadbent & Associates, Inc. 2008. *Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.* . November 7.
Nearby Wells	--	A sensitive receptors survey was conducted by Alton Geoscience on 29 January 1992. This survey concluded that no public water supply wells are located within 2,500 feet of the site and no private water supply wells are located within 1,000 feet of the site. In 2013 the East Bay Municipal Utility District (EBMUD) confirmed no public water supply wells exist within 2,500 feet of the site. The nearest residence was stated to be adjacent the site. The playing fields of Fremont High School are located approximately 100 feet from the Site and the nearest hospital is approximately 6,000 feet away.	None	NA	Broadbent & Associates, Inc. 2008. *Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.* . November 7. Phone conversation with Tom Francis, Senior Civil Engineer of EBMUD, on June 27, 2013.
Beneficial Uses	--	According to the East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, the City of Oakland does not have "any plans to develop local groundwater resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity." However, the California Regional Water Quality Control Board – San Francisco Bay Region's Basin Plan denotes existing beneficial uses of municipal and domestic supply (MUN), industrial process supply (PROC), industrial service supply (IND), and agricultural supply (AGR) for the East Bay Plain ground-water basin.	None	NA	Broadbent & Associates, Inc. 2008. *Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.* . November 7.

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SCM Element	SCM Sub-Element	Description	Potential Data Gaps	How To Address	References
Local Water Supply	--	Local water is supplied by the East Bay Municipal Water District (EBMUD). The supplier's water source is provided by Sierra snow melt and the Pardee Reservoir. The current water supply management plan for EBMUD indicates potential use of the East Bay Plain Basin for temporary storage of drinking water in wet years for eventual extraction; however, planned injection and extraction wells are located 8 miles south the site and will be screened within the deep aquifer.	None	NA	Broadbent & Associates, Inc. 2008. *Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.* . November 7. East Bay Municipal Utility District. 2012 Water Supply Management Program 2040 Plan. April.
Consituents of Potential Concern	--	*Soil:* The constituents of potential concern (COPCs) in soil at the Site include Total Petroleum Hydrocarbons as Gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (collectively BTEX).	None	NA	Broadbent & Associates, Inc. 2008. Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.. November 7. Broadbent & Associates, Inc. 2009. Soil and Ground-Water Investigation Report, Former BP Service Station No. 11109, 4280 Foothill Boulevard, Oakland, California. June 17.
		Groundwater: The constituents of potential concern (COPCs) in soil at the Site include Total Petroleum Hydrocarbons as Gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (collectively BTEX).	None	NA	ARCADIS U.S. Inc. 2013. Fourth Quarter 2012 and First Quarter 2013 Semi-Annual Groundwater Monitoring Report, Former BP Station #11109, 4280 Foothill Blvd, Oakland, California. April 30.
Potential Sources	--	Historical reports and observed contaminant concentrations indicate the primary source area is the UST complex located in the northeastern portion of the Site. Concentrations of petroleum hydrocarbons have also been observed in shallow soils beneath the dispenser pump islands.	HC in southern portion appear to be smear-zone mass	NA	Broadbent & Associates, Inc. 2008. *Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.* . November 7.
Nature and Extent of Environmental Impacts	COC Extent in Soil	Petroleum-hydrocarbon affected soil has been encountered during removal of USTs, excavation activities, and soil boring and monitoring well installation events at the site. Laboratory analysis of soil samples collected from soil borings confirmed the presence of petroleum hydrocarbons in soils beneath the site at concentrations exceeding SFR-RWQCB Environmental Screening Levels (ESLs) for TPHg and BTEX constituents (Table K-2). Elevated petroleum hydrocarbon concentrations were primarily detected in soil samples collected at 10 to 30 feet bgs from soil borings installed downgradient of the UST complex and dispenser islands. Maximum concentrations of COCs appear to primarily have been detected within the range of historical groundwater elevations, indicating historical impacts are primarily within the smear zone. Maximum concentrations of COCs, detected in samples collected from soil boring location MW-11 at 24 feet bgs, are as follows: TPHg at 6,500 mg/kg, benzene at 22 mg/kg, toluene at 86 mg/kg, ethylbenzene at 95 mg/kg, and xylenes at 460 mg/kg. Elevated concentrations of TPH (greater than 1,000 mg/kg) were also observed at boring locations MW-5, MW-10, and MW-12, additionally within the range of historical groundwater elevation fluctuations. Soil analytical data collected during the monitoring well installation activities in 1990 by AGS and subsurface investigations in 1990 by KEI and 1994 by EMCON indicate that the lateral extent of COCs in the vicinity of the USTs and at the northwestern, northeastern, and southeastern boundaries have been delineated. The extent of COCs in soil on the southwestern boundary has not been delineated on-site beyond exceedances observed in soil boring locations MW-5, MW-10, MW-11, and MW-12; however, historical soil analytical data indicates that impacts are primarily limited to the smear zone at all four boring locations. Soil boring data collected from downgradient monitoring well C-10 at the adjacent Chevron site indicates that COCs from the Site were not detected above screening levels downgradient of the site. Supporting groundwater data collected from boring C-10 have been below laboratory reporting limits for TPHg and BTEX since monitoring was initiated, indicating COCs are not migrating off-site and the current extent of impacts to soil is limited to the immediate vicinity of boring locations MW-5, MW-10, MW-11, and MW-12.	None	NA	Broadbent & Associates, Inc. 2008. *Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.* . November 7. Broadbent & Associates, Inc. 2009. Soil and Ground-Water Investigation Report, Former BP Service Station No. 11109, 4280 Foothill Boulevard, Oakland, California.. June 17. Cambria Environmental Technology, Inc. 2003. Well Installation Report/Site Summary, Chevron Station #9-0076, 4265 Foothill Boulevard, Oakland, California. October 8. SFRWQCB. 2013. Environmental Screening Levels, Interim Final. May.
	COC Extent in Groundwater	The site specific clean up limits used are based on SFR-RWQCB ESLs (Table F-3) for TPHg (100 µg/L), benzene (1 µg/L), toluene (150 µg/L), ethylbenzene (300 µg/L), total xylenes (1,800 µg/L) and MTBE (13 µg/L). Groundwater has been sampled and analyzed for fuel hydrocarbons and oxygenates on a quarterly or semi-annual basis since 1990. Historically, analytes detected above ESLs in groundwater include TPHg, Benzene, Toluene, Ethylbenzene, Xylenes, and MTBE. Historical and recent groundwater data indicates that groundwater impacts are limited to the southern portion of the site downgradient of the former USTs. Maximum TPHg and BTEX concentrations were detected at wells MW-5, MW-10, and MW-12, at the southern extent of the site. Data collected during the most recent groundwater sampling event (March 2013) indicate that MTBE is still above screening levels in well MW-4 and TPHg and benzene are above screening levels in well MW-11. Monitoring wells MW-5, MW-10, and MW-12 were not sampled due to the presence of SPH. Offsite downgradient well, C-10, has not indicated the presence of site COCs since monitoring began in 2003 with the exception of MTBE which has been below ESLs since 2012. The nature and extent of COCs exceeding ESLs at the site is discussed below by analyte.	None	NA	ARCADIS U.S. Inc. 2013. *Fourth Quarter 2012 and First Quarter 2013 Semi-Annual Groundwater Monitoring Report, Former BP Station #11109, 4280 Foothill Blvd, Oakland, California.* April 30. SFRWQCB. 2013. Environmental Screening Levels, Interim Final. May.

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SCM Element	SCM Sub-Element	Description	Potential Data Gaps	How To Address	References
Nature and Extent of Environmental Impacts	COC Extent in Groundwater	*TPH-g:* The historical maximum concentration of 270,000 µg/L was detected in a groundwater sample collected on October 7, 1994 from well MW-5, located at the southern extent of the site. The most recently observed concentration at MW-5 was 67,000 µg/L in March 2010.During the most recent sampling event on March 20, 2013, TPHg was detected in monitoring well MW-11 above the ESL at a concentration of 16,000 µg/L. Concentrations of TPHg above ESLs have been observed within the past two years at wells MW-4, MW-7, and MW-11. Samples have not been collected from monitoring wells MW-5 and MW-12 since March 2010 and well MW-10 since February 2011 due to the presence of free product; however the TPHg concentrations in the most recently collected samples exceeded ESLs. (67,00 µg/L at MW-5; 61,000 µg/L at MW-10; 39,000 µg/L at MW-12). *Benzene*: The historical maximum concentration of 13,000 µg/L was detected in a groundwater sample collected on October 3, 1991 from well MW-5, located at the southern extent of the site. The most recently observed concentration at MW-5 was 1,400 µg/L in March 2010. During the most recent sampling event on March 20, 2013, benzene was detected in monitoring well MW-11 above the ESL at a concentration of 250 µg/L. Concentrations of benzene above ESLs have been observed within the past two years at wells MW-7 and MW-11. Samples have not been collected from monitoring wells MW-5 and MW-12 since March 2010 and well MW-10 since February 2011 due to the presence of free product; however the benzene concentrations in the most recently collected samples exceeded ESLs (1,400 µg/L at MW-5; 7,000 µg/L at MW-10; 4,800 µg/L at MW-12). *Toluene*: The historical maximum concentration of 7,400 µg/L was detected in a groundwater sample collected on October 3, 1991 from well MW-5, located at the southern extent of the site. The most recently observed concentration at MW-5 was 380 µg/L in March 2010. During the most recent sampling event on March 20, 2013, toluene was detected in monitoring well MW-11 above the ESL at a concentration of 620 µg/L. Concentrations of toluene above ESLs have been observed within the past two years at well MW-11 only. Samples have not been collected from monitoring wells MW-5 and MW-12 since March 2010 and well MW-10 since February 2011 due to the presence of free product; however the toluene concentrations in the most recently collected samples exceeded ESLs (380 µg/L at MW-5; 5,300 µg/L at MW-10; 1,000 µg/L at MW-12). *Ethylbenzene*: The historical maximum concentration of 3,100 µg/L was detected in groundwater samples collected on October 28, 2009 and March 23, 2010 from wells MW-10 and MW-12, respectively. Both wells are located at the southern extent of the site. During the most recent sampling event on March 20, 2013, ethylbenzene was detected in monitoring well MW-11 above the ESL at a concentration of 680 µg/L. Concentrations of ethylbenzene above ESLs have been observed within the past two years at well MW-11 only. Samples have not been collected from monitoring wells MW-5 and MW-12 since March 2010 and well MW-10 since February 2011 due to the presence of free product; however the ethylbenzene concentrations in the most recently collected samples exceeded ESLs (620 µg/L at MW-5; 2,800 µg/L at MW-10; 3,100 µg/L at MW-12). *Total xylenes*: The historical maximum concentration of 12,000 µg/L was detected in a groundwater sample collected on October 28, 2009 from well MW-10, located at the southern extent of the site. The most recently observed concentration at MW-5 was 1,800 µg/L in March 2010. During the most recent sampling event on March 20, 2013, xylenes were detected in monitoring well MW-11 above the ESL at a concentration of 2,200 µg/L. Concentrations of xylenes above ESLs have been observed within the past two years at well MW-11 only. Samples have not been collected from monitoring wells MW-5 and MW-12 since March 2010 and well MW-10 since February 2011 due to the presence of free product; however the xylenes concentrations in the most recently collected samples exceeded ESLs (1,800 µg/L at MW-5; 6,400 µg/L at MW-10; 12,000 µg/L at MW-12). *MTBE:* The historical maximum concentration of 2,002 µg/L was detected in a groundwater sample collected on April 7, 1994 from well MW-5, located at the southern extent of the site. During the most recent sampling event on March 20, 2013, MTBE was detected in monitoring well MW-4 above the ESL at a concentration of 17 µg/L. Concentrations of MTBE above ESLs have been observed within the past two years at wells MW-3, MW-4, and MW-11.Samples have not been collected from monitoring wells MW-5 and MW-12 since March 2010 and well MW-10 since February 2011 due to the presence of free product; however the MTBE concentrations in the most recently collected samples were below method detection limits (<5.0 µg/L at MW-5; <100 µg/L at MW-10; <25 µg/L at MW-12).	None	NA	ARCADIS U.S. Inc. 2013. *Fourth Quarter 2012 and First Quarter 2013 Semi-Annual Groundwater Monitoring Report, Former BP Station #11109, 4280 Foothill Blvd, Oakland, California.* April 30. SFRWQCB. 2013. Environmental Screening Levels, Interim Final. May.

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SCM Element	SCM Sub-Element	Description	Potential Data Gaps	How To Address	References
Nature and Extent of Environmental Impacts	SPH Extent in Groundwater	SPH was first detected in on-site well MW-5 during quarterly monitoring and sampling activities conducted on December 4, 1991 by KEI. Free product has been historically observed in wells MW-5, MW-10, MW-11, and MW-12 with thicknesses ranging from sheen to 1.30 ft. Consistent free product measurement and removal began in 1992 for MW-5 and 2009 for MW-10, MW-11, and MW-12. A cumulative volume of 187 gallons of free product and free product/water mixture has been removed at the site to date. Free product thicknesses increased at MW-5, MW-10, and MW-12 following a dual-phase extraction pilot study; therefore, three LNAPL bail-down events were performed monthly from November 2012 to January 2013 to characterize the extent of residual LNAPL. Results from the bail-down test indicate the extent of LNAPL remaining at the site is limited, and decreasing rates of LNAPL recharge during bailing activities indicate the mobility of LNAPL at the site is very limited. Additionally, LNAPL has not been detected at downgradient off-site well C-10 at the adjacent Chevron station, indicating that LNAPL is not migrating.	None	NA	Broadbent & Associates, Inc. 2008. *Initial Site Conceptual Model, Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California.* . November 7. ARCADIS U.S. Inc. 2013. Results of DPE Test and SPH Removal, Former BP Station #11109, 4280 Foothill Blvd, Oakland, California. May.
Migration Pathways	Potential Conduits	Although ARCADIS has not conducted a utility survey at this Site, typical utility trenches are located at a depth of 2 to 4 feet bgs. Although historically, groundwater has been encountered as shallow as 2.3 feet bgs, groundwater has generally been encountered 7 to 15 feet bgs.	None	NA	ARCADIS U.S. Inc. 2013. Fourth Quarter 2012 and First Quarter 2013 Semi-Annual Groundwater Monitoring Report, Former BP Station #11109, 4280 Foothill Blvd, Oakland, California. April 30.
Potential Release Mechanisms and Exposure Pathways	Volatilization	A potential release mechanism at the Site may include volatilization of COPCs in subsurface soil to indoor air of current and future onsite commercial buildings, outdoor air, or air within a trench used by a future onsite utility worker. Another potential release mechanism at the Site may include volatilization of COPCs in groundwater to indoor air of current and future onsite commercial buildings, outdoor air, and/or indoor air of offsite commercial buildings or future offsite residences, or air within a trench used by a future onsite utility worker. In general, exposure to petroleum vapors migrating from soil or groundwater to indoor air may pose unacceptable human health risks. However, in many petroleum release cases, potential human exposures to vapors are mitigated by bioattenuation processes as vapors migrate toward the ground surface. Additionally, exposures to volatile petroleum hydrocarbon constituents associated with historical fuel system releases are insignificant relative to typical exposures from surface spills and fugitive vapors at active service stations. Therefore, the exposure pathway for inhalation of indoor air from possible volatilization of site-related soil and groundwater constituents is potentially complete but insignificant for current and future onsite service station workers. However, to support risk-based decision making for the Site, it is assumed that COPCs in groundwater may volatilize into current and future offsite buildings. Although the COPCs may volatilize from subsurface soil and/or groundwater to outdoor air or air within a utility trench and may be inhaled by onsite or offsite potential receptors, this exposure pathway is considered to be insignificant given the atmospheric dilution effects from wind.	None	NA	
	Leaching to Groundwater	Petroleum hydrocarbons released from USTs and associated piping and dispensers also may leach from soil to groundwater. This release mechanism is likely responsible for the majority of historical groundwater impacts. However this release mechanism has likely been partially mitigated through the removal of impacted soil, weathering, remediation, and natural attenuation. Current leaching to groundwater risks are due to the presence of free product in monitoring wells MW-5, MW-10, and MW-12. Historical and recent LNAPL removal activities have removed a significant fraction of recoverable LNAPL at the site to the extent practicable. Residual LNAPL may serve as a source to groundwater; however, downgradient concentrations at the adjacent Chevron site indicate that impacts to groundwater are limited in extent and are not migrating off-site.	None	NA	
	Direct Contact with Groundwater	As described previously, groundwater at the Site is not used as a potable source at this time and is not expected to be used as a drinking water source in the near future. No water wells are located within a 1,000-foot radius of the site. Therefore, potential direct contact exposures to COPCs in groundwater, such as tap water ingestion, dermal contact with tap water and inhalation of volatile organic compounds (VOCs) released from tap water, are not expected to occur for current and future onsite commercial workers, and current and future offsite commercial workers. In the future, onsite construction workers may be directly exposed to groundwater while performing routine utility activities in subsurface trenches. Typical utility trenches are located at a depth no greater than 8 feet bgs. During the March 2013 groundwater monitoring event, groundwater was encountered at depths ranging from approximately 10 to 15 feet bgs. Typically at construction sites when groundwater is exposed, dewatering occurs or workers are not required to work in standing water. Thus, it is unlikely that future onsite utility trench workers will be directly exposed to constituents in groundwater.	None	NA	

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ACEH Case #RO0000426

SCM Element	SCM Sub-Element	Description	Potential Data Gaps	How To Address	References
Potential Release Mechanisms and Exposure Pathways	Direct Contact with Soil	Constituents adhered onto dust particles may migrate from exposed subsurface soil by wind erosion to outdoor air and be breathed by potential onsite and offsite receptors. This transport mechanism is unlikely given that re-development of the Site is not planned, and the Site is either covered with a building, fuel dispensers, landscaping or asphalt pavement and soil is not exposed at the surface. However, potential receptors including future onsite construction/utility trench workers may be directly exposed to constituents in surface and subsurface soil via incidental ingestion, dermal contact and inhalation of dust particles in trench air. If subsurface work is conducted at the Site, monitoring may be required during excavation.	None	NA	
Potential Receptors	Potential Ecological Receptors	Since the Site is devoid of ecological habitat and surface water is absent, it is reasonable to assume that ecological receptors are absent from the Site and will also not be present in the future. As discussed previously, the Site is located approximately 3,500 feet east of Peralta Creek, which is the nearest surface water body to the Site. Based on the approximate groundwater flow direction at the Site (southwest), it is not possible that groundwater from the Site may migrate towards the surface water receptor, with subsequent exposures to aquatic organisms. Additionally, given the sizable distance to the creek and the potential for COPCs to bioattenuate and dilute, this transport mechanism is considered insignificant. Based on this analysis, potential exposure pathways for ecological receptors are incomplete. Potentially complete exposure pathways for human receptors are presented in the following section.	None	NA	
	On-site and Off-site	Potential receptors were identified based on current and future land use(s) at the Site. Current and reasonably anticipated future land use at the Site are commercial (i.e., continued operation as a service station). Potential current and future human receptors at the Site include: • on-site commercial workers, • off-site commercial workers on adjacent, downgradient properties, and • future on-site construction/utility workers. Although residential properties are located adjacent to the northwestern boundary of the Site (cross-gradient), the downgradient Site is commercial service station (LUST Cleanup Site; Case # RO0000427) and likely to remain commercial use in the future. However, future hypothetical off-site residents are considered potential receptors to support conservative risk-based decision making for the Site.	None	NA	
Exposure Pathway Evaluation	Current and Future On-site Commerical Workers	• No complete exposure pathways The COPCs may volatilize from soil and groundwater to soil gas and migrate to the indoor air of on-site building structures. Inhalation of volatile COPCs in indoor air by on-site commercial workers at this site may be a potentially complete exposure pathway. However, the potential vapor migration exposure pathway for current and future onsite indoor service station workers is likely to be insignificant compared to routine exposures associated with the profession. The workplace vapor concentrations are routinely much higher than any levels expected from vapor migration from the subsurface. Given the presence of indoor and exterior building sources of petroleum hydrocarbons, and the fact that fuel operations are currently conducted at the Site and that operations at the Site are likely to remain the same in the future, subsurface residual impacts are unlikely to contribute significantly to indoor VOC levels. Thus, inhalation of volatile COPCs in indoor air by current and future on-site commercial workers is not a significant exposure pathway.	None	NA	
	Current and Future Off-Site Commercial Workers	• Groundwater transport off-site and vapor migration into indoor air The COPCs may volatilize from groundwater to soil gas and migrate to the indoor air of off-site building structures. Inhalation of volatile COPCs in indoor air by current and future off-site commercial workers is a potentially complete exposure pathway. However, given that the downgradient Site is commercial service station (LUST Cleanup Site; Case # RO0000427) and likely to remain commercial use in the future inhalation of volatile COPCs in indoor air by current and future off-site commercial workers is likely to be insignificant compared to routine exposures associated with the profession. Direct-contact exposure pathways (i.e., ingestion, dermal contact, and inhalation of volatile emissions from tap water) from groundwater are currently incomplete, since the community uses municipal-supplied water for potable uses. It is assumed that current land and beneficial water uses will continue in the foreseeable future. Therefore, these pathways are also assumed to be incomplete in the reasonably foreseeable future for off-site commercial workers located on downgradient, adjacent properties.	None	NA	

Table 1
Site Conceptual Model
Former BP Station #11109
4280 Foothill Boulevard Oakland, California 94601
ACEH Case #RO0000426

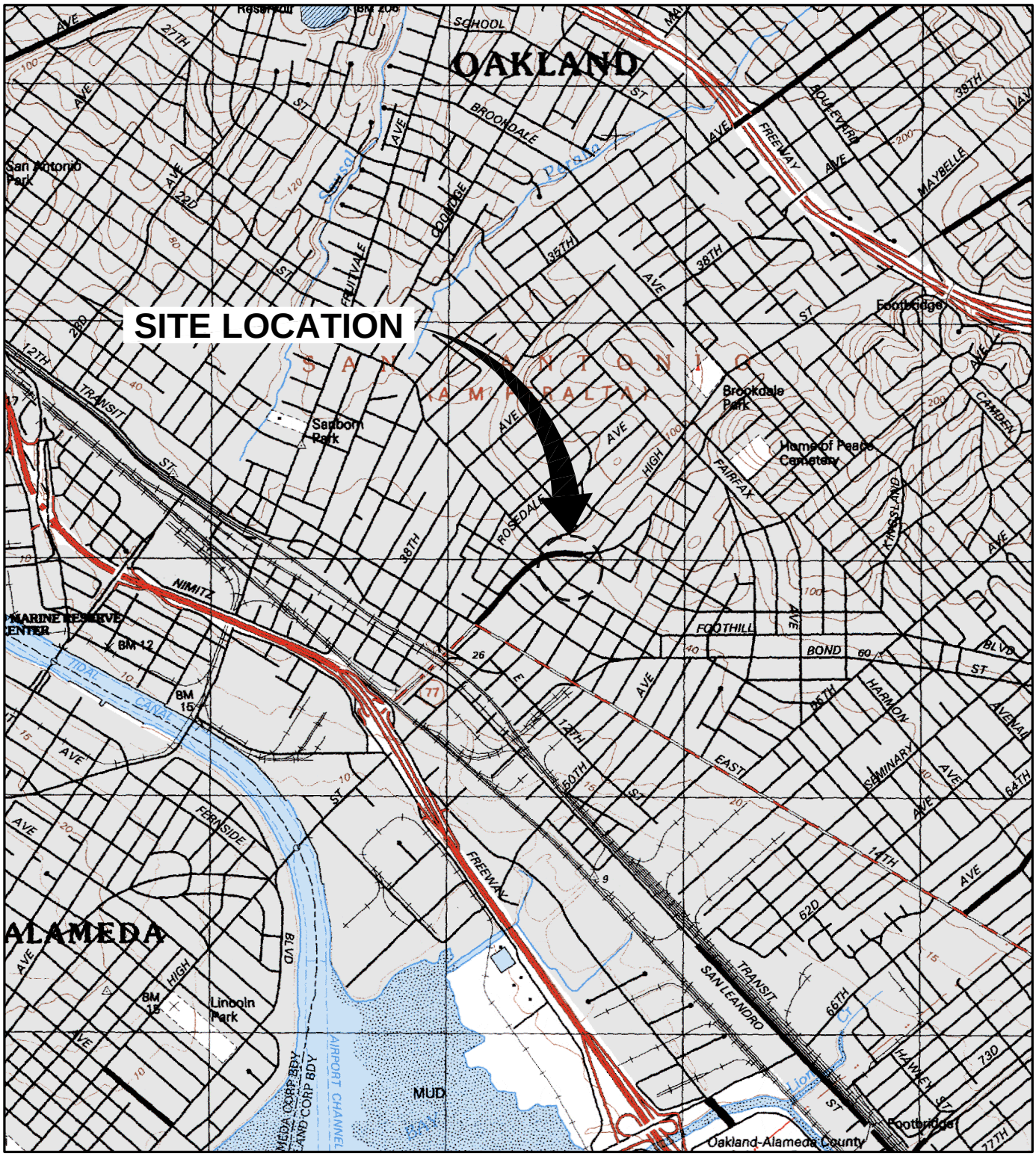
SCM Element	SCM Sub-Element	Description	Potential Data Gaps	How To Address	References
Exposure Pathway Evaluation	Future On-Site Construction/ Utility Workers	• Inhalation (outdoor air) of vapors • Inhalation (outdoor air) of dust particles • Incidental ingestion of surface and subsurface soil • Dermal contact with surface and subsurface soil Potential future on-site utility trench workers may be directly exposed to COPCs in surface and subsurface soil via incidental ingestion, dermal contact and inhalation of dust particles in trench air. Since soil data indicates that the Site satisfies the Direct Contact and Outdoor Air Exposure – Utility Worker (soil: 0 to 10 feet bgs) criteria stated in the State Water Resources Control Board (State Water Board) Low Threat Closure (LTC) Policy14, these pathways are also assumed to be incomplete in the reasonably foreseeable future for utility workers located on onsite.	None	NA	
	Current and Future Hypothetical Off-Site Residents	• Groundwater transport off-site and vapor migration into indoor air The COPCs may volatilize from groundwater to soil gas and migrate to the indoor air of off-site building structures. Inhalation of volatile COPCs in indoor air by current and future off-site residents is a potentially complete exposure pathway. However, given that the downgradient Site is commercial service station (LUST Cleanup Site; Case # RO0000427) and likely to remain commercial use in the future, completion of the exposure pathway is unlikely.	None	NA	

Abbreviations
bgs = below ground surface
msl = mean sea level
ft/ft = feet per foot
btoc = below top of casing
ACEH = Alameda County Environmental Health
DPE = dual-phase extraction
LUFT = leaking underground fuel tank
EBMUD = East Bay Municipal Utility District
COPCs = constituents of potential concern
GRO/TPH-G = Total Petroleum Hydrocarbons as Gasoline Range Organics
DRO/TPH-D = Total Petroleum Hydrocarbons as Diesel Range Organics
MTBE = methyl tertiary-butyl ether
USTs = underground storage tanks
SPH = separate phase hydrocarbons
SFRWQCB = San Francisco Bay Regional Water Quality Control Board
ESLs = environmental screening levels
mg/kg = milligrams per kilogram
µg/L = migrograms per liter
VOCs = volatile organic compouns

List of Appendices
Appendix A - Site Location and Site Plan Figures
Appendix B - Groundwater Flow Direction and Historical Gradients Table
Appendix C - Soil Boring Logs
Appendix D - Historical Soil Data
Appendix E - Groundwater Data and Figures
Appendix F - Historical Soil Vapor Data

Appendix A

Site Location Map and Site Plan Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD.,OAKLAND WEST, CA., 1993, AND SAN LEANDRO, 1993, REVISED 1996.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS LD:--- PIC:--- PM: H. PHILLIPS TM: B. McKENNA LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Petaluma\ACTIVE\09BPNAC106\E0000\GP09BPNAC106-1.dwg LAYOUT: 1SAVED: 11/20/2009 8:30 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: SETUP1PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 11/20/2009 8:40 AM BY: HARRIS, JESSICA

XREFS: IMAGES: PROJECTNAME: ---
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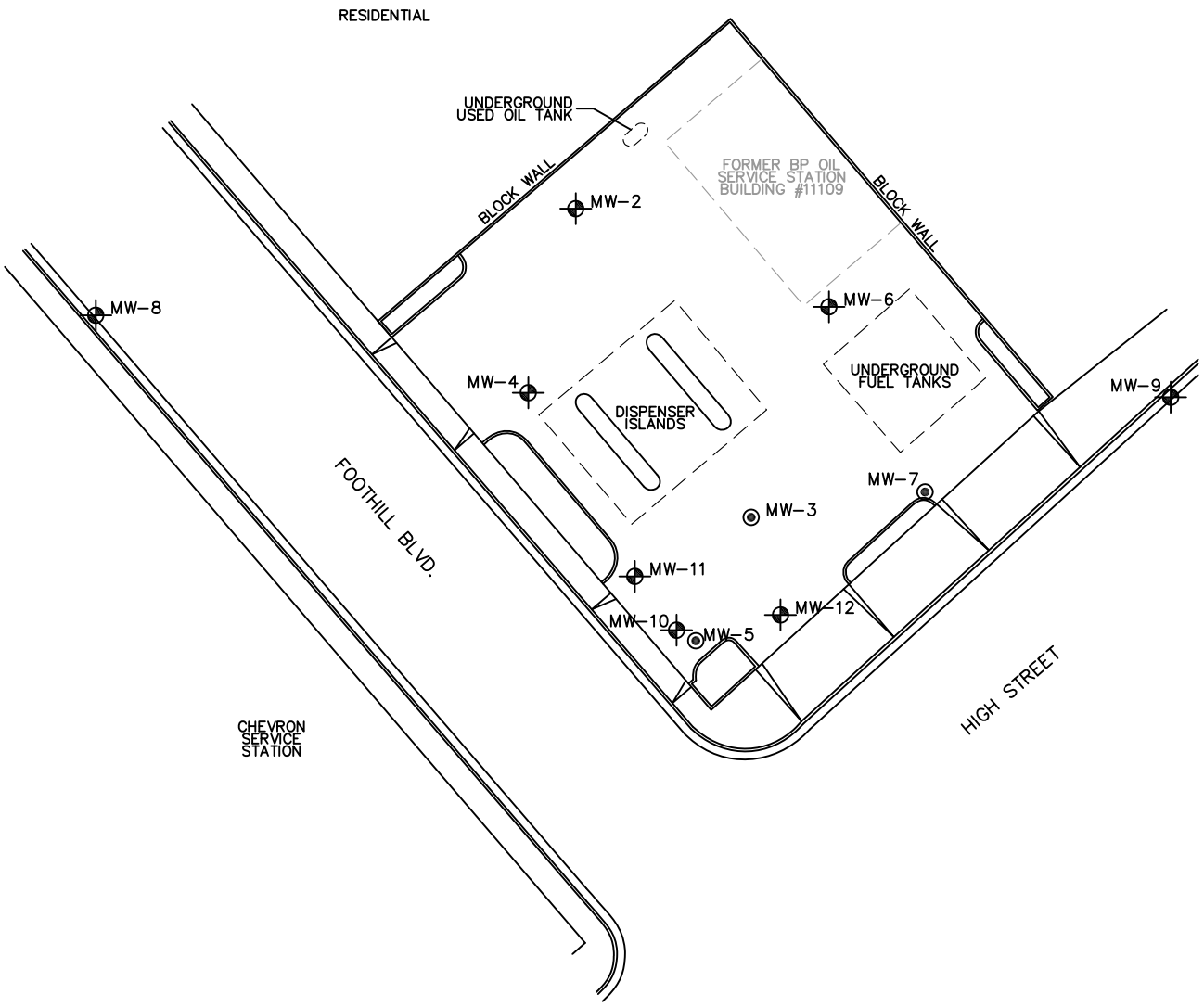
GP09BX03.tiff



0 50' 100'

GRAPHIC SCALE

LEGEND

MONITORING WELL

RECOVERY WELL

NOTE: BASE MAP PROVIDED BY BROADBENT & ASSOCIATES, INC., DATED 10/26/2009, REFERENCE NO. 06-88-646, AT A SCALE OF 1"=40'.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SITE PLAN

ARCADIS

FIGURE
2

ARCADIS

Appendix B

Groundwater Flow Direction and Historical Gradients Table

RESIDENTIAL
UNDERGROUND USED OIL TANK
BLOCK WALL
FORMER BP OIL SERVICE STATION BUILDING #11109
BLOCK WALL
MW-2 (NG)
MW-8 (29.05)
MW-6 (30.01)
MW-4 (29.08)
DISPENSER ISLANDS
UNDERGROUND FUEL TANKS
MW-9 (34.06)
MW-7 (32.22)
MW-3 (32.62)
FOOTHILL BLVD.
MW-11 (30.50)
MW-10 (30.31)
MW-12 (30.22)
MW-5 (29.43)
C-1 (28.67)
0.03 FT/FT
RESIDENTIAL
PRIVACY FENCE
HIGH STREET
CAR WASH
UNDERGROUND FUEL TANKS
DISPENSER ISLANDS/ CANOPY
C-10 (29.10)
C-5 (20.27)
C-3 (19.20)
CHEVRON SERVICE STATION
C-2 (24.76)
TREE LINE
HIGH STREET
C-4 (27.52)*
DATA ANOMALOUS WITH HISTORICAL READINGS (HISTORICAL MIN DTW)
C-6 (15.61)
HIGH STREET
C-7 (11.60)
30
32
34
28
26
24
22
20
18
16
14
12

LEGEND:

- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL-CHEVRON
- RECOVERY POINT
- (11.60) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- 12 GROUNDWATER ELEVATION CONTOUR LINE (DASHED WHERE INFERRED)
- 0.03 GROUNDWATER FLOW DIRECTION (FOOT PER FOOT)
- * NOT USED FOR CONTOURING
- NG NOT GAUGED

NOTE:
GROUNDWATER ELEVATIONS AT ADJACENT CHEVRON SITE CALCULATED BASED ON FIELD DEPTH TO WATER DATA PROVIDED BY CHEVRON AND TOP OF CASING MEASUREMENTS AVAILABLE ON GEOTRACKER

0 50 100
SCALE IN FEET

NOTES:

1. BASE MAP PROVIDED BY BROADBENT & ASSOCIATES, INC. DATED 10/26/2009, REFERENCE 06-88-646, AT A SCALE OF 1"=40'.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP - MARCH 20, 2013

ARCADIS

FIGURE 2

Table 2
Historical Groundwater Flow Direction and Gradient
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
3/6/2006	Southwest	0.05
9/5/2006	Southwest	0.05
2/21/2007	Southwest	0.02
9/7/2007	Southwest	0.03
3/6/2008	Southwest	0.01
9/3/2008	Southwest	0.006
3/4/2009	Southwest	0.02
9/30/2009	Northwest	0.07
10/28/2009	Northwest	0.04
3/23/2010	Northwest	0.03
6/10/2010	Northwest	0.02
9/16/2010	Northwest	0.07
2/23/2011	Northwest	0.04
9/28/2011	Northwest	0.02
3/8/2012	Northwest	0.06
9/5/2012	West-Northwest	0.04
3/20/2013	Southwest	0.03

Notes:

N/A = Not Available
ft/ft = Feet per foot
Note: All data collected following April 2006 was collected by Broadbent & Associates, Inc. The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants.

