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Alameda County  
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**Groundwater Monitoring Report  
Fall 2010 Semiannual Sampling Event  
Municipal Service Center  
7101 Edgewater Drive  
Oakland, California**

**October 19, 2011  
LC010060.0013**

Prepared for:  
City of Oakland, Public Works Agency  
Environmental Services Division  
250 Frank H. Ogawa Plaza, Suite 5301  
Oakland, California



October 19, 2011

LC010060.0013

Mr. Gopal Nair  
City of Oakland, Public Works Department  
Environmental Sciences Division  
250 Frank H. Ogawa Plaza, Suite 5301  
Oakland, California 94612

Subject: Groundwater Monitoring Report, Fall 2010 Semiannual Sampling Event, Municipal Service Center, 7101 Edgewater Drive, Oakland, California

Dear Mr. Nair:

ARCADIS U.S., Inc. (ARCADIS) is pleased to present this report summarizing data collected during the Fall 2010 semiannual groundwater monitoring event at the Municipal Service Center, located at 7101 Edgewater Drive in Oakland, California ("the Site"). These activities were performed in a manner consistent with previous sampling events conducted at the Site.

If you have any questions regarding this report, please call me at (510) 596-9536.

Sincerely,

Charles H. Pardini, P.G. (6444)  
Vice President, Principal Geologist

Attachment

Imagine the result

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## CERTIFICATION

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by an ARCADIS U.S., Inc., California Professional Geologist.\*



Charles H. Pardini  
Principal Geologist  
California Professional Geologist (6444)



October 19, 2011

- \* A professional geologist's certification of conditions comprises a declaration of his or her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, and ordinances.

## 1.0 INTRODUCTION

This report presents the results of the Fall 2010 semiannual groundwater monitoring event conducted on October 19, 2010 (“the current monitoring event”) at the Municipal Service Center (MSC), located at 7101 Edgewater Drive in Oakland, California (“the Site”; Figure 1). ARCADIS U.S., Inc. (ARCADIS) conducted monitoring activities at the Site in accordance with Assignment No. G08-LFR-08.

This report summarizes the monitoring activities conducted during the current monitoring event as well as the analytical results, distribution of contaminants in groundwater, conclusions, and recommendations. Also discussed are the anticipated annual monitoring activities to be performed in Fall 2011.

## 2.0 SITE BACKGROUND AND CORRECTIVE ACTION MEASURES

Eighteen 2-inch-diameter groundwater monitoring wells (MW-1 through MW-18) were installed on and off site to depths ranging from 13 feet below ground surface (bgs) to 20 feet bgs, at various times from 1989 to 2003. These wells have been monitored regularly since their installation. MW-3 and MW-4 were abandoned and sealed in 1999 (Ninyo & Moore 2004). In addition, six 6-inch-diameter wells (TBW-1 through TBW-6) were installed during backfilling of the excavation of former fuel hydrant lines in the early 1990s. TBW-1 through TBW-4 were abandoned and sealed in June 2007 by Baseline Environmental Consulting (“Baseline”).

Eighteen 4-inch-diameter remediation wells and four 2-inch-diameter test/observation wells were installed on site to depths ranging from 13 feet bgs to 17 feet bgs, in December 2001 and January 2002 by others, according to Uribe & Associates’ (“Uribe’s”) “Test/Observation Well Installation Report, U & A Project 291-03,” dated April 2, 2002 (Uribe 2002). Seven of the wells (RW-A1, RW-A2, OB-A1, RW-B1, RW-B2, RW-B3, and RW-B4) were installed in the vicinity of Plumes A and B. Fifteen of the wells (RW-C1, RW-C2, RW-C3, RW-C4, RW-C5, RW-C6, RW-C7, OB-C1, RW-D1, RW-D2, RW-D3, RW-D4, RW-D5, OB-D1, and OB-D2) were installed in the vicinity of Plumes C and D. Each well, except OB-A1, was surveyed subsequent to the installation event. Six additional extraction wells (RW-D6 through RW-D11) were installed within the Plume D area in March 2007 by URS Corporation. These six wells are 6 inches in diameter and installed to an approximate depth of 20 feet bgs. The well locations are shown on Figures 2 and 3. The plume locations are shown on Figure 3.

According to the “Second Quarter 2003 Monitoring Report” (Uribe 2003), approximately 10,000 gallons of a groundwater/free product mixture were removed from on-site wells RW-B3 and RW-B4 (Plume B) in September and October 2002, using a trailer-mounted, dual-phase extraction (DPE) unit with a 10-horsepower vacuum pump. Additionally, approximately 10,000 gallons of liquid were removed

from wells RW-C3, RW-C4, RW-C5, and RW-C7 (Plume C) through five daily extractions over a two-month period. The liquid was pumped into a 21,000-gallon aboveground storage tank to allow separation of oil from water and drained through three 2,000-pound granular-activated carbon filters (in series). After filtration, the wastewater was discharged into a local storm drain. A National Pollutant Discharge Elimination System (NPDES) permit was issued prior to discharge.

Within the same time period, hydrogen peroxide, followed by water, was injected periodically into wells OB-A1, RW-A1, RW-A2, TBW-3, and TBW-4 (Plume A); MW-16 and MW-17 (Plume B); and MW-5 (active tank area), to promote in situ bioremediation. Hydrogen peroxide was also injected periodically into wells in the Plume C area from July 2004 through January 2009.

Construction of an extraction system to remove separate-phase hydrocarbons (SPH) within the vicinity of Plume D began in March 2006. Seven existing wells (RW-D1, RW-D2, RW-D3, RW-D4, RW-D5, TBW-5, and RW-1) were converted to extraction wells by URS Corporation. The extraction system was completed in April 2006, and the system began operation in mid-May 2006. Groundwater extracted from the seven wells was treated through an oil/water separator, followed by three 2,000-pound liquid-phase activated carbon units in series, and was discharged into the local storm drain via an NPDES permit. Extracted soil vapor was treated through a thermal oxidizer and discharged into the atmosphere via a permit issued by the Bay Area Air Quality Management District. Six additional wells were installed within the vicinity of Plume D in March 2007 (RW-D6, RW-D7, RW-D8, RW-D9, RW-D10, and RW-D11) and were connected to the extraction system on June 11, 2007. In addition, six existing wells in the Plume C area (RW-C2, RW-C4 through RW-C7, and OB-C1) were connected to the DPE system in May 2009, and extraction from these wells commenced on May 26, 2009.

The extraction remediation system was shut down on December 23, 2009. The system may be restarted if free-phase product is again detected or significant rebound of dissolved concentration of petroleum hydrocarbons is determined in subsequent groundwater monitoring events. Quarterly remediation system performance reports were submitted separately from this monitoring report to Alameda County Environmental Health (ACEH) and the Regional Water Quality Control Board – San Francisco Bay Region (RWQCB).

## **3.0 FALL 2010 SEMIANNUAL MONITORING ACTIVITIES**

### **3.1 Field Activities**

The field activities, which included depth-to-groundwater/product measurement and well sampling, were conducted in accordance with the revised City of Oakland MSC Schedule and Protocol Table that was included in the November 6, 2009 letter to

Alameda County Environmental Health Services proposing a revised groundwater monitoring schedule (Appendix A).

On October 19, 2010, ARCADIS personnel measured depth to water and depth to SPH using an electric oil/water interface probe in the following wells: MW-1, MW-2, MW-5 through MW-17, TBW-5, TBW-6, RW-1, RW-A1, RW-A2, OB-A1, RW-B1 through RW-B4, RW-C1 through RW-C7, OB-C1, RW-D1 through RW-D11, OB-D1, and OB-D2. A number of monitoring wells have been eliminated from the monitoring program. Monitoring wells MW-3 and MW-4 have been abandoned and sealed (Ninyo & Moore 2004). Wells TBW-1, TBW-2, TBW-3, and TBW-4 were abandoned and sealed by Baseline in June 2007.

The oil/water interface probe was decontaminated with liquinox and distilled water before use in each well to avoid potential cross contamination. Current and historical product thickness measurements, depth-to-groundwater measurements, and groundwater elevations calculated from groundwater measurements are presented in Table 1. Monitoring and remediation well locations are shown on Figures 2 and 3.

On October 19, 2010, ARCADIS personnel collected groundwater samples from monitoring wells MW-6, MW-9, MW-13, and MW-14.

Prior to sampling, a clean, disposable, polyvinyl chloride (PVC) sampling bailer was used to purge a minimum of three well-casing volumes of groundwater from each of the four monitoring wells sampled during the current monitoring event. The wells were allowed to recover to at least 80 percent of their original static groundwater levels before sampling. Dissolved oxygen, temperature, pH, conductivity, and oxidation-reduction potential (ORP) were measured for each well volume purged. Additionally, characteristics of the water (color, turbidity, odor, sheen) were noted on the field data sheets, which are included in Appendix B.

After the wells were purged, samples were collected using the disposable, PVC, bottom-discharging bailer that was used to purge the well. The samples were transferred from the bailer to the appropriate sample containers, labeled, and placed in a "wet chilled" cooler containing ice, under chain-of-custody protocol. The samples were secured in the cooler and transferred to Curtis & Tompkins, Ltd., Analytical Laboratories (C&T), a California Department of Health Services-certified environmental laboratory located in Berkeley, California. Purged and decontamination water generated during sampling activities was transferred into an on-site storage tank that was part of the on-site extraction and treatment system maintained by the City of Oakland.

### 3.2 Sample Analyses

The groundwater samples were analyzed by C&T for the following parameters:



- total petroleum hydrocarbons (TPH) as gasoline (TPHg) using U.S. Environmental Protection Agency (U.S. EPA) Method 8260B
- TPH as kerosene (TPHk), TPH as diesel (TPHd), and TPH as motor oil (TPHmo) using U.S. EPA Method 8015B, with a silica-gel cleanup
- the aromatic hydrocarbons benzene, toluene, ethylbenzene, and total xylenes (collectively known as BTEX) and methyl tertiary-butyl ether (MTBE) using U.S. EPA Method 8260B

## **4.0 MONITORING RESULTS**

### **4.1 Shallow Groundwater Topography**

Depth to groundwater was measured on October 19, 2010, using a Solinst oil/water interface meter (Table 1). Prior to groundwater measurement, the well caps were removed from all wells to allow the water column within each well to come into equilibrium with atmospheric pressure. Groundwater elevations were determined using well survey data from the “Second Quarter 2003 Monitoring Report” (Uribe 2003).

Groundwater elevations in the monitoring wells ranged from 1.24 feet mean sea level (msl) at MW-16 to 5.10 feet msl at MW-6 (Figure 2). Groundwater flow direction, measured between wells MW-1 and MW-10, is toward the northwest in the northern section of the Site at approximately 0.005 foot/foot (ft/ft), and toward the southwest (measured between wells MW-11 and MW-15) at approximately 0.011 ft/ft in the southern portion of the Site. A groundwater high (groundwater elevation of 5.97 feet msl) is observed in the vicinity of remediation well RW-A1, located in the vicinity of Plume A in the southern portion of the Site (Figure 3). The variation in the groundwater gradient may be due to differences in lithologic characteristics in the subsurface or preferential pathways (possibly due to backfilled utility trenches and underground storage tank pits). The groundwater flow direction for this sampling period was similar to that reported by Ninyo & Moore in its July 14, 2004 Spring Semiannual Groundwater Monitoring Report for the Site, and in more recent ARCADIS monitoring reports.

### **4.2 Occurrence of Separate-Phase Hydrocarbons**

Floating SPH was not observed in any wells where depth-to-water and depth-to-SPH were measured during this monitoring event. The results of the SPH assessment are presented in Table 1. Although no SPH or sheen was observed in the remediation wells, an odor was noted in the water purged from Plume C remediation well RW-C5 and Plume D remediation well RW-D6 (Table 1). The lack of SPH or sheen observed during this monitoring event represents a significant decrease in the lateral extent of SPH in Plumes B, C, and D compared to the April 2004 monitoring event. SPH has not been detected in the Plume A wells historically.

### 4.3 Contaminant Distribution in Groundwater

The analytical data from this groundwater monitoring event are presented in Table 1, along with historical analytical results. Laboratory analytical data reports are included in Appendix C. Historical data for volatile organic compounds, semivolatile organic compounds, leaking underground fuel tank metals, and other metals are provided in Appendix D (Tables D-1, D-2, D-3, and D-4, respectively).

For quality assurance/quality control (QA/QC), ARCADIS collected a duplicate sample from well MW-6 on October 19, 2010 and analyzed it for TPHg, TPHk, TPHd, TPHmo, BTEX, and MTBE. Analytical results for the duplicate sample were consistent with those for the primary samples collected from well MW-6 for all analytes.

#### 4.3.1 Screening Criteria

In the June 12, 2009 semiannual monitoring report, LFR Inc. recommended that groundwater quality results be compared to the RWQCB Environmental Screening Levels (ESLs) for Groundwater Screening Levels (groundwater is not a current or potential drinking water resource; RWQCB 2008; Table F-1b) because they are the most applicable screening criteria for the current site conditions. The groundwater quality results had previously been compared to the San Francisco Airport Ecological Protection Zone (SFAEPZ) Tier I Standard and the RWQCB ESL for Surface Water Screening Levels Marine Habitats. These standards/screening levels both relate to the quality of the water in San Francisco Bay but not groundwater.

A comparison of the previous screening criteria and the recommended screening criteria is included in the table below. The groundwater quality results will be compared to the recommended screening criteria in this semiannual monitoring report.

Analyte	Previous Screening Criteria		Recommended Screening Criteria
	SFAEPZ Tier 1 Standard ( $\mu\text{g}/\text{l}$ )	ESL Surface Water (Table F-2b) ( $\mu\text{g}/\text{l}$ )	ESL Groundwater (Table F-1b) ( $\mu\text{g}/\text{l}$ )
Benzene	71	71	46
Toluene	NA	40	130
Ethylbenzene	29,000	30	43
Total Xylenes	NA	100	100
MTBE	NA	180	1800

Analyte	Previous Screening Criteria		Recommended Screening Criteria
	SFAEPZ Tier 1 Standard ( $\mu\text{g/l}$ )	ESL Surface Water (Table F-2b) ( $\mu\text{g/l}$ )	ESL Groundwater (Table F-1b) ( $\mu\text{g/l}$ )
TPHg	3700	210	210
TPHd	640	210	210
TPHmo	640	210	210
TPHk	NA	NA	210

**Notes:**

$\mu\text{g/l}$  = micrograms per liter

NA = screening criteria not previously applied to analyte

**4.3.2 Benzene**

Benzene concentrations detected above laboratory analytical detection limits (LADLs) were reported in groundwater samples collected from one of the four monitoring wells sampled during the current monitoring event. Benzene was detected in well MW-6 at concentrations of 100  $\mu\text{g/l}$  and 110  $\mu\text{g/l}$  (primary and duplicate samples).

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for benzene is 46  $\mu\text{g/l}$  (RWQCB 2008; Table F-1b). The benzene concentration present in well MW-6 during the current monitoring event is above the RWQCB ESL for benzene.

The benzene concentration detected in well MW-6 during the current monitoring period is consistent with concentrations detected since 2008. The benzene concentration in well MW-9 decreased from 5.0  $\mu\text{g/l}$  in April 2010. Benzene has been below the LADL of 0.5  $\mu\text{g/l}$  during the fall sampling events since 2008.

**4.3.3 Toluene**

Toluene was reported in groundwater samples collected from one of the four monitoring wells sampled during the current monitoring event. Toluene was detected in well MW-6 at concentrations of 1.7  $\mu\text{g/l}$  and 1.6  $\mu\text{g/l}$  (primary and duplicate samples).

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for toluene is 130  $\mu\text{g/l}$  (RWQCB 2008; Table F-1b). The toluene concentrations present in MW-6 were well below the ESL of 130  $\mu\text{g/l}$  during the current monitoring event.

The toluene concentration measured in well MW-6 decreased relative to the last sample collected (4.1  $\mu\text{g/l}$  in October 2009).

#### 4.3.4 Ethylbenzene

Ethylbenzene was not detected above the LADL in groundwater samples collected during the current monitoring event.

#### 4.3.5 Total Xylenes

Total xylenes were reported in groundwater samples collected from two of the four monitoring wells sampled during the current monitoring event. Total xylenes were detected in monitoring wells MW-6 (2.0  $\mu\text{g/l}$  and 1.7  $\mu\text{g/l}$ ; primary and duplicate concentrations) and MW-9 (0.51  $\mu\text{g/l}$ ).

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for total xylenes is 100  $\mu\text{g/l}$  (RWQCB 2008; Table F-1b). The concentrations of total xylenes detected in MW-6 and MW-9 during the current monitoring event were well below the ESL of 100  $\mu\text{g/l}$ .

Total xylenes concentrations measured in both MW-6 and MW-9 slightly decreased from the October 2009 monitoring event.

#### 4.3.6 MTBE

MTBE was reported in the groundwater sample collected from one of the four monitoring wells sampled during the current monitoring event. MTBE was detected in well MW-6 at concentrations of 3.3  $\mu\text{g/l}$  and 3.1  $\mu\text{g/l}$  (primary and duplicate samples).

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for MTBE is 1,800  $\mu\text{g/l}$  (RWQCB 2008; Table F-1b). Concentrations of MTBE were not detected above the ESL of 1,800  $\mu\text{g/l}$  in samples collected from the monitoring wells during the current monitoring event.

The MTBE concentration present in well MW-6 during this event was lower than the concentration in the last monitoring event (5.0  $\mu\text{g/l}$  in October 2009).

#### 4.3.7 TPHg

TPHg was reported in groundwater samples collected from two of the four monitoring wells sampled during the current monitoring event. TPHg was detected in monitoring wells MW-6 (620  $\mu\text{g/l}$  and 610  $\mu\text{g/l}$ ; primary and duplicate concentrations) and MW-14 (54  $\mu\text{g/l}$ ).

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHg is 210  $\mu\text{g/l}$  (RWQCB 2008; Table F-1b). The TPHg concentration detected in well MW-6 was above the ESL of 210  $\mu\text{g/l}$ .

The TPHg concentrations present in both MW-6 and MW-14 were slightly higher compared to the concentrations detected in October 2009.

#### 4.3.8 TPHd

TPHd was reported in groundwater samples collected from three of the four monitoring wells sampled during the current monitoring event. The maximum TPHd concentrations were detected in well MW-6 at 400  $\mu\text{g/l}$  and 370  $\mu\text{g/l}$  (primary and duplicate samples). TPHd was also detected in wells MW-13 (150  $\mu\text{g/l}$ ) and MW-14 (210  $\mu\text{g/l}$ ).

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHd (middle distillates) is 210  $\mu\text{g/l}$  (RWQCB 2008; Table F-1b). TPHd concentrations were at or above the ESL of 210  $\mu\text{g/l}$  in samples collected from two monitoring wells (MW-6 and MW-14).

The TPHd concentrations detected during the current monitoring event were all higher than the TPHd concentrations detected in October 2009.

#### 4.3.9 TPHmo

TPHmo was reported in the groundwater sample collected from one of the four monitoring wells sampled during the current monitoring event. TPHmo was detected in well MW-13 at a concentration of 940  $\mu\text{g/l}$ .

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHmo (middle distillates) is 210  $\mu\text{g/l}$  (RWQCB 2008; Table F-1b). The TPHmo concentration was above the ESL of 210  $\mu\text{g/l}$  in the sample collected from well MW-13.

The TPHmo concentration measured in well MW-13 increased relative to the concentration detected in April 2010 (330  $\mu\text{g/l}$ ).

#### 4.3.10 TPHk

TPHk was reported in groundwater samples collected from two of the four monitoring wells sampled during the current monitoring event. TPHk was detected in monitoring wells MW-6 (420  $\mu\text{g/l}$  and 400  $\mu\text{g/l}$ ; primary and duplicate concentrations) and MW-14 (110  $\mu\text{g/l}$ ).

The RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHk (middle distillates) is 210  $\mu\text{g/l}$  (RWQCB

2008; Table F-1b). The TPHk concentrations present in well MW-6 during the current monitoring event are above the RWQCB ESL for TPHk.

The TPHk concentration present in well MW-6 decreased from the concentration detected in October 2009 (1,000  $\mu\text{g/l}$ ). TPHk increased in well MW-14 from below the LADL of 50  $\mu\text{g/l}$  in April 2010 and is the highest concentration of TPHk detected in the well since August 2000.

#### **4.4 Laboratory Analysis**

Current laboratory analytical results and historical results are presented in Table 1. Copies of laboratory data sheets and chain-of-custody documents are included in Appendix C.

### **5.0 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL**

A laboratory QA/QC review was performed on the laboratory analytical data to evaluate the quality and usability of the analytical results. The following sections summarize the QA/QC review.

#### **5.1 Method Holding Times**

The procedures used to extract and analyze the collected samples were reviewed by ARCADIS personnel and were found to be within the appropriate holding times for all samples.

#### **5.2 Blanks**

One field blank (MW-6-FB) was collected along with the corresponding groundwater sample and was analyzed for TPHg, TPHk, TPHd, TPHmo, BTEX, and MTBE. Additionally, laboratory method blank results were reviewed for detection of target analytes. Total xylenes were detected at a concentration of 0.51  $\mu\text{g/l}$  in MW-6-FB. In response to the detection of total xylenes in the field blank, all detections of total xylenes were qualified to identify that the analyte was detected in the associated field blank.

#### **5.3 Laboratory Control Samples**

Laboratory quality control samples were analyzed by C&T for TPHg, TPHd, TPHk, TPHmo, and BTEX. All samples were within the percentage recovery range required by the laboratory.

## 5.4 Surrogates

All surrogates, including o-terphenyl for TPHd, TPHk, and TPHmo, and bromofluorobenzene, 1,2-dichloroethane-d4, dibromofluoromethane, and toluene-d8 for TPHg, BTEX, and MTBE were used for laboratory QA/QC analysis. All of the surrogates were within the acceptable laboratory recovery limits.

## 5.5 False-Positive Petroleum Hydrocarbon Identification

Qualifiers were reported in the laboratory analytical reports and noted in Table 1 and Figure 2.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

The following summarizes the data collected during the Fall 2010 sampling event and presents the recommendations for the Fall 2011 monitoring period.

- Groundwater elevations in the monitoring wells ranged from 1.24 feet msl at MW-16 to 5.10 feet msl at MW-6. The direction of shallow groundwater flow is toward the northwest in the northern section of the Site at a horizontal gradient of 0.005 ft/ft toward the southwest in the southern portion of the Site at 0.011 ft/ft. A groundwater high was observed in the vicinity of well RW-A1 (Plume A) in the southern portion of the Site. This groundwater high is probably the result of higher subsurface permeability in areas of excavation backfill.
- SPH was not observed in any wells where depth-to-SPH was measured during this monitoring event.
- Benzene was detected above LADL in one of the four wells sampled. Benzene was detected in monitoring well MW-6 at concentrations of 100  $\mu\text{g/l}$  and 110  $\mu\text{g/l}$  (primary and duplicate samples). These benzene concentrations exceeded the RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for benzene of 46  $\mu\text{g/l}$  during the current monitoring event.
- Toluene was detected above LADL in one of the four wells sampled. Toluene was detected in monitoring well MW-6 at concentrations of 1.7  $\mu\text{g/l}$  and 1.6  $\mu\text{g/l}$  (primary and duplicate samples). No concentrations of toluene exceeded the RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for toluene of 130  $\mu\text{g/l}$  during the current monitoring event.
- Ethylbenzene was not detected above LADL in the four wells sampled.
- Total xylenes were detected above LADL in two of the four wells sampled. The maximum concentrations of total xylenes detected in shallow groundwater were 2.0  $\mu\text{g/l}$  and 1.7  $\mu\text{g/l}$  (primary and duplicate samples) in well MW-6. No concentrations of total xylenes exceeded the RWQCB ESL Groundwater Screening

Level (groundwater is not a current or potential drinking water resource) for ethylbenzene of 100  $\mu\text{g}/\text{l}$  during the current monitoring event.

- MTBE was detected above LADL in one of the four wells sampled. MTBE was detected in well MW-6 at concentrations of 3.3  $\mu\text{g}/\text{l}$  and 3.1  $\mu\text{g}/\text{l}$  (primary and duplicate samples). No concentrations of MTBE exceeded the RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for MTBE of 1,800  $\mu\text{g}/\text{l}$  during the current monitoring event.
- TPHg was detected above LADL in two of the four wells sampled. The maximum concentrations of TPHg detected in shallow groundwater were 620  $\mu\text{g}/\text{l}$  and 610  $\mu\text{g}/\text{l}$  (primary and duplicate samples) in well MW-6. TPHg concentrations were above the RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHg of 210  $\mu\text{g}/\text{l}$  in one of the wells sampled.
- TPHd was detected above LADL in three of the four wells sampled. The maximum concentrations detected were present in well MW-6 at concentration of 400  $\mu\text{g}/\text{l}$  and 370  $\mu\text{g}/\text{l}$  (primary and duplicate samples). TPHd concentrations were at or above the RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHd (middle distillates) of 210  $\mu\text{g}/\text{l}$  in two of the wells sampled.
- TPHmo was detected above LADL in one of the four wells sampled (MW-13) at a concentration of 940  $\mu\text{g}/\text{l}$ . The TPHmo concentration detected in MW-13 was above the RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHd (middle distillates) of 210  $\mu\text{g}/\text{l}$ .
- TPHk was detected above LADL in two of the four wells sampled. The maximum concentrations of TPHk detected were 420  $\mu\text{g}/\text{l}$  and 400  $\mu\text{g}/\text{l}$  (primary and duplicate samples) in well MW-6. TPHk concentrations were above the RWQCB ESL Groundwater Screening Level (groundwater is not a current or potential drinking water resource) for TPHk (middle distillates) of 210  $\mu\text{g}/\text{l}$  in one of the wells sampled.

Based on the results of the Fall 2010 groundwater monitoring event, ARCADIS makes the following recommendations:

- Continue annual groundwater monitoring on site due to the elevated concentrations of TPHg, TPHd, TPHmo, and benzene reported during the current monitoring event.
- Continue monitoring SPH.

## 7.0 LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard of care exercised by environmental consultants performing similar work in the project area. No other



warranty, expressed or implied, is made regarding the professional opinions presented in this report. Please note this study did not include an evaluation of geotechnical conditions or potential geologic hazards.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions and the referenced literature. It should be understood that the conditions of a site can change with time as a result of natural processes or the activities of man at the site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which ARCADIS has no control.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. ARCADIS should be contacted if the reader requires any additional information or has questions regarding the content, interpretations presented, or completeness of this document.

