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**THIRD QUARTER 2007  
GROUNDWATER  
MONITORING REPORT**

**240 W. MACARTHUR BOULEVARD  
OAKLAND, CALIFORNIA**

*Prepared for:*

**MR. GLEN POY-WING  
OAKLAND AUTO WORKS  
OAKLAND, CALIFORNIA**

**October 2007**

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GROUNDWATER  
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*Prepared for:*

**MR. GLEN POY-WING  
OAKLAND AUTO WORKS  
240 W. MACARTHUR BOULEVARD  
OAKLAND, CALIFORNIA 94612**

*Prepared by:*

**STELLAR ENVIRONMENTAL SOLUTIONS, INC.  
2198 SIXTH STREET  
BERKELEY, CALIFORNIA 94710**

**October 1, 2007**

Project No. 2003-43

October 1, 2007

Mr. Jerry Wickham  
Hazardous Materials Specialist  
Alameda County Environmental Health Department  
Local Oversight Program  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Subject: Third Quarter 2007 Groundwater Monitoring Report  
Oakland Auto Works Facility – 240 W. MacArthur Boulevard, Oakland, California  
Alameda County Environmental Health Department Fuel Leak Case No. RO0000142

Dear Mr. Wickham:

Enclosed is the Stellar Environmental Solutions, Inc. report summarizing recent activities conducted at the referenced site. This report presents the findings of the Third Quarter 2007 groundwater monitoring event (the 36<sup>th</sup> site groundwater monitoring event since August 1997).

This report was uploaded to both the State of California GeoTracker system and the Alameda County Environmental Health Department “ftp” system.

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

If you have any questions regarding this report, please contact us at (510) 644-3123.

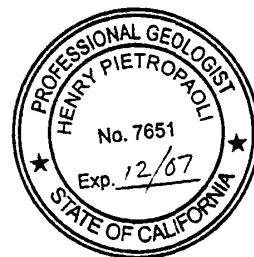
Sincerely,



Henry Pietropaoli, R.G., R.E.A.  
Project Manager



Richard S. Makdisi, R.G., R.E.A.  
Principal



cc: Mr. Glen Poy-Wing, property owner and Responsible Party

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## **1.0 INTRODUCTION**

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### **PROJECT BACKGROUND**

The subject property, located at 240 W. MacArthur Boulevard, Oakland, Alameda County, California, is owned by Glen Poy-Wing and his wife of Oakland Auto Works, for whom Stellar Environmental Solutions, Inc. (SES) has provided environmental consulting services since July 2003. The site has undergone contaminant investigations and remediation since 1991 (discussed below). A list of all known environmental reports is included in Section 6.0, References and Bibliography. This report presents finding for the 36<sup>th</sup> site groundwater monitoring event since monitoring began in August 1997.

In 2002, the current property owners purchased the property and assumed responsibility for continued environmental investigations. The property was formerly owned by Mr. Warren Dodson (Dodson Ltd.) and operated as Vogue Tyres.

### **REGULATORY STATUS**

The Alameda County Environmental Department of Environmental Health (ACEH) is the lead regulatory agency for the case, acting as a Local Oversight Program (LOP) for the Regional Water Quality Control Board (Water Board). There are no ACEH or Water Board cleanup orders for the site; however, all site work has been conducted under oversight of ACEH. In our August 2003 review of the ACEH case file, we determined that all known technical reports for the site were included in the case file to that point.

The previous consultant requested site closure in March 2003 (AEC, 2003a). ACEH that request and, in a letter dated April 16, 2003, requested additional site characterization prior to considering case closure. That work was subsequently conducted by SES, and was summarized in our April 2004 Soil and Groundwater Investigation Report (SES, 2004c). In December 2004, SES submitted a workplan for interim remedial action (including additional site characterization and an evaluation of soil vapor extraction as an interim corrective action). ACEH responded to that workplan in its March 2006 letter (Water Board, 2006), approving the work (with minor technical revisions). The December 2004 workplan was implemented in May 2007 and presented in a separate technical report, dated August 1, 2007. ACEH responded in their letter dated August 24, 2007 requesting a workplan for installation and operation of a soil vapor extraction (SVE) which was submitted by SES to ACEH in October 2007.

The site is in compliance with State of California “GeoTracker” requirements for uploading of technical data and reports. In addition, electronic copies of technical documentation reports published since Second Quarter 2005 have been uploaded to ACEH’s file transfer protocol (ftp) system. Per ACEH’s October 31, 2005 “Miscellaneous Administrative Topics and Procedures” directive, effective January 31, 2006, paper copies of reports will no longer be required by ACEH.

The site has been granted a Letter of Commitment (and has been receiving financial reimbursement) from the California Underground Storage Tank Cleanup Fund.

## **SCOPE OF REPORT**

This report discusses the work conducted between July 1 and September 30, 2007 (36<sup>th</sup> groundwater monitoring and sampling event, conducted on September 18, 2007).

## **SITE DESCRIPTION**

The project site is located at 240 W. MacArthur Boulevard in Oakland, California (see Figure 1). The rectangular-shaped project site is approximately 14,000 square feet (140 feet long by 100 feet wide), and is oriented with its long axis parallel to W. MacArthur Boulevard (approximately northwest-southeast). The project site is essentially flat and is wholly paved. One structure currently exists on the property—an automobile servicing shop that covers approximately 50 percent of the property. The building is currently occupied by Oakland Auto Works. Figure 2 is a site plan showing adjacent land uses.

Adjacent land use includes: a Shell-branded service station (*to the south*); W. MacArthur Boulevard (*to the west*); Howe Street (*to the north*); and a paved driveway, then a multi-story (with basement) health services building (*to the east*).

## **HISTORICAL ENVIRONMENTAL ACTIVITIES**

This section summarizes historical (prior to the current quarter) environmental remediation and site characterization activities, based on documentation provided by the current property owners as well as ACEH files. Figure 2 shows the site plan with the current groundwater well and former underground fuel storage tank (UFST) locations.

Historical remediation and site characterization activities include:

- **Pre-1991.** Three 10,000-gallon gasoline UFSTs from a former Gulf service station occupancy were removed prior to 1991 (there is no available documentation regarding the removals).

- **1991.** A waste oil sump was removed. Limited overexcavation was conducted, and there was no evidence of residual soil contamination, with the exception of 360 milligrams per kilogram (mg/kg) of petroleum oil & grease (Mittelhauser Corporation, 1991b).
- **1996.** A 350-gallon waste oil underground storage tank (UST) was removed. Elevated levels of diesel and oil & grease were detected in confirmation soil samples. Subsequent overexcavation was conducted, and there was no evidence of residual soil contamination (All Environmental, Inc., 1997a).
- **January 1997.** In accordance with a request by ACEH, a subsurface investigation was conducted (All Environmental, Inc., 1997b). Six exploratory boreholes were advanced to a maximum depth of 20 feet, and soil samples were collected.
- **August 1997.** Additional site characterization was conducted. This included sampling three boreholes, installing four groundwater monitoring wells, and conducting the initial groundwater sampling event.
- **February 2001.** Four additional groundwater monitoring wells were installed. Maximum historical soil concentrations were detected in well MW-5 in the northeastern corner of the subject property: 11,700 mg/kg of gasoline and 25.6 mg/kg of benzene (AEC, 2001b).
- **October 2001.** Short-term (less than 1-day duration) groundwater and vapor extraction from five wells was conducted over 4 days (AEC, 2001e) (referred to by that consultant as “Hi-Vac” process).
- **2003.** A sensitive receptor and vicinity water well survey was conducted.
- **April 2004.** Additional site characterization was conducted, including: advancing and sampling 12 exploratory boreholes; analyzing 64 soil and 12 grab-groundwater sample results; and further evaluating site hydrogeology and contaminant extent and magnitude.
- **June 2004 to present.** Quarterly groundwater monitoring.
- **May to June 2007.** Additional site characterization and interim remedial action evaluation. This included 8 exploratory boreholes; analysis of 8 soil gas, 18 soil and 8 grab-groundwater samples and a 6-hour soil vapor extraction (SVE) pilot test.
- **September 2007.** A workplan for installation and operation of a full SVE system was submitted to ACEH on September 28, 2007.

To date, a total of 36 groundwater monitoring events have been conducted at the site.





**SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP**

**240 W. MacArthur Blvd.  
Oakland, CA**

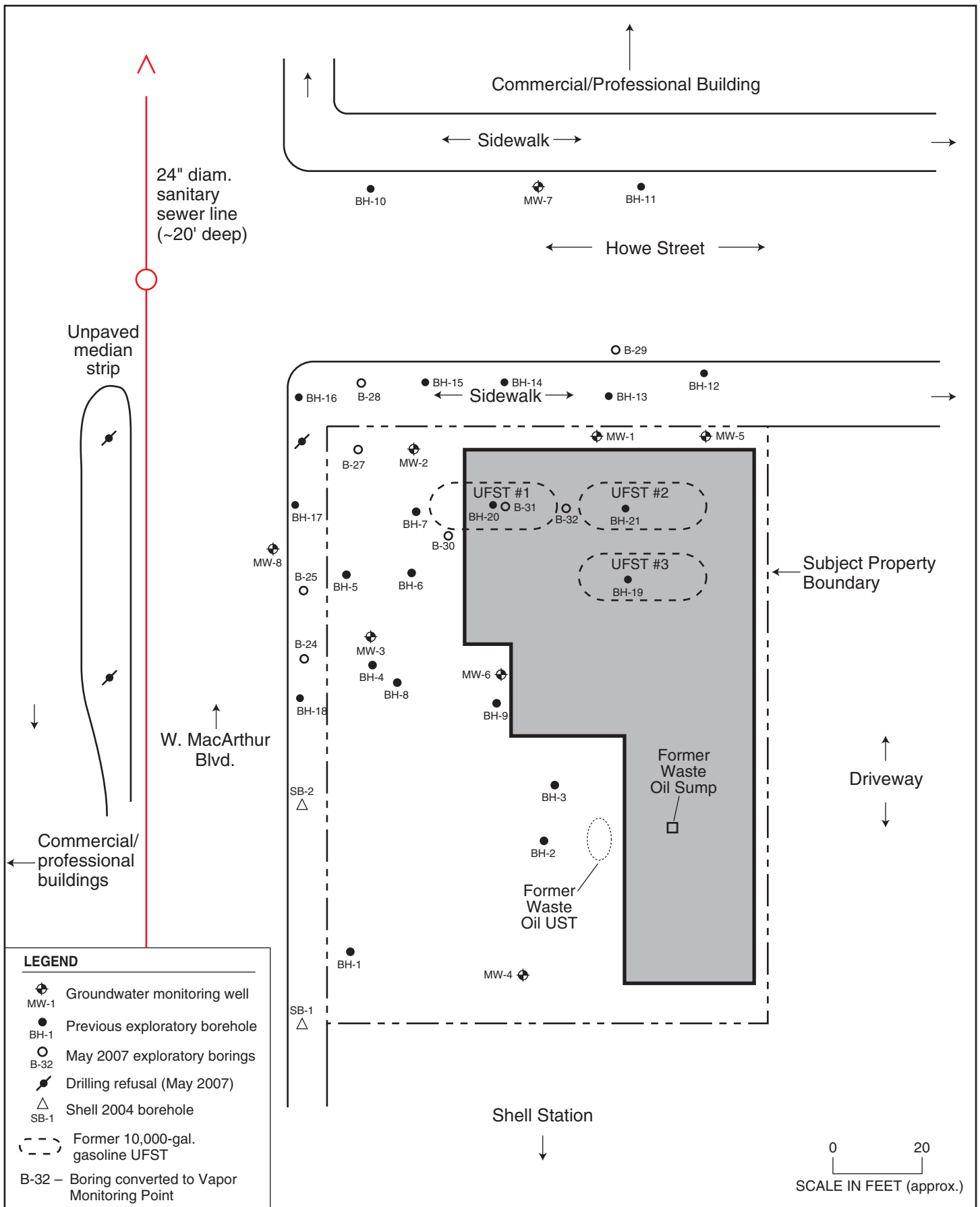
By: MJC

APRIL 2007

**Figure 1**



2008-43-01



**SITE PLAN WITH BOREHOLE AND GROUNDWATER WELL LOCATIONS**

240 W. MacArthur Blvd.  
Oakland, CA

By: MJC

JUNE 2007

**Figure 2**



2008-43-155

## **2.0 PHYSICAL SETTING**

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The following evaluation of the physical setting of the site—including topography, surface water drainage, and geologic and hydrogeologic conditions—is based on previous (1991 through April 2003) site investigations conducted by others, and site investigations and groundwater monitoring data collected by SES since 2003.

### **TOPOGRAPHY AND SURFACE WATER DRAINAGE**

The site is on a gently-sloping alluvial fan at the base of the Berkeley/Oakland Hills, which rise approximately 1,100 feet above mean sea level (amsl) and are located approximately 3 miles east of San Francisco Bay. The mean elevation of the subject property is approximately 82 feet amsl. The subject property is essentially flat, with a local topographic gradient to the west. The nearest surface water bodies are: 1) Glen Echo Creek, a northeast-southwest trending creek located approximately 800 feet southeast of the subject property; and 2) Rockridge Branch, a north-south trending creek located approximately 1,000 feet northwest of the subject property. Both creeks are culverted under ground in the areas nearest the subject property.

### **LITHOLOGY**

A previous SES report included geologic cross-sections through the area of historical investigations (SES, 2004c). The following summarizes site lithologic conditions.

The unsaturated zone (from ground surface to approximately 20 feet below ground surface [bgs]) consists of interbedded silty/sandy clays with silty/clayey sand, with occasional gravelly zones. In the sand zones, clay and/or silt content is high, and the sand is generally very fine- to fine-grained—such that the unit is, in essence, gradational between a clayey sand and a sandy clay. The most laterally-extensive unsaturated zone unit is a sandy clay encountered between ground surface and approximately 15 feet, locally pinching out and displaying lenticular form. Locally, this unit is interbedded with a sandy clay. The sediment types and geometry are suggestive of channel deposits, which is a common depositional facies in this area.

Depth to groundwater in all onsite April 2004 boreholes and all May 2007 boreholes was approximately 20 to 21 feet bgs, predominantly in a saturated, loose, clayey sand. The saturated portion of this clayey sand constitutes the bottom of the unit; the saturated zone is approximately 0.5 to 2.5 feet thick, underlain in all boreholes by a cohesive, non-water-bearing clay. The top of this clay was consistently at a depth between approximately 21 and 23 feet. Of the 12 boreholes in the April 2004 investigation, 9 were advanced at least 1.5 feet into this clay before terminating

(and not encountering visible moisture or sand). Two boreholes B31 and B32 were advanced to 32 feet bgs in the May 2007 investigation and showed this clay to extend from its upper reach of 21 to 23 feet bgs to 32 feet bgs. One of the boreholes in the April 2004 investigation was advanced deeper, documenting a thickness of at least 4.5 feet. The lithologic data (supported by soil sample analytical data from both the 2004 and 2007 investigations) strongly suggest that this clay unit inhibits downward migration of groundwater contamination.

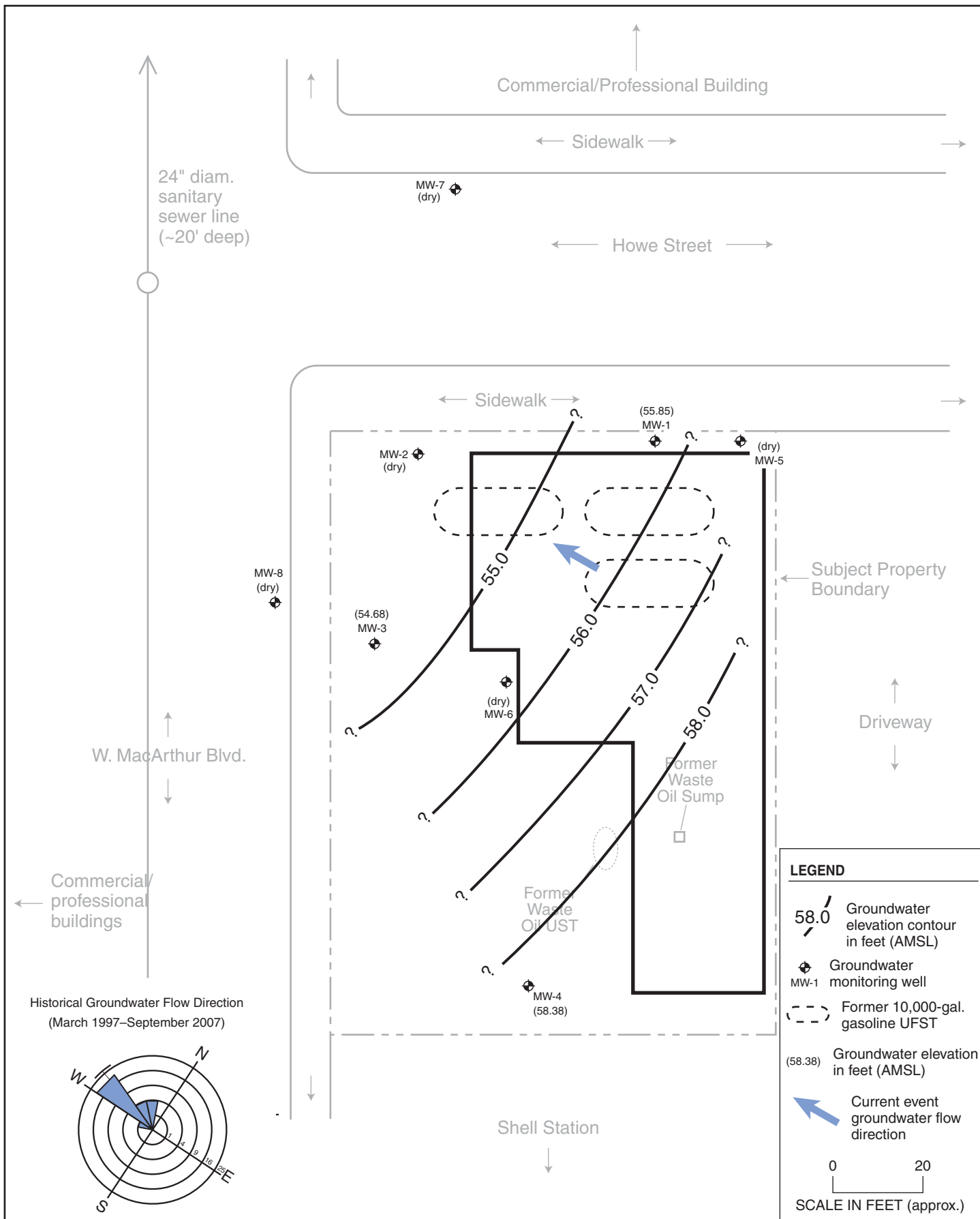
The site lithology is consistent with that documented at the adjacent Shell service station site. Specifically, those boreholes have documented the thin upper, water-bearing zone underlain by the likely non-water-bearing clay unit. In three of the four Shell well boreholes, that clay unit was at least 2 feet thick. In one of the well boreholes, the clay unit was underlain by a saturated clayey sand unit (from approximately 22 to 25.5 feet bgs, which was underlain by a non-water-bearing clay). There are insufficient data to conclude whether the second deepest saturated clayey sand is connected to the more shallow sitewide saturated zone. The subsequent (March 2004) Shell boreholes SB-1 and SB-2 (between the Shell wells and the subject property) all terminated at 20 feet bgs, which was too shallow to encounter the underlying clay unit.