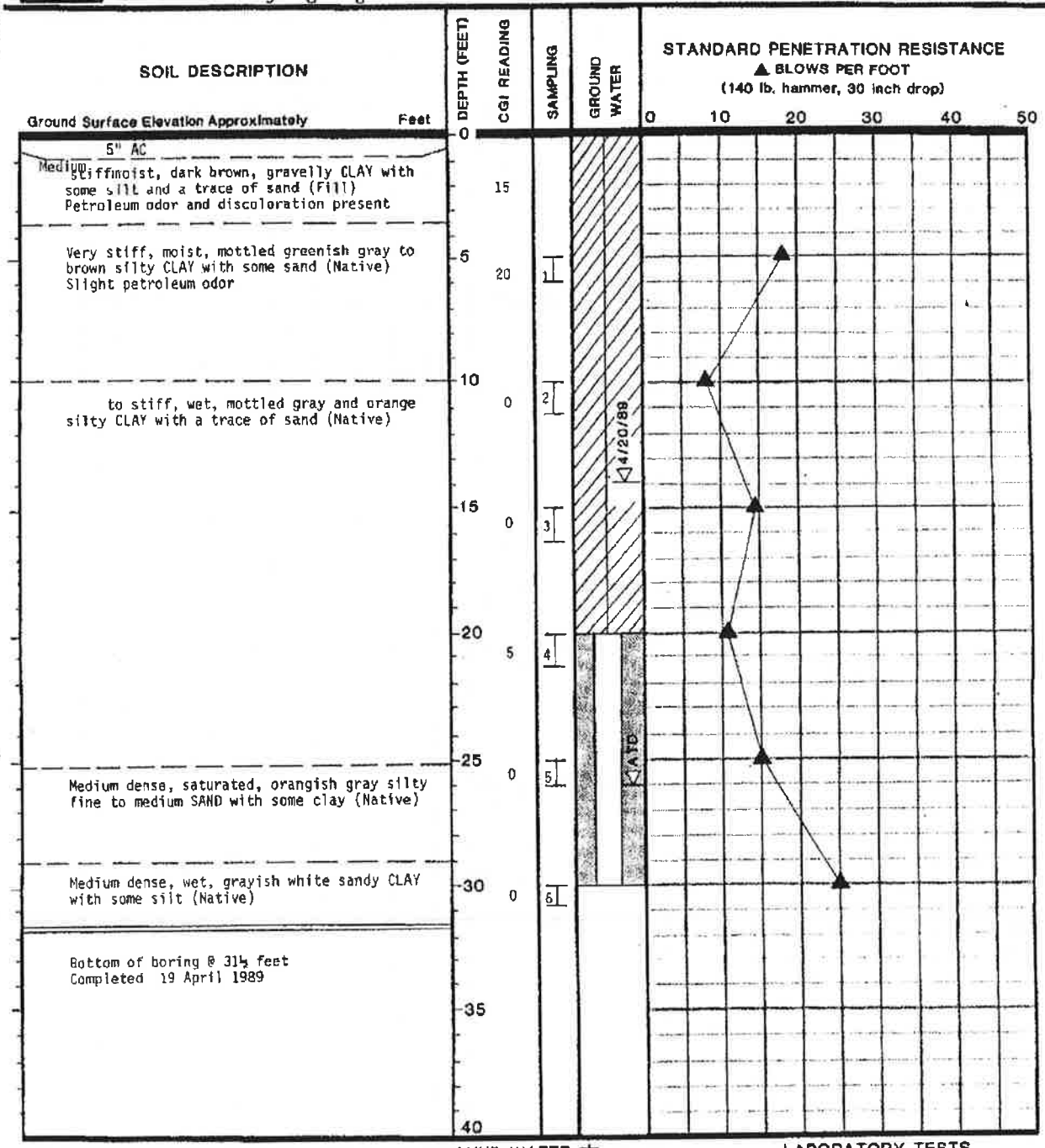
Appendix C

Soil Boring Logs

RZA

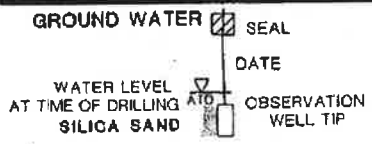
RITTENHOUSE-ZEMAN & ASSOC., INC.
Geotechnical / Hydrogeological Consultants

BORING NUMBER B-1 W.O. W-6095
PROJECT NAME Oakland, CA Mobil



SAMPLING
- I 2" OD SPLIT SPOON SAMPLE
- II 3" OD SHELBY SAMPLE
- ⊠ 2.5" ID RING SAMPLE
- B BULK SAMPLE
- ★ SAMPLE NOT RECOVERED

GROUND WATER



LABORATORY TESTS

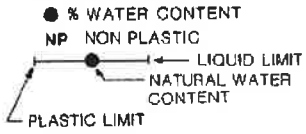
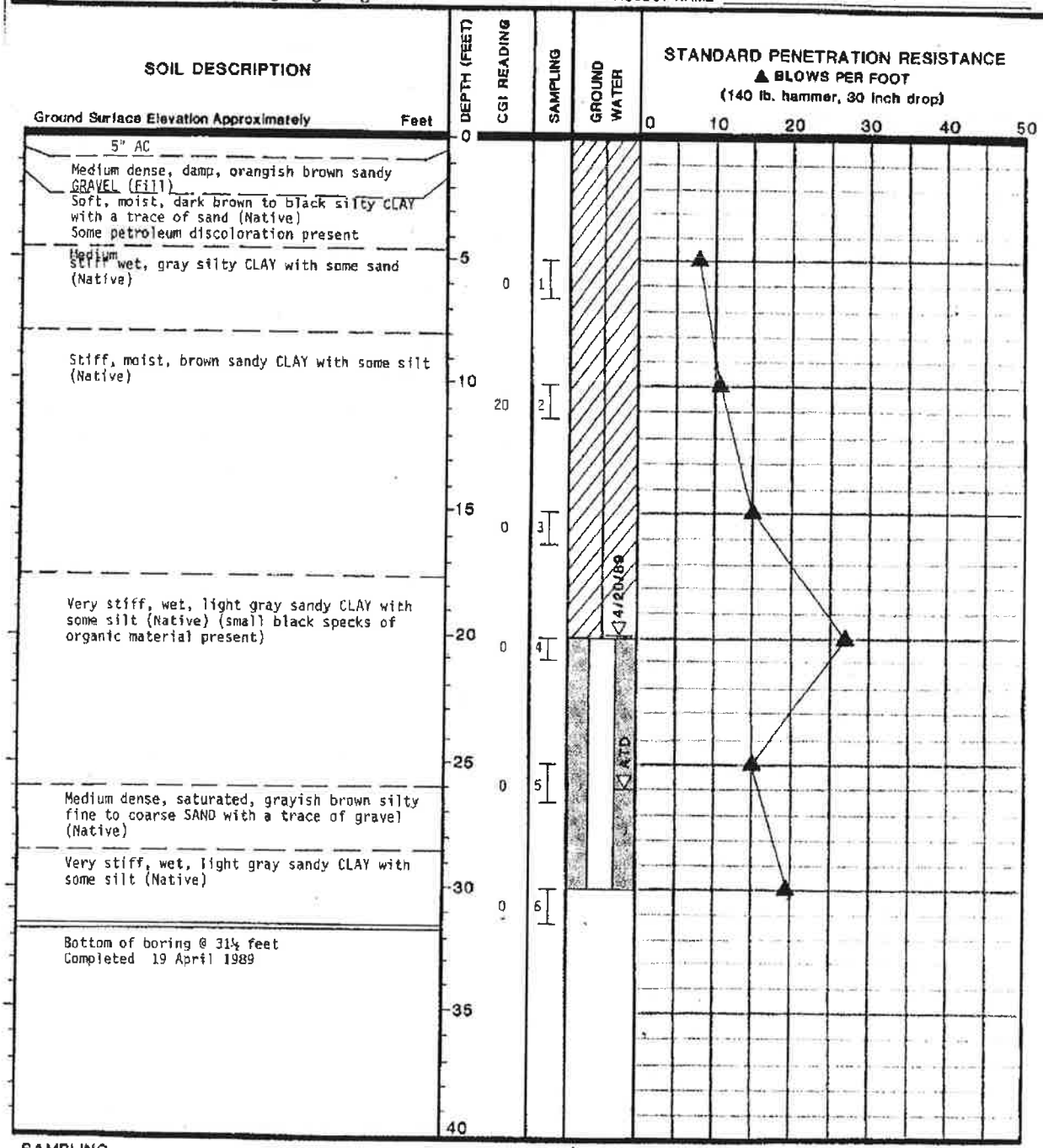


FIGURE 2

RZA

RITTENHOUSE-ZEMAN & ASSOC., INC.
Geotechnical / Hydrogeological Consultants

BORING NUMBER B-2 W.O. W-6095
PROJECT NAME Oakland, CA Mobil



SAMPLING
- I 2" OD SPLIT SPOON SAMPLE
- II 3" OD SHELBY SAMPLE
- ☒ 2.5" ID RING SAMPLE
- B BULK SAMPLE
- ★ SAMPLE NOT RECOVERED

GROUND WATER
- SEAL
- DATE
- WATER LEVEL AT TIME OF DRILLING ATD
- OBSERVATION WELL TIP
- SILICA SAND

LABORATORY TESTS
- ● % WATER CONTENT
- NP NON PLASTIC
- LIQUID LIMIT
- NATURAL WATER CONTENT
- PLASTIC LIMIT

FIGURE 3

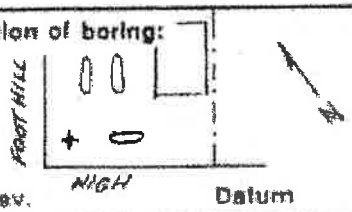
ALTON GEOSCIENCE

LOG OF EXPLORATORY BORING

PROJECT NO. 30-103 DATE 01/29/90
CLIENT Mobil Oil Corporation
LOCATION 4280 Foothill Blvd., Oakland
LOGGED BY B. Nagle DRILLER Bayland

BORING NO. B-3
Sheet 1 of 1

Field location of boring:



Ground Elev. Datum

Drilling method Hollow-stem auger
Hole Dia. 10"

Casing Installation Data 4" perforated (0.020") pipe 32-20', #3 lonestar sand 33-18', bentonite pellets 18-17'; cement seal to surface.

Water Level	6.72	20.28				
Time	11:00	13:51				
Date	1/29/90	2/05/90				

Blow Counts	PID/OVA	Depth	Sample #	Soil Group Symbol (USCS)	Litho-graphic Symbol	DESCRIPTION
						3" asphalt; 6" baserock
		2		CL		SILTY CLAY: Black, moist, high plasticity.
	25	4				Appearance of fine to coarse grained sand; color
3,4,8	50	6		CL		change to dark brown.
		8				SILTY CLAY: Mottled olive green/brown, moist,
		10				moderate plasticity, stiff; gravels up to ¼".
10,13,1	40	12		CL		SANDY CLAY: Brown, moist, low plasticity, very stiff; gravels up to ½".
		14				Driller felt auger out of gravels at 13'
6,7,9	40	16				SILTY CLAY: Tan, damp to moist, medium plasticity, stiff, blue-gray staining along occasional rootlets.
		18				
		20		CL		
5,9,10	25	22				Change to very moist, increase in ½" carbon granules.
		24				
4,9,15	50	26				SANDY CLAY: Blue-gray to tan, moist, low plasticity, stiff.
	100 in Shoe	28		CL		Color change to light gray.
5,6,9		30				Top of 32'-33½' sample wet with sandy gravel stringers
7,10,14		32		CL		up to 2".
						SILTY CLAY: Mottled brown and gray, damp, medium plasticity, very stiff.
						Boring terminated at 33½'. Free ground water encountered at approximately 31'.

ALTON GEOSCIENCE

LOG OF EXPLORATORY BORING

PROJECT NO. 30-103 DATE 01/30/90
CLIENT Mobil Oil Corporation
LOCATION 4280 Foothill Blvd., Oakland
LOGGED BY B. Nagle DRILLER Bayland
BORING NO B-4 Sheet 1 of 1

Field location of boring:

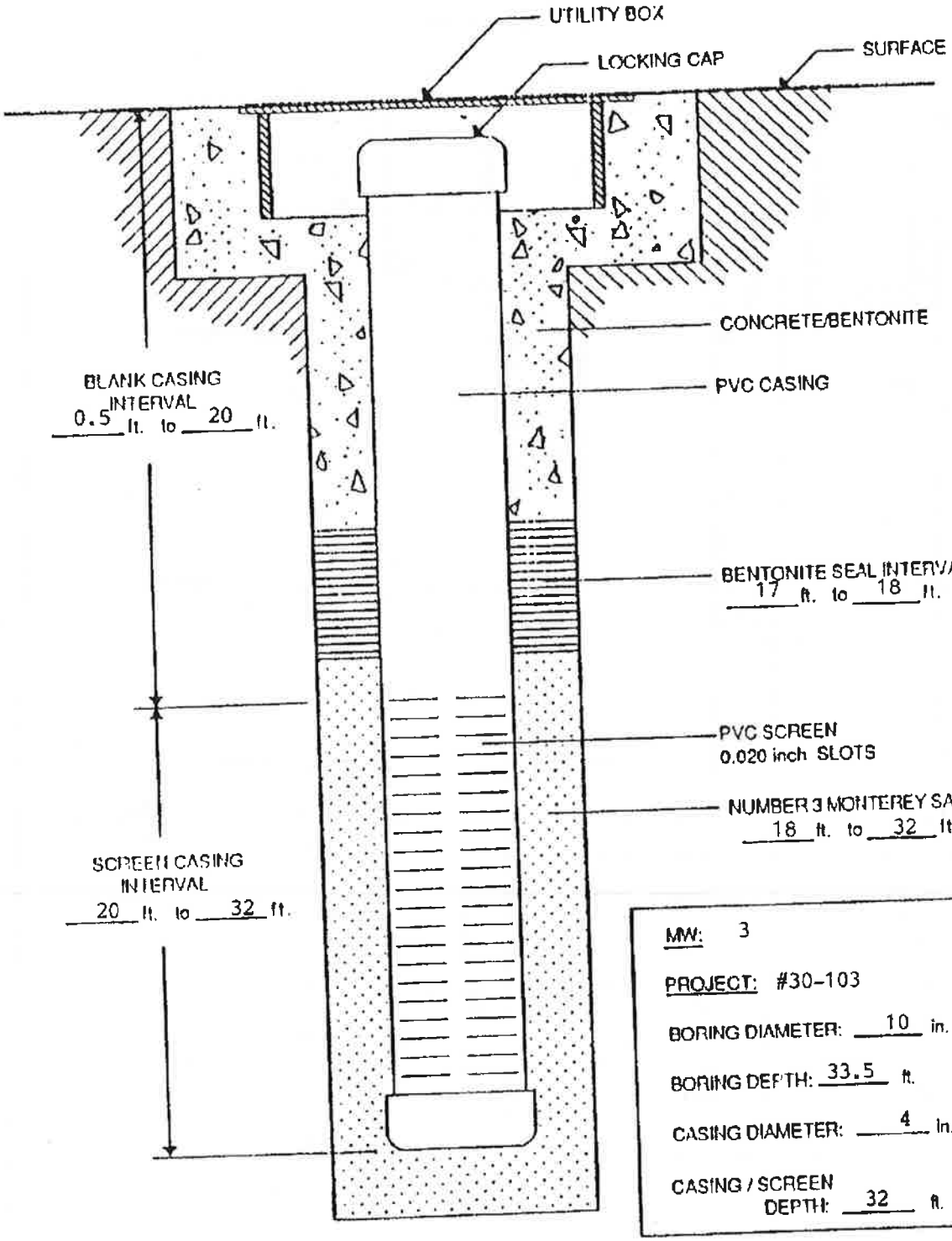
Ground Elev. HIGH Datum

Drilling method Hollow-stem auger
Hole Dia. 10"
Casing Installation Data 4" perforated (0.020") pipe 27-20'; #3 lonestar 27-18½, bentonite pellets 18½-17½; neat cement seal 17½ to surface.

Water Level	17.07	16.32				
Time	13:30	13:15				
Date	1/30/90	2/05/90				

Blow Counts	PID/OVA	Depth	Sample	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
						4" asphalt, 6" baserock
		2				
						SILTY CLAY: Dark brown, damp to moist, high plasticity,
		4				stiff.
4,7,7	20	6				SILTY CLAY: Mottled orange-brown, damp, low plasticity,
						stiff; minor fine sand and angular gravels up to ¼".
		8				
						SANDY CLAY: Light brown, damp, medium plasticity, stiff;
		10				occasional carbon granules.
3,5,7	40					
		12				Driller felt increase in resistance at 13½ feet.
		14				CLAYEY SAND: Brown, moist, medium dense; occasional fine to
						coarse grained gravels up to ¼".
		16				
6,9,11	25					Driller felt smoother drilling at approximately 17'.
		18				
		20	▽			
4,5,13						SANDY CLAY: Light brown, moist, low plasticity, stiff
		22				CLAYEY SAND: Light brown, wet, medium dense.
		24		?—?	?—?	
						SILTY CLAY: Mottled blue gray and brown, low plasticity,
5,9,12	75	26				very stiff; minor very fine sand.
		28				Driller needed more pressure to drill at 27'.
3,7,10	70					
						CLAYEY SILT: Whiteish gray to tan, moist, low plasticity,
						very stiff; some fine sand.
						Boring terminated at 29½ feet.
						Free ground water encountered at approximately 20 feet.

MONITORING WELL CONSTRUCTION DETAIL



MW: 3

PROJECT: #30-103

BORING DIAMETER: 10 in.

BORING DEPTH: 33.5 ft.

CASING DIAMETER: 4 in.

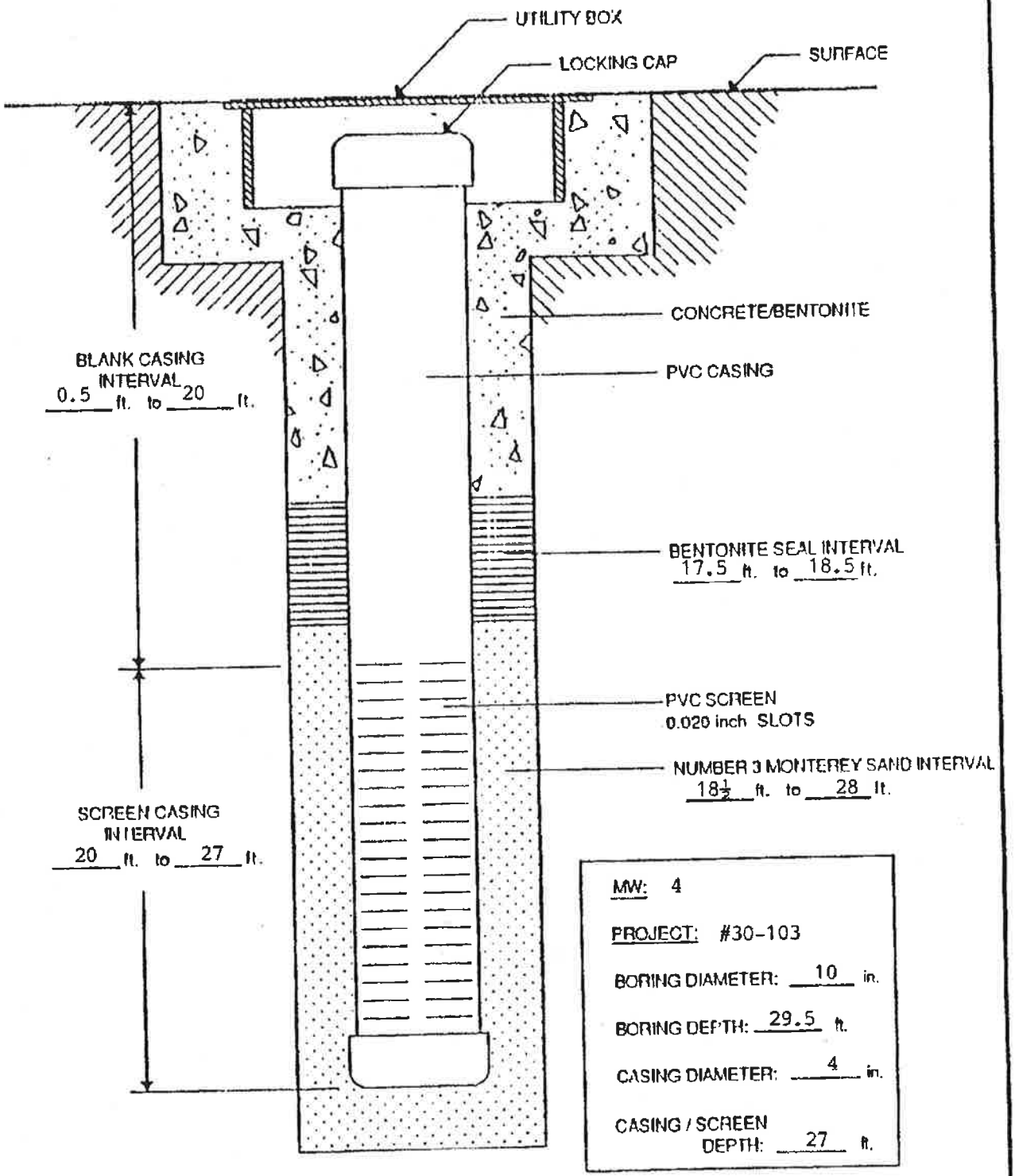
CASING / SCREEN DEPTH: 32 ft.

ALTON GEOSCIENCE
1170 BURNETT AVE., STE S
CONCORD, CA. 94520

NOTE DRAWING IS NOT TO SCALE

PROJECT #30-103

MONITORING WELL CONSTRUCTION DETAIL



MW: 4

PROJECT: #30-103

BORING DIAMETER: 10 in.

BORING DEPTH: 29.5 ft.

CASING DIAMETER: 4 in.

CASING / SCREEN DEPTH: 27 ft.

ALTON GEOSCIENCE
1170 BURNETT AVE., STE S
CONCORD, CA. 94520

NOTE DRAWING IS NOT TO SCALE PROJECT #30-103

ALTON GEOSCIENCE
LOG OF EXPLORATORY BORING

PROJECT NO. 30-0248 DATE DRILLED 9/09/91
CLIENT BP Oil Co., Service Station No. 30-0248
LOCATION 4280 Foothill Blvd., Oakland, CA
LOGGED BY B. Nagle APPROVED BY

BORING NO. MW-5
WELL NO. MW-5
Page 1 of 1

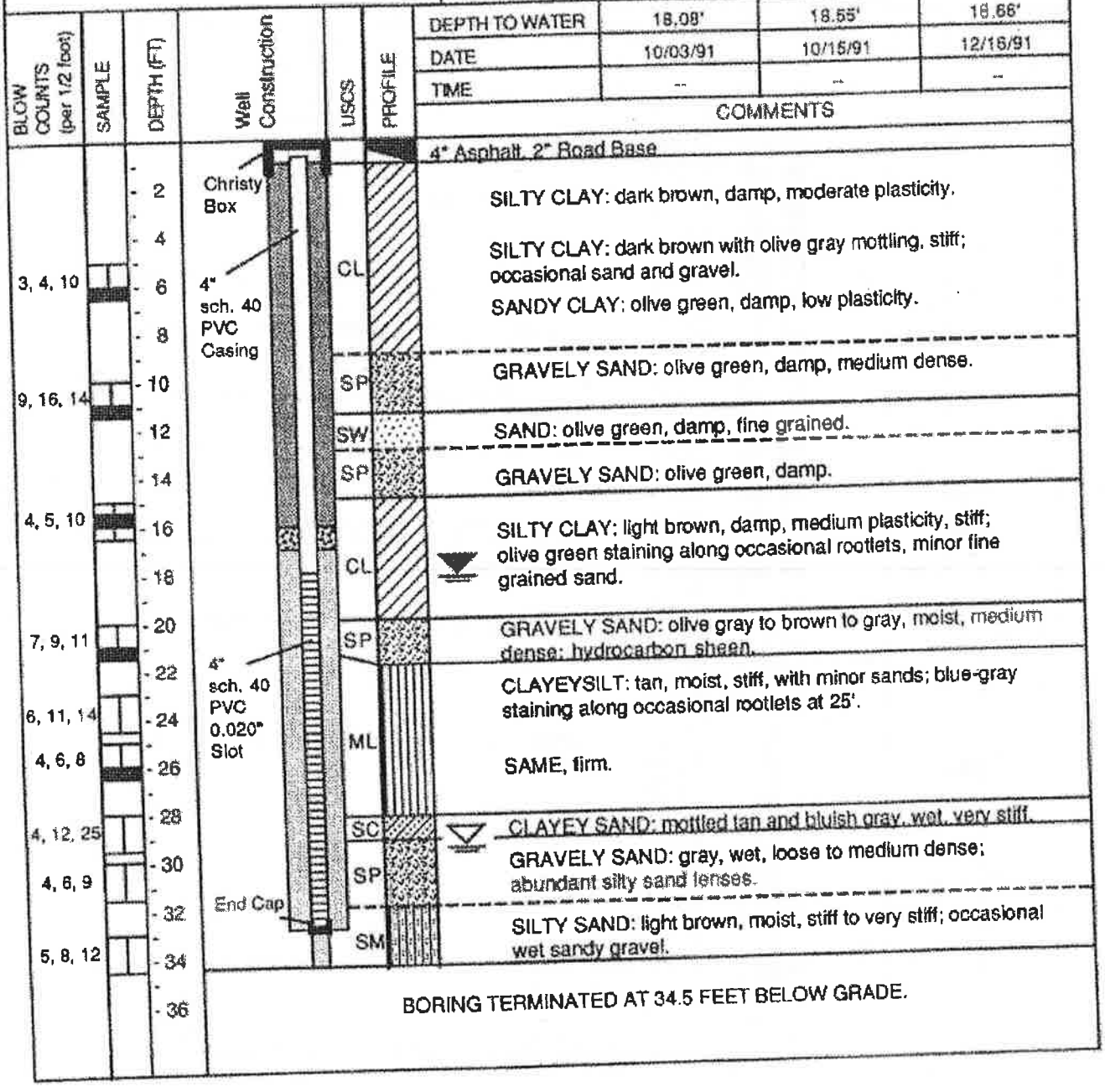
FIELD SKETCH OF BORING LOCATION

(SEE SITE PLAN)

TOP OF CASING ELEVATION 36.55

DRILLING METHOD C.M.E. 55, HSA HOLE DIAM. 10"
SAMPLER TYPE California Modified Split-Spoon Sampler
CASING DATA 4" diameter, Schedule 40 PVC, 18' blank, 15' slotted
DRILLER Soils Exploration

DEPTH TO WATER	18.08'	18.55'	16.66'
DATE	10/03/91	10/15/91	12/16/91
TIME	--	--	--



ALTON GEOSCIENCE
LOG OF EXPLORATORY BORING

PROJECT NO. 30-0248 DATE DRILLED 9/09/91
CLIENT BP Oil Co., Service Station No. 30-0248
LOCATION 4280 Foothill Blvd., Oakland, CA
LOGGED BY B. Nagle APPROVED BY

BORING NO. MW-6
WELL NO. MW-6
Page 1 of 1

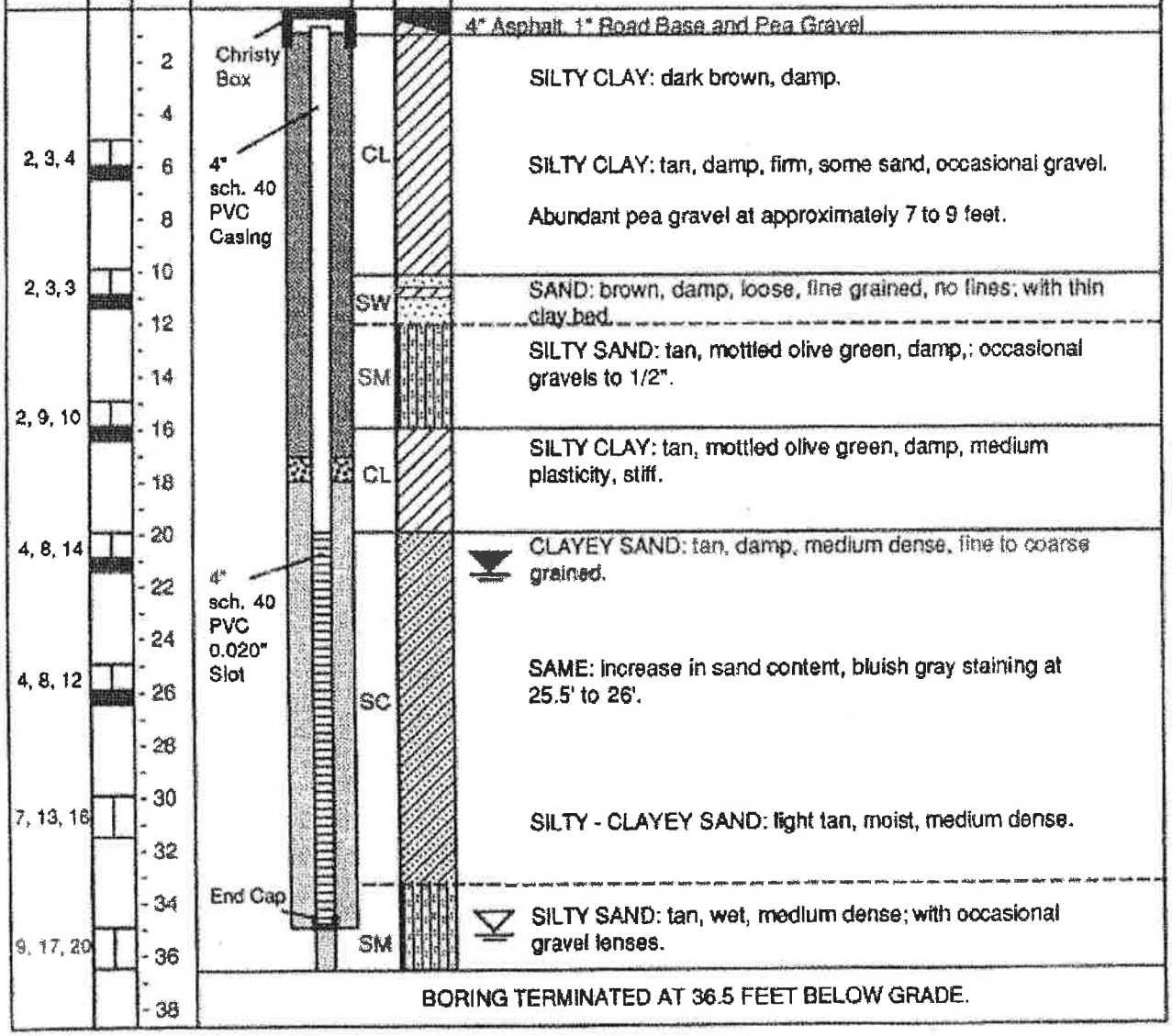
FIELD SKETCH OF BORING LOCATION

(SEE SITE PLAN)

TOP OF CASING ELEVATION

DRILLING METHOD C.M.E. 55, HSA HOLE DIAM. 10"
SAMPLER TYPE California Modified Split-Spoon Sampler
CASING DATA 4" diameter, Schedule 40 PVC, 20' blank, 15' slotted
DRILLER Soils Exploration

DEPTH TO WATER	20.73'	21.20'	21.12'
DATE	10/03/91	10/15/91	12/16/91
TIME	--	--	--



ALTON GEOSCIENCE
LOG OF EXPLORATORY BORING

PROJECT NO. 30-0248 DATE DRILLED 9/09/91
CLIENT BP Oil Co., Service Station No. 30-0248
LOCATION 4280 Foothill Blvd., Oakland, CA
LOGGED BY B. Nagle APPROVED BY

BORING NO. MW-7
WELL NO. MW-7

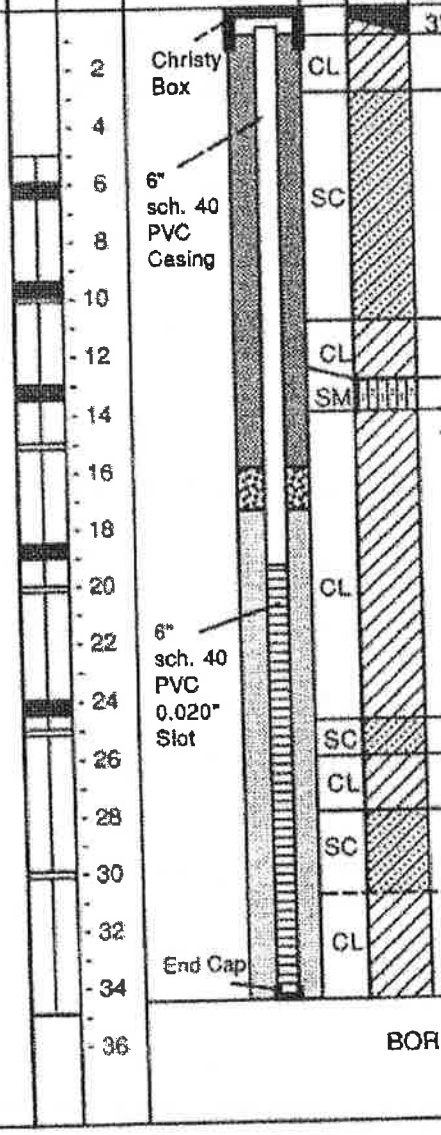
FIELD SKETCH OF BORING LOCATION

(SEE SITE PLAN)

TOP OF CASING ELEVATION

DRILLING METHOD C.M.E. 55, HSA HOLE DIAM. 12"
SAMPLER TYPE Continuous
CASING DATA 6" diameter, Schedule 40 PVC, 19.5 blank, 15 slotted
DRILLER Solls Exploration

DEPTH TO WATER	14.93'	15.16'	15.21'
DATE	10/03/91	10/15/91	12/16/91
TIME	--	--	--



COMMENTS
3" Asphalt, 6" Road Base
SILTY CLAY: dark brown, damp, medium plasticity.
CLAYEY SAND: bluish gray, damp; occasional gravel up to 1" diameter.
SAME: brown to bluish gray, damp; abundant gravel, occasional silty clay lens.
SILTY CLAY: mottled bluish gray - orange brown, damp, medium plasticity; stained along rootlets.
SILTY SAND: bluish gray to brown, damp.
SILTY CLAY: mottled bluish gray - orange brown, damp, medium plasticity; stiff.
SAME: mottled bluish gray - orange brown, damp, medium plasticity; stiff.
SANDY CLAY: mottled bluish gray - olive green, damp, medium plasticity, very stiff.
SILTY CLAY: brown, damp, medium plasticity, very stiff.
SANDY CLAY: olive green, wet, low plasticity.
CLAYEY SAND: brown, wet, medium dense.
SANDY CLAY: tan, moist to wet, low plasticity.
CLAYEY SAND: tan, wet, medium dense; some orange brown mottling.
SANDY CLAY: tan, moist to wet, low plasticity, stiff; increasing sand at 34', clay fractions along horizontal planes.
BORING TERMINATED AT 34.5 FEET BELOW GRADE.