## 8.0 SELECTED REFERENCES

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**Table 1**  
**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
<b>MW-1</b>														
10/4/89	10.20	---	---	8020		---	---	---	540	65	26	14	22	---
10/4/89	10.20	---	---	8240		---	---	---	---	120	46	43	78	---
4/27/93	10.20	---	---	8020		---	---	---	<1,000	<1.0	<1.0	<1.0	<1.0	---
4/19/95	10.20	---	---	8020		---	---	---	3,200	880	15	23	21	---
7/27/95	10.20	4.62	5.58	8020		---	---	---	980	130	3.6	1.4	5.6	---
11/20/95	10.20	6.08	4.12	8020		---	---	---	400	99	2.8	1.1	4.6	---
2/21/96	10.20	4.62	5.58	8020		---	---	---	1,700	340	8.4	5.3	16	---
5/13/96	10.20	4.33	5.87	8020		---	---	---	7,300	2,000	30	42	38	---
8/27/96	10.20	5.25	4.95	8020		---	---	---	380	61	2.4	<0.5	4.2	---
2/23/98	10.20	1.75	8.45	8020		<50	<500	<50	820	160	4.9	3	9.7	---
8/19/98	10.20	4.78	5.42	8020	SGC	1,200	---	---	780	69	4.1	0.84	8.5	<5.0
11/11/98	10.20	5.64	4.56	---		---	---	---	---	---	---	---	---	---
2/23/99	10.20	3.41	6.79	8020	SGC	1,200	1,600	<50	1,100	190	5	3	12	<5.0
5/27/99	10.20	3.96	6.24	---		---	---	---	---	---	---	---	---	---
8/24/99	10.20	4.92	5.28	8020	SGC	640	1,900	<50	370	37	0.9	<0.5	1.9	<5.0
11/22/99	10.20	5.46	4.74	---		---	---	---	---	---	---	---	---	---
1/18/00	10.05	5.41	4.64	---		---	---	---	---	---	---	---	---	---
1/19/00	10.05	---	---	8020	SGC	50	<200	<50	660	43	2.3	1.1	6	<5.0
5/11/00	10.05	4.63	5.42	---		---	---	---	---	---	---	---	---	---
8/24/00	10.05	5.07	4.98	---		---	---	---	---	---	---	---	---	---
8/25/00	10.05	---	---	8020	SGC	340	<250	290	480	53	1.4	<0.5	2.9	<5.0
11/28/00	10.05	5.60	4.45	---		---	---	---	---	---	---	---	---	---
2/27/01	10.05	3.95	6.10	8020	Filtered+SGC	270	<250	<61	1,500	110	6.3	<1.5	9.9	<15
5/17/01	10.05	4.00	6.05	---		---	---	---	---	---	---	---	---	---
8/16/01	10.05	4.17	5.88	---	Filtered+SGC	280	<200B	<100	4,000	640	9.7	5.7	13	<5.0
12/15/01	10.05	5.52	4.53	---		---	---	---	---	---	---	---	---	---
4/9/02	10.05	3.78	6.27	8021	SGC	1,100	1,000	---	2,000	320	5.38	3.08	6.24	<5
6/21/02	10.05	4.92	5.13	---		---	---	---	---	---	---	---	---	---
9/13/02	10.05	5.52	4.53	8021	SGC	88 b,c	<300	88	260	9.6	<0.5	<0.5	1.0	<2
4/22/03	10.05	4.41	5.64	8021B	SGC	570 L Y	<300	660	1,900 Z	400.0	9.6	5.4	8.1	<2.0
4/28/04	10.05	3.95	6.10	8260B	SGC	<100	<400	<100	154	20	<1.0	<1.0	2.3	<1.0
10/29/04	10.05	5.68	4.37	8260B	SGC	230 L Y	<300	240	340 H Z	6.4	0.6	<0.5	1.4	<0.5
9/2/05 <sup>(1)</sup>	10.05	4.35	5.70	8260B	SGC	140 L Y	<300	170	350	6.6	1.0	<0.5	2.3	<0.5
4/4/2006 <sup>(3)</sup>	10.05	2.24	7.81	8260B	SGC	830 L Y	<300	1,100 L Y	3,700	470	13	7.8	6.3	<3.6
9/6/06	10.05	4.98	5.07	8260B	SGC	3,400 H L	400 L	3,100 H	480	4.2	1.0	<0.5	1.9	<0.5
4/5/07	10.05	3.56	6.49	8260B	SGC	500 L Y	<300	490 L Y	1,500 Y	170	7.2	3.6	5.7	<1.3
10/2/07	10.05	5.59	4.46	8260B	SGC	600 Y	<300	710 Y	460 Y	6.1	1.1	<0.5	1.2	<0.5
3/20/08 <sup>(8)</sup>	10.05	3.53	6.52	8260B	SGC	1,000 Y	<300	960	1,600 Y	53	4.1	1.2	6.3	<0.5

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**Municipal Service Center**  
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*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
11/21/08 <sup>(10)</sup>	10.05	5.48	4.57	8260B	SGC	110 Y	<300	87 Y	210 Y	2.4	0.52	<0.50	1.3	<0.50
4/1/09	10.05	3.30	6.75	8260B	SGC	480 Y	<300	540	1,300 Y	79	6.40	2.9	5.1	<0.50
10/30/09	10.05	4.52	5.53	8260B	SGC	810Y	<300	820Y	1,800Y	59	9.40	3.5	10.7	<0.50
4/8/10	10.05	2.90	7.15	8260B	SPH: None; Odor	210 Y	<300	190 Y	380	2.4	0.71	<0.50	1.6	<0.50
10/19/10	10.05	5.48	4.57	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-2</b>														
10/4/89	10.47	---	---	8020		---	---	---	<30	<0.3	<0.3	<0.3	<0.3	---
10/4/89	10.47	---	---	8240		---	---	---	---	2	<2.0	<2.0	<2.0	---
4/27/93	10.47	---	---	8020		---	---	---	<1,000	<1.0	<1.0	<1.0	<1.0	---
4/19/95	10.47	---	---	8020		---	---	---	<50	1.8	<0.5	<0.5	<0.5	---
7/27/95	10.47	6.22	4.25	8020		---	---	---	<50	2.3	<0.5	<0.5	<0.5	---
11/20/95	10.47	7.49	2.98	8020		---	---	---	<50	2.2	<0.5	<0.5	<0.5	---
2/12/96	10.47	6.68	3.79	8020		---	---	---	<50	1.7	<0.5	<0.5	0.5	---
5/13/96	10.47	6.32	4.15	8020		---	---	---	---	2	<0.5	<0.5	<0.5	---
8/27/96	10.47	6.84	3.63	8020		---	---	---	---	2.4	<0.5	<0.5	<0.5	---
2/24/98	10.47	5.44	5.03	8020		<50	<500	<50	---	1.6	<0.5	<0.5	<0.5	---
8/19/98	10.47	6.56	3.91	8020	SGC	330	---	---	<50	4.1	3.4	0.8	2.6	<5.0
11/11/98	10.47	7.37	3.10	---		---	---	---	---	---	---	---	---	---
2/23/99	10.47	8.68	1.79	8020	SGC	200	900	<50	<50	3.5	0.6	0.6	1.2	<5.0
5/27/99	10.47	5.20	5.27	---		---	---	---	---	---	---	---	---	---
8/24/99	10.47	6.75	3.72	8020	SGC	140	700	<50	<50	2.6	<0.5	<0.5	<0.5	<5.0
11/22/99	10.47	7.58	2.89	---		---	---	---	---	---	---	---	---	---
1/18/00	10.47	7.41	3.06	8020	SGC	60 a	660	<50	<50	2.1	<0.5	<0.5	<0.5	<5.0
5/11/00	10.47	6.43	4.04	---		---	---	---	---	---	---	---	---	---
8/24/00	10.47	8.91	1.56	8020	SGC	170	440	130	<50	2.4	<0.5	<0.5	<0.5	<5.0
11/28/00	10.47	7.35	3.12	---		---	---	---	---	---	---	---	---	---
2/27/01	10.47	6.70	3.77	8020	Filtered+SGC	<59	<240	<59	<50	3.6	<0.5	<0.5	<0.5	<5
5/17/01	10.47	6.90	3.57	---		---	---	---	---	---	---	---	---	---
8/16/01	10.47	6.95	3.52	---	Filtered+SGC	<50	200B	<100	<50	<0.5	<0.5	<0.5	<0.5	<5.0
12/15/01	10.47	7.21	3.26	---		---	---	---	---	---	---	---	---	---
4/5/02	10.47	6.02	4.45	8021	SGC	200	400	---	<50	2.9	<0.5	<0.5	<0.5	<5
6/21/02	10.47	8.07	2.40	---		---	---	---	---	---	---	---	---	---
9/17/02	10.47	7.12	3.35	8021	SGC	<50	<300	<50	<50	2.1	<0.5	<0.5	<0.5	<2
4/23/03	10.47	6.36	4.11	8021B	SGC	<50	<300	<50	<50	1.6	<.50	<.50	<.50	<2.0
4/28/04	10.47	5.99	4.48	8260B	SGC	<100	<400	<100	<100	<0.5	<1.0	<1.0	1.3	<1.0
9/1/05 <sup>(1)</sup>	10.47	6.08	4.39	8260B	SGC	<50	<300	<50	<50	2.8	<0.5	<0.5	<0.5	0.8
4/4/2006 <sup>(3)</sup>	10.47	4.96	5.51	8260B	SGC	<50	<300	<50	<50	2.1	<0.5	<0.5	0.5	0.5
9/6/06	10.47	9.31	1.16	---		---	---	---	---	---	---	---	---	---

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/5/07	10.47	9.21	1.26	8260B	SGC	<50	<300	<50	<50	1.6	<0.5	<0.5	<0.5	<0.5
10/2/07	10.47	10.81	-0.34	---	---	---	---	---	---	---	---	---	---	---
3/20/08 <sup>(8)</sup>	10.47	12.36	-1.89	8260B	SGC	<50	<300	<50	<50	1.5	<0.5	<0.5	<0.5	<0.5
11/18/08	10.47	11.07	-0.60	8260B	---	---	---	---	---	---	---	---	---	---
4/1/09	10.47	10.80	-0.33	8260B	SGC	<50	<300	<50	<50	1.3	<0.5	<0.5	<0.5	<0.5
4/1/09 dup	---	---	---	8260B	SGC	<50	<300	<50	<50	1.5	<0.5	<0.5	<0.5	<0.5
10/29/09	10.47	9.88	0.59	---	---	---	---	---	---	---	---	---	---	---
4/8/10	10.47	8.00	2.47	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.47	7.02	3.45	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-3</b>														
10/4/89	---	---	---	8020	---	---	---	---	<30	<0.3	<0.3	<0.3	<0.3	---
10/4/89	---	---	---	8240	---	---	---	---	---	<2.0	<2.0	<2.0	<2.0	---
2/23/98	---	---	---	---	---	<50	<500	<50	---	---	---	---	---	---
11/11/98	---	5.83	---	---	---	---	---	---	---	---	---	---	---	---
2/23/99	---	---	---	---	Submerged	---	---	---	---	---	---	---	---	---
5/27/99	---	1.68	---	---	---	---	---	---	---	---	---	---	---	---
8/24/99	---	4.76	---	---	---	---	---	---	---	---	---	---	---	---
11/22/99	---	6.46	---	---	---	---	---	---	---	---	---	---	---	---
11/22/99	---	---	---	---	Destroyed	---	---	---	---	---	---	---	---	---
<b>MW-4</b>														
10/4/89	7.89	---	---	8020	---	---	---	---	<30	<0.3	<0.3	<0.3	<0.3	---
10/4/89	7.89	---	---	8240	---	---	---	---	---	<2.0	<2.0	<2.0	<2.0	---
11/11/98	7.89	6.25	1.64	---	---	---	---	---	---	---	---	---	---	---
2/23/99	7.89	3.10	4.79	---	---	---	---	---	---	---	---	---	---	---
5/27/99	7.89	4.03	3.86	---	---	---	---	---	---	---	---	---	---	---
8/24/99	7.89	5.07	2.82	---	---	---	---	---	---	---	---	---	---	---
11/22/99	7.89	6.32	1.57	---	---	---	---	---	---	---	---	---	---	---
11/22/99	---	---	---	---	Destroyed	---	---	---	---	---	---	---	---	---
<b>MW-5</b>														
12/13/91	11.15	---	---	8020	---	1,900	---	---	13,000	1,500	190	970	2,500	---
12/13/91	11.15	---	---	8020	Dup	---	---	---	16,000	1,400	180	870	2,500	---
12/13/91	11.15	---	---	8240	---	---	---	---	---	1,800	<250	1,000	3,800	---
12/13/91	11.15	---	---	8240	Dup	---	---	---	---	1,600	<250	980	3,500	---
4/27/93	11.15	---	---	8240	---	12,000	---	---	35,000	2,100	<1.0	1,800	2,700	---
4/19/95	11.15	---	---	8240	---	880	4,700	---	14,000	490	51	610	1,200	---
7/27/95	11.15	6.29	4.86	8240	---	590	5,000	---	22,000	1,300	54	1,500	2,400	---

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
11/20/95	11.15	6.98	4.17	8020		<50	<50	<50	8,900	430	31	610	880	---
2/21/96	11.15	5.97	5.18	8020		480	<50	<50	1,000	540	65	700	970	---
5/13/96	11.15	6.25	4.90	8020		<50	<50	<50	5,900	430	26	580	760	---
5/13/96	11.15	---	---	8020	Dup	<50	<50	<50	7,300	360	22	49	640	---
8/27/96	11.15	6.40	4.75	8020		2,000	<51	<51	6,600	430	27	600	650	---
8/27/96	11.15	---	---	8020	Dup	6,600	<51	<51	6,300	410	25	580	620	---
2/23/98	11.15	4.22	6.93	8020		<50	<500	<50	740	19	1.4	41	34	---
8/19/98	11.15	6.14	5.01	8020		1,400	<250	1700	5,800	500	25	730	300	5,900
8/19/98	11.15	6.14	5.01	8260	SGC	---	---	---	---	---	---	---	---	6,700
11/11/98	11.15	6.51	4.64	---		---	---	---	---	---	---	---	---	---
2/23/99	11.15	3.59	7.56	8020	SGC	2,000	700	<50	6,700	300	26	800	690	1,600
5/27/99	11.15	5.71	5.44	---		---	---	---	---	---	---	---	---	---
8/24/99	11.15	6.02	5.13	8020	SGC	220	2,000	<50	2,100 e	190 e	5.5	340 e	78	380 e
11/22/99	11.15	6.16	4.99	---		---	---	---	---	---	---	---	---	---
1/18/00	11.15	6.60	4.55	---		---	---	---	---	---	---	---	---	---
1/19/00	11.15	---	---	8020	SGC	100	320	<50	3,000	66 e	6.3	400 e	90	300 E (1,300)
5/11/00	11.15	5.62	5.53	---		---	---	---	---	---	---	---	---	---
8/24/00	11.15	6.32	4.83	8020	SGC	4,800	560	6,600	12,000	220	21	430	91	1,200 (1,400)
11/28/00	11.15	6.47	4.68	---		---	---	---	---	---	---	---	---	---
2/27/01	11.15	4.40	6.75	8020	Filtered+SGC	230	<250	<61	6,300	150	7	350	55	830
5/17/01	11.15	5.77	5.38	8020	Filtered+SGC	190	<200	<50	7,500	140	7	580	101	170
8/16/01	11.15	4.87	6.28	---	Filtered+SGC	320	500B	<100	2,300	46	<5	110	24	850
12/15/01	11.15	5.50	5.65	---		---	---	---	---	---	---	---	---	---
4/9/02	11.15	5.15	6.00	8021	SGC	480	260	---	8,000	110	5.95	650	53.9	166
6/21/02	11.15	6.01	5.14	8021	SGC	200 a,b,c	<300	190	4,600	130	33	380	56	440
9/12/02	11.15	6.40	4.75	8021	SGC	620 b,c	<300	650	4,000 J	120	<0.5	260	16	580
4/22/03	11.15	4.69	6.46	8021B	SGC	1600 L Y	<300	1800	6000	91	<1.0	870	59.4	150 C
4/28/04	11.15	5.70	5.45	8260B	SGC	<650	<400	<810	4780	34	<1.0	560	44	47
10/29/04	11.15	5.73	5.42	8260B	SGC	840 L Y	<300	940	3000	18	2.1	280	16.1	94
9/2/05 <sup>(1)</sup>	11.15	6.08	5.07	8260B	SGC	510 L Y	<300	640	1600	13	1.4	55	8.6	92
4/5/06 <sup>(3)</sup>	11.15	3.64	7.51	8260B	SGC	840 L Y	<300	850 H	3,400	14	2.1	280	13	31
9/6/06	11.15	6.21	4.94	8260B	SGC	340 Y	<300	400 Y	2000	8.3	1.1	8.2	6.8	50
4/5/07	11.15	5.31	5.84	8260B	SGC	340 L Y	<300	310 L Y	3,100 Y	9.3	<2.0	230	13	38
10/2/07	11.15	6.51	4.64	8260B	SGC	400 Y	<300	440	3,000 Y	11	1.4	100	6.8	46
3/20/08 <sup>(8)</sup>	11.15	5.37	5.78	8260B	SGC	1,400 Y	<300	1,400	4,100 Y	8.4	1.7	270	12	23
11/21/08 <sup>(10)</sup>	11.15	6.51	4.64	8260B	SGC	660 Y	<300	690 Y	2,600	11	1.7	240	6.5	20
4/2/09 <sup>(12)</sup>	11.15	4.89	6.26	8260B	SGC	730 Y	<300	840	4,800 Y	8.8	2.5	380	13.3	15
10/30/09	11.15	5.86	5.29	8260B	SGC	1,100Y	<300	1,100Y	3,100	5.2	<1.7	200	8.1	23
10/30/09dup	---	---	---	8260B	Dup	600Y	<300	620Y	3,300	5.3	<1.7	210	8.7	20

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**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/8/10	11.15	4.16	6.99	8260B	SPH: None	1300 Y	<300	1400 Y	4,500	6.5	2.4	240	12	8.4
10/19/10	11.15	6.44	4.71	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-6</b>														
12/13/91	10.98	---	---	8020		520	---	---	780	110	2.7	<2.5	5.5	---
12/13/91	10.98	---	---	8240		---	---	---	---	95	5	<5	<5	---
4/27/93	10.98	---	---	8020		<1,000	---	---	<1,000	430	4	5	10	---
4/19/95	10.98	---	---	8020		6,700	---	---	5,700	40	<0.8	3.9	29	---
4/19/95	10.98	---	---	8020	Dup	3,700	---	---	3,000	310	3.1	2.7	100	---
7/27/95	10.98	7.09	3.89	8020		3,900	---	---	6,100	430	15	200	600	---
7/27/95	10.98	---	---	8020	Dup	2,600	---	---	6,300	420	15	200	600	---
11/20/95	10.98	7.89	3.09	8020		850	---	---	6,800	160	4.6	8	240	---
11/20/95	10.98	---	---	8020	Dup	---	---	---	3,600	130	11	4.4	200	---
2/21/96	10.98	7.40	3.58	8020	Filtered+SGC	1,700	---	---	2,800	230	2.8	3.8	44	---
2/21/96	10.98	---	---	8020	Dup	2,500	---	---	2,200	280	3	4	4.6	---
5/13/96	10.98	7.10	3.88	8020		400	<50	<50	3,100	430	12	5.2	67	---
8/27/96	10.98	7.42	3.56	8020		3,100	---	---	4,200	300	9.3	110	110	---
8/19/98	10.98	---	---	---	SPH: 0.125 ft.	---	---	---	---	---	---	---	---	---
11/11/98	10.98	7.09	3.93	---	SPH: 0.05 ft.	---	---	---	---	---	---	---	---	---
2/23/99	10.98	7.31	3.67	---	SPH: NM	---	---	---	---	---	---	---	---	---
5/27/99	10.98	6.91	4.25	---	SPH: 0.20 ft.	---	---	---	---	---	---	---	---	---
8/24/99	10.98	7.46	3.72	---	SPH: 0.03 ft.	---	---	---	---	---	---	---	---	---
11/22/99	10.98	7.96	3.15	---	SPH: 0.16 ft.	---	---	---	---	---	---	---	---	---
1/18/00	10.98	8.08	3.05	---	SPH: 0.19 ft.	---	---	---	---	---	---	---	---	---
5/11/00	10.98	7.52	4.47	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
8/24/00	10.98	7.50	3.53	---	SPH: 0.06 ft.	---	---	---	---	---	---	---	---	---
11/28/00	10.98	6.39	4.62	---	SPH: 0.04 ft.	---	---	---	---	---	---	---	---	---
2/26/01	10.98	7.80	3.50	8020	SPH: 0.40 ft., f	820	<240	<60	6,100	181	<5	14.2	<5	<50
2/26/01	10.98	---	---	8260B		---	---	---	---	270	3	9	3	(19)
5/17/01	10.98	7.57	3.66	---	SPH: 0.32 ft.	---	---	---	---	---	---	---	---	---
8/16/01	10.98	7.75	3.49	---	SPH: 0.32 ft., f	740	200B	<100	4,200	360	4.6	13	12	14
12/15/01	10.98	7.58	3.40	---	SPH: 0.07 ft.	---	---	---	---	---	---	---	---	---
4/3/02	10.98	6.92	4.06	---	SPH: 0.11 ft.	---	---	---	---	---	---	---	---	---
6/21/02	10.98	7.05	3.93	---	SPH: 0.19 ft.	---	---	---	---	---	---	---	---	---
9/12/02	10.98	7.22	4.02	---	SPH: 0.33 ft.	---	---	---	---	---	---	---	---	---
4/22/03	10.98	4.71	6.27	---	SPH: 0.16 ft.	---	---	---	---	---	---	---	---	---
4/28/04	10.98	5.09	5.89	---	SPH: 0.23 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.98	6.12	4.86	--	SPH: product on probe	---	---	---	---	---	---	---	---	---

**Table 1**  
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**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
8/31/05	10.98	6.11	4.87	--	SPH: 0.95 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.98	4.11	---	--	SPH: 0.57 ft.	---	---	---	---	---	---	---	---	---
9/6/06	10.98	5.42	5.56	8260B	SPH: 0.01 ft.	180 Y	<300	200 Y	1,300	330	3.9	<1.7	3.7	4.8
9/6/06	10.98	---	---	8260B	Dup	2,400 H L	<300	2,300 H	1,200	350	3.6	<1.3	3.4	4.7
4/4/07	10.98	4.37	6.61	8260B	SGC	3,300	<300	3,000 H	1,400 H Y	520	<4.2	<4.2	<4.2	4.5
10/2/07	10.98	7.25	3.73	8260B	SGC	2,400	340 Y	2000	890 Y	270	3.8	5.5	3	7.8
					SPH: Residual Product noted while bailing/ SGC									
3/20/08 <sup>(8)</sup>	10.98	6.59	4.39	8260B	SPH: Residual Product noted while bailing/ SGC	7,200	820	5,900	1,100 Y	500	3.5	5.9	3.1	7.7
					SPH: Residual Product noted while bailing/ SGC									
11/21/08 <sup>(10)</sup>	10.98	6.06	4.92	8260B	SGC	1,500 Y	<300	1,200 Y	450 Y	96	1.9	<0.50	1.2	5.7
4/1/09	10.98	4.48	6.50	---	SPH: 0.03 ft.	---	---	---	---	---	---	---	---	---
10/30/09	10.98	6.97	4.01	8260B	SGC	1,200Y	<300	1,000Y	560Y	98	4.1	3.0	4.76	5.0
4/8/10	10.98	4.20	6.78	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.98	5.88	5.10	8260B	SPH: None; SGC	400	<300	420	620	100	1.7	<1.0	2.0 B1	3.3
10/19/10 dup	---	---	---	8260B	SGC	370	<300	400	610	110	1.6	<1.0	1.4 B1	3.1
<b>MW-7</b>														
12/13/91	11.51	---	---	8020		<50	---	---	<50	<0.5	<0.5	<0.5	<0.5	---
12/13/91	11.51	---	---	8240		---	---	---	---	<5	<5	<5	<5	---
4/27/93	11.51	---	---	8240		<1,000	---	---	<1,000	<1.0	<1.0	<1.0	<1.0	---
4/19/95	11.51	---	---	8240		<50	<1,000	---	<50	<2.0	<2.0	<2.0	<2.0	---
7/27/95	11.51	6.87	4.64	8240		<50	<1,000	---	<50	<2.0	<2.0	<2.0	<2.0	---
11/20/95	11.51	8.48	3.03	8020		<50	---	---	<50	<0.5	<0.5	<0.5	1.5	---
2/21/96	11.51	6.29	5.22	8020		<50	---	---	<50	<0.5	<0.5	<0.5	<0.5	---
5/13/96	11.51	6.95	4.56	8020		<50	---	---	---	<0.5	<0.5	<0.5	<0.5	---
8/27/96	11.51	6.80	4.71	8020		---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
8/19/98	11.51	6.88	4.63	---		---	---	---	---	---	---	---	---	---
11/11/98	11.51	7.40	4.11	---		---	---	---	---	---	---	---	---	---
2/23/99	11.51	5.57	5.94	8020		<50	<200	<50	80	<0.5	<0.5	<0.5	1	<5.0
5/27/99	11.51	6.56	4.95	---		---	---	---	---	---	---	---	---	---
8/24/99	11.51	6.29	5.22	8020	SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	5
11/22/99	11.51	6.80	4.71	---		---	---	---	---	---	---	---	---	---
1/18/00	11.51	7.31	4.20	---		---	---	---	---	---	---	---	---	---
1/19/00	11.51	---	---	8020	SGC	<50	<200	<50	54	1.5	1.5	2.4	3.8	<5.0
5/11/00	11.51	6.41	5.10	---		---	---	---	---	---	---	---	---	---
8/24/00	11.51	7.11	4.40	8020		<50	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
11/28/00	11.51	7.30	4.21	---		---	---	---	---	---	---	---	---	---



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**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
2/27/01	11.51	5.75	5.76	8020	Filtered+SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
5/17/01	11.51	6.65	4.86	---		---	---	---	---	---	---	---	---	---
8/16/01	11.51	5.97	5.54		Filtered+SGC	<50	600B	<100	<50	<0.5	<0.5	<0.5	<0.5	<5
12/15/01	11.51	6.43	5.08	---		---	---	---	---	---	---	---	---	---
4/8/02	11.51	6.17	5.34	8021	SGC	80	<200	---	<50	<0.5	0.5	0.6	<0.5	<5
6/21/02	11.51	6.75	4.76	8021	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	3.3
9/12/02	11.51	7.05	4.46	8021	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	2.6
4/22/03	11.51	6.24	5.27	8021B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	4 C
4/28/04	11.51	6.61	4.90	8260B	SGC	<100	<400	<100	<100	1.6	<1.0	<1.0	<1.0	<1.0
9/2/05 <sup>(1)</sup>	11.51	6.56	4.95	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	3.2
4/5/06 <sup>(3)</sup>	11.51	4.58	6.93	8260B	SGC	<50	<300	<50	<50	2.7	<0.5	<0.5	<0.5	<0.5
9/6/06	11.51	6.67	4.84	---		---	---	---	---	---	---	---	---	---
4/5/07	11.51	6.13	5.38	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	2.7
10/2/07	11.51	7.07	4.44	---		---	---	---	---	---	---	---	---	---
3/20/08 <sup>(8)</sup>	11.51	6.24	5.27	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	2.7
3/20/08 dup	---	---	---	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	2.6
11/18/08	11.51	7.40	4.11	---		---	---	---	---	---	---	---	---	---
4/2/09 <sup>(12)</sup>	11.51	6.95	4.56	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	1.3
10/29/09	11.51	6.60	4.91	8260B	SGC	---	---	---	---	---	---	---	---	---
4/8/10	11.51	5.11	6.4	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	11.51	7.05	4.46	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-8</b>														
11/20/96	12.22	---	---	8020		880	---	---	<50	0.66	<0.5	<0.5	<0.5	---
11/20/97	12.22	9.59	2.63	8020		200	---	---	<50	<0.5	<0.5	<0.5	<0.5	2
2/24/98	12.22	8.42	3.80	8020		<50	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	---
6/8/98	12.22	9.57	2.65	8020		1,200	1,000	<50	<50	<0.5	<0.5	<0.5	<0.5	---
8/19/98	12.22	9.49	2.73	8020	SGC	<50	<250	<50	<50	1.6	3.4	1	2.8	<5.0
11/11/98	12.22	9.64	2.58	8020	SGC	<50	<200	<50	<50	0.9	0.8	0.6	2.3	<5.0
2/23/99	12.22	11.53	0.69	8020		700	1,500	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
5/27/99	12.22	9.65	2.57	8020		<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
8/24/99	12.22	9.62	2.60	8020	SGC	70	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
11/22/99	12.22	9.64	2.58	8020	SGC	57	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
1/18/00	12.22	8.31	3.91	8020	SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
5/11/00	12.22	9.69	2.53	8020	SGC	<50	<200	<50	<50	<0.5	1.3	<0.5	2.1	<5.0
8/24/00	12.22	9.40	2.82	---		---	---	---	---	---	---	---	---	---
8/25/00	12.22	---	---	8020	SGC	85	<250	<50	<50	---	---	---	---	---
11/28/00	12.22	9.40	2.83	8020	SGC	<50	910	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
2/27/01	12.22	9.50	2.72	8020	Filtered+SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
5/17/01	12.22	9.71	2.51	---		---	---	---	---	---	---	---	---	---
5/18/01	12.22	---	---	8020	Filtered+SGC	< 50	< 200	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
8/16/01	12.22	9.80	2.42		Filtered+SGC	< 50	< 200	< 100	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
12/15/01	12.22	9.28	2.94	8021	SGC	390	1,300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
4/8/02	12.22	9.55	2.67	8021	SGC	440	800	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
6/21/02	12.22	9.71	2.51	---		---	---	---	---	---	---	---	---	---
9/18/02	12.22	9.86	2.36	8021	SGC	< 50	< 300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 2
4/22/03	12.22	9.54	2.68	8021B	SGC	< 50	< 300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 2
4/28/04	12.22	---	---	---		---	---	---	---	---	---	---	---	---
10/27/04	12.22	NM <sup>(4)</sup>	---	---		---	---	---	---	---	---	---	---	---
4/5/06 <sup>(3)</sup>	12.22	8.73	3.49	8260B	SGC	54 Y	< 300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
9/6/06	12.22	9.50	2.72	8260B	SGC	< 50	< 300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
4/3/07	12.22	9.58	2.64	8260B	SGC	< 50	< 300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
10/3/07	12.22	9.54	2.68	8260B	SGC	< 50	< 300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
3/21/08 <sup>(8)</sup>	12.22	9.61	2.61	8260B	SGC	< 50	< 300	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
11/19/08 <sup>(10)</sup>	12.22	9.58	2.64	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4/2/09 <sup>(12)</sup>	12.22	9.54	2.68	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
10/30/09	12.22	9.67	2.55	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4/8/10	12.22	9.57	2.65	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	12.22	9.61	2.61	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-9</b>														
11/20/96	10.77	---	---	8020		1,900	---	---	240	21	0.81	1.8	2.2	---
11/20/97	10.77	7.91	2.86	8020		---	---	---	300	20	< 0.5	< 0.5	1.8	< 1.0
2/24/98	10.77	6.11	4.66	8020		< 50	< 500	< 50	2,200	540	5.6	1.6	4.9	---
6/8/98	10.77	7.14	3.63	8020		1,800	890	< 50	840	450	6.1	3.3	5.3	---
8/19/98	10.77	7.88	2.89	8020	SGC	190	< 250	160	740	370	8.6	0.99	7.3	< 5.0
11/11/98	10.77	8.23	2.54	8020	SGC	< 50	230	< 50	700	130	4.3	< 0.5	3.9	< 5.0
2/23/99	10.77	6.65	4.12	8020		1,100	3,700	< 50	1,100	620	9.7	1.5	7.7	< 5.0
5/27/99	10.77	7.70	3.07	8020	SGC	70	300	< 50	950	470	11	1.5	9.2	< 5.0
8/24/99	10.77	8.12	2.65	8020	SGC	890	1,700	< 50	290	45	2.8	< 0.5	3	< 5.0
11/22/99	10.77	8.33	2.44	8020	SGC	1,000	6,000	< 50	170	12	1.8	< 0.5	2	< 5.0
1/18/00	10.77	8.63	2.14	8020	SGC	200 a	2,300	< 50	160	5.7	1.9	0.6	4.2	< 5.0
5/11/00	10.77	7.70	3.07	8020	SGC	180 a	980	< 100	1,050	280	7.0	< 2.5	5.9	< 25
8/24/00	10.77	8.31	2.46	---		---	---	---	---	---	---	---	---	---
8/25/00	10.77	---	---	8020	SGC	580	2,200	170	180	23	2.4	< 0.5	2.7	< 5.0
11/28/00	10.77	8.45	2.32	8020	SGC	200	1,600	< 50	130	1.9	< 0.5	< 0.5	< 0.5	< 5.0
11/28/00	10.77	8.45	2.32	---	Filtered+SGC	< 50	< 200	< 50	---	---	---	---	---	---
2/26/01	10.77	6.40	4.37	8020	Filtered+SGC	120	< 200	< 50	142	33	1.8	< 0.5	< 0.5	< 5.0