## **GROUNDWATER HYDROLOGY**

The number and positioning of the existing eight site monitoring wells is currently adequate to evaluate the general groundwater flow direction and gradient. Four of the wells (MW-1, MW-2, MW-3, and MW-4) are screened between approximately 15 and 25 feet bgs, and the other four (MW-5, MW-6, MW-7, and MW -8) are screened at a depth of 10 to 20 feet.

Figure 3 is a groundwater elevation map that shows elevations and contours from the current (September 2007) groundwater monitoring event. Due to low groundwater levels encountered during the September 2007 event, data from five of the site monitoring wells (MW-2, MW-5, MW-6, MW-7 and MW-8) could not be reliably used in the construction of the Figure 3 groundwater elevation map. These are the lowest groundwater elevations recorded since monitoring. Groundwater flow direction in this event was generally to the west, although the data suggest local variations. A generally westward (with a slight southern component) groundwater flow direction has also been measured at the adjacent Shell-branded service station (Cambria Environmental Technology, 2004). Subject property groundwater gradient in the current event was relatively flat, at approximately 0.004 feet/foot. Historical groundwater gradient has varied between approximately 0.002 feet/foot and 0.008 feet/foot, averaging approximately 0.005 feet/foot.

Figure 3 includes a rose diagram that shows historical groundwater flow direction measured at the site. The rose diagram is a histogram that has been wrapped around a circle and has the following characteristics:



**GROUNDWATER ELEVATION MAP—September 18, 2007**

240 W. MacArthur Blvd.  
Oakland, CA

By: MJC

OCTOBER 2007

**Figure 3**



- Each wedge represents a 15-degree arc of groundwater flow direction.
- The length of each wedge (circle radius) represents the number of sampling events with data falling within the 15-degree arc.
- The bold black line from the center of the circle to the outer edge is the mean groundwater flow direction.
- The arcs extending to either side of the mean groundwater flow direction line represent the 95-degree confidence interval of the data.

Historical equilibrated water levels (in wells) have been measured at depths of approximately 13 to 16 feet (slightly higher than first occurrence of groundwater encountered during drilling), indicating that groundwater occurs under slightly confining conditions. The range of water level elevations has varied by approximately 3 feet, and shows a strong seasonal variation, with highest elevations during the rainy winter-spring seasons and lowest elevations during the dry summer-fall seasons.

### **3.0 SEPTEMBER 2007 GROUNDWATER MONITORING AND SAMPLING**

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This section presents the groundwater sampling and analytical methods for the current event (Third Quarter 2007), conducted on September 18, 2007. Table 1 summarizes monitoring well construction and groundwater monitoring data. Groundwater analytical results are presented and discussed in Section 5.0. Monitoring and sampling protocols were in accordance with the SES technical workplan (SES, 2003) submitted to ACEH, and subsequent technical revision requested by ACEH. The groundwater sampling event involved the collection of one set of “post-purge” samples from all wells, in accordance with recent revisions to the quarterly monitoring program approved by ACEH. Specific activities for this event included:

- Measuring static water levels and field measurement of “pre-purge” groundwater samples for hydrogeochemical parameters (temperature, pH, electrical conductivity, turbidity, and dissolved oxygen) in the eight site wells; and
- Collecting “post-purge” groundwater samples from five of the eight onsite wells for field measurement of the aforementioned hydrogeochemical parameters, and for offsite laboratory analyses for contaminants of concern.

Five of the eight monitoring wells could not be sampled due to seasonally lowered groundwater levels that resulted from the 2006-2007 drought. The locations of all site monitoring wells are shown on Figure 2. Well construction information and water level data are summarized in Table 1. All site wells are 2-inch-diameter PVC, although the borehole geologic logs for MW-1 through MW-4 completed by the previous consultant mistakenly indicated that they are 4-inch-diameter. Appendix A contains the groundwater monitoring field records for the current event.

Groundwater monitoring well water level measurements, sampling, and field analyses were conducted by Blaine Tech Services (San Jose, California) under the supervision of SES personnel. To minimize the potential for cross-contamination, wells were purged and sampled in order of increasing contamination (based on the previous quarter analytical results).

As the first monitoring task, static water levels were measured in the eight site wells using an electric water level indicator. Grab-groundwater samples were then collected from each well (using a new disposable bailer) and field-analyzed for aquifer stability parameters—including temperature, pH, electrical conductivity, turbidity, and dissolved oxygen.

**Table 1**  
**Groundwater Monitoring Well Construction and Groundwater Elevation Data**  
**240 W. MacArthur Boulevard, Oakland, California**

Well	Well Depth (feet bgs)	Well Screened Interval		Groundwater Level Depth <sup>(a)</sup> September 18, 2007	Groundwater Elevation <sup>(b)</sup> September 18, 2007
		Depth (feet)	Elevation (feet)		
MW-1	25	19.5 to 24.5	54.5 to 49.5	20.90	55.85
MW-2	25	14.5 to 24.5	64.2 to 54.2	Dry	NR
MW-3	25	14.5 to 24.5	63.4 to 53.4	19.60	54.68
MW-4	25	14.5 to 24.5	63.6 to 53.6	18.41	58.38
MW-5	20	9 to 19	70.6 to 60.6	Dry	NR
MW-6	20	9 to 19	69.7 to 59.7	Dry	NR
MW-7	20	9 to 19	69.6 to 59.6	Dry	NR
MW-8	20	9 to 19	67.7 to 57.7	Dry	NR

Notes:

<sup>(a)</sup> Pre-purge measurement, feet below top of well casing.

<sup>(b)</sup> Pre-purge measurement, feet above mean sea level

NR = not recorded (dry or only residual water in silt trap)

Each well was then purged (by hand bailing with a new disposable bailer) of three wetted casing volumes, and aquifer stability parameters (pH, temperature, electrical conductivity, and turbidity) were measured between each purging. When measurements indicated that representative formation water was entering the well, a groundwater sample set was collected from each well with the purging bailer. These samples were field-measured for pH, temperature, electrical conductivity, turbidity, and dissolved oxygen. Samples were then transferred to appropriate sampling containers (40-ml VOA vials with hydrochloric acid preservative, and 1-liter amber glass jars), labeled, and placed in coolers with “blue ice.” All groundwater samples were managed under chain-of-custody procedures from the time of sample collection until samples were received in the laboratory.

Approximately 3 gallons of wastewater (purge water and equipment decontamination rinseate) was containerized in a labeled, 55-gallon steel drum and temporarily stored onsite. This non-hazardous water will continue to be accumulated onsite until it is cost-effective to coordinate its disposal, at which time it will be profiled and disposed of at a permitted wastewater treatment facility. Seven 55-gallon drums containing approximately 385 gallons of non-hazardous purgewater accumulated from previous events was removed from the site by Evergreen Environmental Services on June 11, 2007; documentation of which is contained in our technical report dated August 1, 2007.



## **4.0 REGULATORY CONSIDERATIONS, ANALYTICAL RESULTS AND FINDINGS**

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This section presents analytical results of the most recent monitoring event, preceded by a summary of relevant regulatory considerations.

### **REGULATORY CONSIDERATIONS**

#### **Environmental Screening Levels**

There are no published cleanup goals for detected site contaminants in groundwater. The Water Board has published “Environmental Screening Levels” (ESLs), which are screening-level concentrations for soil and groundwater that incorporate both environmental and human health risk considerations, and are used as a preliminary guide in determining whether additional remediation and/or investigation are warranted. The ESLs are not cleanup criteria; rather, they are conservative screening-level criteria designed to be protective of both drinking water resources and aquatic environments in general. The groundwater ESLs are composed of one or more components, including ceiling value, human toxicity, indoor air impacts, and aquatic life protection. Exceedance of ESLs suggests that additional remediation and/or investigation may be warranted, such as monitoring plume stability to demonstrate no risk to sensitive receptors in the case of sites where drinking water is not threatened.

The City of Oakland, via its Urban Land Redevelopment (URL) Program, utilizes a similar ESL approach in evaluating whether active remediation is necessary at sites proposed for redevelopment. This program is not currently applicable to the site, as no redevelopment is proposed.

For all site contaminants with published drinking water standards—benzene, toluene, ethylbenzene, and xylenes (BTEX); and methyl *tertiary*-butyl ether (MTBE)—the drinking water standards are equal to or greater than the published ESLs.

#### **Sensitive Receptors**

Risk evaluation commonly includes the identification of sensitive receptors, including vicinity groundwater supply wells. As discussed in a previous report (SES, 2004c), the Department of Water Resources identified only one groundwater supply well within 1,500 feet of the site.

Based on its distance and upgradient location relative to the site, there is no reasonable potential for this well to intercept shallow groundwater emanating from the subject property.

As specified in the Water Board's *San Francisco Bay Region Water Quality Control Plan*, all groundwaters are considered potential sources of drinking water unless otherwise approved by the Water Board, and are assumed to ultimately discharge to a surface water body and potentially impact aquatic organisms. In the case of groundwater contamination, ESLs are published for two scenarios: groundwater is a source of drinking water, and groundwater is not a source of drinking water. Qualifying for the higher ESLs (applicable to groundwater is not a source of drinking water) requires meeting one of the following two criteria:

1. The Water Board has completed the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (Water Board, 1999) that delineates three types of areas with regard to beneficial uses of groundwater: Zone A (significant drinking water resource), Zone B (groundwater unlikely to be used as drinking water resource), and Zone C (shallow groundwater proposed for designation as Municipal Supply Beneficial Use). The subject site falls within Zone A.
2. A site-specific exemption can be obtained from the Water Board. Such an exemption has not been obtained for this site.

As discussed below, multiple groundwater contaminants have been detected in excess of ESLs, for both groundwater beneficial scenarios (groundwater is versus is not a potential drinking water resource). These data indicate that continued site characterization is warranted until it can be demonstrated that site-sourced contamination poses no unacceptable risk to sensitive receptors. Our subsequent discussion of groundwater contamination is in the context of the ESL criteria for sites where groundwater is a potential drinking water resource.

## **GROUNDWATER SAMPLE ANALYTICAL METHODS**

Groundwater samples were analyzed in accordance with the methods proposed in the SES technical workplan. Analytical methods included:

- Total volatile hydrocarbons – gasoline range (TVHg), by EPA Method 8015B (all wells);
- BTEX and MTBE, by EPA Method 8260B;
- The lead scavengers 1,2-dichloroethane (EDC) and 1,2-dibromoethane (EDB), by EPA Method 8260B (all wells except MW-4 and MW-7, which historically have had little or no site-sourced contamination);
- Total extractable hydrocarbons – diesel range (TEHd), by EPA Method 8015M (all wells except MW-4 and MW-7, which historically have never detected diesel); and
- Fuel oxygenates, by EPA Method 8260B.

Groundwater samples were analyzed in accordance with the methods proposed in the SES technical workplan, with one exception. The analytical results for the current event indicate no significant differences from historical analytical results.

## **GROUNDWATER SAMPLE RESULTS**

Five of the eight monitoring wells could not be sampled this event because of insufficient water due to seasonally lowered groundwater levels. Tables 2 and 3 summarize the contaminant analytical results of the current monitoring event. Appendix B contains the certified analytical laboratory report and chain-of-custody record. Appendix C contains historical site groundwater monitoring well analytical data.

### **Gasoline and Diesel**

Figure 4 shows gasoline isoconcentration contours for the recent event. Gasoline was detected in all three of the eight wells sampled. Detected concentrations ranged from 70 micrograms per liter ( $\mu\text{g/L}$ ) in well MW-4 to 4,000  $\mu\text{g/L}$  in well MW-3. All of the gasoline concentrations except that in MW-4 exceeded the 100- $\mu\text{g/L}$  ESL criterion.

The gasoline concentrations in Third Quarter 2007 compared to Second Quarter 2007 show a significant decrease in the gasoline concentrations at the monitoring well near the source area (MW-1) and a slight decrease in the downgradient well MW-3. Gasoline is known to be present offsite under Howe Street (to the northwest) and under W. MacArthur Boulevard (to the southwest).

Figure 5 shows diesel isoconcentration contours for the recent event. Diesel was detected in the one well in which it was analyzed for, but is of secondary concern relative to gasoline, with concentrations historically at significantly lower levels than gasoline. Diesel was detected at a concentration of 1,700  $\mu\text{g/L}$ , exceeding the 100- $\mu\text{g/L}$  ESL criterion. The diesel plume footprint is similar to that of the gasoline plume, but somewhat smaller. Diesel is known to be present offsite under Howe Street (to the northwest) and under W. MacArthur Boulevard (to the southwest).

**Table 2**  
**Groundwater Sample Analytical Results – September 18, 2007**  
**Hydrocarbons, BTEX, and MTBE <sup>(a)</sup>**

Well	TVHg	TEHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-1	<b>1,400</b>	<b>1,700</b>	<b>50</b>	<0.5	1.3	<0.5	4.1
MW-2	NS	NS	NS	NS	NS	NS	NS
MW-3	<b>4,000</b>	NS	<b>4.6</b>	<0.5	2.6	0.8	<b>75</b>
MW-4	70	NA	NA	NA	NA	NA	NA
MW-5	NS	NS	NS	NS	NS	NS	NS
MW-6	NS	NS	NS	NS	NS	NS	NS
MW-7	NS	NA	NA	NA	NA	NA	NA
MW-8	NS	NS	NS	NS	NS	NS	NS
<b>Environmental Screening Levels <sup>(b)</sup></b>							
	100	100	1.0	40	30	20	5.0
<b>Drinking Water Standards <sup>(c)</sup></b>							
	100	100	1.0 <sup>(d)</sup>	40	30	13	5.0

Notes:

<sup>(a)</sup> All concentrations in µg/L, equivalent to parts per billion (ppb).

<sup>(b)</sup> For commercial/industrial sites where a known or potential drinking water resource is threatened.

<sup>(c)</sup> Drinking water standards are State of California Secondary Maximum Contaminant Levels – Proposed, unless specified otherwise.

Analytical results in **bold** are above the ESLs.

<sup>(d)</sup> State of California Primary Maximum Contaminant Levels..

MTBE = methyl *tertiary*-butyl ether

NA = Not analyzed for this contaminant

TEHd = total extractable hydrocarbons - diesel range

NLP = No level published.

TVHg = total volatile hydrocarbons - gasoline range

NS = Not sampled

**Table 3**  
**Groundwater Sample Analytical Results – September 18, 2007**  
**Lead Scavengers and Fuel Oxygenates <sup>(a)</sup>**

Well	EDC	DIPE	TBA
MW-1	1.8	<0.5	<b>66</b>
MW-2	NS	NS	NS
MW-3	1.0	1.9	49
MW-5	NS	NS	NS
MW-6	NS	NS	NS
MW-8	NS	NS	NS
<b>Drinking Water Standards <sup>(b)</sup></b>			
	NLP	NLP	NLP
<b>ESLs <sup>(c)</sup></b>			
	0.5	NLP	12

Notes:

<sup>(a)</sup> All concentrations in µg/L, equivalent to parts per billion (ppb).

<sup>(b)</sup> Drinking water standards are State of California Secondary Maximum Contaminant Levels – Proposed, unless specified otherwise.

<sup>(c)</sup> For commercial/industrial sites where known/potential drinking water resource is threatened. Results in **bold** are above the ESLs.

DIPE = isopropyl ether. EDC = ethylene dichloride (1,2-dichloroethane).

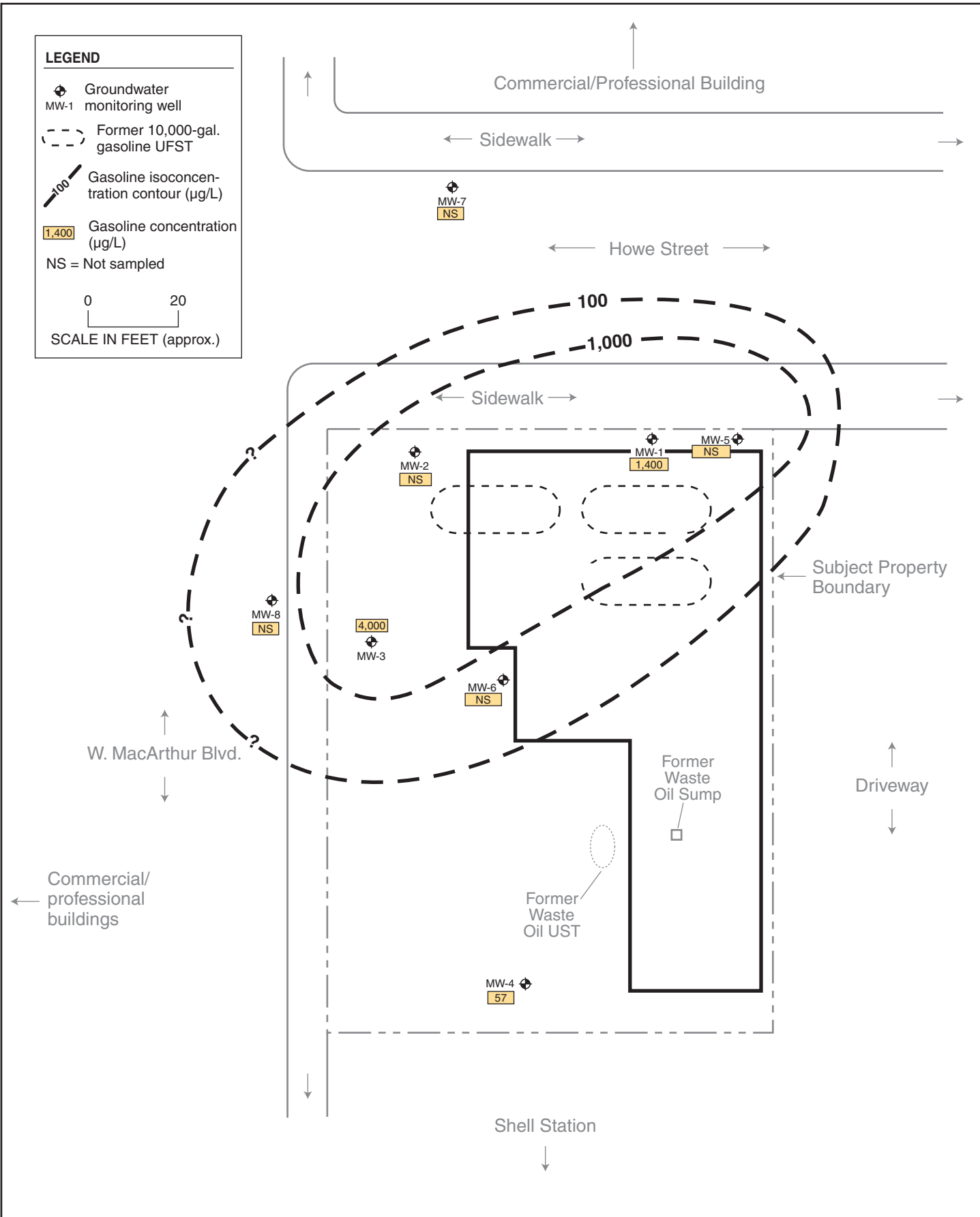
TBA = *tertiary*-butyl alcohol NS = Not sampled NLP = No level published.

