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**SECOND QUARTER 2010  
GROUNDWATER MONITORING REPORT**

Former Val Strough Chevrolet Site  
327 34<sup>th</sup> Street, Oakland, California  
Fuel Leak Case No. RO0000134

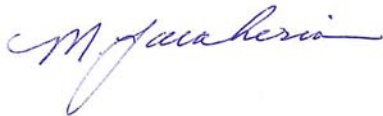
Prepared by  
**LRM Consulting, Inc.**  
**1534 Plaza Lane, #145**  
**Burlingame, CA 94010**

June 2010

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June 2010



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## 1.0 INTRODUCTION

At the request of the Strough Family Trust of 1983, LRM Consulting, Inc. (LRM) has prepared this *Second Quarter 2010 Groundwater Monitoring Report* for the former Val Strough Chevrolet located in Oakland, California. This report documents the procedures and findings of the May 28, 2010 groundwater monitoring event reflecting water quality reporting and water level gauging for all site wells per the existing Alameda County Health Care Services Agency (ACHCSA)-approved monitoring program for the site.

The scope of groundwater monitoring for this quarter corresponded to the ACHCSA-approved program, which for this quarter corresponds to gauging from all eleven site wells, and sampling from the select wells according to the recommended schedule. Also worth noting is that this monitoring reflects groundwater conditions approximately over three years following cessation of the dual phase extraction (DPE) system at the site; the operation of the DPE system was ceased on 30 June 2006. Groundwater monitoring data and well construction details are shown on the figures and presented in the tables. Groundwater monitoring protocols, field data, and laboratory analytical results are provided in the appendices.

### 1.1 General Site Information

<b>Site name:</b>	Former Val Strough Chevrolet
<b>Site address:</b>	327 34 <sup>th</sup> Street, Oakland, California
<b>Current property owner:</b>	Strough Family Trust of 1983
<b>Current site use:</b>	Automotive Dealership and Service Center
<b>Current phase of project:</b>	Groundwater monitoring and evaluation of need and approaches for additional remediation
<b>Tanks at site:</b>	Two former tanks (1 gasoline, 1 waste-oil) removed in 1993
<b>Number of wells:</b>	8 (all onsite)
<b>Site ID #:</b>	3035
<b>RO #:</b>	0000134

### 1.2 Site Contacts

<b>Consultant:</b>	Jing Heisler, PG, CHG Senior Geologist LRM Consulting, Inc. 1534 Plaza Lane, # 145 Burlingame, CA 94010 (415) 342-3713
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**Regulatory agency:**

Barbara Jakub, P.G.  
Alameda County Health Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6746

## 2.0 SITE BACKGROUND

### 2.1 Site Description

**Site Location and Land Use:** The former Val Strough Chevrolet site is currently an active Honda automobile dealership and service center located on the southwestern corner of the intersection of Broadway (Auto Row) and 34<sup>th</sup> Street (Figure 1). The property is located south of Interstate 580. Land use in the area is primarily commercial.

The site is situated approximately two miles east of San Francisco Bay at approximately 61 feet above mean sea level (msl) (EDR, 2003). The land surface in the vicinity slopes toward the south. The nearest surface water body is Lake Merritt, located approximately 1 mile south of the site (Figure 1).

**Site Features:** The site consists of a multi-level building and an adjacent parking lot (Figure 2). The former fuel dispenser and underground storage tanks (USTs) were located in the northwestern portion of the site. Seven groundwater monitoring wells are located at the site. Construction details for the wells are presented in Table 1.

**Underground Utilities:** A box culvert for a former tributary of Glen Echo Creek is located approximately 17 feet below ground surface (bgs) in the eastern portion of the site (Figure 2). The culvert consists of a reinforced concrete box measuring 5 feet by 6 feet. During the winter of 1983, a section of the culvert collapsed and was replaced with a 5-foot-diameter pipeline.

Sanitary sewer, electrical, and natural gas utilities are generally present at depths less than 2 feet bgs at the site. Approximately 40 feet north of the site, along the northern edge of 34<sup>th</sup> Street, a storm sewer pipeline flows toward the east and into the box culvert. Sanitary sewer lines run parallel to both 34<sup>th</sup> Street and Broadway, north and east of the site, respectively. A lateral pipeline located along the western edge of the site connects to the sanitary sewer line below 34<sup>th</sup> Street. Natural gas service is located on the east side of the property. Water service appears to enter the site from the north.

**Water Supply Well Search:** A 2003 report compiled by EDR indicates that there are no federal U.S. Geological Survey wells and no public water supply wells located within a 1-mile radius of the site. No water supply wells were identified by the Alameda County Department of Public Works within a ½-mile radius of the site (ETIC, 2003).

### 2.2 Summary of Previous Investigations and Monitoring Activities

As presented in previous reports, the USTs were removed and multiple investigations, including the installation of seven groundwater monitoring wells, were conducted. In addition, a routine groundwater monitoring program has been in place since 1993. The following paragraphs summarize the findings of these activities.

**Site Hydrogeology:** In general, the site is underlain by silt and clay to depths ranging from approximately 15 to 20 feet bgs. Silty sand and fine-grained sand interbedded with thin clay intervals are encountered from approximately 20 feet bgs to the total explored depth of 35 feet bgs.

The depth to groundwater beneath the site has ranged from approximately 12.5 to 23 feet bgs. As shown in the modified rose diagram on Figure 2, the direction of groundwater flow is generally toward the southwest to south-southeast, with average hydraulic gradients ranging from approximately 0.01 to 0.03 foot/foot.

**Primary Sources:** Two USTs (one gasoline and one waste-oil) were located beneath the sidewalk on the northern side of the property. A fuel dispenser was located inside the building (Figure 2). These primary sources of petroleum hydrocarbons were removed from the site in 1993.

**Constituents of Potential Concern:** Based on the type of fuel stored in the USTs and the results of previous subsurface investigations, the constituents of potential concern (COPCs) at the site include total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl t-butyl ether (MTBE). TPH as diesel (TPH-d) and TPH as motor oil (TPH-mo) are not routinely detected in groundwater samples and are considered secondary COPCs for the site.

**Residual Source Area:** Elevated concentrations of TPH-g, BTEX, and MTBE have been observed in soil in the vadose zone and upper portion of the water-bearing zone near the former USTs and fuel dispenser. Separate phase petroleum hydrocarbons (SPH) have been intermittently detected in wells MW-2 and MW-3, but none since March 2004 in MW-3 and June 2006 in MW-2. These data suggest that most of the residual petroleum hydrocarbon mass is present near the former USTs and fuel dispenser, herein referred to as the residual source area; this is corroborated by the dissolved groundwater data discussed below. Additional wells recently installed within this residual source area include MW9A/9B and O1.

**Petroleum Hydrocarbon Distribution in Groundwater:** The highest concentrations of petroleum hydrocarbons have been detected in samples collected from wells MW-2, MW-3, MW9A/9B, and O1, located immediately downgradient of the former USTs and within the previously defined residual source area. Significantly lower levels of petroleum hydrocarbons have been detected in samples collected from well MW-4 and the other site wells located downgradient and outside of the residual source area. The extent of dissolved-phase petroleum hydrocarbons in groundwater is largely defined by relatively low and stable TPH-g, BTEX, and MTBE concentrations detected in downgradient and cross-gradient monitoring wells MW-5, MW-6, MW-7, and MW-8 (Tables 2 and 3).



### 2.3 Summary of Interim Remedial Action Activities

In addition to the routine groundwater monitoring activities, remediation pilot testing and remediation activities were conducted at the site between 2004 and 2006. A summary of these activities and associated regulatory correspondence with the ACHCSA are presented below:

***DPE Pilot Test:*** In March 2004, ETIC Engineering, Inc. (ETIC) performed a DPE pilot test at the site. As summarized in the June 2004 *Dual Phase Extraction Pilot Test and Interim Remedial Action Plan* (DPE and IRAP Report), vacuum was applied to source area wells MW-2 and MW-3 while water and vacuum levels were measured in nearby monitoring wells. The DPE pilot test induced more than 1 foot of drawdown up to 50 feet from the extraction wells and an estimated radius of vacuum influence of 55 to 70 feet. Based on vapor flow rates and petroleum hydrocarbon concentrations in the vapor stream during the short-term pilot test, removal rates of approximately 90 pounds of petroleum hydrocarbons per day were estimated.

***June 2004 DPE and IRAP Report:*** The DPE and interim remedial action plan (IRAP) Report (ETIC, 2004) described the planned reduction of residual petroleum hydrocarbon mass in the source area through temporary DPE system installation and operation and dual phase extraction from source area wells MW-2 and MW-3 to extract soil vapor and groundwater simultaneously. The system was designed to consist of a knockout vessel to be used for separation of the soil vapor and water streams. A thermal oxidizer (with propane as a supplemental fuel) was proposed for treatment of extracted vapor, and aqueous-phase granular activated carbon was proposed for treatment of extracted groundwater.

***Interim Remedial Action:*** Between February 2005 and June 2006, ETIC operated a DPE system on site. Vacuum was applied to remove groundwater and soil vapor from up to two wells (MW-2 and/or MW-3). The system was temporarily shutdown on 30 January 2006 for conversion of vapor treatment from thermal oxidation to carbon filtration, and remained offline until 22 May 2006, when it was restarted. Because the mass removal rates by the DPE system had reached asymptotic levels and high petroleum hydrocarbon concentrations continued to exist in extraction wells MW-2 and MW-3 despite the DPE operation, the benefit of continuation of DPE in its current configuration was considered to be low and the DPE operation was ceased on 30 June 2006. ETIC subsequently dismantled the remediation system and removed the skid mounted DPE unit from the site.

***August 2006 LRM Consulting, Inc. Correspondence and 11 December 2006 LRM Supplemental Source Area Investigation Work Plan:*** In a August 25, 2006 correspondence, LRM notified the ACHCSA of a project consultant change from ETIC to LRM. Also, based on a review of the available site data, the response of the hydrocarbon concentrations to past DPE operations, and the ACHCSA's comments on ETIC's Work Plan, LRM recommended a technical meeting with the ACHCSA to discuss the project direction. However, because of other commitments of Don Hwang and other ACHCSA staff, a technical meeting could not be scheduled. During a October 19, 2006 telephone conversation with Don Hwang, LRM

presented an approach to conduct a supplemental investigation to define the magnitude and extent of the residual source area in the vicinity of the former fuel dispenser and wells MW-2 and MW-3. Based on these discussions and as agreed by Mr. Hwang, a supplemental source area investigation work plan outlining the proposed scope of work was prepared and submitted to ACHCSA on 11 December 2006; this work plan was revised through multiple discussions with Donna Drogos of the ACHCSA and was finalized in December of 2007. The subject investigation was conducted beginning on December 12, 2007, the results of which were documented in a report to ACHCSA (LRM, 2008a).

**August 2008 LRM Consulting, Inc. IRAP:** In a August 25, 2008 IRAP report, LRM, in response to a request by Barbara Jakub of the ACHCSA, proposed a series of site investigation and pilot testing activities to address the residual source area at the site. These activities included: 1) soil and grab groundwater sampling to vertically characterize the extent of hydrocarbons within the residual source area previously encountered during the supplemental investigation referenced above; 2) grab groundwater sampling along the existing culvert at the site to evaluate the potential for preferential migration of hydrocarbons along the culvert backfill; 3), placement of a groundwater monitoring well (MW-8) at the downgradient site boundary to define the downgradient extent of hydrocarbons; and 4) pilot testing activities including injection and observation well installation and pilot testing protocols for implementation of in-situ oxygen curtain (iSOC) technology within the residual source area. In a letter dated December 5, 2008, the ACHCSA approved the proposed site investigation activities with select modifications listed. Additional information was also requested for the iSOC pilot testing, which were provided by LRM in its response to ACHCSA comment dated December 5, 2008. The investigation activities associated with the IRAP have been completed and reported to the ACHCSA. The ACHCSA has requested that an additional monitoring well be installed to monitor the proposed iSOC pilot testing.

**July 2009 LRM Consulting, Inc. Well Installation:** On July 15, 2009, wells MW9A and MW9B were installed using hollow stem augers as part of the monitoring program for the iSOC pilot testing. The well completion activity was observed by Ms. Vicky Hamlin of Alameda County Public Works and Ms. Barbara Jakub of Alameda County Environmental Health.

**January 2010 LRM Consulting, Inc. IRAP Addendum:** On January 13, 2010, an addendum to the IRAP was prepared by LRM Consulting, reflecting a proposed change from iSOC technology originally outlined in the IRAP. Specifically, in-situ chemical oxidation (ISCO) technology was proposed for the residual source area instead of iSOC. This recommendation was based on results of two rounds of groundwater sampling at MW9A/9B and O-1, with both rounds indicating the presence of hydrocarbons at concentrations which are too high for effective remediation using iSOC. In accordance with the approved IRAP, the January 2010 IRAP Addendum outlined an alternative methodology to more effectively remediate the observed hydrocarbon concentrations in the residual source area. The IRAP Addendum was approved by the ACHCSA in a letter dated April 22, 2010.

### **3.0 PROTOCOLS FOR GROUNDWATER MONITORING**

The following sections of this report present information relevant to the methods employed during the collection of groundwater samples from site wells on May 28, 2010. The scope of work for the quarterly groundwater monitoring event at the site is listed below, with monitoring protocols summarized in Appendix A:

- Checking all wells for SPH.
- Gauging the depth to groundwater in all eleven site wells.
- Purging the monitoring wells prior to sampling.
- Collecting and analyzing groundwater samples from select onsite wells.
- Estimating the hydraulic gradient and general flow direction.
- Evaluating the data and preparing a written report summarizing the results of the monitoring event.

#### **3.1 Groundwater Gauging**

For this round of monitoring, groundwater gauging was performed for all eleven onsite wells. The monitoring wells were opened prior to gauging to allow the groundwater level to equilibrate with atmospheric pressure. The depth to groundwater and depth to SPH, if present, were then measured to the nearest 0.01 feet using an electronic water level meter or optical interface probe. The measurements were made from a fixed reference point at the top of the well casing.

Field data forms are presented in Appendix B.

#### **3.2 Well Purging**

Following well gauging, three well casing volumes of water were purged from wells scheduled to be sampled (MW2 through MW4, MW9B, and O1), and field parameters including temperature, pH, specific conductance, turbidity, dissolved oxygen (DO) and oxidation-reduction potential (ORP) were measured. Well MW9A was not purged due to free product present in the well.

Groundwater monitoring protocols are presented in Appendix A.

#### **3.3 Groundwater Sampling**

After purging, groundwater was sampled at each of the wells scheduled to be sampled using dedicated tubing and a WaTerra inertial pump, or a disposable bailer. Sample containers were sealed, labeled, stored in a cooler and transported under chain-of-custody protocol to Kiff Analytical LLC (Kiff), a state-certified analytical laboratory in Davis, California.



Groundwater analytical results and chain-of-custody documentation are presented in Appendix C.

## **4.0 MONITORING RESULTS**

### **4.1 Separate-Phase Hydrocarbon Monitoring**

The wells were monitored for the presence of SPH using a disposable bailer and/or interface probe. SPHs were observed at well MW9A during this event with a thickness of 0.02 foot (see Appendix B).

### **4.2 Groundwater Elevation and Hydraulic Gradient**

The groundwater elevation contour map (Figure 2) for this monitoring event was constructed based on depth-to-groundwater measurements collected during the current sampling event. Depth-to-groundwater measurements and calculated groundwater elevations are presented in Table 2a.

On May 28, 2010, the depth to groundwater beneath the site ranged from 15.20 (MW7) to 25.54 (MW5) feet bgs (Table 2a). Correspondingly, groundwater elevations in the site wells ranged from 40.05 feet above msl in well MW5 to 44.29 feet above msl in well MW7 (Figure 2); these depth to groundwater measurements mark a drop in water levels by an average of 0.39 feet in site wells relative to the previous quarter with the exception of well MW5 which had gone up 0.36 foot. Using the results from the Second Quarter 2010 monitoring event, the hydraulic gradient is estimated at an average of 0.023 ft/ft, with a general flow direction away from the residual source area toward the southwest (see Figure 2).