**Table 1**  
**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
5/17/01	10.77	9.88	0.89	---		---	---	---	---	---	---	---	---	---
5/18/01	10.77	---	---	8020	Filtered+SGC	<50	<200	<50	74	4.6	<0.5	<0.5	<0.5	<5.0
8/16/01	10.77	8.05	2.72		Filtered+SGC	<50	<200	<100	70	0.62	<0.5	<0.5	<0.5	<5
12/16/01	10.77	7.75	3.02	8021	SGC	1,400	4,100	<50	210	15	1.6	<0.5	2.2	<5
4/5/02	10.77	7.50	3.27	8021	SGC	870	1,000	---	1,498	367	11	2.1	7.8	<5
6/20/02	10.77	8.27	2.50	8021	SGC	<50	<300	<50	430	180	5.7	2.4	4.15	<2
9/18/02	10.77	8.25	2.52	8021	SGC	63 b,c	<300	60	250	49	5.8	<0.5	3.1	<2
4/22/03	10.77	7.25	3.52	8021B	SGC	<50	<300	<50	69	4.1 C	<0.5	<0.5	0.9	<2
4/28/04	10.77	---	---	---		---	---	---	---	---	---	---	---	---
10/27/04	10.77	NM <sup>(4)</sup>	---	---		---	---	---	---	---	---	---	---	---
9/6/06	10.77	8.44	2.33	8260B	SGC	210 Y	<300	150 Y	240	58	5.3	<0.5	5.68	<0.5
4/3/07	10.77	8.28	2.49	8260B	SGC	180 H Y	<300	140 H	240 Z	27	4.2	<0.5	5.32	<0.5
4/3/07	10.77	---	---	8260B	Dup	190 H Y	<300	160 H	260 Z	28	4.5	<0.5	5.87	<0.5
10/3/07	10.77	8.58	2.19	8260B	SGC	110 Y	<300	110 Y Z	240 Y	1	2.4	<0.5	3.53	<0.5
3/20/08 <sup>(8)</sup>	10.77	8.46	2.31	8260B	SGC	170 Y	<300	150 Y	230	65	4.2	<0.5	5.13	<0.5
3/20/08 dup	---	---	---	8260B	SGC	190 Y	<300	180 Y	250	66	4.4	<0.5	5.5	<0.5
11/21/08 <sup>(10)</sup>	10.77	8.63	2.14	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/2/09 <sup>(12)</sup>	10.77	8.08	2.69	8260B	SGC	130 Y	380	53 Y	70 Y	82	1.4	<0.50	1.0	<0.50
10/30/09	10.77	8.91	1.86	8260B	SGC	220Y	<300	130Y	<50	<0.50	<0.50	<0.50	0.61	<0.50
4/8/10	10.77	7.37	3.4	8260B	SPH: None	110 Y, F	<300	52 Y, F	---	---	---	---	---	---
4/8/10 dup	---	---	---	8260B		250 Y, F	<300	170 Y, F	---	---	---	---	---	---
4/29/10	10.77	7.3	3.47	8260B	SPH: None	90 Y, F	<300	<50	87	5.0	1.2	<0.50	1.8	<0.50
4/29/10 dup	---	---	---	8260B		<50 F	<300	<50	98	4.9	1.2	<0.50	1.7	<0.50
10/19/10	10.77	8.37	2.40	8260B	SPH: None; SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	0.51 B1	<0.50
<b>MW-10</b>														
11/20/96	10.59	---	---	8020		940	---	---	<50	49	0.59	0.54	1.2	---
11/20/97	10.59	7.70	2.89	8020		---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---
2/24/98	10.59	4.39	6.20	8020		<50	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	---
6/8/98	10.59	6.94	3.65	8020		500	<500	<50	<50	7.3	<0.5	<0.5	<0.5	---
8/19/98	10.59	6.99	3.60	8020	SGC	240	520	110	<50	<0.5	<0.5	<0.5	<0.5	<5.0
11/11/98	10.59	7.57	3.02	8020	SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
2/23/99	10.59	5.51	5.08	8020		170	1,200	<50	<50	1.3	<0.5	<0.5	<0.5	<5.0
5/27/99	10.59	6.72	3.87	8020	SGC	<50	<200	<50	350	170	1.5	0.5	2.3	<5.0
8/24/99	10.59	7.27	3.32	8020	SGC	140	300	<50	380	160 e	<0.5	<0.5	2.6	<5.0
11/22/99	10.59	7.71	2.88	8020	SGC	570	3,400	<50	110	5.1	<0.5	<0.5	0.72	<5.0
1/18/00	10.59	7.77	2.82	---		---	---	---	---	---	---	---	---	---
1/19/00	10.59	---	---	8020	SGC	120 a,b	1,200	<50	100	<0.5	<0.5	0.8	<0.5	<5.0
5/11/00	10.59	7.00	3.59	8020	SGC	110 a	990	<50	145	1.62	0.5	0.5	0.9	<5.0

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**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
8/24/00	10.59	7.31	3.28	---		---	---	---	---	---	---	---	---	---
8/25/00	10.59	---	---	8020	SGC	430	1,300	110	<50	1.0	<0.5	<0.5	<0.5	<5.0
11/28/00	10.59	7.90	2.69	8020	SGC	220	1,500	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
2/27/01	10.59	5.80	4.79	8020	Filtered+SGC	85	<230	<57	<50	1.3	<0.5	<0.5	<0.5	<5.0
5/17/01	10.59	6.27	4.32	---		---	---	---	---	---	---	---	---	---
5/18/01	10.59	---	---	8020	Filtered+SGC	<50	<200	<50	<50	0.7	<0.5	<0.5	<0.5	<5.0
8/16/01	10.59	8.75	1.84		Filtered+SGC	<50	<200	<100	<50	<0.5	<0.5	<0.5	<0.5	<5
12/16/01	10.59	6.97	3.62	8021	SGC	410	2,100	<50	<50	2.4	<0.5	<0.5	<0.5	<5
4/8/02	10.59	6.51	4.08	8021	SGC	220	300	---	<50	1.1	<0.5	<0.5	<0.5	<5
6/20/02	10.59	8.10	2.49	8021	SGC	1,100 a,c	6,200	<50	120	34	<0.5	<0.5	<0.5	<2
9/17/02	10.59	7.66	2.93	8021	SGC	150 a,c	880	<50	130 a,c,j	32	<0.5	2.3	<0.5	<2
4/22/03	10.59	6.81	3.78	8021B	SGC	<50	<300	<50	51	1.0 C	<.50	1.2	<.50	<2
4/28/04	10.59	6.70	3.89	8260B	SGC	<100	<400	<100	114	14	<1.0	6.9	5.2	3.5
10/28/04	10.59	6.98	3.61	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/1/05 <sup>(1)</sup>	10.59	6.76	3.83	8260B	SGC	<50	<300	<50	110	2.4	<0.5	<0.5	0.7	<0.5
4/5/06 <sup>(3)</sup>	10.59	4.86	5.73	8260B	SGC	<50	<300	<50	<50	2.1	<0.5	<0.5	<0.5	<0.5
9/6/06	10.59	9.01	1.58	8260B	SGC	98 H Y	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
4/4/07	10.59	8.99	1.60	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/3/07	10.59	9.78	0.81	8260B	SGC	<50	<300	<50	<50	30	<0.5	<0.5	<0.5	<0.5
3/21/08 <sup>(8)</sup>	10.59	10.20	0.39	8260B	SGC	<50	<300	<50	<50	3.9	<0.5	<0.5	<0.5	<0.5
11/19/08 <sup>(10)</sup>	10.59	9.55	1.04	8260B	SGC	<50	<300	<50	<50	11	<0.50	<0.50	<0.50	<0.50
11/19/08 dup	---	---	---	8260B	SGC	<50	<300	<50	<50	11	<0.50	<0.50	<0.50	<0.50
4/1/09	10.59	7.52	3.07	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/30/09	10.59	8.80	1.79	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/8/10	10.59	6.23	4.36	---	SPH: None	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/19/10	10.59	7.38	3.21	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-11</b>														
1/18/00	11.60	7.08	4.52	---		---	---	---	---	---	---	---	---	---
1/19/00	11.60	---	---	8020	SGC	<50	500	<50	220	<0.5	<0.5	<0.5	<0.5	<5.0
5/11/00	11.60	5.95	5.65	8020	SGC	<50	430	<50	600	23	2.1	18	15	<5.0
8/24/00	11.60	6.58	5.02	8020		<50	<250	<50	110	5.9	<0.5	0.73	0.64	<5.0
11/28/00	11.60	6.91	4.69	8020	SGC	<50	<200	<50	180	4	<0.5	1.9	<0.5	<5.0
2/27/01	11.60	5.65	5.95	8020	Filtered+SGC	86	<240	<60	720	29	5.2	38	36	<5.0
5/17/01	11.60	6.85	4.75	8020	Filtered+SGC	<50	<200	<50	720	36	3.4	15	18	9.7
8/16/01	11.60	6.01	5.59		Filtered+SGC	<50	500B	<100	110	4.8	<0.5	1.4	<0.5	<5
12/15/01	11.60	6.26	5.34	8021	SGC	200	300	<50	170	1.7	0.6	2.4	1.8	<2
4/5/02	11.60	5.47	6.13	8021	SGC	160	<200	---	330	8.9	2.0	6.9	8.7	<5
6/21/02	11.60	6.17	5.43	8021	SGC	<50	<300	<50	280	16	1.8	8.7	9.6	3.6

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
9/12/02	11.60	6.60	5.00	8021	SGC	<50	<300	<50	93	<0.5	<0.5	1.1	<0.5	2.1
4/24/03	11.60	5.71	5.89	8021B	SGC	<50	<300	<50	320	21	2.1	12	6.13	8.9
4/28/04	11.60	5.92	5.68	8260B	SGC	<100	<400	<100	360	18	<1.0	6.5	4.5	4
10/27/04	11.60	6.59	5.01	8260B	SGC	---	---	---	---	---	---	---	---	---
9/2/05 <sup>(1)</sup>	11.60	6.22	5.38	8260B	SGC	<50	<300	<50	85	<0.5	<0.5	<0.5	<0.5	4.5
4/4/06 <sup>(3)</sup>	11.60	4.17	7.43	8260B	SGC	71 L Y	<300	75 L Y	230	5.7	0.9	14	7.0	6.5
4/4/06	11.60	---	---	8260B	dup	<50	<300	55 L Y	220	6.5	1.0	15	7.3	7.4
9/6/06	11.60	6.46	5.14	---	---	---	---	---	---	---	---	---	---	---
4/5/07	11.60	5.60	6.00	8260B	SGC	66 Y	<300	55 Y	270 Y	9.6	0.7	7.3	2.4	11
10/2/07	11.60	6.83	4.77	---	---	---	---	---	---	---	---	---	---	---
3/20/08 <sup>(8)</sup>	11.60	6.83	4.77	8260B	SGC	<50	<300	<50	160	3.5	<0.5	5.4	0.92	13
11/18/08	11.60	7.00	4.60	---	---	---	---	---	---	---	---	---	---	---
4/2/09 <sup>(12)</sup>	11.60	5.24	6.36	8260B	SGC	<50	<300	<50	94 Y	0.98	<0.50	2.9	<0.50	13
10/29/09	11.60	6.33	5.27	8260B	SGC	---	---	---	---	---	---	---	---	---
4/8/10	11.60	4.51	7.09	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	11.60	6.67	4.93	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-12</b>														
1/18/00	10.43	8.11	2.32	---	---	---	---	---	---	---	---	---	---	---
1/19/00	10.43	---	---	8020	SGC	1,800 a	11,000	<50	200	<0.5	3.4	1.5	8.4	<5.0
5/11/00	10.43	6.78	3.65	8020	SGC	2,400 a	4,900	<100	370	<0.5	<0.5	<0.5	0.9	<5.0
8/24/00	10.43	7.56	2.87	---	---	---	---	---	---	---	---	---	---	---
8/25/00	10.43	---	---	8020	SGC	3,500	5,000	3,700	170	<0.5	<0.5	<0.5	<0.5	<5.0
11/28/00	10.43	8.13	2.30	8020	SGC	2,100	14,000	<50	290	<0.5	<0.5	<0.5	<0.5	<5.0
11/28/00	10.43	8.13	2.30	---	Filtered+SGC	50	<200	<50	---	---	---	---	---	---
2/27/01	10.43	6.00	4.43	8020	Filtered+SGC	320	<250	66	110	1.4	<0.5	<0.5	<0.5	<5.0
5/17/01	10.43	7.01	3.42	8020	Filtered+SGC	<50	<200	<50	220	<0.5	<0.5	<0.5	<0.5	<5.0
8/16/01	10.43	8.47	1.96	8020	Filtered+SGC	200	300B	<100	160	<0.5	<0.5	<0.5	<0.5	<5
4/8/02	10.43	6.65	3.78	8021	SGC	500	500	---	180	<0.5	<0.5	0.7	<1.5	<5
6/21/02	10.43	7.10	3.33	8021	SGC	1,100 a,b,c	3,000 h	640	180	<0.5	<0.5	0.63	1.62	<2
9/17/02	10.43	7.75	2.68	8021	SGC	220 a,b,c	360	190	130	<0.5	<0.5	<0.5	<0.5	<2
4/22/03	10.43	6.60	3.83	8021B	SGC	140 L Y	<300	120	150	<0.5	<0.5	<0.5	<0.5	<2
4/28/04	10.43	6.60	3.83	8260B	SGC	<550	1,020	<100	<100	<0.5	<1.0	<1.0	<1.0	<1.0
10/29/04	10.43	7.87	2.56	8260B	SGC	240 H L Y	460	180	170 H	<0.5	<0.5	<0.5	<0.5	<0.5
9/2/05 <sup>(1)</sup>	10.43	7.04	3.39	8260B	SGC	<50	<300	<50	170	<0.5	<0.5	<0.5	<0.5	<0.5
9/2/05 <sup>(1)</sup>	10.43	7.04	3.39	8260B	SGC	110 L Y	<300	120	150	<0.5	<0.5	<0.5	<0.5	<0.5
4/4/06 <sup>(3)</sup>	10.43	4.49	5.94	8260B	SGC	110 Y	<300	110 Y	110	<0.5	<0.5	<0.5	<0.5	<0.5
9/6/06	10.43	7.43	3.00	8260B	SGC	230 Y	<300	200 Y	120	<0.5	<0.5	<0.5	<0.5	<0.5

**Table 1**  
**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/5/07	10.43	6.58	3.85	8260B	SGC	340 H Y	360 H L	230 H Y	160 Y	<0.5	<0.5	<0.5	<0.5	<0.5
10/2/07	10.43	8.14	2.29	8260B	SGC	290 Y	<300	230	160 Y	<0.5	<0.5	<0.5	<0.5	<0.5
3/19/08	10.43	6.45	3.98	8260B	SGC	620 Y	340	430	130 Y	<0.5	<0.5	<0.5	<0.5	<0.5
11/21/08 <sup>(10)</sup>	10.43	8.27	2.16	8260B	SGC	170 Y	<300	120 Y	59 Y	<0.50	<0.50	<0.50	<0.50	<0.50
4/1/09	10.43	6.30	4.13	8260B	SGC	330 Y	<300	300	100 Y	<0.50	<0.50	<0.50	<0.50	<0.50
10/29/09	10.43	7.73	2.70	8260B	SGC	280Y	<300	220Y	160Y	<0.50	<0.50	<0.50	<0.50	<0.50
4/8/10	10.43	6.07	4.36	8260B	SPH: None	320 Y	<300	250	140	<0.50	<0.50	<0.50	<0.50	<0.50
10/19/10	10.43	7.85	2.58	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-13</b>														
1/18/00	11.34	9.63	1.71	8020	SGC	8,800 a	120,000	<50	<50	<0.5	0.8	<0.5	<0.5	<5.0
5/11/00	11.34	10.12	1.22	8020	SGC	11,000 a	110,000	<500	70	1.6	5.4	1.2	7.6	<5.0
8/24/00	11.34	10.22	1.12	---	---	---	---	---	---	---	---	---	---	---
8/25/00	11.34	---	---	8020	SGC	3,100	13,000	1,200	<50	<0.5	<0.5	<0.5	<0.5	<5.0
11/28/00	11.34	10.50	0.84	8020	SGC	2,400	36,000	<1300	<50	<0.5	<0.5	<0.5	<0.5	<5.0
11/28/00	11.34	10.50	0.84	---	Filtered+SGC	280	1,100	<50	---	---	---	---	---	---
2/26/01	11.34	9.60	1.74	8020	Filtered+SGC	100	<260	<64	<50	<0.5	<0.5	<0.5	<0.5	<5.0
5/17/01	11.34	10.10	1.24	---	---	---	---	---	---	---	---	---	---	---
5/18/01	11.34	---	---	8020	Filtered+SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
8/16/01	11.34	10.50	0.84	---	Filtered+SGC	<50	300B	<100	<50	<0.5	<0.5	<0.5	<0.5	<5
12/16/01	11.34	9.43	1.91	8021	SGC	1,900	18,000	<250	<50	<0.5	<0.5	<0.5	<0.5	<5
4/8/02	11.34	10.24	1.10	8021	SGC	440	900	---	<50	<0.5	<0.5	<0.5	<0.5	<5
6/20/02	11.34	10.75	0.59	8021	SGC	270 a,c	1,500 h	<50	<50	<0.5	<0.5	<0.5	<0.5	<2
9/18/02	11.34	10.60	0.74	8021	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<2
4/22/03	11.34	10.46	0.88	8021B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0
4/28/04	11.34	10.22	1.12	8260B	SGC	<100	799	<100	<100	<0.5	<1.0	<1.0	<1.0	<1.0
10/28/04	11.34	9.50	1.84	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/1/05 <sup>(1)</sup>	11.34	9.56	1.78	8260B	SGC	<50	320	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
4/5/06 <sup>(3)</sup>	11.34	7.86	3.48	8260B	SGC	180 H Y	910	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/6/06	11.34	10.53	0.81	8260B	SGC	150 H Y	730	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
4/4/07	11.34	9.73	1.61	8260B	SGC	58 H Y	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/3/07	11.34	10.18	1.16	8260B	SGC	120 Y	460	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
3/20/08 <sup>(8)</sup>	11.34	9.54	1.80	8260B	SGC	53 Y	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
11/21/08 <sup>(10)</sup>	11.34	10.41	0.93	8260B	SGC	120 Y	630	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/2/09 <sup>(12)</sup>	11.34	10.41	0.93	8260B	SGC	110 Y	610	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/30/09	11.34	9.65	1.69	8260B	SGC	81Y	650	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/8/10	11.34	9.96	1.38	8260B	SPH: None	61 Y	330	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/19/10	11.34	9.50	1.84	8260B	SPH: None; SGC	150 Y	940	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50

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**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
<b>MW-14</b>														
1/18/00	10.05	7.37	2.68	8020	SGC	1,700 a	22,000	<50	120	<0.5	<0.5	<0.5	<0.5	<5.0
5/11/00	10.05	6.73	3.32	8020	SGC	360 a	4,300	<100	120	<0.5	<0.5	<0.5	0.5	<5.0
8/24/00	10.05	7.30	2.75	---	---	---	---	---	---	---	---	---	---	---
8/25/00	10.05	---	---	8020	SGC	1,000	3,100	460	90	6.3	<0.5	<0.5	<0.5	<5.0
11/28/00	10.05	7.40	2.65	8020	SGC	380	6,400	<250	140	7.4	<0.5	<0.5	<0.5	<5.0
11/28/00	10.05	7.40	2.65	---	Filtered+SGC	<50	<200	<50	---	---	---	---	---	---
2/26/01	10.05	6.20	3.85	8020	Filtered+SGC	150	<230	<58	73	2.3	<0.5	<0.5	<0.5	<5.0
5/17/01	10.05	7.74	2.31	---	---	---	---	---	---	---	---	---	---	---
5/18/01	10.05	---	---	8020	Filtered+SGC	120	<200	<50	100	11	<0.5	<0.5	<0.5	<5.0
8/16/01	10.05	7.85	2.20	---	Filtered+SGC	<50	<200	<100	60	<0.5	<0.5	<0.5	<0.5	<5
12/16/01	10.05	6.60	3.45	8021	SGC	1,110	3,000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
4/9/02	10.05	6.58	3.47	8021	SGC	870	1,100	---	250	<0.5	<0.5	<0.5	<0.5	<5
6/20/02	10.05	7.52	2.53	8021	SGC	<50	310 h	<50	<50	<0.5	<0.5	<0.5	<0.5	<2
9/18/02	10.05	7.55	2.50	8021	SGC	<50	<300	<50	<50	1.3	<0.5	0.80	<0.5	<2
4/22/03	10.05	6.71	3.34	8021B	SGC	<50	<300	<50	61	4.2	<0.5	1.0	<0.5	12.0
4/28/04	10.05	6.81	3.24	8260B	SGC	<230	<400	<100	241	1.4	<1.0	<1.0	<1.0	<1.0
10/28/04	10.05	6.99	3.06	8260B	SGC	<50	<300	<50	56	3.5	<0.5	<0.5	<0.5	0.5
10/28/04	10.05	---	---	8260B	dup	<50	<300	<50	53	1.9	<0.5	<0.5	<0.5	<0.5
9/1/05 <sup>(1)</sup>	10.05	7.60	2.45	8260B	SGC	<50	<300	<50	79	6.7	<0.5	<0.5	<0.5	0.7
4/5/06 <sup>(3)</sup>	10.05	5.91	4.14	8260B	SGC	50 Y	<300	<50	<50	1.7	<0.5	<0.5	<0.5	<0.5
9/6/06	10.05	7.70	2.35	8260B	SGC	140 H Y	<300	79 H Y	60	<0.5	<0.5	<0.5	<0.5	0.51
4/4/07	10.05	7.52	2.53	8260B	SGC	100 H Y	<300	50 H Y	<50	<0.5	<0.5	<0.5	<0.5	<0.5
4/4/07	10.05	---	---	8260B	Dup	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/3/07	10.05	8.45	1.60	8260B	SGC	61 Y	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
3/20/08 <sup>(8)</sup>	10.05	7.80	2.25	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
11/21/08 <sup>(10)</sup>	10.05	8.45	1.60	8260B	SGC	150 Y	660	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/2/09 <sup>(12)</sup>	10.05	7.20	2.85	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/30/09	10.05	9.11	0.94	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/8/10	10.05	6.62	3.43	8260B	SPH: None	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/19/10	10.05	7.23	2.82	8260B	SPH: None; SGC	210	<300	110	54	<0.50	<0.50	<0.50	<0.50	<0.50
<b>MW-15</b>														
1/18/00	12.36	10.56	1.80	8020	SGC	12,000 a	89,000	<50	110	3.8	2.1	1	4.6	<5.0
5/11/00	12.36	10.03	2.33	8020	SGC	120 a	590	<50	90	0.9	0.9	<0.5	3.3	<5.0
8/24/00	12.36	10.22	2.14	---	---	---	---	---	---	---	---	---	---	---
8/25/00	12.36	---	---	8020	SGC	1,900	8,600	1,000	<50	1.9	<0.5	<0.5	1.5	<5.0
11/28/00	12.36	10.30	2.06	8020	SGC	2,500	36,000	<1300	80	1.7	<0.5	<0.5	1.6	<5.0
11/28/00	12.36	10.30	2.06	---	Filtered+SGC	73	<200	<50	---	---	---	---	---	---