Table includes only detected fuel oxygenates and lead scavengers. Contaminants analyzed for and not detected include EDB, ETBE, and TAME.

**LEGEND**

- Groundwater monitoring well
- Former 10,000-gal. gasoline UFGT
- Gasoline isoconcentration contour ( $\mu\text{g/L}$ )
- Gasoline concentration ( $\mu\text{g/L}$ )
- NS = Not sampled

0      20  
SCALE IN FEET (approx.)



**GASOLINE ISOCONCENTRATION CONTOURS (SEPTEMBER 2007)**

240 W. MacArthur Blvd.  
Oakland, CA

By: MJC

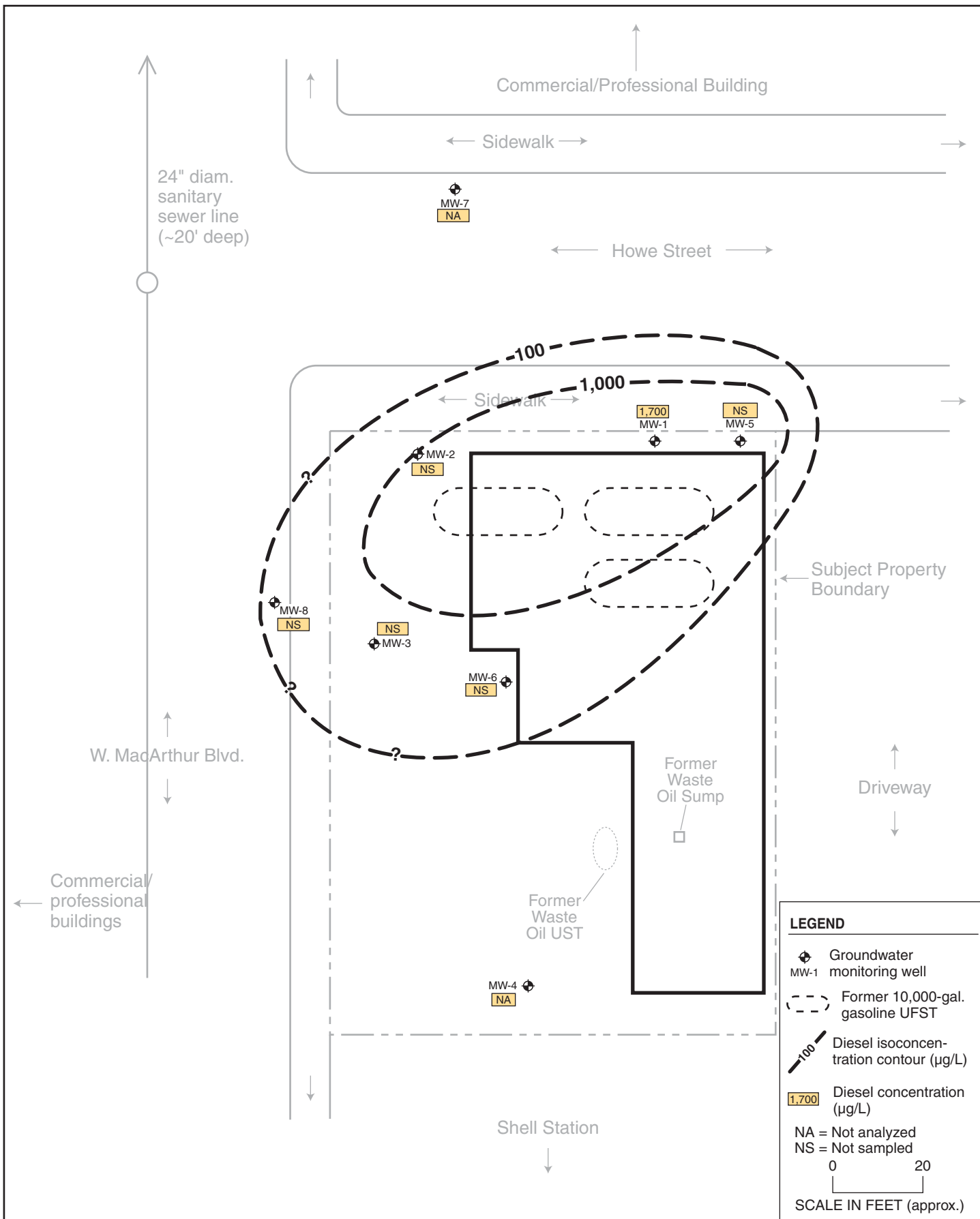
OCTOBER 2007

**Figure 4**



2008-43-178





### DIESEL ISOCONCENTRATION CONTOURS (SEPTEMBER 2007)

240 W. MacArthur Blvd.  
Oakland, CA

By: MJC

OCTOBER 2007

Figure 5



## **Benzene, Toluene, Ethylbenzene, and Total Xylenes**

Figure 6 shows benzene isoconcentration contours for the recent event. Benzene was detected in both of the two wells in which it was analyzed, at concentrations of 4.6 µg/L in MW-3 and 50 µg/L in MW-1. Maximum benzene concentration was detected in source area well MW-1, as historically has been the case and at a concentration in excess of the 1.0 µg/L ESL criterion. The lateral extent of the benzene plume was constrained onsite in three directions in the current event; however, it is known to extend under Howe Street to the northwest (historical concentrations up to approximately 100 µg/L). The benzene plume configuration is generally the same as for gasoline and diesel.

Trace concentrations of ethylbenzene, and xylenes were detected below ESL criteria during this event. Historically these analytes are detected in generally the same wells in which benzene is detected.

## **Methyl *tertiary*-Butyl Ether**

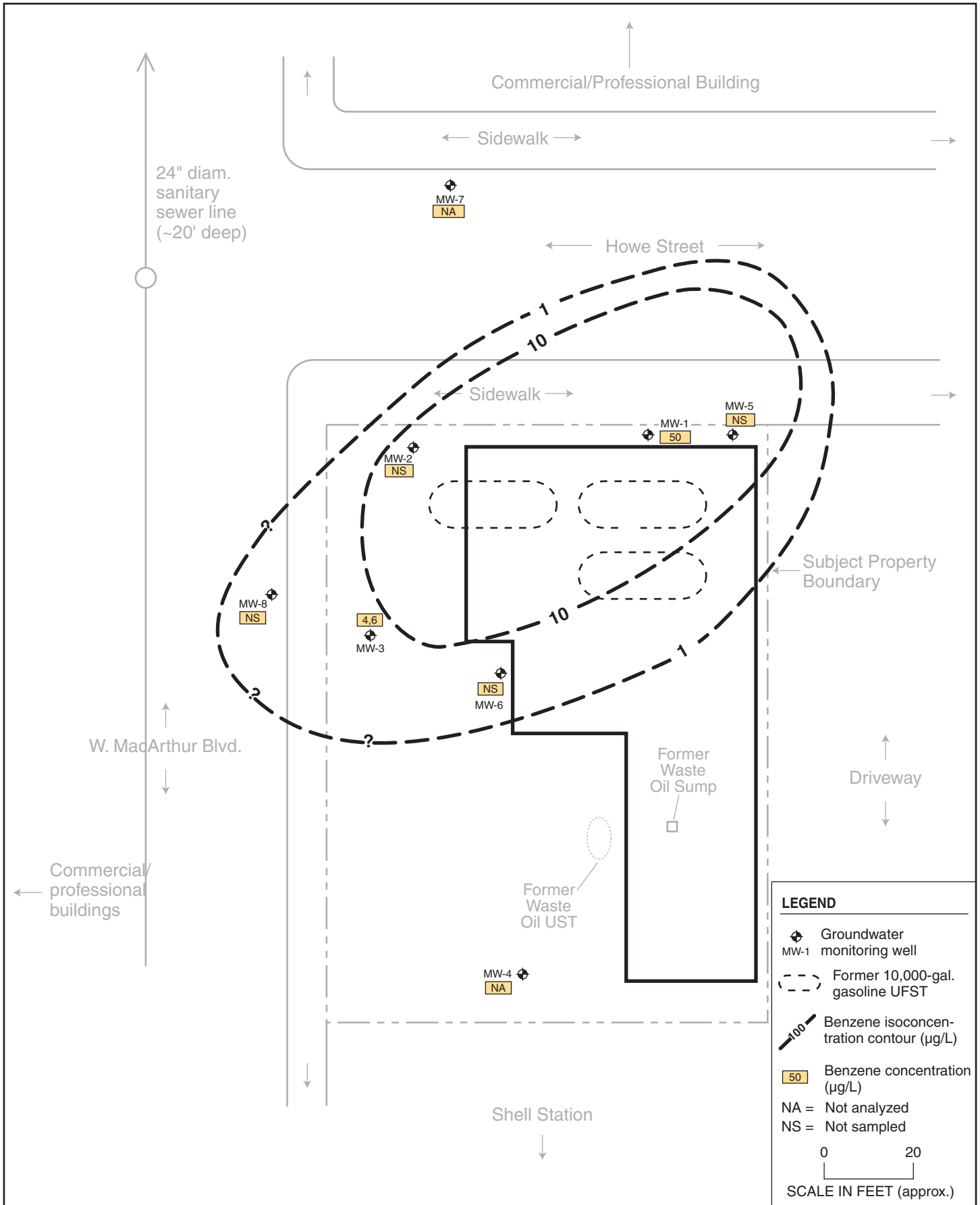
Figure 7 shows MTBE isoconcentration contours for the recent event. MTBE was detected in both of the wells for which MTBE was analyzed, at concentrations ranging from 4.1 µg/L (in MW-1) to 75 µg/L (in MW-8). The center of mass of the MTBE plume has migrated downgradient from the source area to the southern side of the property (adjacent to W. MacArthur Boulevard).

The lateral extent of the MTBE plume was constrained onsite in three directions in the current event; however, it is known to extend to the west underneath W. MacArthur Boulevard. As discussed in previous reports (SES, 2004c), MTBE appears to be migrating onto the subject property from the adjacent (to the east) Shell-branded service station. This contamination, however, is unrelated to the separate site-sourced MTBE contamination.

## **Lead Scavengers and Fuel Oxygenates**

The lead scavenger EDC was detected above ESL criteria in both wells in which lead scavengers were analyzed; 1.8 µg/L in MW-1 and 1.0 µg/L in MW-2.

Two fuel oxygenates were detected in the current event. DIPE was detected in one of the two wells in which it was analyzed; MW-1 at a concentration of 1.3 µg/L. TBA was detected above ESL criteria in both wells in which it was analyzed for; at concentrations of 66 µg/L in MW-1 and 49 µg/L in MW-3. No other fuel oxygenates were detected.



**BENZENE ISOCONCENTRATION CONTOURS (SEPTEMBER 2007)**

240 W. MacArthur Blvd.  
Oakland, CA

By: MJC

OCTOBER 2007

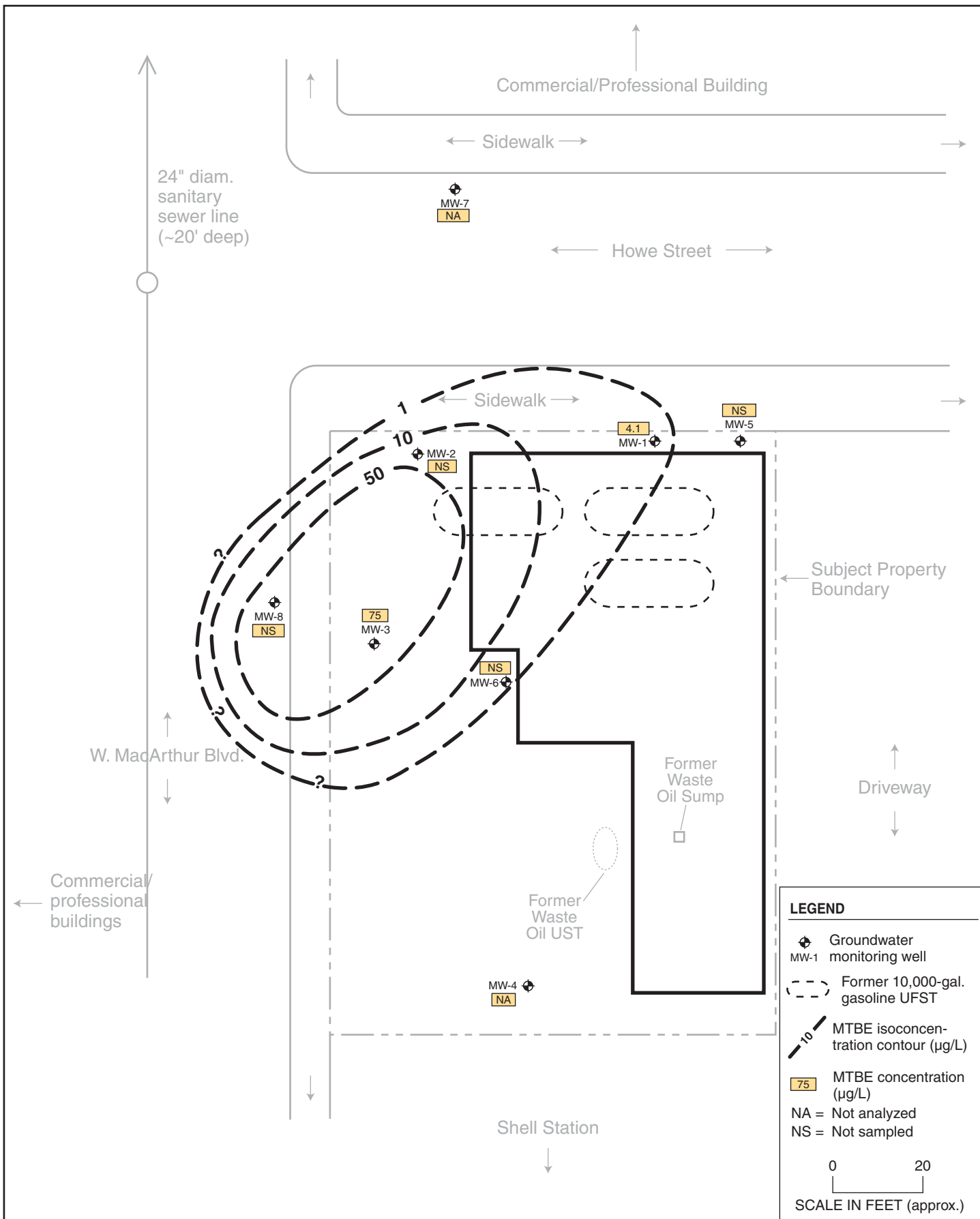
**Figure 6**



2003-43-180







**MTBE ISOCONCENTRATION CONTOURS (SEPTEMBER 2007)**

240 W. MacArthur Blvd.  
Oakland, CA

By: MJC

OCTOBER 2007

**Figure 7**



2008-43-159



## **Summary of Groundwater Contamination**

Maximum concentrations of gasoline, diesel and benzene were detected in well MW-1 (near the former UFSTs) and gasoline in well MW-3, located in the downgradient. Maximum concentrations of MTBE are historically detected in downgradient wells (adjacent to W. MacArthur Boulevard), indicating that the center of mass of MTBE has migrated downgradient. Groundwater contamination is known to extend offsite to the northwest southwest (beneath Howe Street and W. MacArthur Boulevard). Discussion of contaminant trends is limited this event because historical low groundwater levels resulted in only three of the eight wells being sampled.

## **QUALITY CONTROL SAMPLE ANALYTICAL RESULTS**

Laboratory QC samples (e.g., method blanks, matrix spikes, surrogate spikes) were analyzed by the laboratory in accordance with requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the methods (Appendix C).

## **5.0 SUMMARY, CONCLUSIONS, AND PROPOSED ACTIONS**

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### **SUMMARY AND CONCLUSIONS**

- A total of 36 groundwater monitoring/sampling events have been conducted in the eight site wells between August 1997 and the current event. ACEH is the lead regulatory agency.
- Five of the eight monitoring wells could not be sampled this monitoring event because of insufficient water due to seasonal low groundwater levels. These are the lowest groundwater elevations recorded since monitoring began in August 2007.
- The site has undergone site investigations and remediation since 1991 (SES has been involved since August 2003) to address soil and groundwater contamination resulting from leaking UFSTs that were reportedly removed.
- Sufficient site characterization has been conducted to evaluate the risks associated with residual soil contamination, and to evaluate corrective action options. The data indicate that, if remedial action is not implemented, residual site contamination will remain at elevated levels for many years and longer.
- A corrective action assessment and remedial evaluation (soil vapor extraction pilot test was conducted in June 2007). ACEH requested a workplan for installation and operation of a soil vapor extraction system was prepared by SES and submitted concurrently with this report to ACEH in October 2007.
- Groundwater at the site appears to be slightly confined, with a flow direction ranging between northwest and west, with a relatively flat hydraulic gradient averaging approximately 0.005 ft/ft. The groundwater flow direction and gradient were within the historical range.
- The primary site chemicals of concern, with regard to concentrations and risk issues, are gasoline, benzene, and MTBE. Diesel, aromatic hydrocarbons, lead scavengers, and fuel oxygenates are present at lesser concentrations and over a smaller area.
- As stipulated by ACEH, analysis for lead scavengers will continue to be conducted in wells MW-1, MW-5, and MW-6. Fuel oxygenates were detected in those wells, and in MW-2, MW-3, and MW-8. Because lead scavengers and fuel oxygenates are analyzed by the same method at no additional cost, the responsible party has elected to continue analysis for lead scavengers and fuel oxygenates in all wells except MW-4 and MW-7.