### **4.3 Groundwater Analytical Results**

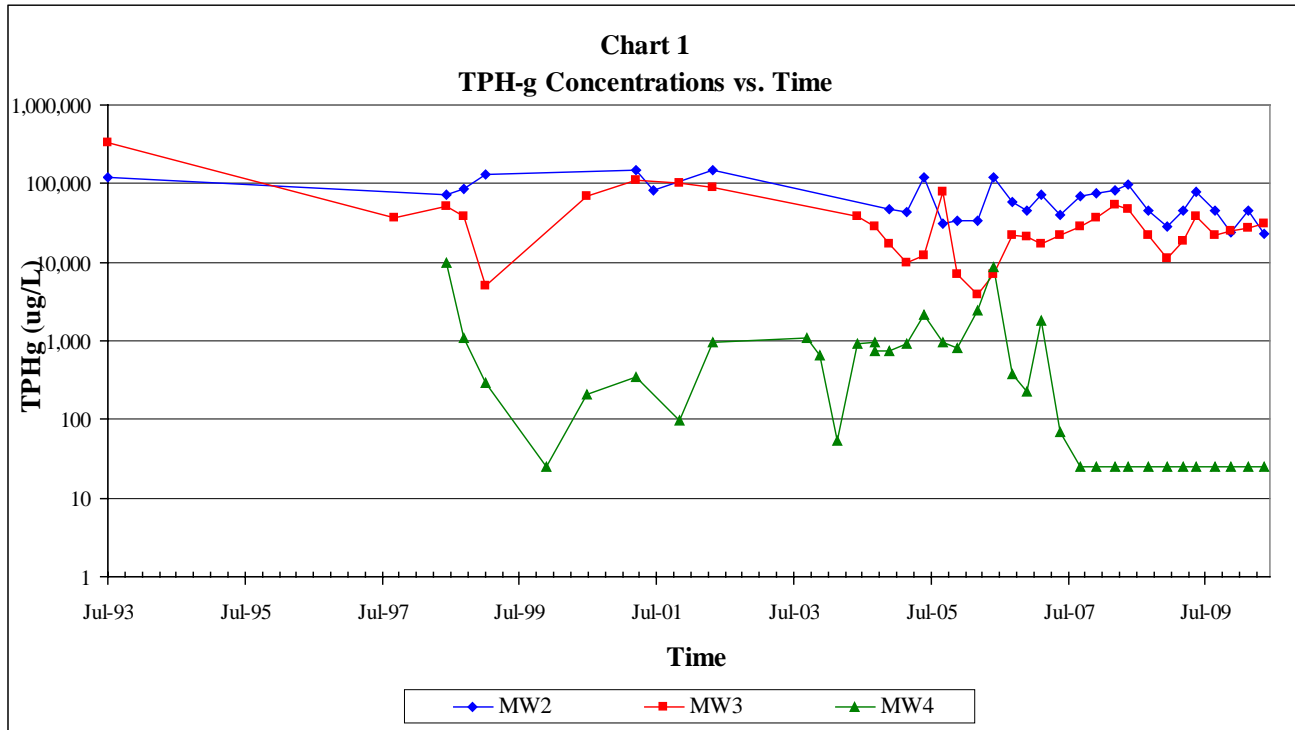
On May 28, 2010, groundwater samples were collected from wells MW2 through MW4, MW9B, and O1, and analyzed by Kiff for TPH-g, BTEX, and MTBE by EPA Method 8260B and for TPH-d and TPH-mo by modified EPA Method 8015.

Analytical results for this event are presented on Figure 3, and historical petroleum hydrocarbon analytical results are presented in Table 2a. Natural attenuation parameters, including field parameters such as DO, are summarized in Table 2b. Copies of the chain-of-custody and laboratory analytical reports for the groundwater samples are presented in Appendix C. Laboratory analytical results for petroleum hydrocarbons are summarized below:

- TPH-g was detected in samples collected from wells MW2, MW3, MW9B, and O1. The maximum TPH-g concentration was detected at well MW3 (31,000 µg/L). TPH-g remained below the laboratory reporting limit of 50 µg/L in well MW4.
- Benzene was detected in the samples collected from wells MW2, MW3, MW9B, and O1. The maximum benzene concentration was detected at well MW3 (1,200 µg/L). Benzene was below the laboratory reporting limit of 0.5 µg/L in well MW4.

- Toluene was detected at wells MW2, MW3, MW9B, and O1. The maximum toluene concentration was detected at well MW3 (4,600 µg/L), but remained below the laboratory reporting limit of 0.50 µg/L in well MW4.
- Ethylbenzene was detected at wells MW2, MW3, MW9B, and O1. The maximum ethylbenzene concentration was detected at well O1 (1,000 µg/L), but remained below the laboratory reporting limit of 0.50 µg/L in well MW4.
- Total xylenes were detected at wells MW2, MW3, MW9B, and O1. The maximum total xylenes concentration was detected at well MW3 (4,800 µg/L), but remained below the laboratory reporting limit of 0.50 µg/L in well MW4.
- MTBE was detected in the samples collected from all sampled wells (MW2 through MW4, MW9B, and O1). The maximum MTBE concentration was detected at well MW2 (380 µg/L).
- TPH-d was not detected in groundwater samples collected from any of the sampled wells this quarter, although reporting limits in samples from wells MW2, MW3, MW9B, and O1 were elevated due to interference from gasoline-range hydrocarbons (see Appendix C).
- TPH-mo was detected at a concentration of 170 µg/L in well MW2, but remained below the laboratory reporting limit of 100 µg/L in all other sampled wells (MW3, MW4, MW9B, and O1).

The chart below depicts TPH-g concentration trends for wells MW-2 and MW-3 located within the residual source area, and MW-4 located immediately downgradient of this location. As indicated on the chart, the TPH-g concentration in the 2<sup>nd</sup> Quarter 2010 event decreased in well MW-2 compared to the previous quarter (1<sup>st</sup> quarter 2010). Specifically, at well MW-2, TPH-g has decreased from 45,000 µg/L to 23,000 µg/L, while TPH-g concentration at well MW-3 has increased slightly from 27,000 µg/L to 31,000 µg/L between the 1<sup>st</sup> quarter 2010 and 2<sup>nd</sup> quarter 2010 events.



As shown on Table 2a, benzene concentrations for both MW-2 and MW-3 have increased. Specifically, at well MW-2, benzene concentration has decreased from 200 µg/L to 260 µg/L, while benzene concentration at well MW-3 has increased from 420 µg/L to 1,200 µg/L between the 1<sup>st</sup> quarter 2010 and 2<sup>nd</sup> quarter 2010 events.

Also within the residual source area, lower petroleum hydrocarbon concentrations were observed at wells MW9B and O1 during this event compared to the previous event. Away from the residual source area, TPH-g levels in well MW4 continued their observed decline over time and remain below detection limits over the past several rounds of monitoring regardless of the water level changes (see Chart 1 and Table 2a).

Overall, petroleum hydrocarbon concentrations were in line with the previous observations in all wells, including highly concentrated levels of hydrocarbons at wells O1 and MW3 and evidence of SPHs in the well MW9A area within the residual source area.

## **5.0 PLANNED ACTIVITIES**

### **5.1 Remediation Related Activities**

As previously discussed, to address the high concentration of petroleum hydrocarbons and thin free product encountered in the new well MW9A at the source area, LRM submitted an IRAP Addendum in January 2010. This addendum proposes the use of ISCO using RegenOx within the residual source area. The IRAP addendum was approved by the ACHCSA in a letter dated April 22, 2010. With this round of monitoring serving as the baseline sampling prior to ISCO, LRM is currently in the process of implementing the workplan.

### **5.2 Planned Monitoring Activities**

Quarterly monitoring per the ACHCSA-approved plan will continue, with the next round scheduled for September 2010 (Table 4).



## 6.0 REFERENCES

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LRM Consulting, Inc. 2010a. First Quarter 2010 Groundwater Monitoring Report, Strough Family Trust of 1983, 327 34<sup>th</sup> Street, Oakland, California. March.

## **TABLES**

TABLE 1 WELL CONSTRUCTION DETAILS  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well ID	Well Installation Date	Top-of-Casing Elevation* (feet)	Casing Material	Total Depth of Borehole (ft bgs)	Casing Diameter (inches)	Screened Interval (ft bgs)	Slot Size (inches)	Filter Pack Interval (ft bgs)	Filter Pack Material
MW1	7/19/1993	64.71	PVC	32	2	17 to 32	0.020	15 to 32	Gravel Pack
MW2	7/20/1993	65.71	PVC	33	2	18 to 33	0.020	16 to 33	Gravel Pack
MW3	7/20/1993	65.7	PVC	34	2	18 to 34	0.020	16 to 34	Gravel Pack
MW4	6/26/1998	64.37	PVC	31	2	15 to 31	0.020	13 to 31.5	Lonestar #3 Sand
MW5	6/26/1998	65.59	PVC	31	2	15 to 31	0.020	13 to 31.5	Lonestar #3 Sand
MW6	7/17/2000	59.60	PVC	31.5	2	10 to 30	0.020	8 to 30	Lonestar #3 Sand
MW7	7/17/2000	59.49	PVC	36.5	2	15 to 35	0.020	13 to 35	Lonestar #3 Sand
MW8	12/17/2008	57.07	PVC	26	1	11 to 26	0.010	9 to 26	#2/12 Sand
O1	12/12/2008	65.91	PVC	40	2	15 to 40	0.020	13 to 40	#3 Sand
MW9A	7/15/2009	65.90	PVC	25	2	15 to 25	0.020	14 to 25	#3 Monterey Sand
MW9B	7/15/2009	65.85	PVC	39	2	29 to 39	0.020	28 to 39	#3 Monterey sand

Abbreviations:

ft bgs feet below ground surface  
PVC Polyvinyl chloride.

Note:

\* Elevations Based on Survey Conducted in 1st Quarter 2009 relative to NAVD88 datum. Wells O1, MW9A, and MW9B were surveyed on November 12, 2009.

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)								
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA
MW1	07/27/93	100.00	a 20.79	79.21	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	--	--	--
MW1	10/02/97	100.00	a 21.22	78.78	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<2.0	--
MW1	06/30/98	100.00	a 18.21	81.79	0.00	<0.50	<0.50	2.1	0.6	84	--	--	2.1	--
MW1	07/29/98	100.00	a 18.74	81.26	0.00	--	--	--	--	--	--	--	--	--
MW1	08/26/98	100.00	a 19.28	80.72	0.00	--	--	--	--	--	--	--	--	--
MW1	10/01/98	100.00	a 19.93	80.07	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--
MW1	10/30/98	100.00	a 20.22	79.78	0.00	--	--	--	--	--	--	--	--	--
MW1	11/30/98	100.00	a 19.99	80.01	0.00	--	--	--	--	--	--	--	--	--
MW1	12/28/98	100.00	a 19.81	80.19	0.00	--	--	--	--	--	--	--	--	--
MW1	01/25/99	100.00	a 19.62	80.38	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--
MW1	02/26/99	100.00	a 17.18	82.82	0.00	--	--	--	--	--	--	--	--	--
MW1	03/24/99	100.00	a 17.28	82.72	0.00	--	--	--	--	--	--	--	--	--
MW1	05/12/99	100.00	a 17.91	82.09	0.00	--	--	--	--	--	--	--	--	--
MW1	12/15/99	100.00	a 21.01	78.99	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<0.50	--
MW1	03/20/00	100.00	a 16.25	83.75	0.00	--	--	--	--	--	--	--	--	--
MW1	07/20/00	100.00	a 19.63	80.37	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	3.4	--
MW1	10/11/00	100.00	a 20.80	79.20	0.00	--	--	--	--	--	--	--	--	--
MW1	04/10-11/01	100.00	a 18.81	81.19	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	1.2	--
MW1	07/10/01	100.00	a 20.51	79.49	0.00	--	--	--	--	--	--	--	--	--
MW1	11/20/01	64.69	b 21.36	43.33	0.00	<0.50	1.3	<0.50	0.81	<50	<50	<300	<2.0	--
MW1	02/19/02	64.69	b 18.95	45.74	0.00	--	--	--	--	--	--	--	--	--
MW1	05/21/02	64.69	b 19.82	44.87	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<2.0	--
MW1	06/27/03	64.69	b 19.93	44.76	0.00	--	--	--	--	--	--	--	--	--
MW1	09/29/03	64.69	b 21.24	43.45	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--
MW1	12/12/03	64.69	b 21.27	43.42	0.00	<0.50	<0.50	<0.50	1.1	<50	58	<500	<0.50	--
MW1	03/15/04	64.69	b 18.18	46.51	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--
MW1	06/24/04	64.69	b 20.48	44.21	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--
MW1	09/29/04	64.69	b 21.37	43.32	0.00	<0.50	0.51	<0.50	<1.0	<50	<50	<500	<0.50	--
MW1	12/13/04	64.69	b 20.63	44.06	0.00	--	--	--	--	--	--	--	--	--
MW1	03/14/05	64.69	b 18.69	46.00	0.00	<0.50	<0.50	<0.50	<1.0	<50	73	<500	<0.50	--
MW1	06/15/05	64.69	b 20.32	44.37	0.00	--	--	--	--	--	--	--	--	--
MW1	09/26/05	64.69	b 22.10	42.59	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--
MW1	12/12/05	64.69	b 22.39	42.30	0.00	--	--	--	--	--	--	--	--	--
MW1	03/29/06	64.69	b 15.24	49.45	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	74	--
MW1	06/19/06	64.69	b 18.27	46.42	0.00	--	--	--	--	--	--	--	--	--
MW1	09/29/06	64.69	b 20.06	44.63	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	7.9	--
MW1	12/12/06	64.69	b 20.32	44.37	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	9.4	--
MW1	03/01/07	64.69	b 18.68	46.01	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	3.5	--
MW1	06/12/07	64.69	b 20.28	44.41	0.00	--	--	--	--	--	--	--	--	--
MW1	09/25/07	64.69	b 21.37	43.32	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	1.8	--
MW1	12/20/07	64.69	b 21.48	43.21	0.00	--	--	--	--	--	--	--	--	--
MW1	03/26/08	64.69	b 20.98	43.71	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--
MW1	06/03/08	64.69	b 20.70	43.99	0.00	--	--	--	--	--	--	--	--	--
MW1	09/25/08	64.69	b 22.30	42.39	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	0.57	<5.0
MW1	12/29/08	64.69	b 21.77	42.92	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW1	03/24/09	64.71	l 18.68	46.03	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW1	06/02/09	64.71	l 19.60	45.11	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	
MW1	12/04/09	64.71	l 22.86	41.85	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0	
MW1	03/10/10	64.71	l 21.06	43.65	0.00	< 0.50	0.97	< 0.50	1.6	< 50	< 50	< 100	< 0.50	--	
MW1	05/28/10	64.71	l 21.19	43.52	0.00	--	--	--	--	--	--	--	--	--	
MW2	07/27/93	101.27	a 22.10	79.17	0.00	10,000	27,000	2,900	20,000	120,000	--	--	--	--	
MW2	10/02/97	101.27	a 22.91	78.36	0.43	*	*	*	*	*	*	*	*	--	
MW2	06/30/98	101.27	a 19.69	81.58	0.45	7,300	18,000	2,500	15,600	72,000	--	--	5,500	--	
MW2	07/29/98	101.27	a 20.11	81.16	0.29	--	--	--	--	--	--	--	--	--	
MW2	08/26/98	101.27	a 20.54	80.73	0.08	--	--	--	--	--	--	--	--	--	
MW2	10/01/98	101.27	a 21.52	79.75	0.42	6,400	17,000	2,600	17,000	84,000	--	--	2,000	--	
MW2	10/30/98	101.27	a 21.54	79.73	0.10	--	--	--	--	--	--	--	--	--	
MW2	11/30/98	101.27	a 21.21	80.06	0.04	--	--	--	--	--	--	--	--	--	
MW2	12/28/98	101.27	a 21.10	80.17	0.02	--	--	--	--	--	--	--	--	--	
MW2	01/25/99	101.27	a 20.80	80.47	0.01	9,000	26,000	3,800	27,500	130,000	--	--	5,800	--	
MW2	02/26/99	101.27	a 18.00	83.27	sheen	--	--	--	--	--	--	--	--	--	
MW2	03/24/99	101.27	a 18.27	83.00	trace	--	--	--	--	--	--	--	--	--	
MW2	05/12/99	101.27	a 19.08	82.19	trace	--	--	--	--	--	--	--	--	--	
MW2	12/15-16/99	101.27	a 22.42	78.85	0.025	*	*	*	*	*	*	*	*	--	
MW2	03/20/00	101.27	a 17.09	84.18	0.026	--	--	--	--	--	--	--	--	--	
MW2	07/20/00	101.27	a 20.86	80.41	0.017	*	*	*	*	*	*	*	*	--	
MW2	10/11/00	101.27	a 22.10	79.17	0.00	--	--	--	--	--	--	--	--	--	
MW2	04/10-11/01	101.27	a 19.98	81.29	0.00	8,000	22,000	2,600	23,500	150,000	1,500	<600	3,600	--	
MW2	07/10/01	101.27	a 21.85	79.42	0.00	5,900	15,000	2,300	12,100	83,000	5,700	<1,500	2,800	--	
MW2	11/20/01	65.95	b 22.75	43.20	0.00	--	--	--	--	--	--	--	--	--	
MW2	02/19/02	65.95	b 20.12	45.83	0.00	--	--	--	--	--	--	--	--	--	
MW2	05/21/02	65.95	b 21.10	44.85	0.00	8,600	25,000	3,500	26,000	150,000	31,000	<3,000	4,800	--	
MW2	06/27/03	65.95	b 21.48	44.47	0.35	--	--	--	--	--	--	--	--	--	
MW2	09/29/03	65.95	b 23.04	42.91	0.48	*	*	*	*	*	*	*	*	--	
MW2 <sup>e</sup>	12/12/03	65.95	b 22.75	43.31	0.16	*	*	*	*	*	*	*	*	--	
MW2 <sup>e</sup>	03/15/04	65.95	b 19.24	46.72	0.01	*	*	*	*	*	*	*	*	--	
MW2 <sup>e</sup>	06/24/04	65.95	b 22.10	44.06	0.31	*	*	*	*	*	*	*	*	--	
MW2 <sup>e</sup>	09/29/04	65.95	b 22.81	43.14	sheen	*	*	*	*	*	*	*	*	--	
MW2 <sup>e</sup>	12/13/04	65.95	b 22.06	43.95	0.08	3,700	12,000	1,900	10,000	47,000	2,600	<500	1,200	--	
MW2 <sup>j</sup>	03/14/05	65.95	b 25.00	40.95	0.00	780	3,700	920	6,400	43,000	43,000	<5,000	<200	--	
MW2	06/15/05	65.95	b 21.14	44.81	0.00	2,900	15,000	2,400	22,000	120,000	13,000	<2,500	810	--	
MW2	07/18/05	65.95	b NM	NC	NM	2,700	13,000	1,800	15,000	120,000	17,000	--	530	--	
MW2	09/26/05	65.95	b 22.93	43.02	0.00	570	4,000	620	6,200	31,000	63,000	28,000	<50	--	
MW2	12/12/05	65.95	b 25.40	40.55	0.00	670	5,300	1,100	9,800	34,000	2,800	<500	65	--	
MW2	03/29/06	65.95	b 15.66	50.29	sheen	620	2,800	540	4,700	33,000	<4,000	<100	37	--	
MW2	06/19/06	65.95	b 19.14	46.81	sheen	680	5,200	990	16,000	120,000	<30,000	1,900	170	--	
MW2	09/29/06	65.95	b 21.16	44.79	0.00	1,200	5,100	1,200	9,300	59,000	<8000	300	230	--	
MW2	12/12/06	65.95	b 21.46	44.49	0.00	850	4,400	1,100	8,900	45,000	<10000	360	110	--	
MW2	03/01/07	65.95	b 19.48	46.47	0.00	1,400	5,200	980	9,500	71,000	<18000	460	160	--	
MW2	06/12/07	65.95	b 20.98	44.97	0.00	1,300	4,900	1,200	8,900	40,000	<3000	<100	130	--	
MW2	09/25/07	65.95	b 22.57	43.38	0.00	1,400	6,500	1,900	13,000	68,000	<12000	250	240	--	
MW2	12/20/07	65.95	b 22.70	43.25	0.00	1,400	7,000	2,400	16,000	75,000	<5000	650	270	--	
MW2	03/26/08	65.95	b 22.51	43.44	0.00	1,400	6,200	1,800	16,000	83,000	<10000	360	480	--	
MW2	06/03/08	65.95	b 21.85	44.10	0.00	1,900	11,000	2,500	18,000	98,000	<12000	500	660	--	
MW2	09/25/08	65.95	b 23.30	42.65	0.00	740	3,500	1,700	10,000	46,000	<8000	170	340	180	