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**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
2/26/01	12.36	9.30	3.06	8020	Filtered+SGC	190	<240	<60	55	0.6	<0.5	<0.5	0.5	<5.0
5/17/01	12.36	10.09	2.27	---	---	---	---	---	---	---	---	---	---	---
5/18/01	12.36	---	---	8020	Filtered+SGC	210	<230	<57	66	1.5	<0.5	<0.5	2.1	<5.0
8/16/01	12.36	10.20	2.16	---	Filtered+SGC	<50	B500	<100	<50	<0.5	<0.5	<0.5	2.4	<5
12/16/01	12.36	9.80	2.56	8021	SGC	3,800	15,000	<250	<50	<0.5	<0.5	<0.5	2	<5
4/5/02	12.36	9.58	2.78	8021	SGC	1,000	1,400	---	<50	<0.5	<0.5	<0.5	2.3	<5
6/20/02	12.36	10.24	2.12	8021	SGC	670 a,c	2,700 h	95 c,i	<50	0.83	<0.5	<0.5	2.20	<2
9/18/02	12.36	9.89	2.47	8021	SGC	70 a,c	<300	<50	<50	<0.5	<0.5	1.5	1.71	<2
4/22/03	12.36	9.55	2.81	8021B	SGC	<50	<300	<50	<50	1 C	<.50	1.4	1.9	<2
4/28/04	12.36	9.68	2.68	8260B	SGC	<250	567	<100	<100	<0.5	<1.0	<1.0	<1.0	2.8
10/28/04	12.36	9.58	2.78	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	2.2	<0.5
9/1/05 <sup>(1)</sup>	12.36	9.56	2.80	8260B	SGC	420 Y	<300	120 H Y	55	<0.5	<0.5	<0.5	2.0	<0.5
4/5/06 <sup>(3)</sup>	12.36	8.76	3.60	8260B	SGC	300 H Y	760	87 H Y	<50	<0.5	<0.5	<0.5	2.4	<0.5
9/6/06	12.36	9.98	2.38	8260B	SGC	220 H Y	400	80 H Y	<50	<0.5	<0.5	<0.5	2.06	<0.5
4/3/07	12.36	10.05	2.31	8260B	SGC	130 H Y	<300	63 H Y	<50	<0.5	<0.5	<0.5	2.38	<0.5
10/3/07	12.36	10.16	2.20	8260B	SGC	150 Y	550	<50	55 Y	<0.5	<0.5	<0.5	1.96	<0.5
3/20/08 <sup>(8)</sup>	12.36	10.08	2.28	8260B	SGC	88 Y	<300	<50	<50	<0.5	<0.5	<0.5	2.02	<0.5
11/19/08 <sup>(10)</sup>	12.36	10.28	2.08	8260B	SGC	110 Y	<300	<50	<50	<0.50	<0.50	<0.50	1.78	<0.50
4/2/09 <sup>(12)</sup>	12.36	9.91	2.45	8260B	SGC	85 Y	<300	<50	<50	<0.50	<0.50	<0.50	0.82	<0.50
10/30/09	12.36	10.24	2.12	8260B	SGC	110Y	<300	<50	81Y	<0.50	<0.50	<0.50	2.41	<0.50
4/8/10	12.36	9.59	2.77	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	12.36	10.21	2.15	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-16</b>														
1/18/00	13.57	10.22	3.43	---	SPH: 0.1 ft.	---	---	---	---	---	---	---	---	---
5/11/00	13.57	13.31	0.27	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
8/24/00	13.57	8.91	4.66	---	SPH: NM	---	---	---	---	---	---	---	---	---
11/28/00	13.57	13.05	0.86	---	SPH: 0.42 ft.	---	---	---	---	---	---	---	---	---
2/26/01	13.57	13.10	0.79	---	SPH: 0.40 ft.	---	---	---	---	---	---	---	---	---
5/17/01	13.57	12.62G	---	---	SPH: NM	---	---	---	---	---	---	---	---	---
8/16/01	13.57	11.94G	---	---	SPH: NM	---	---	---	---	---	---	---	---	---
12/15/01	13.57	NM	---	---	SPH: NM	---	---	---	---	---	---	---	---	---
4/3/02	13.57	12.88	0.69	---	---	---	---	---	---	---	---	---	---	---
6/21/02	12.22	NM	---	---	SPH: NM	---	---	---	---	---	---	---	---	---
4/22/03	12.22	---	---	---	Well cap stuck	---	---	---	---	---	---	---	---	---
4/28/04	12.22	12.48	-0.26	8260B	SGC	<230	1030	<260	2000	150	<1.0	46	<1.0	<1.0
10/28/04	12.22	11.97	0.25	8260B	SGC	450 L Y	<300	480	1100	18	1.7	29	1.7	<0.5
8/31/05	12.22	12.09	0.13	---	SPH: None	---	---	---	---	---	---	---	---	---
4/5/06 <sup>(3)</sup>	12.22	3.80	8.42	8260B	SGC	95 H Y	420	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5



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**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
9/6/06	12.22	---	---	---	Dry	---	---	---	---	---	---	---	---	---
4/4/07 <sup>(5)</sup>	12.22	10.72	1.5	8260B	SGC	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/3/07	12.22	10.92	1.3	8260B	SGC	2,300 Y	4300	1700	480 Y	31	1.7	4.5	1.6	<0.5
3/19/08 <sup>(9)</sup>	12.22	10.72	1.5	---	---	---	---	---	---	---	---	---	---	---
11/19/08 <sup>(10)</sup>	12.22	12.33	-0.11	8260B	SGC	52,000 Y	110,000	31,000	150 Y	21	1.7	2.7	1.1	<0.50
4/2/09 <sup>(12)</sup>	12.22	11.25	0.97	8260B	SGC	---	---	---	59 Y	<0.5	<0.5	<0.5	<0.5	<0.5
10/30/09	12.22	11.37	0.85	8260B	SGC	5,600Y	12,000	4,100Y	590	59	3.5	3.1	3.03	<0.50
4/8/10	12.22	10.45	1.77	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	12.22	10.98	1.24	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-17</b>														
1/18/00	9.86	5.35	4.51	8020	SGC	850 a	21,000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
5/11/00	9.86	9.85	0.01	8020	SGC	150 a	2,900	<100	<50	<0.5	<0.5	<0.5	<0.5	<5.0
8/24/00	9.86	8.59	1.27	---	---	---	---	---	---	---	---	---	---	---
8/25/00	9.86	---	---	8020	SGC	190	610	71	<50	0.58	<0.5	<0.5	<0.5	<5.0
11/28/00	9.86	9.25	0.61	8020	SGC	<250	2,400	<250	<50	<0.5	<0.5	<0.5	<0.5	<5.0
11/28/00	9.86	9.25	0.61	---	Filtered+SGC	<50	<200	<50	---	---	---	---	---	---
2/26/01	9.86	9.40	0.46	8020	Filtered+SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
5/17/01	9.86	8.32	1.54	---	---	---	---	---	---	---	---	---	---	---
5/18/01	9.86	---	---	8020	Filtered+SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
8/16/01	9.86	10.35	-0.49	---	Filtered+SGC	<50	400B	<100	<50	<0.5	<0.5	<0.5	<0.5	<5.0
12/16/01	9.86	8.01	1.85	8021	SGC	940	1,000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
4/9/02	9.86	9.76	0.10	8021	SGC	590	880	---	60	<0.5	<0.5	1.6	<0.5	<5.0
6/21/02	9.86	9.79	0.07	8021	SGC	99 a,c	650 h	<50	<50	<0.5	<0.5	<0.5	<0.5	<2
9/18/02	9.86	8.25	1.61	8021	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<2
4/23/03	9.86	9.75	0.11	8021B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<2
4/28/04	9.86	8.90	0.96	8260B	SGC	<100	<400	<100	<100	<0.5	<1.0	2.4	<1.0	<1.0
10/28/04	9.86	8.32	1.54	---	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/1/05 <sup>(1)</sup>	9.86	8.38	1.48	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
4/5/06 <sup>(3)</sup>	9.86	6.86	3.00	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/6/06	9.86	9.85	0.01	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
4/3/07	9.86	7.67	2.19	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/3/07	9.86	7.97	1.89	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/3/07 dup	---	---	---	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
3/20/08 <sup>(8)</sup>	9.86	6.70	3.16	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
11/19/08 <sup>(10)</sup>	9.86	9.53	0.33	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/2/09 <sup>(12)</sup>	9.86	9.56	0.30	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/30/09	9.86	7.21	2.65	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50

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**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/8/10	9.86	9.15	0.71	8260B	SPH: None	<50	<300	<50	77	2.3	<0.50	2.2	<0.50	<0.50
10/19/10	9.86	6.82	3.04	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>MW-18</b>														
4/24/03	---	6.49		8021B	SGC	<50	<300	<50	<50	<0.5	<0.5	2.4	<0.5	<2
					Developed to monitor a utility trench, not sampled									
4/28/04	---													
8/31/05	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3/27/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>TBW-1</b>														
2/23/99	---	6.25	---	---	SPH: 0.10 ft.	---	---	---	---	---	---	---	---	---
5/27/99	---	5.29	---	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
8/24/99	---	6.99	---	---	SPH: 0.18 ft.	---	---	---	---	---	---	---	---	---
11/22/99	---	---	---	---	Inaccessible	---	---	---	---	---	---	---	---	---
1/18/00	---	---	---	---	Inaccessible	---	---	---	---	---	---	---	---	---
5/11/00	---	6.90	---	---	SPH: 0.10 ft.	---	---	---	---	---	---	---	---	---
8/24/00	---	7.12	---	---	SPH: NM	---	---	---	---	---	---	---	---	---
11/28/00	---	7.75	---	---	SPH: 0.36 ft.	---	---	---	---	---	---	---	---	---
2/27/01	---	9.06	---	---	SPH: 0.51 ft.	---	---	---	---	---	---	---	---	---
5/17/01	---	6.98	---	---	SPH: 0.28 ft.	---	---	---	---	---	---	---	---	---
8/16/01	---	6.62	---	---	SPH: 0.66 ft., f	1,100	700B	<100	17,000	2,100	75	730	850	<1
12/15/01	---	6.86	---	---	SPH 0.35 ft.	---	---	---	---	---	---	---	---	---
4/3/02	---	6.14	---	---	SPH: None	---	---	---	---	---	---	---	---	---
9/12/02	---	7.52	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/22/03	---	6.41	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/28/04	---	6.33	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/28/04	---	NM	---	---		---	---	---	---	---	---	---	---	---
8/31/05	---	6.50	---	---	Well cap smashed 6"	---	---	---	---	---	---	---	---	---
3/27/06	---	5.20	---	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	---	NM	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/4/07	---	8.26	---	---		---	---	---	---	---	---	---	---	---
10/2/07	---	NM	---	---	Abandoned	---	---	---	---	---	---	---	---	---
<b>TBW-2</b>														
6/21/02	---	8.28	---	---		---	---	---	---	---	---	---	---	---
4/22/03	---	6.70	---	---	SPH globules	---	---	---	---	---	---	---	---	---

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**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/28/04	---	6.61	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/28/04	---	7.31	---	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	---	NM	---	---	---	---	---	---	---	---	---	---	---	---
3/27/06	---	NM <sup>(4)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	---	NM <sup>(4)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/4/07	---	NM <sup>(4)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	---	NM	---	---	Abandoned	---	---	---	---	---	---	---	---	---
<b>TBW-3</b>														
8/19/98	---	2.67	---	8020	SGC	810,000	---	---	920	3.2	<0.5	<0.5	0.77	<10
8/19/98	---	2.67	---	8260	---	---	---	---	---	---	---	---	---	<5.0
2/23/98	---	1.25	---	8020	---	3,800	3,000	<50	110	1.6	<0.5	<0.5	<0.5	<5.0
5/27/99	---	---	---	---	DTW: NM	---	---	---	---	---	---	---	---	---
8/24/99	---	3.25	---	---	SPH globules	---	---	---	---	---	---	---	---	---
11/22/99	---	3.68	---	---	---	---	---	---	---	---	---	---	---	---
1/18/00	9.92	3.73	6.19	---	SPH globules	---	---	---	---	---	---	---	---	---
5/11/00	9.92	2.07	7.85	---	---	---	---	---	---	---	---	---	---	---
8/24/00	9.92	2.82	7.10	---	SPH: sheen	44,000	13,000	34,000	570	4.7	<0.5	<0.5	<0.5	<5.0
11/28/00	9.92	---	---	---	---	---	---	---	---	---	---	---	---	---
2/27/01	9.92	1.29	8.63	8020	Filtered+SGC	560	<230	<57	120	1.5	<0.5	<0.5	<0.5	<5.0
5/17/01	9.92	2.47	7.45	---	---	---	---	---	---	---	---	---	---	---
8/16/01	9.92	1.81	8.11	---	Filtered+SGC	1,500	400B	<100	180	<0.5	<0.5	<0.5	<0.5	<1
12/15/01	9.92	2.52	---	---	SPH: 0.02 ft.	---	---	---	---	---	---	---	---	---
4/3/02	9.92	1.50	---	---	SPH: None	---	---	---	---	---	---	---	---	---
6/21/02	9.92	2.37	7.55	---	SPH: None	---	---	---	---	---	---	---	---	---
9/12/02	9.92	3.48	6.44	---	SPH: None	---	---	---	---	---	---	---	---	---
4/22/03	9.92	1.45	8.47	---	Sheen	---	---	---	---	---	---	---	---	---
4/28/04	9.92	2.26	7.66	---	SPH: None	---	---	---	---	---	---	---	---	---
10/28/04	9.92	3.42	6.50	---	Sheen	---	---	---	---	---	---	---	---	---
8/31/05	9.92	2.99	6.93	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	9.92	0.49	9.43	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	9.92	3.42	6.50	---	SPH:0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	9.92	1.93	7.99	---	---	---	---	---	---	---	---	---	---	---
10/2/07	---	NM	---	---	Abandoned	---	---	---	---	---	---	---	---	---
<b>TBW-4</b>														
2/27/01	---	1.35	---	8020	Filtered+SGC	410	<230	<57	250	1.9	<0.5	<0.5	<0.5	<5.0
5/17/01	---	2.52	---	---	---	---	---	---	---	---	---	---	---	---
8/16/01	---	1.88	---	---	Filtered+SGC	2,600	700B	<100	390	<0.5	<0.5	<0.5	<0.5	<5

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
6/21/02	---	2.32	---	---		---	---	---	---	---	---	---	---	---
4/22/03	---	1.41	---	---	Sheen	---	---	---	---	---	---	---	---	---
4/28/04	---	2.21	---	---		---	---	---	---	---	---	---	---	---
10/27/04	---	3.37	---	---	Sheen	---	---	---	---	---	---	---	---	---
8/31/05	---	2.92	---	---		---	---	---	---	---	---	---	---	---
3/27/06	---	0.49	---	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	---	3.37	---	---	SPH:0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	---	1.88	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	---	NM	---	---	Abandoned	---	---	---	---	---	---	---	---	---
<b>TBW-5</b>														
2/23/99	---	9.72	---	---	SPH: 1.45 ft.	---	---	---	---	---	---	---	---	---
5/27/99	---	7.03	---	---	SPH: 1.13 ft.	---	---	---	---	---	---	---	---	---
8/24/99	---	6.52	---	---	SPH: 1.33 ft.	---	---	---	---	---	---	---	---	---
11/22/99	---	8.31	---	---	SPH: 1.29 ft.	---	---	---	---	---	---	---	---	---
1/18/00	10.22	6.20	4.74	---	SPH: 0.90 ft.	---	---	---	---	---	---	---	---	---
5/11/00	10.22	9.41	1.05	---	SPH: 0.30 ft.	---	---	---	---	---	---	---	---	---
8/24/00	10.22	9.62	0.81	---	SPH: 0.26 ft.	---	---	---	---	---	---	---	---	---
11/28/00	10.22	10.25	0.34	---	SPH: 0.46 ft.	---	---	---	---	---	---	---	---	---
2/27/01	10.22	9.06	1.45	---	SPH: 0.36 ft.	---	---	---	---	---	---	---	---	---
5/17/01	10.22	8.75	1.47	---	SPH: 0.67 ft.	---	---	---	---	---	---	---	---	---
8/16/01	10.22	8.32	2.51	8020	SPH: 0.76 ft., f	550	400B	<100	30,000	2,900	100	1,500	5,100	<1
12/15/01	10.22	9.09	1.13	---	SPH: 0.36 ft.	---	---	---	---	---	---	---	---	---
4/3/02 <sup>(6)</sup>														
6/21/02	10.22	7.87	2.35	---	SPH: 0.03 ft.	---	---	---	---	---	---	---	---	---
9/12/01	10.22	7.26	2.97	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/22/03	10.22	6.22	4.00	---	SPH: 0.06 ft.	---	---	---	---	---	---	---	---	---
4/28/04	10.22	6.26	3.96	---	SPH: 0.21 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.22	3.62	6.60	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	10.22	6.41	---	---	SPH: 0.30 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.22	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	10.22	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
4/4/07	10.22	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	---	NM	---	---	SPH: viscous residual	---	---	---	---	---	---	---	---	---
3/19/08	---	NM	---	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	10.22	9.32	0.9	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM	---	---	NA	---	---	---	---	---	---	---	---	---
10/29/09	10.22	8.50	1.72	---	---	---	---	---	---	---	---	---	---	---
4/8/10	10.22	5.54	4.68	---	SPH: None	---	---	---	---	---	---	---	---	---

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
10/19/10	10.22	6.91	3.31	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>TBW-6</b>														
2/23/99	---	2.09	---	8020		160	600	<50	60	<0.5	<0.5	<0.5	<0.5	<5.0
5/27/99	---	3.31	---	---		---	---	---	---	---	---	---	---	---
8/24/99	---	7.29	---	8020	SGC	180	400	<50	130	<0.5	<0.5	<0.5	<0.5	<5.0
11/22/99	---	4.37	---	---		---	---	---	---	---	---	---	---	---
1/18/00	9.49	3.83	5.66	---		---	---	---	---	---	---	---	---	---
1/19/00	9.49	---	---	8020	SGC	55 C	<200	<50	170	0.6	<0.5	<0.5	<0.5	<5.0
5/11/00	9.49	2.51	6.98	---		---	---	---	---	---	---	---	---	---
8/24/00	9.49	4.34	5.15	---		---	---	---	---	---	---	---	---	---
8/25/00	9.49	---	---	8020	SGC	320	<250	200	<50	<0.5	<0.5	<0.5	<0.5	<5.0
11/28/00	9.49	4.74	4.75	---		---	---	---	---	---	---	---	---	---
2/27/01	9.49	2.30	7.19	8020	Filtered+SGC	<57	<230	<57	<50	<0.5	<0.5	<0.5	<0.5	<5.0
5/17/01	9.49	3.35	6.14	---		---	---	---	---	---	---	---	---	---
8/16/01	9.49	3.85	5.64	---	Filtered+SGC	<50	<200	<100	<50	<0.5	<0.5	<0.5	<0.5	<5
12/15/01	9.49	3.96	5.53	---		---	---	---	---	---	---	---	---	---
4/3/02	9.49	2.51	6.98	---		---	---	---	---	---	---	---	---	---
6/21/02	9.49	3.58	5.91	---		---	---	---	---	---	---	---	---	---
9/12/02	9.49	6.07	4.56	---	SPH: 1.42 ft.	---	---	---	---	---	---	---	---	---
4/23/03	9.49	2.42	7.07	---		---	---	---	---	---	---	---	---	---
4/28/04	9.49	3.21	6.28	---		---	---	---	---	---	---	---	---	---
10/27/04	9.49	4.49	5.00	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	9.49	4.43	---	---	SPH: 0.52 ft.	---	---	---	---	---	---	---	---	---
3/27/06	9.49	1.90	7.59	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	9.49	4.33	5.16	---	SPH:0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	9.49	3.08	6.41	---	---	---	---	---	---	---	---	---	---	---
10/2/07	9.49	4.98	4.51	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	9.49	3.16	6.33	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	9.49	5.32	4.17	---	SPH: None	---	---	---	---	---	---	---	---	---
4/1/09	9.49	2.87	6.62	---	SPH: sheen	---	---	---	---	---	---	---	---	---
10/29/09	---	---	---	---	No Access	---	---	---	---	---	---	---	---	---
4/8/10	9.49	1.87	7.62	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	9.49	4.79	4.70	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-A1</b>														
4/22/03	---	1.81	---	---		---	---	---	---	---	---	---	---	---
4/28/04	10.09	2.52	7.57	---		---	---	---	---	---	---	---	---	---
10/27/04	10.09	3.03	7.06	---	SPH: None	---	---	---	---	---	---	---	---	---

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**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
8/31/05	10.09	3.31	6.78	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	10.09	0.62	9.47	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	10.09	3.52	6.57	---	SPH: None	---	---	---	---	---	---	---	---	---
4/3/07	10.09	2.93	7.16	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.09	NM <sup>(7)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	10.09	3.16	6.93	---	SPH: None	---	---	---	---	---	---	---	---	---
11/20/08 <sup>(10)</sup>	10.09	4.49	5.60	8260B	SGC	56 Y	<300	<50	<50	8.8	<0.50	<0.50	<0.50	4.5
4/1/09	10.09	2.48	7.61	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	10.09	3.49	6.60	---	---	---	---	---	---	---	---	---	---	---
4/8/10	10.09	1.54	8.55	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.19	4.22	5.97	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-A2</b>														
4/22/03	---	1.22	---	---	Sheen	---	---	---	---	---	---	---	---	---
4/28/04	9.67	2.01	7.66	---	---	---	---	---	---	---	---	---	---	---
10/27/04	9.67	3.20	6.47	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	9.67	2.75	6.92	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	9.67	0.30	9.37	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	9.67	3.19	6.48	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	9.67	1.70	7.97	8260B	SGC	200 Y	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/2/07	9.67	3.81	5.86	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	9.67	1.71	7.96	---	SPH: None	---	---	---	---	---	---	---	---	---
11/20/08 <sup>(10)</sup>	9.67	3.96	5.71	8260B	SGC	590 Y	<300	160 Y	<50	<0.50	<0.50	<0.50	<0.50	<0.50
4/1/09	9.67	1.58	8.09	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	9.67	2.89	6.78	---	---	---	---	---	---	---	---	---	---	---
4/8/10	9.67	0.93	8.74	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	9.67	3.72	5.95	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>OB-A1</b>														
4/22/03	---	2.24	---	---	SPH: .01 ft.	---	---	---	---	---	---	---	---	---
4/28/04	---	3.01	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/27/04	---	5.11	---	---	SPH: None (strong odor)	---	---	---	---	---	---	---	---	---
8/31/05	---	4.10	---	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	---	1.25	---	---	SPH: None	---	---	---	---	---	---	---	---	---
9/7/06	---	4.49	---	---	---	---	---	---	---	---	---	---	---	---
4/4/07	---	2.72	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	---	5.34	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	---	2.73	---	---	SPH: None	---	---	---	---	---	---	---	---	---

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**7101 Edgewater Drive, Oakland, California**  
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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
11/18/08	---	5.31	---	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	2.61	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	4.68	---	---	---	---	---	---	---	---	---	---	---	---
4/8/10	---	1.95	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	---	5.09	---	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-B1</b>														
4/22/03	---	7.26	---	---	Sheen	---	---	---	---	---	---	---	---	---
4/28/04	11.22	7.20	4.02	---	---	---	---	---	---	---	---	---	---	---
10/27/04	11.22	7.80	3.42	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	11.22	7.14	4.08	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	11.22	6.10	5.12	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	11.22	7.39	3.83	---	SPH:0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	11.22	7.06	4.16	8260B	SGC	130 L	< 300	100 H	220	410	23	9.4	16	6.3
10/2/07	11.22	7.70	3.52	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	11.22	7.06	4.16	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	11.22	7.90	3.32	---	SPH: None	---	---	---	---	---	---	---	---	---
4/1/09	11.22	7.15	4.07	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	11.22	7.76	3.46	---	---	---	---	---	---	---	---	---	---	---
4/8/10	11.22	6.78	4.44	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	11.22	7.66	3.56	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-B2</b>														
4/22/03	---	7.29	---	---	Sheen, Odor	---	---	---	---	---	---	---	---	---
4/28/04	11.23	7.20	4.03	---	---	---	---	---	---	---	---	---	---	---
10/27/04	11.23	7.81	3.42	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	11.23	7.14	4.09	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	11.23	6.09	5.14	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	11.23	7.39	3.84	---	SPH: None	---	---	---	---	---	---	---	---	---
4/4/07	11.23	9.84	1.39	8260B	SGC	500 L Y	< 300	500 L	11000	3400	2700	190	1100	<10
10/2/07	11.23	7.71	3.52	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	11.23	7.07	4.16	---	SPH: None (strong odor)	---	---	---	---	---	---	---	---	---
11/20/08 <sup>(10)</sup>	11.23	7.92	3.31	8260B	SGC	190 Y	< 300	150 Y	7,900 Y	3,200	2,100	140	720	<25
4/1/09	11.23	7.16	4.07	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	11.23	7.78	3.45	---	---	---	---	---	---	---	---	---	---	---
4/8/10	11.23	6.80	4.43	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	11.23	7.67	3.56	---	SPH: None	---	---	---	---	---	---	---	---	---

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
<b>RW-B3</b>														
4/22/03	---	9.90	---	---	visible Product	---	---	---	---	---	---	---	---	---
4/28/04	11.14	13.20	-2.06	---	SPH: 3.09	---	---	---	---	---	---	---	---	---
10/27/04	11.14	9.33	1.81	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	11.14	9.60	1.54	---	SPH: 0.01	---	---	---	---	---	---	---	---	---
3/27/06	11.14	9.08	2.06	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	11.14	9.61	1.53	---	SPH: None	---	---	---	---	---	---	---	---	---
4/4/07	11.14	9.84	1.30	8260B	SGC	3,600 L Y	880	4,000 L	7900	4300	130	520	357	<31
10/2/07	11.14	9.56	1.58	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	---	NM <sup>(7)</sup>	---	---	NM	---	---	---	---	---	---	---	---	---
11/18/08	11.14	9.57	1.57	---	---	---	---	---	---	---	---	---	---	---
4/1/09	11.14	9.80	1.34	---	---	---	---	---	---	---	---	---	---	---
10/29/09	11.14	9.61	1.53	---	---	---	---	---	---	---	---	---	---	---
4/8/10	11.14	9.61	1.53	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	11.14	9.50	1.64	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-B4</b>														
4/22/03	---	10.55	---	---	SPH: .55 ft.	---	---	---	---	---	---	---	---	---
4/28/04	11.29	10.22	1.07	---	SPH: None	---	---	---	---	---	---	---	---	---
10/27/04	11.29	9.55	1.74	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	11.29	9.70	1.59	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	11.29	9.23	2.06	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	11.29	9.69	1.60	---	SPH: None	---	---	---	---	---	---	---	---	---
4/4/07	11.29	10.04	1.25	8260B	SGC	3,500 Y	360	4,000 L	16000	3200	150	460	1430	<8.3
10/2/07	11.29	9.72	1.57	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	11.29	9.87	1.42	---	SPH: None (odor)	---	---	---	---	---	---	---	---	---
11/20/08 <sup>(10)</sup>	11.29	9.75	1.54	8260B	SGC	3,100 Y	2,900	930	6,000 Y	3,100	100	270	679	<25
4/1/09	11.29	9.87	1.42	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	11.29	9.85	1.44	---	---	---	---	---	---	---	---	---	---	---
4/8/10	11.29	9.72	1.57	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	11.29	9.80	1.49	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-C1</b>														
4/24/03	---	8.34	---	---	---	---	---	---	---	---	---	---	---	---
4/28/04	10.44	8.00	2.44	---	---	---	---	---	---	---	---	---	---	---
10/27/04	10.44	7.59	2.85	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	10.44	5.81	4.63	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	10.44	1.94	8.50	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	10.44	6.71	3.73	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---



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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/5/07	10.44	6.66	3.78	8260B	---	220 H Y	1300	63 H Y	<50	<0.50	<0.50	<0.50	<0.50	<0.50
10/2/07	10.44	8.48	1.96	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
3/19/08	10.44	8.56	1.88	---	SPH: None	---	---	---	---	---	---	---	---	---
11/20/08 <sup>(10)</sup>	10.44	8.29	2.15	8260B	SGC	290 Y	1,200	76 Y	<50	6.4	<0.50	<0.50	0.51	<0.50
4/1/09	10.44	8.16	2.28	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	10.44	8.64	1.80	---	---	---	---	---	---	---	---	---	---	---
4/8/10	10.44	5.62	4.82	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.44	5.57	4.87	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-C2</b>														
4/24/03	---	6.22	---	---	SPH: .03 ft.	---	---	---	---	---	---	---	---	---
4/28/04	10.58	6.19	4.39	---	SPH: 0.06 ft	---	---	---	---	---	---	---	---	---
10/27/04	10.58	7.00	3.58	---	SPH: Present	---	---	---	---	---	---	---	---	---
8/31/05	10.58	6.30	4.28	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.58	5.10	5.48	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	10.58	8.19	2.39	---	SPH: 0.12 ft.	---	---	---	---	---	---	---	---	---
4/4/07	10.58	8.28	2.30	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.58	9.75	0.83	---	SPH: 0.015 ft.	---	---	---	---	---	---	---	---	---
10/3/07	10.58	9.39	1.19	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	10.58	9.38	1.20	---	---	---	---	---	---	---	---	---	---	---
4/1/09	10.58	7.64	2.94	---	---	---	---	---	---	---	---	---	---	---
10/29/09	10.58	8.90	1.68	---	---	---	---	---	---	---	---	---	---	---
4/8/10	10.58	5.86	4.72	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.58	6.59	3.99	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-C3</b>														
4/24/03	---	6.36	---	---	---	---	---	---	---	---	---	---	---	---
4/28/04	10.71	6.25	4.46	---	---	---	---	---	---	---	---	---	---	---
10/27/04	10.71	7.10	3.61	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	10.71	6.39	4.32	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	10.71	5.30	5.41	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	10.71	8.10	2.61	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/5/07	10.71	7.97	2.74	8260B	SPH: None	540 H L Y	360 H L	430 H L Y	520	13	14	32	54	<0.5
10/2/07	10.71	8.59	2.12	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
3/19/08	10.71	8.38	2.33	---	SPH: None	---	---	---	---	---	---	---	---	---
11/20/08 <sup>(10)</sup>	10.71	8.61	2.10	8260B	SGC	720 Y <sup>(11)</sup>	1600 <sup>(11)</sup>	170 Y <sup>(11)</sup>	<50	1.1	<0.50	0.67	<0.50	<0.50
4/1/09	10.71	6.98	3.73	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	10.71	8.56	2.15	---	---	---	---	---	---	---	---	---	---	---
4/8/10	10.71	5.93	4.78	---	SPH: None	---	---	---	---	---	---	---	---	---