ALTON GEOSCIENCE
LOG OF EXPLORATORY BORING

PROJECT NO. 30-0248 DATE DRILLED 9/11/91
CLIENT BP Oil Co., Service Station No. 30-0248
LOCATION 4280 Foothill Blvd., Oakland, CA
LOGGED BY B. Nagle APPROVED BY _____

BORING NO. MW-8
WELL NO. MW-8
Page 1 of 1

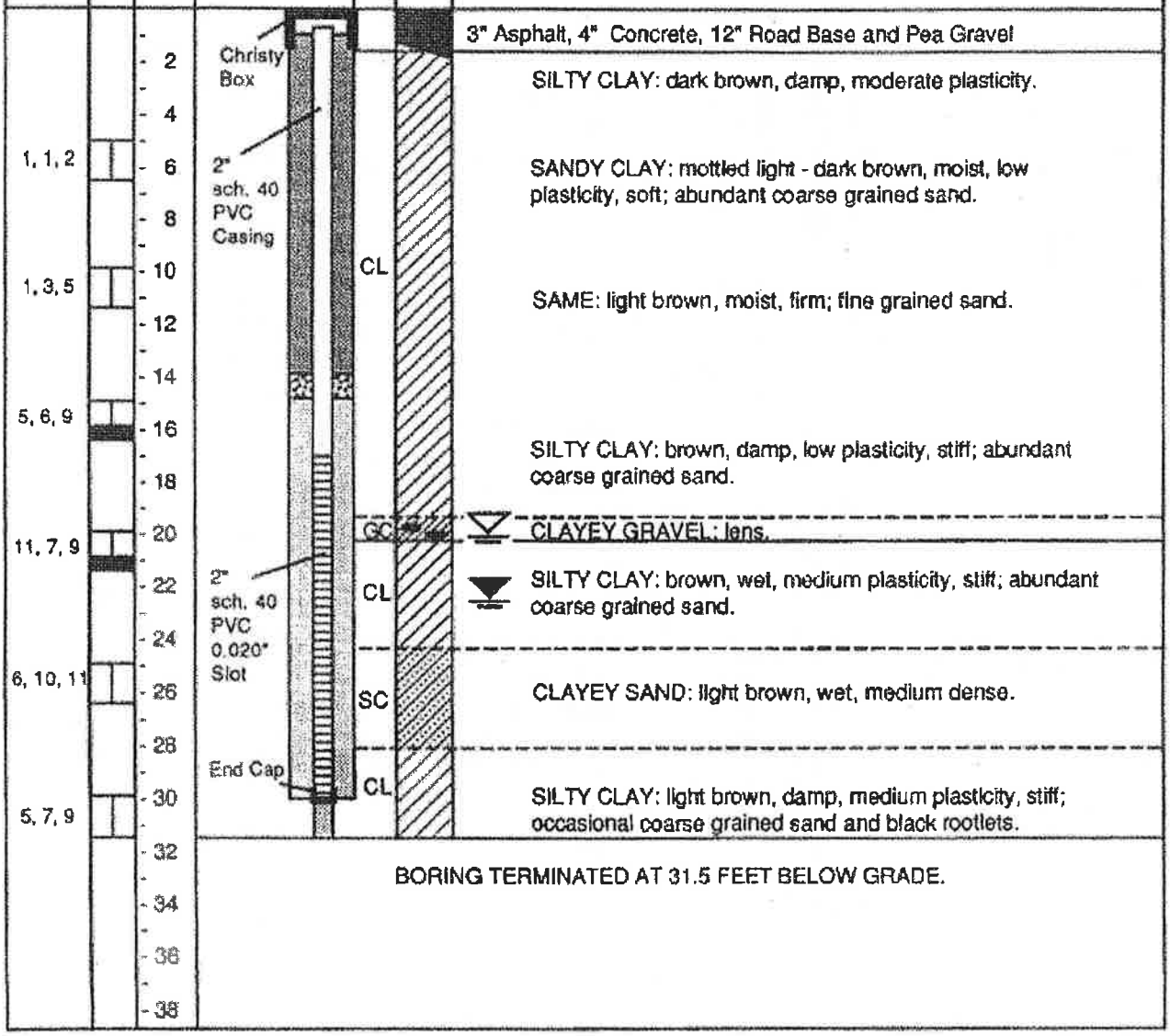
FIELD SKETCH OF BORING LOCATION

(SEE SITE PLAN)

TOP OF CASING ELEVATION _____

DRILLING METHOD C.M.E. 55, HSA HOLE DIAM. 8"
SAMPLER TYPE California Modified Split-Spoon Sampler
CASING DATA 2" diameter, Schedule 40 PVC, 19' blank, 13' slotted
DRILLER Soils Exploration

DEPTH TO WATER	22.37'	22.70'	22.47'
DATE	10/03/91	10/15/91	12/16/91
TIME	--	--	--



ALTON GEOSCIENCE
LOG OF EXPLORATORY BORING

PROJECT NO. 30-0248 DATE DRILLED 9/11/91
CLIENT BP Oil Co., Service Station No. 30-0248
LOCATION 4280 Foothill Blvd., Oakland, CA
LOGGED BY B. Nagle APPROVED BY _____

BORING NO. MW-9
WELL NO. MW-9
Page 1 of 1

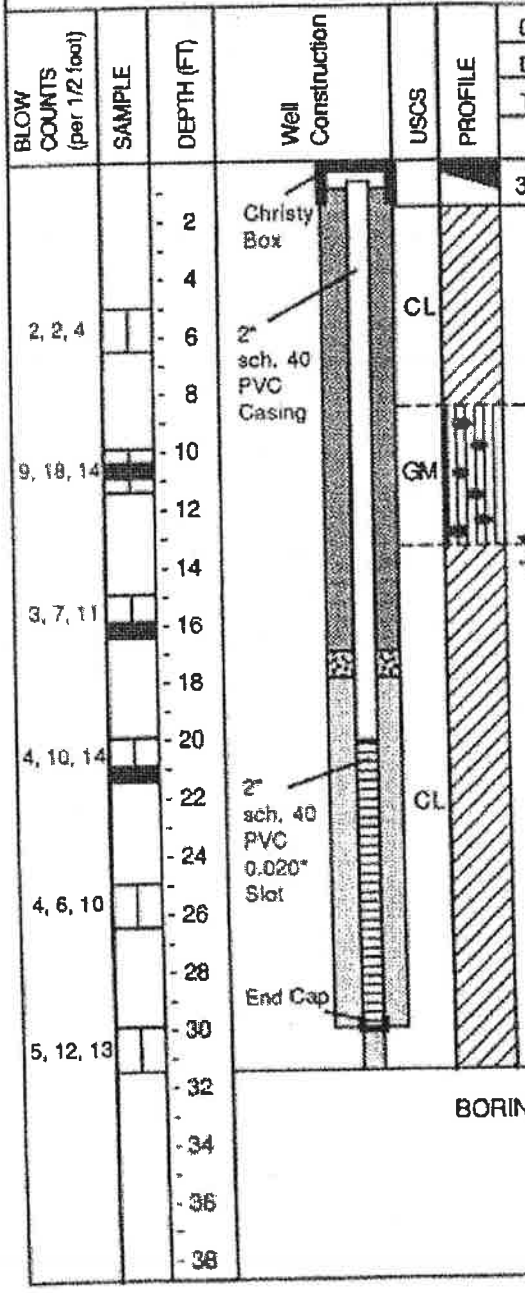
FIELD SKETCH OF BORING LOCATION

(SEE SITE PLAN)

TOP OF CASING ELEVATION _____

DRILLING METHOD C.M.E. 55, HSA HOLE DIAM. 8"
SAMPLER TYPE California Modified Split-Spoon Sampler
CASING DATA 2" diameter, Schedule 40 PVC, 20' blank, 10' slotted
DRILLER Soils Exploration

DEPTH TO WATER	14.12'	14.27'	14.18'
DATE	10/03/91	10/15/91	12/16/91
TIME	--	--	--



COMMENTS

3" Asphalt, 6" Concrete, 12" Road Base and Pea Gravel

SILTY CLAY: dark brown, damp, high plasticity, firm.

SANDY CLAY:dark brown, damp, firm, soft; fine to coarse grained sand.

SANDY GRAVEL: olive green to brown, damp, medium dense; with clay matrix.

SANDY CLAY: brown, damp, stiff; with abundant gravel. No gravels at 16'.

SAME: very stiff,occasional carbonacious gravels.

SAME: stiff, with orangish brown mottling, SATURATED

SILTY CLAY: brown, damp, medium plasticity, very stiff; minor fine to coarse grained sand.

BORING TERMINATED AT 31.5 FEET BELOW GRADE.

SOIL BORING LOG **Boring No. MW-10** **Sheet: 1 of 2**

Client	Former BP Station 11109	Date	March 23, 2009
Address	4280 Foothill Boulevard	Drilling Co.	Woodward Drilling rig type: BK-81
	Oakland, CA	Driller	Dave
Project No.	E11109	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	24-inch length split spoon
Well Pack	sand: 6 ft. to 30 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 7 ft. to 30 ft.
	bent.: 4 ft. to 6 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.020-in.
	grout: 0 ft. to 4 ft.	Depth to GW:	▽ first encountered: 13' bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
					1		Cleared to 6.5' bgs. with air knife	
					2			
					3			
					4			
					5			
					6			
					7			
					8			
		9 14			9	ML	Clayey silt with sand, ML, dark grayish brown, moist, hard, low plasticity 60% silt, 30% clay, 10% medium grained sand	197
	MW-10 10'	17 20	0835	75	10			
		21 36			11	SC	Clayey sand with gravel, SC, dark grayish brown, moist, very dense 65% coarse grained sand, 20% clay, 15% fine gravel	447
	MW-10 12'	50/5" -	0840	50	12			
		27 36			13	▽ SM	Silty sand, SM, dark grayish brown, wet, very dense 85% medium to coarse grained sand, 15% silt	1027
S	MW-10 14'	42 50/5"	0850	100	14			
		10 10			15			
	MW-10 16'	14 15	0855	0	16			
		12 12			17	CL	Clay, CL, dark yellowish brown, moist, hard, high plasticity 100% clay	70.9
	MW-10 18'	20 27	0900	75	18			
		12 16			19	SC	Clayey sand with gravel, SC, dark grayish brown, wet, dense 65% medium to coarse grained sand, 20% clay, 15% fine gravel	366
S	MW-10 20'	18 20	0905	100	20			

Recovery

Sample

Comments: Strong hydrocarbon odor from surface to total depth.

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. MW-10** **Sheet: 2 of 2**

Client	Former BP Station 11109	Date	March 23, 2009
Address	4280 Foothill Boulevard	Drilling Co.	Woodward Drilling rig type: BK-81
	Oakland, CA	Driller	Dave
Project No.	E11109	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	24-inch length split spoon
Well Pack	sand: 6 ft. to 30 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 7 ft. to 30 ft.
	bent.: 4 ft. to 6 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.020-in.
	grout: 0 ft. to 4 ft.	Depth to GW:	▽ first encountered: 13' bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
		12						Clayey sand with gravel, SC, dark grayish brown, wet, very dense	176
		25				21	SC	65% coarse grained sand, 25% clay, 15% fine gravel	
		32							
	MW-10 22'	36	0915	75		22			70.8
		17							
		18				23			
		20						Clay, CL, dark yellowish brown, moist, hard, high plasticity	
	MW-10 24'	26	0920	75		24	CL	100% clay	
		10							245
		18				25			
		20						Sandy clay, CL, dark grayish brown, moist, hard, medium plasticity	
S	MW-10 26'	22	0930	100		26		70% clay, 30% fine grained sand	
		10							43.2
		18				27			
		20					SC	Clayey sand, SC, grayish brown, moist, dense	
	MW-10 28'	23	0935	100		28		70% very fine grained sand, 30% clay	
		12							33.8
		12				29			
		15					CL	Silty clay, CL, dark grayish brown, moist, hard, medium plasticity	
S	MW-10 30'	18	0940	100		30		60% clay, 40% silt	
						31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			

Comments:

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. MW-11** **Sheet: 1 of 2**

Client	Former BP Station 11109	Date	March 23, 2009
Address	4280 Foothill Boulevard	Drilling Co.	Woodward Drilling rig type: BK-81
	Oakland, CA	Driller	Dave
Project No.	E11109	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	24-inch length split spoon
Well Pack	sand: 6 ft. to 30 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 7 ft. to 30 ft.
	bent.: 4 ft. to 6 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.020-in.
	grout: 0 ft. to 4 ft.	Depth to GW:	▽ first encountered: 13'bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
						1		Cleared to 6.5' bgs. with air knife	
						2			
						3			
						4			
						5			
						6			
						7			
						8			
		12 17				9	ML	Clayey silt with gravel, ML, dark grayish brown, moist, hard, low plasticity 60% silt, 25% clay, 15% fine gravel	155
S	MW-11 10'	20 23	1305	50		10			
		16 23				11	CL	Clay with gravel, CL, dark grayish brown, moist, hard, low plasticity 70% clay, 30% medium to coarse grained sand	118
	MW-11 12'	29 32	1315	75		12			
		26 28				13	▽ SM	Silty sand with gravel, SM, dark grayish brown, wet, very dense 60% medium to coarse grained sand, 25% silt, 15% medium gravel	51.3
	MW-11 14'	30 32	1320	100		14			
		7 8				15		Silty sand with gravel, SM, dark grayish brown, wet, medium dense 60% medium to coarse grained sand, 25% silt, 15% medium gravel	205
S	MW-11 16'	10 12	1330	100		16		Sandy clay, CL, dark grayish brown, moist, very stiff, medium plasticity 75% clay, 25% coarse grained sand	
		10 12				17		Clay with gravel, CL, dark yellowish brown, moist, hard, medium plasticity 85% clay, 15% fine to medium gravel	51.1
	MW-11 18'	15 18	1335	100		18	CL		
		12 13				19		Sandy clay, CL, dark yellowish brown, moist, very stiff, medium plasticity 80% clay, 20% coarse grained sand	42.8
	MW-11 20'	15 16	1340	100		20			

Recovery

Sample

Comments: Strong hydrocarbon odor from surface to total depth.

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. MW-11** **Sheet: 2 of 2**

Client	Former BP Station 11109	Date	March 23, 2009
Address	4280 Foothill Boulevard	Drilling Co.	Woodward Drilling rig type: BK-81
	Oakland, CA	Driller	Dave
Project No.	E11109	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	24-inch length split spoon
Well Pack	sand: 6 ft. to 30 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 7 ft. to 30 ft.
	bent.: 4 ft. to 6 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.020-in.
	grout: 0 ft. to 4 ft.	Depth to GW:	▽ first encountered: 13'bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
		30					CL		397
		32				21			
		50/4"						Clayey sand with gravel, SC, dark yellowish brown, moist, very dense	
	MW-11 22'	-	1345	100		22		65% medium graiend sand, 25% clay, 15% fine gravel	
		25					SC		1397
		27				23			
		30						Clayey sand with gravel, SC, dark yellowish brown, wet, very dense	
S	MW-11 24'	32	1355	75		24		60% medium grained sand, 20% clay, 20% fine gravel	
		13							97.9
		16				25			
		20						Sandy clay, CL, dark grayish brown, moist hard, medium plasticity	
	MW-11 26'	26	1400	100		26	CL	70% clay, 30% fine frained sand	
		15							473
		15				27			
		20						Clayey sand, SC, dark grayish brown, moist to wet, dense	
	MW-11 28'	21	1405	100		28	SC	60% fine grained sand, 40% clay	
		12							214
		18				29			
		20					CL	Clay, CL, dark grayish brown, moist to wet, hard, medium plasticity	
S	MW-11 30'	26	1425	100		30		100% clay	
						31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			

Comments:

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. MW-12** **Sheet: 1 of 2**

Client	Former BP Station 11109	Date	March 24, 2009
Address	4280 Foothill Boulevard	Drilling Co.	Woodward Drilling rig type: BK-81
	Oakland, CA	Driller	Dave
Project No.	E11109	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	24-inch length split spoon
Well Pack	sand: 6 ft. to 30 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 7 ft. to 30 ft.
	bent.: 4 ft. to 6 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.020-in.
	grout: 0 ft. to 4 ft.	Depth to GW:	▽ first encountered: 13' bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
						1		Cleared to 6.5' bgs. with air knife	
						2			
						3			
						4			
						5			
						6			
						7			
						8			
		10 11				9		Clayey silt, ML, dark grayish brown, moist, very stiff, low plasticity 60% silt, 40% clay	
S	MW-12 10'	14 16	0835	50		10	ML		
		10 15				11		Clayey silt with sand, ML, dark grayish brown, moist, hard, low plasticity 60% silt, 30% clay, 10% fine grained sand	
	MW-12 12'	50/6" -	0840	67		12			
		28 50/6"				13	▽ SC	Clayey sand with gravel, SC, dark grayish brown, moist, very dense 65% coarse grained sand, 20% clay, 15% fine to medium gravel	
	MW-12 14'	- -	0845	100		14			
		12 15				15		Clay trace gravel, CL, dark grayish brown, moist, hard, high plasticity 95% clay, 5% fine gravel	
S	MW-12 16'	20 23	0850	100		16			
		19 20				17	CL	Clay, CL, dark brown, moist, hard, high plasticity, 100% clay	
	MW-12 18'	20 24	0900	100		18			
		14 18				19		Silty clay with sand, CL, dark yellowish brown, moist, hard, medium plasticity 60% clay, 25% silt, 15% fine grained sand	
	MW-12 20'	20 21	0905	100		20			

Recovery

Sample

Comments: Strong hydrocarbon odor from surface to total depth.
PID readings not available.

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. MW-12** **Sheet: 2 of 2**

Client	Former BP Station 11109	Date	March 24, 2009
Address	4280 Foothill Boulevard	Drilling Co.	Woodward Drilling rig type: BK-81
	Oakland, CA	Driller	Dave
Project No.	E11109	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	24-inch length split spoon
Well Pack	sand: 6 ft. to 30 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 7 ft. to 30 ft.
	bent.: 4 ft. to 6 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.020-in.
	grout: 0 ft. to 4 ft.	Depth to GW:	▽ first encountered static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
		15					CL		
		19				21			
		20						Clayey sand with gravel, SC, dark grayish brown, wet, very dense	
S	MW-12 22'	42	0910	100		22	SC	65% coarse grained sand, 25% clay, 15% fine gravel	
		15							
		20				23			
		30							
	MW-12 24'	32	0920	0		24			
		12							
		12				25	CL		
		14						Sandy clay, CL, dark grayish brown, wet, very stiff, medium plasticity	
	MW-12 26'	17	0930	100		26		70% clay, 30% fine grained sand	
		10							
		10				27			
		17						Clayey sand, SC, dark grayish brown, wet, dense	
	MW-12 28'	20	0940	100		28		70% very fine grained sand, 30% clay	
		17							
		20				29	SC		
		23						Clayey sand, SC, dark grayish brown, wet, dense	
S	MW-12 30'	24	0950	100		30		60% very fine grained sand, 40% clay	
						31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			

Comments:

STRATUS ENVIRONMENTAL, INC.

Appendix D

Historical Soil Data

TABLE 2

Summary of Analytical Results of Soil Samples
BP Oil Company Service Station No. 11109
4280 Foothill Boulevard, Oakland, California

Project No.: 30-0248

Concentrations in parts per million (ppm)

SAMPLE ID	DATE OF SAMPLING	SAMPLE DEPTH (feet)	TPH-G	B	T	E	X	TOTAL ORGANIC PB	LAB
MW-8	09/11/91	16	ND<1	ND<.003	ND<.003	ND<.003	ND<.003	---	SAL
MW-9	09/11/91	10.5	ND<1	ND<.003	ND<.003	ND<.003	ND<.003	---	SAL
MW-9	09/11/91	16	ND<1	ND<.003	ND<.003	ND<.003	ND<.003	---	SAL
MW-9	09/11/91	21	ND<1	ND<.003	ND<.003	ND<.003	ND<.003	---	SAL

AGS - 91

AGS-91

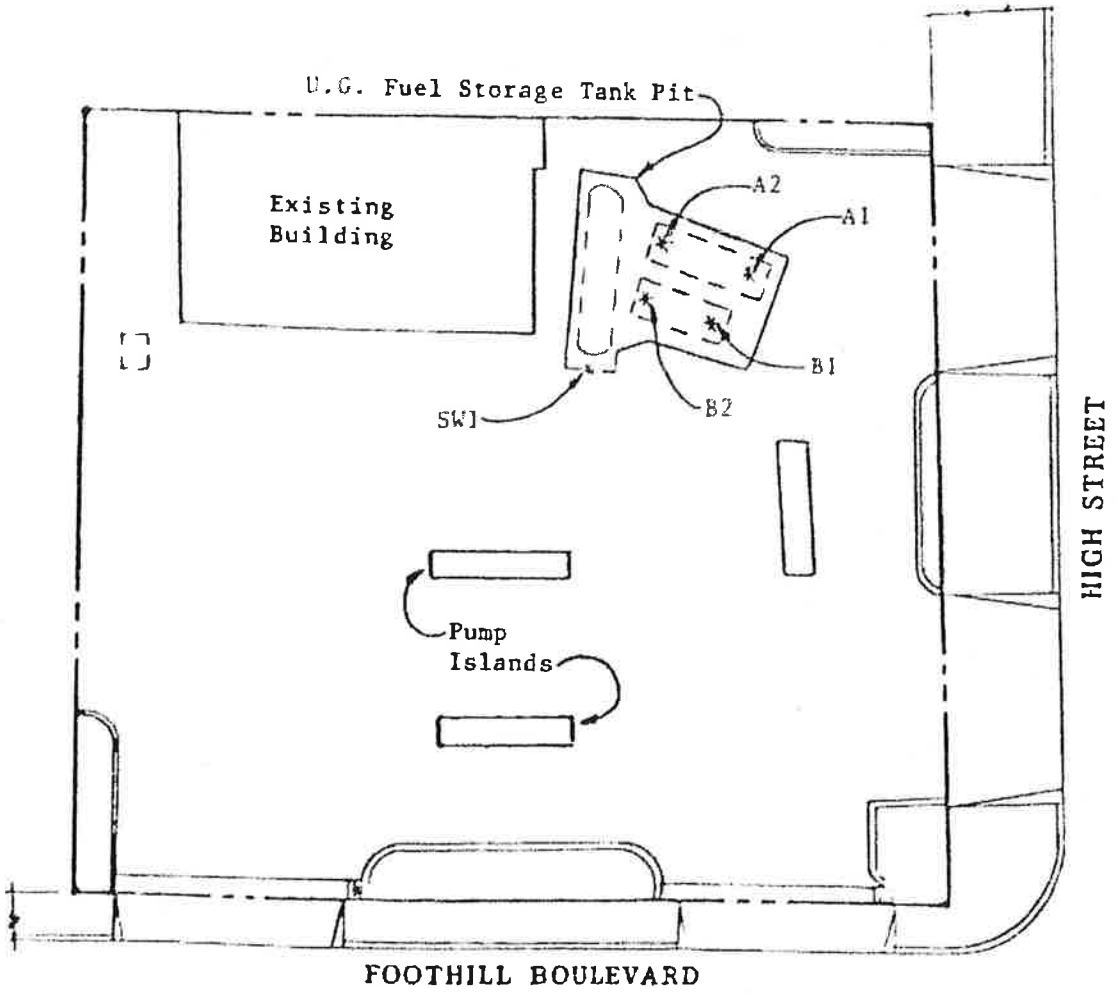
EXPLANATION OF ABBREVIATIONS:

TPH-G	:Total Petroleum Hydrocarbons as Gasoline
B	:Benzene
T	:Toluene
E	:Ethylbenzene
X	:Xylenes
ND	:Not detected above given detection limits
SAL	:Superior Analytical Lab

Source: Alton, March 24, 1992a

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
PO BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

1-2-8



SITE PLAN
Figure 1

LEGEND

* Sample Point Location

0 30 60
Approx. scale feet

BP Service Station
4280 Foothill Boulevard
Oakland, CA

KEI-J90-0911.R1
November 1, 1990

TABLE 1

SUMMARY OF LABORATORY ANALYSES
SOIL SAMPLES COLLECTED FROM THE FUEL TANK PIT
AND PRODUCT DISPENSER AREA

(Collected between September 14 to 28,
and on October 16, 1990)

Sample	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
A1	14.5	ND	0.10	0.006	ND	0.006
A2	14.5	ND	ND	0.0080	ND	ND
B1*	14.5	ND	0.034	0.014	ND	ND
B2*	14.5	ND	0.0060	ND	ND	ND
SW1	12	ND	0.018	ND	ND	ND
SW2-19	19	ND	0.12	ND	0.071	0.10
SW3-9.5	9.5	ND	0.051	ND	ND	0.0050
SW4-16	16	140	0.89	0.79	0.44	4.4
SW5	17	4.2	0.040	0.029	0.058	0.069
SW6-11	11	16	0.033	0.16	0.38	0.097
A3-16	16	4.3	0.044	0.010	0.22	0.20
A4-16.5	16.5	5.3	0.058	0.026	ND	0.19
A4-19	19	ND	0.010	ND	0.037	0.050
B3-14.5	14.5	910	6.0	13	82	19
B3-24	24	91	1.7	0.46	ND	0.17
D1-4	4	ND	ND	ND	ND	ND
D2-11	11	31	0.38	1.2	2.8	0.60
D3**	4	ND	ND	0.011	ND	ND
D4**	6	1.9	0.054	0.094	0.20	0.046
D5**	4	6.8	0.0010	0.028	0.018	0.045
D6**	5.5	15	0.51	0.038	1.7	0.62

* Total lead for B1 and B2 were detected at 10 ppm and 12 ppm, respectively.

** Total lead for D3, D4, D5 and D6 were detected at 2.5 ppm, 4.5 ppm, 4.0 ppm and 2.0 ppm, respectively.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

KAPREALIAN ENGINEERING, INC.
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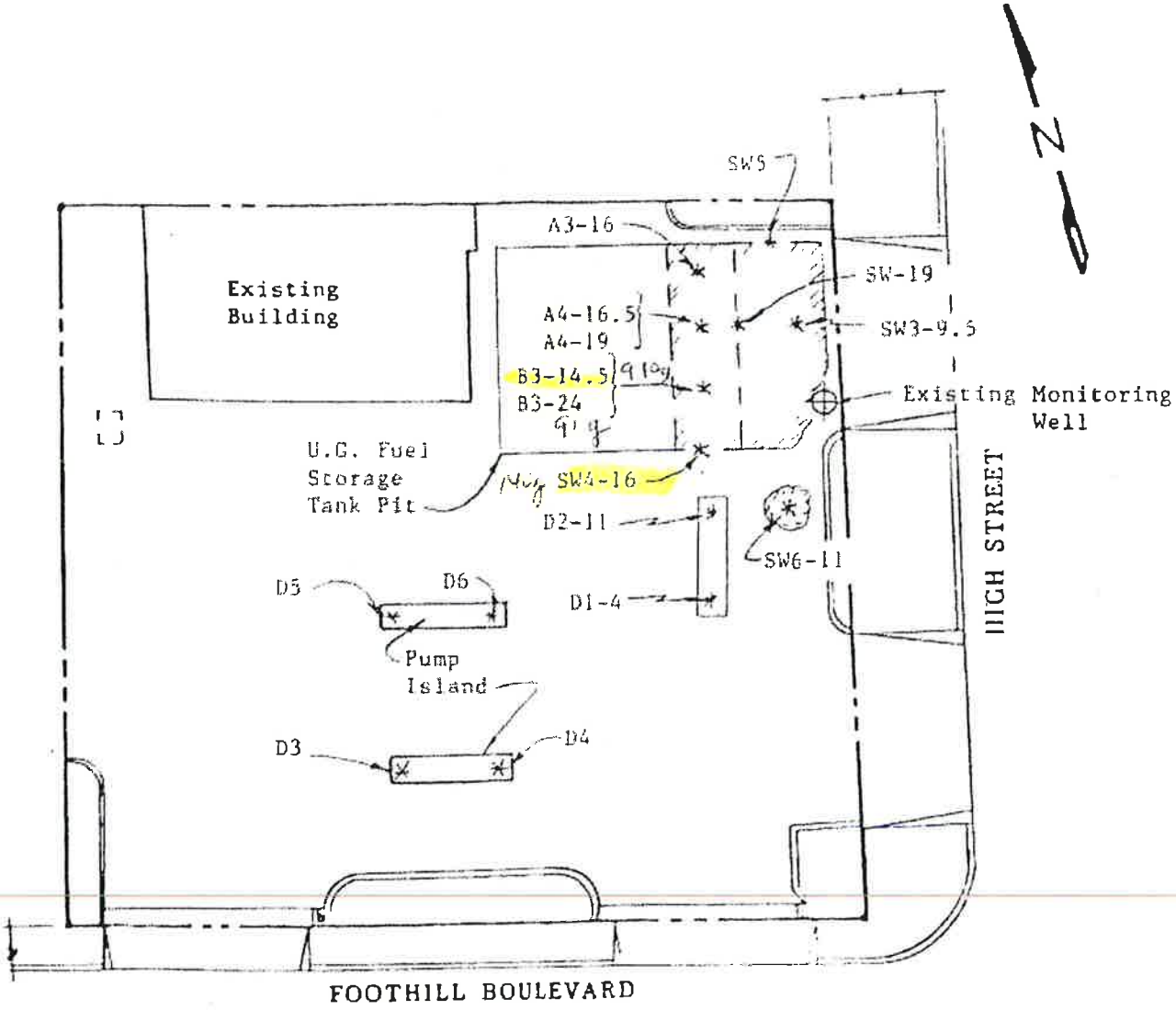
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581



SITE PLAN
Figure 2

LEGEND

Sample Point Location

Additional Excavation

0 30 60
Approx. scale feet

BP Service Station
4280 Foothill Boulevard
Oakland, CA

P&A RZA

GTEL ENVIRONMENTAL LABORATORIES, INC.
Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

04/25/89 KF PAGE 1 OF 1

WORK ORD#: C904459
CLIENT: STEVE EVANS/SHAUN DONNAN
RITTENHOUSE-ZEMAN & ASSOC.
1400 140TH AVENUE NE
BELLEVUE, WA 98005
PROJECT#: SEA-0101-5
LOCATION: OAKLAND, CA

SAMPLED: 04/19/89 BY: S. EVANS
RECEIVED: 04/21/89
ANALYZED: 04/24/89 BY: K. PATTON

MATRIX: SOIL W-6095
UNITS: mg/Kg (ppm)

PARAMETER	MDL	SAMPLE # I.D.	01 S-1A	02 S-2A			
Benzene	0.5		<0.5	<0.5			
Toluene	0.5		<0.5	<0.5			
Ethylbenzene	0.5		<0.5	<0.5			
Xylenes	0.5		<0.5	<0.5			
Total BTEX	0.5		<0.5	<0.5			

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: Modified EPA 5030/8020

TABLE 1.

Emma P. Popek

EMMA P. POPEK, Laboratory Director

1980 P-3A

GTEL ENVIRONMENTAL LABORATORIES, INC.
Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

04/26/89MT

WORK ORD#: C904461
CLIENT: STEVE EVANS/SHAUN DONNAN
RITTENHOUSE-ZEMAN & ASSOC.
1400 140TH AVENUE NE
BELLEVUE, WA 98005
PROJECT#: SEA-0101-7
LOCATION: OAKLAND, CA

SAMPLED: 04/19/89 BY: S. EVANS
RECEIVED: 04/20/89
ANALYZED: 04/24/89 BY: T. ALUSI
J. FLORO
MATRIX: Soil
UNITS: mg/Kg (ppm) JOB# 6095

PARAMETER	MDL	SAMPLE # I.D.	01 S-1B	02 S-2B		
Total Petroleum Hydrocarbons	5		15	<5		

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: APHA Standard Methods 503D/E

Table 2

Emma P. Popek

EMMA P. POPEK, Laboratory Director

1484 RZA

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

04/25/89 jp PAGE 1 OF 1

WORK ORD#:C904460
CLIENT: STEVE EVANS/SHAUN DONNAN
RITTENHOUS-ZEMAN & ASSOCIATES, INC.
1400 140TH AVENUE
BELLEVUE, WASHINGTON 98005
PROJECT#: SEA-0101-6
LOCATION: OAKLAND, CA

SAMPLED: 04/19/89 BY: STEVE EVANS
RECEIVED: 04/20/89
ANALYZED: 04/23/89 BY: C. MANUEL

MATRIX: WATER W-6095
UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE # I.D.	01 S-3A
Benzene	0.5		860
Toluene	0.5		160
Ethylbenzene	0.5		570
Xylenes	0.5		1200
Total BTEX	0.5		2800

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: Modified EPA 5030/8020

TABLE 3

Emma P. Popek

EMMA P. POPEK, Director

TABLE 2

Summary of Analytical Results of Soil Samples
BP Oil Company Service Station No. 11109
4280 Foothill Boulevard, Oakland, California

Project No.: 30-0248

Concentrations in parts per million (ppm)

SAMPLE ID	DATE OF SAMPLING	SAMPLE DEPTH (feet)	TPH-G	B	T	E	X	TOTAL ORGANIC PB	LAB
MW-3	01/29/90	5	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-3	01/29/90	10	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-3	01/29/90	15	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-3	01/29/90	20	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-3	01/29/90	25	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-3	01/29/90	29	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-4	01/30/90	5	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-4	01/30/90	10	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-4	01/30/90	15	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-4	01/30/90	20	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-4	01/30/90	25	16	ND<.050	ND<.050	ND<.050	.170	---	SAL
MW-4	01/30/90	29	ND<1	ND<.005	ND<.005	ND<.005	ND<.005	---	SAL
MW-5	09/09/91	6	ND<1	.003	ND<.003	ND<.003	.003	ND<2	SAL
MW-5	09/09/91	11	4400	8.5	58	55	260	ND<2	SAL
MW-5	09/09/91	15.5	240	1	1.4	2.5	9.5	ND<2	SAL
MW-5	09/09/91	21	6100	14	47	34	120	---	SAL
MW-5	09/09/91	26	89	.23	.390	.5	1	---	SAL
MW-6	09/09/91	16	ND<1	ND<.003	ND<.003	ND<.003	ND<.003	---	SAL
MW-6	09/09/91	21	ND<1	ND<.003	ND<.003	ND<.003	ND<.003	---	SAL
MW-6	09/09/91	25.5	270	ND<.030	.780	.340	.510	---	SAL
MW-7	09/10/91	6	310	ND<.150	.860	.690	1.6	ND<2	SAL
MW-7	09/10/91	9.5	11	ND<.003	.035	.013	.028	ND<2	SAL
MW-7	09/10/91	13	38	.120	.110	.089	.120	ND<2	SAL
MW-7	09/10/91	18.5	17	.053	.035	.160	.098	ND<2	SAL
MW-7	09/10/91	24	ND<1	.003	ND<.003	.003	ND<.003	ND<2	SAL

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AGS -91

AGS 91

AGS -91

Source: Alton, March 24, 1992a

Table C-3
Page 1 of 2

The laboratory analytical reports for soil boring samples, including chain-of-custody documentation, are provided in Appendix B. Soil laboratory analytical results are also summarized in tabular format below.