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	
MW2	12/29/08	65.95	b 22.95	43.00	0.00	260	1,500	1,100	6,400	29,000	<4000	<100	110	<50	
MW2	03/24/09	65.71	l 19.58	46.13	0.00	410	2,000	900	8,900	45,000	<8,000	420	300	210	
MW2	06/02/09	65.71	l 20.50	45.21	0.00	680	3,100	1,200	10,000	80,000	<12000	480	330	180	
MW2	09/10/09	65.71	l 22.40	43.31	0.00	700	3,000	1,300	9,400	45,000	< 8000	190	370	220	
MW2	12/04/09	65.71	l 24.30	41.41	0.00	290	1,500	930	4,900	24,000	< 2000	170	200	92	
MW2	03/10/10	65.71	l 22.20	43.51	0.00	200	1,300	700	9,500	45,000	< 6,000	< 100	340	--	
MW2	05/28/10	65.71	l 22.41	43.30	0.00	260	1,100	650	4,700	23,000	< 8000	170	380	--	
MW3	07/27/93	101.29	a 22.28	79.01	0.02	9,100	24,000	5,300	33,000	330,000	--	--	--	--	
MW3	10/02/97	101.29	a 22.71	78.58	0.03	4,200	11,000	1,800	10,600	36,000	--	--	3,500	--	
MW3	06/30/98	101.29	a 19.47	81.82	0.00	4,800	11,000	1,200	7,100	51,000	--	--	3,900	--	
MW3	07/29/98	101.29	a 20.01	81.28	0.00	--	--	--	--	--	--	--	--	--	
MW3	08/26/98	101.29	a 20.62	80.67	0.00	--	--	--	--	--	--	--	--	--	
MW3	10/01/98	101.29	a 21.33	79.96	0.00	3,900	8,500	1,200	6,000	38,000	--	--	2,300	--	
MW3	10/30/98	101.29	a 21.62	79.67	0.00	--	--	--	--	--	--	--	--	--	
MW3	11/30/98	101.29	a 21.31	79.98	0.00	--	--	--	--	--	--	--	--	--	
MW3	12/28/98	101.29	a 21.15	80.14	0.06	--	--	--	--	--	--	--	--	--	
MW3	01/25/99	101.29	a 20.79	80.50	0.00	4,000	10,000	1200	6700	5,100	--	--	2900	--	
MW3	02/26/99	101.29	a 18.02	83.27	0.00	--	--	--	--	--	--	--	--	--	
MW3	03/24/99	101.29	a 18.37	82.92	0.00	--	--	--	--	--	--	--	--	--	
MW3	05/12/99	101.29	a 19.22	82.07	0.0083	--	--	--	--	--	--	--	--	--	
MW3	12/15-16/99	101.29	a 22.43	78.86	0.00	*	*	*	*	*	*	*	*	--	
MW3	03/20/00	101.29	a 17.14	84.15	0.00	--	--	--	--	--	--	--	--	--	
MW3	07/20/00	101.29	a 20.98	80.31	0.00	5,700	14,000	1,600	9,300	69,000	2,900	<300	3,300	--	
MW3	10/11/00	101.29	a 22.24	79.05	0.00	--	--	--	--	--	--	--	--	--	
MW3	04/10-11/01	101.29	a 20.70	80.59	0.00	7,200	<0.001	2,300	12,900	110,000	4,700	<1,500	4,300	--	
MW3	07/10/01	101.29	a 21.97	79.32	0.00	--	--	--	--	--	--	--	--	--	
MW3	11/20/01	65.99	b 22.80	43.19	0.00	6,300	16,000	2,400	14,900	100,000	5,900	<900	4,000	--	
MW3	02/19/02	65.99	b 20.11	45.88	0.00	--	--	--	--	--	--	--	--	--	
MW3	05/21/02	65.99	b 21.20	44.79	0.00	6,500	17,000	2,200	12,700	91,000	14,000	<3,000	2,200	--	
MW3	06/27/03	65.99	b 21.32	44.67	sheen	--	--	--	--	--	--	--	--	--	
MW3	09/29/03	65.99	b 22.79	43.20	sheen	*	*	*	*	*	*	*	*	--	
MW3 <sup>c</sup>	12/12/03	65.99	b 22.73	43.27	0.01	*	*	*	*	*	*	*	*	--	
MW3 <sup>c</sup>	03/15/04	65.99	b 19.32	46.67	sheen	*	*	*	*	*	*	*	*	--	
MW3	06/24/04	65.99	b 21.99	44.00	0.00	3,400	7,700	1,000	4,800	39,000	1,700	<500	1,100	--	
MW3	09/29/04	65.99	b 22.54	43.45	0.00	2,900	6,700	980	4,300	29,000	2,200	<500	1,100	--	
MW3	12/13/04	65.99	b 22.06	43.93	0.00	1,700	2,900	790	3,400	17,000	1,300	<500	490	--	
MW3 <sup>j</sup>	03/14/05	65.99	b 24.00	41.99	0.00	680	1,700	380	1,600	10,000	670	<500	67	--	
MW3	06/15/05	65.99	b 21.13	44.86	0.00	260	960	330	1,400	12,000	1,200	<500	31	--	
MW3	07/18/05	65.99	b NM	NC	NM	1,000	5,600	1,100	4,300	23,000	1,700	--	81	--	
MW3	09/26/05	65.99	b 22.92	43.07	0.00	4,000	17,000	1,900	17,000	79,000	5,100	540	270	--	
MW3	12/12/05	65.99	b 23.30	42.69	0.00	200	710	450	1,400	7,000	550	<500	<10	--	
MW3	03/29/06	65.99	b 15.70	50.29	0.00	110	300	130	490	3,800	<200	<100	13	--	
MW3	06/19/06	65.99	b 19.11	46.88	0.00	160	500	320	840	7,000	<300	<100	3.1	--	
MW3	09/29/06	65.99	b 21.15	44.84	0.00	1,300	2,300	720	2,900	22,000	<1500	<100	110	--	
MW3	12/12/06	65.99	b 21.38	44.61	0.00	1,400	2,200	670	2,600	21,000	<1500	<100	130	--	
MW3	03/01/07	65.99	b 19.50	46.49	0.00	1,100	2,500	510	2,200	17,000	<600	<100	51	--	
MW3	06/12/07	65.99	b 21.00	44.99	0.00	1,800	4,000	800	3,300	22,000	<1500	<100	150	--	
MW3	09/25/07	65.99	b 22.59	43.40	0.00	2,400	5,000	1,000	4,600	29,000	<500	<100	220	--	



TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	
MW3	12/20/07	65.99	b	22.59	43.40	0.00	2,400	4,900	1,100	4,700	36,000	<2000	<100	240	--
MW3	03/26/08	65.99	b	22.13	43.86	0.00	4,500	11,000	1,700	7,800	54,000	<1500	<100	340	--
MW3	06/03/08	65.99	b	21.81	44.18	0.00	3,900	8,700	1,500	7,000	47,000	<1500	<100	470	--
MW3	09/25/08	65.99	b	23.30	42.69	0.00	1,600	3,700	700	3,300	22,000	<3000	<100	220	180
MW3	12/29/08	65.99	b	22.92	43.07	0.00	310	910	320	1,300	11,000	<1500	<100	35	23
MW3	03/24/09	65.70	l	19.43	46.27	0.00	1,400	4,200	600	2,500	19,000	<1,000	<100	160	60
MW3	06/02/09	65.70	l	20.70	45.00	0.00	2,800	7,600	1,300	5,600	39,000	<1,500	<100	240	180
MW3	09/10/09	65.70	l	22.32	43.38	0.00	1,800	3,900	790	3,500	22,000	< 1500	< 100	190	110
MW3	12/04/09	65.70	l	24.20	41.50	0.00	1,600	3,400	860	3,900	25,000	< 800	< 100	210	81
MW3	03/10/10	65.70	l	22.03	43.67	0.00	420	2,400	640	3,600	27,000	< 3,000	< 100	24	--
MW3	05/28/10	65.70	l	22.84	42.86	0.00	1,200	4,600	920	4,800	31,000	< 5000	< 100	120	--
MW4	06/30/98	98.65	a	16.93	81.72	0.00	2,200	930	850	2,100	10,000	--	--	1,800	--
MW4	07/29/98	98.65	a	17.48	81.17	0.00	--	--	--	--	--	--	--	--	--
MW4	08/26/98	98.65	a	18.65	80.00	0.00	--	--	--	--	--	--	--	--	--
MW4	10/01/98	98.65	a	18.74	79.91	0.00	570	46	130	36	1,100	--	--	1,300	--
MW4	10/30/98	98.65	a	19.02	79.63	0.00	--	--	--	--	--	--	--	--	--
MW4	11/30/98	98.65	a	18.74	79.91	0.00	--	--	--	--	--	--	--	--	--
MW4	12/28/98	98.65	a	18.60	80.05	0.00	--	--	--	--	--	--	--	--	--
MW4	01/25-26/99	98.65	a	18.32	80.33	0.00	230	<8.3	<8.3	<8.3	290	--	--	1,300	--
MW4	02/26/99	98.65	a	15.81	82.84	0.00	--	--	--	--	--	--	--	--	--
MW4	03/24/99	98.65	a	16.01	82.64	0.00	--	--	--	--	--	--	--	--	--
MW4	05/12/99	98.65	a	17.71	80.94	0.00	--	--	--	--	--	--	--	--	--
MW4	12/15-16/99	98.65	a	19.83	78.82	0.00	5.8	<0.50	<0.50	<0.50	<50	--	--	1,400	--
MW4	03/20/00	98.65	a	14.9	83.75	0.00	--	--	--	--	--	--	--	--	--
MW4	07/20/00	98.65	a	18.38	80.27	0.00	91	4.6	19	12.9	210	<50	<300	1,500	--
MW4	10/11/00	98.65	a	19.61	79.04	0.00	--	--	--	--	--	--	--	--	--
MW4	04/10-11/01	98.65	a	17.55	81.10	0.00	110	<5.0	<5.0	<5.0	350	<50	<300	1,100	--
MW4	07/10/01	98.65	a	19.34	79.31	0.00	--	--	--	--	--	--	--	--	--
MW4	11/20/01	63.35	b	20.16	43.19	0.00	<2.5	4	<2.5	3.7	96	<50	<300	2,500	--
MW4	02/19/02	63.35	b	17.34	46.01	0.00	--	--	--	--	--	--	--	--	--
MW4	05/21/02	63.35	b	18.57	44.78	0.00	340	5.7	70	<1.0	940	83	<300	1,600	--
MW4	06/27/03	63.35	b	18.72	44.63	0.00	--	--	--	--	--	--	--	--	--
MW4	09/29/03	63.35	b	20.11	43.24	0.00	<5.0	<5.0	<5.0	<10	1,100	<50	<500	1,700	--
MW4	12/12/03	63.35	b	20.06	43.29	0.00	<13	<13	<13	<25	<1,300	<50	<500	1,000	--
MW4	03/15/04	63.35	b	16.89	46.46	0.00	1.5	<0.50	<0.50	<1.0	54	<50	<500	41	--
MW4	06/24/04	63.35	b	19.31	44.04	0.00	69	<5.0	<5.0	<10	920	<50	<500	1,100	--
MW4	09/29/04	63.35	b	20.20	43.15	0.00	<5.0	<5.0	<5.0	<10	940	<50	<500	1,200	--
MW4	12/13/04	**	b	20.44	NC	0.00	<5.0	<5.0	<5.0	<10	740	<50	<500	860	--
MW4	03/14/05	**	b	18.30	NC	0.00	20	<5.0	<5.0	<10	930	<50	<500	930	--
MW4	06/15/05	**	b	20.03	NC	0.00	350	6.1	<5.0	<10	2100	89	<500	1,100	--
MW4	07/18/05	**	b	NM	NC	NM	11	<5.0	<5.0	<10	540	<50	--	1,100	--
MW4	09/26/05	**	b	21.79	NC	0.00	<5.0	<5.0	<5.0	<10	960	<50	<500	660	--
MW4	12/12/05	**	b	21.89	NC	0.00	<5.0	<5.0	<5.0	<10	820	<50	<500	1,000	--
MW4	03/29/06	**	b	14.85	NC	0.00	49	160	120	300	2,400	<100	<100	130	--
MW4	06/19/06	**	b	17.96	NC	0.00	100	940	540	1,800	8,800	<400	<100	55	--
MW4	09/29/06	63.35	b	19.85	43.50	0.00	18.0	2.6	1.5	3.5	370.0	<50	<100	180	--
MW4	12/12/06	63.35	b	20.03	43.32	0.00	11.0	0.77	<0.5	<0.5	230.0	<50	<100	260	--
MW4	03/01/07	63.35	b	18.33	45.02	0.00	63.0	7.10	40.0	190.0	1,800.0	<50	<100	130	--