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
10/19/10	10.71	6.82	3.89	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-C4</b>														
4/22/03	---	7.15	---	---	Strong odor	---	---	---	---	---	---	---	---	---
4/28/04	11.32	6.95	4.37	---	SPH: 0.01 ft	---	---	---	---	---	---	---	---	---
10/27/04	11.32	7.45	3.87	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	11.32	6.71	4.61	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	11.32	6.47	4.85	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	11.32	8.16	3.16	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	11.32	8.50	2.82	---	---	---	---	---	---	---	---	---	---	---
10/2/07	11.32	8.62	2.70	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	11.32	9.13	2.19	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	11.32	8.99	2.33	---	---	---	---	---	---	---	---	---	---	---
4/1/09	11.32	8.52	2.80	---	---	---	---	---	---	---	---	---	---	---
10/29/09	11.32	8.53	2.79	---	---	---	---	---	---	---	---	---	---	---
4/8/10	11.32	NM	---	---	Could not open	---	---	---	---	---	---	---	---	---
4/29/10	11.32	6.07	5.25	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	11.32	6.84	4.48	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-C5</b>														
4/22/03	---	6.46	---	---	---	---	---	---	---	---	---	---	---	---
4/28/04	10.79	6.39	4.40	---	---	---	---	---	---	---	---	---	---	---
10/27/04	10.79	7.21	3.58	---	SPH: Present	---	---	---	---	---	---	---	---	---
8/31/05	10.79	6.51	4.28	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	10.79	5.33	5.46	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	10.79	8.03	2.76	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	10.79	8.27	2.52	8260B	SGC	3,800 Y	310	4,100 L	12000	3400	170	520	1300	<25
10/2/07	10.79	8.95	1.84	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	10.79	8.82	1.97	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
11/20/08 <sup>(10)</sup>	10.79	8.92	1.87	8260B	SPH: None/ SGC	3,700 Y	430	3,300	5,800 Y	2,900	91	120	437	<20
11/20/08 dup	---	---	---	8260B	SGC: Oder	3,400 Y	<300	3,100	3,900 Y	2,700	78	91	358	<25
4/1/09	10.79	7.88	2.91	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	---	---	---	---	No Access	---	---	---	---	---	---	---	---	---
4/8/10	10.79	NM	---	---	Could not open	---	---	---	---	---	---	---	---	---
4/29/10	10.79	5.59	5.2	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.79	6.54	4.25	---	SPH: None, odor	---	---	---	---	---	---	---	---	---
<b>RW-C6</b>														
4/22/03	---	6.05	---	---	SPH: 0.07 ft.	---	---	---	---	---	---	---	---	---

**Table 1**  
**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/28/04	10.31	6.30	4.01	---	SPH: 0.05 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.31	6.85	---	---	SPH: 0.15 ft.	---	---	---	---	---	---	---	---	---
8/31/05	10.31	6.81	---	---	SPH: 0.93 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.31	5.66	---	---	SPH: 0.96 ft.	---	---	---	---	---	---	---	---	---
9/6/06	10.31	7.96	2.35	---	SPH: 0.18ft.	---	---	---	---	---	---	---	---	---
4/4/07	10.31	NM <sup>(4)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.31	8.45	1.86	---	SPH: residual	---	---	---	---	---	---	---	---	---
3/19/08	10.31	8.32	1.99	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	10.31	8.42	1.89	---	SPH: Oder	---	---	---	---	---	---	---	---	---
4/1/09	10.31	7.36	2.95	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	---	---	---	---	No Access	---	---	---	---	---	---	---	---	---
4/8/10	10.31	NM	---	---	Could not open	---	---	---	---	---	---	---	---	---
4/29/10	10.31	5.43	4.88	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.31	6.4	3.91	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-C7</b>														
4/22/03	---	6.51	---	---	visible Product	---	---	---	---	---	---	---	---	---
4/28/04	10.12	6.60	3.52	---	SPH: 0.02 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.12	NM	---	---	---	---	---	---	---	---	---	---	---	---
8/31/05	10.12	NM	---	---	---	---	---	---	---	---	---	---	---	---
3/27/06	10.12	NM <sup>(4)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	10.12	8.34	1.78	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	10.12	NM <sup>(4)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.12	9.01	1.11	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	10.12	8.85	1.27	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	10.12	8.97	1.15	---	---	---	---	---	---	---	---	---	---	---
4/1/09	10.12	7.89	2.23	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
10/29/09	---	9.23	---	---	---	---	---	---	---	---	---	---	---	---
4/8/10	10.12	NM	---	---	Could not open	---	---	---	---	---	---	---	---	---
4/29/10	10.12	5.71	4.41	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.12	6.68	3.44	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>OB-C1</b>														
4/22/03	---	6.26	---	---	---	---	---	---	---	---	---	---	---	---
4/28/04	10.39	7.39	3.00	---	SPH: 1.27 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.39	8.06	2.33	---	SPH: 1.08 ft.	---	---	---	---	---	---	---	---	---
8/31/05	10.39	7.84	---	---	SPH: 1.55 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.39	6.15	---	---	SPH: 1.05 ft.	---	---	---	---	---	---	---	---	---
9/6/06	---	NM <sup>(4)</sup>	---	---	Buried	---	---	---	---	---	---	---	---	---

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**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/4/07	10.39	7.78	2.61	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.39	8.67	1.72	---	SPH: 0.02 ft.	---	---	---	---	---	---	---	---	---
3/19/08	10.39	8.49	1.90	---	SPH: 0.29 ft.	---	---	---	---	---	---	---	---	---
11/18/08	10.39	8.57	1.82	---	SPH: 0.03 ft.	---	---	---	---	---	---	---	---	---
4/1/09	10.39	7.96	2.43	---	SPH: 0.64 ft.	---	---	---	---	---	---	---	---	---
10/29/09	---	---	---	---	No Access	---	---	---	---	---	---	---	---	---
4/8/10	10.39	NM	---	---	Could not open	---	---	---	---	---	---	---	---	---
4/29/10	10.39	5.95	4.44	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.39	6.37	4.02	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D1</b>														
4/22/03	---	6.97	---	---	---	---	---	---	---	---	---	---	---	---
4/28/04	10.18	5.62	4.56	---	---	---	---	---	---	---	---	---	---	---
10/27/04	10.18	6.67	3.51	---	SPH: Present	---	---	---	---	---	---	---	---	---
8/31/05	10.18	5.75	---	---	SPH: 0.02 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.18	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	10.18	NM <sup>(2)</sup>	---	---	No Access	---	---	---	---	---	---	---	---	---
4/4/07	10.18	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.18	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
11/19/08	10.18	11.29	-1.11	6260B	SGC	11,000 Y	4,900	9,400	5,100 Y	270	85	150	710	<2.0
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	10.18	7.70	2.48	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.18	6.85	3.33	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D2</b>														
4/22/03	---	7.15	---	---	SPH 1.25 ft.	---	---	---	---	---	---	---	---	---
4/28/04	10.33	7.45	2.88	---	SPH: 0.1 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.33	6.41	3.92	---	SPH: Present	---	---	---	---	---	---	---	---	---
8/31/05	10.33	8.44	---	---	SPH: 3.12 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.33	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	10.33	NM <sup>(2)</sup>	---	---	No Access	---	---	---	---	---	---	---	---	---
4/4/07	10.33	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.33	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
11/18/08	10.33	10.95	-0.62	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---

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**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	10.33	7.21	3.12	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.33	6.35	3.98	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D3</b>														
4/22/03	---	6.89	---	---	SPH: 1.58 ft.	---	---	---	---	---	---	---	---	---
4/28/04	10.07	8.18	1.89	---	SPH: 3.25 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.07	6.37	3.70	---	SPH: Present	---	---	---	---	---	---	---	---	---
8/31/05	10.07	7.72	---	---	SPH: 2.46	---	---	---	---	---	---	---	---	---
3/27/06	10.07	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	10.07	NM <sup>(2)</sup>	---	---	No Access	---	---	---	---	---	---	---	---	---
4/4/07	10.07	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.07	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
11/18/08	10.07	10.10	-0.03	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	10.07	7.43	2.64	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.07	6.97	3.10	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D4</b>														
4/22/03	---	8.11	---	---	SPH: 1.98 ft.	---	---	---	---	---	---	---	---	---
4/28/04	10.22	7.99	2.23	---	SPH: 2.09 ft.	---	---	---	---	---	---	---	---	---
10/27/04	10.22	6.49	3.73	---	SPH: Present	---	---	---	---	---	---	---	---	---
8/31/05	10.22	8.09	---	---	SPH: 2.12 ft.	---	---	---	---	---	---	---	---	---
3/27/06	10.22	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	10.22	NM <sup>(2)</sup>	---	---	No Access	---	---	---	---	---	---	---	---	---
4/4/07	10.22	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	10.22	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
11/19/08 <sup>(10)</sup>	10.22	9.10	1.12	8260B	SGC	55,000	9,700	46,000	7,600 Y	210	17	270	280	<1.7
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	10.22	5.00	5.22	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	10.22	6.37	3.85	---	SPH: None	---	---	---	---	---	---	---	---	---

**RW-D5**

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4/22/03	---	6.04	---	---	SPH: 0.07 ft.	---	---	---	---	---	---	---	---	---
4/28/04	9.99	5.96	4.03	---	SPH: None	---	---	---	---	---	---	---	---	---
10/27/04	9.99	6.48	3.51	---	SPH: Present	---	---	---	---	---	---	---	---	---
8/31/05	9.99	7.02*	---	---	SPH: 1.01 ft.	---	---	---	---	---	---	---	---	---
3/27/06	9.99	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	9.99	NM <sup>(2)</sup>	---	---	No Access	---	---	---	---	---	---	---	---	---
4/4/07	9.99	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	9.99	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
11/18/08	9.99	9.45	0.54	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	9.99	4.97	5.02	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	9.99	6.30	3.69	---	---	---	---	---	---	---	---	---	---	---
<b>RW-D6</b>														
11/18/08	---	11.10	---	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	---	7.10	---	---	SPH: None; Odor	---	---	---	---	---	---	---	---	---
10/19/10	---	6.45	---	---	SPH: None; Odor	---	---	---	---	---	---	---	---	---
<b>RW-D7</b>														
11/19/08 <sup>(10)</sup>	---	9.62	---	8260B	SGC	54,000 Y	59,000	43,000	3,400	100	54	13	830	<3.1
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	---	5.55	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	---	6.45	---	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D8</b>														
11/18/08	---	8.48	---	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	---	4.27	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	---	5.19	---	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D9</b>														
11/18/08	---	9.70	---	---	---	---	---	---	---	---	---	---	---	---

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Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	---	6.92	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	---	6.34	---	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D10</b>														
11/18/08	---	8.84	---	8260B	SGC	1,000 Y	650	760	640 Y	2.7	0.69	5.6	17.71	<0.50
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	---	4.87	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	---	6.22	---	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-D11</b>														
11/18/08	---	8.66	---	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	NM <sup>(2)</sup>	---	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	---	4.71	---	---	SPH: Sheen	---	---	---	---	---	---	---	---	---
10/19/10	---	6.04	---	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>OB-D1</b>														
4/22/03	---	5.41	---	---	Strong Odor	---	---	---	---	---	---	---	---	---
4/28/04	9.46	5.31	4.15	---	Strong Odor	---	---	---	---	---	---	---	---	---
10/27/04	9.46	5.89	3.57	---	---	---	---	---	---	---	---	---	---	---
8/31/05	9.46	5.42	---	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	9.46	3.09	6.37	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	9.46	8.31	1.15	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	9.46	7.77	1.69	---	---	---	---	---	---	---	---	---	---	---
10/2/07	9.46	8.66	0.80	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	9.46	8.90	0.56	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	9.46	8.41	1.05	---	---	---	---	---	---	---	---	---	---	---
4/1/09	9.46	8.50	0.96	---	SPH: sheen	---	---	---	---	---	---	---	---	---
10/29/09	9.46	7.65	1.81	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	9.46	4.71	4.75	---	Strong Odor	---	---	---	---	---	---	---	---	---
10/19/10	9.46	6.10	3.36	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>OB-D2</b>														
4/22/03	---	5.14	---	---	---	---	---	---	---	---	---	---	---	---
4/28/04	9.95	5.25	4.70	---	---	---	---	---	---	---	---	---	---	---
10/27/04	9.95	6.42	3.53	---	SPH: None	---	---	---	---	---	---	---	---	---

**Table 1**  
**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
8/31/05	9.95	5.71	---	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
3/27/06	9.95	2.32	7.63	---	SPH: None	---	---	---	---	---	---	---	---	---
9/6/06	9.95	8.39	1.56	---	SPH: 0.01 ft.	---	---	---	---	---	---	---	---	---
4/4/07	9.95	7.94	2.01	---	---	---	---	---	---	---	---	---	---	---
10/2/07	9.95	9.07	0.88	---	SPH: None	---	---	---	---	---	---	---	---	---
3/19/08	9.95	8.64	1.31	---	SPH: None	---	---	---	---	---	---	---	---	---
11/18/08	9.95	8.94	1.01	---	---	---	---	---	---	---	---	---	---	---
4/1/09	9.95	7.00	2.95	---	SPH: None	---	---	---	---	---	---	---	---	---
10/29/09	9.95	8.24	1.71	---	SPH: None	---	---	---	---	---	---	---	---	---
4/8/10	9.95	5.38	4.57	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	9.95	6.55	3.40	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>RW-1</b>														
4/22/03	---	6.43	---	---	---	---	---	---	---	---	---	---	---	---
4/28/04	---	5.73	---	---	---	---	---	---	---	---	---	---	---	---
10/27/04	---	6.34	---	---	SPH: None	---	---	---	---	---	---	---	---	---
8/31/05	---	5.83	---	---	SPH: None	---	---	---	---	---	---	---	---	---
3/27/06	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
9/6/06	---	NM <sup>(2)</sup>	---	---	No Access	---	---	---	---	---	---	---	---	---
4/4/07	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/2/07	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
3/19/08	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
11/18/08	---	8.81	---	---	---	---	---	---	---	---	---	---	---	---
4/1/09	---	NM <sup>(2)</sup>	---	---	---	---	---	---	---	---	---	---	---	---
10/29/09	---	8.17	---	---	---	---	---	---	---	---	---	---	---	---
4/8/10	---	5.21	---	---	SPH: None	---	---	---	---	---	---	---	---	---
10/19/10	---	6.60	---	---	SPH: None	---	---	---	---	---	---	---	---	---
<b>Field Blank</b>														
10/28/04	---	---	---	8260B	---	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/1/05	---	---	---	8260B	---	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/2/05	---	---	---	8260B	---	---	---	---	<50	---	---	---	---	---
4/4/06	---	---	---	8260B	---	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/7/06	---	---	---	8260B	---	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
4/3/07	---	---	---	8260B	---	<50	<300	<50	<50	<0.5	0.54	<0.5	<0.5	<0.5
10/2/07	---	---	---	8260B	---	<50	<300	<50	<50	<0.5	0.5	<0.5	<0.5	<0.5
3/20/08	---	---	---	8260B	SGC	<50	<300	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
11/19/08	---	---	---	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
11/20/08	---	---	---	8260B	SGC	<50	<300	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50



**Table 1**  
**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
11/21/08	---	---	---	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4/1/09	---	---	---	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
10/30/09	---	---	---	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4/8/10	---	---	---	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
10/19/10	---	---	---	8260B	SGC	< 50	< 300	< 50	< 50	< 0.50	< 0.50	< 0.50	0.51	< 0.50
<b>Trip Blank</b>														
8/19/98	---	---	---	8020		---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
11/22/99	---	---	---	8020		---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
11/28/00	---	---	---	8020		---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
2/27/01	---	---	---	8020	Filtered + SGC	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
5/17/01	---	---	---	8020	SGC	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
12/16/01	---	---	---	8021		---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
4/5/02	---	---	---	8021	Trip Blank 1	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
4/5/02	---	---	---	8021	Trip Blank 2	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
6/21/02	---	---	---	8021	Trip Blank 1	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
9/12/02	---	---	---	8021	Trip Blank 1	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 2
9/13/02	---	---	---	8021	Trip Blank 2	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 2
4/23/03	---	---	---	8021B	Trip Blank 1	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 2
4/28/04	---	---	---	8260B	Trip Blank 1	---	---	---	< 100	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0
10/29/04	---	---	---	8260B	Trip Blank 2	---	---	---	< 50	---	---	---	---	---
4/3/07	---	---	---	8260B	Trip Blank 1	---	---	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
10/2/07	---	---	---	8260B	Trip Blank 1	---	---	---	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

**Notes:**

Groundwater elevations corrected for the presence of free product according to the calculation: GW Elevation = TOC - DTW + (0.8 x SPH thickness)

- (1) = Depth to groundwater measured on August 31, 2005.
- (2) = Converted to an extraction well, and access port is too small for the oil/water probe.
- (3) = Depth to groundwater measured on March 27, 2006.
- (4) = Could not locate well.
- (5) = Well dewatered, field staff unable to collect all samples.
- (6) = Well has active remediation unit/recovery.
- (7) = Well was covered by car or heavy equipment.
- (8) = Depth to groundwater measured on March 19, 2008.
- (9) = Well dewatered, field staff unable to collect samples.
- (10) = Depth to groundwater measured on November 18, 2008.
- (11) = Low surrogate recovery was observed for hexacosane. The sample was re-extracted, but was outside the EPA recommended hold time.

**Table 1**  
**Summary of Groundwater Analytical Data, Petroleum Hydrocarbons**  
**Municipal Service Center**  
**7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	BTEX Method	Notes	TPH-d (µg/l)	TPH-mo (µg/l)	TPH-k (µg/l)	TPH-g (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
------------------	----------------------------	-----------------------------------	------------------------------------	----------------	-------	-----------------	------------------	-----------------	-----------------	-------------------	-------------------	-----------------------------	----------------------------	----------------

(12) = Depth to groundwater measured on April 1, 2009.

--- = Not measured/analyzed

BTEX = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020 or 8240/8260

DTW = Depth to water

Dup = Duplicate sample

Filtered = Groundwater samples were filtered through a 0.45-micron glass membrane filter.

ID = Identification

MTBE = Methyl tertiary-butyl ether by EPA Method 8020 or 8260. Confirmation 8260 results shown in parentheses.

NM = Not measured. Well obstructed or could not be located.

RPD = Relative percent difference

SPH = Separate-phase hydrocarbons; measured thickness

SGC = Silica gel cleanup based on Method 3630B prior to TPH-d, TPH-k, or TPH-mo analysis, following California Regional Water Quality Control Board February 16, 1999 memorandum

TBW = Tank backfill well

TOC = Top of casing

TPH-d = Total petroleum hydrocarbons quantitated as diesel - analyzed by EPA Method 8015B

TPH-g = Total petroleum hydrocarbons quantitated as gasoline - analyzed by EPA Method 8015B

TPH-k = Total petroleum hydrocarbons quantitated as kerosene - analyzed by EPA Method 8015B

TPH-mo = Total petroleum hydrocarbons quantitated as motor oil - analyzed by EPA Method 8015B

a = The analytical laboratory reviewed the data and noted that petroleum hydrocarbons quantified in the diesel range actually resemble heavier fuels at the front end of the motor oil pattern.

b = The analytical laboratory reviewed the data and noted that petroleum hydrocarbons quantified in the diesel range actually resemble lighter fuels; the response looks like lower carbon chain compounds close to the gasoline range.

c = The analytical laboratory reviewed the data and noted that the sample exhibits a fuel pattern that does not resemble the standard.

e = Results are estimated due to concentrations exceeding the calibration range.

f = Filtration with 0.45-micron glass membrane filter and silica gel treatment.

h = The analytical laboratory reviewed the data and noted that petroleum hydrocarbons quantified in the motor oil range are actually from the front end of the kerosene oil pattern.

i = The analytical laboratory reviewed the data and noted that petroleum hydrocarbons quantified in the motor oil range are actually from the back end of the kerosene oil pattern.

j = The analytical laboratory reviewed the data and noted that the sample exhibited an unknown peak or peaks.

B = Results flagged with "B" indicate motor oil was detected in the method blank.

B1 = Analyte detected in associated equipment blank.

C = Footnote assigned by Ninyo and Moore, not defined in their historical tables.

E = Footnote assigned by Ninyo and Moore, not defined in their historical tables.

F = Original and duplicate sample results RPD was greater than 30 percent.

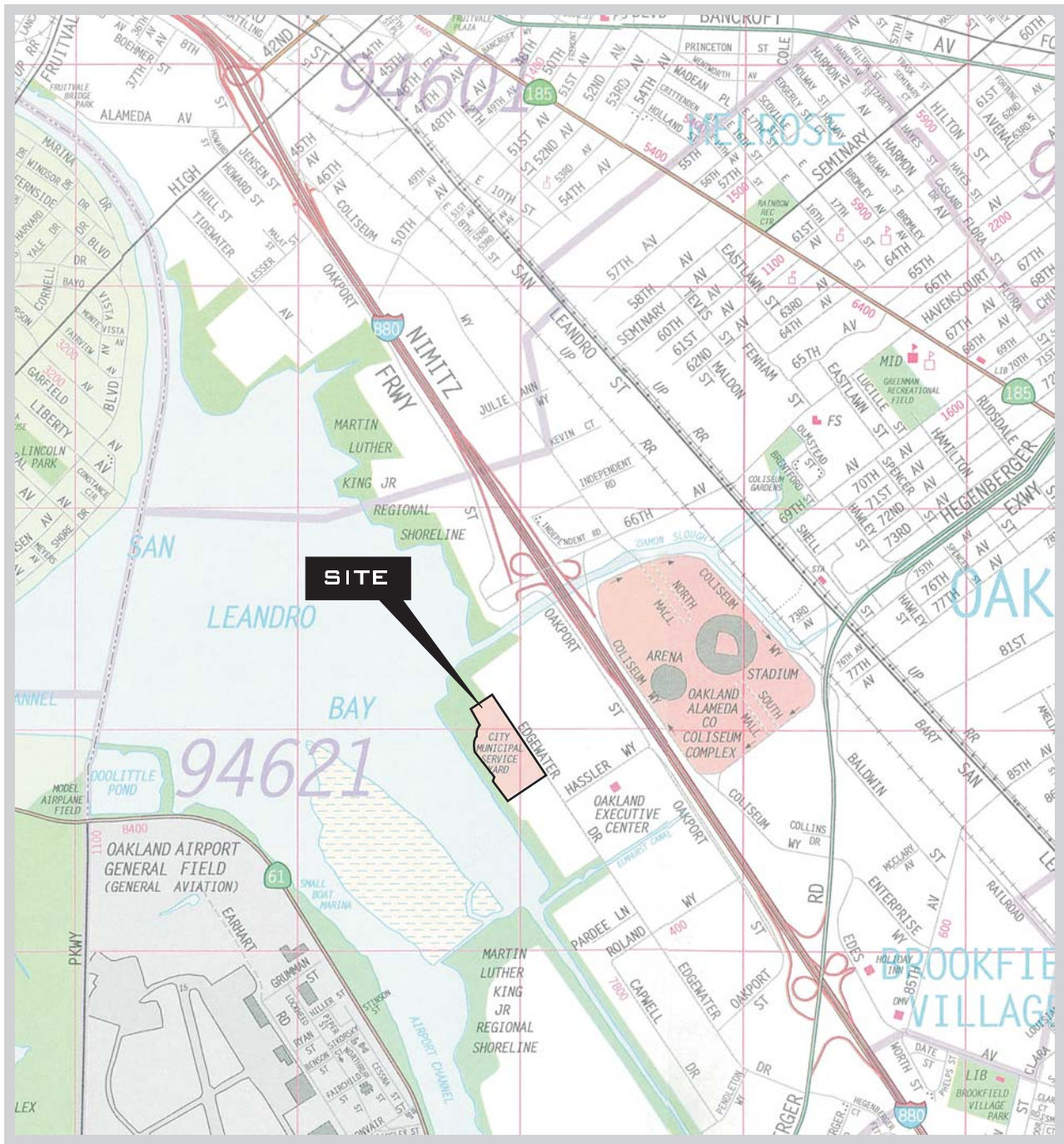
H = Heavier hydrocarbons contributed to the quantitation.

J = Value qualified as "estimated."

L = Lighter hydrocarbons contributed to the quantitation.

Y = Sample exhibits chromatographic pattern that does not resemble standard.

Z = Sample exhibits unknown single peak or peaks.



APPROXIMATE SCALE IN FEET

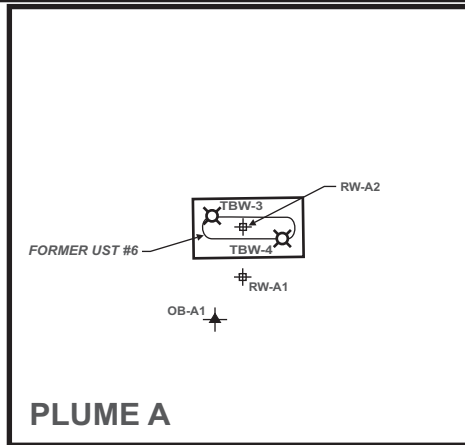
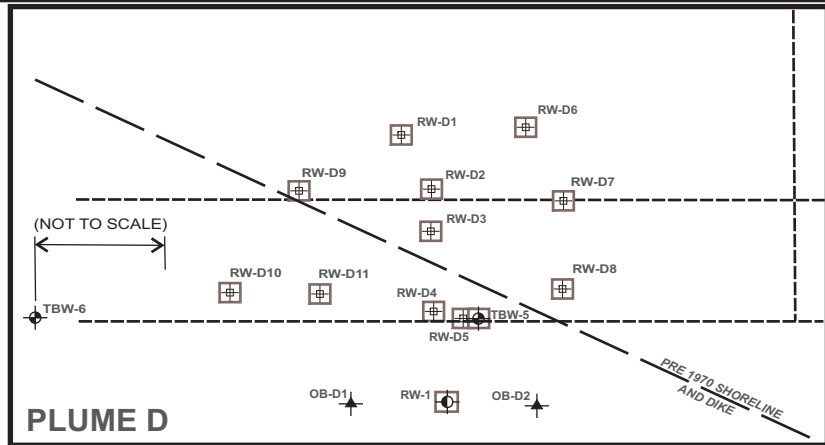
MUNICIPAL SERVICE CENTER  
7101 EDGEWATER DRIVE, OAKLAND, CALIFORNIA

**SITE VICINITY MAP**

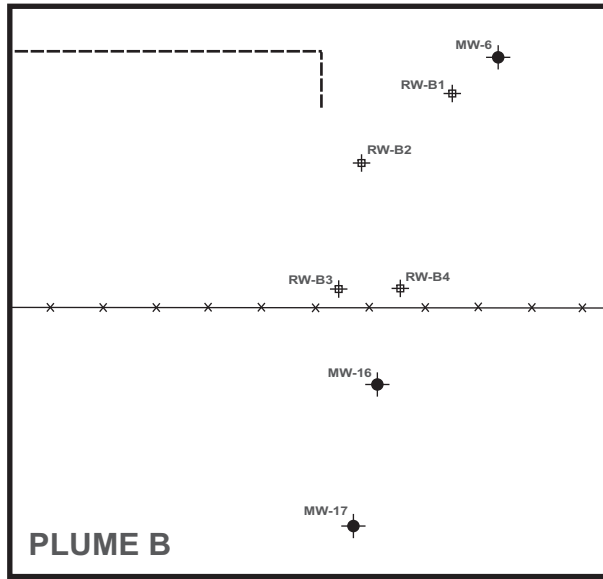
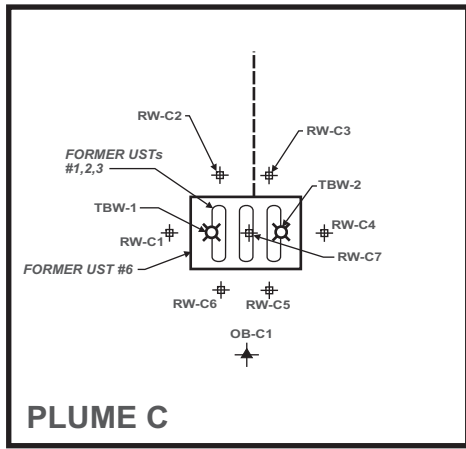


FIGURE  
**1**

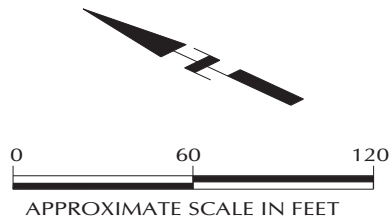




- EXPLANATION**
- RW-D1 EXTRACTION WELL LOCATION
  - RW-A1 TEST/OBSERVATION WELL LOCATION
  - OB-A1 OBSERVATION WELL LOCATION
  - MW-A6 MONITORING WELL LOCATION
  - RW-1 REMEDIATION WELL LOCATION
  - TBW-1 TANK BACKFILL WELL
  - ABANDONED WELL
  - x-x- FENCE
  - - - - - FORMER UNDERGROUND PIPING



- NOTES:**
- SPH WAS NOT DETECTED IN ANY WELLS WHERE DEPTH-TO-SPH MEASUREMENTS WERE COLLECTED IN OCTOBER 2010
  - SPH = SEPARATE PHASE HYDROCARBONS



NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE  
SOURCE: NINYO & MOORE - JULY 2004

MUNICIPAL SERVICE CENTER  
7101 EDGEWATER DRIVE, OAKLAND, CALIFORNIA

**DETAIL PLUME MAP  
OCTOBER 2010**

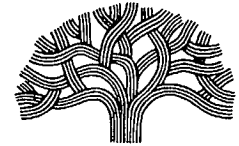
FIGURE  
**3**

**APPENDIX A**

**City of Oakland MSC Schedule and Protocol**



# CITY OF OAKLAND



DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 5301 • OAKLAND, CALIFORNIA 94612-2034

Public Works Agency  
Environmental Services

FAX (510) 238-7286  
TDD (510) 238-7644

November 6, 2009

Mr. Paresh Khatri  
Hazardous Materials Specialist  
Alameda County- Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Re: Revised Groundwater Monitoring Schedule- Fuel Leak Case No. RO0000293-7101  
Edgewater Drive, Municipal Service Center, Oakland, CA

Dear Mr. Khatri:

Thank you very much for our meeting on October 7, 2009 related to the above referenced project. Based on our discussions, we have reviewed the groundwater monitoring program, and have revised the sampling schedule. The recommendations for the revised sampling schedule are based on the contaminants concentrations, the site history, and the well locations.