Soil Boring Samples - Laboratory Analytical Results (mg/kg)

Sample ID	GRO	B	T	E	X	MTBE	TBA	DIPE
MW-10 14'	**420**	**2.4**	**5.1**	**20**	**84**	<0.50	<5.0	<1.0
MW-10 20'	**3,900**	**11**	**31**	**48**	**230**	<1.0	<10	<2.0
MW-10 26'	**1,300**	**0.67**	**0.43**	**2.1**	**2.9**	<0.10	<1.0	<0.20
MW-10 30'	**21**	**0.48**	**0.020**	**0.033**	**0.037**	<0.0010	**0.065**	**0.0035**
MW-11 10'	**55**	<0.10	<0.10	**1.6**	**0.21**	<0.10	<1.0	<0.20
MW-11 16'	<0.50	**0.0014**	**0.0013**	**0.0051**	**0.0076**	**0.0028**	<0.010	<0.0020
MW-11 24'	**6,500**	**22**	**86**	**95**	**460**	<2.0	<20	<4.0
MW-11 30'	**15**	**0.58**	**0.44**	**0.69**	**3.1**	<0.10	<1.0	<0.20
MW-12 10'	**8.5**	**0.025**	**0.0019**	**0.013**	**0.0039**	<0.0010	**0.014**	<0.0020
MW-12 16'	**9.8**	**0.065**	**0.012**	**1.3**	**0.40**	<0.0010	<0.010	<0.0020
MW-12 22'	**1,300**	**2.6**	**0.94**	**24**	**6.7**	<0.20	<2.0	<0.40
MW-12 30'	**0.76**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	**0.013**	<0.0020

Hydrocarbon concentrations detected above laboratory reporting limits are represented with bold-typed font. Concentrations of EDB, ETBE, TAME, and 1,2-DCA are not included in the above table as the results for these constituents were below their respective laboratory reporting limits. No significant irregularities were reported during laboratory analysis of the soil boring samples. From review of the tabulated data and historic depths to ground water as low as 30 ft bgs, it appears that a 20 ft thick 'smear zone' may be present. Concentrations do dramatically decrease down to the historic low ground-water level of 30.00 ft bgs (MW-5, 4/7/1994), approximately defining the vertical extent of contamination. The laboratory results for soil sample analyses were uploaded to the GeoTracker AB2886 database. Copies of the GeoTracker upload confirmation receipts (EDF) are provided within Appendix D.

4.4 Monitoring Well Construction

Monitoring wells MW-10, MW-11, and MW-12 were constructed using flush-threaded, four-inch diameter, 0.020-inch factory-slotted Schedule 40 PVC pipe. The screen interval in each well extends from 7.0 feet bgs to 30 feet bgs. The filter pack surrounding the screen intervals consists of No.2/12 silica sand from the bottom of the well boring to one foot above the screen intervals. Each wellhead was secured with a locking well cap, and protected by a traffic-rated well vault set flush with the local ground surface. Additional details of well construction are provided in the field notes, lithologic boring logs and well construction logs provided in Appendix B. Well construction information was uploaded to the GeoTracker AB2886 database. Copies of GeoTracker upload confirmation receipts are provided within Appendix D.

Exxon 94 - CPT

Table A-1

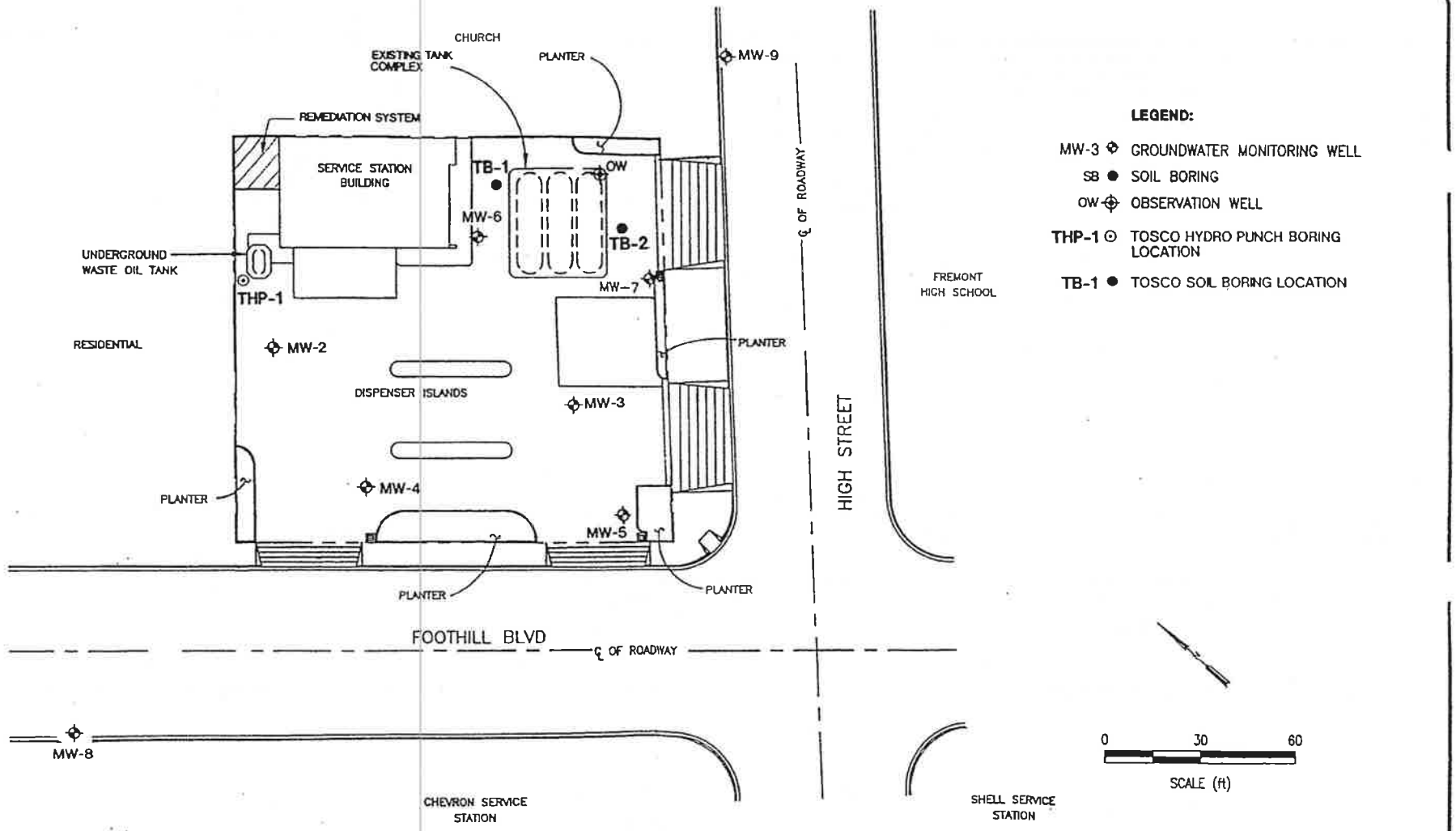
Site Number 11109
4280 Foothill Boulevard, Oakland, California

Soil Sample Results of Analyses (ppm)

Sample Number	Depth (feet)	Date Collected	California DHS LUFT Method TPH-G	California DHS LUFT Method Hydrocarbon Scan		BTEX EPA Method 5030/8020			
			TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes
THP1-S-9.5-10**	9.5-10	10/19/94	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*
THP1-S-17-17.5	17-17.5	10/19/94	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*
TB1-S-17-17.5***	17-17.5	10/19/94	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*
TB1-S-24.5-25	24.5-25	10/19/94	*nd*	*nd*	33	*nd*	*nd*	*nd*	*nd*
TB2-S-16-16.5	16-16.5	10/19/94	51	*nd*	8	0.09	*nd**	0.4	0.8
TB2-S-27-27.5	27-27.5	10/19/94	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*

NOTE:
- TPH-G = Total petroleum hydrocarbons as gasoline.
- TPH-D = Total petroleum hydrocarbons as diesel.
- TPH-O = Total petroleum hydrocarbons as oil.
- *nd* = Not detected at or above method reporting limit.
- *n/a* = Not applicable.
- — = Not analyzed.

- TW = Tosco well.
- TB = Tosco boring.
- TD = Tosco dispenser soil sample.
- THP = Tosco HydroPunch.
- SGP = Soil gas probe.
- * = Raised method reporting limits (see laboratory report in Attachment D).
- ** = THP1 is referred to as HP1 on the lab report.
- *** = TB1 and TB2 are referred to as SB1 and SB2 on the lab report.



EMCON Northwest, Inc.

SOURCE: ALISTO (JULY 8, 1993)

DATE 12-19-94
DWN. MLP
REV.
APPR.
PROJECT NO. 0952-027.03

Figure A-1
TOSCO #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA
SITE PLAN

Appendix E

Groundwater Dat a and Figures

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-1	1/31/1990		38.19	15.41		22.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	9/16/2010		--	--		--	--	5,500	400	250	320	410	11	<20	<2.5	<2.5	<2.5	<500	<2.5	<2.5
MW-2	2/5/1990		41.22	21.90		19.32	--	1,300	14	<0.1	9	13	--	--	--	--	--	--	--	--
MW-2	2/14/1991		41.22	21.16		20.06	<10,000	<50	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--
MW-2	5/13/1991		41.22	21.32		19.90	<50	<50	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--
MW-2	7/24/1991		41.22	22.92		18.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	10/3/1991		41.22	24.90		16.32	<50	<50	<0.3	0.8	<0.3	<0.3	--	--	--	--	--	--	--	--
MW-2	10/15/1991		41.22	24.10		17.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	12/16/1991		41.22	23.95		17.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	1/6/1992		41.22	23.30		17.92	<50	<50	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--
MW-2	1/22/1992		41.22	23.14		18.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	1/28/1992		41.22	22.99		18.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2/5/1992		41.22	22.63		18.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2/12/1992		41.22	22.04		19.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2/17/1992		41.22	20.84		20.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	4/3/1992		41.22	18.29		22.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	4/8/1992		41.22	18.86		22.36	63	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-2	4/14/1992		41.22	19.45		21.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	4/29/1992		41.22	20.35		20.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	5/7/1992		41.22	20.84		20.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	7/3/1992		41.22	22.34		18.88	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-2	10/8/1992		41.22	23.73		17.49	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-2	12/31/1992		41.22	21.12		20.10	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-2	4/21/1993	a	41.22	17.68		23.54	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-2	7/7/1993		41.22	20.30		20.92	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-2	9/21/1993		41.22	21.93		19.29	--	<50	0.9	0.7	0.7	2.6	21.54	--	--	--	--	--	--	--
MW-2	12/17/1993		41.22	21.48		19.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	12/23/1993		--	--		--	--	<50	<0.5	<0.5	<0.5	0.7	--	--	--	--	--	--	--	--
MW-2	4/7/1994		41.22	20.25		20.97	--	<50	<0.5	<0.5	<0.5	<0.5	12.2	--	--	--	--	--	--	--
MW-2	7/6/1994		41.22	20.59		20.63	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-2	10/7/1994		41.22	22.04		19.18	--	<50	<0.5	<0.5	<0.5	<0.5	15.2	--	--	--	--	--	--	--
MW-2	1/27/1995		41.22	26.12		15.10	440	<50	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--
MW-2	3/30/1995		41.22	12.34		28.88	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-2	6/20/1995		41.22	16.42		24.80	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-2	10/3/1995		41.22	20.06		21.16	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	--	--	--	--	--	--
MW-2	12/6/1995		41.22	21.31		19.91	--	<50	<0.50	<0.50	<0.50	<1.0	46	--	--	--	--	--	--	--
MW-2	3/21/1996		41.22	12.28		28.94	--	<50	<0.5	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--
MW-2	6/21/1996		41.22	13.28		27.94	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-2	9/6/1996		41.22	13.94		27.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	9/9/1996		--	--		--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-2	12/19/1996		41.22	12.19		29.03	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-2	3/17/1997		41.22	11.59		29.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	8/12/1997		41.22	13.21		28.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	12/10/1997		41.22	12.34		28.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/12/1998		41.22	11.04		30.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	6/23/1998		41.22	11.77		29.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/31/1999		41.22	12.38		28.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	8/25/1999		41.22	17.72		23.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/9/2000		41.22	11.94		29.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/8/2001		41.22	10.31		30.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/8/2002		41.22	14.35		26.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/18/2002		41.22	13.11		28.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/11/2003		41.22	13.24		27.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	12/9/2003	b	41.22	18.58		22.64	--	350	<0.50	<0.50	0.56	2.8	24	<20	<0.50	<0.50	<0.50	<100	--	--
MW-2	3/9/2004		41.22	12.52		28.70	--	74	<0.50	<0.50	0.83	4.7	27	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-2	9/17/2004		41.22	18.05		23.17	--	59	<0.50	<0.50	<0.50	<0.50	21	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-2	3/7/2005	c	41.22	2.32		38.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	9/5/2006	c	41.22	10.46		30.76	--	79	<0.50	5.1	<0.50	0.73	<0.50	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-2	3/5/2007	c	41.22	12.25		28.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/6/2008	d	41.22	12.33		28.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	9/5/2012		--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	9/5/2012		41.22	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	2/5/1990		40.74	17.45		23.29	--	1,400	15	<2.5	11	8	--	--	--	--	--	--	--	--
MW-3	2/14/1991		40.74	18.52		22.22	--	320	8	<0.3	8	1	--	--	--	--	--	--	--	--
MW-3	5/13/1991		40.74	19.32		21.42	--	640	13	<0.3	18	1	--	--	--	--	--	--	--	--
MW-3	7/24/1991		40.74	20.69		20.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	10/3/1991		40.74	19.47		21.27	--	940	21	<0.3	23	2.1	--	--	--	--	--	--	--	--
MW-3	10/15/1991		40.74	20.46		20.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/4/1991		40.74	18.29		22.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-3	12/16/1991		40.74	18.34		22.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	1/6/1992		40.74	18.50		22.24	--	580	6.1	1	6.1	7.1	--	--	--	--	--	--	--	--
MW-3	1/22/1992		40.74	17.86		22.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	1/28/1992		40.74	15.84		24.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	2/5/1992		40.74	17.53		23.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	2/12/1992		40.74	17.15		23.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	2/17/1992		40.74	16.18		24.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	4/3/1992		40.74	14.80		25.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	4/8/1992		40.74	17.06		23.68	--	1,100	30	4.6	32	11	--	--	--	--	--	--	--	--
MW-3	4/14/1992		40.74	15.22		25.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	4/29/1992		40.74	15.90		24.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5/7/1992		40.74	16.35		24.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	7/3/1992		40.74	17.74		23.00	--	1,200	38	<2.5	24	<2.5	--	--	--	--	--	--	--	--
MW-3	10/8/1992		40.74	19.06		21.68	--	1,400	31	<0.5	25	13	--	--	--	--	--	--	--	--
MW-3	12/31/1992		40.74	16.61		24.13	--	820	12	4.1	13	5.9	--	--	--	--	--	--	--	--
MW-3	12/31/1992	e	40.74	16.61		24.13	--	960	11	3.6	10	3.8	--	--	--	--	--	--	--	--
MW-3	4/21/1993		40.74	14.24		26.50	--	420	5.6	<0.5	3.9	1.4	--	--	--	--	--	--	--	--
MW-3	4/21/1993	e	40.74	14.24		26.50	--	390	5	<0.5	3.7	1.5	--	--	--	--	--	--	--	--
MW-3	7/7/1993	f	40.13	15.19		24.94	--	54	0.6	0.6	<0.5	<0.5	12.68	--	--	--	--	--	--	--
MW-3	9/21/1993		40.13	16.58		23.55	--	540	7.9	0.9	4.7	2.4	--	--	--	--	--	--	--	--
MW-3	12/17/1993		40.13	15.82		24.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/23/1993		--	--		--	--	500	9.8	1.5	3.3	2.1	--	--	--	--	--	--	--	--
MW-3	12/23/1993	e	--	--		--	--	480	9.2	<0.5	5.4	5.3	--	--	--	--	--	--	--	--
MW-3	4/7/1994		40.13	28.50		11.63	--	460	20	7.4	8.9	11	18.2	--	--	--	--	--	--	--
MW-3	4/7/1994	e	40.13	28.50		11.63	--	460	20	7.7	9	11	--	--	--	--	--	--	--	--
MW-3	7/6/1994		--	--		--	--	300	10	0.6	1.7	6.4	5.54	--	--	--	--	--	--	--
MW-3	10/7/1994		40.13	27.65		12.48	--	620	28	<0.5	2.2	12	31.4	--	--	--	--	--	--	--
MW-3	1/27/1995		40.13	27.65		12.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/30/1995		40.13	26.05		14.08	--	300	10	6	3.4	18	--	--	--	--	--	--	--	--
MW-3	6/20/1995		40.13	19.49		20.64	--	170	7.2	3.4	0.85	15	--	--	--	--	--	--	--	--
MW-3	10/3/1995		40.13	24.93		15.20	--	170	2.1	<0.50	0.81	8	6.7	--	--	--	--	--	--	--
MW-3	12/6/1995		40.13	25.14		14.99	--	1,700	6.7	3.1	2.8	210	64	--	--	--	--	--	--	--
MW-3	12/6/1995	e	40.13	25.14		14.99	--	1,400	6.1	3	1.7	190	53	--	--	--	--	--	--	--
MW-3	3/21/1996		40.13	9.48		30.65	--	<50	0.5	<1.0	<1.0	1	<10	--	--	--	--	--	--	--
MW-3	6/21/1996		40.13	11.60		28.53	--	<50	13	<1.0	<1.0	<1.0	12	--	--	--	--	--	--	--
MW-3	9/6/1996		40.13	12.23		27.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	9/9/1996		--	--		--	--	<250	6.5	<5.0	<5.0	<5.0	<50	--	--	--	--	--	--	--
MW-3	12/19/1996		40.13	10.46		29.67	--	<50	4.1	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-3	3/17/1997		40.13	9.86		30.27	--	50	<5.0	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-3	8/12/1997		40.13	12.11		28.02	--	<50	0.79	<1.0	<1.0	<1.0	10	--	--	--	--	--	--	--
MW-3	12/10/1997		40.13	10.90		29.23	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-3	3/12/1998		40.13	10.20		29.93	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-3	3/12/1998	e	40.13	10.20		29.93	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-3	6/23/1998		40.13	10.17		29.96	--	50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-3	3/31/1999		40.13	11.45		28.68	--	60	<1.0	<1.0	<1.0	<1.0	6.2	--	--	--	--	--	--	--
MW-3	8/25/1999		40.13	12.52		27.61	--	<50	<1.0	<1.0	<1.0	<1.0	7.7	--	--	--	--	--	--	--
MW-3	3/9/2000		40.13	12.39		27.74	--	<50	<0.5	0.54	<0.5	1.7	6.3	--	--	--	--	--	--	--
MW-3	3/8/2001		40.13	10.41		29.72	--	<50	<0.5	<0.5	<0.5	0.59	7.7	--	--	--	--	--	--	--
MW-3	3/8/2002		40.13	9.83		30.30	--	62	<0.5	<0.5	<0.5	<1.0	11.6	--	--	--	--	--	--	--
MW-3	3/18/2002		40.13	9.20		30.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/11/2003		40.13	10.54		29.59	--	<50	<0.50	<0.50	<0.50	<0.50	6.7	--	--	--	--	--	--	--
MW-3	12/9/2003		40.13	12.88		27.25	--	<50	<0.50	<0.50	<0.50	<0.50	6.4	<20	<0.50	<0.50	<0.50	<100	--	--
MW-3	3/9/2004		40.13	9.49		30.64	--	<50	<0.50	<0.50	<0.50	0.63	6.9	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-3	9/17/2004		40.13	12.76		27.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/7/2005		40.13	7.30		32.83	--	<50	<0.50	<0.50	<0.50	0.52	5.1	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-3	9/6/2005		42.92	10.81		32.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/6/2006		42.92	8.85		34.07	--	<50	<0.50	<0.50	<0.50	<0.50	6.9	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-3	9/5/2006		42.92	9.86		33.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/5/2007		42.92	8.33		34.59	--	<50	<0.50	<0.50	<0.50	<0.50	5.4	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-3	9/7/2007		42.92	11.10		31.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/6/2008		42.92	8.92		34.00	--	<50	<0.50	<0.50	<0.50	<0.50	4.2	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-3	9/3/2008		42.92	12.19		30.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/4/2009		42.92	8.28		34.64	--	<50	<0.50	<0.50	<0.50	<0.50	4.9	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-3	9/30/2009		42.92	11.60		31.32	--	<50	<0.50	<0.50	<0.50	<0.50	6.8	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-3	10/28/2009		42.92	10.40		32.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/23/2010		42.92	8.27		34.65	--	<50	<0.50	<0.50	<0.50	<1.0	3.2	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-3	6/10/2010		42.92	9.40		33.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	9/16/2010		42.92	11.14		31.78	--	<50	<0.50	<0.50	<0.50	<1.0	5.9	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-3	2/23/2011		42.92	8.71		34.21	--	--	--	--	--	--	0.58	--	--	--	--	--	--	--
MW-3	9/28/2011		42.92	11.14		31.78	--	--	--	--	--	--	3.2	--	--	--	--	--	--	--
MW-3	3/8/2012		42.92	11.01		31.91	--	--	--	--	--	--	<0.50(*)	--	--	--	--	--	--	--

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-3	9/5/2012		42.92	11.42		31.50	--	--	--	--	--	--	6.5	--	--	--	--	--	--	--
MW-3	3/20/2013		42.92	10.30	--	32.62	--	--	--	--	--	--	2.6	--	--	--	--	--	--	--
MW-4	2/5/1990		40.11	20.75		19.36	--	620	<0.5	9	<0.5	10	--	--	--	--	--	--	--	--
MW-4	2/14/1991		40.11	21.73		18.38	--	180	<0.3	<0.3	0.4	2	--	--	--	--	--	--	--	--
MW-4	5/13/1991		40.11	18.55		21.56	--	72	0.7	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--
MW-4	7/24/1991		40.11	21.31		18.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/3/1991		40.11	22.57		17.54	--	57	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--
MW-4	10/15/1991		40.11	22.88		17.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/4/1991		40.11	22.54		17.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/16/1991		40.11	22.59		17.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	1/6/1992		40.11	22.00		18.11	--	480	0.8	3.2	1.9	7.7	--	--	--	--	--	--	--	--
MW-4	1/22/1992		40.11	21.58		18.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	1/28/1992		40.11	21.42		18.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	2/5/1992		40.11	21.10		19.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	2/12/1992		40.11	20.74		19.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	2/17/1992		40.11	19.78		20.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	4/3/1992		40.11	16.80		23.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	4/8/1992		40.11	17.13		22.98	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-4	4/14/1992		40.11	17.74		22.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	4/29/1992		40.11	18.56		21.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/7/1992		40.11	19.10		21.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/3/1992		40.11	20.71		19.40	--	<50	0.6	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-4	10/8/1992		40.11	22.43		17.68	--	270	<0.5	2.1	2.5	3.2	--	--	--	--	--	--	--	--
MW-4	12/31/1992		40.11	19.58		20.53	--	150	<0.5	<0.5	<0.5	1.3	--	--	--	--	--	--	--	--
MW-4	4/21/1993		40.11	17.79		22.32	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-4	7/7/1993		40.11	18.44		21.67	--	160	1.2	5.4	3.8	19	5.51	--	--	--	--	--	--	--
MW-4	9/21/1993		40.11	20.14		19.97	--	71	<0.5	1.9	<0.5	2.1	--	--	--	--	--	--	--	--
MW-4	12/17/1993		40.11	19.80		20.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/23/1993		--	--		--	--	<50	3.1	1.6	0.8	3.8	5.7	--	--	--	--	--	--	--
MW-4	4/7/1994		40.11	19.12		20.99	--	<50	<0.5	<0.5	<0.5	<0.5	11.7	--	--	--	--	--	--	--
MW-4	7/6/1994		40.11	19.90		20.21	--	62	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-4	10/7/1994		40.11	20.07		20.04	--	<50	<0.5	<0.5	<0.5	<0.5	7.38	--	--	--	--	--	--	--
MW-4	1/27/1995		40.11	13.72		26.39	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--
MW-4	3/30/1995		40.11	11.46		28.65	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-4	6/20/1995		40.11	14.78		25.33	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-4	10/3/1995		40.11	19.62		20.49	--	<50	<0.50	<0.50	<0.50	<1.0	5	--	--	--	--	--	--	--
MW-4	12/6/1995		40.11	19.91		20.20	--	<50	<0.50	<0.50	<0.50	<1.0	47	--	--	--	--	--	--	--
MW-4	3/21/1996		40.11	11.12		28.99	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-4	6/21/1996		40.11	12.21		27.90	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-4	9/6/1996		40.11	12.89		27.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/9/1996		--	--		--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-4	12/19/1996		40.11	11.01		29.10	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-4	3/17/1997		40.11	10.42		29.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	8/12/1997		40.11	12.77		27.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/10/1997		40.11	11.22		28.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/12/1998		40.11	10.81		29.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/23/1998		40.11	10.61		29.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/31/1999		40.11	11.46		28.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	8/25/1999		40.11	16.16		23.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/9/2000		40.11	12.23		27.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/8/2001		40.11	11.04		29.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/8/2002		40.11	12.73		27.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/18/2002		40.11	11.62		28.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/11/2003		40.11	13.44		26.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/9/2003		40.11	15.03		25.08	--	<250	<2.5	<2.5	<2.5	<2.5	130	<100	<2.5	<2.5	2.7	<500	--	--
MW-4	3/9/2004		40.11	11.04		29.07	--	<50	<0.50	<0.50	<0.50	<0.50	35	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-4	9/17/2004		40.11	16.75		23.36	--	<250	<2.5	<2.5	<2.5	<2.5	140	<100	<2.5	<2.5	2.6	<500	<2.5	<2.5
MW-4	3/7/2005		40.11	11.02		29.09	--	67	<0.50	<0.50	<0.50	<0.50	42	<20	<0.50	<0.50	0.56	<100	<0.50	<0.50
MW-4	9/6/2005		42.88	14.64		28.24	--	81	<0.50	<0.50	<0.50	<1.5	180	<10	<0.50	<0.50	2.8	<150	<0.50	<0.50
MW-4	3/6/2006		42.88	12.42		30.46	--	<100	<1.0	<1.0	<1.0	<1.0	110	<40	<1.0	<1.0	1.4	<600	<1.0	<1.0
MW-4	9/5/2006		42.88	13.81		29.07	--	130	<1.0	<1.0	<1.0	<1.0	190	<40	<1.0	<1.0	1.7	<600	<1.0	<1.0
MW-4	3/5/2007		42.88	10.63		32.25	--	<50	<0.50	<0.50	<0.50	<0.50	13	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-4	9/7/2007		42.88	14.77		28.11	--	90	<0.50	<0.50	<0.50	<0.50	130	<20	<0.50	<0.50	1.7	<300	<0.50	<0.50
MW-4	3/6/2008		42.88	11.30		31.58	--	<50	<0.50	<0.50	<0.50	<0.50	170	14	<0.50	<0.50	2.1	<300	<0.50	<0.50
MW-4	9/3/2008		42.88	16.11		26.77	--	<50	<5.0	<5.0	<5.0	<5.0	150	<100	<5.0	<5.0	<5.0	<3,000	<5.0	<5.0
MW-4	3/4/2009		42.88	10.78		32.10	--	140	<5.0	<5.0	<5.0	<5.0	110	<100	<5.0	<5.0	<5.0	<3,000	<5.0	<5.0
MW-4	9/30/2009		42.88	16.48		26.40	--	240	<2.0	<2.0	<2.0	<2.0	140	<40	<2.0	<2.0	<2.0	<1,200	<2.0	<2.0
MW-4	10/28/2009		42.88	15.07		27.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/23/2010		42.88	10.82		32.06	--	<50	<0.50	<0.50	<0.50	<1.0	84	18	<0.50	<0.50	0.88	<100	<0.50	<0.50
MW-4	6/10/2010		42.88	12.67		30.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-4	9/16/2010		42.88	15.72		27.16	--	120	<0.50	<0.50	<0.50	<1.0	72	8.0	<0.50	<0.50	0.82	<100	<0.50	<0.50
MW-4	2/23/2011		42.88	11.43		31.45	--	<50	--	--	--	--	55	--	--	--	--	--	--	--
MW-4	9/28/2011		42.88	15.34		27.54	--	150	--	--	--	--	62	--	--	--	--	--	--	--
MW-4	3/8/2012		42.88	15.03		27.85	--	120	--	--	--	--	42	--	--	--	--	--	--	--
MW-4	9/5/2012		42.88	15.90		26.98	--	56	<0.50	<0.50	<0.50	<1.0	47	18	<0.50	<0.50	<0.50	<250	<0.50	<0.50
MW-4	3/20/2013		42.88	13.80	--	29.08	--	<50	--	--	--	--	17	--	--	--	--	--	--	--
MW-5	10/3/1991		39.55	18.08		21.47	--	79,000	13,000	7,400	1,400	6,200	--	--	--	--	--	--	--	--
MW-5	10/15/1991		39.55	18.55		21.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/4/1991	g	39.55	18.44		20.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/16/1991	g	39.55	18.66		20.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	1/6/1992	g	39.55	19.12		20.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	1/22/1992		39.55	14.59		24.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	1/28/1992		39.55	15.25		24.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	2/5/1992	b	39.55	15.58		23.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	2/12/1992	g	39.55	15.54		24.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	2/17/1992	b	39.55	13.98		25.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	4/3/1992	g	39.55	13.63		25.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	4/8/1992	g	39.55	13.17		26.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	4/14/1992	g	39.55	13.45		26.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	4/29/1992	g	39.55	13.75		25.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	5/7/1992	g	39.55	16.15		23.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	7/3/1992	g	39.55	17.67		21.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/1/1992	g	39.55	17.83		21.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	10/8/1992	g	39.55	17.86		20.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/31/1992	b	39.55	15.20		24.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	4/21/1993	g	39.55	12.64		26.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	7/7/1993	g,f	39.14	12.68		25.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/21/1993	b	39.14	14.35		24.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/17/1993	g	39.14	12.61		26.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	4/7/1994		39.14	30.00		9.14	--	66,000	3,000	1,700	250	6,800	2,002	--	--	--	--	--	--	--
MW-5	7/6/1994		--	--		--	--	29,000	1,900	330	63	2,700	1,141	--	--	--	--	--	--	--
MW-5	10/7/1994		39.14	28.70		10.44	--	250,000	2,600	660	830	5,200	37.7	--	--	--	--	--	--	--
MW-5	10/7/1994	e	39.14	28.70		10.44	--	45,000	2,900	540	260	2,600	--	--	--	--	--	--	--	--
MW-5	1/27/1995		39.14	28.70		10.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/30/1995		39.14	28.95		10.19	--	50,000	7,900	2,600	520	6,400	--	--	--	--	--	--	--	--
MW-5	3/30/1995	e	39.14	28.95		10.19	--	43,000	7,900	2,500	440	6,200	--	--	--	--	--	--	--	--
MW-5	6/20/1995		39.14	22.54		16.60	--	34,000	5,100	1,900	300	3,700	--	--	--	--	--	--	--	--
MW-5	6/20/1995	e	39.14	22.54		16.60	--	26,000	3,500	290	<25	3,300	--	--	--	--	--	--	--	--
MW-5	10/3/1995		39.14	18.84		20.30	--	12,000	68	42	11	1,600	330	--	--	--	--	--	--	--
MW-5	10/3/1995	e	39.14	18.84		20.30	--	12,000	46	39	10	1,600	320	--	--	--	--	--	--	--
MW-5	12/6/1995		39.14	19.07		20.07	--	16,000	1,200	93	51	700	600	--	--	--	--	--	--	--
MW-5	3/21/1996		39.14	7.43		31.71	--	1,500	89	28	6	250	<10	--	--	--	--	--	--	--
MW-5	3/21/1996	e	39.14	7.43		31.71	--	1,900	92	30	7	270	<10	--	--	--	--	--	--	--
MW-5	6/21/1996		39.14	9.87		29.27	--	3,500	740	150	19	400	<100	--	--	--	--	--	--	--
MW-5	6/21/1996	e	39.14	9.87		29.27	--	2,700	680	140	20	400	<50	--	--	--	--	--	--	--
MW-5	9/6/1996		39.14	10.52		28.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/9/1996		--	--		--	--	82,000	3,100	1,700	850	9,100	<2,500	--	--	--	--	--	--	--
MW-5	9/9/1996	e	--	--		--	--	90,000	2,900	1,600	670	6,900	<2,500	--	--	--	--	--	--	--
MW-5	12/19/1996		39.14	8.62		30.52	--	41,000	790	820	120	2,040	<500	--	--	--	--	--	--	--
MW-5	12/19/1996	e	39.14	8.62		30.52	--	26,000	490	430	63	1,140	<500	--	--	--	--	--	--	--
MW-5	3/17/1997		39.14	8.22		30.92	--	5,500	1.9	2.4	<1.0	<1.0	29	--	--	--	--	--	--	--
MW-5	3/17/1997	e	39.14	8.22		30.92	--	6,600	2.5	2.7	<1.0	<1.0	28	--	--	--	--	--	--	--
MW-5	8/12/1997	g	39.14	12.18		26.74	--	33,000	6,400	2,400	680	4,400	<1,000	--	--	--	--	--	--	--
MW-5	8/12/1997	e	39.14	12.18		26.74	--	36,000	6,100	2,500	720	4,500	<500	--	--	--	--	--	--	--
MW-5	12/10/1997	g	39.14	10.78		28.30	--	31,000	3,000	2,500	560	5,100	500	--	--	--	--	--	--	--
MW-5	12/10/1997	e	39.14	10.78		28.30	--	37,000	2,900	2,500	440	4,800	--	--	--	--	--	--	--	--
MW-5	3/12/1998	g	39.14	10.11		28.81	--	100,000	1,600	870	250	2,600	<250	--	--	--	--	--	--	--
MW-5	6/23/1998		39.14	10.20		28.92	--	27,000	2,500	840	370	2,900	<250	--	--	--	--	--	--	--
MW-5	6/23/1998	e	39.14	10.20		28.92	--	27,000	2,600	840	400	2,950	<500	--	--	--	--	--	--	--
MW-5	8/25/1999	g	39.14	14.69		24.07	--	180,000	2,700	400	830	2,800	26	--	--	--	--	--	--	--
MW-5	3/9/2000	g	39.14	14.83		23.71	--	53,000	12,000	2,600	1,900	9,100	<5.0	--	--	--	--	--	--	--
MW-5	3/8/2002	g	39.14	11.45		26.19	--	33,000	8,240	1,080	1,010	2,900	34.3	--	--	--	--	--	--	--
MW-5	3/18/2002		39.14	8.03		31.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/11/2003	g	39.14	9.60		29.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	12/9/2003	g	39.14	11.44		27.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/9/2004		39.14	7.91		31.23	--	31,000	3,900	1,100	780	3,600	<50	<2,000	<50	<50	<50	<10,000	96	<50
MW-5	9/17/2004	g	39.14	12.13		27.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/7/2005	g	39.14	8.62		30.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/6/2005	g	39.14	11.16		27.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/6/2006	g,b	39.14	8.60		30.54	--	32,000	7,500	810	1,200	2,300	<50	<2,000	60	<50	<50	<30,000	<50	<50