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	
MW4	06/12/07	63.35	b 19.70	43.65	0.00	9.3	<0.5	<0.5	<0.5	<0.5	70.0	<50	<100	150	--
MW4	09/25/07	63.35	b 21.27	42.08	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	300	--	
MW4	12/20/07	63.35	b 21.30	42.05	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	370	--	
MW4	03/26/08	63.35	b 20.89	42.46	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	260	--	
MW4	06/03/08	63.35	b 20.51	42.84	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	190	--	
MW4	09/25/08	63.35	b 22.03	41.32	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	380	<5.0	
MW4	12/29/08	63.35	b 21.62	41.73	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	230	<5.0	
MW4	03/24/09	64.37	l 18.38	45.99	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	370	<5.0	
MW4	06/02/09	64.37	l 19.32	45.05	0.00	0.64	<0.5	<0.5	<0.5	<50	<50	<100	320	<5.0	
MW4	09/10/09	64.37	l 21.00	43.37	0.00	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	< 100	280	< 5.0	
MW4	12/04/09	64.37	l 22.76	41.61	0.00	< 0.50	< 0.50	< 0.50	2.9	< 50	< 50	< 100	430	< 5.0	
MW4	03/10/10	64.37	l 20.87	43.50	0.00	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	< 100	130	--	
MW4	05/28/10	64.37	l 21.07	43.30	0.00	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	< 100	140	--	
MW5	06/30/98	100.9	a 20.60	80.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	23	--	
MW5	07/29/98	100.9	a 21.52	79.38	0.00	--	--	--	--	--	--	--	--	--	
MW5	08/26/98	100.9	a 22.21	78.69	0.00	--	--	--	--	--	--	--	--	--	
MW5	10/01/98	100.9	a 22.95	77.95	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--	
MW5	10/30/98	100.9	a 23.23	77.67	0.00	--	--	--	--	--	--	--	--	--	
MW5	11/30/98	100.9	a 23.12	77.78	0.00	--	--	--	--	--	--	--	--	--	
MW5	12/28/98	100.9	a 23.18	77.72	0.00	--	--	--	--	--	--	--	--	--	
MW5	01/25-26/99	100.9	a 22.61	78.29	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--	
MW5	02/26/99	100.9	a 19.78	81.12	0.00	--	--	--	--	--	--	--	--	--	
MW5	03/24/99	100.9	a 20.25	80.65	0.00	--	--	--	--	--	--	--	--	--	
MW5	05/12/99	100.9	a 21.06	79.84	0.00	--	--	--	--	--	--	--	--	--	
MW5	12/15-16/99	100.9	a 24.19	76.71	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<0.50	--	
MW5	03/20/00	100.9	a 19.15	81.75	0.00	--	--	--	--	--	--	--	--	--	
MW5	07/20/00	100.9	a 21.84	79.06	0.00	<0.50	0.98	<0.50	<0.50	<50	<50	<300	1.9	--	
MW5	10/11/00	100.9	a 23.4	77.50	0.00	--	--	--	--	--	--	--	--	--	
MW5	04/10-11/01	100.9	a 22.3	78.60	0.00	<0.50	2.6	<0.50	0.6	<50	<50	<300	1.5	--	
MW5	07/10/01	100.9	a 23.64	77.26	0.00	--	--	--	--	--	--	--	--	--	
MW5	11/20/01	65.59	b 24.65	40.94	0.00	0.83	12	1.2	11	140	860	2,500	10	--	
MW5	02/19/02	65.59	b 22.37	43.22	0.00	--	--	--	--	--	--	--	--	--	
MW5	05/21/02	65.59	b 23.10	42.49	0.00	<0.50	<0.50	<0.50	<0.50	<50	2,200	<300	<2.0	--	
MW5	06/27/03	65.59	b 23.07	42.52	0.00	--	--	--	--	--	--	--	--	--	
MW5	09/29/03	65.59	b 24.38	41.21	0.00	<0.50	0.52	7.1	35	100	<50	<500	1.4	--	
MW5	12/12/03	65.59	b 23.90	41.69	0.00	<0.50	<0.50	<0.50	<1	<50	<50	<500	1.5	--	
MW5	03/15/04	65.59	b 20.82	44.77	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	
MW5	06/24/04	65.59	b 23.57	42.02	0.00	<0.50	<0.50	<0.50	<1.0	<50	130	<500	0.79	--	
MW5	09/29/04	65.59	b 24.44	41.15	0.00	--	--	--	--	--	--	--	--	--	
MW5	12/13/04	65.59	b 23.87	41.72	0.00	--	--	--	--	--	--	--	--	--	
MW5	03/14/05	65.59	b 20.18	45.41	0.00	<0.50	1.3	1.5	8.6	82	<50	<500	<0.50	--	
MW5	06/15/05	65.59	b 12.96	52.63	0.00	--	--	--	--	--	--	--	--	--	
MW5	09/26/05	65.59	b 23.60	41.99	0.00	--	--	--	--	--	--	--	--	--	
MW5	12/12/05	65.59	b 23.84	41.75	0.00	--	--	--	--	--	--	--	--	--	
MW5	03/29/06	65.59	b 17.19	48.40	0.00	<0.50	<0.50	<0.50	<0.50	73	<50	<100	<0.50	--	
MW5	06/19/06	65.59	b 20.22	45.37	0.00	--	--	--	--	--	--	--	--	--	
MW5	09/29/06	65.59	b 22.80	42.79	0.00	--	--	--	--	--	--	--	--	--	
MW5	12/12/06	65.59	b 23.08	42.51	0.00	--	--	--	--	--	--	--	--	--	

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	
MW5	03/01/07	65.59	b	21.02	44.57	0.00	<0.50	<0.50	<0.50	<0.50	54	<50	<100	<0.50	--
MW5	06/12/07	65.59	b	22.78	42.81	0.00	--	--	--	--	--	--	--	--	--
MW5	09/25/07	65.59	b	24.45	41.14	0.00	<0.50	1.5	<0.50	<0.50	<50	<50	<100	0.64	--
MW5	12/20/07	65.59	b	24.52	41.07	0.00	--	--	--	--	--	--	--	--	--
MW5	03/26/08	65.59	b	24.08	41.51	0.00	<0.50	1.5	<0.50	<0.50	<50	<50	<100	<0.5	--
MW5	06/03/08	65.59	b	23.68	41.91	0.00	--	--	--	--	--	--	--	--	--
MW5	09/25/08	65.59	b	25.00	40.59	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	0.66	<5.0
MW5	12/29/08	65.59	b	24.92	40.67	0.00	<0.50	<0.50	<0.50	<0.50	71	<50	<100	<0.5	<5.0
MW5	03/24/09	65.59	l	21.85	43.74	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	0.54	<5.0
MW5	06/02/09	65.59	l	22.70	42.89	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.5	<5.0
MW5	09/10/09	65.59	l	24.12	41.47	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	0.56	<5.0
MW5	12/04/09	65.59	l	dry	--	0.00	--	--	--	--	--	--	--	--	--
MW5	03/10/10	65.59	l	25.90	39.69	0.00	<0.50	<0.50	<0.50	<0.50	55	<50	<100	0.71	--
MW5	05/28/10	65.59	l	25.54	40.05	0.00	--	--	--	--	--	--	--	--	--
MW6	07/20/00	96.60	a	18.30	78.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	160	--
MW6	10/11/00	96.60	a	18.69	77.91	0.00	--	--	--	--	--	--	--	--	--
MW6	04/10-11/01	96.60	a	17.85	78.75	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	180	--
MW6	07/10/01	96.60	a	18.43	78.17	0.00	--	--	--	--	--	--	--	--	--
MW6	11/20/01	59.60	b	18.67	40.93	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	450	--
MW6	02/19/02	59.60	b	17.40	42.20	0.00	--	--	--	--	--	--	--	--	--
MW6	05/21/02	59.60	b	17.68	41.92	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	170	--
MW6	06/27/03	59.60	b	17.73	41.87	0.00	--	--	--	--	--	--	--	--	--
MW6	09/29/03	59.60	b	18.48	41.12	0.00	<1.0	<1.0	<1.0	<2.0	230	<50	<500	340	--
MW6	12/12/03	59.60	b	17.89	41.71	0.00	<2.5	<2.5	<2.5	<5.0	<250	51	<500	190	--
MW6	03/15/04	59.60	b	16.46	43.14	0.00	<1.0	<1.0	<1.0	<2.0	200	<50	<500	220	--
MW6	06/24/04	59.60	b	17.97	41.63	0.00	<1.0	<1.0	<1.0	<2.0	130	<50	<500	190	--
MW6	09/29/04	59.60	b	18.55	41.05	0.00	<0.50	0.61	<0.50	1.2	210	<50	<500	190	--
MW6	12/13/04	59.60	b	17.88	41.72	0.00	--	--	--	--	--	--	--	--	--
MW6	03/14/05	59.60	b	16.82	42.78	0.00	<0.50	<0.50	<0.50	1.8	160	<50	<500	190	--
MW6	06/15/05	59.60	b	17.60	42.00	0.00	--	--	--	--	--	--	--	--	--
MW6	09/26/05	59.60	b	NM	NM	0.00	--	--	--	--	--	--	--	--	--
MW6	12/12/05	59.60	b	18.33	41.27	0.00	0.62	<0.50	<0.50	1.0	81	<50	<500	140	--
MW6	03/29/06	59.60	b	14.53	45.07	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	120	--
MW6	06/19/06	59.60	b	16.46	43.14	0.00	--	--	--	--	--	--	--	--	--
MW6	09/29/06	59.60	b	17.60	42.00	0.00	0.87	<0.50	<0.50	<0.50	<50	<50	<100	140	--
MW6	12/12/06	59.60	b	16.93	42.67	0.00	0.67	<0.50	<0.50	<0.50	<50	<50	230	89	--
MW6	03/01/07	59.60	b	16.30	43.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	78	--
MW6	06/12/07	59.60	b	17.38	42.22	0.00	--	--	--	--	--	--	--	--	--
MW6	09/25/07	59.60	b	18.36	41.24	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	89	--
MW6	12/20/07	59.60	b	17.90	41.70	0.00	--	--	--	--	--	--	--	--	--
MW6	03/26/08	59.60	b	17.37	42.23	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	68	--
MW6	06/03/08	59.60	b	17.11	42.49	0.00	--	--	--	--	--	--	--	--	--
MW6	09/25/08	59.60	b	18.82	40.78	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	78	<5.0
MW6	12/29/08	59.60	b	18.30	41.30	0.00	0.77	<0.50	<0.50	<0.50	<50	<50	<100	44	<5.0
MW6	03/24/09	59.60	l	16.80	42.80	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	51	<5.0
MW6	06/02/09	59.60	l	17.27	42.33	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	59	<5.0
MW6	09/10/09	59.60	l	18.20	41.40	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	73	<5.0
MW6	12/04/09	59.60	l	19.07	40.53	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	50	<5.0

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	
MW6	03/10/10	59.60	1	17.80	41.80	0.00	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	< 100	51	--
MW6	05/28/10	59.60	1	18.02	41.58	0.00	--	--	--	--	--	--	--	--	--
MW7	07/20/00	96.75	a	15.93	80.82	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	--
MW7	10/11/00	96.75	a	16.90	79.85	0.00	--	--	--	--	--	--	--	--	--
MW7	04/10-11/01	96.75	a	15.80	80.95	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	--
MW7	07/10/01	96.75	a	16.71	80.04	0.00	--	--	--	--	--	--	--	--	--
MW7	11/20/01	59.47	b	16.17	43.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<2.0	--
MW7	02/19/02	59.47	b	14.92	44.55	0.00	--	--	--	--	--	--	--	--	--
MW7	05/21/02	59.47	b	15.18	44.29	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	--
MW7	06/27/03	59.47	b	16.28	43.19	0.00	--	--	--	--	--	--	--	--	--
MW7	09/29/03	59.47	b	16.88	42.59	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	0.62	--
MW7	12/12/03	59.47	b	14.95	44.52	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--
MW7	03/15/04	59.47	b	14.77	44.70	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--
MW7	06/24/04	59.47	b	16.33	43.14	0.00	<0.50	<0.50	<0.50	<1.0	<50	300	<500	<0.50	--
MW7	09/29/04	59.47	b	16.88	42.59	0.00	--	--	--	--	--	--	--	--	--
MW7	12/13/04	59.47	b	15.26	44.21	0.00	--	--	--	--	--	--	--	--	--
MW7	03/14/05	59.47	b	15.00	44.47	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--
MW7	06/15/05	59.47	b	15.32	44.15	0.00	--	--	--	--	--	--	--	--	--
MW7	09/26/05	59.47	b	NM	NM	0.00	--	--	--	--	--	--	--	--	--
MW7	12/12/05	59.47	b	15.99	43.48	0.00	--	--	--	--	--	--	--	--	--
MW7	03/29/06	59.47	b	12.65	46.82	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--
MW7	06/19/06	59.47	b	14.49	44.98	0.00	--	--	--	--	--	--	--	--	--
MW7	09/29/06	59.47	b	16.67	42.80	0.00	--	--	--	--	--	--	--	--	--
MW7	12/12/06	59.47	b	15.21	44.26	0.00	--	--	--	--	--	--	--	--	--
MW7	03/01/07	59.47	b	14.68	44.79	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--
MW7	06/12/07	59.47	b	16.2	43.27	0.00	--	--	--	--	--	--	--	--	--
MW7	09/25/07	59.47	b	16.72	42.75	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--
MW7	12/20/07	59.47	b	15.02	44.45	0.00	--	--	--	--	--	--	--	--	--
MW7	03/26/08	59.47	b	15.95	43.52	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--
MW7	06/03/08	59.47	b	14.24	45.23	0.00	--	--	--	--	--	--	--	--	--
MW7	09/25/08	59.47	b	17.07	42.40	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW7	12/29/08	59.47	b	15.64	43.83	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW7	03/24/09	59.49	1	14.57	44.92	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW7	06/02/09	59.49	1	16.10	43.39	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW7	09/10/09	59.49	1	17.10	42.39	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW7	12/04/09	59.49	1	17.10	42.39	0.00	--	--	--	--	--	--	--	--	--
MW7	03/10/10	59.49	1	15.17	44.32	0.00	--	--	--	--	--	--	--	--	--
MW7	05/28/10	59.49	1	15.20	44.29	0.00	--	--	--	--	--	--	--	--	--
MW8	12/29/08	NS	b	15.71	NC	0.00	<0.50	0.64	<0.50	0.78	<50	<50	<100	1.5	<5.0
MW8	03/24/09	57.07	1	16.08	40.99	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW8	06/02/09	57.07	1	15.46	41.61	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0
MW8	09/10/09	57.07	1	15.58	41.49	0.00	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	< 100	2.4	< 5.0
MW8	12/04/09	57.07	1	16.27	40.80	0.03	--	--	--	--	--	--	--	--	--
MW8	03/10/10	57.07	1	14.47	42.60	0.03	--	--	--	--	--	--	--	--	--
MW8	05/28/10	57.07	1	16.12	40.95	0.03	--	--	--	--	--	--	--	--	--
MW9A	09/10/09	65.90		22.51	43.39	0.00	7,800	33,000	4,500	25,000	160,000	< 20,000	410	1,800	780

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)								
						Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA
MW9A	12/04/09	65.90	24.42	41.48	0.00	--	--	--	--	--	--	--	--	--
MW9A (m)	12/28/09	65.90	24.62	41.28	sheen	12,000	34,000	4,300	24,000	180,000	<200,000	3,400	2,100	680
MW9A	03/10/10	65.90	22.30	43.60	0.00	15,000	42,000	4,800	26,000	210,000	< 40,000	250	2,300	--
MW9A	05/28/10	65.90	22.62	43.29 (n)	0.02	Not Sampled due to Free Product								
MW9B	09/10/09	65.85	22.30	43.55	0.00	640	4,500	1,100	6,500	36,000	< 3,000	< 100	61	< 50
MW9B	12/04/09	65.85	24.00	41.85	0.00	63	250	180	620	5,600	< 300	< 100	3.1	< 5.0
MW9B	03/10/10	65.85	22.41	43.44	0.00	98	310	340	900	7,500	< 600	< 100	5.7	--
MW9B	05/28/10	65.85	22.50	43.35	0.00	31	75	150	270	2,900	< 400	< 100	2.9	--
O1	09/10/09	65.91	22.44	43.47	0.00	960	2,400	1,000	4,600	23,000	< 1,500	< 100	180	84
O1	12/04/09	65.91	24.33	41.58	0.00	1,000	3,700	1,700	7,400	38,000	< 1000	< 100	310	200
O1	03/10/10	65.91	22.20	43.71	0.00	660	2,600	970	5,300	29,000	< 1000	< 100	200	--
O1	05/28/10	65.91	22.49	43.42	0.00	610	2,000	1,000	4,200	21,000	< 1500	< 100	270	--
QCTB	03/10/10	--	--	--	--	<0.5	<0.5	<0.5	<0.5	< 50	--	--	<0.5	--

TABLE 2a CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

SPH	Separate-phase hydrocarbons.
GW	Groundwater.
TPH-g	Total Petroleum Hydrocarbons as gasoline.
TPH-d	Total Petroleum Hydrocarbons as diesel.
TPH-mo	Total Petroleum Hydrocarbons as motor oil.
MTBE	Methyl tertiary butyl ether.
TBA	Tertiary Butyl Alcohol
NC	Not calculated.
NS	Not surveyed
µg/L	Micrograms per liter.
*	SPH present; not sampled.
**	Well MW4 elevation modified due to site renovation activities. Not Surveyed.
--	Not analyzed or not sampled.
<	Less than the laboratory reporting limits.
a	Elevations are referenced to monitoring well MW1, with assumed datum of 100.00 feet.
b	Elevations based on a survey conducted August 2002 and referenced benchmark with known elevation (NGVD 29) of 60.40 feet above mean sea level.
c	Analysis not conducted due to broken sample containers.
d	Hydrocarbon reported in the gasoline range does not match laboratory gasoline standard.
e	Groundwater elevation in wells with LPH are corrected by multiplying the specific gravity of gasoline (0.69) by the LPH thickness and adding this value to the water elevation.
f	Hydrocarbon reported is in the early diesel range, and does not match the laboratory diesel standard.
g	Sample contained discrete peak in gasoline range and identified by lab as MTBE.
h	Quantity of unknown hydrocarbon(s) in sample based on diesel.
i	The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.
j	Depth to groundwater is based on the depth of the stingers.
k	Quantity of unknown hydrocarbon(s) in sample based on motor oil.
l	Resurveyed Prior to 1st Quarter 2009 Measurements
m	The well was not purged due to insufficient water.
n	Groundwater elevation corrected by substituting the "product thickness" in the water column of the well with thickness of the groundwater equivalent, determined by multiplying the specific gravity of gasoline (0.739) by the "product thickness".