Please see the attached table (Table 1) showing the revised monitoring schedule. It shows the proposed groundwater monitoring schedule for the sampling events in March 2010, September 2010, and September 2011 (annual) and thereafter. I have also attached a well location map as well as the existing monitoring schedule (Table 2) for comparison. Groundwater elevation and floating product (if any) measurements will be continued at all well locations, including the locations proposed for reduction in groundwater sampling and analysis. I request you to review and approve this revised monitoring plan.

If you have any questions, or would like additional information, please call me at (510) 238-6361.

Sincerely,

A handwritten signature in black ink that reads "Gopal Nair".

Gopal Nair  
Environmental Specialist

cc: Charles Pardini, LFR, Inc. (sent via email)

**Table 1 - Revised Well Sampling Schedule and Protocol**

City of Oakland Municipal Services Center

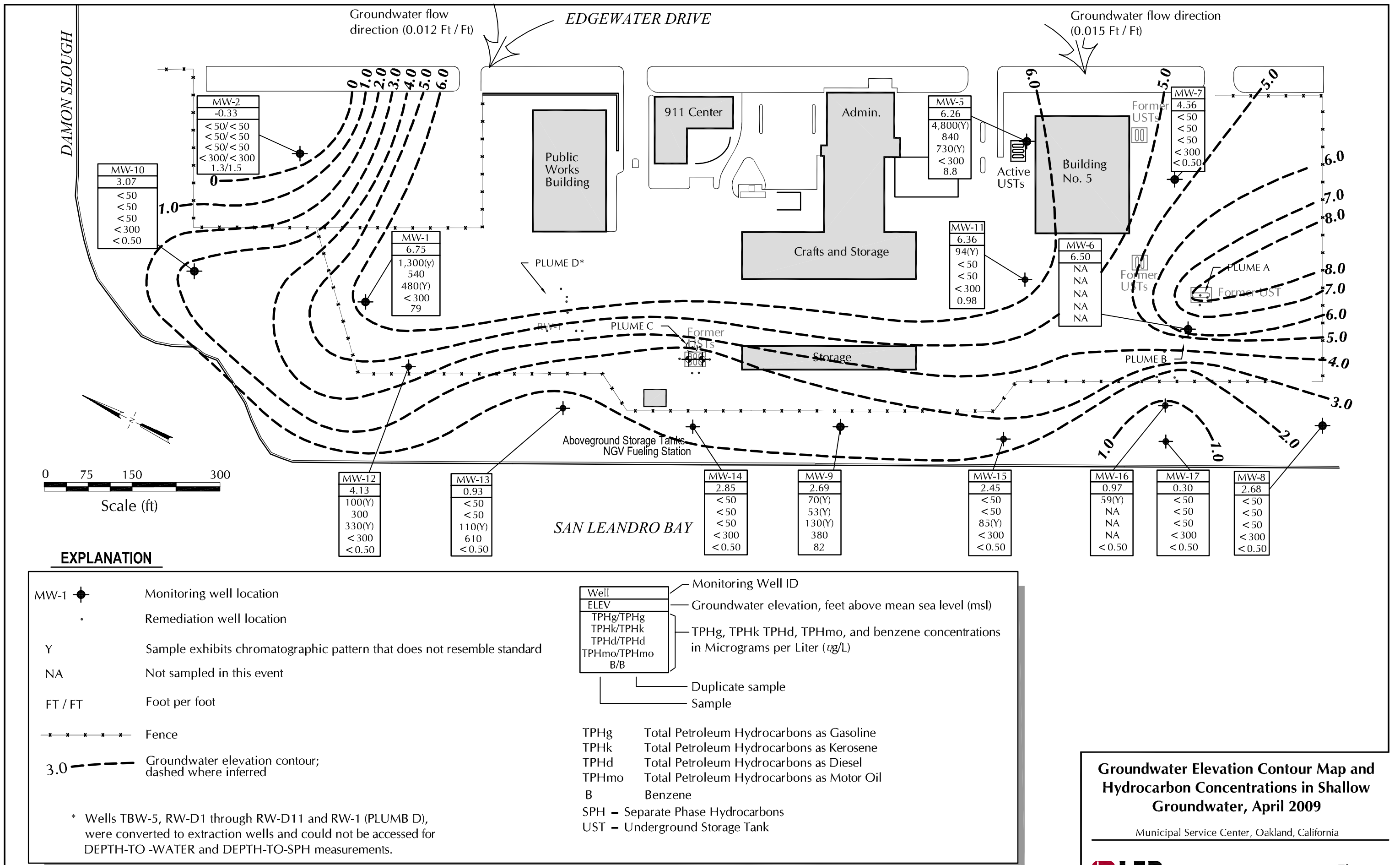
Well ID	Sampling Frequency			Elevation	Parameters to be Monitored								Notes
	March-2010 semi-annual	Sept-2010 semi-annual	Sept-2011 annual thereafter		Floating Product Thickness	pH	Dissolved Oxygen	Temp.	Specific Conduct.	TPH gas BTEX & MTBE	TPH d/k/mo		
MW-1	X	gauge only	X	X	X	X	X	X	X	X	X	benzene at 79 ug/L in April 09; interior well	
MW-2	gauge only	gauge only	gauge only	X	X							up/cross gradient well, benzene <2 ug/L since 07	
MW-3	closed/destroyed												
MW-4	closed/destroyed												
MW-5	X	gauge only	X	X	X	X	X	X	X	X	X	TPH-g still over 2,000 ug/L; near active USTs	
MW-6	gauge only	X	X	X	X	X	X	X	X	X	X	0.03" free-phase product in April 09	
MW-7	gauge only	gauge only	gauge only	X	X							upgradient well, only MTBE around 2 ug/L since 06	
MW-8	gauge only	gauge only	gauge only	X	X							ND for all constituents since Sept 02	
MW-9	X	X	X	X	X	X	X	X	X	X	X	benzene still at 82 ug/L in April 09; perimeter/sentinel well	
MW-10	X	gauge only	X	X	X	X	X	X	X	X	X	ND for everything except benzene around 10 ug/L since 08	
MW-11	gauge only	gauge only	gauge only	X	X							interior/upgradient well, only benzene around 5 ug/L since 05	
MW-12	X	gauge only	gauge only	X	X	X	X	X	X	X	X	TPH-g around 150 ug/L, benzene ND (<0.5) since 2002	
MW-13	X	X	X	X	X	X	X	X	X	X	X	only TPH-d around 100 ug/L, TPH-mo 600 ug/L since 06; perimeter/sentinel well	
MW-14	X	X	X	X	X	X	X	X	X	X	X	all ND in April 09, but TPHmo at 660 ug/l in Nov 08; perimeter/sentinel well	
MW-15	gauge only	gauge only	gauge only	X	X	X	X	X	X	X	X	only TPH-d around 100 ug/L since Sept 02; benzene ND since 04	
MW-16	gauge only	gauge only	gauge only	X	X							often dry/no water, MW-17 directly downgradient as sentinel well	
MW-17	X	gauge only	X	X	X	X	X	X	X	X	X	ND for all since 02, but directly downgradient of Plume B; perimeter/sentinel well	
MW-18	gauge only	gauge only	gauge only	X	X							not located since 2003, seach & apply for closure in 2010	
TBW-1	closed/destroyed												
TBW-2	closed/destroyed												
TBW-3	closed/destroyed												
TBW-4	closed/destroyed												
TBW-5	gauge only	gauge only	gauge only	X	X							remediation well	
TBW-6	gauge only	gauge only	gauge only	X	X							excavation backfill well	
RW-A1	gauge only	gauge only	gauge only	X	X							remediation well	
RW-A2	gauge only	gauge only	gauge only	X	X							remediation well	
OB-A1	gauge only	gauge only	gauge only	X	X							remediation observation well	
RW-B1	gauge only	gauge only	gauge only	X	X							remediation well	
RW-B2	gauge only	gauge only	gauge only	X	X							remediation well	
RW-B3	gauge only	gauge only	gauge only	X	X							remediation well	
RW-B4	gauge only	gauge only	gauge only	X	X							remediation well	
RW-C1	gauge only	gauge only	gauge only	X	X							remediation well	
RW-C2	gauge only	gauge only	gauge only	X	X							remediation well	
RW-C3	gauge only	gauge only	gauge only	X	X							remediation well	
RW-C4	gauge only	gauge only	gauge only	X	X							remediation well	
RW-C5	gauge only	gauge only	gauge only	X	X							remediation well	
RW-C6	gauge only	gauge only	gauge only	X	X							remediation well	
RW-C7	gauge only	gauge only	gauge only	X	X							remediation well	
OB-C1	gauge only	gauge only	gauge only	X	X							remediation observation well	
RW-D1	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D2	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D3	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D4	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D5	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D6	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D7	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D8	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D9	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D10	gauge only	gauge only	gauge only	X	X							remediation well	
RW-D11	gauge only	gauge only	gauge only	X	X							remediation well	
RW-1	gauge only	gauge only	gauge only	X	X							remediation well	
OB-D1	gauge only	gauge only	gauge only	X	X							remediation observation well	
OB-D2	gauge only	gauge only	gauge only	X	X							remediation observation well	
Notes:													
gauge only = measure groundwater elevation and floating product thickness only													
TPH d/k/mo = total petroleum hydrocarbons as diesel, kerosene, and motor oil after silica gel cleanup.													
an "X" in the column means the well will be sampled.													



Table 2 - Existing Well Sampling Schedule and Protocol as of October 2009

City of Oakland Municipal Services Center

Well ID	Monitoring Schedule		Parameters to be Monitored							
	March	September	Elevation	Floating	pH	Dissolved	Temp.	Specific	TPH gas	TPH
				Product		Oxygen		Conduct.	BTEX &	d/k/mo
				Thickness					MTBE	
MW-1	X	X	X	X	X	X	X	X	X	X
MW-2	X	gauge only	X	X	X	X	X	X	X	X
MW-3	closed/destroyed									
MW-4	closed/destroyed									
MW-5	X	X	X	X	X	X	X	X	X	X
MW-6	X	X	X	X	X	X	X	X	X	X
MW-7	X	gauge only	X	X	X	X	X	X	X	X
MW-8	X	X	X	X	X	X	X	X	X	X
MW-9	X	X	X	X	X	X	X	X	X	X
MW-10	X	X	X	X	X	X	X	X	X	X
MW-11	X	gauge only	X	X	X	X	X	X	X	X
MW-12	X	X	X	X	X	X	X	X	X	X
MW-13	X	X	X	X	X	X	X	X	X	X
MW-14	X	X	X	X	X	X	X	X	X	X
MW-15	X	X	X	X	X	X	X	X	X	X
MW-16	X	X	X	X	X	X	X	X	X	X
MW-17	X	X	X	X	X	X	X	X	X	X
MW-18	gauge only	gauge only	X	X						
TBW-1	gauge only	gauge only	X	X						
TBW-2	gauge only	gauge only	X	X						
TBW-3	gauge only	gauge only	X	X						
TBW-4	gauge only	gauge only	X	X						
TBW-5	gauge only	gauge only	X	X						
TBW-6	gauge only	gauge only	X	X						
RW-A1	gauge only	gauge only	X	X						
RW-A2	gauge only	gauge only	X	X						
OB-A1	gauge only	gauge only	X	X						
RW-B1	gauge only	gauge only	X	X						
RW-B2	gauge only	gauge only	X	X						
RW-B3	gauge only	gauge only	X	X						
RW-B4	gauge only	gauge only	X	X						
RW-C1	gauge only	gauge only	X	X						
RW-C2	gauge only	gauge only	X	X						
RW-C3	gauge only	gauge only	X	X						
RW-C4	gauge only	gauge only	X	X						
RW-C5	gauge only	gauge only	X	X						
RW-C6	gauge only	gauge only	X	X						
RW-C7	gauge only	gauge only	X	X						
OB-C1	gauge only	gauge only	X	X						
RW-D1	gauge only	gauge only	X	X						
RW-D2	gauge only	gauge only	X	X						
RW-D3	gauge only	gauge only	X	X						
RW-D4	gauge only	gauge only	X	X						
RW-D5	gauge only	gauge only	X	X						
OB-D1	gauge only	gauge only	X	X						
OB-D2	gauge only	gauge only	X	X						
Notes:										
gauge only = measure groundwater elevation and floating product thickness only										
TPH d/k/mo = total petroleum hydrocarbons as diesel, kerosene, and motor oil after silica gel cleanup.										



**Groundwater Elevation Contour Map and Hydrocarbon Concentrations in Shallow Groundwater, April 2009**  
Municipal Service Center, Oakland, California

**APPENDIX B**

**Groundwater Sampling Field Data Sheets**

Project No. LC010060.0013.00001

 Date October 19, 2010 Page 1 of 2

 Project Name Oakland MSC

 Day:  Sun  Mon  Tues  Weds  Thurs  Fri  Sat

 Field Personnel Andrea Valdivia and Brian Prowd

 General Observations MW-18 not found since 2003 - found well that we thought to be MW-18 (see data below)

Time Measured

WELL NO.	Time Opened	DEPTH TO WATER		WATER ELEVATION	WELL SECURE?		REMARKS (UNITS = FEET)
		1	2		Y	N	
MW-1	0810	5.48'	5.48'	1014	X		
MW-2	0910	7.02'	7.02'	1109	X		
MW-3	—	—	—	—	—		CLOSED/DESTROYED
MW-4	—	—	—	—	—		CLOSED/DESTROYED
MW-5	0905	6.44'	6.44'	1100	X		No bolts
MW-6	0853	5.88'	5.88'	1059.4	X		TD=13.95'
MW-7	0902	7.05'	7.05'	1058	X		No bolts
MW-8	0928	9.61'	9.61'	1132	X		
MW-9	0921	8.37'	8.37'	1123	X		1 bolt missing TD=14.15'
MW-10	0914	7.38'	7.38'	1114	X		1 bolt missing
MW-11	0852	6.67'	6.67'	1102	X		15/16
MW-12	0916	7.85'	7.85'	1016	X		
MW-13	0917	9.50'	9.50'	1118	X		No bolts TD=20.25'
MW-14	0920	7.23'	7.23'	1138	X		1 bolt missing TD=14.38'
MW-15	0924	10.21'	10.21'	1125	X		1 bolt missing
MW-16	0925	10.98'	10.98'	1128	X		No bolts
MW-17	0926	6.82'	6.82'	1129	X		No bolts
MW-18	1107	6.78'	6.78'	1114	X		Bolts rusted in box a bit
TBW-1	—	—	—	—	—		CLOSED/DESTROYED
TBW-2	—	—	—	—	—		CLOSED/DESTROYED
TBW-3	—	—	—	—	—		CLOSED/DESTROYED
TBW-4	—	—	—	—	—		CLOSED/DESTROYED
TBW-5	0846	6.91'	6.91'	1033	X		
TBW-6	0852	4.79'	4.79'	1012	X		
RW-A1	0902	4.22'	4.22'	1056	X		
RW-A2	0904	3.72'	3.72'	1057	X		
CB-A1	0901	5.09'	5.09'	1055	X		
RW-B1	0855	7.66'	7.66'	1058.3	X		
RW-B2	0856	7.67'	7.67'	1057.2	X		
RW-B3	0857	9.50'	9.50'	1058.0	X		
RW-B4	0858	9.80'	9.80'	1056.1	X		
RW-C1	0948	5.57'	5.57'	0958	X		



Project No. LC010060.0013.00001 Date: October 19, 2010 Page 1 of 1  
 Project Name: MSC Oakland Edgewater Sampling Location: 7101 Edgewater Drive, Oakland, Ca  
 Sampler's Name: Brian Proulx/Andres Valdivia Sample No.: MW-13  FB  
 Sampling Plan By: DCR Dated: 10/18/10 C.O.C. No.: \_\_\_\_\_  DUP \_\_\_\_\_  
 Purge Method:  Centrifugal Pump  Disposable Bailer  Hand Bail  Submersible Pump  Teflon Bailer  Other \_\_\_\_\_  
 Purge Water Storage Container Type: 55 gallon drum Storage Location: On-site  
 Date Purge Water Disposed: \_\_\_\_\_ Where Disposed: On-site

**Analyses Requested** **No. and Type of Bottles Used**  
TPHg / BTEX / MTBE by 8260 3 VOAs with HCl preservative  
TPHd / TPHmo / TPHk by 8010 with silica gel clean-up 1 Liter Amber  
 Lab Name: Curtis and Tompkins  
 Delivery By  Courier  Hand

Well No. MW-13 Depth of Water 9.50'  
 Well Diameter: 2" Well Depth 20.25'  
 2" (0.16 gal/feet)  5" (1.02 gal/feet) Water Column Height 10.75'  
 4" (0.65 gal/feet)  6" (1.47 gal/feet) Well Volume 1.72 gallons

80% DTW \_\_\_\_\_

Time	Inlet Depth	Depth to Water	Volume Purged (gal)	DO (mg/L)	Temperature (C°)	PH (SU)	Cond (uS/cm C)	ORP (mV)	Turbo NTU	Remarks	
1236	—	9.50'	0	2.51	21.1	6.76	11.3	-53	110.0		
1239	—	—	2.0	2.74	20.0	6.93	15.0	-83	—		
1242	—	—	~4.0	2.74	19.4	6.98	15.6	-83	—		
1245	—	—	~5.5	2.70	19.4	6.93	16.2	-76	—		
1255	End	—————→								Sample Collected	

Project No. LC010060.0013.00001 Date: 10/19/10 Page 1 of 1

Project Name: MSC Oakland Edgewater Sampling Location: 7101 Edgewater Drive, Oakland, Ca

Sampler's Name: Brian Proud/A. Vaidya Sample No.: MW-14  FB

Sampling Plan By: DCR Dated: 10/18/10 C.O.C. No.: \_\_\_\_\_  DUP

Purge Method:  Centrifugal Pump  Disposable Bailer  Hand Bail  Submersible Pump  Teflon Bailer  Other \_\_\_\_\_

Purge Water Storage Container Type: 55 gallon drum Storage Location: On-site

Date Purge Water Disposed: \_\_\_\_\_ Where Disposed: On-site

Analyses Requested	No. and Type of Bottles Used
<u>TPHg / BTEX / MTBE by 8260</u>	<u>3 VOAs with HCl preservative</u>
<u>TPHd / TPHmo / TPHk by 8010 with silica gel clean-up</u>	<u>1 Liter Amber</u>
Lab Name: <u>Curtis and Tompkins</u>	
Delivery By <input type="checkbox"/> Courier <input checked="" type="checkbox"/> Hand	

Well No. MW-14 Depth of Water 7.23'  
 Well Diameter: 2" Well Depth 14.38'  
 2" (0.16 gal/feet)  5" (1.02 gal/feet) Water Column Height 7.15'  
 4" (0.65 gal/feet)  6" (1.47 gal/feet) Well Volume 1.14

80% DTW \_\_\_\_\_

Time	Inlet Depth	Depth to Water	Volume Purged (gal)	DO (mg/L)	Temperature (C°)	PH (SU)	Cond (uS/cm C)	ORP (mV)	Turb. (NTU)	Remarks	
1300	Start	7.23'	0	2.25	20.4	7.56	14.4	-111	936		
1303		—	1.5	2.19	20.7	7.59	14.0	-151	—		
1305		—	2.75	2.21	20.7	7.62	14.0	-154	—		
1307		—	3.5	2.15	20.8	7.64	14.0	-151	—		
1315	End	—————→									Sample

Project No. LC010060.0013.00001 Date: 10/19/10 Page 1 of 1  
 Project Name: MSC Oakland Edgewater Sampling Location: 7101 Edgewater Drive, Oakland, Ca  
 Sampler's Name: Brian Proud/Andrea Valdivia Sample No.: MW-9  FB  
 Sampling Plan By: DCR Dated: 10/18/10 C.O.C. No.: \_\_\_\_\_  DUP  
 Purge Method:  Centrifugal Pump  Disposable Bailer  Hand Bail  Submersible Pump  Teflon Bailer  Other \_\_\_\_\_  
 Purge Water Storage Container Type: 55 gallon drum Storage Location: On-site  
 Date Purge Water Disposed: \_\_\_\_\_ Where Disposed: On-site

Analyses Requested	No. and Type of Bottles Used
<u>TPHg / BTEX / MTBE by 8260</u>	<u>3 VOAs with HCl preservative</u>
<u>TPHd / TPHmo / TPHk by 8010 with silica gel clean-up</u>	<u>1 Liter Amber</u>
Lab Name: <u>Curtis and Tompkins</u>	
Delivery By <input type="checkbox"/> Courier <input checked="" type="checkbox"/> Hand	

Well No. MW-9 Depth of Water 8.37'  
 Well Diameter: 2" Well Depth 14.15'  
 2" (0.16 gal/feet)  5" (1.02 gal/feet) Water Column Height 5.78'  
 4" (0.65 gal/feet)  6" (1.47 gal/feet) Well Volume 0.92

Sample is reactive to HCl - bubbles

80% DTW \_\_\_\_\_

Time	Inlet Depth	Depth to Water	Volume Purged (gal)	DO (mg/L)	Temperature (C°)	PH (SU)	Cond (uS/cm C)	ORP (mV)	Turb (NTU)	Remarks	
1318	Start	8.37'	0	2.40	21.4	7.14	19.9	-12.9	<del>186.0</del> 21.4		
1322		—	1.0	2.01	21.2	7.09	20.4	-132	186.0		
1324		—	2.0	2.07	21.0	7.11	21.4	-133	336.0		
1326		—	3.0	2.04	20.6	7.13	22.1	-134	860.0		
1330	End	—————→								Sample	





# WATER-QUALITY SAMPLING LOG

Project No. LC010060.0013.00001 Date: 10/19/10 Page 1 of 1

Project Name: MSC Oakland Edgewater Sampling Location: 7101 Edgewater Drive, Oakland, Ca

Sampler's Name: Brian Proulx / Andrea Valdivia Sample No.: MW-6  FB @ 1420

Sampling Plan By: DCR Dated: 10/18/10 C.O.C. No.: \_\_\_\_\_  DUP MW-6-DP

Purge Method:  Centrifugal Pump  Disposable Bailer  Hand Bail  Submersible Pump  Teflon Bailer  Other \_\_\_\_\_

Purge Water Storage Container Type: 55 gallon drum Storage Location: On-site

Date Purge Water Disposed: \_\_\_\_\_ Where Disposed: On-site

Analyses Requested	No. and Type of Bottles Used
<u>TPHg / BTEX / MTBE by 8260</u>	<u>3 VOAs with HCl preservative</u>
<u>TPHd / TPHmo / TPHk by 8010 with silica gel clean-up</u>	<u>1 Liter Amber</u>
Lab Name: <u>Curtis and Tompkins</u>	
Delivery By <input type="checkbox"/> Courier	<input checked="" type="checkbox"/> Hand

Well No. MW-6 Depth of Water 5.88'  
 Well Diameter: 2" Well Depth 13.95'  
 2" (0.16 gal/feet)  5" (1.02 gal/feet) Water Column Height 8.07'  
 4" (0.65 gal/feet)  6" (1.47 gal/feet) Well Volume 1.29

80% DTW \_\_\_\_\_

Time	Inlet Depth	Depth to Water	Volume Purged (gal)	DO (mg/L)	Temperature (C°)	PH (SU)	Cond (uS/cm @)	ORP (mV)	Turb (NTU)	Remarks
1431	Start	5.88'	∅	2.43	22.8	7.13	3.52	-33	11.6	
1434		—	1.5	2.39	22.8	7.09	3.21	-68	—	
1436		—	3.0	2.46	22.5	7.16	3.32	-48	—	
1438		—	4.0	2.49	22.4	7.06	3.30	-5	—	
1445	End	—————→								Sample
1450		—————→								Duplicate
1420		—————→								Field Blank

## **APPENDIX C**

### **Laboratory Results and Chain-of-Custody Documentation**



Curtis & Tompkins, Ltd.

Analytical Laboratories, Since 1878



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

**Laboratory Job Number 223317  
ANALYTICAL REPORT**

Arcadis  
1900 Powell St.  
Emeryville, CA 94608

Project : LC010060.0013.00001  
Location : MSC Oakland  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
TRIP BLANK	223317-001
MW-13	223317-002
MW-14	223317-003
MW-9	223317-004
MW-6-FB	223317-005
MW-6	223317-006
MW-6-DUP	223317-007

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: \_\_\_\_\_

Project Manager

Date: 10/26/2010

NELAP # 01107CA

### CASE NARRATIVE

Laboratory number: 223317  
Client: Arcadis  
Project: LC010060.0013.00001  
Location: MSC Oakland  
Request Date: 10/19/10  
Samples Received: 10/19/10

This data package contains sample and QC results for six water samples, requested for the above referenced project on 10/19/10. The samples were received cold and intact. All data were e-mailed to Daren Roth on 10/26/10.

**TPH-Extractables by GC (EPA 8015B):**

No analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B):**

MW-6 (lab # 223317-006) and MW-6-DUP (lab # 223317-007) had pH greater than 2. No other analytical problems were encountered.



COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 223317 Date Received 10/19/10 Number of coolers 1
Client ARCADIS Project MSC OAKLAND

Date Opened 10/19/10 By (print) M. Villanueva (sign) [Signature]
Date Logged in By (print) [Signature] (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... YES (circle) on cooler on samples NO
How many Name Date

2B. Were custody seals intact upon arrival? YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe)

- Bubble Wrap, Foam blocks, Bags, None, Cloth material, Cardboard, Styrofoam, Paper towels

7. Temperature documentation:

Type of ice used: Wet Blue/Gel None Temp(°C) 2.2

Samples Received on ice & cold without a temperature blank

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
If YES, what time were they transferred to freezer?

9. Did all bottles arrive unbroken/unopened? YES NO

10. Are samples in the appropriate containers for indicated tests? YES NO

11. Are sample labels present, in good condition and complete? YES NO

12. Do the sample labels agree with custody papers? YES NO

13. Was sufficient amount of sample sent for tests requested? YES NO

14. Are the samples appropriately preserved? YES NO N/A

15. Are bubbles > 6mm absent in VOA samples? YES NO N/A

16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

Multiple horizontal lines for handwritten comments.