- The greatest concentrations of gasoline, diesel, and benzene in groundwater are located in the northern corner of the site (near the source area). Maximum groundwater contamination by MTBE was detected in the downgradient portion of the property, indicating that the center of mass of these contaminants has migrated downgradient. Groundwater contamination above ESL criteria extends offsite (likely no more than 25 feet) beneath Howe Street and W. MacArthur Boulevard.
- The groundwater plume geometry is typical of what has been observed in previous monitoring events. Seasonal effects do not appear to change the plume migration direction.
- A previous water well survey identified no vicinity water wells with the potential to intercept site-sourced groundwater contamination.
- Potential preferential pathways identified include deep sanitary sewer lines beneath Howe Street and W. MacArthur Boulevard (adjacent to the subject property). Based on the detection of gasoline and MTBE in well MW-7 (beyond the Howe Street deep utilities), it appears unlikely that the Howe Street deep utilities are acting as a preferential pathway for site-sourced groundwater contamination. The influence of deep utilities beneath W. MacArthur Boulevard is not known.
- The adjacent Shell service station is contributing minor MTBE groundwater contamination to the eastern corner of the subject property. This contamination is unrelated to the separate, site-sourced MTBE groundwater contamination in the northern and western portions of the subject property.
- The site is currently receiving reimbursements from the California Tank Fund.

## **PROPOSED ACTIONS**

The Responsible Party proposes to implement the following actions to address regulatory concerns:

- As requested by ACEH, a workplan for installation and operation of a soil vapor extraction system has been submitted. SES recommends that the SVE be implemented to remove source area subsurface contamination and move the site toward regulatory closure. We propose to implement the SVE 60 days from the submittal of the workplan or sooner if ACEH is able to complete their technical review.
- Continue to make required Electronic Data Format uploads to the GeoTracker database, and upload an electronic copy of technical reports to ACEH's "ftp" system.
- Continue submitting reimbursement requests under the State of California Petroleum UST Cleanup Fund. In the event the property is sold, the current Responsibility Party will coordinate with the new Responsibility Party to transfer Tank Fund eligibility.

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---

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## 7.0 LIMITATIONS

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This report has been prepared for the exclusive use of the current property owners (Mr. and Mrs. Glen Poy-Wing, d.b.a. Oakland Auto Works) their representatives, and the regulators. No reliance on this report shall be made by anyone other than those for whom it was prepared.

The findings and conclusions presented in this report are based on the review of previous investigators' findings at the site, as well as site activities conducted by SES since August 2003. This report provides neither a certification nor guarantee that the property is free of hazardous substance contamination. This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The SES personnel who performed this limited remedial investigation are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

The findings of this report are valid as of the present. Site conditions may change with the passage of time, natural processes, or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the investigation and remediation completed.

## **APPENDIX A**

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### **Current Event Groundwater Monitoring Field Records**

## SPH or Purge Water Drum Log

Client: Stellar Env.

Site Address: 240 W. Macarthur Blvd., Oakland

### STATUS OF DRUM(S) UPON ARRIVAL

Date	6/22/07	9/18/07				
Number of drum(s) empty:	0	2				
Number of drum(s) 1/4 full:	1					
Number of drum(s) 1/2 full:	<del>2</del> 1					
Number of drum(s) 3/4 full:	0					
Number of drum(s) full:	1	1				
Total drum(s) on site:	3	3				
Are the drum(s) properly labeled?	Y	Y				
Drum ID & Contents:	Purge H <sub>2</sub> O	soil in things				
If any drum(s) are partially or totally filled, what is the first use date:						

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purgewater or DI Water.
- If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.
- All BTS drums MUST be labeled appropriately.

### STATUS OF DRUM(S) UPON DEPARTURE

Date	6/22/07	9/18/07				
Number of drums empty:	0					
Number of drum(s) 1/4 full:	0	1				
Number of drum(s) 1/2 full:	1					
Number of drum(s) 3/4 full:	1					
Number of drum(s) full:	1	1				
Total drum(s) on site:	3	3				
Are the drum(s) properly labeled?	Y	Y				
Drum ID & Contents:	Purge H <sub>2</sub> O	soil in things				

### LOCATION OF DRUM(S)

Describe location of drum(s): Next to Dumpster

### FINAL STATUS

Number of new drum(s) left on site this event	0	0				
Date of inspection:	6/22/07	<del>9/18/07</del>				
Drum(s) labelled properly:	Y	Y				
Logged by BTS Field Tech:	<i>[Signature]</i>	PCJ				
Office reviewed by:	M	meu				

# WELLHEAD INSPECTION CHECKLIST

Date 9/18/07 Client STELLAR

Site Address 240w. MacArthur Blvd, Oakland

Job Number 070918-PC1 Technician P. Cornish

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-1							K	
MW-2	K							
MW-3							K	
MW-4							K	
MW-5							K	
MW-6	K							
MW-7							K	
MW-8	K							

NOTES: MW-4 2 1/2 tabs stripped  
 MW-7 1/2 " "  
 MW-3 2 1/2 " "  
 MW-1 2 1/2 bolts missing  
 MW-5 1/2 " "



# WELL GAUGING DATA

Project # 070918-PC1 Date 9-18-07 Client STELLAR

Site 240 MacArthur Blvd., Oakland

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <u>TOC</u>	Notes
MW-1	0812	2					23.30	24.39	TOC ↓	
MW-2	0830	2				23.80	24.30			
MW-3	0812	2				22.90	23.70			
MW-4	0748	2				19.36	23.90			
MW-5	0815	2				Dry	20.04			
MW-6	0822	2				20.00	20.16			
MW-7	0755	2				19.96	20.03			
MW-8	0802	2				19.12	19.94			

# WELL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-1</b>	Well Diameter: <b>②</b> 3 4 6 8 _____
Total Well Depth (TD) <b>24.39</b>	Depth to Water (DTW): <b>23.30</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <b>23.52</b>	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	--	---

<b>0.2</b> (Gals.) X	<b>3</b>	= <b>0.6</b> Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
920	18.7	6.71	850.7	71000	0.2	grey ↓
922	18.7	6.69	821.2	71000	0.4	
925	18.8	6.72	802.1	71000	0.6	
					DTW: 23.92' @ 928	
water too turbid for Fe <sup>2+</sup> - dark grey, very silty						

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <b>0.6</b>	
Sampling Date: <b>9/18/07</b>	Sampling Time: <b>1300</b>	Depth to Water: <b>23.75</b>
Sample I.D.: <b>MW-1</b>	Laboratory: Kiff CalScience Other: <b>C&amp;T</b>	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: <b>see col</b>		
EB I.D. (if applicable): _____ @ _____ Time	Duplicate I.D. (if applicable): _____	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:		
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: <b>0.91</b> mg/L	
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV	



# LL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-3</b>	Well Diameter: <b>2</b> 3 4 6 8 _____
Total Well Depth (TD): <b>23.70</b>	Depth to Water (DTW): <b>22.90</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <b>23.00</b>	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	--	---

**0.1** (Gals.) X **3** = **0.3** Gals.  
 Case Volume                      Specified Volumes                      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
916	19.6	6.91	636.5	>1000	0.1	grey, very silty
						well dewatered - minimal water escaped from bailer during retrieval
1246	19.2	7.05	695.0	>1000	-	thick silty
						→ water @ sampling thick and silty, Fe <sup>2+</sup> not able to be measured

Did well dewater?  Yes    No    Gallons actually evacuated: **0.15**

Sampling Date: **9/18/07**    Sampling Time: **1246**    Depth to Water: **23.30**

Sample I.D.: **MW-3**    Laboratory: Kiff    CalScience    Other: **C&T**

Analyzed for: TPH-G    BTEX    MTBE    TPH-D    Oxygenates (5)    Other: **see coc**

EB I.D. (if applicable): \_\_\_\_\_ @ \_\_\_\_\_ Time    Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for: TPH-G    BTEX    MTBE    TPH-D    Oxygenates (5)    Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.15 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-4</b>	Well Diameter: <b>②</b> 3 4 6 8 _____
Total Well Depth (TD): <b>23.90</b>	Depth to Water (DTW): <b>19.36</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <b>19.50</b>	

Purge Method: Bailer	Waterra	Sampling Method: Bailer
<input checked="" type="checkbox"/> Disposable Bailer	Peristaltic	<input checked="" type="checkbox"/> Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
Electric Submersible	Other _____	Dedicated Tubing
		Other: _____

**72** (Gals.) X **3** = **2.16** Gals.  
 1 Case Volume      Specified Volumes      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0850	19.6	6.96	406.1	>1000	0.7	brown, cloudy
0854	19.9	6.31	454.5	>1000	1.4	
0858	19.9	6.33	465.0	>1000	2.2	
				DTW: 21.10 @ 902		
			Fe	out of range - too cloudy		

Did well dewater? Yes  No  Gallons actually evacuated: **2.2**

Sampling Date: **9/18/07** Sampling Time: **1228** Depth to Water: **20.05**

Sample I.D.: **MW-4** Laboratory: Kiff CalScience Other: **C&T**

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: **see col**

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	<b>0.30</b> mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-8</b>	Well Diameter: <b>(2)</b> 3 4 6 8
Total Well Depth (TD): <b>19.94</b>	Depth to Water (DTW): <b>19.12</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>(PVC)</b> Grade	D.O. Meter (if req'd): <b>(YSI)</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <b>19.28</b>	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	--	---

0.1 (Gals.) X	3	= 0.3 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0908	19.5	6.84	523.5 <del>1000</del> (µS)	> 1000	0.1	very silty
well dewatered - minimal water escapes bailer during retrieval						
DTW: 19.70						
Attempted to sample well w/ Disp Bailer - Nothing in bailer but silt when retrieved - No sample						

Did well dewater? <b>(Yes)</b> No	Gallons actually evacuated: <b>0.15</b>	
Sampling Date: <b>9/18/07</b>	Sampling Time: _____	Depth to Water: _____
Sample I.D.: <b>MW-8</b>	Laboratory: Kiff CalScience Other: <b>(C&amp;T)</b>	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: <b>see coc</b>		
EB I.D. (if applicable): _____ @ _____ Time	Duplicate I.D. (if applicable): _____	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____		
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: _____ mg/L	
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV	

LL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-2</b>	Well Diameter: <b>2</b> 3 4 6 8
Total Well Depth (TD): <b>24.30</b>	Depth to Water (DTW): <b>23.50</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer  Disposable Bailer  Positive Air Displacement  Electric Submersible  Waterra  Peristaltic  Extraction Pump  Other \_\_\_\_\_

Sampling Method: Bailer  ~~Disposable Bailer~~  Extraction Port  Dedicated Tubing  Other: \_\_\_\_\_

\_\_\_\_\_ (Gals.) X **3** = \_\_\_\_\_ Gals.  
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
			Insufficient water for Purge or Sample			

Did well dewater? Yes  No  Gallons actually evacuated: \_\_\_\_\_

Sampling Date: **9/18/07** Sampling Time: \_\_\_\_\_ Depth to Water: \_\_\_\_\_

Sample I.D.: **MW-** Laboratory: Kiff CalScience Other: **C&T**

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: **see CDC**

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	_____ mg/L	Post-purge:	_____ mg/L
O.R.P. (if req'd):	Pre-purge:	_____ mV	Post-purge:	_____ mV

# WELL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-5</b>	Well Diameter: <b>2</b> 3 4 6 8 _____
Total Well Depth (TD): <b>20.04</b>	Depth to Water (DTW): <b>Dry</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: ~~Bailer~~ ~~Disposable Bailer~~ ~~Positive Air Displacement~~ ~~Electric Submersible~~ ~~Water~~ ~~Peristaltic~~ ~~Extraction Pump~~ ~~Other \_\_\_\_\_~~ Sampling Method: ~~Bailer~~ ~~Disposable Bailer~~ ~~Extraction Port~~ ~~Dedicated Tubing~~ Other: \_\_\_\_\_

\_\_\_\_\_ (Gals.) X 3 = \_\_\_\_\_ Gals.  
 l Case Volume                      Specified Volumes                      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
			<b>Well Dry</b>			

Did well dewater?    Yes    No                      Gallons actually evacuated: \_\_\_\_\_

Sampling Date: **9/18/07**    Sampling Time: \_\_\_\_\_    Depth to Water: \_\_\_\_\_

Sample I.D.: **MW-**                      Laboratory:    Kiff    CalScience    Other: **CAT**

Analyzed for:    TPH-G    BTEX    MTBE    TPH-D    Oxygenates (5)    Other: **see coc**

EB I.D. (if applicable): \_\_\_\_\_ @ \_\_\_\_\_ Time    Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for:    TPH-G    BTEX    MTBE    TPH-D    Oxygenates (5)    Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-2</b>	Well Diameter: <b>2</b> 3 4 6 8
Total Well Depth (TD): <b>20.16</b>	Depth to Water (DTW): <b>20.00</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: <del>Bailer</del> <del>Disposable Bailer</del> <del>Positive Air Displacement</del> <del>Electric Submersible</del>	Water: <del>Peristaltic</del> <del>Extraction Pump</del> Other: _____	Sampling Method: <del>Bailer</del> <del>Disposable Bailer</del> <del>Extraction Port</del> <del>Dedicated Tubing</del> Other: _____
--	---	---

_____ (Gals.) X <b>3</b> = _____ Gals. 1 Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
			<i>Insufficient water for Purge or Sample</i>			

Did well dewater?    Yes    No	Gallons actually evacuated:
Sampling Date: <b>9/18/07</b>	Sampling Time: _____ Depth to Water: _____
Sample I.D.: <b>MW-</b>	Laboratory: Kiff CalScience Other: <b>C&amp;T</b>
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: <b>see COC</b>	
EB I.D. (if applicable): _____ @ _____ Time	Duplicate I.D. (if applicable): _____
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____	
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: _____ mg/L
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV

# WELL MONITORING DATA SHEET

Project #: <b>070918-PC1</b>	Client: <b>STELLAR, Oakland Auto Works</b>
Sampler: <b>PC, KR</b>	Date: <b>9/18/07</b>
Well I.D.: <b>MW-7</b>	Well Diameter: <b>2</b> 3 4 6 8
Total Well Depth (TD): <b>20.03</b>	Depth to Water (DTW): <b>19.96</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	--	---

\_\_\_\_\_ (Gals.) X 3 = \_\_\_\_\_ Gals.  
 1 Case Volume      Specified Volumes      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
			<i>Insufficient water for Purge or Sample</i>			

Did well dewater?    Yes    No                      Gallons actually evacuated: \_\_\_\_\_

Sampling Date: **9/18/07**    Sampling Time: \_\_\_\_\_    Depth to Water: \_\_\_\_\_

Sample I.D.: **MW-7**                      Laboratory:    Kiff    CalScience    Other: **C&T**

Analyzed for:    TPH-G    BTEX    MTBE    TPH-D    Oxygenates (5)    Other: **see CDC**

EB I.D. (if applicable): \_\_\_\_\_ @ \_\_\_\_\_ Time    Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for:    TPH-G    BTEX    MTBE    TPH-D    Oxygenates (5)    Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## **APPENDIX B**

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### **Current Event Analytical Laboratory Report and Chain-of-Custody Record**



### Total Volatile Hydrocarbons

Lab #: 197699	Location: Oakland Auto Works
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2003-43	Analysis: EPA 8015B
Matrix: Water	Batch#: 129655
Units: ug/L	Sampled: 09/18/07
Diln Fac: 1.000	Received: 09/18/07

Field ID: MW-1                      Lab ID: 197699-001  
 Type: SAMPLE                      Analyzed: 09/20/07

Analyte	Result	RL
Gasoline C7-C12	1,800	50
Surrogate	%REC	Limits
Trifluorotoluene (FID)	146 *	73-134
Bromofluorobenzene (FID)	154 *	77-140

Field ID: MW-4                      Lab ID: 197699-002  
 Type: SAMPLE                      Analyzed: 09/20/07

Analyte	Result	RL
Gasoline C7-C12	70 Y Z	50
Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	73-134
Bromofluorobenzene (FID)	95	77-140

Field ID: MW-3                      Lab ID: 197699-003  
 Type: SAMPLE                      Analyzed: 09/19/07

Analyte	Result	RL
Gasoline C7-C12	4,000 L Y	50
Surrogate	%REC	Limits
Trifluorotoluene (FID)	234 * >LR b	73-134
Bromofluorobenzene (FID)	194 *	77-140

Type: BLANK                      Analyzed: 09/19/07  
 Lab ID: QC406919

Analyte	Result	RL
Gasoline C7-C12	ND	50
Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	73-134
Bromofluorobenzene (FID)	84	77-140

\*= Value outside of QC limits; see narrative  
 L= Lighter hydrocarbons contributed to the quantitation  
 Y= Sample exhibits chromatographic pattern which does not resemble standard  
 Z= Sample exhibits unknown single peak or peaks  
 b= See narrative  
 ND= Not Detected  
 RL= Reporting Limit  
 >LR= Response exceeds instrument's linear range

## Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC406920	Batch#:	129655
Matrix:	Water	Analyzed:	09/19/07
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,771	89	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	134	73-134
Bromofluorobenzene (FID)	111	77-140

## Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	129655
MSS Lab ID:	197698-001	Sampled:	09/17/07
Matrix:	Water	Received:	09/18/07
Units:	ug/L	Analyzed:	09/19/07
Diln Fac:	1.000		

Type: MS Lab ID: QC406921

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	24.21	2,000	1,690	83	72-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	137 *	73-134
Bromofluorobenzene (FID)	116	77-140