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-5	9/5/2006	g	39.14	6.16		32.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/5/2007	b	39.14	8.34		30.80	--	90,000	10,000	4,200	1,900	7,900	<50	<2,000	57	<50	<50	<30,000	<50	<50
MW-5	9/7/2007	g	39.14	15.15		23.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	1/14/2008	g	39.14	10.30		28.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	2/27/2008	g	39.14	13.22		25.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/6/2008	g	39.14	12.90		26.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/3/2008	g	39.14	12.90		26.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/4/2009	g	39.14	8.45		30.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	4/8/2009	g	39.14	9.05		30.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	5/11/2009	g	39.14	9.10		30.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	6/16/2009	g	39.14	9.15		29.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	7/22/2009	g	39.14	9.33		29.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	8/6/2009	g	39.14	10.05		29.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/30/2009	g	39.14	10.55		28.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	10/28/2009		39.14	10.48		28.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/23/2010		39.14	7.10		32.04	--	67,000	1,400	380	620	1,800	<5.0	<40	<5.0	<5.0	<5.0	<1,000	<5.0	<5.0
MW-5	6/10/2010	g	39.14	8.26		30.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/16/2010	g	39.14	9.14		30.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	2/23/2011	g	39.14	8.33		30.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/28/2011	g	39.14	10.46		28.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/8/2012	g	39.14	10.27		28.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/5/2012	g	39.14	11.80		27.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/20/2013	g	39.14	9.73	9.71	29.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/3/1991		41.59	20.73		20.86	--	<50	0.7	0.8	<0.3	1.3	--	--	--	--	--	--	--	--
MW-6	10/15/1991		41.59	21.20		20.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/4/1991		41.59	21.26		20.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/16/1991		41.59	21.12		20.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/6/1992		41.59	20.29		21.30	--	<50	<0.5	<0.5	<0.5	1.6	--	--	--	--	--	--	--	--
MW-6	1/22/1992		41.59	20.12		21.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	1/28/1992		41.59	20.20		21.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	2/5/1992		41.59	20.09		21.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	2/12/1992		41.59	19.15		22.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	2/17/1992		41.59	18.02		23.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/3/1992		41.59	16.62		24.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/8/1992		41.59	17.06		24.53	--	<50	0.6	<0.5	0.8	<0.5	--	--	--	--	--	--	--	--
MW-6	4/14/1992		41.59	17.23		24.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	4/29/1992		41.59	18.12		23.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/7/1992		41.59	18.52		23.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	7/3/1992		41.59	19.71		21.88	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-6	10/8/1992		41.59	21.22		20.37	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-6	10/8/1992	e	41.59	21.22		20.37	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-6	12/31/1992		41.59	21.33		20.26	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-6	4/21/1993		41.59	16.45		25.14	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-6	7/7/1993		41.59	18.68		22.91	--	<50	<0.5	<0.5	<0.5	<0.5	28.96	--	--	--	--	--	--	--
MW-6	9/21/1993		41.59	19.64		21.95	--	<50	<0.5	<0.5	<0.5	1.6	--	--	--	--	--	--	--	--
MW-6	12/17/1993		41.59	21.08		20.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/23/1993		--	--		--	--	<50	<0.5	0.5	<0.5	0.6	13.95	--	--	--	--	--	--	--
MW-6	4/7/1994		41.59	21.27		20.32	--	<50	<0.5	<0.5	<0.5	<0.5	35.1	--	--	--	--	--	--	--
MW-6	7/6/1994		41.59	19.81		21.78	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-6	7/6/1994	e	41.59	19.81		21.78	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-6	10/7/1994		41.59	21.25		20.34	--	<50	<0.5	<0.5	<0.5	<0.5	24.3	--	--	--	--	--	--	--
MW-6	1/27/1995		41.59	12.39		29.20	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--
MW-6	3/30/1995		41.59	11.34		30.25	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-6	6/20/1995		41.59	15.12		26.47	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-6	10/3/1995		41.59	20.68		20.91	--	<50	<0.50	<0.50	<0.50	<1.0	66	--	--	--	--	--	--	--
MW-6	12/6/1995		41.59	23.77		17.82	--	<50	<0.50	<0.50	<0.50	<1.0	45	--	--	--	--	--	--	--
MW-6	3/21/1996		41.59	11.55		30.04	--	<50	<0.5	<1.0	<1.0	<1.0	41	--	--	--	--	--	--	--
MW-6	6/21/1996		41.59	12.60		28.99	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-6	9/6/1996		41.59	13.25		28.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/9/1996		--	--		--	--	<50	<0.5	<1.0	<1.0	<1.0	22	--	--	--	--	--	--	--
MW-6	12/19/1996		41.59	11.45		30.14	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-6	3/17/1997		41.59	10.80		30.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/12/1997		41.59	13.11		28.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/10/1997		41.59	13.84		27.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/12/1998		41.59	11.17		30.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/23/1998		41.59	13.27		28.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/31/1999		41.59	12.91		28.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	8/25/1999		41.59	15.93		25.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/9/2000		41.59	11.49		30.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/8/2001		41.59	10.81		30.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-6	3/8/2002		41.59	14.28		27.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/18/2002		41.59	13.10		28.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/11/2003		41.59	13.63		27.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/9/2003		41.59	14.26		27.33	--	<50	<0.50	<0.50	<0.50	<0.50	12	<20	<0.50	<0.50	<0.50	<100	--	--
MW-6	3/9/2004		41.59	11.87		29.72	--	<50	<0.50	<0.50	<0.50	<0.50	10	<20	<0.50	<0.50	<0.50	<100	0.58	<0.50
MW-6	9/17/2004		41.59	16.45		25.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/7/2005		41.59	13.65		27.94	--	<50	<0.50	<0.50	<0.50	<0.50	5.8	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-6	9/6/2005		44.37	14.23		30.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/6/2006		44.37	12.89		31.48	--	<50	<0.50	<0.50	<0.50	<0.50	8.1	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-6	9/5/2006		44.37	14.10		30.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/5/2007		44.37	11.43		32.94	--	<50	<0.50	<0.50	<0.50	<0.50	5.6	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-6	9/7/2007		44.37	16.00		28.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/6/2008		44.37	11.84		32.53	--	<50	<0.50	<0.50	<0.50	<0.50	1.9	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-6	9/3/2008		44.37	16.24		28.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/4/2009		44.37	11.68		32.69	--	<50	<0.50	<0.50	<0.50	<0.50	2.8	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-6	9/30/2009		44.37	16.83		27.54	--	<50	<0.50	<0.50	<0.50	<0.50	4.4	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-6	10/28/2009		44.37	15.63		28.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/23/2010		44.37	11.48		32.89	--	<50	<0.50	<0.50	<0.50	<1.0	1.0	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-6	6/10/2010		44.37	12.54		31.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/16/2010		44.37	15.95		28.42	--	<50	<0.50	<0.50	<0.50	<1.0	0.80	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-6	2/23/2011		44.37	12.34		32.03	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--
MW-6	9/28/2011		44.37	15.81		28.56	--	--	--	--	--	--	3.4	--	--	--	--	--	--	--
MW-6	3/8/2012		44.37	15.51		28.86	--	--	--	--	--	--	0.58	--	--	--	--	--	--	--
MW-6	9/5/2012		44.37	15.88		28.49	--	--	--	--	--	--	2.1	--	--	--	--	--	--	--
MW-6	3/20/2013		44.37	14.36	--	30.01	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<250	<0.50	<0.50
MW-7	10/3/1991		40.64	14.93		25.71	--	360	62	13	3.4	20	--	--	--	--	--	--	--	--
MW-7	10/15/1991		40.64	15.16		25.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/4/1991		40.64	15.41		25.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/16/1991		40.64	15.21		25.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	1/6/1992		40.64	14.56		26.08	--	1,100	170	<0.5	24	23	--	--	--	--	--	--	--	--
MW-7	1/22/1992		40.64	14.63		26.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	1/28/1992		40.64	14.73		25.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	2/5/1992		40.64	14.58		26.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	2/12/1992		40.64	13.94		26.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	2/17/1992		40.64	13.10		27.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	4/3/1992		40.64	12.66		27.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	4/8/1992		40.64	12.77		27.87	--	750	150	<0.5	23	9.9	--	--	--	--	--	--	--	--
MW-7	4/14/1992		40.64	13.02		27.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	4/29/1992		40.64	13.59		27.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	5/7/1992		40.64	13.95		26.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	7/3/1992		40.64	14.73		25.91	--	660	210	<2.5	33	8	--	--	--	--	--	--	--	--
MW-7	10/8/1992		40.64	15.75		24.89	--	320	49	1.4	13	6.2	--	--	--	--	--	--	--	--
MW-7	12/31/1992		40.64	13.57		27.07	--	900	100	<2.5	28	4.3	--	--	--	--	--	--	--	--
MW-7	4/21/1993		40.64	14.56		26.08	--	510	83	1.2	10	5.8	--	--	--	--	--	--	--	--
MW-7	7/7/1993	f	40.32	13.40		26.92	--	1,100	160	2	27	4	10.84	--	--	--	--	--	--	--
MW-7	7/7/1993	e	40.32	13.40		26.92	--	1,100	170	1.9	29	2.84	9.84	--	--	--	--	--	--	--
MW-7	9/21/1993		40.32	14.40		25.92	--	690	150	3.1	26	5.7	--	--	--	--	--	--	--	--
MW-7	9/21/1993	e	40.32	14.40		25.92	--	640	140	1.7	23	2.4	--	--	--	--	--	--	--	--
MW-7	12/17/1993		40.32	13.65		26.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/23/1993		--	--		--	--	250	64	1.2	9	1.8	7.81	--	--	--	--	--	--	--
MW-7	4/7/1994		40.32	30.62		9.70	--	140	32	1.4	<0.5	<0.5	6.32	--	--	--	--	--	--	--
MW-7	7/6/1994		40.32	16.88		23.44	--	410	94	1.3	10	3.5	<5.0	--	--	--	--	--	--	--
MW-7	10/7/1994		40.32	25.59		14.73	--	<50	9.2	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-7	1/27/1995		40.32	9.82		30.50	--	810	570	3	60	17	--	--	--	--	--	--	--	--
MW-7	1/27/1995	e	40.32	9.82		30.50	--	930	620	4	77	21	--	--	--	--	--	--	--	--
MW-7	3/30/1995		40.32	9.15		31.17	--	180	65	0.53	2	<1.0	--	--	--	--	--	--	--	--
MW-7	6/20/1995		40.32	11.38		28.94	--	2,800	980	<5.0	<5.0	43	--	--	--	--	--	--	--	--
MW-7	10/3/1995		40.32	29.95		10.37	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	--	--	--	--	--	--
MW-7	12/6/1995		40.32	29.85		10.47	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	--	--	--	--	--	--
MW-7	3/21/1996		40.32	9.76		30.56	--	1,000	390	2	40	13	<10	--	--	--	--	--	--	--
MW-7	6/21/1996		40.32	11.01		29.31	--	<250	40	<5.0	<5.0	<5.0	<50	--	--	--	--	--	--	--
MW-7	9/6/1996		40.32	11.68		28.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	9/9/1996		--	--		--	--	<250	13	<5.0	<5.0	<5.0	<50	--	--	--	--	--	--	--
MW-7	12/19/1996		40.32	10.78		29.54	--	70	1.2	<1.0	1	<1.0	<10	--	--	--	--	--	--	--
MW-7	3/17/1997		40.32	9.96		30.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	8/12/1997		40.32	11.44		28.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/10/1997		40.32	10.42		29.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/12/1998		40.32	9.51		30.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/23/1998		40.32	9.98		30.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/31/1999		40.32	10.38		29.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-7	8/25/1999		40.32	12.38		27.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/9/2000		40.32	8.48		31.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/8/2001		40.32	8.37		31.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/18/2002		40.32	9.94		30.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/11/2003		40.32	11.26		29.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/9/2003		40.32	12.76		27.56	--	270	26	<0.50	<0.50	<0.50	8.7	<20	<0.50	<0.50	<0.50	<100	--	--
MW-7	3/9/2004		40.32	10.91		29.41	--	320	49	0.73	1.8	0.59	6.9	<20	<0.50	<0.50	<0.50	<100	1.2	<0.50
MW-7	9/17/2004		40.32	13.20		27.12	--	330	17	<0.50	<0.50	<0.50	7.0	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-7	3/7/2005		40.32	8.18		32.14	--	340	41	0.79	0.79	0.73	7.2	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-7	9/6/2005		43.10	11.80		31.30	--	1,100	130	1.2	1.8	<1.5	16	30	0.60	<0.50	<0.50	<150	<0.50	<0.50
MW-7	3/6/2006		43.10	8.39		34.71	--	440	31	0.78	0.74	0.81	8.3	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-7	9/5/2006		43.10	11.45		31.65	--	2,000	260	3.1	5.9	<2.5	12	<100	<2.5	<2.5	<2.5	<1,500	<2.5	<2.5
MW-7	3/5/2007		43.10	9.31		33.79	--	2,200	110	2.2	4.0	1.8	7.6	<40	<1.0	<1.0	<1.0	<600	<1.0	<1.0
MW-7	9/7/2007		43.10	12.18		30.92	--	220	8.4	<0.50	<0.50	<0.50	1.2	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-7	3/6/2008		43.10	10.05		33.05	--	1,800	54	1.2	1.1	<1.0	<1.0	<20	<1.0	<1.0	<1.0	<600	<1.0	<1.0
MW-7	9/3/2008		43.10	13.17		29.93	--	540	13	0.69	<0.50	<0.50	5.5	17	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-7	3/4/2009		43.10	8.25		34.85	--	720	15	0.59	0.53	<0.50	3.4	12	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-7	9/30/2009		43.10	12.70		30.40	--	1,200	44	1.0	0.74	0.79	3.3	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-7	10/28/2009		43.10	11.17		31.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/23/2010		43.10	9.28		33.82	--	610	11	<0.50	<0.50	<1.0	<0.50	12	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-7	6/10/2010		43.10	10.24		32.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	9/16/2010		43.10	12.16		30.94	--	4,700	130	<5.0	7.4	<10	<5.0	<40	<5.0	<5.0	<5.0	<1,000	<5.0	<5.0
MW-7	2/23/2011		43.10	9.62		33.48	--	2,200	26	1.1	1.4	1.6	4.0	<4.0	<0.50	<0.50	<0.50	<250	<0.50	<0.50
MW-7	9/28/2011		43.10	11.80		31.30	--	3,800	380	4.8	28	4.3	9.5	13	<0.50	<0.50	<0.50	<250	<0.50	<0.50
MW-7	3/8/2012		43.10	11.69		31.41	--	550	1.4	<0.50	<0.50	<1.0	2.3	<4.0	<0.50	<0.50	<0.50	<250	<0.50	<0.50
MW-7	9/5/2012		43.10	11.60		31.50	--	830	16	1.3	0.66	1.4	3.0	<4.0	<0.50	<0.50	<0.50	<250	<0.50	<0.50
MW-7	3/20/2013		43.10	10.88	--	32.22	--	--	--	--	3.4	--	--	--	--	--	--	--	--	--
MW-8	10/3/1991		38.18	22.37		15.81	--	<50	<0.3	0.6	<0.3	0.9	--	--	--	--	--	--	--	--
MW-8	10/15/1991		38.18	22.70		15.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/4/1991		38.18	22.44		15.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/16/1991		38.18	22.47		15.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	1/6/1992		38.18	21.94		16.24	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-8	1/22/1992		38.18	21.44		16.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	1/28/1992		38.18	21.20		16.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	2/5/1992		38.18	20.88		17.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	2/12/1992		38.18	20.54		17.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	2/17/1992		38.18	19.99		18.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	4/3/1992		38.18	16.75		21.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	4/8/1992		38.18	16.57		21.61	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-8	4/29/1992		38.18	18.61		19.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	5/7/1992		38.18	18.41		19.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	7/3/1992		38.18	20.35		17.83	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-8	10/8/1992		38.18	21.74		16.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/31/1992		38.18	19.09		19.09	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-8	4/21/1993		38.18	18.92		19.26	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-8	7/7/1993		38.18	17.76		20.42	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-8	9/21/1993		38.18	19.71		18.47	--	<50	2.9	2.2	2.2	7.1	--	--	--	--	--	--	--	--
MW-8	12/17/1993		38.18	21.33		16.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/23/1993		--	--		--	--	<50	<0.5	<0.5	<0.5	0.6	<5.0	--	--	--	--	--	--	--
MW-8	4/7/1994		38.18	21.51		16.67	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-8	7/6/1994		38.18	17.41		20.77	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-8	10/7/1994		38.18	19.20		18.98	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-8	1/27/1995		38.18	12.25		25.93	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--
MW-8	3/30/1995		38.18	10.35		27.83	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-8	6/20/1995		38.18	13.37		24.81	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-8	12/6/1995		38.18	18.42		19.76	--	<50	<0.50	<0.50	<0.50	<1.0	47	--	--	--	--	--	--	--
MW-8	6/21/1996		38.18	13.03		25.15	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-8	9/6/1996		38.18	13.70		24.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	9/9/1996		--	--		--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-8	12/19/1996		38.18	11.93		26.25	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-8	3/17/1997		38.18	11.29		26.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	8/12/1997		38.18	13.73		24.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	12/10/1997		38.18	11.88		26.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/12/1998		38.18	11.89		26.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/23/1998		38.18	11.33		26.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/31/1999		38.18	12.68		25.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	8/25/1999		38.18	14.93		23.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/9/2000		38.18	9.14		29.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/8/2001		38.18	8.41		29.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/8/2002		38.18	11.18		27.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-8	3/18/2002		38.18	10.72		27.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/11/2003		38.18	10.46		27.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/9/2004		38.18	9.79		28.39	--	<50	<0.50	<0.50	<0.50	<0.50	0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-8	9/17/2004		38.18	15.35		22.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/7/2005		38.18	7.94		30.24	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-8	9/6/2005		40.95	13.06		27.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/6/2006		40.95	9.26		31.69	--	<50	<0.50	<0.50	<0.50	<0.50	0.59	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-8	9/5/2006		40.95	12.61		28.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/5/2007		40.95	9.12		31.83	--	<50	<0.50	<0.50	<0.50	0.53	<0.50	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-8	9/7/2007		40.95	13.56		27.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/6/2008		40.95	9.80		31.15	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-8	9/3/2008		40.95	14.20		26.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/4/2009		40.95	9.51		31.44	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-8	9/30/2009		40.95	14.92		26.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	10/28/2009		40.95	13.56		27.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/10/2010		40.95	11.06		29.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	9/16/2010		40.95	14.41		26.54	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-8	9/28/2011		40.95	13.87		27.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/8/2012		40.95	13.27		27.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	9/5/2012		40.95	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/20/2013		40.95	11.90	--	29.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/3/1991		41.25	14.12		27.13	--	<50	<0.3	0.4	<0.3	<0.3	--	--	--	--	--	--	--	--
MW-9	10/15/1991		41.25	14.27		26.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/4/1991		41.25	13.84		27.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/16/1991		41.25	14.18		27.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	1/6/1992		41.25	13.42		27.83	--	<50	<0.5	<0.5	<0.5	0.9	--	--	--	--	--	--	--	--
MW-9	1/22/1992		41.25	13.75		27.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	1/28/1992		41.25	14.76		26.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	2/5/1992		41.25	13.38		27.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	2/12/1992		41.25	11.86		29.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	2/17/1992		41.25	10.78		30.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	4/3/1992		41.25	11.63		29.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	4/8/1992		41.25	12.25		29.00	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-9	4/14/1992		41.25	12.32		28.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	4/29/1992		41.25	13.07		28.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	5/7/1992		41.25	14.43		26.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	7/3/1992		41.25	13.85		27.40	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-9	10/8/1992		41.25	14.89		26.36	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-9	12/31/1992		41.25	11.90		29.35	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-9	4/21/1993		41.25	13.68		27.57	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-9	7/7/1993		41.25	13.12		28.13	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-9	9/21/1993		41.25	14.00		27.25	--	<50	<0.5	<0.5	<0.5	0.9	--	--	--	--	--	--	--	--
MW-9	12/17/1993		41.25	12.98		28.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/23/1993		--	--		--	--	<50	<0.5	<0.5	<0.5	0.9	<5.0	--	--	--	--	--	--	--
MW-9	4/7/1994		41.25	13.24		28.01	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-9	7/6/1994		41.25	13.77		27.48	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
MW-9	10/7/1994		41.25	14.60		26.65	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
MW-9	1/27/1995		41.25	8.47		32.78	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--
MW-9	3/30/1995		41.25	8.19		33.06	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-9	6/20/1995		41.25	11.25		30.00	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--
MW-9	10/3/1995		41.25	14.68		26.57	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	--	--	--	--	--	--
MW-9	12/6/1995		41.25	16.07		25.18	--	<50	<0.50	<0.50	<0.50	<1.0	46	--	--	--	--	--	--	--
MW-9	3/21/1996		41.25	9.60		31.65	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-9	6/21/1996		41.25	10.86		30.39	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-9	9/6/1996		41.25	11.52		29.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	9/9/1996		--	--		--	--	<50	<0.5	<1.0	<1.0	<1.0	21	--	--	--	--	--	--	--
MW-9	12/19/1996		41.25	10.43		30.82	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	--	--	--	--	--	--
MW-9	3/17/1997		41.25	9.87		31.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	8/12/1997		41.25	11.44		29.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/10/1997		41.25	10.44		30.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/12/1998		41.25	9.50		31.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/23/1998		41.25	10.06		31.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/31/1999		41.25	9.06		32.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	8/25/1999		41.25	12.00		29.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/9/2000		41.25	10.57		30.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/8/2001		41.25	9.73		31.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/8/2002		41.25	11.89		29.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/18/2002		41.25	9.68		31.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/11/2003		41.25	9.21		32.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/9/2004		41.25	10.99		30.26	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-9	9/17/2004		41.25	13.35		27.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/7/2005		41.25	8.94		32.31	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-9	9/6/2005		44.06	11.99		32.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/6/2006		44.06	8.26		35.80	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-9	9/5/2006		44.06	11.63		32.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/5/2007		44.06	9.33		34.73	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-9	9/7/2007		44.06	12.28		31.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/6/2008		44.06	10.11		33.95	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-9	9/3/2008		44.06	13.49		30.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/4/2009		44.06	8.15		35.91	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50
MW-9	9/30/2009		44.06	12.98		31.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/28/2009		44.06	11.98		32.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/23/2010		44.06	10.59		33.47	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50
MW-9	6/10/2010		44.06	10.25		33.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	2/23/2011		44.06	9.71		34.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	9/28/2011		44.06	11.66		32.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/8/2012		44.06	11.56		32.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	9/5/2012		44.06	11.18		32.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/20/2013		44.06	10.00	--	34.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	6/16/2009	g	39.78	8.60		31.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	7/22/2009	g	39.78	9.68		30.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	8/6/2009		39.78	9.48		30.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	9/30/2009	g	39.78	9.69		30.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	10/28/2009		39.78	8.53		31.25	--	62,000	8,300	5,300	3,100	12,000	<50	<400	<50	<50	<50	<10,000	<50	<50
MW-10	3/23/2010	b	39.78	7.70		32.08	--	59,000	6,500	4,800	2,300	9,700	<100	<800	<100	<100	<100	<20,000	<100	<100
MW-10	6/10/2010	g	39.78	8.93		30.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	9/16/2010	g	39.78	9.69		30.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	2/23/2011		39.78	7.99		31.79	--	61,000	7,000	5,300	2,800	12,000	<100	<800	<100	<100	<100	<50,000	<100	<100
MW-10	9/28/2011	g	39.78	10.36		29.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/8/2012	g	39.78	10.51		29.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	9/5/2012	g	39.78	10.25		29.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/20/2013	g	39.78	9.48	9.47	30.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	9/30/2009		40.04	10.55		29.49	--	30,000	850	1,400	1,000	3,700	27	<200	<10	<10	<10	<6,000	<10	<10
MW-11	10/28/2009		40.04	8.00		32.04	--	27,000	1,100	2,300	1,500	5,800	<50	<400	<50	<50	<50	<10,000	<50	<50
MW-11	3/23/2010		40.04	7.25		32.79	--	21,000	530	830	790	2,200	<25	<200	<25	<25	<25	<5,000	<25	<25
MW-11	6/10/2010	b	40.04	9.65		30.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	9/16/2010		40.04	9.42		30.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	2/23/2011		40.04	7.60		32.44	--	10,000	380	260	330	540	7.2	<40	<5.0	<5.0	<5.0	<2,500	<5.0	<5.0
MW-11	9/28/2011		40.04	9.88		30.16	--	5,900	230	92	260	370	6.4	26	<2.5	<2.5	<2.5	<1,300	<2.5	<2.5
MW-11	3/8/2012		40.04	9.71		30.33	--	5,000	280	170	250	380	<5.0	<40	<5.0	<5.0	<5.0	<2,500	<5.0	<5.0
MW-11	9/5/2012		40.04	10.60		29.44	--	22,000	1,000	1,600	1,200	4,500	6.2	<40	<5.0	<5.0	<5.0	<2,500	<5.0	<5.0
MW-11	3/20/2013	i	40.04	9.54	--	30.50	--	16,000	250	620	680	2,200	<10	<80	<10	<10	<10	<5,000	<10	<10
MW-12	9/30/2009		40.32	11.02		29.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	10/28/2009		40.32	10.40		29.92	--	43,000	5,800	800	2,900	6,800	<50	<400	<50	<50	<50	<10,000	<50	<50
MW-12	3/23/2010	b	40.32	11.46		28.86	--	39,000	4,800	1,000	3,100	6,400	<25	<200	<25	<25	<25	<5,000	<25	<25
MW-12	6/10/2010	b	40.32	11.35		29.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	9/16/2010	g	40.32	11.54		28.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	2/23/2011	g	40.32	10.80		29.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	9/28/2011	g	40.32	11.48		28.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	3/8/2012	g	40.32	11.92		28.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	9/5/2012	g	40.32	11.63		29.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	3/20/2013	g	40.32	10.13	10.09	30.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
DO= Dissolved oxygen
DRO = Diesel range organics, range C10-C28
DTW = Depth to water in ft bgs
EDB = 1,2-Dibromomethane
ETBE = Ethyl tert butyl ether
GRO = Gasoline range organics, range C4-C12
GWE = Groundwater measured in ft
MTBE = Methyl tert butyl ether
TAME = Ter-amyl methyl ether
TBA = Ter-butyl alcohol
TOC = Top of casing measured in ft

Table 1
Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
CA-11109
4280 Foothill Blvd., Oakland, CA 94601

Well ID	Date	Notes	TOC (ft msl)	DTW (ft)	DTP	GW Elev (ft msl)	DRO (µg/L)	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)

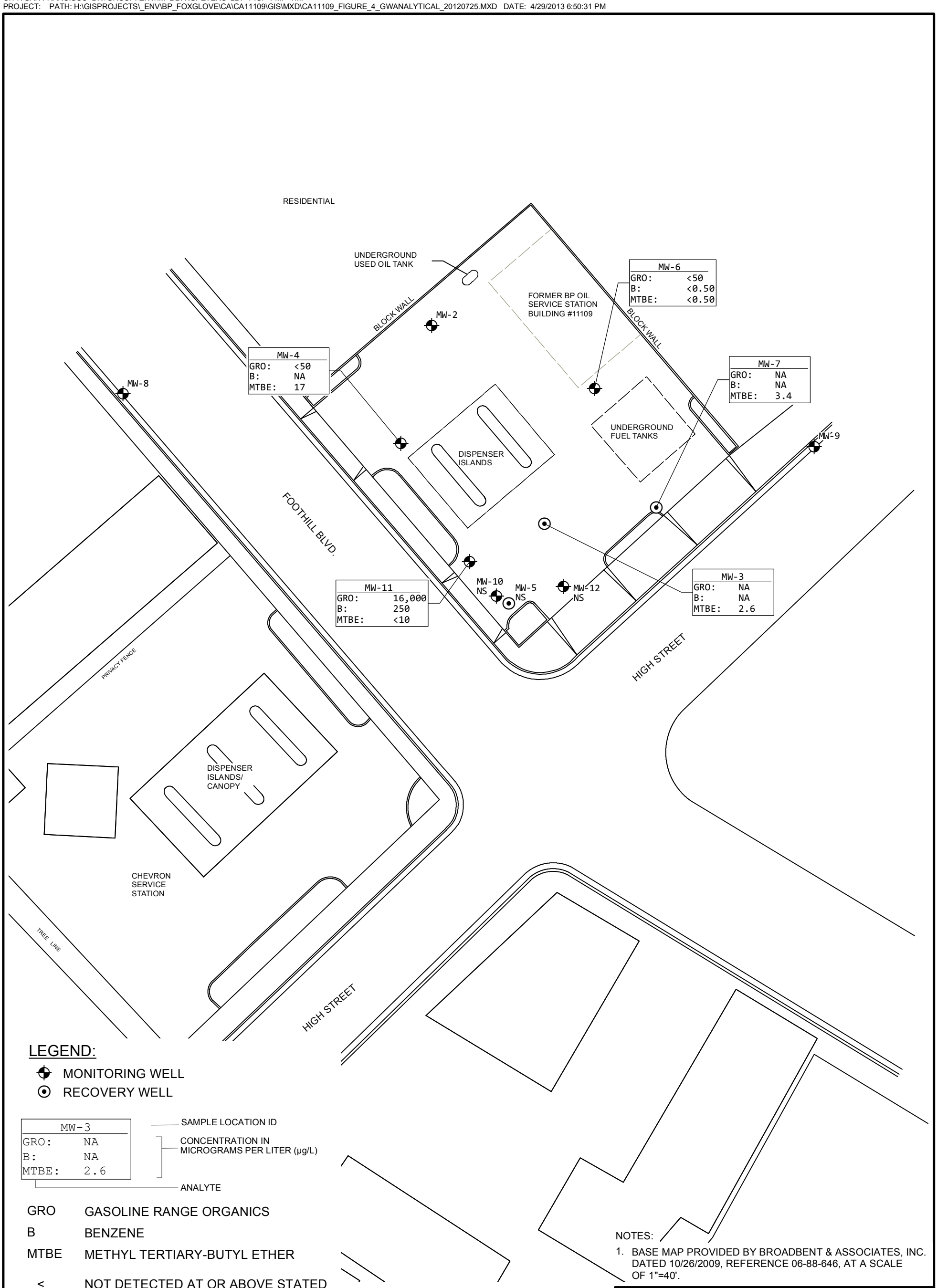
µg/L= Micrograms per liter
ft bgs = Feet below ground surface
--- = Not analyzed/applicable/measured/ available
< = Not detected at or above reported detection limit
(a) Sample exceeded EPA recommened holding time
(b) Sheen in well
(c) Well not sampled due to damage during site construction
(d) Insufficient water to sample
(e) Blind duplicate
(f) TOC lowered
(g) Free product in well
(h) Trip Blank
(i) Hydrocarbon odor observed at wellhead

GWE adjusted assuming specific gravity of 0.75 for free product
Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.
GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present.

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.

CITY: SAN FRANCISCO DIV/GROUP: ENV/IM DB: KGPETERS LD: PIC: PM: TM:
PROJECT: PATH: H:\GISPROJECTS_ENV\BP_FOXGLOVE\CA\CA11109\GIS\MXD\CA11109_FIGURE_4_GWANALYTICAL_20120725.MXD DATE: 4/29/2013 6:50:31 PM



LEGEND:

- MONITORING WELL
- RECOVERY WELL

MW-3	
GRO:	NA
B:	NA
MTBE:	2.6

SAMPLE LOCATION ID

CONCENTRATION IN MICROGRAMS PER LITER (µg/L)

ANALYTE

GRO	GASOLINE RANGE ORGANICS
B	BENZENE
MTBE	METHYL TERTIARY-BUTYL ETHER
<	NOT DETECTED AT OR ABOVE STATED LABORATORY REPORTING LIMIT
NS	NOT SAMPLED
NA	NOT ANALYZED

NOTE:
SAMPLES WERE NOT COLLECTED FROM MONITORING WELLS CONTAINING MEASURABLE FREE PRODUCT.