TABLE 2b NATURAL ATTENUATION PARAMETERS  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW1	07/27/93	--	--	--	--	--	--	--	--	--	--	--	--
MW1	10/02/97	--	--	--	--	--	--	--	--	--	--	--	--
MW1	06/30/98	204	5	--	6.16	--	0.046	55	<0.10	--	<0.10	<0.10	2
MW1	07/29/98	--	--	--	--	--	--	--	--	--	--	--	--
MW1	08/26/98	--	--	--	--	--	--	--	--	--	--	--	--
MW1	10/01/98	192	3.6	--	6.49	--	--	--	--	--	--	--	--
MW1	10/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/28/98	--	--	--	--	--	--	--	--	--	--	--	--
MW1	01/25/99	389	3.4	--	6.72	--	--	--	--	--	--	--	--
MW1	02/26/99	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/24/99	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/12/99	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/15/99	--	3.31	--	6.52	--	--	--	--	--	--	--	--
MW1	03/20/00	--	--	--	--	--	--	--	--	--	--	--	--
MW1	07/20/00	120	7.37	--	6.66	--	<0.01	54	<0.10	--	3.4	3.4	<0.2
MW1	10/11/00	--	--	--	--	--	--	--	--	--	--	--	--
MW1	04/10-11/01	117	NR	--	NR	--	0.045	57	<0.10	--	6.6	6.6	0.15
MW1	07/10/01	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/20/01	-- <sup>c</sup>	0.65	--	6.47	--	1.8	63	<0.10	--	--	--	<0.20
MW1	02/19/02	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/21/02	120	0.96	--	6.25	--	0.5	58	<0.10	--	5.5	5.5	<0.20
MW1	06/27/03	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/29/03	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/12/03	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/15/04	--	0.14	--	--	--	--	--	--	--	--	--	--
MW1	06/24/04	--	0.15	--	--	--	--	--	--	--	--	--	--
MW1	09/29/04	--	1.01	--	6.42	--	--	--	--	--	--	--	--
MW1	12/13/04	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/14/05	--	1.96	--	6.04	--	--	--	--	--	--	--	--
MW1	06/15/05	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/26/05	--	1.84	317.4	6.43	--	--	--	--	--	--	--	--
MW1	12/12/05	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/29/06	--	1.57	--	6.73	--	--	--	--	--	--	--	--
MW1	06/19/06	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/29/06	--	0.43	--	6.40	--	--	--	--	--	--	--	--
MW1	12/12/06	--	0.38	--	6.39	--	--	--	--	--	--	--	--
MW1	03/01/07	--	0.86	--	6.39	--	--	--	--	--	--	--	--
MW1	06/12/07	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/25/07	--	16.87	--	6.40	--	--	--	--	--	--	--	--
MW1	12/20/07	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/26/08	--	3.1	71.10	6.11	--	--	--	--	--	--	--	--
MW1	06/03/08	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2b NATURAL ATTENUATION PARAMETERS  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW1	06/02/09	--	1.3	232.00	5.50	--	--	--	--	--	--	--	--
MW1	09/10/09	--	2.1	186.00	6.70	--	--	--	--	--	--	--	--
MW1	12/04/09	--	1.5	13.00	6.60	--	--	--	--	--	--	--	--
MW1	03/10/10	--	2.0	83.00	5.80	--	--	--	--	--	--	--	--
MW2	07/27/93	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/02/97	*	*	*	*	--	*	*	*	--	*	--	*
MW2	06/30/98	185	2.2	--	5.98	--	--	--	--	--	--	--	--
MW2	07/29/98	--	--	--	--	--	--	--	--	--	--	--	--
MW2	08/26/98	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/01/98	--	2.7	--	6.47	--	--	--	--	--	--	--	--
MW2	10/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW2	11/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/28/98	--	--	--	--	--	--	--	--	--	--	--	--
MW2	01/25/99	386	0.3	--	6.69	--	--	--	--	--	--	--	--
MW2	02/26/99	--	--	--	--	--	--	--	--	--	--	--	--
MW2	03/24/99	--	--	--	--	--	--	--	--	--	--	--	--
MW2	05/12/99	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/15-16/99	*	*	*	*	--	*	*	*	--	*	--	*
MW2	03/20/00	--	--	--	--	--	--	--	--	--	--	--	--
MW2	07/20/00	*	0.88	*	6.37	--	*	*	*	--	*	--	*
MW2	10/11/00	--	--	--	--	--	--	--	--	--	--	--	--
MW2	04/10-11/01	168	NR	--	NR	--	2.5	16	0.14	--	0.19	--	<0.20
MW2	07/10/01	--	--	--	--	--	--	--	--	--	--	--	--
MW2	11/20/01	120	NR	--	6.15	--	2	16	<0.10	--	--	--	<0.20
MW2	02/19/02	--	--	--	--	--	--	--	--	--	--	--	--
MW2	05/21/02	160	0.88	--	5.99	--	1.7	13	<0.10	--	0.54	--	<0.20
MW2	06/27/03	--	--	--	--	--	--	--	--	--	--	--	--
MW2	09/29/03	*	*	*	*	--	*	*	*	--	*	--	*
MW2 <sup>e</sup>	12/12/03	*	*	*	*	--	*	*	*	--	*	--	*
MW2 <sup>e</sup>	03/15/04	*	*	*	*	--	*	*	*	--	*	--	*
MW2 <sup>e</sup>	06/24/04	*	*	*	*	--	*	*	*	--	*	--	*
MW2 <sup>e</sup>	09/29/04	*	*	*	*	--	*	*	*	--	*	--	*
MW2 <sup>e</sup>	12/13/04	*	0.27	*	6.63	--	*	*	*	--	*	--	*
MW2 <sup>j</sup>	03/14/05	*	*	*	*	--	*	*	*	--	*	--	*
MW2	06/15/05	--	3.05	-147.6	--	--	--	--	--	--	--	--	--
MW2	07/18/05	--	--	--	--	--	--	--	--	--	--	--	--
MW2	09/26/05	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/12/05	--	--	--	--	--	--	--	--	--	--	--	--
MW2	03/29/06	--	7.59	--	6.9	--	--	--	--	--	--	--	--
MW2	06/19/06	--	1.78	--	6.21	--	--	--	--	--	--	--	--
MW2	09/29/06	--	1.71	--	6.66	--	--	--	--	--	--	--	--
MW2	12/12/06	--	1.5	--	6.61	--	--	--	--	--	--	--	--
MW2	03/01/07	--	1.2	--	6.7	--	--	--	--	--	--	--	--
MW2	06/12/07	--	1.12	--	6.7	--	--	--	--	--	--	--	--
MW2	09/25/07	--	2.52	--	6.57	--	--	--	--	--	--	--	--



TABLE 2b NATURAL ATTENUATION PARAMETERS  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW2	12/20/07	--	1.1	--	6.47	--	--	--	--	--	--	--	--
MW2	03/26/08	--	4.13	-5.7	6.18	--	--	--	--	--	--	--	--
MW2	06/03/08	--	0.91	-24.6	6.43	--	--	--	--	--	--	--	--
MW2	09/25/08	--	1.3	-146	6.1	--	--	--	--	--	--	--	--
MW2	12/29/08	--	1.2	-80	6.4	--	--	--	--	--	--	--	--
MW2	03/24/09	--	0.9	-61	6.9	--	--	--	--	--	--	--	--
MW2	06/02/09	--	1.4	-60	5.7	--	--	--	--	--	--	--	--
MW2	09/10/09	--	1.3	-44	7.4	71	--	--	--	<0.1	0.58	1.4	<0.1
MW2	12/04/09	--	1.3	-17	6.8	--	--	--	--	--	--	--	--
MW2	03/10/10	--	1.5	-12	6.0	--	--	--	--	--	--	--	--
MW2	05/28/10	--	2	0.1	6.5	--	--	--	--	--	--	--	--
MW3	07/27/93	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/02/97	--	--	--	--	--	--	--	--	--	--	--	--
MW3	06/30/98	300	2	--	6.03	--	9.8	13	1.4	--	<0.10	--	2.4
MW3	07/29/98	--	--	--	--	--	--	--	--	--	--	--	--
MW3	08/26/98	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/01/98	240	2	--	6.65	--	--	--	--	--	--	--	--
MW3	10/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/28/98	--	--	--	--	--	--	--	--	--	--	--	--
MW3	01/25/99	238	1	--	7.01	--	--	--	--	--	--	--	--
MW3	02/26/99	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/24/99	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/12/99	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/15-16/99	*	*	*	*	--	*	*	*	--	*	--	*
MW3	03/20/00	--	--	--	--	--	--	--	--	--	--	--	--
MW3	07/20/00	128	2.05	--	6.73	--	6.6	20	<0.10	--	0.55	--	<0.20
MW3	10/11/00	--	--	--	--	--	--	--	--	--	--	--	--
MW3	04/10-11/01	137	NR	--	NR	--	6	8.2	<0.10	--	0.13	--	<0.20
MW3	07/10/01	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/20/01	120	2.93	--	6.67	--	12	31	<0.10	--	--	--	<0.20
MW3	02/19/02	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/21/02	130	1.01	--	6.62	--	9.6	25	<0.10	--	0.77	--	<0.20
MW3	06/27/03	--	--	--	--	--	--	--	--	--	--	--	--
MW3	09/29/03	*	*	*	*	--	*	*	*	--	*	--	*
MW3 <sup>e</sup>	12/12/03	*	*	*	*	--	*	*	*	--	*	--	*
MW3 <sup>e</sup>	03/15/04	*	*	*	*	--	*	*	*	--	*	--	*
MW3	06/24/04	--	0.07	--	--	--	--	--	--	--	--	--	--
MW3	09/29/04	--	0.80	--	6.42	--	--	--	--	--	--	--	--
MW3	12/13/04	--	0.16	--	6.7	--	--	--	--	--	--	--	--
MW3 <sup>j</sup>	03/14/05	--	--	--	--	--	--	--	--	--	--	--	--
MW3	06/15/05	--	1.93	-150.4	--	--	--	--	--	--	--	--	--
MW3	07/18/05	--	--	--	--	--	--	--	--	--	--	--	--
MW3	09/26/05	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/12/05	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2b NATURAL ATTENUATION PARAMETERS  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW3	03/29/06	--	1.23	--	6.89	--	--	--	--	--	--	--	--
MW3	06/19/06	--	2.30	--	6.40	--	--	--	--	--	--	--	--
MW3	09/29/06	--	1.05	--	6.78	--	--	--	--	--	--	--	--
MW3	12/12/06	--	0.6	--	6.72	--	--	--	--	--	--	--	--
MW3	03/01/07	--	1.11	--	6.76	--	--	--	--	--	--	--	--
MW3	06/12/07	--	0.97	--	6.74	--	--	--	--	--	--	--	--
MW3	09/25/07	--	1.62	--	6.63	--	--	--	--	--	--	--	--
MW3	12/20/07	--	0.9	--	6.62	--	--	--	--	--	--	--	--
MW3	03/26/08	--	2.2	3.1	6.35	--	--	--	--	--	--	--	--
MW3	06/03/08	--	0.88	-29.2	6.64	--	--	--	--	--	--	--	--
MW3	09/25/08	--	1.5	-176	6.00	--	--	--	--	--	--	--	--
MW3	12/29/08	--	1.6	-112	6.50	--	--	--	--	--	--	--	--
MW3	03/24/09	--	0.5	-129	7.00	--	--	--	--	--	--	--	--
MW3	06/02/09	--	1.1	-67	5.80	--	--	--	--	--	--	--	--
MW3	09/10/09	--	1.3	-79	7.70	30	--	--	--	<0.1	0.41	0.56	<0.1
MW3	12/04/09	--	1.2	-14	6.80	--	--	--	--	--	--	--	--
MW3	03/10/10	--	1.4	2.0	5.90	--	--	--	--	--	--	--	--
MW3	05/28/10	--	1.9	10.0	6.50	--	--	--	--	--	--	--	--
MW4	06/30/98	222	2.6	--	6.18	--	4.3	14	0.8	--	0.8	--	1.5
MW4	07/29/98	--	--	--	--	--	--	--	--	--	--	--	--
MW4	08/26/98	--	--	--	--	--	--	--	--	--	--	--	--
MW4	10/01/98	320	3.4	--	<0.001	--	--	--	--	--	--	--	--
MW4	10/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/28/98	--	--	--	--	--	--	--	--	--	--	--	--
MW4	01/25-26/99	475	6.7	--	7	--	--	--	--	--	--	--	--
MW4	02/26/99	--	--	--	--	--	--	--	--	--	--	--	--
MW4	03/24/99	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/12/99	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/15-16/99	--	1.75	--	7.02	--	--	--	--	--	--	--	--
MW4	03/20/00	--	--	--	--	--	--	--	--	--	--	--	--
MW4	07/20/00	126	3.88	--	6.67	--	5.3	11	<0.10	--	0.04	--	<0.20
MW4	10/11/00	--	--	--	--	--	--	--	--	--	--	--	--
MW4	04/10-11/01	107	NR	--	NR	--	6.3	10	<0.10	--	<0.05	--	<0.20
MW4	07/10/01	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/20/01	130	0.83	--	6.51	--	10	11	<0.10	--	--	--	<0.20
MW4	02/19/02	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/21/02	150	1.65	--	6.32	--	8.4	9	<0.10	--	0.06	--	<0.20
MW4	06/27/03	--	--	--	--	--	--	--	--	--	--	--	--
MW4	09/29/03	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/12/03	--	--	--	--	--	--	--	--	--	--	--	--
MW4	03/15/04	--	0.16	--	--	--	--	--	--	--	--	--	--
MW4	06/24/04	--	0.15	--	--	--	--	--	--	--	--	--	--
MW4	09/29/04	--	0.13	--	6.63	--	--	--	--	--	--	--	--
MW4	12/13/04	--	0.58	--	6.84	--	--	--	--	--	--	--	--