Type: MSD Lab ID: QC406922

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,691	83	72-120	0	20

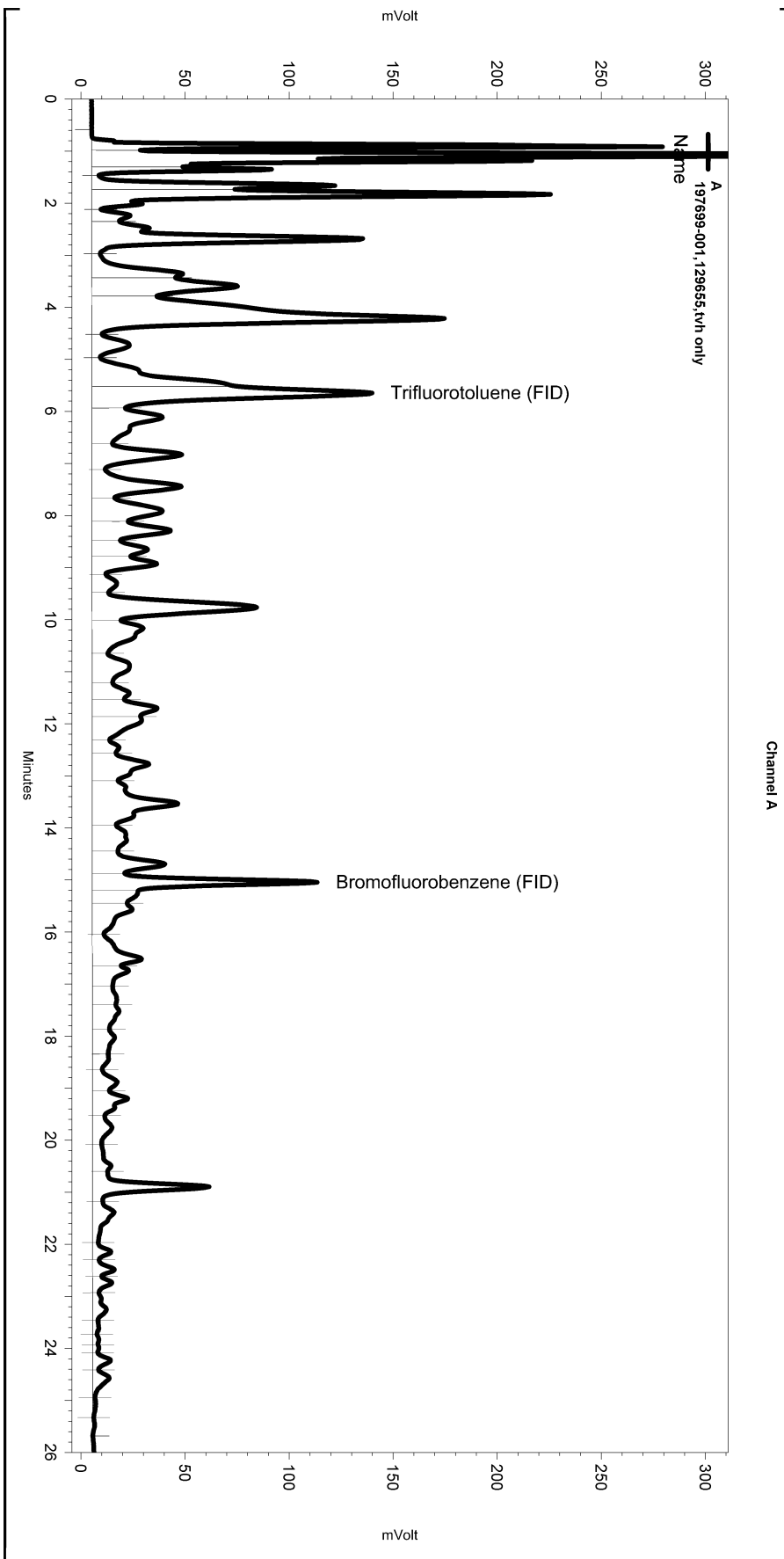
Surrogate	%REC	Limits
Trifluorotoluene (FID)	139 *	73-134
Bromofluorobenzene (FID)	119	77-140

\*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC05\Sequence\262.seq  
 Sample Name: 197699-001,129655,tvh only  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\262\_022  
 Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
 Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\TVHBTXE255.MET

Software Version 3.1.7  
 Run Date: 9/20/2007 3:14:02 AM  
 Analysis Date: 9/20/2007 8:05:26 AM  
 Sample Amount: 5 Multiplier: 5  
 Vial & pH or Core ID: A1.3



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Yes	Threshold	0	0	50

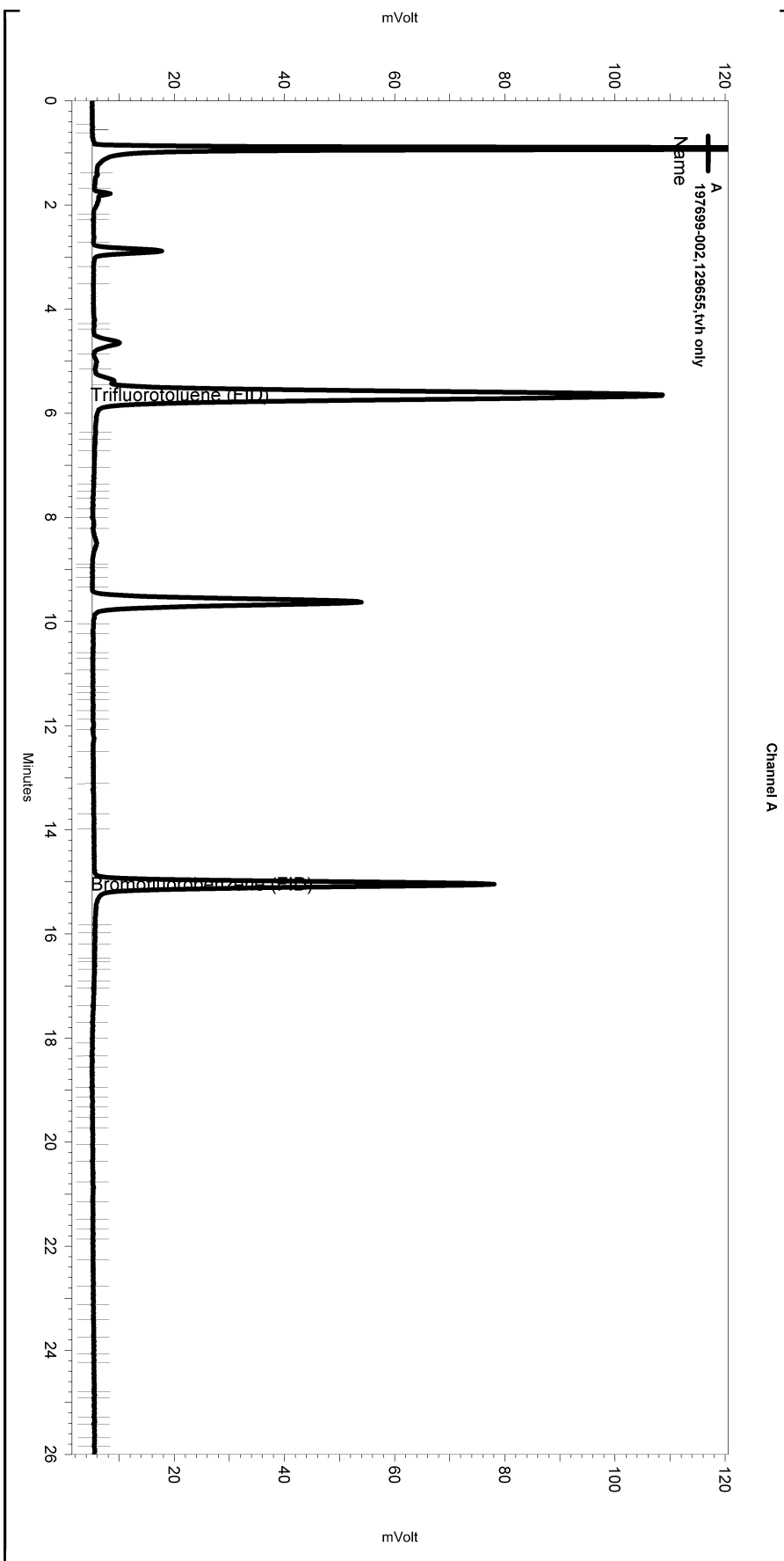
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 Manual Integration Fixes  
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Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\262\_022

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Yes	Split Peak	15.197	0	0

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 Sample Name: 197699-002,129655,tvh only  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\262\_023  
 Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
 Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe255.met

Software Version 3.1.7  
 Run Date: 9/20/2007 3:50:30 AM  
 Analysis Date: 9/20/2007 10:02:46 AM  
 Sample Amount: 5 Multiplier: 5  
 Vial & pH or Core ID: A1.3



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Yes	Threshold	0	0	50

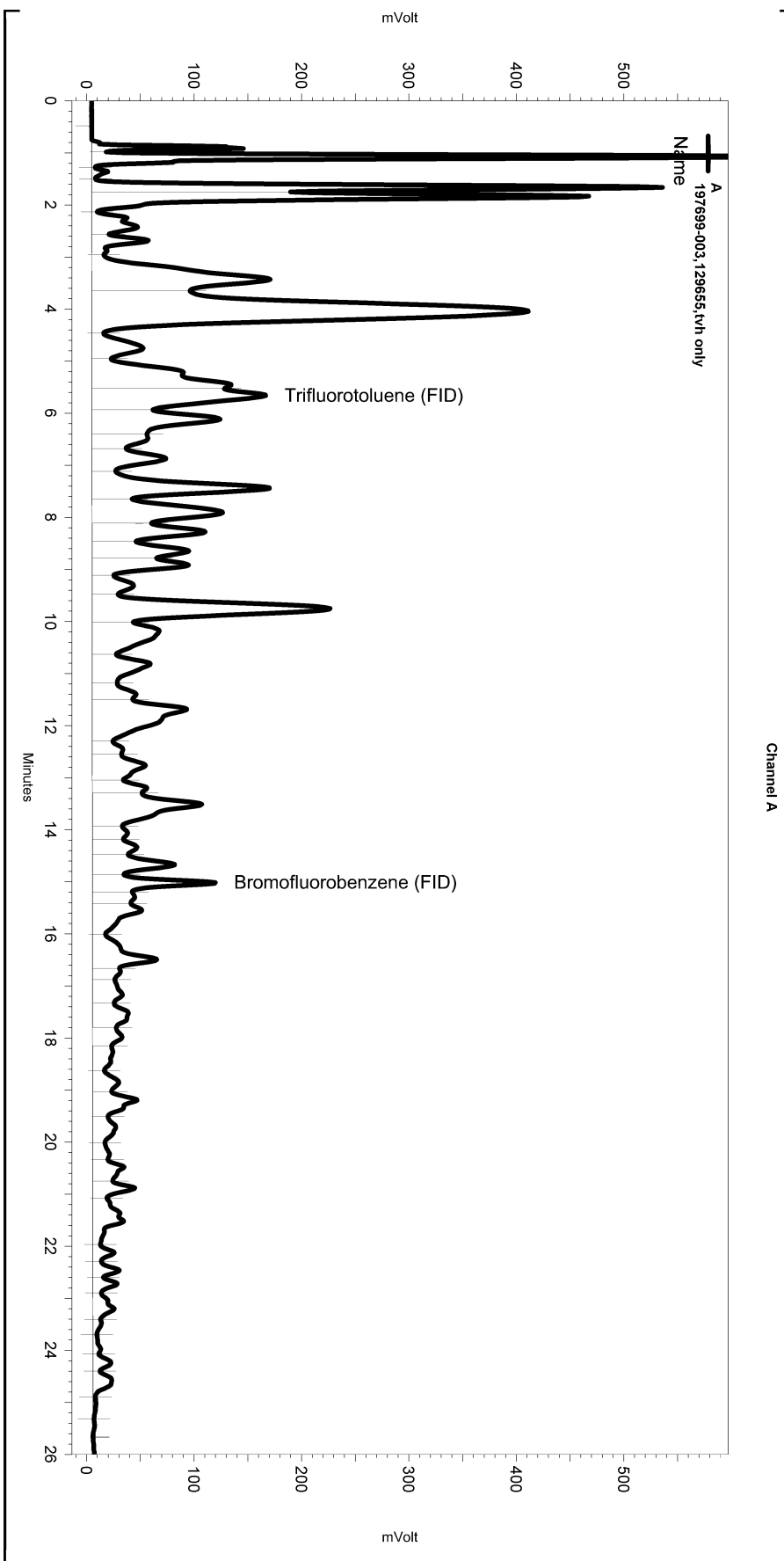
Manual Integration Fixes

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Yes	Split Peak	5.442	0	0

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 Sample Name: 197699-003,129655,tvh only  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\262\_007  
 Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
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 Analysis Date: 9/20/2007 7:58:43 AM  
 Sample Amount: 5 Multiplier: 5  
 Vial & pH or Core ID: A1.3



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Yes	Threshold	0	0	50

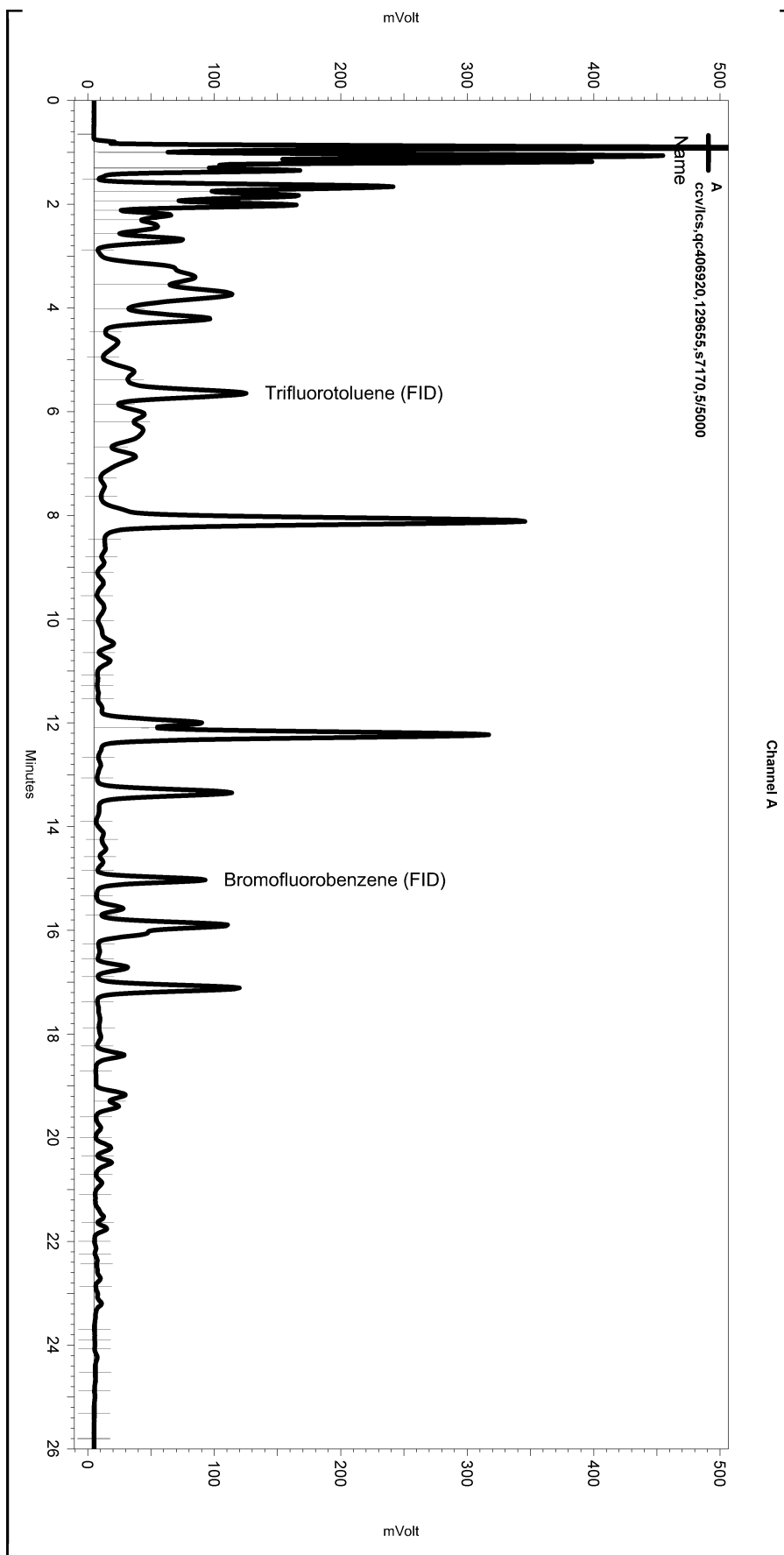
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 Manual Integration Fixes  
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Yes	Split Peak	5.523	0	0

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 Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
 Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhtxe255.met

Software Version 3.1.7  
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 Vial & pH or Core ID: {Data Description}



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\262\_001

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Total Extractable Hydrocarbons			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2003-43	Analysis:	EPA 8015B
Field ID:	MW-1	Sampled:	09/18/07
Matrix:	Water	Received:	09/18/07
Units:	ug/L	Prepared:	09/20/07
Diln Fac:	1.000	Analyzed:	09/21/07
Batch#:	129693		

Type: SAMPLE Lab ID: 197699-001

Analyte	Result	RL
Diesel C10-C24	1,700 H L Y	50

Surrogate	%REC	Limits
Hexacosane	105	61-133

Type: BLANK Lab ID: QC407064

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	100	61-133

H= Heavier hydrocarbons contributed to the quantitation  
 L= Lighter hydrocarbons contributed to the quantitation  
 Y= Sample exhibits chromatographic pattern which does not resemble standard  
 ND= Not Detected  
 RL= Reporting Limit



## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2003-43	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	129693
Units:	ug/L	Prepared:	09/20/07
Diln Fac:	1.000	Analyzed:	09/21/07