0 40 80

SCALE IN FEET

NOTES:

1. BASE MAP PROVIDED BY BROADBENT & ASSOCIATES, INC. DATED 10/26/2009, REFERENCE 06-88-646, AT A SCALE OF 1"=40'.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

ANALYTICAL SUMMARY MAP
MARCH 20, 2013

ARCADIS

FIGURE
3

Appendix F

Historical Soil Vapor Data

TARGET ENVIRONMENTAL SERVICES, 3/1989

TABLE 1

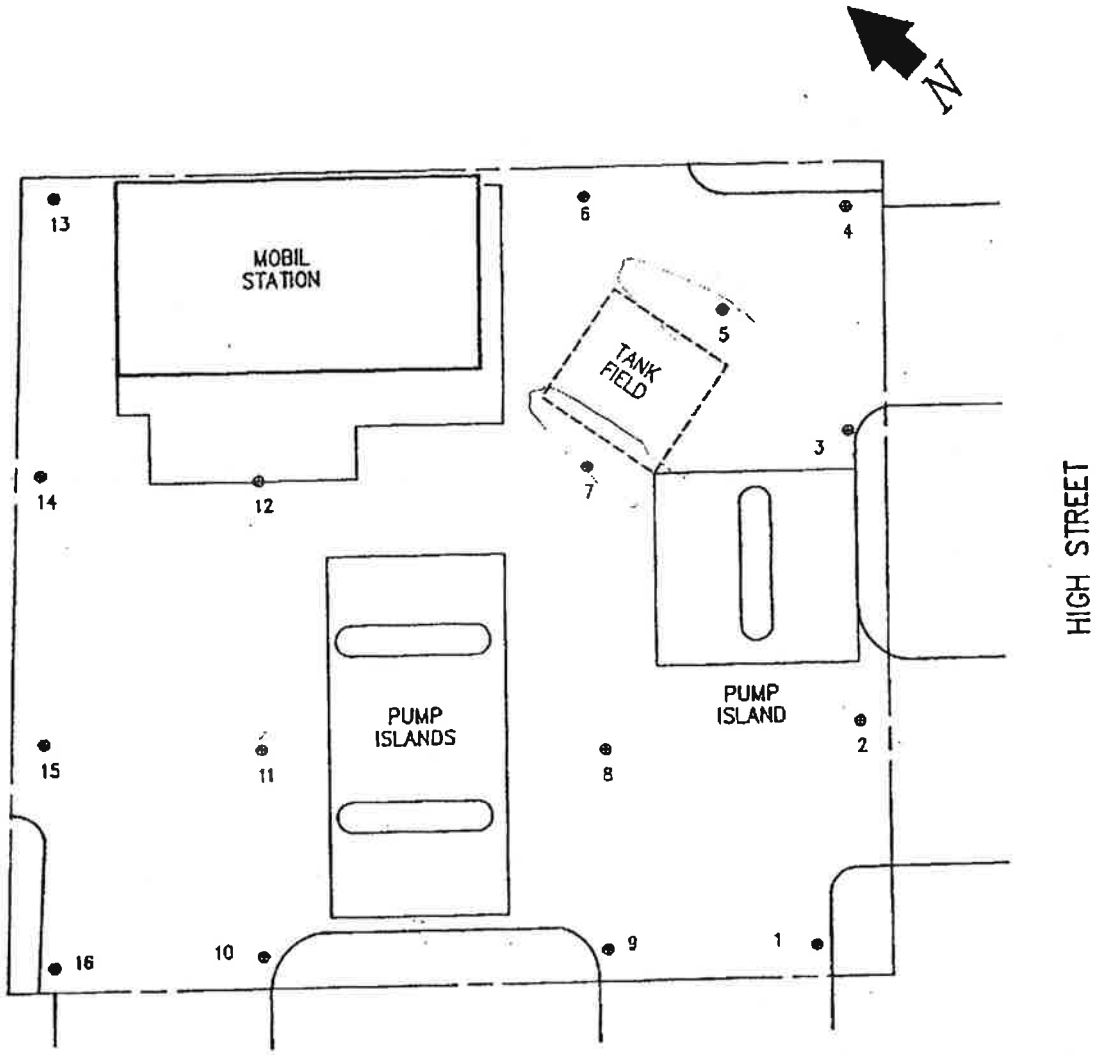
SOIL GAS

LABORATORY RESULTS
FLAME IONIZATION DETECTOR ANALYSIS
CONCENTRATIONS IN MICROGRAMS-PER-LITER

SAMPLE	PENTANE/ MTBE[1]	BENZENE	TOLUENE	ETHYL-BENZENE	m- & p-XYLENE	o-XYLENE	TOTAL VOLATILES[2]
1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.5
[redacted]	[redacted]73	[redacted].2	21	13	9.6	8.9	[redacted]643
[redacted]	[redacted]5,497	[redacted]150	[redacted]91	[redacted]345	[redacted]81	[redacted]63	[redacted]6,500
4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
[redacted]	13	<1.0	4.3	<1.0	<1.0	<1.0	[redacted]6
6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
7	3.8	<1.0	<1.0	<1.0	<1.0	<1.0	30
8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
[redacted]	2.4	<1.0	3.3	2.4	<1.0	<1.0	[redacted]9
10	4.5	<1.0	<1.0	<1.0	<1.0	<1.0	89
11	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
[redacted]2	6.5	<1.0	6.3	<1.0	<1.0	<1.0	[redacted]8
13	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	19
[redacted]4	10	3.0	112	64	291	120	[redacted]50
15	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	25
16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
FIELD CONTROL SAMPLES							
17	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
LABORATORY SYRINGE BLANKS							
BM1-1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUPLICATE ANALYSES							
10	4.5	<1.0	<1.0	<1.0	<1.0	<1.0	89
10R	4.1	<1.0	<1.0	<1.0	<1.0	<1.0	84

[1]CONCENTRATIONS BASED ON RESPONSE FACTOR OF MTBE

[2]CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS, AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE



0 25 50

FEET

• SOIL GAS SAMPLE LOCATION

FIGURE 1. Sample Locations

TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

MOBIL SERVICE STATION #10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

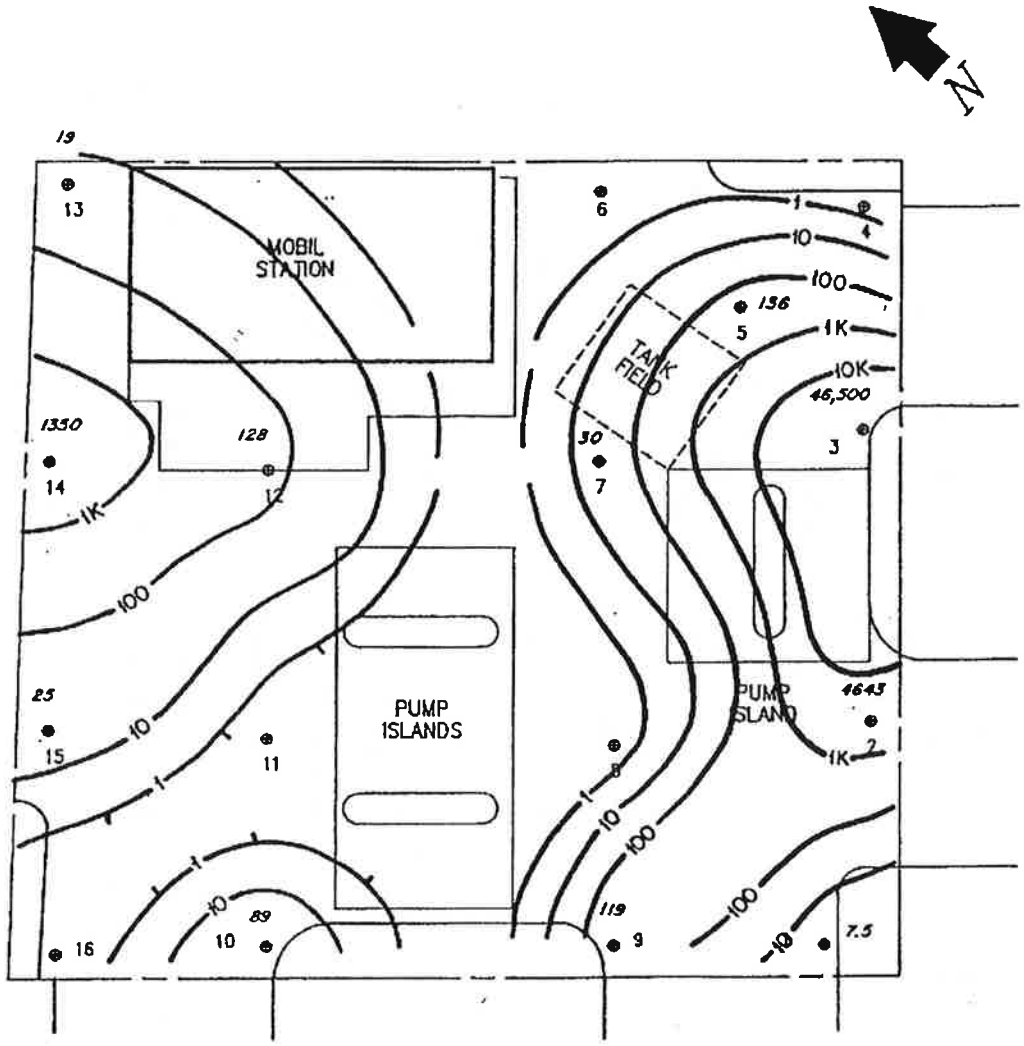


FIGURE 2. FID Total Volatiles (calc'd µg/l)

TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

MOBIL SERVICE STATION #10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

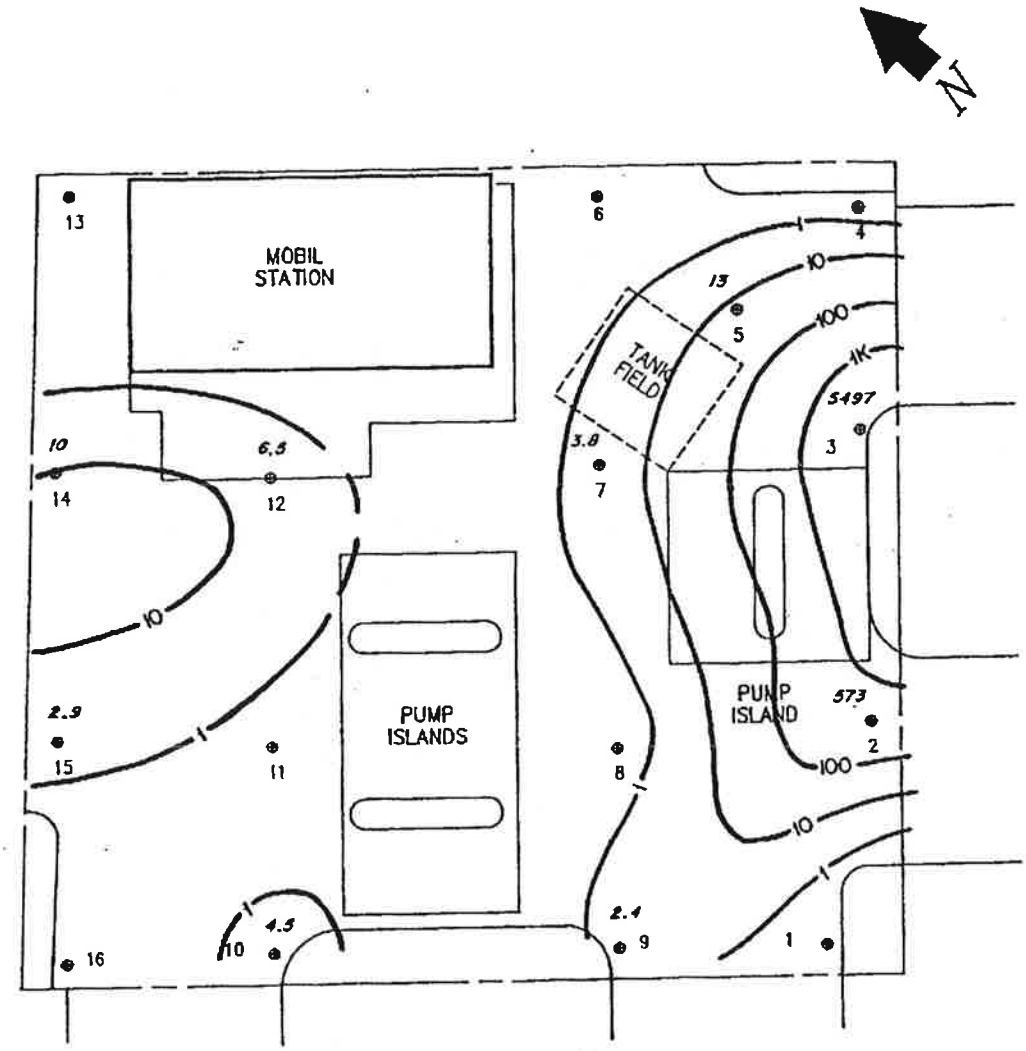


FIGURE 3. MTBE and Pentane (µg/l)

TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

MOBIL SERVICE STATION #10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

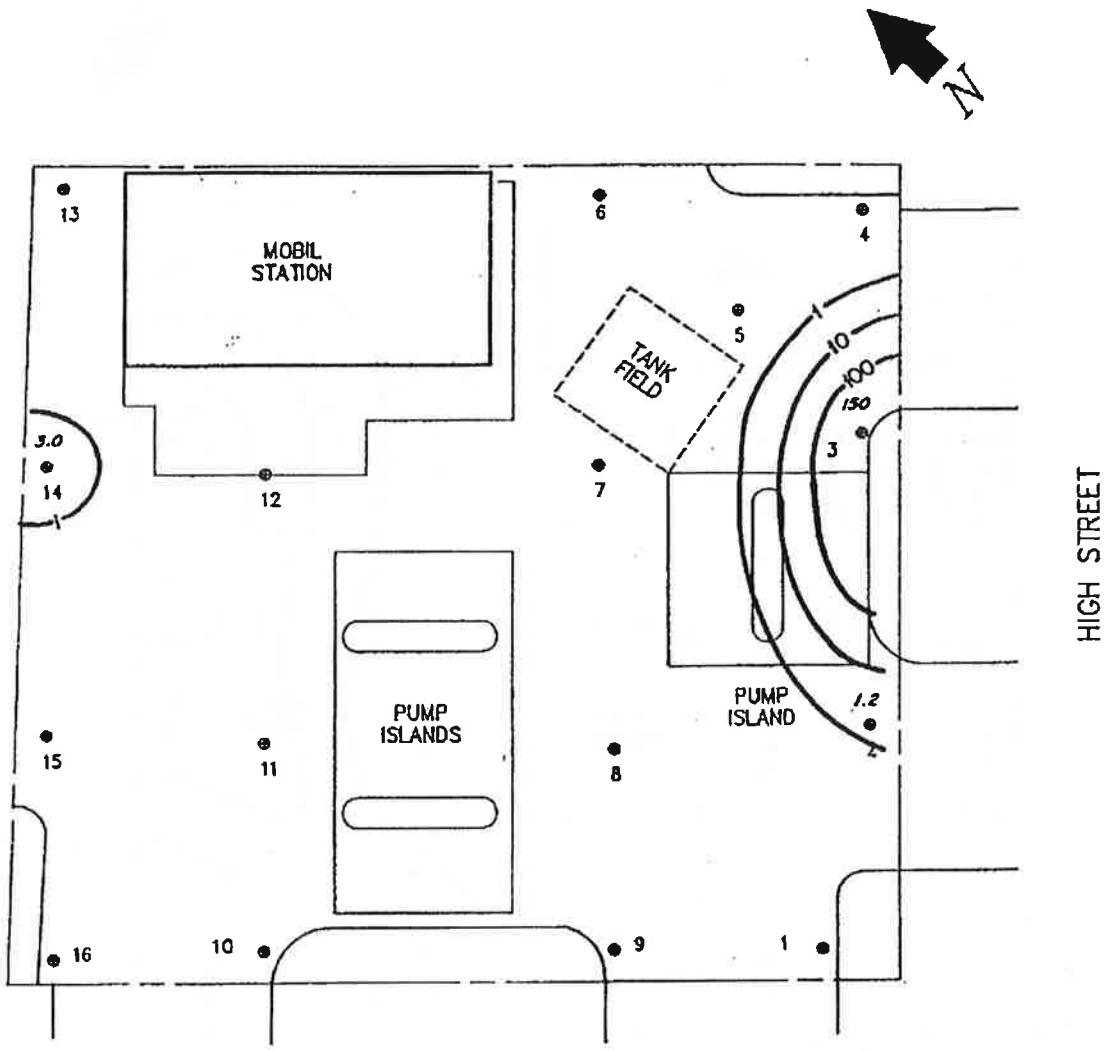


FIGURE 4. Benzene (µg/l)

TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

MOBIL SERVICE STATION #10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

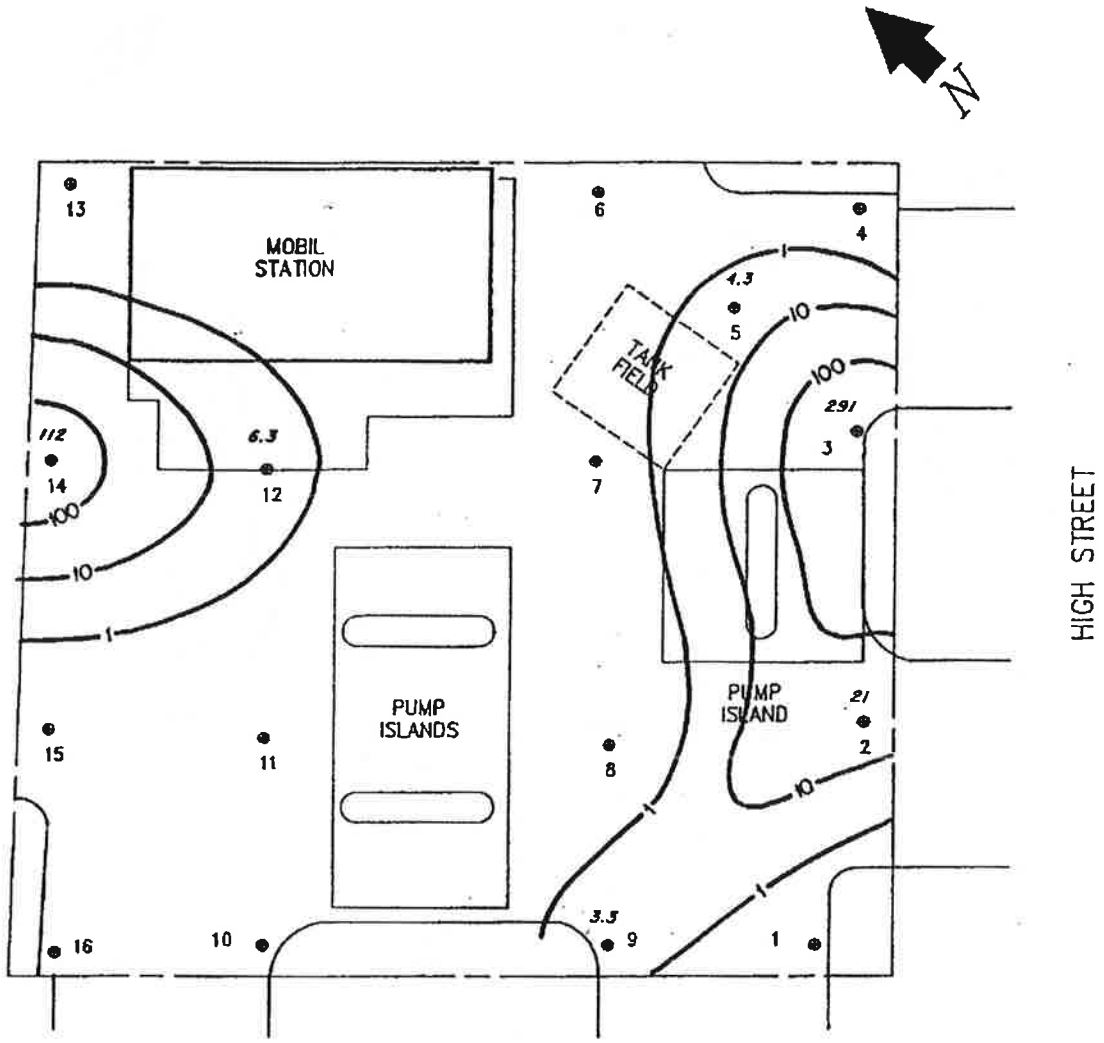


FIGURE 5. Toluene (µg/l)

TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

MOBIL SERVICE STATION #10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

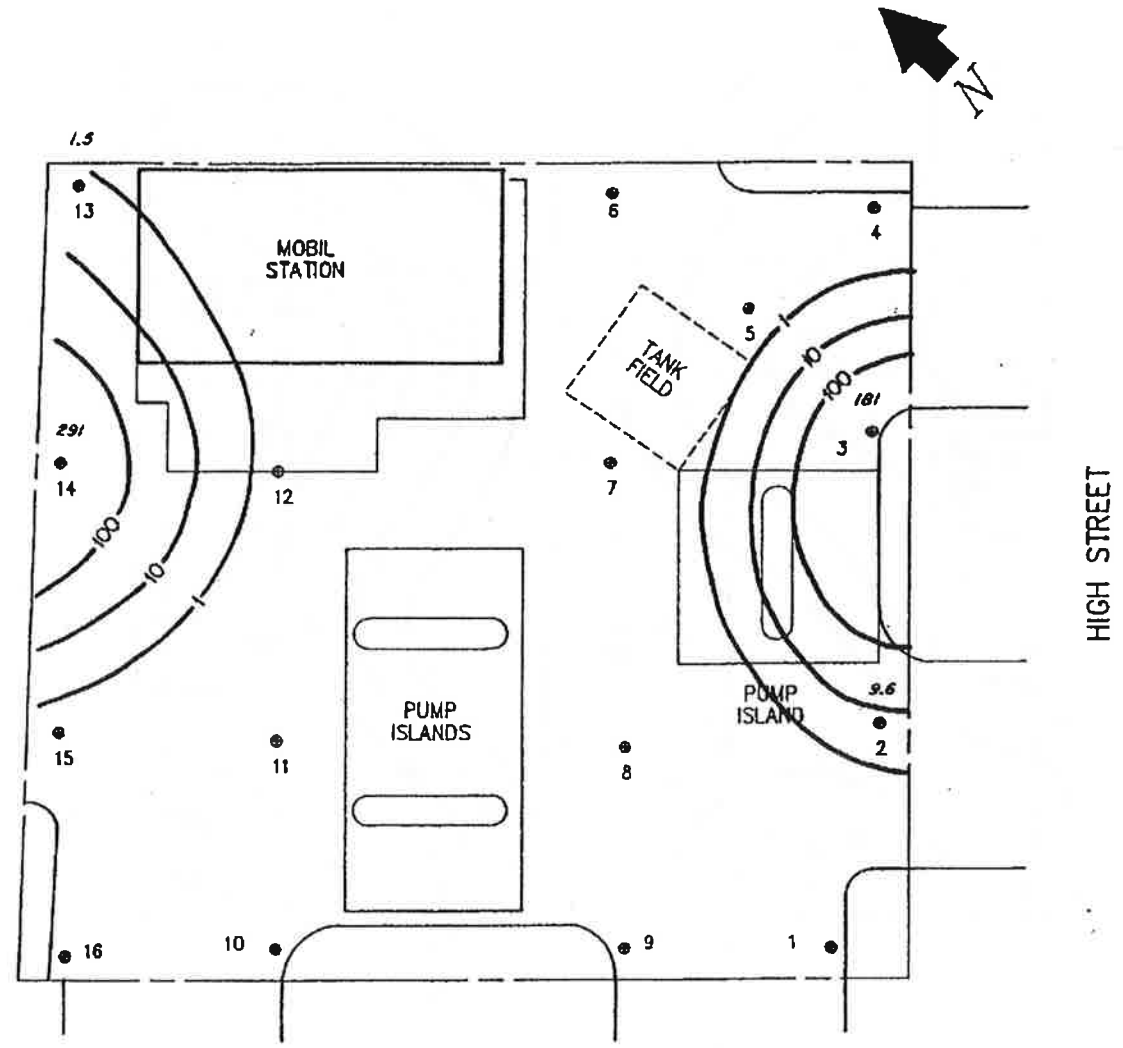
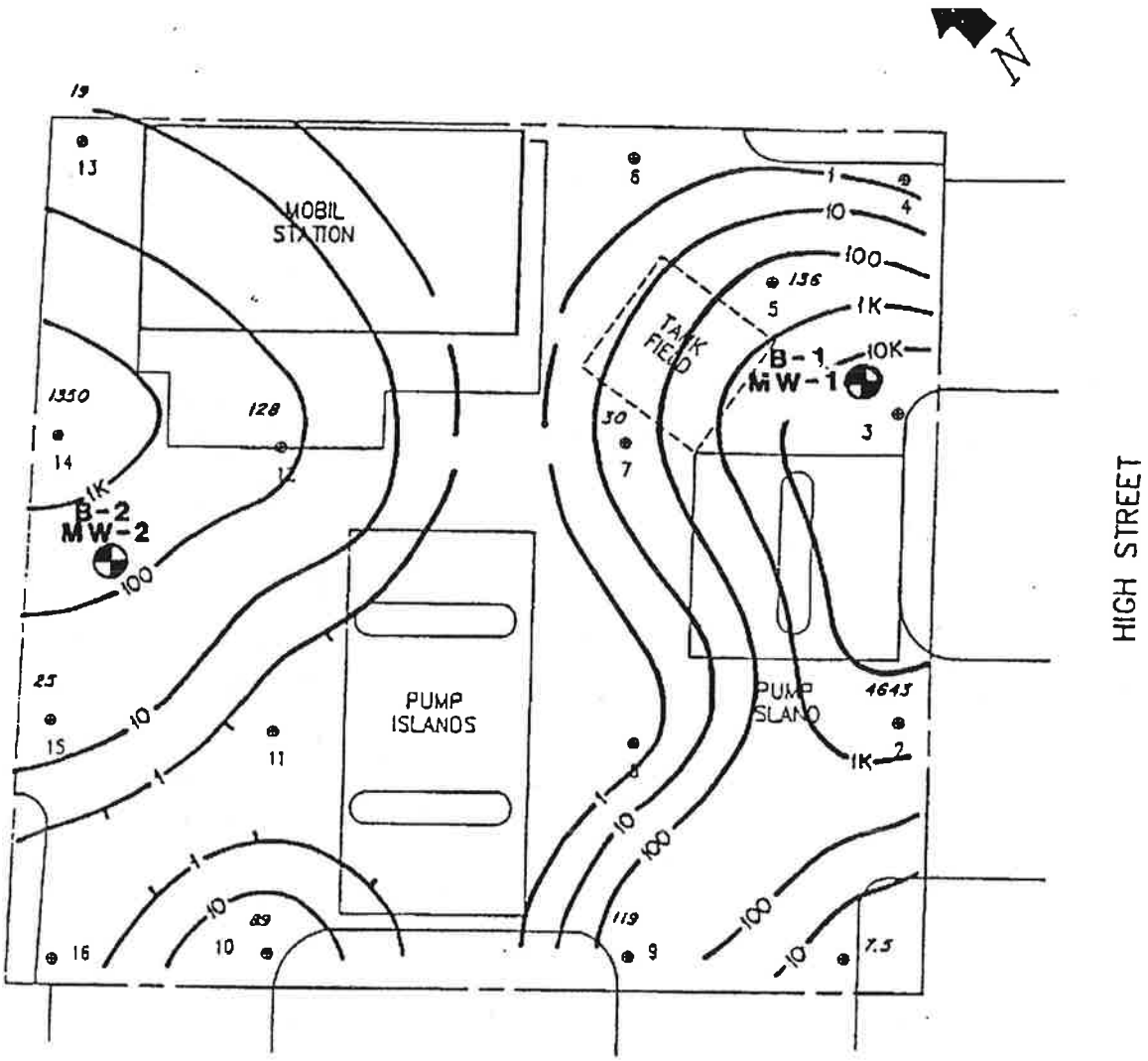


FIGURE 6. m- and p- Xylene (µg/l)

TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

MOBIL SERVICE STATION #10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA



BASED ON FIGURE PROVIDED BY
TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

MOBIL SERVICE STATION #10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SITE & EXPLORATION PLAN

APR 1989 **W-6095**

FIGURE 1

ARCADIS

ACEH Checklists

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA A

General Criteria a: **Is the Unauthorized Release Located within the Service Area of a Public Water System?**	☒ Y	☐ N

LTCP Statement: "This policy is protective of existing water supply wells. New water supply wells are unlikely to be installed in the shallow groundwater near former UST release sites. However, it is difficult to predict, on a statewide basis, where new wells will be installed, particularly in rural areas that are undergoing new development. This policy is limited to areas with available public water systems to reduce the likelihood that new wells in developing areas will be inadvertently impacted by residual petroleum in groundwater. Case closure outside of areas with a public water system should be evaluated based upon the fundamental principles in this policy and a site specific evaluation of developing water supplies in the area. For purposes of this policy, a public water system is a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year."

If the unauthorized release is located within the service area of a public water supply system, then

Name of public water system agency?

East Bay Municipal Utility District	☒ Y
Zone 7 Water Agency	☐ Y
City of Hayward Water	☐ Y
Alameda County Water District	☐ Y
Other:	☐ Y

Are there existing water supply wells or other sources of water in the vicinity of the site? ***Use General Criteria e – CSM Well Survey sheet to support answer*** *Note: If yes, the site must still satisfy the groundwater media specific criteria for distance from the contaminant plume boundary to existing wells*	☐ Y	☒ N	☐ NE

If the unauthorized release is located outside the service area of a public water supply system, then Are there additional characteristics to consider that might result in a low-threat designation?	☐ **Y**	☐ **N**	☐ **NE**	☒ **NA**
Has a site-specific evaluation of developing water supplies in the area been conducted?	☐ Y	☐ N	☐ NE	☒ NA
Is impacted groundwater shallower than the sanitary seal requirement for supply wells in the applicable county? Applicable County Sanitary Seal Requirements:	☐ Y	☐ N	☐ NE	☒ NA
Are impacted perched water zones not a viable potential water supply?	☐ Y	☐ N	☐ NE	☒ NA
Does high salinity or low yield negate the impacted groundwater from drinking water beneficial use per State Water Board Resolution 1988-0063, or de-designated areas of the applicable Basin Plans?	☐ Y	☐ N	☐ NE	☒ NA
Will Water Quality Objectives (WQOs) in the groundwater plume be attained through natural attenuation within a reasonable time, prior to the expected need for use of any affected groundwater?	☐ Y	☐ N	☐ NE	☒ NA

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA A

General Criteria a: Case Notes

Case File Reference Documents:

Attachments:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA B

General Criteria b: **Does the Unauthorized Release Consist only of Petroleum?**	☒ YES	☐ NO	☐ NE

LTCP Statement: "For purposes of this policy, petroleum is defined as crude oil, or any fraction thereof, which is liquid at standard conditions and temperature and pressure, which means 60 degrees Fahrenheit and 14.7 pounds per square inch absolute including the following substances: motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents and used oils, including any additives and blending agents such as oxygenates contained in the formulation of the substances."

Have adequate site investigation activities been conducted to evaluate unauthorized releases of potential chemicals of concern (PCOCs) and chemicals of concern (COCs) from on-site sources due to historical site activities and chemical usage?	☒ Y	☐ N	☐ NE	☐ NA
Have areas of concern been identified based on historical site activities and chemical usage?	☒ Y	☐ N	☐ NE	☐ NA
Have unauthorized releases from underground storage tanks been identified?	☒ Y	☐ N	☐ NE	☐ NA
Have unauthorized releases from above ground storage tanks been identified?	☐ Y	☒ N	☐ NE	☐ NA
Have unauthorized releases from site infrastructure (i.e., sumps, drains, sanitary sewer, etc) been identified?	☐ Y	☒ N	☐ NE	☐ NA
Have unauthorized releases from surface spills at dispenser islands, tank fill ports, etc. been identified?	☐ Y	☒ N	☐ NE	☐ NA
Have unauthorized releases from other on-site sources been identified?	☐ Y	☒ N	☐ NE	☐ NA
Has the site been impacted by off-site sources?	☐ Y	☒ N	☐ NE	☐ NA
Are detected COCs consistent with reported site use?	☒ Y	☐ N	☐ NE	☐ NA
If detected COCs are not consistent with reported site use, then are there other regulatory cases in the vicinity of the site? Identify regulatory case number(s):	☐ Y	☐ N	☐ NE	☒ NA
If there are not other regulatory cases in the vicinity of the site, then has an investigation of other potential sources and contaminant migration pathways been conducted? ***Use General Criteria e – Conceptual Site Model (Off-site sources) sheets to support answer***	☐ Y	☐ N	☐ NE	☒ NA
Has site contamination in all affected media been fully characterized? ***Use page b-2 and General Criteria e – Conceptual Site Model COCs and PCOCs sheets to identify site contaminants***	☒ Y	☐ N	☐ NE	☐ NA
Soil?	☒ Y	☐ N	☐ NE	☐ NA
Soil Gas?	☒ Y	☐ N	☐ NE	☐ NA
Groundwater?	☒ Y	☐ N	☐ NE	☐ NA
Surface Water?	☐ Y	☐ N	☐ NE	☒ NA
Has a data quality review verified the validity of historic analytical data? ***Use General Criteria e – Conceptual Site Model Analytical Data Quality Review sheets to support answers***	☒ Y	☐ N	☐ NE	☐ NA
Have appropriate protocols been followed for obtaining representative samples?	☒ Y	☐ N	☐ NE	☐ NA
Are the analytical methods currently being used consistent with the recommended "best practices" in the CA LUFT Manual?	☒ Y	☐ N	☐ NE	☐ NA
Have appropriate method detection limits been used (i.e., less than the LTCP media specific criteria for groundwater, vapor intrusion to indoor air, and direct contact and outdoor air exposure, and/or current environmental screening levels as appropriate?	☒ Y	☐ N	☐ NE	☐ NA

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

General Criteria b: Case Notes

Case File Reference Documents:

Attachments:

Case Notes:

Chemicals of Concern (COCs - detected) and Potential Chemicals of Concern (PCOCs – i.e., not detected but used in site operations) in Soil, Groundwater, Soil Gas, and/or Surface Water[1]

PETROLEUM HYDROCARBON SOURCE TYPE(S)

COC/PCOC	Soil				Groundwater				Soil Gas ☒, Crawl Space ☐, Indoor Air ☐				Surface Water			
Gasoline[2]	☒ **Y**	☐ **N**	☐ **NE**	☐ **NA**	☒ **Y**	☐ **N**	☐ **NE**	☐ **NA**	☐ **Y**	☒ **N**	☐ **NE**	☐ **NA**	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Fuel Oils[3]	☒ **Y**	☐ **N**	☐ **NE**	☐ **NA**	☒ **Y**	☐ **N**	☐ **NE**	☐ **NA**	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Diesel	☐ Y	☒ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Stoddard Solvent	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Jet Fuels	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Kerosene	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Home Heating Fuel	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Bunker Fuel	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Oils	☐ **Y**	☐ **N**	☐ **NE**	☒ **NA**	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Waste Oil[4]	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Hydraulic Oil	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Lubricating Oil	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Oil and Grease	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Motor Oil	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA

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Chemicals of Concern (COCs) and Potential Chemicals of Concern (PCOCs) in Soil, Groundwater, Soil Gas, and/or Surface Water[1]

TOTAL PETROLEUM HYDROCARBON – GASOLINE RELATED CONSTITUENTS[2]

COC/PCOC	Soil				Groundwater				Soil Gas, Crawl Space or Indoor Air				Surface Water			
TPH																
TPH-g	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
GRO	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Aromatics																
Benzene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Toluene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Xylenes	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Napthalene	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Fuel Oxys[5]																
MTBE[6]	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
ETBE	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
TAME	☐ Y	☒ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
TBA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
DIPE	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Ethanol	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Methanol	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Leaded Gas																
TML[7]	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
EDC[8]	☐ Y	☒ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
EDB[8]	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA

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Chemicals of Concern (COCs) and Potential Chemicals of Concern (PCOCs) in Soil, Groundwater, Soil Gas, and/or Surface Water[1]

TOTAL PETROLEUM HYDROCARBONS – DIESEL, JET FUEL, ANDOTHER FUEL OIL RELATED CONSTITUENTS[3]

COC/PCOC	Soil				Groundwater				Soil Gas ☒, Crawl Space ☐, Indoor Air ☐				Surface Water			
TPH																
TPH-d	☐ Y	☒ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
DRO	☐ Y	☒ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
TEPH	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Aromatics																
Benzene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Toluene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Xylenes	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Napthalene	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Others																
PAHs[9]	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA

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Chemicals of Concern (COCs) and Potential Chemicals of Concern (PCOCs) in Soil, Groundwater, Soil Gas, and/or Surface Water[1]

WASTE (USED) OILS[4]

COC/PCOC	Soil				Groundwater				Soil Gas ☒, Crawl Space ☐, Indoor Air ☐				Surface Water			
TPH																
TPH-g	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
GRO	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
TPH-d	☐ Y	☒ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
DRO	☐ Y	☒ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
TPH-mo	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
TEPH	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
MORO	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Aromatics																
Benzene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Toluene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Xylenes	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Napthalene	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☒ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Fuel Oxys																
MTBE	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
TBA	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☒ Y	☐ N	☐ NE	☐ NA	☒ Y	☐ N	☐ NE	☐ NA	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Wear Metals[10]																
Total Lead	☐ Y	☒ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Cadmium	☐ Y	☐ N	☒ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Chromium	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Zinc	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Nickel	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Others																
CVOCs[11]	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
PCBs	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
PCPs	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA
Dioxins & Furans[12]	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☒ NA	☐ Y	☐ N	☐ NE	☐ NA

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Chemicals of Concern (COCs) and Potential Chemicals of Concern (PCOCs) in Soil, Groundwater, Soil Gas, and/or Surface Water[1]

NON PETROLEUM HYDROCARBON SOURCE - RELATED CONTAMINANTS

COC/PCOC	Soil				Groundwater				Soil Gas ☐, Crawl Space ☐, Indoor Air ☐				Surface Water			
	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
VOCs[11]	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
SVOCs[13]	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
OCPs[14]	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Herbicides[15]	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Metals[16]	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA

REMEDIATION - RELATED BYPRODUCTS

COC/PCOC	Soil				Groundwater				Soil Gas ☐, Crawl Space ☐, Indoor Air ☐				Surface Water			
Remediation Byproducts	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Chromium VI	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Other Metals[16]	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA
Others	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA	☐ Y	☐ N	☐ NE	☐ NA

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Chemicals of Concern (COCs) and Potential Chemicals of Concern (PCOCs) in Soil, Groundwater, Soil Gas, and/or Surface Water

VOLATILE ORGANIC COMPOUNDS

Compound	S	SG	GW	SW				
Benzene	☒	☒	☒	☐	☒ Y	☐ N	☐ NE	☐ NA
Bromobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Bromochloromethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Bromodichloromethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Bromoform	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Bromomethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
n-Butylbenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
sec-Butylbenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
tert-Butylbenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Carbon tetrachloride	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Chlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Chlorodibromomethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Chloroethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Chloroform	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Chloromethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
2-Chlorotoluene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
4-Chlorotoluene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,2-Dibromo-3-chloropropane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,2-Dibromoethane	☒	☐	☒	☐	☐ Y	☒ N	☐ NE	☐ NA
Dibromomethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,2-Dichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,3-Dichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,4-Dichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Dichlorodifluoromethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,1-Dichloroethane	☐	☐	☒	☐	☒ Y	☐ N	☐ NE	☐ NA
1,2-Dichloroethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,1-Dichloroethene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
cis-1,2-Dichloroethene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
trans-1,2-Dichloroethene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,2-Dichloropropane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA

Compound	S	SG	SW	GW				
2,2-Dichloropropane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,3-Dichloropropane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,1-Dichloropropene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Ethylbenzene	☒	☒	☐	☒	☒ Y	☐ N	☐ NE	☐ NA
Hexachlorobutadiene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Isopropylbenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
p-Isopropyltoluene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Methylene chloride	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Naphthalene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
n-Propylbenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Styrene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,1,1,2-Tetrachloroethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,1,2,2-Tetrachloroethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Tetrachloroethene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Toluene	☒	☒	☐	☒	☐ Y	☐ N	☐ NE	☐ NA
1,2,4-Trichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,2,3-Trichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,1,1-Trichloroethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,1,2-Trichloroethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Trichloroethene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Trichlorofluoromethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,2,3-Trichloropropane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,2,4-Trimethylbenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
1,3,5-Trimethylbenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
Vinyl chloride	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA
o-Xylene	☒	☒	☐	☒	☒ Y	☐ N	☐ NE	☐ NA
m-Xylene	☒	☒	☐	☒	☒ Y	☐ N	☐ NE	☐ NA
p-Xylene	☒	☒	☐	☒	☒ Y	☐ N	☐ NE	☐ NA
Methyl-t-butyl ether	☒	☒	☐	☒	☒ Y	☐ N	☐ NE	☐ NA
Dichlorofluoromethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☒ NA

Key:
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Chemicals of Concern (COCs) and Potential Chemicals of Concern (PCOCs) in Soil, Groundwater, Soil Gas, and/or Surface Water

SEMI-VOLATILE ORGANIC COMPOUNDS

Compound	S	SG	GW	SW				
1,2-Dichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
1,2,4-Trichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
1,3-Dichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
1,4-Dichlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2-Chloronaphthalene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2-Chlorophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2-Methylnaphthalene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2-Methylphenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2-Nitroaniline	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2-Nitrophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,2'-oxybis (1-Chloropropane)	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,4-Dichlorophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,4-Dimethylphenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,4-Dinitrophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,4-Dinitrotoluene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,4,5-Trichlorophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,4,6-Trichlorophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
2,6-Dinitrotoluene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
3-Nitroaniline	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
3,3'-Dichlorobenzidine	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4-Bromophenyl-phenylether	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4-Chloro-3-methylphenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4-Chloroaniline	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4-Chlorophenyl-phenyl ether	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4-Methylphenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4-Nitroaniline	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4-Nitrophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
4,6-Dinitro-2-methylphenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Acenaphthene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Acenaphthylene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Anthracene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Benzo(a)anthracene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA

Compound	S	SG	SW	GW				
Benzo(a)pyrene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Benzo(b)fluoranthene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Benzo(g,h,i)perylene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Benzo(k)fluoranthene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
bis(2-Chloroethoxy)-methane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
bis(2-Chloroethyl) ether	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
bis(2-Ethylhexyl)phthalate	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Butylbenzylphthalate	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Carbazole	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Chrysene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Di-n-butylphthalate	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Di-n-octylphthalate	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Dibenz(a,h)anthracene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Dibenzofuran	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Diethylphthalate	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Dimethylphthalate	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Fluoranthene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Fluorene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Hexachlorobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Hexachlorobutadiene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Hexachlorocyclopentadiene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Hexachloroethane	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Indeno(1,2,3-cd)pyrene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Isophorone	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
N-Nitroso-di-n-propylamine	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
N-nitrosodiphenylamine	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Naphthalene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Nitrobenzene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Pentachlorophenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Phenanthrene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Phenol	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA
Pyrene	☐	☐	☐	☐	☐ Y	☐ N	☐ NE	☐ NA

Key:
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- NA = Not Applicable (never present at site – validated by case review)

Chemicals of Concern (COCs) and Potential Chemicals of Concern (PCOCs) in Soil, Groundwater, Soil Gas, and/or Surface Water[1]

Notes:

CVOCS = Chlorinated Volatile Organic Compounds
DIPE = di-isopropyl either
EDC (ethylene dichloride) or 1,2-DCA (1,2-dichloroethane or ethylene dibromide)
EDB = 1,2-dibromomethane
ETBE = ethyl tert butyl ether
MTBE = methyl tert butyl ether (banned in CA since 2004)
OCPs = Organochlorine Pesticides
PAH = Polycyclic Aromatic Hydrocarbons or Polynuclear Aromatic Hydrocarbons
PCPs = Pentachlorphenol (wood preservative)
TAME = tert amyl methyl ether
TBA = t-Butyl Alcohol
TEL = tetra ethyl lead
TML = tetra methyl lead
SVOCs = Semi-volatile Organic Compounds
VOCs = Volatile Organic Compounds

1 = The analytes listed below are recommended in the CA LUFT Manual to ensure that site characterization is complete. Note that more analytes are recommended than are used as "criteria" chemicals in the LTCP for the various media.
2 = **CA LUFT Manual recommended analyses for gasoline releases** include BTEX, napthalene, and fuel oxygenates (MTBE and TBA) and/or lead scavengers if gasoline release was pre-1992.
3 = **CA LUFT Manual recommended analyses for fuel oil releases** include BTEX, and napthalene. Additionally, for heavy fuel oil such as bunker fuel the priority pollutant PAHs should be added to the list of analytes.
4 = **CA LUFT Manual recommended analyses for waste (used) motor oils** include BTEX, the 16 priority pollutant PAHs, chlorinated solvents (which will include EDB and EDC), and fuel oxygenates (MTBE and TBA). For soil only analysis for the five "wear metals" is also recommended.
5 = ACEH recommended analysis of all fuel oxygenates
6 = MTBE to be analyzed at all LUFT sites unless the tank contained only diesel or jet fuel per California Health and Safety Code 25296.15(a). MTBE was added to gasoline in California starting in approximately the late 1980's/early 1990's and was banned in 2004.
7 = Samples to be analyzed for tetra methyl lead
8 = Samples to be initially analyzed for lead scavengers EDC and EDB for all release sites and fuel oxygenates
9 = Use page b-8 to identify priority PAHs
10 = Wear metals need only be analyzed for soil
11 = Use page b-7 to identify specific VOCs
12 = Analyzed for dioxins and furans if PCBs and/or PCPs are detected
13 = Use page b-8 to identify specific SVOCs
14 = Use page b- to identify OCPs
15 = Use page b- to identify herbicides
16 = Use page b- to identify metals (in addition to the 5 wear metals)

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA C

General Criteria c: **Has the Unauthorized ("Primary") Release from the UST System been Stopped?**	☒ Y	☐ N	☐ NE	☐ NA

LTCP Statement: "The tank, pipe, or other appurtenant structure that released petroleum into the environment (i.e. the primary source) has been removed, repaired or replaced. It is not the intent of this policy to allow sites with ongoing leaks from the UST system to qualify for low-threat closure."

Fuel Dispensing Facility History (list in chronological order, starting with operational in-place tanks)

	Contents (gas - (leaded, unleaded), diesel, waste oil, etc.)	Type (steel, fiberglass single-walled, double-walled)	Evidence of Release? (Y/N)	Closed in Place, Removed, or Upgraded?	Responsible Party (Organization Name, Type)	Date Installed	Date Removed
Tank (capacity in gallons)							
3 X 10,000	unleaded	fiberglass, DW	N	in place	BP	1991	
1,000	waste oil	fiberglass, DW	N	in place	BP	1989	
6,000	leaded	steel	Y	removed	BP		1990
8,000	unleaded	steel	Y	removed	BP		1990
10,000	unleaded	fiberglass	Y	removed	BP		1990
550	waste oil	steel	N	removed	BP		1986
Piping							
Dispensers							
Other Structures							

Is the site currently an operating fuel dispensing facility?	☒ Y	☐ N	☐ NE	☐ NA
Have there been multiple tank system locations at the site?	☒ Y	☐ N	☐ NE	☐ NA
Have there been multiple releases at the site?	☐ Y	☒ N	☐ NE	☐ NA
Was there a previous/different regulatory case at this site? Identify previous case number:	☐ Y	☒ N	☐ NE	☐ NA
Is there evidence of releases from other on-site sources besides the UST system(s)?	☐ Y	☒ N	☐ NE	☐ NA
Is there indication of impacts from offsite sources?	☐ Y	☒ N	☐ NE	☐ NA

Use General Criteria e – Conceptual Site Model (Sources) sheets to support answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA C

General Criteria c:

Has the Unauthorized ("Primary") Release from the UST System been Stopped?

Case File Reference Documents:

Attachments:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA D

General Criteria d: **Has Free Product been Removed to the Maximum Extent Practicable?**	☑ Y	☐ N	☐ NE	☐ NA

LTCP Statement: "At petroleum unauthorized release sites where investigations indicate the presence of free product, free product shall be removed to the maximum extent practicable. In meeting the requirements of this section:

(a) Free product shall be removed in a manner that minimizes the spread of the unauthorized release into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable laws;

(b) Abatement of free product migration shall be used as a minimum objective for the design of any free product removal system; and

(c) Flammable products shall be stored for disposal in a safe and competent manner to prevent fires or explosions."

Has free product (migrating of mobile LNAPL) been detected in site monitoring wells?	☑ Y	☐ N	☐ NE	☐ NA

MW ID	Date FP First Observed	Max FP Apparent Thickness (feet), sheen, or globules	Most Recently Observed FP Apparent Thickness (feet)	Date of Most Recent FP Observation
MW-5	12/4/1991	1.50	0.02	3/20/2013
MW-10	6/6/2009	0.32	0.01	3/20/2013
MW-11	6/10/2010	sheen	sheen	6/10/2010
MW-12	9/30/2009	1.43	0.04	3/20/2013

Has a description of the standard operating procedures used to measure free product in wells been provided?	☑ Y	☐ N	☐ NE	☐ NA
Has an adequate LNAPL Conceptual Site Model been developed?	☑ Y	☐ N	☐ NE	☐ NA

Was free product observed during tank removal activities or station upgrades?	☐ Y	☑ N	☐ NE	☐ NA
Has an evaluation of the adequacy of the monitoring well network and appropriateness of screen interval to detect free product been conducted?	☑ Y	☐ N	☐ NE	☐ NA
Have there been other indications of the presence of free product (i.e., observations during tank removal, observations during exploratory drilling, bore logs, dissolved phase concentrations of COCs greater than their effective solubility's in groundwater, etc.)	☐ Y	☐ N	☑ NE	☐ NA
Has a preferential pathway study been conducted to determine the probability of free product encountering geologic and anthropogenic preferential pathways and conduits that can act as contaminant migration pathways to or from the site?	☑ Y	☐ N	☐ NE	☐ NA
Has the LNAPL body spatial distribution (horizontal and vertical) been defined?	☑ Y	☐ N	☐ NE	☐ NA
Are there risk and exposure issues attributed to the presence of the LNAPL?	☐ Y	☐ N	☑ NE	☐ NA
Has an evaluation of whether free product removal is practicable, or if not practicable, a description of the conditions that prevent free product removal been conducted?	☐ Y	☐ N	☐ NE	☑ NA

Use General Criteria e - Conceptual Site Model (Free Product) sheets to support answer

Has free product removal been implemented?	☑ Y	☐ N	☐ NE	☐ NA

Location/ MW ID	Method (Absorbent Materials, Bailing, Skimmer, DPE, Excavation, etc.)	Cumulative Gallons/Volume/Mass Removed	Dates Implemented
MW-5	bailing, skimmer, DPE, absorbent socks	148 gallons (water/LNAPL mixture)	1992-2013
MW-10	bailing, DPE, absorbent socks	17 gallons (water/LNAPL mixture)	2009-2013
MW-11	bailing, DPE	2 gallons (water/LNAPL mixture)	2009-2013
MW-12	bailing, DPE, absorbent socks	21 gallons (water/LNAPL mixture)	2009-2013

Does data indicate rebound of free product subsequent to product removal?	☐ Y	☐ N	☑ NE	☐ NA

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA D

General Criteria d:
Has Free Product been Removed to the Maximum Extent Practicable?

Case File Reference Documents:

Attachments:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA E

General Criteria e: **Has a Conceptual Site Model that Assesses the Nature, Extent, and Mobility of the Release been Developed?**	☑ Y	☐ N	☐ NE

LTCP Statement: "The Conceptual Site Model (CSM) is a fundamental element of a comprehensive site investigation. The CSM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The CSM is relied upon by practitioners as a guide for investigative design and data collection. Petroleum release sites in California occur in a wide variety of hydrogeologic settings. As a result, contaminant fate and transport and mechanisms by which receptors may be impacted by contaminants vary greatly from location to location. Therefore, the CSM is unique to each individual release site. All relevant site characteristics identified by the CSM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy. The supporting data and analysis used to develop the CSM are not required to be contained in a single report and may be contained in multiple reports submitted to the regulatory agency over a period of time."

Has a CSM been prepared that is representative of current site conditions?	☑ Y	☐ N

Document Title	Author	Date
See Attached		

If the CSM is provided in multiple documents, provide additional document titles, authors and dates in the Case File Reference document section on page e-2

Is the CSM comprehensive enough to show compliance with all the LTCP criteria and that final closure review is appropriate?	☑ Y	☐ N

General Criteria			
a	The unauthorized release is located within the service area of a public water system	☑ Y	☐ N
b	The unauthorized release consists only of petroleum	☐ Y	☑ N
c	The unauthorized ("primary") release from the UST system has been stopped	☐ Y	☑ N
d	Free product has been removed to the maximum extent practicable	☐ Y	☑ N
e	A CSM that assesses the nature, extent, and mobility of the release has been developed	☐ Y	☑ N
f	Secondary source has been removed to the extent practicable	☑ Y	☐ N
g	Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safely Code section 25296.15	☐ Y	☑ N
h	Nuisance as defined by Water Code section 13050 does not exist at the site	☐ Y	☑ N
Media-Specific Criteria			
Groundwater		☐ Y	☑ N
Vapor Intrusion to Indoor Air		☐ Y	☑ N
Direct Contact and Outdoor Air Exposure		☑ Y	☐ N

If the CSM is not comprehensive enough to show compliance with all the LTCP criteria, then

Has a data gap investigation work plan been prepared that is guided by the CSM?	☐ Y	☐ N
Has a path to closure plan been prepared that is guided by the CSM?	☐ Y	☐ N

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA E

General Criteria e: Case Notes

Case File Reference Documents:

Attachments:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA F

General Criteria f: **Has Secondary Source been Removed to the Extent Practicable?**	☑ Y	☐ N	☐ NE

LTCP Statement: "Secondary source" is defined as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described herein. "To the extent practicable" means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. It is expected that most secondary mass removal efforts will be completed in one year or less. Following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy."

Has corrective action been implemented at the site to remove or destroy-in-place the most readily recoverable fraction of source-area mass?	☑ Y	☐ N	☐ NE	☐ NA
Soil remediation	☑ Y	☐ N	☐ NE	☐ NA

Method	Mass/Volume Removed	Dates of Implementation
Excavation	1,950 Cubic Yards	September 1990
Dual Phase Extraction Test	91 lb GRO and 0.3 lb benzene	April 2009
Dual Phase Extraction Event	140 lb Total VOCs	July 2012

If soil remediation is currently being conducted, then is it progressing adequately?	☐ Y	☐ N	☑ NE	☐ NA
If soil remediation is no longer being conducted then, has confirmation sampling results confirmed that additional corrective actions are not necessary?	☑ Y	☐ N	☐ NE	☐ NA
Are additional soil remedial actions necessary to meet the media-specific criteria of the Policy or to abate a demonstrated threat to human health?	☐ Y	☑ N	☐ NE	☐ NA
Groundwater Remediation	☑ Y	☐ N	☐ NE	☐ NA

Method	Mass/Volume Removed	Dates of Implementation
Groundwater Extraction and Treatment	344,650 gallons	1994-1995
Dual Phase Extraction Test	1,460 gallons	April 2009
Dual Phase Extraction Event	7,200 gallons	July 2012

If groundwater remediation is currently being conducted, then is it progressing adequately?	☐ Y	☐ N	☐ NE	☑ NA
If groundwater remediation is no longer being conducted then, has verification monitoring confirmed that additional corrective actions are not necessary?	☑ Y	☐ N	☐ NE	☐ NA
Are additional groundwater remedial actions necessary to meet the media-specific criteria of the Policy or to abate a demonstrated threat to human health?	☐ Y	☑ N	☐ NE	☐ NA

Use sheet f-2 - Maximum Detected Contaminant Concentrations Before and After Corrective Action to support your answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

General Criteria f: Maximum Documented Contaminant Concentrations Before and After Correction Action

Contaminant	Soil (ppm)		Water (ppb)	
	Historical Maximum	Current Maximum	Historical Maximum	Current Maximum
VADOSE ZONE SOIL				
GRO	910 (B3; 14.5 ft bgs)	51 (TB-2; 16 ft bgs)	--	--
Benzene	6 (B3; 14.5 ft bgs)	0.09 (TB-2; 16 ft bgs)	--	--
Toluene	13 (B3; 14.5 ft bgs)	ND	--	--
Ethylbenzene	82 (B3; 14.5 ft bgs)	0.4 (TB-2; 16 ft bgs)	--	--
Total Xylenes	19 (B3; 14.5 ft bgs)	0.8 (TB-2; 16 ft bgs)	--	--
MTBE	--	0.0028 (MW-11; 16 ft bgs)	--	--
Lead	10 (B1; 14.5 ft bgs)	--	--	--
SMEAR ZONE SOIL			--	--
GRO	6,500 (MW-11; 24 ft bgs)	MW-11 is most recent boring	--	--
Benzene	22 (MW-11; 24 ft bgs)	MW-11 is most recent boring	--	--
Toluene	86 (MW-11; 24 ft bgs)	MW-11 is most recent boring	--	--
Ethylbenzene	95 (MW-11; 24 ft bgs)	MW-11 is most recent boring	--	--
Total Xylenes	460 (MW-11; 24 ft bgs)	MW-11 is most recent boring	--	--
MTBE	<2.0 (MW-11; 24 ft bgs)	MW-11 is most recent boring	--	--
GROUNDWATER				
GRO	--	--	270,000 (MW-5; 1994)	16,000 (MW-11; 2013)
Benzene	--	--	13,000 (MW-5; 1991)	250 (MW-11; 2013)
Toluene	--	--	7,400 (MW-5; 1991)	620 (MW-11; 2013)
Ethylbenzene	--	--	3,100 (MW-10; 2009)	680 (MW-11; 2013)
Total Xylenes	--	--	12,000 (MW-10; 2009)	2,200 (MW-11; 2013)
MTBE	--	--	2,002 (MW-5; 1994)	17 (MW-4; 2013)

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA F

General Criteria f: Case Notes

Case File Reference Documents:

Attachments:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA G

General Criteria g: **Has Soil or Groundwater been Tested for MTBE and Results Reported in Accordance with Health and Safety Code Section 25296.15?**	☒ Y	☐ N	☐ NE	☐ NA

LTCP Statement: "Health and Safety Code section 25296.15 prohibits closing a UST case unless the soil, groundwater, or both, as applicable have been tested for MTBE and the results of that testing are known to the Regional Water Board. The exception to this requirement is where a regulatory agency determines that the UST that leaked has only contained diesel or jet fuel. Before closing a UST case pursuant to this policy, the requirements of section 25296.15, if applicable, shall be satisfied."

Exemption - Has sufficient data been presented to determine that the UST that leaked has only contained diesel or jet fuel?	☐ Y	☐ N	☒ NE	☐ NA

If the site does not qualify for the exemption then

Has sufficient data been presented to assess whether MTBE is or was present in soil at or in the vicinity of the site?	☒ Y	☐ N	☐ NE	☐ NA
Has sufficient data been presented to assess whether MTBE is or was present in groundwater at or in the vicinity of the site?	☒ Y	☐ N	☐ NE	☐ NA
Have all results been verified by the appropriate analytical laboratory method?	☒ Y	☐ N	☐ NE	☐ NA

Use General Criteria b pages b-3 and General Criteria e – Conceptual Site Model sheets to support answer

Case File Reference Documents:

Attachments:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA H

General Criteria h: **Does a Nuisance as Defined by Water Code Section 13050 Exist at the Site?**	☐ Y	☒ N	☐ NE

LTCP Statement: "Water Code section 13050 defines "nuisance" as anything which meets all of the following requirements:

(1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.

(2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

(3) Occurs during, or as a result of, the treatment or disposal of wastes.

For the purpose of this policy, waste means a petroleum release."

Does a nuisance condition currently exist (or potentially could exist) that meets all of the following criteria?	☐ Y	☒ N	☐ NE	☐ NA
Is injurious to health? *-OR-*	☐ Y	☒ N	☐ NE	☐ NA
Is indecent or offensive to the senses? *-OR-*	☐ Y	☐ N	☐ NE	☒ NA
Is an obstruction to the free use of property so as to interfere with the comfortable enjoyment of life or property?	☐ Y	☐ N	☒ NE	☐ NA
Affects at the same time an entire community, although the extent of the annoyance or damage inflicted upon individuals may be unequal? *-OR-*	☐ Y	☐ N	☒ NE	☐ NA
Affects at the same time an entire neighborhood, although the extent of the annoyance or damage inflicted upon individuals may be unequal? *-OR-*	☐ Y	☒ N	☐ NE	☐ NA
Affects at the same time any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal?	☐ Y	☐ N	☒ NE	☐ NA
Occurs during the treatment of waste? *-OR-*	☐ Y	☐ N	☐ NE	☒ NA
Occurs during the disposal of waste? *-OR-*	☐ Y	☐ N	☒ NE	☐ NA
Occurs as a result of the treatment of waste? *-OR-*	☐ Y	☒ N	☐ NE	☐ NA
Occurs as a result of the disposal of waste?	☐ Y	☒ N	☐ NE	☐ NA

Has an evaluation of whether site contamination is present in locations that have the potential to pose nuisance conditions during common or reasonably expected site activities been conducted?	☒ Y	☐ N	☐ NE	☐ NA
Surface soils?	☒ Y	☐ N	☐ NE	☐ NA
Utility corridors?	☒ Y	☐ N	☐ NE	☐ NA
Groundwater?	☒ Y	☐ N	☐ NE	☐ NA
Surface water?	☐ Y	☐ N	☒ NE	☐ NA
Soil gas?	☐ Y	☐ N	☐ NE	☒ NA
Basements or other subsurface structures?	☒ Y	☐ N	☐ NE	☐ NA

Use the following to support your answer:

- *General Criteria a (site located within a service area of a public water supply system)*
- *General Criteria b (identified chemicals of concern and potential chemicals of concern)*
- *General Criteria d (free product evaluation)*
- *General Criteria e (results of preferential pathway and sensitive receptor survey)*
- *Media Specific Criteria for Groundwater*
- *Media Specific Criteria for Vapor Intrusion to Indoor Air*
- *Media Specific Criteria for Direct Contact and Outdoor Air Exposure*

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY - GENERAL CRITERIA H

General Criteria h: Case Notes

Case File Reference Documents:

Attachments:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY
MEDIA SPECIFIC CRITERIA: GROUNDWATER

Does the site qualify for the Soil Only Case exemption? -OR-	☐ Y	☒ N	☐ NE
Does the site satisfy the Media-Specific Criteria for Groundwater?	☐ Y	☒ N	☐ NE

LTCP Statement: "This policy describes criteria on which to base a determination that threats to existing and anticipated beneficial uses of groundwater have been mitigated or are de minimis, including cases that have not affected groundwater.

State Water Board Resolution 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304* is a state policy for water quality control and applies to petroleum UST cases. Resolution 92-49 directs that water affected by an unauthorized release attain either background water quality or the best water quality that is reasonable if background water quality cannot be restored. Any alternative level of water quality less stringent than background must be consistent with the maximum benefit to the people of the state, not unreasonably affect current and anticipated beneficial use of affected water, and not result in water quality less than that prescribed in the water quality control plan for the basin within which the site is located. Resolution No. 92-49 does not require that the requisite level of water quality be met at the time of case closure; it specifies compliance with cleanup goals and objectives within a reasonable time frame.

Water quality control plans (Basin Plans) generally establish "background" water quality as a restorative endpoint. This policy recognizes the regulatory authority of the Basin Plans but underscores the flexibility contained in Resolution 92-49.

It is a fundamental tenet of this low-threat closure policy that if the closure criteria described in this policy are satisfied at a petroleum unauthorized release site, attaining background water quality is not feasible, establishing an alternate level of water quality not to exceed that prescribed in the applicable Basin Plan is appropriate, and that water quality objectives will be attained through natural attenuation within a reasonable time, prior to the expected need for use of any affected groundwater.

If groundwater with a designated beneficial use is affected by an unauthorized release, 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 listed below. A plume that is "stable or decreasing" is a contaminant mass that has expanded to its maximum extent: the distance from the release where attenuation exceeds migration."

"Sites with Releases that Have Not Affected Groundwater - Sites with soil that does not contain sufficient mobile constituents [leachate, vapors, or light non-aqueous-phase liquids (LNAPL)] to cause groundwater to exceed the groundwater criteria in this policy shall be considered low-threat sites for the groundwater medium. Provided the general criteria and criteria for other media are also met, those sites are eligible for case closure. For older releases, the absence of current groundwater impact is often a good indication that residual concentrations present in the soil are not a source for groundwater pollution."

Has adequate data been collected to demonstrate that soil does not contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria in this policy?					☒ Y	☐ N	☐ NE
Leachate?	☒ Y	☐ N	☐ NE	☐ NA			
Soil gas?	☒ Y	☐ N	☐ NE	☐ NA			
LNAPL?	☐ Y	☐ N	☐ NE	☒ NA			
If the site does not qualify for the soil only exemption, then Does groundwater in the vicinity of the site have beneficial use designations?					☐ Y	☐ N	☒ NE

Use General Criteria e – Conceptual Site Model sheets to support answer

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY
MEDIA SPECIFIC CRITERIA: GROUNDWATER

GROUNDWATER PLUME STABILITY

If the site <u>does not</u> qualify for the soil only exemption, and groundwater has designated beneficial uses, then, **Is the contaminant plume stable or decreasing in areal extent?**	☐ Y	☐ N	☒ NE	☐ NA

Technical Justification for Groundwater Media-Specific Criteria: "A plume is considered stable or decreasing if a contaminant mass has expanded to its maximum extent: the distance from the release where attenuation exceeds migration. There are two common ways to demonstrate plume stability. The first common way is to routinely observe non-detect values for groundwater parameters in down-gradient wells. The second common way is to show stable or decreasing concentration levels in down-gradient wells at the distal end of the plume. It should be noted that concentration levels may exhibit fluctuation due to seasonal variations. These variations may be also attributed to man-made factors, including but not limited to: varying sampling techniques, false positive results, or laboratory inconsistencies."

"Requiring that a plume must be stable or decreasing reduces uncertainty as to how long the plume might become in the future.

Has the maximum stabilized plume length been defined?	☐ Y	☐ N	☐ NE	☒ NA
Have non-detect values for groundwater parameters in down-gradient wells at the distal end of the plume been routinely observed?	☐ Y	☐ N	☐ NE	☒ NA

MW ID's	Dates of GW Monitoring Events Demonstrating Non-Detect Values?
C-1 (Chevron Site Wells)	9/28/2011, 3/8/2012, 9/20/2012 - All COCs are ND except MTBE
C-10 (Chevron Site Wells)	12/4/2006 to 9/20/2013 - All COCs are ND except MTBE

Have stable or decreasing concentration levels in down-gradient wells at the distal end of the plume been routinely observed?	☐ Y	☒ N	☐ NE	☐ NA

MW ID's	Dates of GW Monitoring Events Demonstrating Stability?
C-1	MTBE decreasing since 3/6/2008
C-10	MTBE decreasing since 6/5/2006

Do concentration levels exhibit fluctuations due to seasonal variations?	☒ Y	☐ N	☐ NE	☐ NA
Do concentration levels exhibit fluctuations due to man- made factors?	☐ Y	☒ N	☐ NE	☐ NA

Varying Sampling Techniques?	☐ Y	☐ N	☐ NE	☒ NA
False Positive Results?	☐ Y	☐ N	☐ NE	☒ NA
Laboratory Inconsistencies?	☐ Y	☐ N	☒ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY
MEDIA SPECIFIC CRITERIA: GROUNDWATER

GROUNDWATER CONTAMINANT PLUME CLASSIFICATION CHARACTERISTICS

If the Contaminant Plume is Stable or Decreasing, then **Does the contaminant plume that exceeds water quality objectives meet <u>all of the additional characteristics</u> of at least <u>one of the five</u> (5) LTCP classes listed below?**	☒ Y	☐ N	☐ NE	☐ NA

	Plume Length[1] (feet)	Free Product Remaining[2] (Yes/No)	Distance of Nearest Water Supply Well from Plume Boundary[3] (feet)	Distance of Nearest Surface Water Body from Plume Boundary[4] (feet)	Stable or Decreasing Plume[5]	Maximum Dissolved Benzene Concentration[6] (µg/L)	Maximum Dissolved MTBE Concentration[6] (µg/L)	Property Owner Willing to Accept Land Use Restriction[7]			
Site											
Does the contaminant plume that exceeds water quality objectives meet <u>all of the characteristics</u> of at least <u>one of the five</u> LTCP classes listed below?									☐ Y	☐ N	☐ NE
1[a]	< 100	No	>250	>250	Yes	NA	NA	NA	☐ Y	☐ N	☐ NE
2[b]	<250	No	>1,000	>1,000	Yes	<3,000	<1,000	NA	☒ Y	☐ N	☐ NE
3[c]	<250	Yes	>1,000	>1,000	> 5 Years	NA	NA	Yes	☒ Y	☐ N	☐ NE
4[d]	<1,000	No	>1,000	>1,000	Yes	<1,000	<1,000	NA	☐ Y	☐ N	☐ NE
5[e]	A site-specific analysis determines that under current and reasonable anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable period time frame.								☐ Y	☐ N	☐ NE

<u>Notes:</u>

1 = The length of the plume is the maximum extent from the point of release of any petroleum related constituent in groundwater that exceeds the WQOs. The plume boundary is where the constituent(s) furthest from the point of release concentration level equals the WQOs (Technical Justification for Groundwater Specific Criteria). **General Criteria – Conceptual Site Model pages e-___ through e-___ to support plume length determination.**

2 = A "Yes" designation signifies free product remains at the site, has been removed to the maximum extent practicable, but does not extend off-site. A "No" designation means free product does not exist onsite or off-site. **See General Criteria – Conceptual Site Model pages e-___ through e-___** to support free product status.

(See page gw-4 for a continuation of notes)

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LTCP Groundwater Contaminant Plume Classification Characteristics

Notes (continued):

3 = **See General Criteria – Conceptual Site Model sheets** to support distance to nearest water supply well.

4 = **See General Criteria – Conceptual Site Model sheets** to support distance to nearest surface water body.

5 = The specified concentrations are maximums, and typically occur in source area monitoring wells. **See General Criteria – Conceptual Site Model sheets** to support length of time plume has been stable or decreasing.

6 = The specified concentrations are maximums, and typically occur in source area monitoring wells. **See General Criteria – Conceptual Site Model sheets** to support dissolved benzene and MTBE concentrations.

7 = **See General Criteria – Conceptual Site Model sheets** to support Property Owner's willingness to accept Land Use Restrictions.

a = Class 1: Represents a short, stabilized plume that is indicative of a small or depleted source and/or very high natural attenuation rate. (CA LUFT Manual)

b = Class 2: Represents a moderate, stabilized plume length (plume boundary is <250 feet from point of release) that approximates the average benzene plume length from cited studies. The maximum concentration of benzene (3,000 µg/L) and MTBE (1,000 µg/L) in groundwater are conservative indicators that free product is not present. These concentrations are approximately 10% and 0.02%, respectively, of the typical effective solubility of benzene and MTBE in unweathered gasoline. (CA LUFT Manual)

c = Class 3: Represents a moderate, stabilized plume length (plume boundary is <250 feet from point of release) that approximates the average benzene plume length from cited studies. The on-site free product and/or high dissolved concentrations in the plume remaining after secondary source removal to the maximum extent practicable as per the General Criteria in the Policy require that the plume has been stable or decreasing for a minimum of five years of monitoring to validate plume stability/natural attenuation (i.e., to confirm that the rate of natural attenuation exceeds the rate of LNAPL dissolution and dissolved-phase migration). (CA LUFT Manual)

d = Class 4: Represents a long, stabilized plume length (plume boundary is <1,000 feet from point of release) that approximates the maximum MTBE plume length cited. (CA LUFT Manual)

e = Class 5: For other low-threat site-specific scenarios not captured in Class 1 through 4, use a fate-and-transport model to evaluate the potential migration and attenuation of the chemicals using site-specific calibration data when available. It is important to use models that consider mass balance whenever possible. (CA LUFT Manual)

NA = Not applicable

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

Groundwater: Case Notes

Case File References (Document File Names):

Technical References:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY
MEDIA SPECIFIC CRITERIA: PETROLEUM VAPOR INTRUSION TO INDOOR AIR

Does the site qualify for the active commercial fueling facility exemption? **-OR-**	☒ **Y**	☐ **N**	☐ **NE**
Does the site meet <u>one of the three</u> petroleum vapor intrusion to indoor air specific criteria (a, b, or c)?	☐ **Y**	☐ **N**	☐ **NE**

LTCP Statement: "Exposure to petroleum vapors migrating from soil or groundwater to indoor air may pose unacceptable human health risks. This policy describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks. In many petroleum release cases, potential human exposures to vapors are mitigated by bioattenuation processes as vapors migrate toward the ground surface. For the purposes of this section, the term "bioattenuation zone" means an area of soil with conditions that support biodegradation of petroleum hydrocarbon vapors.

The low-threat vapor-intrusion criteria described below apply to sites where the release originated and impacted or potentially impacted adjacent parcels when:

(1) existing buildings are occupied or may be reasonably expected to be occupied in the future, <u>or</u>

(2) buildings for human occupancy are reasonably expected to be constructed in the future.

Appendices 1 through 4 (attached) illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario. Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air and be considered low-threat for the vapor-intrusion-to-indoor-air pathway if:

a. Site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, or all of the characteristics and criteria of scenario 4 as applicable; <u>or</u>

b. 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; <u>or</u>

c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health.

Exception: Exposures to petroleum vapors associated with historical fuel system releases are comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. Therefore, 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."