TABLE 2b NATURAL ATTENUATION PARAMETERS  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW4	03/14/05	--	0.28	--	6.34	--	--	--	--	--	--	--	--
MW4	06/15/05	--	0.46	-98.9	--	--	--	--	--	--	--	--	--
MW4	07/18/05	--	--	--	--	--	--	--	--	--	--	--	--
MW4	09/26/05	--	2.20	210.4	6.73	--	--	--	--	--	--	--	--
MW4	12/12/05	--	2.05	--	6.62	--	--	--	--	--	--	--	--
MW4	03/29/06	--	1.07	--	6.82	--	--	--	--	--	--	--	--
MW4	06/19/06	--	2.49	--	5.76	--	--	--	--	--	--	--	--
MW4	09/29/06	--	0.25	--	6.66	--	--	--	--	--	--	--	--
MW4	12/12/06	--	0.90	--	6.61	--	--	--	--	--	--	--	--
MW4	03/01/07	--	0.76	--	6.6	--	--	--	--	--	--	--	--
MW4	06/12/07	--	1.06	--	6.9	--	--	--	--	--	--	--	--
MW4	09/25/07	--	6.67	--	6.59	--	--	--	--	--	--	--	--
MW4	12/20/07	--	1.45	--	6.57	--	--	--	--	--	--	--	--
MW4	03/26/08	--	4.56	65	6.35	--	--	--	--	--	--	--	--
MW4	06/03/08	--	1.34	101.3	6.49	--	--	--	--	--	--	--	--
MW4	09/25/08	--	2.2	-134	6.1	--	--	--	--	--	--	--	--
MW4	12/29/08	--	2.9	-7	6.4	--	--	--	--	--	--	--	--
MW4	03/24/09	--	0.9	33	6.8	--	--	--	--	--	--	--	--
MW4	06/02/09	--	1.1	78	5.73	--	--	--	--	--	--	--	--
MW4	09/10/09	--	1.7	183	7	--	--	--	--	--	--	--	--
MW4	12/04/09	--	0.8	26	6.8	--	--	--	--	--	--	--	--
MW4	03/10/10	--	1.8	83	5.9	--	--	--	--	--	--	--	--
MW4	05/28/10	--	2.2	192	6.4	--	--	--	--	--	--	--	--
MW5	06/30/98	220	4.3	--	6.1	--	--	--	--	--	--	--	--
MW5	07/29/98	--	--	--	--	--	--	--	--	--	--	--	--
MW5	08/26/98	--	--	--	--	--	--	--	--	--	--	--	--
MW5	10/01/98	256	4.8	--	6.71	--	--	--	--	--	--	--	--
MW5	10/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/30/98	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/28/98	--	--	--	--	--	--	--	--	--	--	--	--
MW5	01/25-26/99	305	9.7	--	7.04	--	--	--	--	--	--	--	--
MW5	02/26/99	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/24/99	--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/12/99	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/15-16/99	--	2.72	--	7.19	--	--	--	--	--	--	--	--
MW5	03/20/00	--	--	--	--	--	--	--	--	--	--	--	--
MW5	07/20/00	134	5.58	--	6.35	--	0.017	49	<0.10	--	3.9	--	<0.20
MW5	10/11/00	--	--	--	--	--	--	--	--	--	--	--	--
MW5	04/10-11/01	183	66	--	NR	--	0.042	45	<0.10	--	2.9	--	0.11
MW5	07/10/01	--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/20/01	-- <sup>c</sup>	66	--	6.01	--	2.5	42	<0.10	--	--	--	<0.20
MW5	02/19/02	--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/21/02	140	66	--	6.3	--	0.22	44	<0.10	--	3	--	<0.20
MW5	06/27/03	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/29/03	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2b NATURAL ATTENUATION PARAMETERS  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW5	12/12/03	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/15/04	--	6.4	--	--	--	--	--	--	--	--	--	--
MW5	06/24/04	--	5.56	--	--	--	--	--	--	--	--	--	--
MW5	09/29/04	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/13/04	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/14/05	--	3.91	--	5.57	--	--	--	--	--	--	--	--
MW5	06/15/05	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/26/05	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/12/05	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/29/06	--	2.3	--	6.3	--	--	--	--	--	--	--	--
MW5	06/19/06	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/29/06	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/12/06	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/01/07	--	4.35	--	6.08	--	--	--	--	--	--	--	--
MW5	06/12/07	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/25/07	--	18.71	--	6.26	--	--	--	--	--	--	--	--
MW5	12/20/07	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/26/08	--	7.93	88	5.86	--	--	--	--	--	--	--	--
MW5	06/03/08	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/25/08	--	2.3	-54	5.5	--	--	--	--	--	--	--	--
MW5	12/29/08	--	4.8	167	6.1	--	--	--	--	--	--	--	--
MW5	03/24/09	--	1.9	27	6.2	--	--	--	--	--	--	--	--
MW5	06/02/09	--	3.5	112	5.2	--	--	--	--	--	--	--	--
MW5	09/10/09	--	3.4	113	6.5	--	--	--	--	--	--	--	--
MW5	03/10/10	--	2.8	42	6.1	--	--	--	--	--	--	--	--
MW6	07/20/00	122	2.72	--	6.66	--	1.9	53	6	--	0.05	--	<0.20
MW6	10/11/00	--	--	--	--	--	--	--	--	--	--	--	--
MW6	04/10-11/01	142	NR	--	NR	--	2.2	0.69	5.2	--	<0.05	--	<0.20
MW6	07/10/01	--	--	--	--	--	--	--	--	--	--	--	--
MW6	11/20/01	100	2.03	--	6.44	--	5.2	1.1	3.4	--	--	--	<0.20
MW6	02/19/02	--	--	--	--	--	--	--	--	--	--	--	--
MW6	05/21/02	100	0.76	--	6.6	--	3.4	1.4	8.9	--	0.65	--	<0.20
MW6	06/27/03	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/29/03	--	--	--	--	--	--	--	--	--	--	--	--
MW6	12/12/03	--	--	--	--	--	--	--	--	--	--	--	--
MW6	03/15/04	--	0.11	--	--	--	--	--	--	--	--	--	--
MW6	06/24/04	--	0.05	--	--	--	--	--	--	--	--	--	--
MW6	09/29/04	--	0.37	--	6.60	--	--	--	--	--	--	--	--
MW6	12/13/04	--	--	--	--	--	--	--	--	--	--	--	--
MW6	03/14/05	--	0.08	--	5.65	--	--	--	--	--	--	--	--
MW6	06/15/05	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/26/05	--	--	--	--	--	--	--	--	--	--	--	--
MW6	12/12/05	--	1.52	--	6.61	--	--	--	--	--	--	--	--
MW6	03/29/06	--	6.93	--	6.06	--	--	--	--	--	--	--	--
MW6	06/19/06	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2b NATURAL ATTENUATION PARAMETERS  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW6	09/29/06	--	0.16	--	6.49	--	--	--	--	--	--	--	--
MW6	12/12/06	--	0.5	--	6.68	--	--	--	--	--	--	--	--
MW6	03/01/07	--	0.83	--	6.66	--	--	--	--	--	--	--	--
MW6	06/12/07	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/25/07	--	8.5	--	6.78	--	--	--	--	--	--	--	--
MW6	12/20/07	--	--	--	--	--	--	--	--	--	--	--	--
MW6	03/26/08	--	5.57	-35	6.38	--	--	--	--	--	--	--	--
MW6	06/03/08	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/25/08	--	1.6	-160	6.2	--	--	--	--	--	--	--	--
MW6	12/29/08	--	1.2	-60	6.5	--	--	--	--	--	--	--	--
MW6	03/24/09	--	0.3	-115	6.8	--	--	--	--	--	--	--	--
MW6	06/02/09	--	1.1	-141	5.9	--	--	--	--	--	--	--	--
MW6	09/10/09	--	0.9	-112	8	--	--	--	--	--	--	--	--
MW6	12/04/09	--	0.7	-54	6.8	--	--	--	--	--	--	--	--
MW6	03/10/10	--	1.0	-26	6.0	--	--	--	--	--	--	--	--
MW7	07/20/00	32.2	7.15	--	7.43	--	0.002	7.5	<0.10	--	2.6	--	0.13
MW7	10/11/00	--	--	--	--	--	--	--	--	--	--	--	--
MW7	04/10-11/01	77.6	NR	--	NR	--	0.048	49	<0.10	--	2.7	--	0.31
MW7	07/10/01	--	--	--	--	--	--	--	--	--	--	--	--
MW7	11/20/01	62	0.96	--	7.11	--	1.8	63	<0.10	--	--	--	<0.20
MW7	02/19/02	--	--	--	--	--	--	--	--	--	--	--	--
MW7	05/21/02	68	1.03	--	7.57	--	0.35	51	<0.10	--	2.8	--	0.11
MW7	06/27/03	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/29/03	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/12/03	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/15/04	--	0.54	--	--	--	--	--	--	--	--	--	--
MW7	06/24/04	--	0.20	--	--	--	--	--	--	--	--	--	--
MW7	09/29/04	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/13/04	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/14/05	--	0.47	--	6.15	--	--	--	--	--	--	--	--
MW7	06/15/05	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/26/05	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/12/05	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/29/06	--	0.72	--	5.81	--	--	--	--	--	--	--	--
MW7	06/19/06	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/29/06	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/12/06	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/01/07	--	0.92	--	6.84	--	--	--	--	--	--	--	--
MW7	06/12/07	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/25/07	--	6.11	--	6.78	--	--	--	--	--	--	--	--
MW7	12/20/07	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/26/08	--	3.3	23	6.46	--	--	--	--	--	--	--	--
MW7	06/03/08	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/25/08	--	1.5	-186	6.3	--	--	--	--	--	--	--	--
MW7	12/29/08	--	6.4	-50	6.9	--	--	--	--	--	--	--	--

TABLE 2b NATURAL ATTENUATION PARAMETERS  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Concentration (mg/L)											
		CO <sub>2</sub> (lab)	DO (field)	ORP (mv) (field)	pH (field)	COD	Mn	SO <sub>4</sub>	N-NH <sub>3</sub>	NO <sub>2</sub> -N	N-NO <sub>3</sub>	N	o-PO <sub>4</sub>
MW7	03/24/09	--	1.7	-16	7.1	--	--	--	--	--	--	--	--
MW7	06/02/09	--	2.1	3	6.1	--	--	--	--	--	--	--	--
MW7	09/10/09	--	2.3	58	7.4	--	--	--	--	--	--	--	--
MW8	12/29/08	--	1.5	-3	6.6	--	--	--	--	--	--	--	--
MW8	03/24/09	--	1.8	-2	7.2	--	--	--	--	--	--	--	--
MW8	06/02/09	--	1.4	80	5.5	--	--	--	--	--	--	--	--
MW8	09/10/09	--	1.1	81	7.2	--	--	--	--	--	--	--	--
MW9A	09/10/09	--	1.4	79	8.4	250	--	--	--	<0.1	<0.1	1.8	0.22
MW9A	03/10/10	--	1.1	17	6.0	--	--	--	--	--	--	--	--
MW9B	09/10/09	--	2.4	55	7.4	12	--	--	--	<0.1	1.2	<0.5	<0.1
MW9B	12/04/09	--	2.1	-9	6.9	--	--	--	--	--	--	--	--
MW9B	03/10/10	--	1.9	7	6.0	--	--	--	--	--	--	--	--
MW9B	05/28/10	--	1.9	72	6.6	--	--	--	--	--	--	--	--
O1	09/10/09	--	0.4	-53	7.6	32	--	--	--	<0.1	<0.1	1.3	<0.1
O1	12/04/09	--	0.5	-12	6.8	--	--	--	--	--	--	--	--
O1	03/10/10	--	1.2	-8	6.0	--	--	--	--	--	--	--	--
O1	05/28/10	--	1.4	-8	6.6	--	--	--	--	--	--	--	--

CO<sub>2</sub> Carbon dioxide.

COD Chemical Oxygen Demand

DO Dissolved oxygen.

ORP Oxygen reduction potential

Fe(II) Ferrous iron.

Mn Manganese.

SO<sub>4</sub> Sulfate.

N-NH<sub>3</sub> Ammonia.

N-NO<sub>3</sub> Nitrate.

N Total Kjeldahl Nitrogen

o-PO<sub>4</sub> Ortho-Phosphate.

mg/L Milligrams per liter.

\* SPH present; not sampled.

-- Not analyzed or not sampled.

TABLE 3 HISTORICAL GRAB GROUNDWATER ANALYTICAL DATA  
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Boring ID	Date	Depth (feet)	Concentrations (µg/L)							
			Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TPH-g	TPH-d	TPH-mo
HP1	12/18/2003	26-30	<5.0	<5.0	<5.0	11	<b>480</b>	<b>410</b>	<b>180</b>	<500
HP3	12/18/2003	32-36	<0.50	<0.50	<0.50	<1.0	<b>0.55</b>	<50	<b>75</b>	<500
SB3	12/26/2007	24	0.75	28	35	180	0.59	1800	<1000	<100
SB3	12/26/2007	40	<0.50	1.1	5.3	33	1	240	<400	<100
SB4	12/26/2007	23	160	120	200	240	1.8	3500	<1500	<100
SB4	12/26/2007	40	250	1400	280	2000	3.2	9900	<1500	<100
SB5	12/26/2007	24	<b>660</b>	<b>11000</b>	<b>4200</b>	<b>20000</b>	34	<b>110000</b>	<100000	310
SB5	12/26/2007	40	74	1000	380	2400	31	13000	<3000	<100
SB6	12/26/2007	25	<0.5	6.6	3.6	27	1.2	210	<100	<100
SB6	12/26/2007	40	85	1500	620	6900	15	35000	<18000	<100
SB7	12/26/2007	40	120	1100	470	2900	7.9	20000	<6000	<100
SB8	12/26/2007	40	320	1300	920	3100	100	17000	<3000	<100
SB9	12/26/2007	34	<0.5	<0.5	<0.5	<0.5	92	<50	69	<100
SB10	12/26/2007	21.3	<0.5	<0.5	<0.5	<0.5	30	<50	2200	5000
SB11	12/26/2007	17	<0.5	<0.5	<0.5	<0.5	<50	<50	200	220
SB12	12/26/2007	20	<0.5	<0.5	<0.5	<0.5	43	67	950	1200
SB13	12/26/2007	26	<0.5	<0.5	<0.5	<0.5	<b>160</b>	<50	<b>3800</b>	<b>6600</b>

TPH-g Total Petroleum Hydrocarbons as gasoline.

TPH-d Total Petroleum Hydrocarbons as diesel.

TPH-mo Total Petroleum Hydrocarbons as motor oil.

< less than the laboratory reporting limits.

**660** Bold values reflect maximum detected concentrations

TABLE 4 GROUNDWATER MONITORING SCHEDULE  
 FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Groundwater Gauging Frequency	Groundwater Sampling and Analysis Frequency		
		BTEX and TPH-g	MTBE	TEPH
MW1	Q	S	S	S
MW2	Q	Q	Q	Q
MW3	Q	Q	Q	Q
MW4	Q	Q	Q	Q
MW5	Q	S	S	S
MW6	Q	S	S	S
MW7	Q	A	A	A
MW8	Q	A	A	A
MW9A	Q	Q	Q	Q
MW9B	Q	Q	Q	Q
O1	Q	Q	Q	Q

Q = Quarterly.

S = Semiannual.

A = Annual.

BTEX = Benzene, toluene, ethylbenzene, total xylenes.

MTBE = Methyl tertiary butyl ether.

TPH-g = Total Petroleum Hydrocarbons as gasoline.

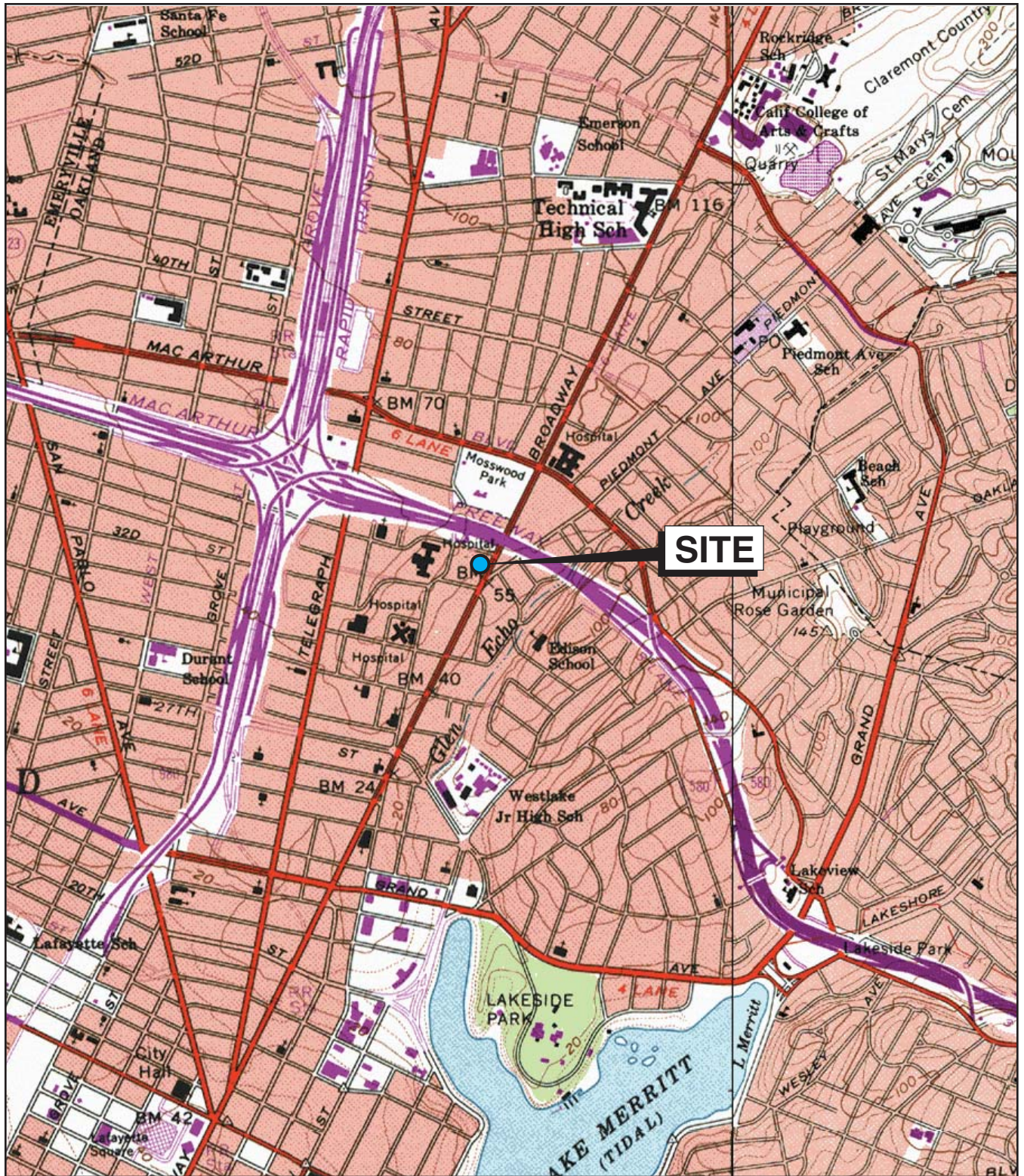
TEPH = Total Extractable Petroleum Hydrocarbons, includes TPH-diesel and TPH-motor oil.