Type: BS Cleanup Method: EPA 3630C  
 Lab ID: QC407065

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,061	82	58-128

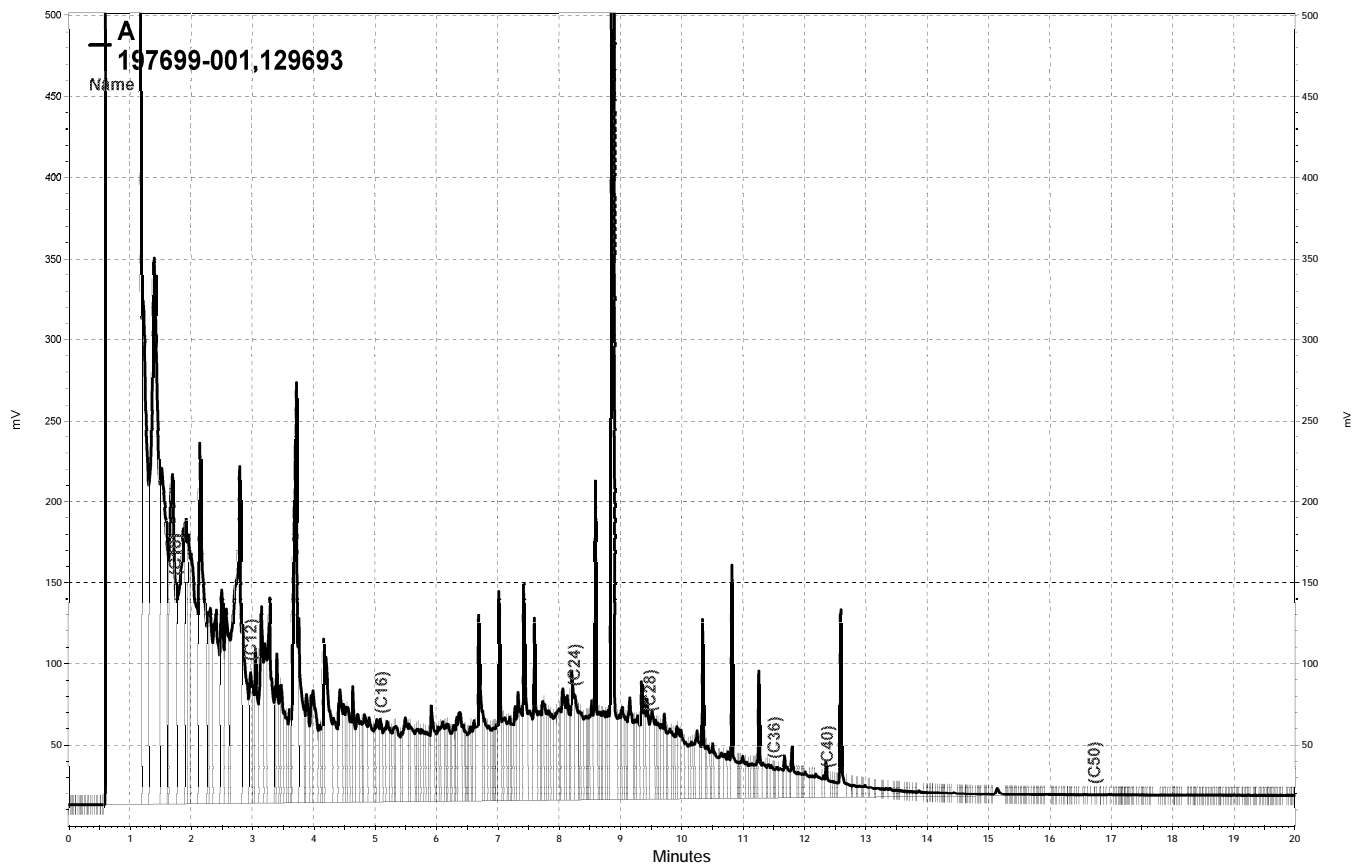
Surrogate	%REC	Limits
Hexacosane	88	61-133

Type: BSD Cleanup Method: EPA 3630C  
 Lab ID: QC407066

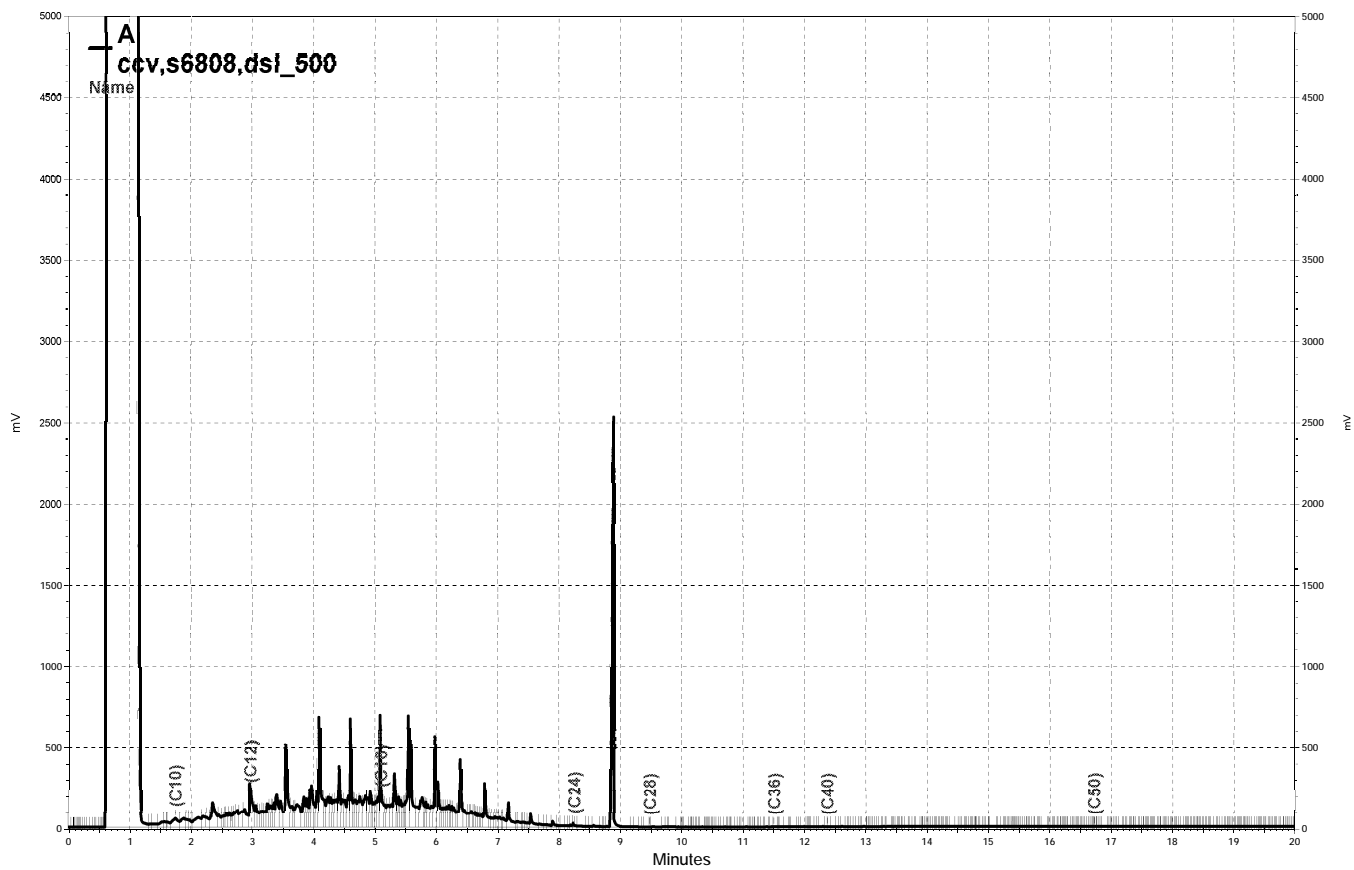
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,107	84	58-128	2	29

Surrogate	%REC	Limits
Hexacosane	89	61-133



— \\Lims\gdrive\ezchrom\Projects\GC17A\Data\264a011, A



— \\Lims\gdrive\ezchrom\Projects\GC17A\Data\264a004, A

<b>BTXE &amp; Oxygenates</b>			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	129726
Lab ID:	197699-001	Sampled:	09/18/07
Matrix:	Water	Received:	09/18/07
Units:	ug/L	Analyzed:	09/21/07
Diln Fac:	1.000		

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
tert-Butyl Alcohol (TBA)	66	10
MTBE	4.1	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	1.8	0.5
Benzene	50	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	1.3	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	102	80-122
1,2-Dichloroethane-d4	99	74-137
Toluene-d8	96	80-120
Bromofluorobenzene	101	80-120

ND= Not Detected  
 RL= Reporting Limit

<b>BTXE &amp; Oxygenates</b>			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8260B
Field ID:	MW-3	Batch#:	129676
Lab ID:	197699-003	Sampled:	09/18/07
Matrix:	Water	Received:	09/18/07
Units:	ug/L	Analyzed:	09/20/07
Diln Fac:	1.000		

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
tert-Butyl Alcohol (TBA)	49	10
MTBE	75	0.5
Isopropyl Ether (DIPE)	1.9	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	1.0	0.5
Benzene	4.6	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	2.6	0.5
m,p-Xylenes	0.8	0.5
o-Xylene	ND	0.5

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	100	80-122
1,2-Dichloroethane-d4	113	74-137
Toluene-d8	103	80-120
Bromofluorobenzene	107	80-120

ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

<b>BTXE &amp; Oxygenates</b>			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	129676
Units:	ug/L	Analyzed:	09/20/07
Diln Fac:	1.000		

Type: BS Lab ID: QC406997

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	143.5	115	59-149
MTBE	25.00	32.12	128	60-130
Isopropyl Ether (DIPE)	25.00	25.85	103	59-120
Ethyl tert-Butyl Ether (ETBE)	25.00	28.22	113	65-134
1,2-Dichloroethane	25.00	26.92	108	76-121
Benzene	25.00	24.97	100	80-120
Methyl tert-Amyl Ether (TAME)	25.00	28.24	113	67-132
Toluene	25.00	27.15	109	80-122
1,2-Dibromoethane	25.00	27.15	109	80-120
Ethylbenzene	25.00	29.86	119	80-127
m,p-Xylenes	50.00	59.21	118	80-130
o-Xylene	25.00	29.99	120	80-126

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-122
1,2-Dichloroethane-d4	110	74-137
Toluene-d8	102	80-120
Bromofluorobenzene	102	80-120

Type: BSD Lab ID: QC406998

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	135.3	108	59-149	6	20
MTBE	25.00	31.08	124	60-130	3	20
Isopropyl Ether (DIPE)	25.00	24.85	99	59-120	4	20
Ethyl tert-Butyl Ether (ETBE)	25.00	27.09	108	65-134	4	20
1,2-Dichloroethane	25.00	26.15	105	76-121	3	20
Benzene	25.00	23.38	94	80-120	7	20
Methyl tert-Amyl Ether (TAME)	25.00	26.36	105	67-132	7	20
Toluene	25.00	26.03	104	80-122	4	20
1,2-Dibromoethane	25.00	25.85	103	80-120	5	20
Ethylbenzene	25.00	28.37	113	80-127	5	20
m,p-Xylenes	50.00	56.32	113	80-130	5	20
o-Xylene	25.00	28.73	115	80-126	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-122
1,2-Dichloroethane-d4	108	74-137
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-120

RPD= Relative Percent Difference

**Batch QC Report**

<b>BTXE &amp; Oxygenates</b>			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC406999	Batch#:	129676
Matrix:	Water	Analyzed:	09/20/07
Units:	ug/L		

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	99	80-122
1,2-Dichloroethane-d4	112	74-137
Toluene-d8	97	80-120
Bromofluorobenzene	102	80-120

ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

<b>BTXE &amp; Oxygenates</b>			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC407212	Batch#:	129726
Matrix:	Water	Analyzed:	09/21/07
Units:	ug/L		

<b>Analyte</b>	<b>Spiked</b>	<b>Result</b>	<b>%REC</b>	<b>Limits</b>
tert-Butyl Alcohol (TBA)	125.0	132.9	106	59-149
MTBE	25.00	23.13	93	60-130
Isopropyl Ether (DIPE)	25.00	23.51	94	59-120
Ethyl tert-Butyl Ether (ETBE)	25.00	24.47	98	65-134
1,2-Dichloroethane	25.00	24.62	98	76-121
Benzene	25.00	26.43	106	80-120
Methyl tert-Amyl Ether (TAME)	25.00	24.58	98	67-132
Toluene	25.00	27.68	111	80-122
1,2-Dibromoethane	25.00	26.56	106	80-120
Ethylbenzene	25.00	26.51	106	80-127
m,p-Xylenes	50.00	55.46	111	80-130
o-Xylene	25.00	26.07	104	80-126

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	101	80-122
1,2-Dichloroethane-d4	99	74-137
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-120



**Batch QC Report**

<b>BTXE &amp; Oxygenates</b>			
Lab #:	197699	Location:	Oakland Auto Works
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2003-43	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC407213	Batch#:	129726
Matrix:	Water	Analyzed:	09/21/07
Units:	ug/L		

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	99	80-122
1,2-Dichloroethane-d4	101	74-137
Toluene-d8	97	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected  
 RL= Reporting Limit

# Chain of Custody Record

197699

Laboratory Curtis and Tompkins, Ltd. Method of Shipment Hand Delivery  
 Address 2323 Fifth Street Shipment No. \_\_\_\_\_  
Berkeley, California 94710  
510-486-0900 Airbill No. \_\_\_\_\_  
 Project Owner Mr. Glen Poy-Wing Cooler No. \_\_\_\_\_  
 Site Address 240 W. MacArthur Blvd. Project Manager Bruce Rucker  
Oakland, California Telephone No. (510) 644-3123  
 Project Name Oakland Auto Works Fax No. (510) 644-3859  
 Project Number 2003-43 Samplers: (Signature) \_\_\_\_\_

Lab job no. \_\_\_\_\_  
 Date 9/18/07  
 Page 1 of 1

82608

Filtered	No. of Containers	Analysis Required										Remarks	
		TNH-6 (BOISM)	BTRR / NUMBER	EDB	9 EDC	FUEL OILS	TEH-D (BOISA)						
		X	X	X	X	X							
		X											
		X	X	X	X								

-1  
-2  
-3

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation	
						Cooler	Chemical
MU-1		9/18/07	1300	W	3V Gas HCl / 2 1/2 Amber	yes	
MU-4			1226		" -	yes	
<del>MU-3</del> MU-3			1246		" -	yes	
						yes	
						yes	
						yes	
						yes	
						yes	

Relinquished by: <u>Pete Carnich</u> Signature _____ Printed <u>Pete Carnich</u> Company <u>BTS</u>		Date <u>9-18-07</u>	Received by: <u>Ken Loganski</u> Signature _____ Printed <u>Ken Loganski</u> Company <u>BTS</u>		Date <u>9-18-07</u>	Relinquished by: <u>W Jones</u> Signature _____ Printed <u>W Jones</u> Company <u>BTS</u>		Date <u>9/18/07</u>	Received by: <u>Rick Grams</u> Signature _____ Printed <u>Rick Grams</u> Company <u>CPT</u>		Date <u>9/18/07</u>
		Time _____			Time <u>1545</u>			Time <u>1550</u>			Time <u>1550</u>
Turnaround Time: <u>5 Day TAT</u>						Relinquished by: _____		Date _____	Received by: _____		Date _____
Comments: _____						Signature _____		Time _____	Signature _____		Time _____
						Printed _____		Time _____	Printed _____		Time _____
						Company _____		Time _____	Company _____		Time _____

2000-00-01

intact cold RG

## **APPENDIX C**

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### **Historical Groundwater Monitoring Well Analytical Data**

**Table C-1**  
**Historical Groundwater Monitoring Well Groundwater Analytical Results**  
**Petroleum and Aromatic Hydrocarbons (µg/L)**  
**240 W. MacArthur Boulevard, Oakland, Alameda, California**

Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-1</b>									
Yes	1	Aug-97	1,140	< 1,000	110	16	15	112	NA
Yes	2	Dec-97	ND	NA	ND	ND	ND	31	NA
Yes	3	Mar-98	370	NA	8.9	< 0.5	< 0.5	2.2	18
Yes	4	Jul-98	6,400	NA	1,300	23	3.7	58	97
Yes	5	Oct-98	2,500	NA	360	44	1.3	150	< 0.5
Yes	6	Jan-99	2,700	NA	1,200	28	140	78	130
(a)	7	Jun-00	27,000	NA	5,200	500	320	3,100	1,300
(a)	8	Dec-00	976,000	NA	2,490	1,420	3,640	10,100	< 150
(a)	9	Feb-01	NA	NA	NA	NA	NA	NA	NA
(a)	10	May-01	20,000	NA	2,900	310	230	1,900	< 30
(a)	11	Jul-01	92,000	NA	2,900	580	2,800	20,000	560
Pre“hi-vac”	12	Oct 22-01	20,000	NA	3,700	560	410	4,600	2,600
Post “hi-vac”	12	Oct 26-01	< 0.05	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
(a)	13	Dec-01	3,300	NA	200	12	5.7	43	44
No	14	Mar-02	4,600	NA	820	4.4	100	300	210
No	15	May-02	1,600	NA	100	23	20	190	7.7
No	16	Jul-02	2,300	NA	250	15	13	180	180
No	17	Oct-02	1,820	NA	222	16	< 0.3	59	58
No	18	Jan-03	2,880	NA	188	< 50	< 50	157	20
No	19	Mar-03	6,700	NA	607	64	64	288	< 0.18
No	20	Aug-03	4,900	5,000	740	45	85	250	14
Yes	21	Dec-03	8,930	800	1,030	55	127	253	212
Yes	22	Mar-04	11,300	1,100	483	97	122	452	67
Yes	23	Jun-04	9,300	4,000	1,700	75	92	350	6.0
Yes	24	Sep-04	9,100	97	920	19	82	201	7.2
Yes	25	Dec-04	11,000	3,300	830	21	74	118	7.9
Yes	26	Mar-05	4,700	3,500	450	28	42	97	6.7
Yes	27	Jun-05	21,000	6,800	1,900	270	320	2,800	< 13
Yes	28	Sep-05	23,000	2,500	2,100	100	200	880	< 2.5
Yes	29	Dec-05	4,300	3,000	500	22	72	228	5.5
Yes	30	Mar-06	11,000	3,000	340	45	89	630	4.3
Yes	31	Jun-06	21,000	8,500	1,600	160	170	1,000	< 2.5
Yes	32	Sep-06	13,000	6,200	1,700	76	110	440	< 13
Yes	33	Dec-06	16,000	4,100	1,500	100	160	670	< 13
Yes	34	Mar-07	22,000	6,200	1,700	140	180	1,100	< 13
Yes	35	Jun-07	3,600	1,500	210	10	19	61	3.2
Yes	36	Sep-07	1,400	1,700	50	< 0.5	1.3	< 0.5	4.1

(table continued on next page; footnotes on final page)

Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-2</b>									
Yes	1	Aug-97	5,350	< 1,000	108	36	33	144	NA
Yes	2	Dec-97	1,600	NA	73	ND	ND	ND	NA
Yes	3	Mar-98	3,400	NA	830	100	210	240	870
Yes	4	Jul-98	3,100	NA	25	2.2	< 0.5	0.9	1,900
Yes	5	Oct-98	4,300	NA	< 0.5	1.2	< 0.5	1	4,200
Yes	6	Jan-99	2,900	NA	160	8.9	6.9	78.4	2,100
(a)	7	Jun-00	2,700	NA	200	17	30	16	680
(a)	8	Dec-00	3,020	NA	56.7	< 1.5	< 1.5	< 3.0	3,040
(a)	9	Feb-01	NA	NA	NA	NA	NA	NA	NA
(a)	10	May-01	720	NA	49	< 3.0	4.6	< 3.0	380
(a)	11	Jul-01	8,400	NA	350	44	77	78	550
Pre "hi-vac"	12	Oct 22-01	850	NA	170	4.9	5.1	14	260
Post "hi-vac"	12	Oct 26-01	770	NA	86	5.5	9.6	8.5	310
(a)	13	Dec-01	1,300	NA	9.2	< 2.0	< 2.0	< 2.0	370
No	14	Mar-02	1,300	NA	76	3.8	21	15	460
No	15	May-02	320	NA	12	1.1	4.6	4.8	160
No	16	Jul-02	1,300	NA	130	1	9.4	5.6	420
No	17	Oct-02	1,060	NA	12	2.2	4.2	3.5	270
No	18	Jan-03	581	NA	6.5	< 5.0	< 5.0	< 5.0	130
No	19	Mar-03	1,250	NA	< 0.22	< 0.32	< 0.31	< 0.4	155
No	20	Aug-03	2,200	730	58	9.2	< 0.5	28	240
Yes	21	Dec-03	1,980	100	29	22.0	7.4	13	295
Yes	22	Mar-04	2,700	100	12	16.0	9	12	249
Yes	23	Jun-04	1,200	370	42	0.7	2.6	0.9	170
Yes	24	Sep-04	1,500	280	14	< 0.5	< 0.5	0.6	130
Yes	25	Dec-04	1,400	540	26	1.1	1.8	3.5	91
Yes	26	Mar-05	2,300	420	5.3	< 1.0	3.7	< 2.0	120
Yes	27	Jun-05	1,600	500	14	< 0.5	1.8	0.68	66
Yes	28	Sep-05	1,400	210	30	1.3	12	26	58
Yes	29	Dec-05	1,300	800	4.9	0.6	0.7	0.8	74
Yes	30	Mar-06	1,300	400	3.2	< 0.7	< 0.7	< 1.4	120
Yes	31	Jun-06	1,400	1,200	33.0	1.3	3.5	< 1.6	84
Yes	32	Sep-06	8,300	1,600	67.0	4.1	4.6	15.4	64
Yes	33	Dec-06	1,500	940	22.0	2.9	2.6	3.5	67
Yes	34	Mar-07	1,200	760	65	1.9	3.7	1.6	59
Yes	35	Jun-07	2,900	1,000	67	3.2	14.0	7.5	49
Yes	36	Sep-07	NS	NS	NS	NS	NS	NS	NS

(table continued on next page; footnotes on final page)

Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-3</b>									
Yes	1	Aug-97	8,500	< 1,000	450	30	53	106	NA
Yes	2	Dec-97	5,200	NA	180	6	5	9.3	NA
Yes	3	Mar-98	1,000	NA	6	< 0.5	< 0.5	< 0.5	810
Yes	4	Jul-98	6,400	NA	490	57	23	78	220
Yes	5	Oct-98	2,100	NA	< 5.0	< 5.0	< 5.0	< 5.0	2,100
Yes	6	Jan-99	4,400	NA	450	65	26	42	1,300
(a)	7	Jun-00	1,700	NA	110	13	34	13	96
(a)	8	Dec-00	5,450	NA	445	< 7.5	23.8	< 7.5	603
(a)	9	Feb-01	NA	NA	NA	NA	NA	NA	NA
(a)	10	May-01	1,900	NA	180	12	< 3.0	19	330
(a)	11	Jul-01	10,000	NA	830	160	150	260	560
Pre“hi-vac”	12	Oct 22-01	1,400	NA	240	7.8	4.1	15	220
Post “hi-vac”	12	Oct 26-01	1,900	NA	200	16	51	30	290
(a)	13	Dec-01	5,800	NA	93	< 20	31	< 20	330
No	14	Mar-02	1,900	NA	220	16	31	24	400
No	15	May-02	1,600	NA	110	3.4	29	14	320
No	16	Jul-02	1,900	NA	210	27	30	55	200
No	17	Oct. 2002	3,030	NA	178	19	6.2	36	178
No	18	Jan-03	2,980	NA	47	< 5.0	7.6	6.3	105
No	19	Mar-03	3,620	NA	124	< 0.32	22	12	139
No	20	Aug-03	3,800	2,400	170	28	31	31	170
Yes	21	Dec-03	6,860	500	312	20	55	58	309
Yes	22	Mar-04	5,490	500	82	34	46	49	249
Yes	23	Jun-04	5,400	1,100	150	30	45	66	130
Yes	24	Sep-04	5,400	1,500	70	3.2	16	13	110
Yes	25	Dec-04	5,300	2,400	91	7.4	21	19	92
Yes	26	Mar-05	4,700	2,000	19	1.1	10	3.7	76
Yes	27	Jun-05	4,200	1,800	49	4.5	23	16	66
Yes	28	Sep-05	5,000	950	60	3.1	12	26	59
Yes	29	Dec-05	3,200	1,800	29	1.3	6.6	5.6	80
Yes	30	Mar-06	4,100	1,200	24	1.1	8.5	3.4	99
Yes	31	Jun-06	4,000	1,400	89.0	8.4	14.0	16.7	75
Yes	32	Sep-06	6,100	2,600	190	15.0	24.0	59.0	51
Yes	33	Dec-06	4,500	2,000	110	4.0	7.3	19.1	47
Yes	34	Mar-07	3,800	2,400	90	3.7	9.8	11.1	51
Yes	35	Jun-07	4,500	2,100	8.9	1.4	14.0	4.0	77
Yes	36	Sep-07	4,000	NS	4.6	< 0.5	1.3	< 0.5	75

(table continued on next page; footnotes on final page)

Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-4</b>									
Yes	1	Aug-97	< 500	< 1,000	< 0.5	< 0.5	< 0.5	< 1.5	NA
Yes	2	Dec-97	ND	NA	ND	ND	ND	ND	NA
Yes	3	Mar-98	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Yes	4	Jul-98	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Yes	5	Oct-98	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Yes	6	Jan-99	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
(a)	7	Jun-00	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
(a)	8	Dec-00	< 500	NA	< 0.3	< 0.3	< 0.6	< 0.3	< 0.3
(a)	9	Feb-01	NA	NA	NA	NA	NA	NA	NA
(a)	10	May-01	< 50	NA	1.2	< 0.3	0.55	1.2	2.9
(a)	11	Jul-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pre“hi-vac”	12	Oct 22-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Post “hi-vac”	12	Oct 26-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
(a)	13	Dec-01	ND	NA	ND	ND	ND	ND	ND
No	14	Mar-02	< 50	NA	< 1	< 1	< 1	< 1	< 1
No	15	May-02	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
No	16	Jul-02	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
No	17	Oct-02	< 100	NA	< 0.3	< 0.3	< 0.3	< 0.6	< 0.3
No	18	Jan-03	< 100	NA	< 0.3	< 0.3	< 0.3	< 0.6	14
No	19	Mar-03	< 15	NA	< 0.4	< 0.02	< 0.02	< 0.06	5.2
No	20	Aug-03	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Yes	21	Dec-03	63	NA	< 0.3	< 0.3	< 0.3	< 0.6	< 5.0
Yes	22	Mar-04	< 50	NA	< 0.3	< 0.3	< 0.3	< 0.6	< 5.0
Yes	23	Jun-04	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	0.9
Yes	24	Sep-04	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	2.3
Yes	25	Dec-04	< 50	NA	NA	NA	NA	NA	NA
Yes	26	Mar-05	< 50	NA	NA	NA	NA	NA	NA
Yes	27	Jun-05	< 50	NA	NA	NA	NA	NA	NA
Yes	28	Sep-05	< 50	NA	NA	NA	NA	NA	NA
Yes	29	Dec-05	< 50	NA	NA	NA	NA	NA	NA
Yes	30	Mar-06	< 50	NA	NA	NA	NA	NA	NA
Yes	31	Jun-06	< 50	NA	NA	NA	NA	NA	NA
Yes	32	Sep-06	< 50	NA	NA	NA	NA	NA	NA
Yes	33	Dec-06	59	NA	NA	NA	NA	NA	NA
Yes	34	Mar-07	<50	NA	NA	NA	NA	NA	NA
Yes	35	Jun-07	57	NA	NA	NA	NA	NA	NA
Yes	36	Sep-07	70	NA	NA	NA	NA	NA	NA

(table continued on next page; footnotes on final page)

Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-5</b>									
(a)	9	Feb-01	5,660	NA	76.9	21.1	47.3	312	< 0.3
(a)	10	May-01	22,000	NA	2,600	480	220	2,700	< 30
(a)	11	Jul-01	72,000	NA	3,500	1,100	4,300	22,000	2,500
Pre“hi-vac”	12	Oct 22-01	26,000	NA	2,800	980	6,000	950	2,300
Post “hi-vac”	12	Oct 26-01	17,000	NA	1,200	470	2,900	440	900
(a)	13	Dec-01	2,000	NA	620	190	110	910	< 20
No	14	Mar-02	8,800	NA	1,200	72	7.4	350	1,200
No	15	May-02	2,000	NA	150	38	21	260	13
No	16	Jul-02	4,200	NA	480	68	29	280	450
No	17	Oct-02	5,370	NA	236	45	23	39	135
No	18	Jan-03	8,270	NA	615	156	174	1,010	< 10
No	19	Mar-03	12,400	NA	824	195	213	1,070	< 0.18
No	20	Aug-03	18,000	10,000	950	290	330	1,820	< 2.0
Yes	21	Dec-03	11,900	800	627	263	288	1,230	595
Yes	22	Mar-04	20,700	850	867	266	305	678	145
Yes	23	Jun-04	12,000	1,700	920	240	260	1,150	< 3.1
Yes	24	Sep-04	13,000	1,900	580	240	260	1,260	< 4.2
Yes	25	Dec-04	16,000	3,300	730	200	250	1,100	< 4.2
Yes	26	Mar-05	6,300	4,600	190	28	42	280	< 1.7
Yes	27	Jun-05	16,000	4,100	1,100	260	380	1,590	< 7.1
Yes	28	Sep-05	15,000	3,600	810	210	300	1,300	< 1.3
Yes	29	Dec-05	9,600	3,600	270	80	110	710	< 1.7
Yes	30	Mar-06	9,800	5,100	240	47	97	590	< 2.0
Yes	31	Jun-06	28,000	4,900	920.0	250.0	350.0	1,480	< 2.0
Yes	32	Sep-06	12,000	2,400	580	170	230	980	< 3.6
Yes	33	Dec-06	15,000	3,400	510	160	260	1,190	< 3.6
Yes	34	Mar-07	20,000	4,600	910	230	360	1,560	< 3.6
No	35	Jun-07	NS	NS	NS	NS	NS	NS	NS
No	36	Sep-07	NS	NS	NS	NS	NS	NS	NS

(table continued on next page; footnotes on final page)



Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-6</b>									
(a)	9	Feb-01	1,340	NA	17	0.967	11.1	51.4	< 0.3
(a)	10	May-01	610	NA	15	0.97	< 0.5	46	< 0.5
(a)	11	Jul-01	2,500	NA	130	4.7	53	170	120
Pre“hi-vac”	12	Oct 22-01	280	NA	18	1.2	6.2	4.7	6
Post “hi-vac”	12	Oct 26-01	3,600	NA	210	20	170	62	120
(a)	13	Dec-01	5,300	NA	69	5.6	14	17	< 2.0
No	14	Mar-02	71	NA	54	4.2	27	17	8.5
No	15	May-02	150	NA	9.3	< 0.5	< 0.5	< 0.5	1.5
No	16	Jul-02	2,200	NA	98	32	46	150	66
No	17	Oct-02	786	NA	48	5.0	2.2	44	16
No	18	Jan-03	497	NA	6.8	< 5.0	< 5.0	11	< 1.0
No	19	Mar-03	258	NA	5.4	< 0.32	3.3	< 1.1	< 0.18
No	20	Aug-03	1,600	2,800	37	4	23	58	< 0.5
Yes	21	Dec-03	365	200	2.5	3.8	1.4	6.1	< 5.0
Yes	22	Mar-04	215	140	4.0	1.2	1.4	1.4	3.7
Yes	23	Jun-04	710	830	14.0	0.7	5.2	6.6	< 0.5
Yes	24	Sep-04	350	600	< 0.5	2.4	< 0.5	< 0.5	< 0.5
Yes	25	Dec-04	280	1,100	4.9	< 0.5	1.4	4.4	< 0.5
Yes	26	Mar-05	300	980	5.4	< 0.5	3.3	2.3	< 0.5
Yes	27	Jun-05	150	1,100	< 0.5	< 0.5	< 0.5	0.77	28
Yes	28	Sep-05	680	200	13	0.9	6.6	13	< 0.5
Yes	29	Dec-05	240	890	3.6	< 0.5	0.7	2.4	0.5
Yes	30	Mar-06	530	950	8.3	< 0.5	4.0	2.1	0.6
Yes	31	Jun-06	460	1,300	8.3	< 0.5	1.4	2.6	< 0.5
Yes	32	Sep-06	530	730	10.0	0.8	4.1	7.5	< 0.5
Yes	33	Dec-06	500	750	7.5	< 0.5	2.6	2.5	< 0.5
Yes	34	Mar-07	430	530	7.1	< 0.5	1.7	0.8	< 0.5
No	35	Jun-07	NS	NS	NS	NS	NS	NS	NS
No	36	Sep-07	NS	NS	NS	NS	NS	NS	NS

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Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-7</b>									
(a)	9	Feb-01	ND	NA	ND	ND	ND	ND	ND
(a)	10	May-01	< 50	NA	0.75	0.77	0.48	2.4	1.1
(a)	11	Jul-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pre“hi-vac”	12	Oct 22-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Post “hi-vac”	12	Oct 26-01	6,000	NA	170	550	110	120	970
(a)	13	Dec-01	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	43
No	14	Mar-02	< 50	NA	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
No	15	May-02	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
No	16	Jul-02	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
No	17	Oct-02	< 100	NA	< 0.3	< 0.3	< 0.3	< 0.6	< 5.0
No	18	Jan-03	NA	NA	NA	NA	NA	NA	NA
No	19	Mar-03	< 15	NA	< 0.04	< 0.02	< 0.02	< 0.06	< 0.03
No	20	Aug-03	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Yes	21	Dec-03	< 50	NA	< 0.3	< 0.3	< 0.3	< 0.6	< 5.0
Yes	22	Mar-04	86	NA	< 0.3	< 0.3	< 0.3	< 0.6	57
Yes	23	Jun-04	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Yes	24	Sep-04	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Yes	25	Dec-04	< 50	NA	NA	NA	NA	NA	NA
Yes	26	Mar-05	< 50	NA	NA	NA	NA	NA	NA
Yes	27	Jun-05	< 50	NA	NA	NA	NA	NA	NA
Yes	28	Sep-05	< 50	NA	NA	NA	NA	NA	NA
Yes	29	Dec-05	< 50	NA	NA	NA	NA	NA	NA
Yes	30	Mar-06	< 50	NA	NA	NA	NA	NA	NA
Yes	31	Jun-06	< 50	NA	NA	NA	NA	NA	NA
Yes	32	Sep-06	< 50	NA	NA	NA	NA	NA	NA
Yes	33	Dec-06	< 50	NA	NA	NA	NA	NA	NA
Yes	34	Mar-07	< 50	NA	NA	NA	NA	NA	NA
No	35	Jun-07	NA	NA	NA	NA	NA	NA	NA
No	36	Sep-07	NA	NA	NA	NA	NA	NA	NA

(table continued on next page; footnotes on final page)

Well Purged?	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
<b>MW-8</b>									
(a)	9	Feb-01	1,000	NA	3.97	< 0.3	3.78	1.63	620
(a)	10	May-01	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	4.4
(a)	11	Jul-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pre"hi-vac"	12	Oct 22-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Post "hi-vac"	12	Oct 26-01	< 5.0	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
(a)	13	Dec-01	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
No	14	Mar-02	< 50	NA	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
No	15	May-02	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
No	16	Jul-02	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
No	17	Oct-02	458	NA	1.7	< 0.3	< 0.3	< 0.6	233
No	18	Jan-03	< 100	NA	< 0.3	< 0.3	< 0.3	< 0.6	< 5.0
No	19	Mar-03	< 15	NA	< 0.22	< 0.32	< 0.31	< 0.4	< 0.18
No	20	Aug-03	190	< 50	< 0.5	< 0.5	< 0.5	0.6	< 0.5
Yes	21	Dec-03	163	< 100	< 0.3	< 0.3	< 0.3	< 0.6	66
Yes	22	Mar-04	412	< 100	1.2	< 0.3	1.7	3.9	66
Yes	23	Jun-04	320	68	< 0.5	< 0.5	< 0.5	< 0.5	120
Yes	24	Sep-04	280	2600	< 0.5	< 0.5	< 0.5	< 0.5	120
Yes	25	Dec-04	270	84	< 0.5	< 0.5	< 0.5	< 0.5	94
Yes	26	Mar-05	270	120	< 0.5	< 0.5	< 0.5	< 1.0	66
Yes	27	Jun-05	510	63	6.8	< 0.5	2.4	5.3	< 0.5
Yes	28	Sep-05	520	< 50	< 0.5	< 0.5	< 0.5	< 1.0	65
Yes	29	Dec-05	65	57	< 0.5	< 0.5	< 0.5	< 1.0	29
Yes	30	Mar-06	140	120	< 0.5	< 0.5	< 0.5	0.6	24
Yes	31	Jun-06	710	170	< 0.5	< 0.5	< 0.5	< 1.0	81
Yes	32	Sep-06	330	260	< 0.5	< 0.5	< 0.5	< 0.5	44
Yes	33	Dec-06	63	< 50	< 0.5	< 0.5	< 0.5	< 0.5	21
Yes	34	Mar-07	250	130	< 0.5	< 0.5	< 0.5	0.5	5
Yes	35	Jun-07	320	150	5.2	< 0.5	< 0.5	0.7	89
Yes	36	Sep-07	NS	NS	NS	NS	NS	NS	NS

Notes:

(a) Data not available to Ses as to whether the samples were collected "post-purge" or before purging.

"No Purge" means no purging was conducted before the groundwater sample was collected.

TVH-g = Total Volatile Hydrocarbons - gasoline range. TEH-d = Total Extractable Hydrocarbons - diesel range.

NA = Not analyzed for this constituent in this event.

ND = Not Detected (method reporting limit not specified in the information available to SES).