Total Extractable Hydrocarbons			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 3520C
Project#:	LC010060.0013.00001	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	10/19/10
Units:	ug/L	Received:	10/19/10
Diln Fac:	1.000	Prepared:	10/20/10
Batch#:	168172	Analyzed:	10/21/10

Field ID: MW-13  
Type: SAMPLE

Lab ID: 223317-002  
Cleanup Method: EPA 3630C

Analyte	Result	RL
Kerosene C10-C16	ND	50
Diesel C10-C24	150 Y	50
Motor Oil C24-C36	940	300

Surrogate	%REC	Limits
o-Terphenyl	87	60-129

Field ID: MW-14  
Type: SAMPLE

Lab ID: 223317-003  
Cleanup Method: EPA 3630C

Analyte	Result	RL
Kerosene C10-C16	110	50
Diesel C10-C24	210	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	94	60-129

Field ID: MW-9  
Type: SAMPLE

Lab ID: 223317-004  
Cleanup Method: EPA 3630C

Analyte	Result	RL
Kerosene C10-C16	ND	50
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	94	60-129

Field ID: MW-6-FB  
Type: SAMPLE

Lab ID: 223317-005  
Cleanup Method: EPA 3630C

Analyte	Result	RL
Kerosene C10-C16	ND	50
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

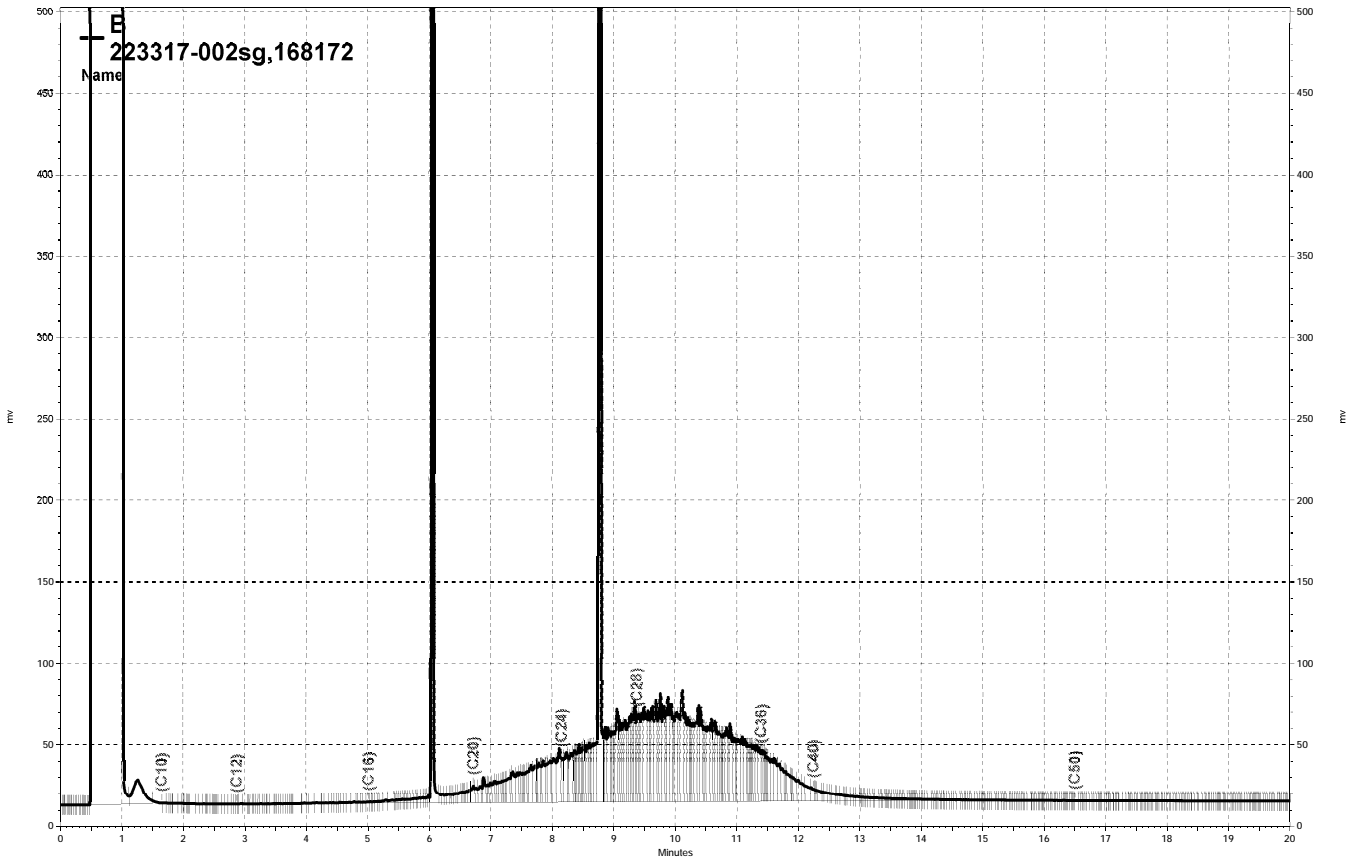
Surrogate	%REC	Limits
o-Terphenyl	92	60-129

Y= Sample exhibits chromatographic pattern which does not resemble standard  
ND= Not Detected  
RL= Reporting Limit

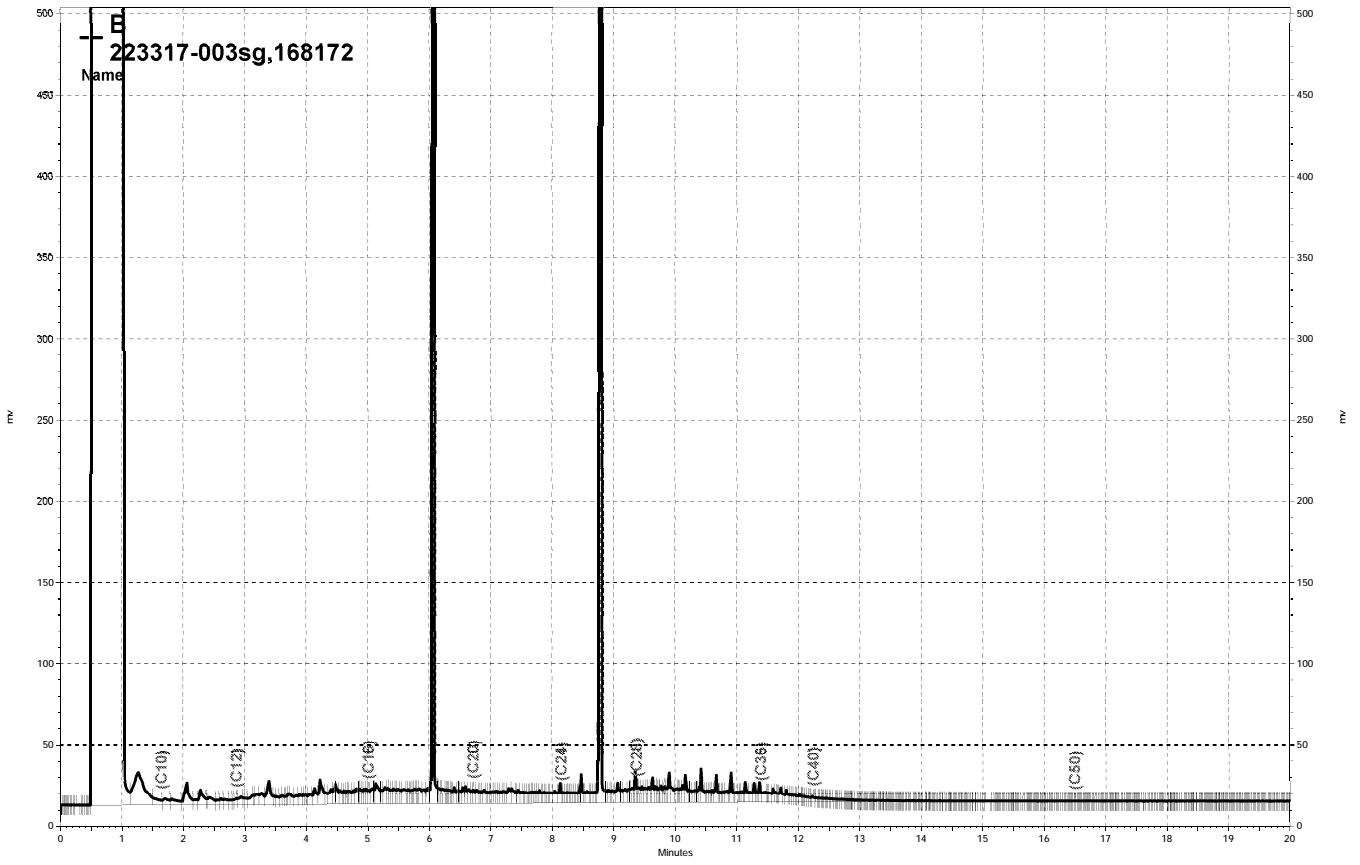




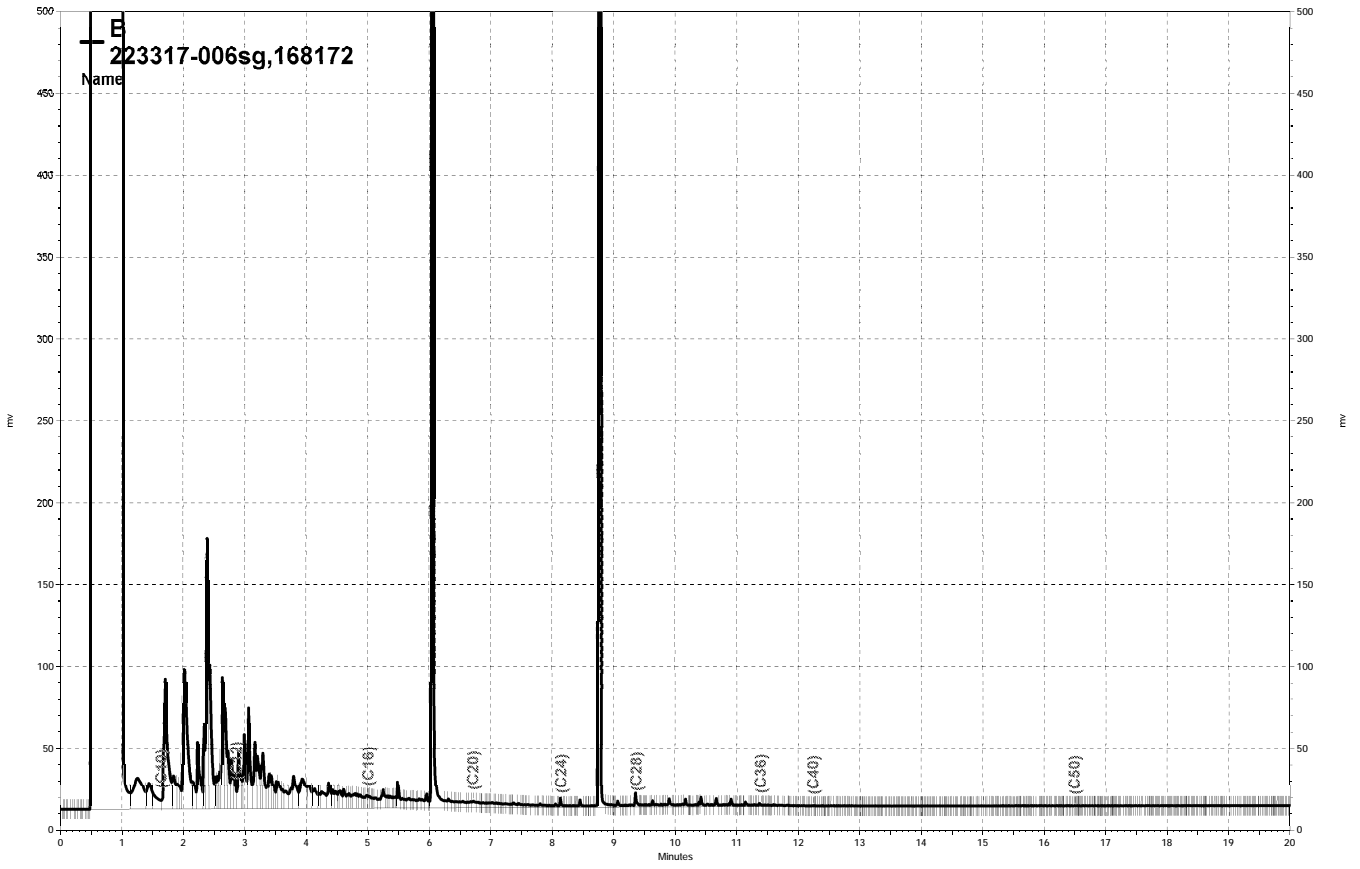




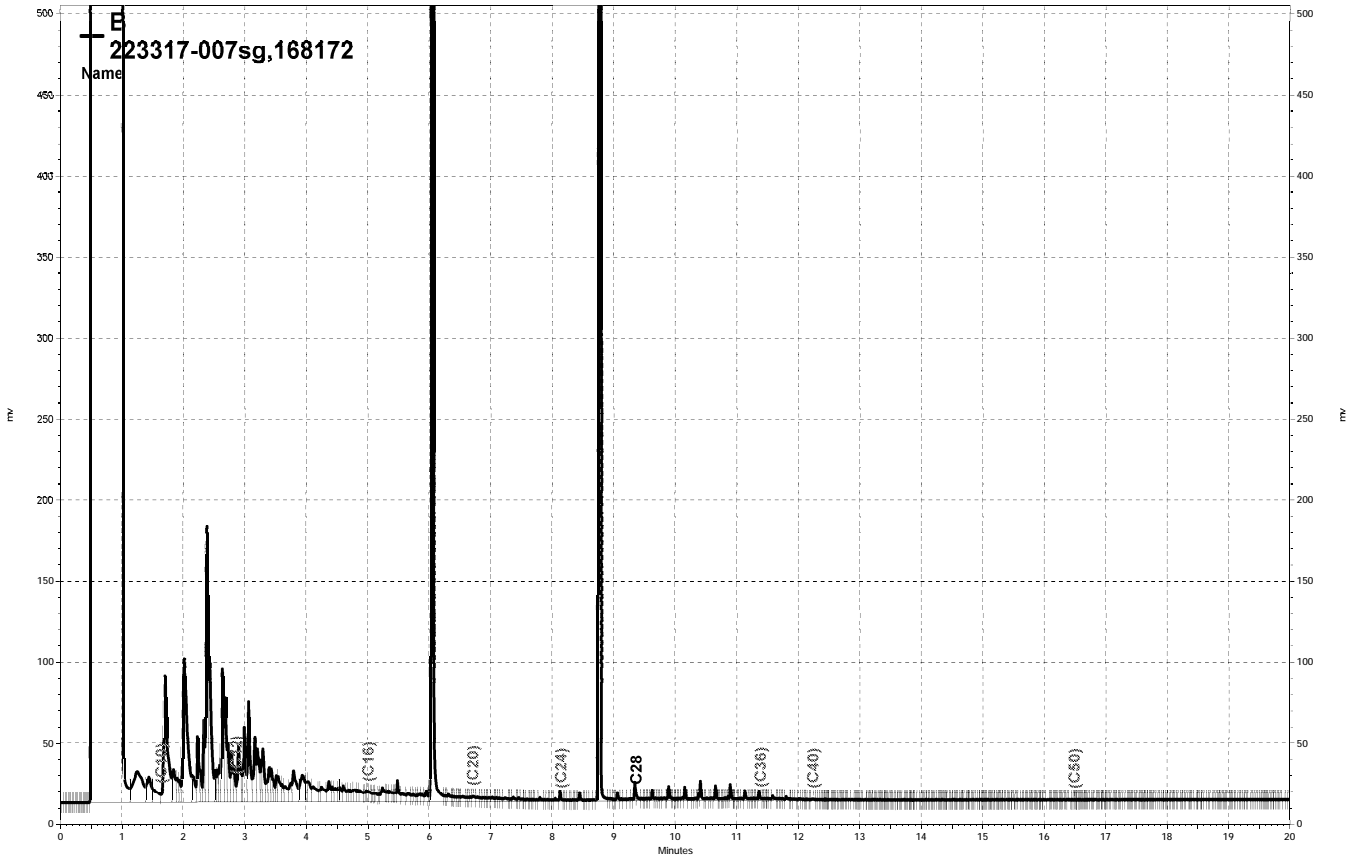
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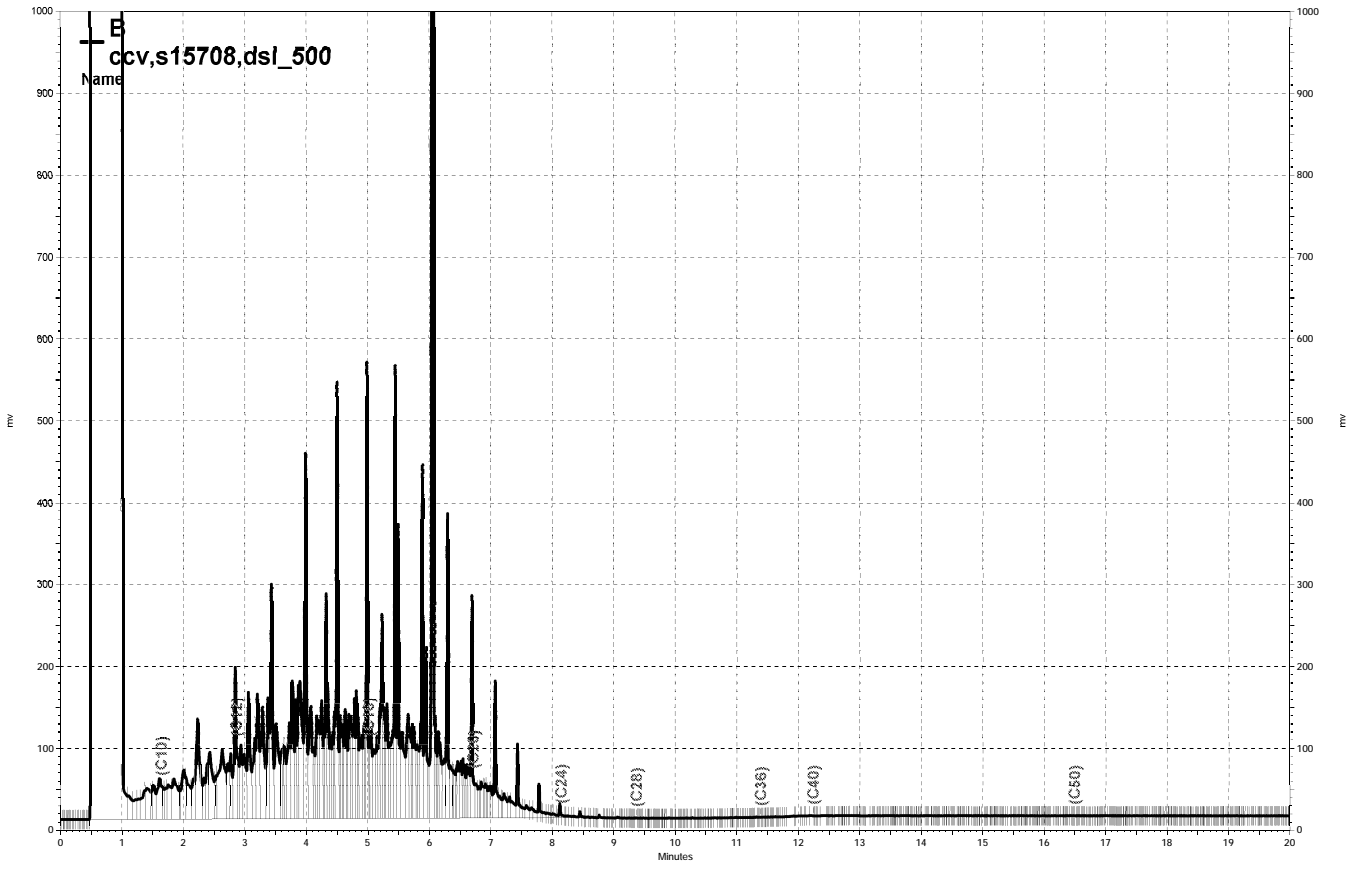
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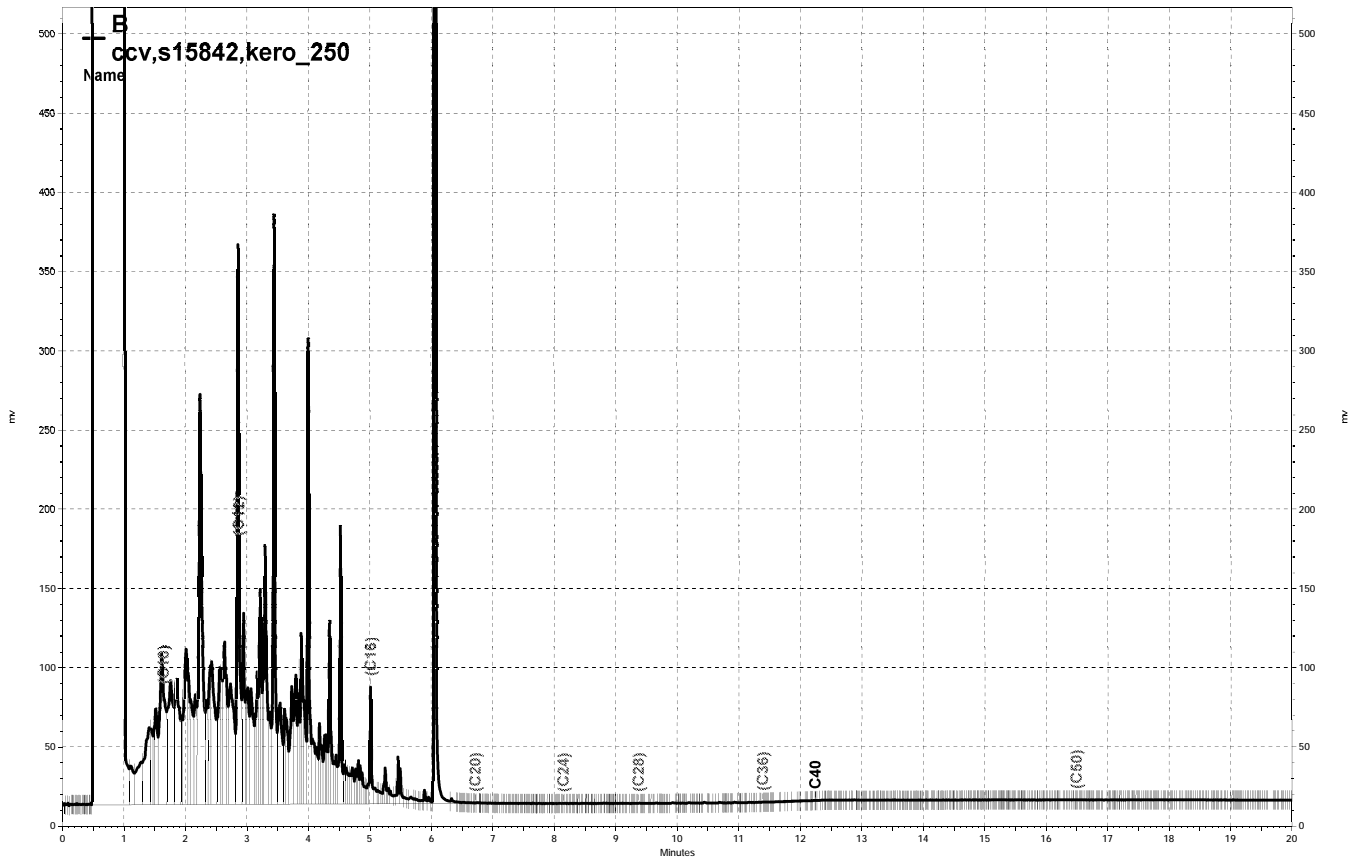
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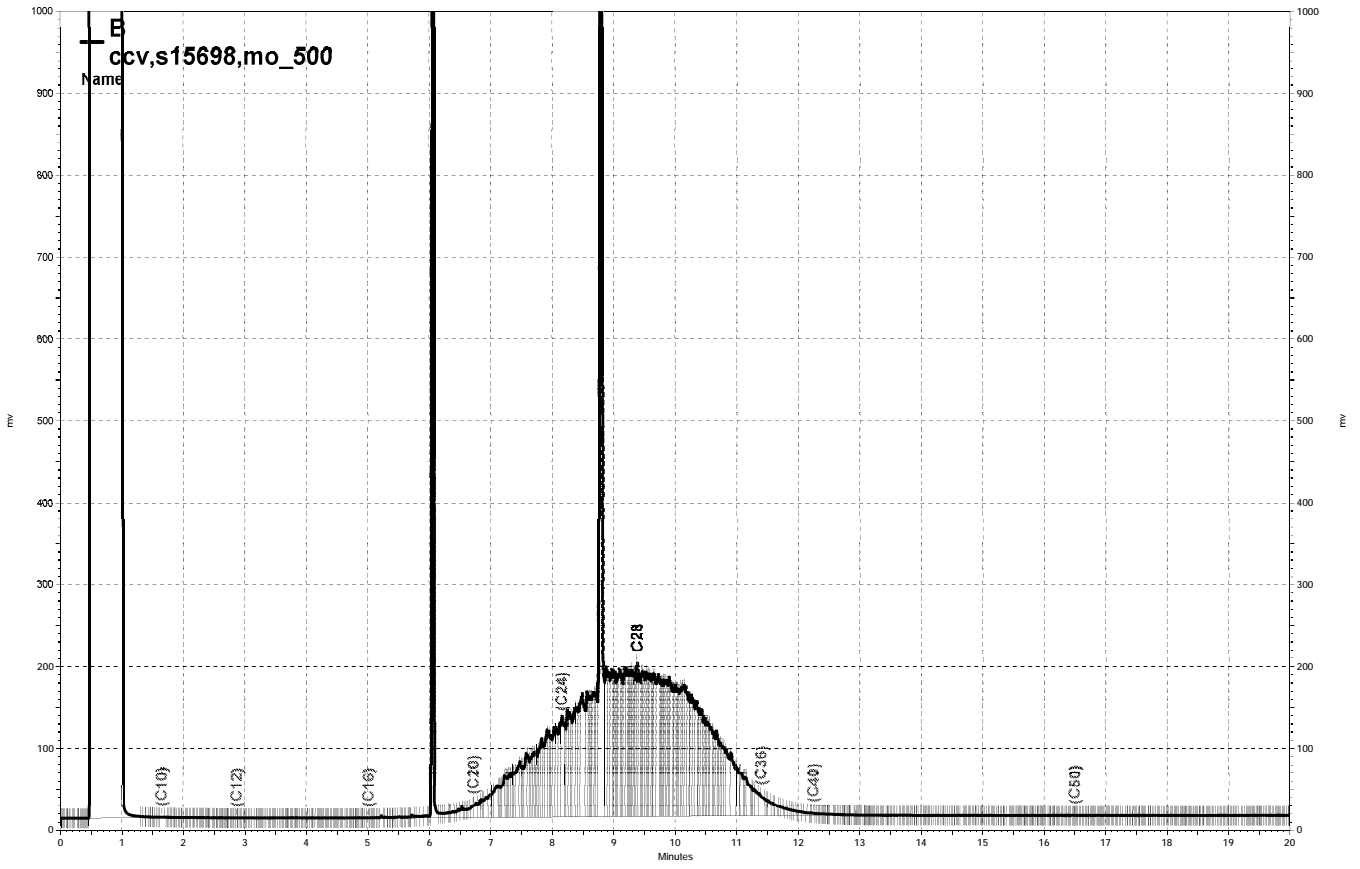


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Gasoline by GC/MS			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	10/19/10
Units:	ug/L	Received:	10/19/10

Field ID:	MW-9	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	168144
Lab ID:	223317-004	Analyzed:	10/20/10

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	0.51	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	88	80-122
1,2-Dichloroethane-d4	109	71-140
Toluene-d8	98	80-120
Bromofluorobenzene	90	80-121

Field ID:	MW-6-FB	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	168144
Lab ID:	223317-005	Analyzed:	10/20/10

Analyte	Result	RL
Gasoline C7-C12	ND	50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	88	80-122
1,2-Dichloroethane-d4	109	71-140
Toluene-d8	95	80-120
Bromofluorobenzene	90	80-121

ND= Not Detected  
 RL= Reporting Limit

Gasoline by GC/MS			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	10/19/10
Units:	ug/L	Received:	10/19/10

Field ID: MW-6 Diln Fac: 2.000  
 Type: SAMPLE Batch#: 168289  
 Lab ID: 223317-006 Analyzed: 10/25/10