Does the site qualify for an <u>exemption</u> from the Petroleum Vapor Intrusion to Indoor Air criteria?	☒ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Is the site is an active commercial petroleum fueling facility?	☒ Y	☐ N	☐ NE	☐ NA
Are release characteristics reasonably believed to pose an unacceptable health risk to facility users or nearby facilities?	☐ Y	☒ N	☐ NE	☐ NA
If the site <u>does not qualify</u> for an exemption, then				
a. Do site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, <u>or</u> all of the characteristics and criteria of scenario 4? **-OR-** ***(Use page vi-2 through vi-10 to support answer)***	☐ Y	☐ N	☐ NE	☐ NA
b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted that demonstrates that human health is protected? **-OR-**	☐ Y	☐ N	☐ NE	☐ NA
c. As a result of controlling exposure through the use of mitigation measures <u>or</u> 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?	☐ Y	☐ N	☐ NE	☐ NA

Use General Criteria e - Conceptual Site Model pages to support answer

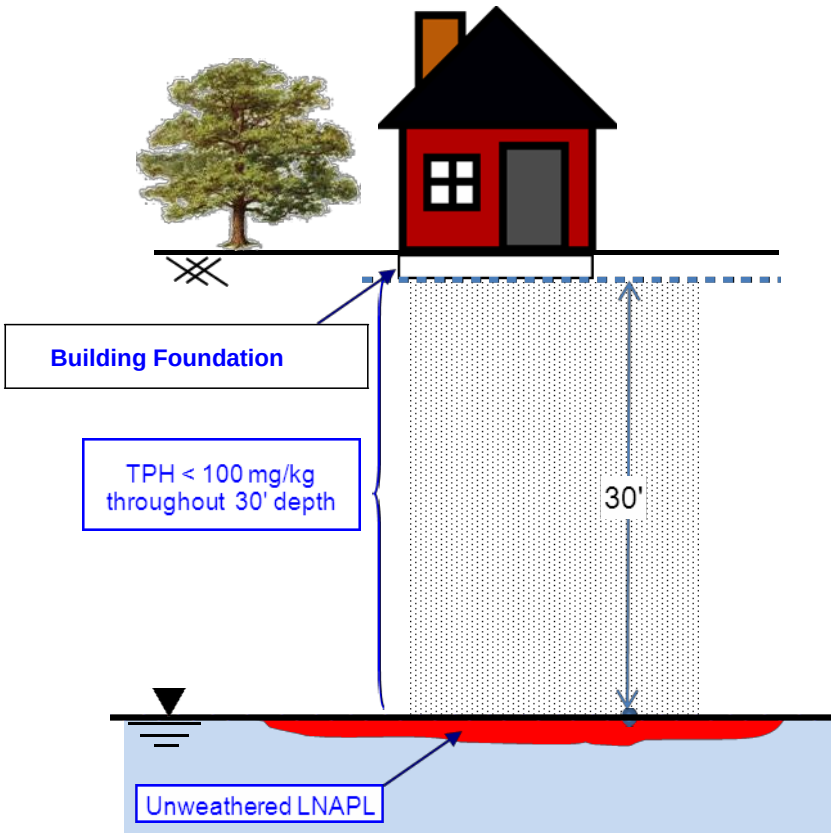
Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

SCENARIO 1 - UNWEATHERED LNAPL IN GROUNDWATER				
Do site specific conditions at the site satisfy all the characteristics of Scenario 1?	☐ Y	☐ N	☐ NE	☒ NA

Scenario 1
Existing Building or Potential Future Construction

LNAPL Characteristics:
Unweathered – petroleum product that has not been subjected to significant volatilization or solubilization, and therefore has not lost a significant portion of its volatile or soluble constituents (e.g., comparable to recently dispensed fuel)

Bioattenuation Zone Required Characteristics:
Minimum 30 foot vertical separation distance between the bottom of building foundations and LNAPL in groundwater, Total TPH concentrations in soil < 100 mg/kg



Is the LNAPL unweathered?	☐ Y	☐ N	☐ NE	☐ NA
Does the site have a continuous bioattenuation zone that provides a separation of at least 30 feet vertically between the LNAPL in groundwater and the foundation of existing buildings?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Does the site have a continuous bioattenuation zone that provides a separation of at least 30 feet vertically between the LNAPL in groundwater and the foundation of potential buildings?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Are total TPH concentrations in soil less than 100 mg/kg throughout the entire vertical extent of the 30 foot bioattenuation zone?	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

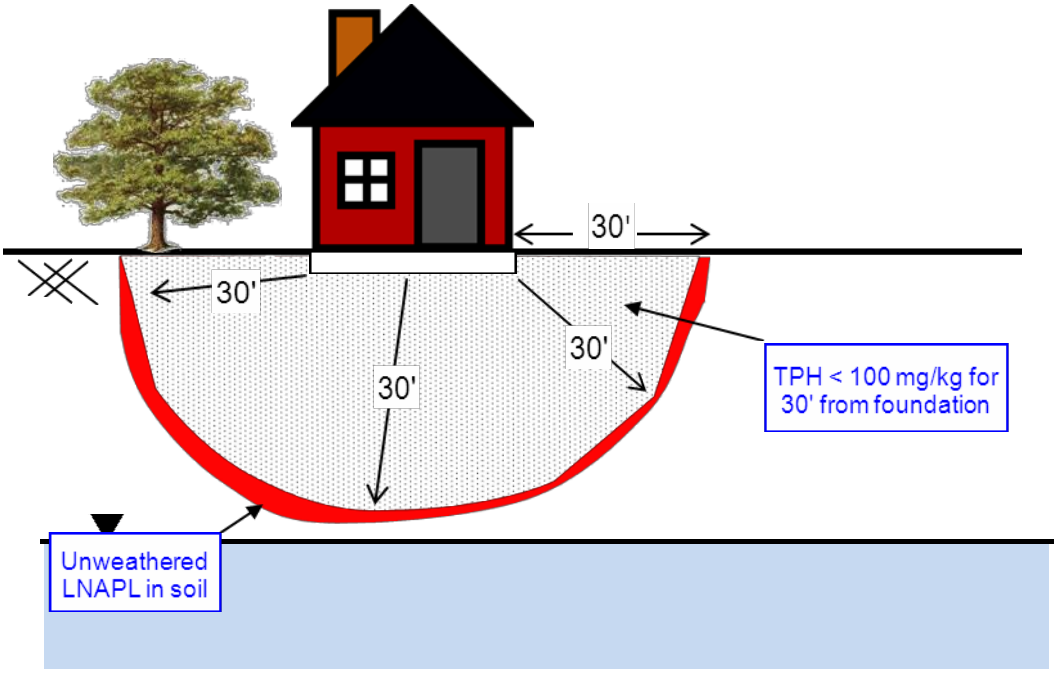
LOW THREAT CLOSURE POLICY
MEDIA SPECIFIC CRITERIA: PETROLEUM VAPOR INTRUSION TO INDOOR AIR

SCENARIO 2 - UNWEATHERED LNAPL IN SOIL				
Do site specific conditions at the site satisfy all the characteristics of Scenario 2?	☐ **Y**	☐ **N**	☐ **NE**	☒ **NA**

Scenario 2
Existing Building or Potential Future Construction

LNAPL Characteristics:
Unweathered – petroleum product that has not been subjected to significant volatilization or solubilization, and therefore has not lost a significant portion of its volatile or soluble constituents (e.g., comparable to recently dispensed fuel)

Bioattenuation Zone Required Characteristics:
Minimum 30 foot vertical separation distance between the bottom of building foundations and LNAPL in soil,
Total TPH concentrations in Soil < 100 mg/kg



Is the LNAPL unweathered?	☐ Y	☐ N	☐ NE	☐ NA
Does the site have a continuous bioattenuation zone that provides a separation of at least 30 feet both laterally and vertically between the LNAPL in soil and the foundation of existing buildings?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Does the site have a continuous bioattenuation zone that provides a separation of at least 30 feet both laterally and vertically between the LNAPL in soil and the foundation of potential buildings?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Are total TPH concentrations in soil less than 100 mg/kg throughout the entire lateral and vertical extent of the 30 foot bioattenuation zone?	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

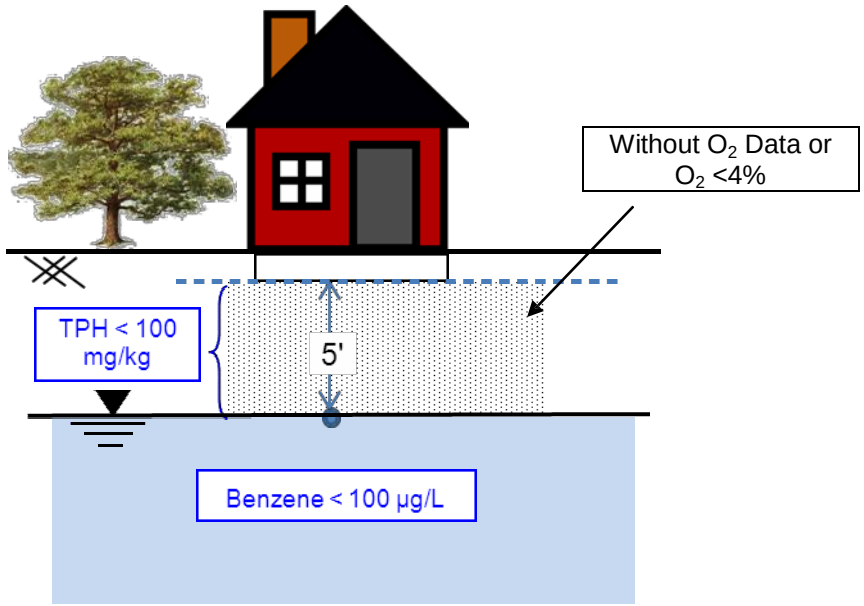
Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

SCENARIO 3 – LOW CONCENTRATION GROUNDWATER SCENARIO (FIGURE A)				
Does the Site Satisfy all of the Characteristics and Requirements of Scenario 3 Figure A?	☐ Y	☐ N	☐ NE	☒ NA

Figure A
Existing Building or Future Construction

Dissolved Phase Benzene Concentrations in Groundwater Requirements:
< 100 µg/L

Bioattenuation Zone Required Characteristics:
Minimum 5 Foot Vertical Separation Distance between Bottom of Building Foundations and Water Table,
No Soil Gas Oxygen Data or Measured Soil Gas Oxygen Concentrations< 4%,
Total TPH Concentrations in Soil < 100 mg/kg



Are maximum dissolved benzene concentrations in groundwater < 100 µg/L? **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Is the bioattenuation zone a continuous zone that provides a separation of at least 5 feet vertically between the dissolved phase benzene and the foundation of existing buildings? **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Is the bioattenuation zone a continuous zone that provides a separation of at least 5 feet vertically between the dissolved phase benzene and the foundation of potential buildings? **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that Total TPH (TPH-g and TPH-d combined) concentrations in soil are < 100 mg/kg throughout the entire depth of the 5 foot bioattenuation zone?	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

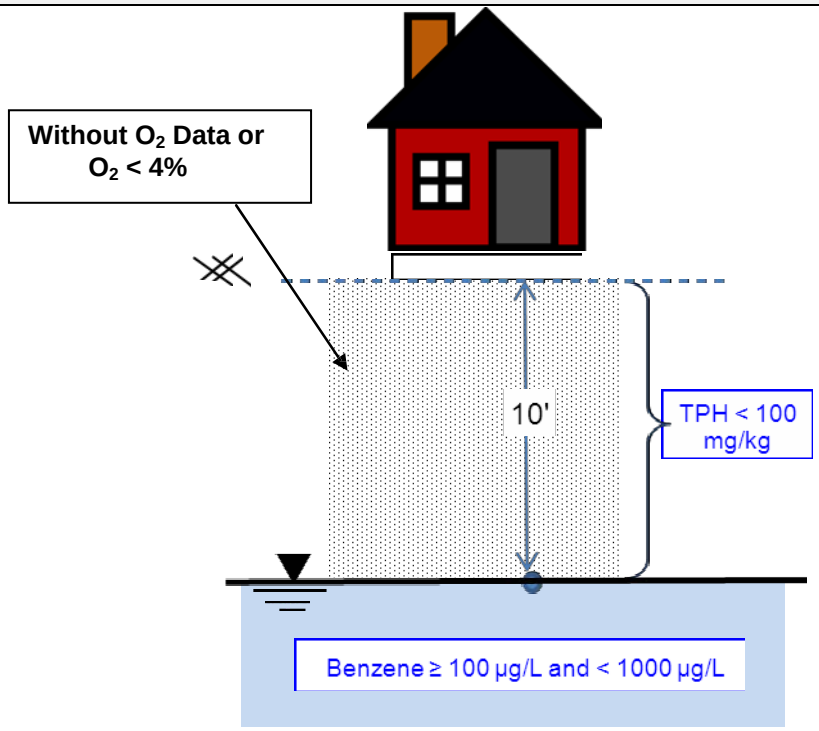
Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

SCENARIO 3 – LOW CONCENTRATION GROUNDWATER SCENARIO (FIGURE B)				
Does the Site Satisfy all of the Characteristics and Requirements of Scenario 3 - Figure B?	☐ Y	☐ N	☐ NE	☒ NA

Figure B
Existing Building or Future Construction

Dissolved Phase Benzene Concentrations in Groundwater Requirements:
≥ 100 µg/L but < 1,000 µg/L

Bioattenuation Zone Required Characteristics:
Minimum 5 Foot Vertical Separation Distance between Bottom of Building Foundations and Water Table,
Measured Soil Gas Oxygen Concentrations< 4%,
Total TPH Concentrations in Soil < 100 mg/kg



Are maximum dissolved benzene concentrations in groundwater ≥ 100 µg/L but < 1,000 µg/L?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Is the bioattenuation zone a continuous zone that provides a separation of at least 10 feet vertically between the dissolved phase benzene and the foundation of existing **buildings**?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Is the bioattenuation zone a continuous zone that provides a separation of at least 10 feet vertically between the dissolved phase benzene and the foundation of **potential buildings**?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that Total TPH (TPH-g and TPH-d combined) concentrations in soil are < 100 mg/kg throughout the entire depth of the 10 foot bioattenuation zone?	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

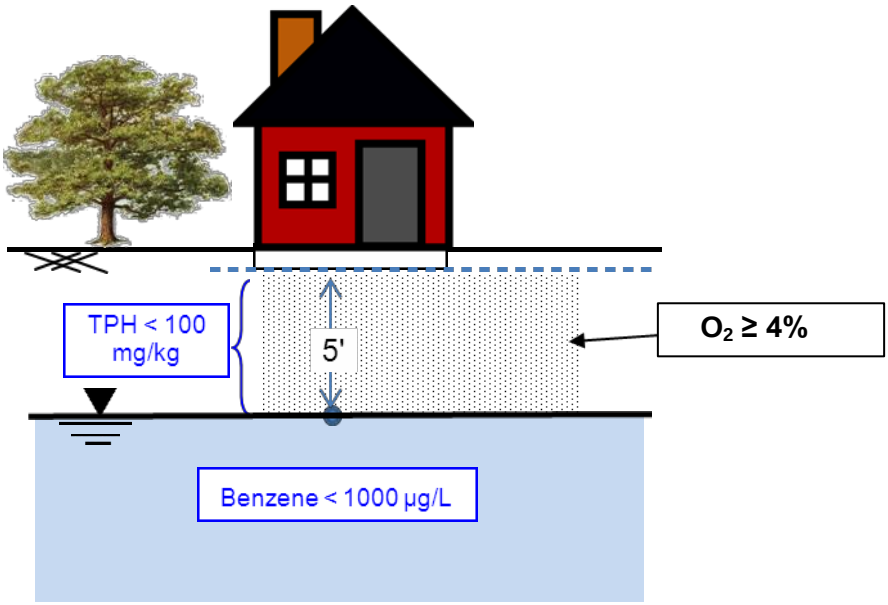
Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

SCENARIO 3 – LOW CONCENTRATION GROUNDWATER SCENARIO (FIGURE C)				
Does the Site Satisfy all of the Characteristics and Requirements of Scenario 3 - Figure C?	☐ Y	☐ N	☐ NE	☒ NA

Figure C
Existing Building or Future Construction

Dissolved Phase Benzene Concentrations in Groundwater Requirements:
< 1,000 µg/L

Bioattenuation Zone Required Characteristics:
Minimum 5 Foot Vertical Separation Distance between Bottom of Building Foundations and Water Table,
Measured Soil Gas Oxygen Concentrations ≥ 4%,
Total TPH Concentrations in Soil < 100 mg/kg



Are maximum dissolved benzene concentrations in groundwater ≥ 100 µg/L but < 1,000 µg/L?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Is the bioattenuation zone a continuous zone that provides a separation of at least 10 feet vertically between the dissolved phase benzene and the foundation of existing buildings?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Is the bioattenuation zone a continuous zone that provides a separation of at least 10 feet vertically between the dissolved phase benzene and the foundation of potential buildings?; **-and-**	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that Total TPH (TPH-g and TPH-d combined) concentrations in soil are < 100 mg/kg throughout the entire depth of the 10 foot bioattenuation zone?	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY
MEDIA SPECIFIC CRITERIA: PETROLEUM VAPOR INTRUSION TO INDOOR AIR

SCENARIO 4 – DIRECT MEASUREMENT OF SOIL GAS CONCENTRATIONS (WITH A BIOATTENUATION ZONE)				
Does the Site Satisfy all of the Characteristics and Requirements of Scenario 4 – With Bioattenuation Zone?	☐ Y	☐ N	☐ NE	☒ NA

Soil Gas Sampling – With Bioattenuation Zone
Existing Building or Future Construction

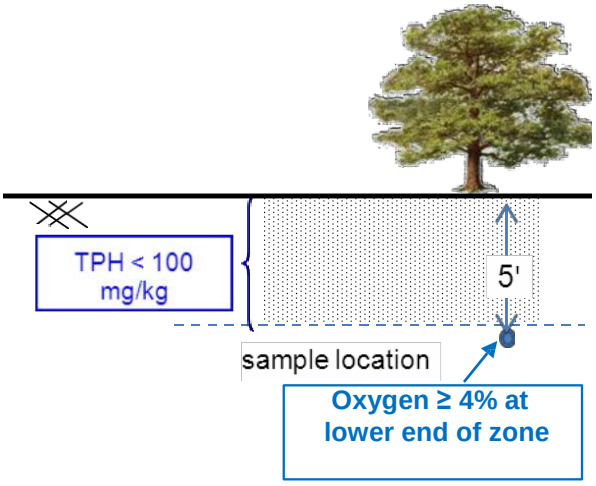
Bioattenuation Zone Required Characteristics:

Minimum 5 foot vertical feet of soil between the soil vapor measurement and the foundation of an existing building or ground surface of future construction;
Total TPH concentrations in soil < 100 mg/kg (measured in at least two depths within the five-foot zone);
Soil gas oxygen concentrations ≥ 4% at the bottom of the five-foot bioattenuation zone

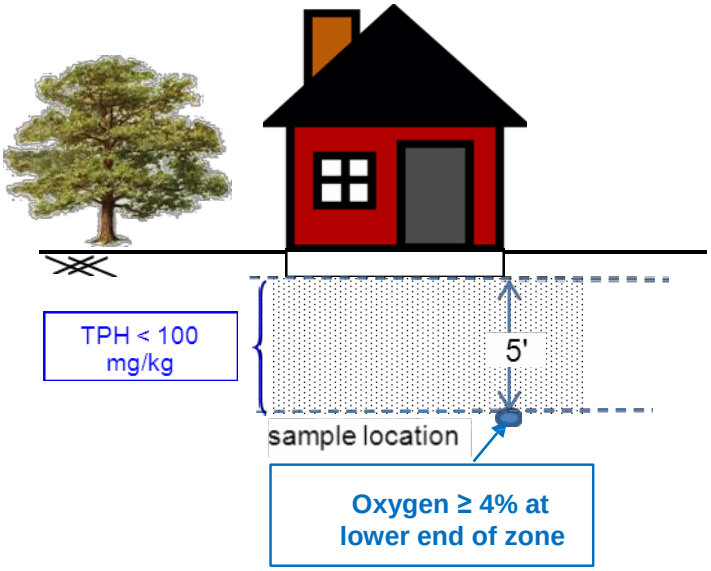
Soil Gas Sample Location Requirements:

Existing Buildings - At least five feet below the bottom of the building foundation
Future Construction - The soil gas sample shall be collected from at least five feet below ground surface

Existing Building



Future Construction



Are the required bioattenuation zone characteristics satisfied?	☐ Y	☐ N	☐ NE	☐ NA
Is there a minimum 5 foot vertical feet of soil between the soil vapor measurement and the foundation of existing buildings?	☐ Y	☐ N	☐ NE	☐ NA
Is there a minimum 5 foot vertical feet of soil between the soil vapor measurement and the ground surface of future construction?	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that total TPH concentrations in soil are < 100 mg/kg (measured in at least two depths within the five-foot zone)?	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that soil gas oxygen concentrations are ≥ 4% at the bottom of the five-foot bioattenuation zone?	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

SCENARIO 4 – DIRECT MEASUREMENT OF SOIL GAS CONCENTRATIONS (WITH A BIOATTENUATION ZONE)

If the required bioattenuation zone characteristics have been met then,

Have soil gas samples been collected in accordance with required protocols?	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
For existing buildings, were soil gas samples collected from at least five feet below the bottom of building foundations?	☐ Y	☐ N	☐ NE	☐ NA
For sites where future construction is planned, were soil gas samples collected from at least five feet below ground surface within the footprints of future buildings?	☐ Y	☐ N	☐ NE	☐ NA
Were samples collected in accordance with the guidance provided in the CA LUFT Manual?	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that soil gas concentrations for benzene, ethylbenzene, and napthalene are below the specified residential screening levels?	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Benzene < 85,000 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene < 1,100,000 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Napthalene < 93,000 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that soil gas concentrations for benzene, ethylbenzene, and napthalene are below the specified commercial screening levels?	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Benzene < 280,000 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene < 3,600,000 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Napthalene < 310,000 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

If the required bioattenuation zone characteristics have not been satisfied then use Scenario 4 – No Bioattenuation Zone (pages vi-9 and vi-10)

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

SCENARIO 4 – DIRECT MEASUREMENT OF SOIL GAS CONCENTRATIONS (NO BIOATTENUATION ZONE)

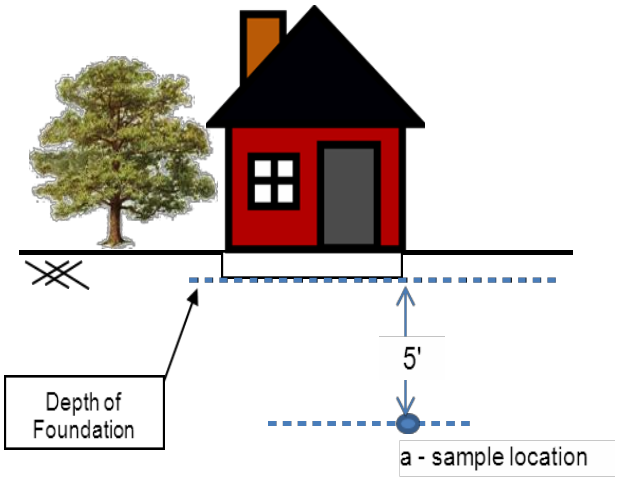
Does the Site Satisfy all of the Characteristics and Requirements of Scenario 4 – No Bioattenuation Zone?	☐ Y	☐ N	☐ NE	☒ NA

Soil Gas Sampling – No Bioattenuation Zone
Existing Building or Future Construction

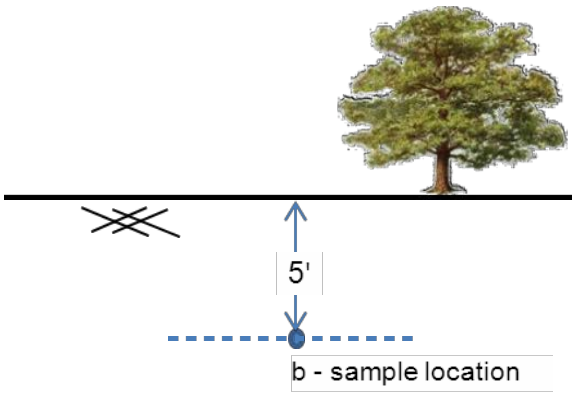
Soil Gas Sample Location Requirements:

Existing Buildings – At least five feet below the bottom of the building foundation
Future Construction - The soil gas sample shall be collected from at least five feet below ground surface

Existing Building



Future Construction



Were appropriate protocols followed for collecting soil gas samples?	**☐ Y**	**☐ N**	**☐ NE**	**☐ NA**
For existing buildings, were soil gas samples collected from at least five feet below the bottom of building foundations?	☐ Y	☐ N	☐ NE	☐ NA
For sites where future construction is planned, were soil gas samples collected from at least five feet below ground surface within the footprints of future buildings?	☐ Y	☐ N	☐ NE	☐ NA
Were samples collected in accordance with the guidance provided in the CA LUFT Manual?	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that soil gas concentrations for benzene, ethylbenzene, and napthalene are below the specified residential screening levels?	**☐ Y**	**☐ N**	**☐ NE**	**☐ NA**
Benzene < 85 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene < 1,100 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Napthalene < 93 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that soil gas concentrations for benzene, ethylbenzene, and napthalene are below the specified commercial screening levels?	**☐ Y**	**☐ N**	**☐ NE**	**☐ NA**
Benzene < 280 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene < 3,600 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Napthalene < 310 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

SCENARIO 4 – DIRECT MEASUREMENT OF SOIL GAS CONCENTRATIONS (NO BIOATTENUATION ZONE)

For the no bioattenuation zone scenario, the screening criteria provided in the table on the preceding page are the same as the California Human Health Screening Levels (CHSSLs) with engineered fill below sub-slab.

If building crawl space air samples were collected instead of soil gas samples to evaluate vapor intrusion into buildings, then

Were appropriate protocols followed for collecting the crawl space air samples?	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Were samples collected in accordance with the guidance provided in *the CA LUFT Manual* and referenced documents including the DTSC's *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*?	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that crawl space air concentrations for benzene, ethylbenzene, and napthalene are below the appropriate residential screening levels (i.e., CHHSLs for Indoor Air)?	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Benzene < 0.084 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene – No screening number currently available	☐ Y	☐ N	☐ NE	☐ NA
Napthalene < 0.072 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Has sufficient data been collected to determine that crawl space air concentrations for benzene, ethylbenzene, and napthalene are below the appropriate commercial screening levels (i.e., CHHSLs for Indoor Air)?	☐ **Y**	☐ **N**	☐ **NE**	☐ **NA**
Benzene < 0.141 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA
Ethylbenzene – No screening number currently available	☐ Y	☐ N	☐ NE	☐ NA
Napthalene < 0.120 µg/m^3	☐ Y	☐ N	☐ NE	☐ NA

Use Criteria e – Conceptual Site Model sheets to support answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

Case Notes

Case File Document References:

Technical References:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

Case Notes

Case Notes (continued):

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

LOW THREAT CLOSURE POLICY
MEDIA SPECIFIC CRITERIA: DIRECT CONTACT AND OUTDOOR AIR EXPOSURE

Does the site qualify for an exemption from the media-specific criteria for Direct Contact and Outdoor Air Exposure? -OR-	☐ **Yes**	☐ **No**	☐ **NE**
Does the site meet the media-specific criteria for Direct Contact and Outdoor Air Exposure?	☒ **Yes**	☐ **No**	☐ **NE**

LTCP Statement: "This policy describes conditions where direct contact with contaminated soil or inhalation of contaminants volatized to outdoor air poses a low threat to human health. Release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if they meet any of the following:

a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth below ground surface (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 feet bgs concentration limits and the 5 to 10 feet bgs concentration limits for the appropriate site classification (Residential or Commercial/Industrial) 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; or

b. Maximum concentration of petroleum constituents in soil are less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health; or

c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health."

Has adequate data been collected to demonstrate that the upper 10 feet of soil is free of petroleum contamination and therefore qualifies for the exemption?	☐ **Y**	☒ **N**	☐ **NE**	☐ **NA**
If the site does not qualify for the exemption, then does the site satisfy the media-specific criteria (a, b, or c) for direct contact and outdoor air exposure?	☒ **Y**	☐ **N**	☐ **NE**	☐ **NA**

a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth bgs? ***Use page dc-2 to support answer***	☒ Y	☐ N	☐ NE	☐ NA
b. Are the 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?	☐ Y	☐ N	☐ NE	☒ 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?	☐ Y	☐ N	☐ NE	☒ NA

Use General Criteria e – Conceptual Site Model sheets to support your answers

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

Maximum Concentrations of Petroleum Constituents in Soil (Scenario a)

Table 1 – Concentrations of Petroleum Constituents in Soil That will Have No Significant Risk of Adversely Affecting Human Health

Chemical	Residential		Commercial/Industrial		Utility Worker
	0 to 5 ft bgs (mg/kg)	5 to 10 ft bgs (mg/kg)	0 to 5 ft bgs (mg/kg)	5 to 10 ft bgs (mg/kg)	0 to 10 ft bgs (mg/kg)
Benzene	**1.9**	**2.8**	**8.2**	**12**	**14**
Max Soil Conc[1]					
Ethylbenzene	**21**	**32**	**89**	**134**	**314**
Max Soil Conc[1]					
Napthalene	**9.7**	**9.7**	**45**	**45**	**219**
Max Soil Conc[1]					
PAH[2]	**0.063**	**NA**	**0.68**	**NA**	**4.5**
Max Soil Conc[1]					

Notes:

1. The maximum concentrations of petroleum constituents in soil should be compared to those listed in Table 1 (Technical Justification for Soil Screening Levels for Direct Contact and Outdoor Air Exposure Pathways, SWRCB)
2. Based on the seven carcinogenic poly-aromatic hydrocarbons (PAHs) as benzo(a)pyrene toxicity equivalent [BaPe]. Sampling and analysis for PAHs is only necessary where soil is affected by either waste oil or Bunker C oil.

Are all the concentration limits for all the appropriate site classification satisfied?	**☒ Y**	**☐ N**	**☐ NE**	**☐ NA**
Residential: 0 to 5 feet bgs	☒ Y	☐ N	☐ NE	☐ NA
Residential: 5 to 10 feet bgs	☒ Y	☐ N	☐ NE	☐ NA
Commercial/Industrial: 0 to 5 feet bgs	☒ Y	☐ N	☐ NE	☐ NA
Commercial/Industrial: 5 to 10 feet bgs	☒ Y	☐ N	☐ NE	☐ NA
Utility Worker: 0 to 10 feet bgs?	☒ Y	☐ N	☐ NE	☐ NA
Have the requirements for using the screening levels in Table 1 been satisfied (i.e., have the model assumptions presented in the SWRCB document entitled "*Technical Justification for Soil Screening Levels for Direct Contact and Outdoor Air Exposure Pathways*" been met?	**☒ Y**	**☐ N**	**☐ NE**	**☐ NA**
Is the area of impacted soil where a particular exposure occurs ≤ 82 feet by 82 feet?	☒ Y	☐ N	☐ NE	☐ NA
Is the receptor located at the downgradient edge for inhalation exposure?	☒ Y	☐ N	☐ NE	☐ NA
Is the wind speed < 2.25 meters per second (7.38 feet per second) on average?	☐ Y	☒ N	☐ NE	☐ NA
Are there different exposure scenarios than residential, commercial/industrial, utility worker) at the site?	☐ Y	☒ N	☐ NE	☐ NA

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

Direct Contact and Outdoor Air Exposure: Case Notes

Case File Reference Documents:

Technical References:

Case Notes:

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable

ARCADIS

ACEH Supplementary Forms

CONCEPTUAL SITE MODEL
AND DATA GAP IDENTIFICATION CHECKLIST

Well Survey

Are there existing water supply wells or other sources of water in the vicinity of the site?	**☑ Y**	**☐ N**	**☐ NE**	**☐ NA**
Has a recent well survey been conducted to identify all wells within 2,000 feet of the site? Name, author, and date of survey document: Broadbend and Associates, 2009	☑ Y	☐ N	☐ NE	☐ NA
Have Department of Water Resources records been reviewed?	☑ Y	☐ N	☐ NE	☐ NA
Have Zone 7 Water Agency records been reviewed?	☐ Y	☐ N	☑ NE	☐ NA
Have Alameda County Public Works records been reviewed?	☐ Y	☑ N	☐ NE	☐ NA
Has a background study of the historical land uses of the site and properties in the vicinity of the site been conducted to determine the existence of unrecorded/unknown (abandoned) wells?	☐ Y	☑ N	☐ NE	☐ NA
Has sufficient data been provided on all wells located within 2,000 feet of the site to identify sensitive receptors and determine potential contaminant migration pathways to and from the site?	**☑ Y**	**☐ N**	**☐ NE**	**☐ NA**
Has a figure (with rose diagram) identifying each well location been presented?	☐ Y	☑ N	☐ NE	☐ NA
Have DWR well logs (marked as confidential) been provided?	☐ Y	☐ N	☐ NE	☐ NA
Has a table with details of the well search been provided?	☐ Y	☐ N	☑ NE	☐ NA
Identification number (ID) corresponding to the well location on a figure?	☐ Y	☑ N	☐ NE	☐ NA
State Well ID, Well Owner ID?	☐ Y	☐ N	☐ NE	☑ NA
Well location address?	☑ Y	☐ N	☐ NE	☐ NA
Distance of well from the site?	☑ Y	☐ N	☐ NE	☐ NA
Direction of well from the site (downgradient, upgradient, crossgradient)?	☐ Y	☐ N	☐ NE	☐ NA
Type of well (monitoring, remediation, irrigation, water supply, industrial, livestock, dewatering, cathodic protection)?	☑ Y	☐ N	☐ NE	☐ NA
Well status (active, inactive, decommissioned, unrecorded, and/or abandoned)?	☑ Y	☐ N	☐ NE	☐ NA
Well installation date?	☑ Y	☐ N	☐ NE	☐ NA
Well decommissioned date?	☐ Y	☐ N	☐ NE	☑ NA
Total Well depth (feet bgs)?	☑ Y	☐ N	☐ NE	☐ NA
Well screen interval (feet bgs)?	☐ Y	☐ N	☐ NE	☑ NA
Well seal interval (feet bgs)?	☐ Y	☐ N	☐ NE	☑ NA
Well diameter (inches)?	☐ Y	☐ N	☐ NE	☑ NA
Are these supply wells or other sources of water used by property owners/tenants in the vicinity of the site?	**☐ Y**	**☑ N**	**☐ NE**	**☐ NA**
Has a neighborhood backyard domestic water/irrigation well assessment been conducted?	☐ Y	☐ N	☑ NE	☐ NA
Have wells been impacted by the release site?	☐ Y	☐ N	☑ NE	☐ NA
Have the wells been sampled for chemicals of concern associated with the release site and analytical results been provided?	☐ Y	☐ N	☑ NE	☐ NA
Have impacted wells been decommissioned and well destruction records provided?	☐ Y	☐ N	☑ NE	☐ NA

Key: ■ NE = Identified Data Gap - Needs Further Evaluation ■ NA = Not Applicable ■ UNK = Unknown

Site Well Construction Details

Well ID	Location (Onsite/Offsite, Downgradient, Upgradient or Cross Gradient)	Highest Measured Depth to Water		Lowest Measured Depth to Water		Screen Interval (ft bgs)	Total Depth	Submerged (% of events)	Dry (% of Events)	Status (Active, Abandoned, Lost)
		Date	Feet bgs	Date	Feet bgs					
MW-1	onsite (monitored 1 event)	1/31/1990	15.41	1/31/1990	15.41	20-30	30	100	0	abandoned (1990)
MW-2	onsite	1/27/1995	26.12	3/7/2005	2.32	20-30	30	52	2	active
MW-3	onsite	4/7/1994	28.50	3/7/2005	7.30	20-32	33.5	87	0	active
MW-4	onsite	10/15/1991	22.88	3/17/1997	10.42	20-27	29.5	78	0	active
MW-5	onsite	4/7/1994	30.00	9/5/2006	6.16	17-31	34.5	77	0	active
MW-6	onsite	12/6/1995	23.77	3/17/1997	10.80	20-35	36.5	77	0	active
MW-7	onsite	4/7/1994	30.62	3/7/2005	8.18	19.5-34.5	34.5	93	0	active
MW-8	onsite	10/15/1991	22.70	3/7/2005	7.94	17-30	31.5	63	0	active
MW-9	onsite	12/6/1995	16.07	3/4/2009	8.15	20-30	31.5	100	0	active
MW-10	onsite	3/8/2012	10.57	3/23/2010	7.70	7-30	30	0	0	active
MW-11	onsite	9/5/2012	10.60	3/23/2010	7.25	7-30	30	0	0	active
MW-12	onsite	3/8/2012	11.92	3/20/2013	10.13	7-30	30	0	0	active