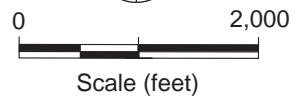


## **FIGURES**





Base map: Maptech Inc., 2001



**SITE LOCATION MAP**  
 FORMER VAL STROUGH CHEVROLET  
 327 34TH STREET, OAKLAND, CALIFORNIA

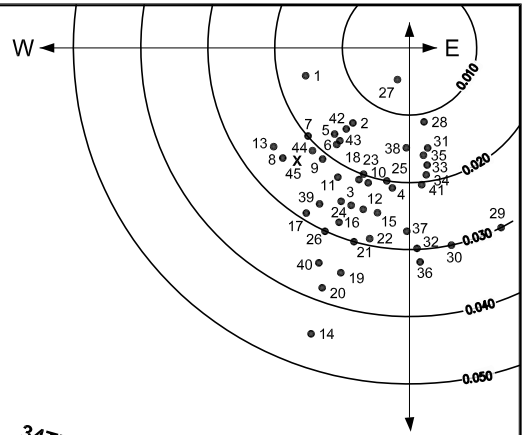
FIGURE: **1**



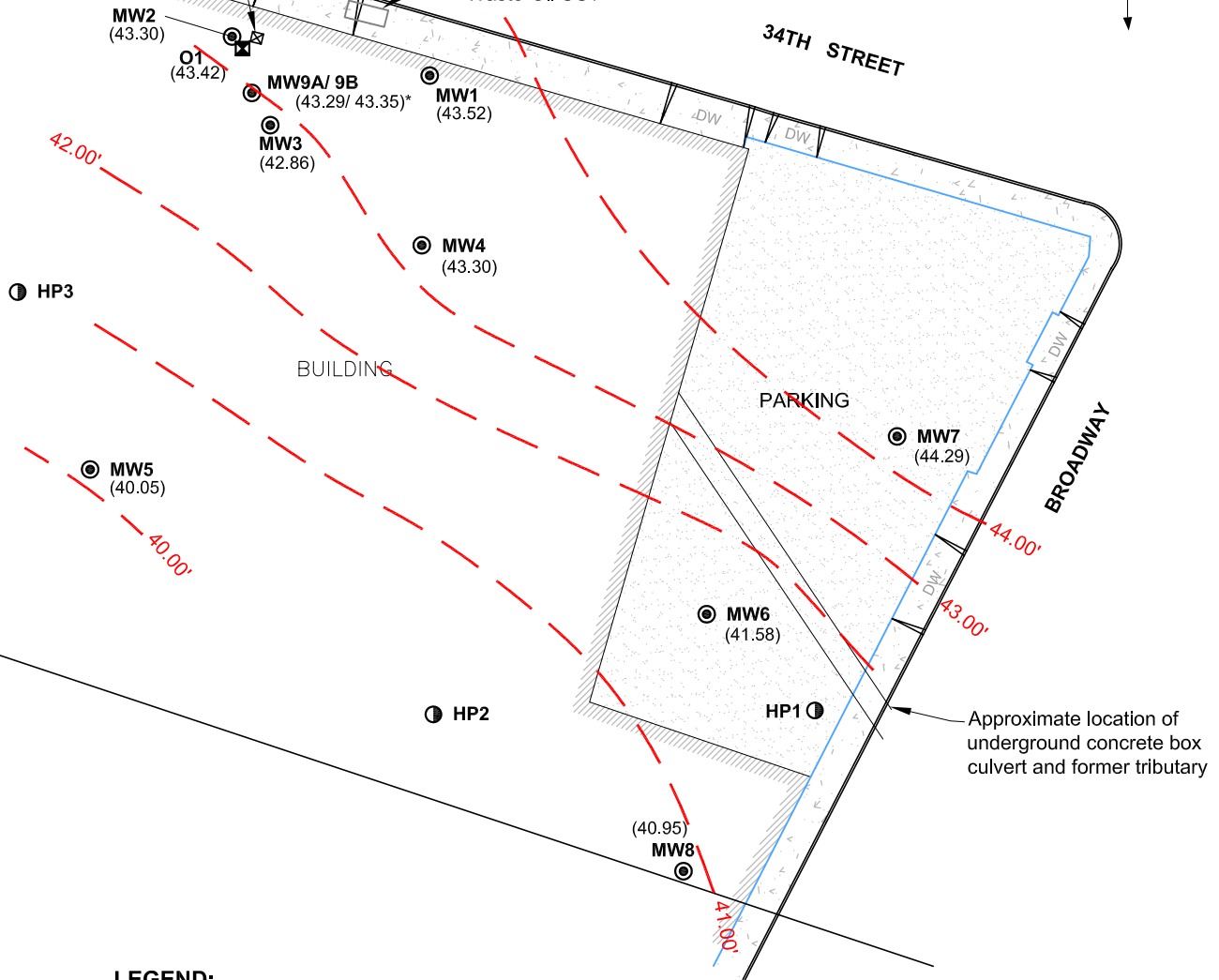
Estimated Groundwater Flow Direction

**ROSE DIAGRAM**

- Historical
- X This Event



Former location of dispenser pump  
 Former Gasoline UST  
 Former Waste-Oil UST



**LEGEND:**

- MW1 ● Groundwater Monitoring Well
- HP1 ● Grab Groundwater Sampling Location
- \* Not used in contour due to wells screened in different zone
- (40.05) Groundwater Elevation (feet above mean sea level)
- 41.00' - - - Groundwater Elevation Contour (feet above mean sea level)

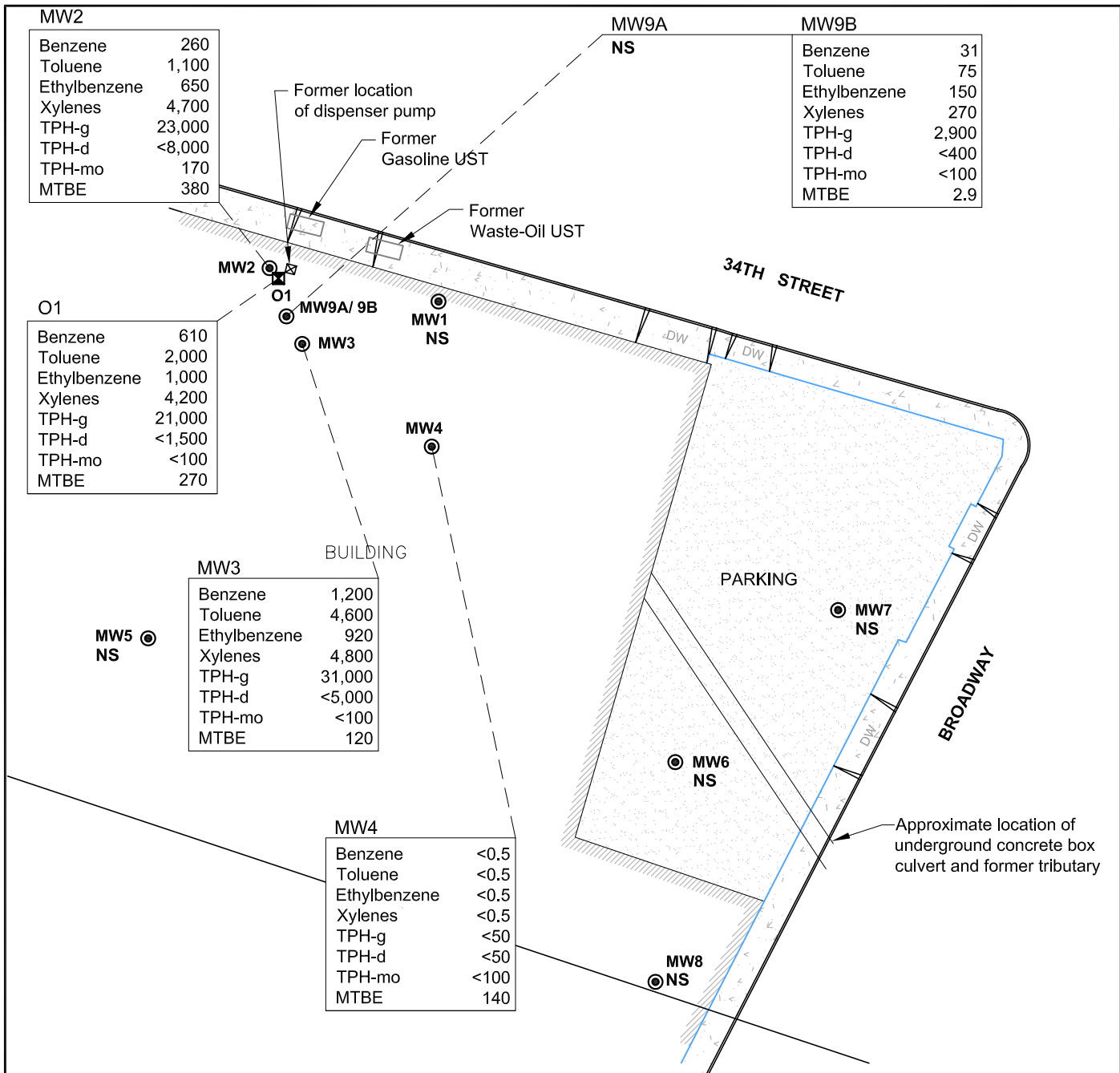
Base Map: Virgil Chavez Land Surveying, dated January 2009.



**GROUNDWATER CONTOUR MAP AND ROSE DIAGRAM**  
**2ND QUARTER 2010 MONITORING EVENT**  
 FORMER VAL STROUGH CHEVROLET  
 327 34TH STREET, OAKLAND, CALIFORNIA  
 JUNE 2010

FIGURE:

**2**



**MW2**

Benzene	260
Toluene	1,100
Ethylbenzene	650
Xylenes	4,700
TPH-g	23,000
TPH-d	<8,000
TPH-mo	170
MTBE	380

**MW9B**

Benzene	31
Toluene	75
Ethylbenzene	150
Xylenes	270
TPH-g	2,900
TPH-d	<400
TPH-mo	<100
MTBE	2.9

**O1**

Benzene	610
Toluene	2,000
Ethylbenzene	1,000
Xylenes	4,200
TPH-g	21,000
TPH-d	<1,500
TPH-mo	<100
MTBE	270

**MW3**

Benzene	1,200
Toluene	4,600
Ethylbenzene	920
Xylenes	4,800
TPH-g	31,000
TPH-d	<5,000
TPH-mo	<100
MTBE	120

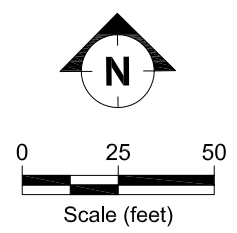
**MW4**

Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Xylenes	<0.5
TPH-g	<50
TPH-d	<50
TPH-mo	<100
MTBE	140

**MW5** NS

**LEGEND:**

- MW1** ● Groundwater monitoring well
- TPH-g** Total Petroleum Hydrocarbons as gasoline
- TPH-d** Total Petroleum Hydrocarbons as diesel
- TPH-mo** Total Petroleum Hydrocarbons as motor oil
- MTBE** Methyl Tertiary Butyl Ether
- NS** Not sampled this quarter



All concentrations are reported in micrograms per liter (ug/L)



**GROUNDWATER ANALYTICAL DATA**  
**2ND QUARTER 2010 MONITORING EVENT**  
 FORMER VAL STROUGH CHEVROLET  
 327 34TH STREET, OAKLAND, CALIFORNIA  
 JUNE 2010

FIGURE:  
**3**



## **Appendix A**

### **Protocols for Groundwater Monitoring**



## **APPENDIX A**

### **PROTOCOLS FOR GROUNDWATER MONITORING**

#### **GROUNDWATER GAUGING**

Wells are opened prior to gauging to allow the groundwater level in the wells to equilibrate with atmospheric pressure. The depth to groundwater and depth to liquid-phase hydrocarbons, if present, are then measured to the nearest 0.01 feet using an electronic water level meter or optical interface probe. The measurements are made from a permanent reference point at the top of the well casing. If less than 1 foot of water is measured in a well, the water is bailed from the well and, if the well does not recover, the well is considered “functionally dry.” Wells with a sheen or measurable liquid-phase hydrocarbons are generally not purged or sampled.

#### **WELL PURGING**

After the wells are gauged, each well is purged of approximately 3 well casing volumes of water to provide representative groundwater samples for analysis. Field parameters of pH, temperature, and electrical conductance are measured during purging to ensure that these parameters have stabilized before groundwater in a well is sampled. Groundwater in each well is purged using an inertial pump (WaTerra), an electric submersible pump, or a bailer. After the well is purged, the water level is checked to ensure that the well has recharged to at least 80 percent of its original water level.

#### **GROUNDWATER SAMPLING**

After purging, groundwater in each well is sampled using dedicated tubing and an inertial pump (WaTerra) or a factory-cleaned disposable bailer. Samples from extraction wells are typically collected from sample ports associated with the groundwater remediation system. Samples collected for volatile organic analysis are placed in Teflon septum-sealed 40-milliliter glass vials. Samples collected for diesel analysis are placed in 1-liter amber glass bottles. Each sample bottle is labeled with the site name, well number, date, sampler’s initials, and preservative. The samples are placed in a cooler with ice for delivery to a state-certified laboratory. The information for each sample is entered on a chain-of-custody form prior to transport to the laboratory.



**Appendix B**  
**Field Documents**

### Equipment Calibration Log

Equipment make/model	Equipment ID/serial number	Date	Time	Calibration Standards	Equipment Reading	Equipment Calibrated	Temp (°C / °F)	Tech init.	Comments
YSI 556	#2	5/28/12	720	pH 4, 7, 10	4.0, 7.0 10.0	Y	15	BM	
I	I	I	I	1413	1413	Y	15	BM	
I	I	I	I	100%	100%	Y	-	BM	
I	I	I	I	ORP 244	744	Y	15	BM	

Notes/comments:



# Well Maintenance Inspection Form

Client: LRM Site: Finner Strong Oakland Date: 5/28/20

Job #: MT-100528 Technician: BM Page      of     

Inspection Point	Well Inspected - No Corrective Action Required	Entry Indicates Deficiency										Well Not Inspected (explain in notes)	Notes (Note any repairs made while on site)			
		Cap non-functional	Lock non-functional	Lock missing	Bolts missing (# missing / # total tabs)	Tabs stripped (# stripped / # total tabs.)	Tabs broken (# broken / # of total tabs)	Annular seal incomplete	Apron damaged	Rim / Lid broken	Trip Hazard			Below Grade	Other (explain in notes)	
MW1	X															
MW2	X															
MW3	X															
MW4	X															
MW5					1 3	2 3										
MW6	X					1 3										
MW7	X															
MW8	X															
MW9A	X															
MW9B	X															
DI				X												

Notes: \_\_\_\_\_

Repair codes: **rt**=retap/ bolts added or replaced    **as**=annular seal repair,

## Water Level Measurements

Job Number: MH-100528      Date: 5/28/10      Client: LRM

Site: Former Stough      Oakland

Well I.D.	Time	Dia	Depth to NAPL	Thickness of NAPL	Depth to water (DTW)	Total Depth (measured)	Total Depth (historical)	Ref Point (TOC/ TOB)			
MW1	704	2			21.19		30.59	TOC			
MW2	654	2			22.41		31.74				
MW3	706	2			22.84		31.88				
MW4	702	2			21.07		27.54				
MW5	650	2			25.54		26.40				
MW6	645	2			18.02		26.55				
MW7	647	2			15.20		34.54				
MW8	710	1			16.12		26.65				
MW9A	656	2	22.60	0.02	22.62		25.20			Used Interface Probe	
MW9B	657	2			22.50		34.58				
DI	652	2			22.49		35.17		↓		

## Purging And Sampling Data Sheet

Job#: M1-100528	Sampler: B Myers	Client: LRM
Well ID: MW2	Date: 5/28/10	Site: Former Strough Chevy, Oakland
Well diam: 1/4" 1" 2" 3" 4" 6" Other:	DTW: 22.41 Total Depth: 31.74	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius <sup>2</sup> X 0.163		
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 1.5 X 3 = 4.5 (Total Purge) 80% = 24.28