Analyte	Result	RL
Gasoline C7-C12	620	100
MTBE	3.3	1.0
Benzene	100	1.0
Toluene	1.7	1.0
Ethylbenzene	ND	1.0
m,p-Xylenes	2.0	1.0
o-Xylene	ND	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-122
1,2-Dichloroethane-d4	102	71-140
Toluene-d8	97	80-120
Bromofluorobenzene	90	80-121

Field ID: MW-6-DUP Diln Fac: 2.000  
 Type: SAMPLE Batch#: 168236  
 Lab ID: 223317-007 Analyzed: 10/22/10

Analyte	Result	RL
Gasoline C7-C12	610	100
MTBE	3.1	1.0
Benzene	110	1.0
Toluene	1.6	1.0
Ethylbenzene	ND	1.0
m,p-Xylenes	1.4	1.0
o-Xylene	ND	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	87	80-122
1,2-Dichloroethane-d4	107	71-140
Toluene-d8	97	80-120
Bromofluorobenzene	89	80-121

ND= Not Detected  
 RL= Reporting Limit





## Batch QC Report

Gasoline by GC/MS			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	168144
Units:	ug/L	Analyzed:	10/20/10
Diln Fac:	1.000		

Type: BS Lab ID: QC565058

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	20.98	84	66-120
Benzene	25.00	23.63	95	80-122
Toluene	25.00	24.81	99	80-120
Ethylbenzene	25.00	24.92	100	80-123
m,p-Xylenes	50.00	52.17	104	80-126
o-Xylene	25.00	25.86	103	80-122

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-122
1,2-Dichloroethane-d4	106	71-140
Toluene-d8	97	80-120
Bromofluorobenzene	89	80-121

Type: BSD Lab ID: QC565059

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	20.27	81	66-120	3	20
Benzene	25.00	22.89	92	80-122	3	20
Toluene	25.00	24.09	96	80-120	3	20
Ethylbenzene	25.00	24.51	98	80-123	2	20
m,p-Xylenes	50.00	50.50	101	80-126	3	20
o-Xylene	25.00	24.94	100	80-122	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	88	80-122
1,2-Dichloroethane-d4	106	71-140
Toluene-d8	97	80-120
Bromofluorobenzene	90	80-121

RPD= Relative Percent Difference

## Batch QC Report

Gasoline by GC/MS			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	168144
Units:	ug/L	Analyzed:	10/20/10
Diln Fac:	1.000		

Type: BS Lab ID: QC565103

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,051	105	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-122
1,2-Dichloroethane-d4	107	71-140
Toluene-d8	96	80-120
Bromofluorobenzene	89	80-121

Type: BSD Lab ID: QC565104

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	1,013	101	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	87	80-122
1,2-Dichloroethane-d4	108	71-140
Toluene-d8	96	80-120
Bromofluorobenzene	90	80-121

RPD= Relative Percent Difference



**Batch QC Report**

<b>Gasoline by GC/MS</b>			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	168236
Units:	ug/L	Analyzed:	10/22/10
Diln Fac:	1.000		

Type: BS Lab ID: QC565397

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	20.42	82	66-120
Benzene	25.00	23.50	94	80-122
Toluene	25.00	24.06	96	80-120
Ethylbenzene	25.00	25.07	100	80-123
m,p-Xylenes	50.00	51.32	103	80-126
o-Xylene	25.00	25.10	100	80-122

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-122
1,2-Dichloroethane-d4	109	71-140
Toluene-d8	98	80-120
Bromofluorobenzene	89	80-121

Type: BSD Lab ID: QC565398

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	21.57	86	66-120	5	20
Benzene	25.00	24.21	97	80-122	3	20
Toluene	25.00	24.82	99	80-120	3	20
Ethylbenzene	25.00	25.65	103	80-123	2	20
m,p-Xylenes	50.00	52.18	104	80-126	2	20
o-Xylene	25.00	25.93	104	80-122	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	91	80-122
1,2-Dichloroethane-d4	108	71-140
Toluene-d8	97	80-120
Bromofluorobenzene	90	80-121

RPD= Relative Percent Difference

## Batch QC Report

Gasoline by GC/MS			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	168236
Units:	ug/L	Analyzed:	10/22/10
Diln Fac:	1.000		

Type: BS Lab ID: QC565442

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,107	111	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	89	80-122
1,2-Dichloroethane-d4	110	71-140
Toluene-d8	97	80-120
Bromofluorobenzene	89	80-121

Type: BSD Lab ID: QC565443

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	989.7	99	80-120	11	20

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-122
1,2-Dichloroethane-d4	107	71-140
Toluene-d8	96	80-120
Bromofluorobenzene	91	80-121

RPD= Relative Percent Difference

Batch QC Report

Gasoline by GC/MS			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	168289
Units:	ug/L	Analyzed:	10/25/10
Diln Fac:	1.000		

Type: BS Lab ID: QC565617

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	20.20	81	66-120
Benzene	25.00	22.63	91	80-122
Toluene	25.00	23.57	94	80-120
Ethylbenzene	25.00	23.80	95	80-123
m,p-Xylenes	50.00	49.44	99	80-126
o-Xylene	25.00	24.50	98	80-122

Surrogate	%REC	Limits
Dibromofluoromethane	88	80-122
1,2-Dichloroethane-d4	103	71-140
Toluene-d8	96	80-120
Bromofluorobenzene	88	80-121

Type: BSD Lab ID: QC565618

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	19.82	79	66-120	2	20
Benzene	25.00	22.16	89	80-122	2	20
Toluene	25.00	23.32	93	80-120	1	20
Ethylbenzene	25.00	23.62	94	80-123	1	20
m,p-Xylenes	50.00	48.09	96	80-126	3	20
o-Xylene	25.00	24.37	97	80-122	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	89	80-122
1,2-Dichloroethane-d4	101	71-140
Toluene-d8	98	80-120
Bromofluorobenzene	88	80-121

RPD= Relative Percent Difference

Batch QC Report

Gasoline by GC/MS			
Lab #:	223317	Location:	MSC Oakland
Client:	Arcadis	Prep:	EPA 5030B
Project#:	LC010060.0013.00001	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	168289
Units:	ug/L	Analyzed:	10/25/10
Diln Fac:	1.000		

Type: BS Lab ID: QC565645

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,073	107	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	89	80-122
1,2-Dichloroethane-d4	104	71-140
Toluene-d8	97	80-120
Bromofluorobenzene	90	80-121

Type: BSD Lab ID: QC565646

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	1,044	104	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	88	80-122
1,2-Dichloroethane-d4	104	71-140
Toluene-d8	98	80-120
Bromofluorobenzene	89	80-121

RPD= Relative Percent Difference

Date : 20-OCT-2010 15:52

Client ID: DYNA P&T

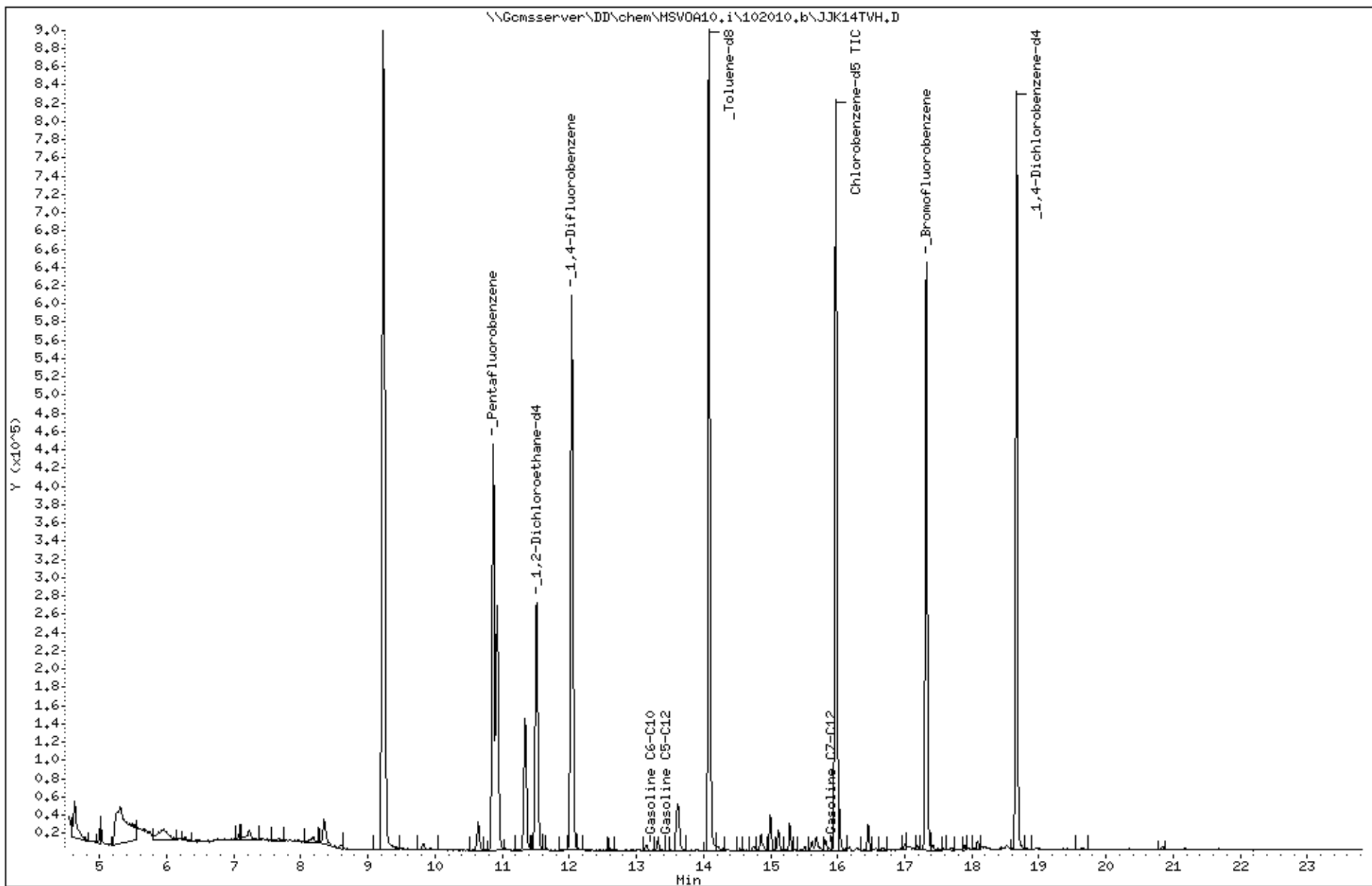
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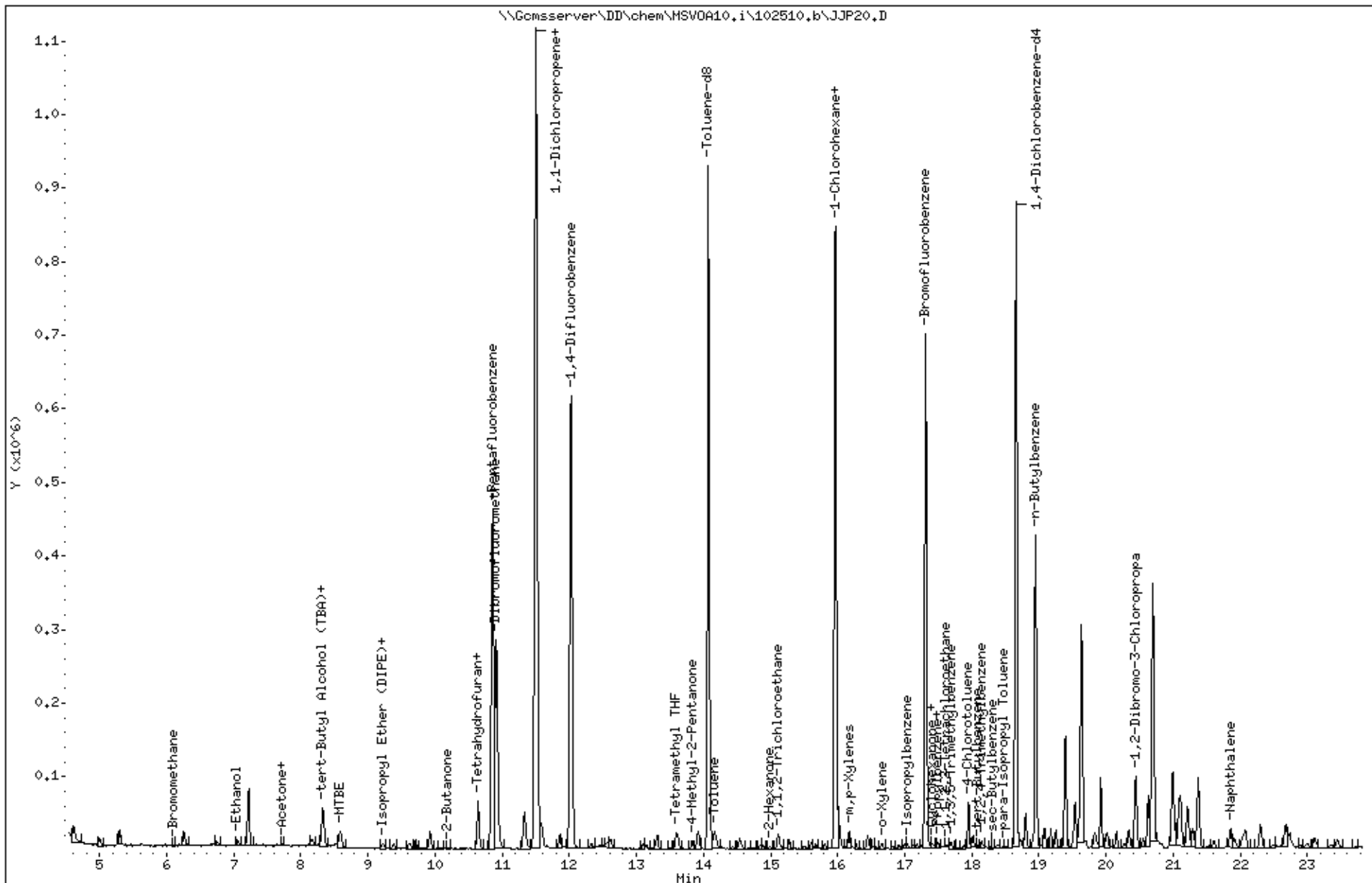
Instrument: MSV0A10.i

Operator: VOA

Column diameter: 2.00

Column phase:





Date : 22-OCT-2010 16:35

Client ID: DYNA P&T

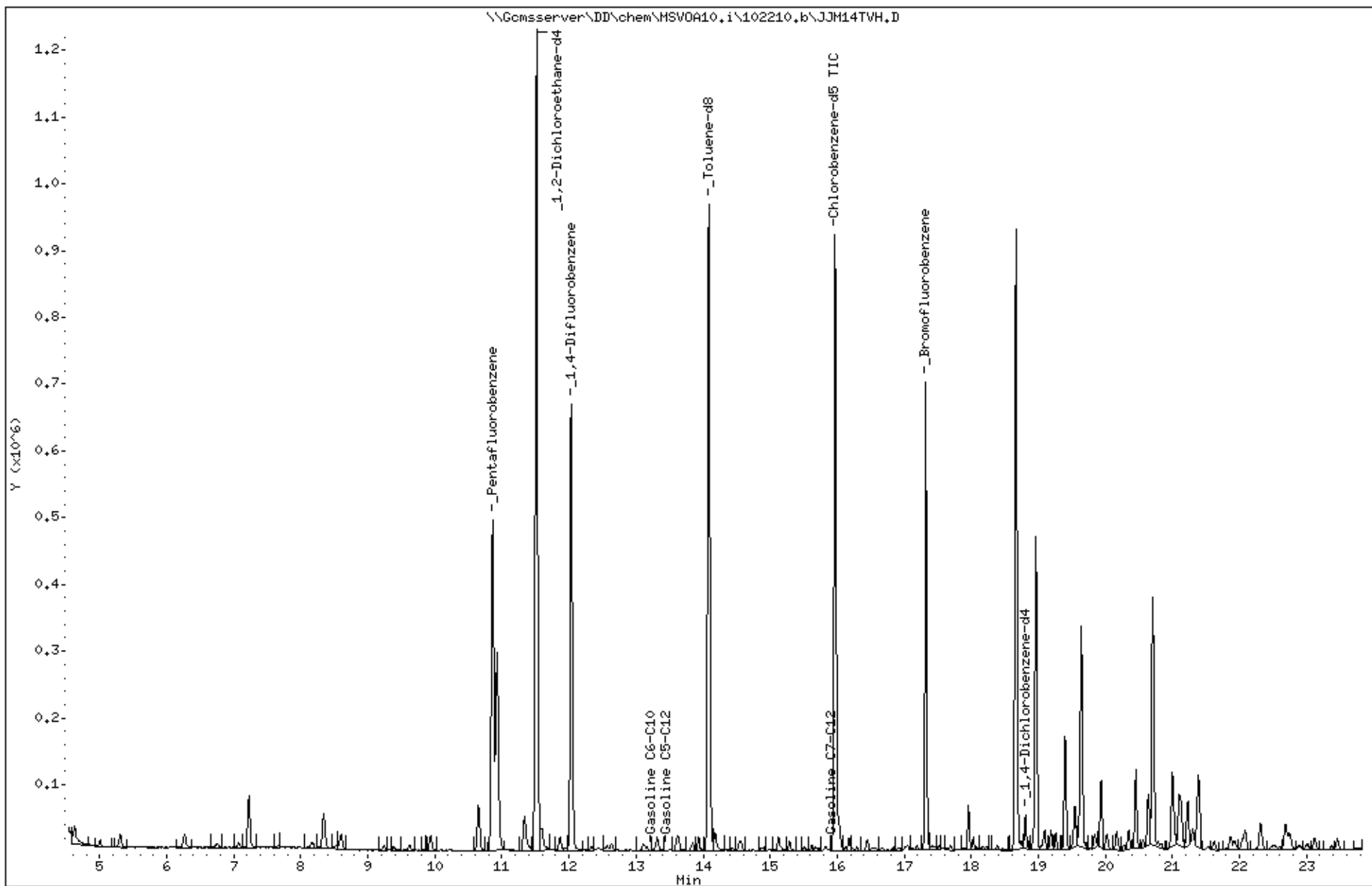
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Instrument: MSV0A10.i

Operator: VOA

Column diameter: 2.00

Column phase:



Date : 20-OCT-2010 12:41

Client ID: DYNA P&T

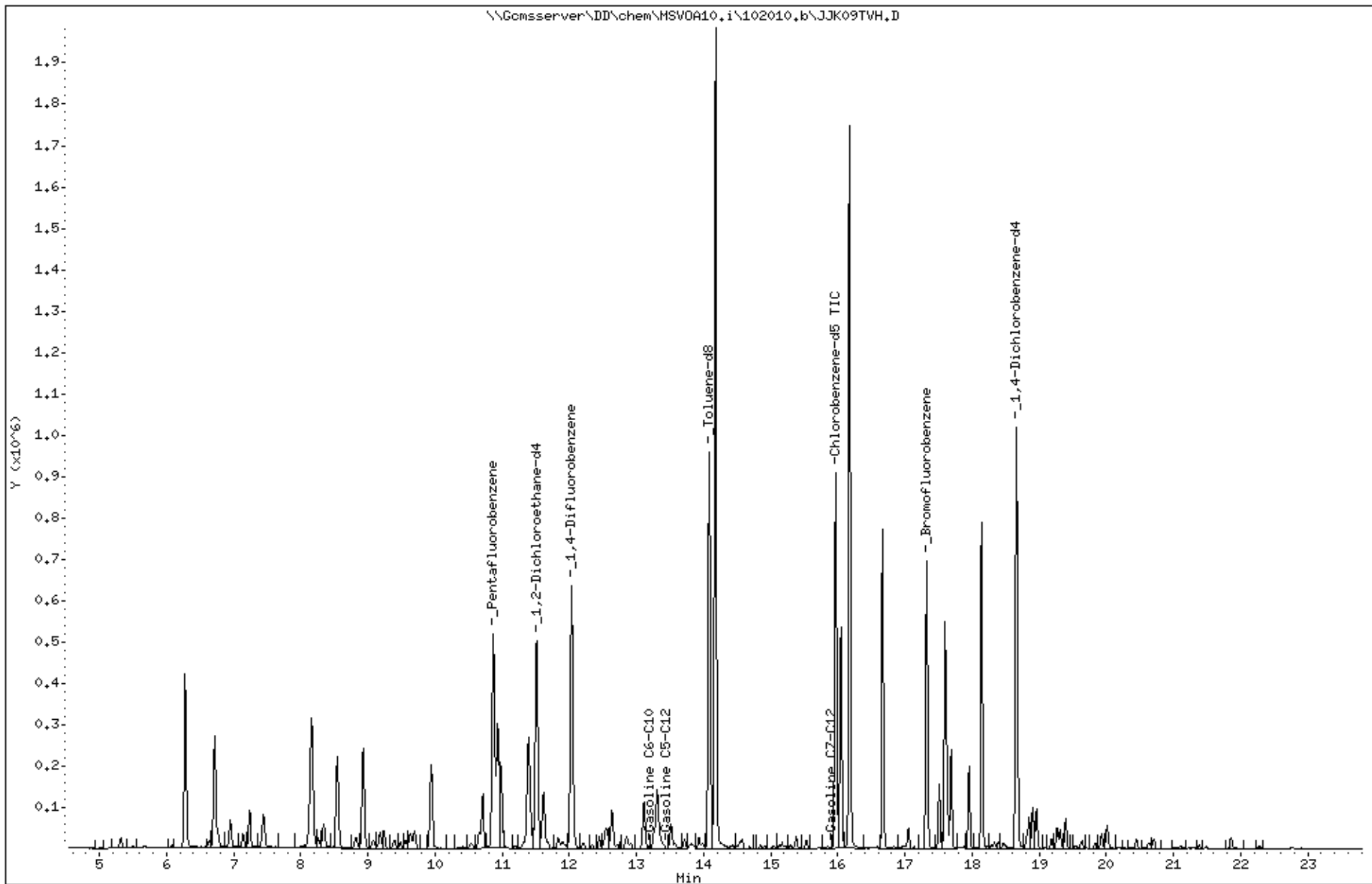
Sample Info: CCV/BS, QC565103, 168144, S14540,

Instrument: MSV0A10.i

Operator: VOA

Column diameter: 2.00

Column phase:





## **APPENDIX D**

### **Historical Tables**

**Table D-1**  
**Summary of Groundwater Analytical Data, VOCs**  
**Municipal Service Center, 7101 Edgewater Drive, Oakland, California**

*Concentrations expressed in micrograms per liter (µg/l)*

Well ID/ Date	Benzene (µg/l)	n-Butyl- benzene (µg/l)	sec-Butyl- benzene (µg/l)	tert-Butyl- benzene (µg/l)	Chloro- ethane (µg/l)	Chloro- form (µg/l)	Methyl Chloride (µg/l)	1,2- DCA (µg/l)	cis-1,2- DCE (µg/l)	1,2- DCP (µg/l)	Ethyl- benzene (µg/l)	Isopropyl- benzene (µg/l)	p-Isopropyl- toluene (µg/l)	MTBE (µg/l)	Napthalene (µg/l)	n-Propyl- benzene (µg/l)	Toluene (µg/l)	1,2,4- TMB (µg/l)	1,3,5- TMB (µg/l)	Xylenes (µg/l)
<b>MW-5</b> 2/27/01	180	9	4	ND	3	ND	ND	7	ND	3	260	23	6	1,100	43	68	7	1	11	53
<b>MW-6</b> 2/27/01	270	11	3	ND	<1	ND	ND	7	ND	<1	9	6.0	1.0	19.0	62	21	3	1	<1	3
8/20/01	E280	14	<1	<1	<1	3	2	<1	<1	<1	11	4.0	<1	14.0	E82	14	4	<1	<1	9
<b>TBW-1</b> 8/20/01	E530	30	<1	54	<1	4	10	<1	2	<1	E540	36	54	<1	E300	E120	79	E430	<1	E790
<b>TBW-3</b> 8/20/01	10	<1	<1	<1	<1	<1	<1	<1	<1	<1	6	<1	<1	<1	5	<1	<1	<1	<1	3
<b>TBW-5</b> 8/20/01	E620	<1	<1	E160	<1	3	<1	<1	<1	<1	E730	40	E160	<1	E450	E140	E110	<1	<1	E3100

**Notes:**

cis-1,2-DCE = cis-1,2-dichloroethene

E = Estimated concentration.

MTBE = methyl tertiary-butyl ether

ND = Not detected.

VOCs = Volatile organic compounds by EPA Method 8260. Sample not subject to silica gel cleanup or filtration prior to analysis.

1,2-DCA = 1,2-dichloroethane

1,2-DCP = 1,2-dichloropropane

1,2,4-TMB = 1,2,4-trimethylbenzene

1,3,5-TMB = 1,3,5-trimethylbenzene

**Table D-2**  
**Summary of Groundwater Analytical Data, SVOCs**  
**Municipal Service Center, 7101 Edgewater Drive, Oakland, California**

*Concentrations expressed in micrograms per liter (µg/l)*

<b>Well ID/ Date</b>	<b>Napthalene (µg/l)</b>	<b>Pyrene (µg/l)</b>	<b>Other SVOCs (µg/l)</b>
<b>MW-6</b>			
2/27/01	19	ND	ND
8/20/01	52	< 5	39
<b>MW-9</b>			
11/28/00	ND	ND	ND
<b>MW-13</b>			
11/28/00	ND	10	ND
<b>MW-17</b>			
11/28/00	ND	ND	ND
<b>TBW-1</b>			
8/20/01	140	8	387
<b>TBW-3</b>			
8/20/01	< 5	< 5	5
<b>TBW-5</b>			
8/20/01	220	< 5	73

**Notes:**

SVOCs = Semivolatile organic compounds by EPA Method 8270.

ND = Not detected

Samples not subject to silica gel cleanup or filtration before analysis.

**Table D-3**  
**Summary of Groundwater Analytical Data, LUFT Metals**  
**Municipal Service Center, 7101 Edgewater Drive, Oakland, California**

*Concentrations expressed in milligrams per liter (mg/l)*

<b>Well ID/ Date</b>	<b>Cadmium (mg/l)</b>	<b>Chromium (mg/l)</b>	<b>Lead (mg/l)</b>	<b>Nickel (mg/l)</b>	<b>Zinc (mg/l)</b>	<b>Notes</b>
<b>MW-2</b> 8/19/98	---	---	<100	---	---	a
<b>MW-6</b> 2/28/01	<0.001	0.035	0.23	0.046	0.19	non-filtered
8/16/01	<0.001	0.020	0.12	0.032	0.11	
<b>TBW-1</b> 8/16/01	<0.001	0.017	0.042	0.034	0.10	0.1*
<b>TBW-3</b> 8/16/01	<0.001	0.008	0.01	0.019	<0.02	
<b>TBW-5</b> 8/16/01	<0.001	<0.005	0.01	0.008	0.03	

**Notes:**

--- = Not measured/analyzed.

\* = Note was indicated but not defined in historical data tables.

a = Analyzed for organic lead.

LUFT = Leaking Underground Fuel Tank

LUFT metals by EPA Method 6010. Samples filtered in lab before analysis, unless noted otherwise.

**Table D-4**  
**Summary of Groundwater Analytical Data, Additional Metals**  
**Municipal Service Center, 7101 Edgewater Drive, Oakland, California**  
*Concentrations expressed in milligrams per liter (mg/l)*

<b>Sample ID/ Date</b>	<b>Antimony (mg/l)</b>	<b>Arsenic (mg/l)</b>	<b>Beryllium (mg/l)</b>	<b>Copper (mg/l)</b>	<b>Selenium (mg/l)</b>	<b>Silver (mg/l)</b>	<b>Thallium (mg/l)</b>
<b>MW-6</b>							
8/16/01	<0.01	0.033	<0.001	0.025	<0.01	<0.003	<0.01
<b>TBW-1</b>							
8/16/01	<0.01	0.015	<0.001	0.017	<0.01	<0.003	<0.01
<b>TBW-3</b>							
8/16/01	<0.01	0.009	<0.001	0.008	<0.01	<0.003	<0.01
<b>TBW-5</b>							
8/16/01	<0.01	0.020	<0.001	<0.005	<0.01	<0.003	<0.01

**Notes:**

Metals by EPA Method 6010. Samples filtered in lab before analysis, unless noted otherwise.