Time	Temp (°C/°F)	pH	Cond (mS / (uS))	Turbidity (NTU)	Purge Rate (gal or ml/ min)	Volume Removed (gal) L	DO (mg/l)	ORP	DTW	Notes
0850	17.4	7.5	629	445	—	—	1.4	7.2	—	
0855	17.6	6.5	707	65	—	1.5	1.9	5.6	—	
0857	17.7	6.5	722	78	—	3.0	2.3	3.2	—	
0900	17.7	6.5	735	47	—	4.5	2.0	4.1	—	

Did well dewater? YES <input type="radio"/> NO <input checked="" type="radio"/>			Total volume removed: <u>4.5</u> (gal/L)		
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:					
Sample date: 5/28/10		Sample time: <u>0905</u>		DTW at sample: <u>22.45</u>	
Sample ID: <u>MW2</u>		Lab: Kiff		Number of bottles: <u>5</u>	
Analysis: TPH-G, BTEX, MTBE, TEPH-D, TEPH-MO					
Equipment blank ID @		Field blank ID @			
Duplicate ID:		Pre-purge DO:		Post purge DO:	
Fe2 <sup>+</sup> :		Pre-purge ORP:		Post purge ORP:	
NAPL depth:		Volume of NAPL:		Volume removed: ml	



## Purging And Sampling Data Sheet

Job#: M1-100528	Sampler: B Myers	Client: LRM
Well ID: <u>HW4</u>	Date: 5/28/10	Site: Former Strough Chevy, Oakland
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>21.07</u> Total Depth: <u>27.54</u>	
Purge equip: ES - diam: Bladder Peri <u>Waterra</u> Positive Air Displacement Ext. System	disp bailer teflon bailer other: Tubing: OD: New Dedicated NA	
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius <sup>2</sup> X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 1 X 3 = 3 (Total Purge) 80% = 22.36

Time	Temp (°C/°F)	pH	Cond (mS/µS)	Turbidity (NTU)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	DO (mg/l)	ORP	DTW	Notes
<u>Initial</u>	<u>17.7</u>	<u>6.4</u>	<u>1018</u>	<u>71000</u>	—	—	<u>2.5</u>	<u>165</u>	—	
<u>731</u>	<u>18.0</u>	<u>6.2</u>	<u>991</u>	<u>71000</u>	—	<u>1</u>	<u>2.1</u>	<u>210</u>	—	
<u>733</u>	<u>18.6</u>	<u>6.4</u>	<u>852</u>	<u>992</u>	—	<u>2</u>	<u>2.3</u>	<u>192</u>	—	
<u>735</u>	<u>18.1</u>	<u>6.4</u>	<u>856</u>	<u>961</u>	—	<u>3</u>	<u>2.2</u>	<u>192</u>	—	

Did well dewater? YES <u>NO</u>		Total volume removed: <u>3</u> (gal / L)	
Sample method: Disp Bailer <u>Ded. Tubing</u> New Tubing Ext. Port Other:			
Sample date: 5/28/10	Sample time: <u>740</u>	DTW at sample: <u>21.57</u>	
Sample ID: <u>HW4</u>	Lab: Kiff	Number of bottles: <u>5</u>	
Analysis: TPH-G, BTEX, MTBE, TEPH-D, TEPH-MO			
Equipment blank ID @	Field blank ID @		
Duplicate ID:	Pre-purge DO:	Post purge DO:	
Fe2 <sup>+</sup> :	Pre-purge ORP:	Post purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed: ml	





## Purging And Sampling Data Sheet

Job#: M1-100528	Sampler: B Myers	Client: LRM
Well ID: MW-9B	Date: 5/28/10	Site: Former Strough Chevy, Oakland
Well diam: 1/4" 1" (2") 3" 4" 6" Other:	DTW: 27.50 Total Depth: 34.58	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System	Tubing: OD: New Dedicated NA	
disp bailer teflon bailer other:	Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:	
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius <sup>2</sup> X 0.163	
(TD - DTW X Multiplier = 1 Volume	80% Recovery (TD - DTW X 0.20 + DTW)	

1 Volume = 2 X 3 = 6 (Total Purge) 80% = 24.92

Time	Temp (°C/°F)	pH	Cond (mS / (µS))	Turbidity (NTU)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	DO (mg/l)	ORP	DTW	Notes
<i>Initial</i>	17.3	6.6	853	116	—	—	1.9	94	—	
808	17.6	6.6	853	317	—	2	2.1	78	—	
811	17.2	6.6	863	309	—	4	1.9	77	—	
815	17.6	6.6	863	312	—	6	1.9	72	—	

Did well dewater? YES <input checked="" type="radio"/> NO <input type="radio"/>	Total volume removed: <u>6</u> (gal / L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: 5/28/10	Sample time: <u>820</u> DTW at sample: <u>23.10</u>
Sample ID: <u>MW9B</u>	Lab: Kiff Number of bottles: <u>5</u>
Analysis: TPH-G, BTEX, MTBE, TEPH-D, TEPH-MO	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe <sup>2+</sup> :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

## Purging And Sampling Data Sheet

Job#: M1-100528	Sampler: B Myers	Client: LRM
Well ID: 01	Date: 5/28/10	Site: Former Strough Chevy, Oakland
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>22.49</u> Total Depth: <u>35.17</u>	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
<u>Disp bailer</u> teflon bailer other:	Tubing: OD: New Dedicated NA	
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius <sup>2</sup> X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 2 X 3 = 6 (Total Purge) 80% = 25.03

Time	Temp (°C/°F)	pH	Cond (mS / (S))	Turbidity (NTU)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	DO (mg/l)	ORP	DTW	Notes
<i>Initial</i>	17.3	6.6	733	267	—	—	1.6	-6	—	
835	17.5	6.6	750	71000	—	2	1.4	-9	—	
838	17.6	6.6	749	71000	—	4	1.4	-10	—	
841	17.6	6.6	743	71000	—	6	1.4	-8	—	

Did well dewater? YES  NO  Total volume removed: 6 (gal/L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 5/28/10 Sample time: 8:45 DTW at sample: 22.65

Sample ID: 01 Lab: Kiff Number of bottles: 5

Analysis: TPH-G, BTEX, MTBE, TEPH-D, TEPH-MO

Equipment blank ID @ Field blank ID @

Duplicate ID: Pre-purge DO: Post purge DO:

Fe2<sup>+</sup>: Pre-purge ORP: Post purge ORP:

NAPL depth: Volume of NAPL: Volume removed: ml





## **Appendix C**

### **Laboratory Analytical Reports and Chain-of-Custody Documentation**



## Laboratory Results

Mehrdad Javaherian  
LRM Consulting, Inc.  
1534 Plaza Lane, #145  
Burlingame, CA 94010

Subject : 5 Water Samples  
Project Name : Former Strough Chevy - Oakland  
Project Number : M1-100528

Dear Mr. Javaherian,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff

Project Name : **Former Strough Chevy - Oakland**

Project Number : **M1-100528**

Sample : **MW2**

Matrix : Water

Lab Number : 73205-01

Sample Date :05/28/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>260</b>	25	ug/L	EPA 8260B	05/29/2010
<b>Toluene</b>	<b>1100</b>	25	ug/L	EPA 8260B	05/29/2010
<b>Ethylbenzene</b>	<b>650</b>	25	ug/L	EPA 8260B	05/29/2010
<b>Total Xylenes</b>	<b>4700</b>	25	ug/L	EPA 8260B	05/29/2010
<b>Methyl-t-butyl ether (MTBE)</b>	<b>380</b>	25	ug/L	EPA 8260B	05/29/2010
<b>TPH as Gasoline</b>	<b>23000</b>	2500	ug/L	EPA 8260B	05/29/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/29/2010
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/29/2010
<b>TPH as Diesel (w/ Silica Gel)</b>	<b>&lt; 8000</b>	8000	ug/L	M EPA 8015	06/01/2010
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
<b>TPH as Motor Oil (w/ Silica Gel)</b>	<b>170</b>	100	ug/L	M EPA 8015	06/01/2010
Octacosane (Silica Gel Surr)	114		% Recovery	M EPA 8015	06/01/2010

2) MRL raised due to interference

Project Name : **Former Strough Chevy - Oakland**

Project Number : **M1-100528**

Sample : **MW3**

Matrix : Water

Lab Number : 73205-02

Sample Date :05/28/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>1200</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Toluene</b>	<b>4600</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Ethylbenzene</b>	<b>920</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Total Xylenes</b>	<b>4800</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Methyl-t-butyl ether (MTBE)</b>	<b>120</b>	15	ug/L	EPA 8260B	05/29/2010
<b>TPH as Gasoline</b>	<b>31000</b>	1500	ug/L	EPA 8260B	05/29/2010
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	05/29/2010
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	05/29/2010
<b>TPH as Diesel (w/ Silica Gel)</b>	<b>&lt; 5000</b>	5000	ug/L	M EPA 8015	06/01/2010
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
<b>TPH as Motor Oil (w/ Silica Gel)</b>	<b>&lt; 100</b>	100	ug/L	M EPA 8015	06/01/2010
Octacosane (Silica Gel Surr)	101		% Recovery	M EPA 8015	06/01/2010

2) MRL raised due to interference

Project Name : **Former Strough Chevy - Oakland**

Project Number : **M1-100528**

Sample : **MW4**

Matrix : Water

Lab Number : 73205-03

Sample Date :05/28/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	05/28/2010
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	05/28/2010
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	05/28/2010
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	05/28/2010
<b>Methyl-t-butyl ether (MTBE)</b>	<b>140</b>	0.50	ug/L	EPA 8260B	05/28/2010
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	05/28/2010
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/28/2010
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	05/28/2010
<b>TPH as Diesel (w/ Silica Gel)</b>	< 50	50	ug/L	M EPA 8015	06/01/2010
<b>TPH as Motor Oil (w/ Silica Gel)</b>	< 100	100	ug/L	M EPA 8015	06/01/2010
Octacosane (Silica Gel Surr)	104		% Recovery	M EPA 8015	06/01/2010

2) MRL raised due to interference

Project Name : **Former Strough Chevy - Oakland**

Project Number : **M1-100528**

Sample : **MW9B**

Matrix : Water

Lab Number : 73205-04

Sample Date :05/28/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>31</b>	1.0	ug/L	EPA 8260B	05/28/2010
<b>Toluene</b>	<b>75</b>	1.0	ug/L	EPA 8260B	05/28/2010
<b>Ethylbenzene</b>	<b>150</b>	1.0	ug/L	EPA 8260B	05/28/2010
<b>Total Xylenes</b>	<b>270</b>	1.0	ug/L	EPA 8260B	05/28/2010
<b>Methyl-t-butyl ether (MTBE)</b>	<b>2.9</b>	1.0	ug/L	EPA 8260B	05/28/2010
<b>TPH as Gasoline</b>	<b>2900</b>	100	ug/L	EPA 8260B	05/28/2010
1,2-Dichloroethane-d4 (Surr)	99.7		% Recovery	EPA 8260B	05/28/2010
Toluene - d8 (Surr)	97.8		% Recovery	EPA 8260B	05/28/2010
<b>TPH as Diesel (w/ Silica Gel)</b>	<b>&lt; 400</b>	400	ug/L	M EPA 8015	06/01/2010
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
<b>TPH as Motor Oil (w/ Silica Gel)</b>	<b>&lt; 100</b>	100	ug/L	M EPA 8015	06/01/2010
Octacosane (Silica Gel Surr)	104		% Recovery	M EPA 8015	06/01/2010

2) MRL raised due to interference

Project Name : **Former Strough Chevy - Oakland**

Project Number : **M1-100528**

Sample : **O1**

Matrix : Water

Lab Number : 73205-05

Sample Date :05/28/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>610</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Toluene</b>	<b>2000</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Ethylbenzene</b>	<b>1000</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Total Xylenes</b>	<b>4200</b>	15	ug/L	EPA 8260B	05/29/2010
<b>Methyl-t-butyl ether (MTBE)</b>	<b>270</b>	15	ug/L	EPA 8260B	05/29/2010
<b>TPH as Gasoline</b>	<b>21000</b>	1500	ug/L	EPA 8260B	05/29/2010
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	05/29/2010
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/29/2010
<b>TPH as Diesel (w/ Silica Gel)</b>	<b>&lt; 1500</b>	1500	ug/L	M EPA 8015	06/01/2010
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
<b>TPH as Motor Oil (w/ Silica Gel)</b>	<b>&lt; 100</b>	100	ug/L	M EPA 8015	06/01/2010
Octacosane (Silica Gel Surr)	102		% Recovery	M EPA 8015	06/01/2010

2) MRL raised due to interference

**QC Report : Method Blank Data**

Project Name : **Former Strough Chevy - Oakland**

Project Number : **M1-100528**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (w/ Silica Gel)	< 50	50	ug/L	M EPA 8015	06/01/2010
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	06/01/2010
Octacosane (Silica Gel Surr)	101		%	M EPA 8015	06/01/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/27/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/27/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/27/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/27/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/27/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/27/2010
1,2-Dichloroethane-d4 (Surr)	109		%	EPA 8260B	05/27/2010
Toluene - d8 (Surr)	102		%	EPA 8260B	05/27/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
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## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Former Strough Chevy - Oakland**Project Number : **M1-100528**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)	BLANK	<50	1000	1000	1060	1040	ug/L	M EPA 8015	6/1/10	106	104	1.55	70-130	25
Benzene	73184-01	<0.50	38.7	39.4	38.2	38.9	ug/L	EPA 8260B	5/27/10	98.8	98.5	0.313	80-120	25
Ethylbenzene	73184-01	<0.50	38.7	39.4	36.8	36.6	ug/L	EPA 8260B	5/27/10	95.2	92.7	2.65	80-120	25
Methyl-t-butyl ether	73184-01	<0.50	38.8	39.6	39.6	39.8	ug/L	EPA 8260B	5/27/10	102	100	1.52	69.7-121	25
O-Xylene	73184-01	<0.50	38.7	39.4	36.1	36.0	ug/L	EPA 8260B	5/27/10	93.2	91.3	2.14	79.7-120	25
P + M Xylene	73184-01	<0.50	38.7	39.4	35.6	35.3	ug/L	EPA 8260B	5/27/10	92.0	89.4	2.76	76.8-120	25
Toluene	73184-01	<0.50	38.7	39.4	38.2	38.8	ug/L	EPA 8260B	5/27/10	98.8	98.3	0.553	80-120	25

**QC Report : Laboratory Control Sample (LCS)**Project Name : **Former Strough Chevy - Oakland**Project Number : **M1-100528**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	5/27/10	98.9	80-120
Ethylbenzene	40.0	ug/L	EPA 8260B	5/27/10	95.0	80-120
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	5/27/10	95.8	69.7-121
O-Xylene	40.0	ug/L	EPA 8260B	5/27/10	92.5	79.7-120
P + M Xylene	40.0	ug/L	EPA 8260B	5/27/10	91.6	76.8-120
Toluene	40.0	ug/L	EPA 8260B	5/27/10	99.5	80-120



Confluence Environmental, Inc.  
 3308 El Camino Ave, Suite 300 #148  
 Sacramento, CA 95821  
 916-760-7641 - main  
 916-473-8617 - fax  
 www.confluence-env.com

# Chain of Custody

73205

Project Name: Former Strough Chevy - Oakland

Job Number: M1-100528

TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: <b>Kiff</b>				Site Address: 327 34th St, Oakland				Confluence PM: Jason Brown														
Address: 2795 2nd St, Suite 300, Davis CA 95616				California Global ID No.: T0600101644				Phone / Fax: 916-760-7641 / 916-473-8617														
Contact: Troy Turpen				Include EDF w/ Report: <u>Yes</u> No				Confluence Log Code: <b>CESC</b>														
Phone/ Fax: 530-297-4800 x.127				Consultant / PM: LRM / Merhdad Javaherian				Report to: Merhdad Javaherian														
				Phone / Fax: (415) 706-8935				Invoice to: Merhdad Javaherian														
Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis					Notes and Comments				
			Soil/Solid	Water/Liquid	Air			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	TEPH Diesel & Motor Oil* (8015)	TPH-G, BTEX (8260B)	MTBE (8260)							
• MW2	905	5/28	X			5						X	X	X							-01	
• MW3	752		X									X	X	X								-02
• MW4	740		X									X	X	X								-03
• HW9B	820		X									X	X	X								-04
• O1	845		X									X	X	X								-05
Sampler's Name: <u>B. Hayes</u>				Relinquished By / Affiliation: <u>[Signature]</u>				Date: <u>5/28/10</u>	Time: <u>1315</u>	Accepted By / Affiliation: <u>Roz McAfee</u>				Date: <u>0528/10</u>	Time: <u>1315</u>							
Sampler's Company: Confluence Environmental												Kiff Analytical										
Shipment Date:																						
Shipment Method:																						
Special Instructions: <b>*Run TEPH w/ silica gel cleanup</b>																						