**TABLE C-2**  
**Historical Groundwater Monitoring Well Groundwater Analytical Results**  
**Fuel Oxygenates and VOCs (µg/L)**  
**240 W. MacArthur Boulevard, Oakland, California**

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	7	Jun-00	< 5.0	< 5.0	51	< 5	< 1,000	< 1000	< 50	< 5	< 5	< 5	< 5	ND
	14	Mar-02	< 1.0	< 1.0	< 1	1.6	< 10	NA	< 2	< 1	< 1	< 1	< 1	ND
	18	Jan-03	< 50	< 50	150	< 50	NA	68	< 10	< 50	< 50	< 50	< 50	ND
<b>MW-1</b>	19	Mar-03	< 0.26	< 0.17	373	< 0.49	NA	< 10	< 0.29	< 0.88	< 0.30	< 0.23	< 0.36	ND
	20	Aug-03	< 1.0	7.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21	Dec-03	< 5.0	< 5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	< 0.26	< 0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 5.0	< 5.0	NA	NA	NA	270	< 5.0	NA	NA	NA	NA	NA
	24	Sep-04	< 5.0	< 5.0	NA	NA	NA	120	< 5.0	NA	NA	NA	NA	NA
	25	Dec-04	< 1.3	< 1.3	NA	NA	NA	< 25	< 1.3	NA	NA	NA	NA	NA
	26	Mar-05	< 0.50	< 0.50	NA	NA	NA	< 10	< 0.50	NA	NA	NA	NA	NA
	27	Jun-05	< 13	< 13	NA	NA	NA	< 250	< 13	NA	NA	NA	NA	NA
	28	Sep-05	< 2.5	6.5	NA	NA	NA	240	< 2.5	NA	NA	NA	NA	NA
	29	Dec-05	< 1.3	< 1.3	NA	NA	NA	100	< 3.6	NA	NA	NA	NA	NA
	30	Mar-06	< 2.0	< 2.0	NA	NA	NA	83	< 2.0	NA	NA	NA	NA	NA
	31	Jun-06	< 2.5	< 2.5	NA	NA	NA	220	< 2.5	NA	NA	NA	NA	NA
	32	Sep-06	< 13	< 13	NA	NA	NA	320	< 13	NA	NA	NA	NA	NA
	33	Dec-06	< 13	< 13	NA	NA	NA	320	< 13	NA	NA	NA	NA	NA
	34	Mar-07	< 13	< 13	NA	NA	NA	< 250	< 13	NA	NA	NA	NA	NA
	35	Jun-07	NA	< 1.7	NA	NA	NA	37	< 1.7	NA	NA	NA	NA	NA
	36	Sep-07	NA	1.8	NA	NA	NA	66	< 0.5	NA	NA	NA	NA	NA

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Table C-2 Continued

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	7	Jun-00	< 0.5	< 0.5	< 0.5	< 0.5	< 100	< 100	< 5.0	< 0.5	< 0.5	< 0.5	< 0.5	ND
	14	Mar-02	< 1.0	< 1.0	< 1	< 1	220	NA	< 2	< 1	< 1	< 1	< 1	ND
	18	Jan-03	< 5	< 5	< 5	< 5	NA	34	< 1	< 5	24	< 5	< 5	ND
	19	Mar-03	< 0.26	< 0.17	< 0.49	< 0.26	NA	94	< 0.29	< 0.88	15	< 0.23	< 0.36	ND
<b>MW-2</b>	21	Dec-03	< 0.6	< 0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20	Aug-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21	Dec-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 0.5	2.0	NA	NA	NA	190	1.1	NA	NA	NA	NA	NA
	24	Sep-04	< 0.5	1.2	NA	NA	NA	130	0.9	NA	NA	NA	NA	NA
	25	Dec-04	< 0.5	< 0.5	NA	NA	NA	< 10	0.8	NA	NA	NA	NA	NA
	26	Mar-05	< 1.0	< 1.0	NA	NA	NA	< 20	1.3	NA	NA	NA	NA	NA
	27	Jun-05	< 0.50	< 0.50	NA	NA	NA	200	0.79	NA	NA	NA	NA	NA
	28	Sep-05	< 0.50	0.6	NA	NA	NA	150	0.8	NA	NA	NA	NA	NA
	29	Dec-05	< 0.50	< 0.50	NA	NA	NA	54	1.0	NA	NA	NA	NA	NA
	30	Mar-06	< 0.7	< 0.7	NA	NA	NA	56	1.2	NA	NA	NA	NA	NA
	31	Jun-06	< 0.8	1.4	NA	NA	NA	56	< 0.8	NA	NA	NA	NA	NA
	32	Sep-06	< 0.5	1.3	NA	NA	NA	59	0.8	NA	NA	NA	NA	NA
	33	Dec-06	< 0.5	1.3	NA	NA	NA	59	0.8	NA	NA	NA	NA	NA
	34	Mar-07	< 0.5	2.5	NA	NA	NA	65	1.2	NA	NA	NA	NA	NA
	35	Jun-07	NA	<0.5	NA	NA	NA	24	6.1	NA	NA	NA	NA	NA
	36	Sep-07	NA	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA

(table continued on next page)

Table C-2 Continued

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	14	Mar-02	< 1.0	< 1.0	1.8	4.7	180	NA	< 2	2.2	< 1	< 1	< 1	ND
	18	Jan-03	< 5	< 5	< 5	5.0	NA	76	< 1	< 5	21	< 5	< 5	(a)
	19	Mar-03	< 0.26	< 0.17	< 0.49	< 0.26	NA	< 10	< 0.29	< 0.88	24	< 0.23	< 0.36	ND
<b>MW-3</b>	20	Aug-03	< 0.5	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21	Dec-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 0.5	< 0.5	NA	NA	NA	130	1.9	NA	NA	NA	NA	NA
	24	Sep-04	< 0.5	< 0.5	NA	NA	NA	82	1.5	NA	NA	NA	NA	NA
	25	Dec-04	< 0.7	< 0.7	NA	NA	NA	< 14	1.3	NA	NA	NA	NA	NA
	26	Mar-05	< 1.0	< 1.0	NA	NA	NA	< 20	1.1	NA	NA	NA	NA	NA
	27	Jun-05	< 0.5	< 0.5				160	1.4					
	28	Sep-05	< 0.5	1.5	NA	NA	NA	94	0.9	NA	NA	NA	NA	NA
	29	Dec-05	< 0.7	< 0.7	NA	NA	NA	67	1.2	NA	NA	NA	NA	NA
	30	Mar-06	< 0.5	< 0.5	NA	NA	NA	29	1.0	NA	NA	NA	NA	NA
	31	Jun-06	< 0.5	< 0.5	NA	NA	NA	52	2.2	NA	NA	NA	NA	NA
	32	Sep-06	<1.7	1.8	NA	NA	NA	53	1.7	NA	NA	NA	NA	NA
	33	Dec-06	<1.7	1.8	NA	NA	NA	53	1.7	NA	NA	NA	NA	NA
	34	Mar-07	<0.5	<0.5	NA	NA	NA	37	1.9	NA	NA	NA	NA	NA
	35	Jun-07	NA	<0.5	NA	NA	NA	10	1.0	NA	NA	NA	NA	NA
	36	Sep-07	NA	1.0	NA	NA	NA	49	1.9	NA	NA	NA	NA	NA

(table continued on next page)

Table C-2 Continued

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	7	Jun-00	< 0.5	< 0.5	< 0.5	< 0.5	< 100	< 100	< 5.0	< 0.5	< 0.5	< 0.5	< 0.5	ND
	14	Mar-02	< 1.0	< 1.0	< 1	< 1	< 10	NA	< 2	< 1	2.9	3.7	5.0	ND
	18	Jan-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
<b>MW-4</b>	19	Mar-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
	20	Aug-03	< 0.5	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21	Dec-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 0.5	< 0.5	NA	NA	NA	< 10	< 0.5	NA	NA	NA	NA	NA
	24	Sep-04	< 0.5	< 0.5	NA	NA	NA	< 10	< 0.5	NA	NA	NA	NA	NA
	25	Dec-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	26	Mar-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	27	Jun-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	28	Sep-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29	Dec-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30	Mar-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	31	Jun-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	32	Sep-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33	Dec-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	34	Mar-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	36	Sep-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

(table continued on next page)

Table C-2 Continued

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	14	Mar-02	< 1.0	< 1.0	< 1	2.7	640	NA	< 2	< 1	< 1	< 1	< 1	ND
	18	Jan-03	< 50	< 50	512	122	NA	< 100	< 10	120	< 50	< 50	< 50	ND
	19	Mar-03	< 0.26	< 0.17	554	107	NA	< 10	< 0.29	251	< 0.3	< 0.23	< 0.36	(b)
<b>MW-5</b>	20	Aug-03	< 2.0	6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21	Dec-03	< 5.0	< 5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	< 0.26	< 0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 3.1	< 3.1	NA	NA	NA	120	< 3.1	NA	NA	NA	NA	NA
	24	Sep-04	< 4.2	18	NA	NA	NA	87	< 4.2	NA	NA	NA	NA	NA
	25	Dec-04	< 4.2	< 4.2	NA	NA	NA	< 83	< 4.2	NA	NA	NA	NA	NA
	26	Mar-05	< 1.7	< 1.7	NA	NA	NA	< 33	< 1.7	NA	NA	NA	NA	NA
	27	Jun-05	< 7.1	< 7.1	NA	NA	NA	< 140	< 7.1	NA	NA	NA	NA	NA
	28	Sep-05	< 1.3	7.7	NA	NA	NA	87	< 0.50	NA	NA	NA	NA	NA
	29	Dec-05	< 1.7	< 1.7	NA	NA	NA	< 33	< 1.7	NA	NA	NA	NA	NA
	30	Mar-06	< 2.0	< 2.0	NA	NA	NA	< 2.0	< 2.0	NA	NA	NA	NA	NA
	31	Jun-06	< 2.0	10	NA	NA	NA	61	< 2.0	NA	NA	NA	NA	NA
	32	Sep-06	< 3.6	5.5	NA	NA	NA	76	< 3.6	NA	NA	NA	NA	NA
	33	Dec-06	< 3.6	5.5	NA	NA	NA	76	< 3.6	NA	NA	NA	NA	NA
	34	Mar-07	< 3.6	< 3.6	NA	NA	NA	< 71	< 3.6	NA	NA	NA	NA	NA
	35	Jun-07	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
	36	Sep-07	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA

(table continued on next page)



Table C-2 Continued

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	14	Mar-02	< 1.0	< 1.0	< 1	2.2	< 10	NA	< 2	1.6	< 1	< 1	< 1	ND
	18	Jan-03	< 5.0	< 5.0	13	< 5	NA	46	< 1	< 5	< 5	< 5	< 5	ND
	19	Mar-03	< 0.26	6.9	< 0.49	< 0.26	NA	40	< 0.29	< 0.88	< 0.3	< 0.23	< 0.36	(c.)
	20	Aug-03	< 0.5	12.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>MW-6</b>	21	Dec-03	< 5.0	11 / 17.1 <sup>(d)</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	< 0.26	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 0.5	19	NA	NA	NA	54	1.0	NA	NA	NA	NA	NA
	24	Sep-04	< 0.5	31	NA	NA	NA	43	1.0	NA	NA	NA	NA	NA
	25	Dec-04	< 0.5	24	NA	NA	NA	32	0.7	NA	NA	NA	NA	NA
	26	Mar-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	27	Jun-05	< 0.50	< 0.50	NA	NA	NA	26	< 0.50	NA	NA	NA	NA	NA
	28	Sep-05	< 0.50	15	NA	NA	NA	43	0.7	NA	NA	NA	NA	NA
	29	Dec-05	< 0.50	13	NA	NA	NA	30	0.9	NA	NA	NA	NA	NA
	30	Mar-06	< 0.50	15	NA	NA	NA	19	0.6	NA	NA	NA	NA	NA
	31	Jun-06	< 0.50	28	NA	NA	NA	53	1.3	NA	NA	NA	NA	NA
	32	Sep-06	< 0.50	11	NA	NA	NA	46	0.7	NA	NA	NA	NA	NA
	33	Dec-06	< 0.50	11	NA	NA	NA	46	0.7	NA	NA	NA	NA	NA
	34	Mar-07	< 0.5	10	NA	NA	NA	25	< 0.5	NA	NA	NA	NA	NA
	35	Jun-07	NA	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
	36	Sep-07	NA	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA

(table continued on next page)

Table C-2 Continued

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	14	Mar-02	< 1.0	< 1.0	< 1	< 1	< 10	NA	< 2	< 1	< 1	< 1	< 1	ND
	18	Jan-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
	19	Mar-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
<b>MW-7</b>	20	Aug-03	< 0.5	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21	Dec-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 0.5	< 0.5	NA	NA	NA	< 10	< 0.5	NA	NA	NA	NA	NA
	24	Sep-04	< 0.5	< 0.5	NA	NA	NA	< 10	< 0.5	NA	NA	NA	NA	NA
	25	Dec-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	26	Mar-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	27	Jun-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	28	Sep-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29	Dec-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30	Mar-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	31	Jun-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	32	Sep-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	32	Sep-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	33	Dec-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	34	Mar-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	35	Jun-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	36	Sep-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

(table continued on next page)

Table C-2 Continued

Well I.D.	Sampling Event No.	Date Sampled	EDB	EDC	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	DIPE	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
	14	Mar-02	< 1.0	< 1.0	< 1	< 1	< 10	NA	< 2	< 1	< 1	< 1	< 1	ND
	18	Jan-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
	19	Mar-03	< 0.26	< 0.17	< 0.49	< 0.26	NA	< 10	< 0.29	< 0.88	< 0.3	< 0.23	< 0.36	ND
<b>MW-8</b>	20	Aug-03	< 0.5	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	21	Dec-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Mar-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	23	Jun-04	< 0.5	< 0.5	NA	NA	NA	61	1.0	NA	NA	NA	NA	NA
	24	Sep-04	< 0.5	< 0.5	NA	NA	NA	96	1.1	NA	NA	NA	NA	NA
	25	Dec-04	< 0.5	< 0.5	NA	NA	NA	< 10	1.0	NA	NA	NA	NA	NA
	26	Mar-05	< 0.5	< 0.5	NA	NA	NA	< 10	0.6	NA	NA	NA	NA	NA
	27	Jun-05	< 0.50	25.0	NA	NA	NA	42	1.1	NA	NA	NA	NA	NA
	28	Sep-05	< 0.50	< 0.5	NA	NA	NA	120	1.4	NA	NA	NA	NA	NA
	29	Dec-05	< 0.50	< 0.50	NA	NA	NA	27	< 0.50	NA	NA	NA	NA	NA
	30	Mar-06	< 0.50	< 0.50	NA	NA	NA	17	0.6	NA	NA	NA	NA	NA
	31	Jun-06	< 0.50	< 0.50	NA	NA	NA	20	0.9	NA	NA	NA	NA	NA
	32	Sep-06	< 0.50	< 0.50	NA	NA	NA	12	< 0.50	NA	NA	NA	NA	NA
	33	Dec-06	< 0.50	< 0.50	NA	NA	NA	12	< 0.50	NA	NA	NA	NA	NA
	34	Mar-07	< 0.50	< 0.50	NA	NA	NA	< 10	< 0.50	NA	NA	NA	NA	NA
	35	Jun-07	NA	< 0.5	NA	NA	NA	14	1.3	NA	NA	NA	NA	NA
	36	Sep-07	NA	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA

Table C-2 - Footnotes

Notes:

Table includes only detected contaminants.

EDB = Ethylene dibromide, aka 1,2-Dibromoethane (lead scavenger)

EDC = Ethylene dichloride, aka 1,2-Dichloroethane (lead scavenger)

PCE = Tetrachloroethylene

TCE = Trichloroethylene

DCE = Dichloroethylene

TMB = Trimethylbenzene

DIPE = Isopropyl Ether (a.k.a. di-isopropyl ether)

TBA = Tertiary butyl alcohol

NLP = No Level Published

NA = Not analyzed for this constituent. ND = Not Detected

(a) Also detected were: n-propylbenzene (5.4 mg/L); p-Isopropyltoluene (14 mg/L); sec-Butylbenzene (7.2 mg/L)

(b) Also detected were: isopropylbenzene (38 mg/L); n-Butylbenzene (20 mg/L); n-propylbenzene (36 mg/L); p-Isopropyltoluene (14 mg/L).

(c.) Also detected were: isopropylbenzene (3.4 mg/L); n-propylbenzene (2.3 mg/L).

(d) Pre-purge / post-purge sampling, conducted in same event.

**Table D-1**  
**Historical Water Levels in Monitoring Wells**  
**240 W. MacArthur Boulevard, Oakland, Alameda, California**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-1	1	Aug-97	16.83	62.32
	2	Dec-97	NA	NA
	3	Mar-98	13.58	65.57
	4	Jul-98	15.55	63.60
	5	Oct-98	15.70	63.45
	6	Jan-99	15.21	63.94
	7	Jun-00	15.41	63.74
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	15.57	63.58
	11	Jul-01	16.42	62.73
	12	Oct-01	16.82	62.33
	13	Dec-01	15.08	64.07
	14	Mar-02	14.53	64.62
	15	May-02	NA	NA
	16	Jul-02	16.39	62.76
	17	Oct-02	17.03	62.12
	18	Jan-03	14.91	64.24
	19	Mar-03	15.26	63.89
	20	Aug-03	16.24	62.91
	21	Dec-03	16.90	62.25
	22	Mar-04	14.33	64.82
	23	Jun-04	16.28	62.87
	24	Sep-04	17.03	62.12
	25	Dec-04	16.38	62.77
	26	Mar-05	14.30	64.85
	27	Jun-05	15.53	63.82
	28	Sep-05	16.42	62.73
	29	Dec-05	15.67	63.48
	30	Mar-06	12.75	66.40
	31	Jun-06	14.60	64.55
	32	Sep-06	16.52	62.63
	33	Dec-06	15.89	63.26
	34	Mar-07	15.50	63.65
	35	Jun-07	20.90	58.25
	36	Sep-07	23.30	55.85

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

Data prior to August 2003 are likely not valid as well elevations were not surveyed.

**Table D-1 (continued)**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-2				
	1	Aug-97	16.32	62.13
	2	Dec-97	NA	NA
	3	Mar-98	13.05	64.95
	4	Jul-98	14.95	63.50
	5	Oct-98	15.09	63.36
	6	Jan-99	14.61	63.84
	7	Jun-00	14.80	63.65
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	14.98	63.47
	11	Jul-01	15.86	62.59
	12	Oct-01	16.69	61.76
	13	Dec-01	13.49	64.96
	14	Mar-02	13.07	65.38
	15	May-02	NA	NA
	16	Jul-02	15.86	62.59
	17	Oct-02	16.54	61.91
	18	Jan-03	14.37	64.08
	19	Mar-03	14.74	63.71
	20	Aug-03	15.75	62.70
	21	Dec-03	16.11	62.34
	22	Mar-04	13.83	64.82
	23	Jun-04	15.76	62.69
	24	Sep-04	16.48	61.97
	25	Dec-04	15.74	62.71
	26	Mar-05	13.48	64.97
	27	Jun-05	14.48	63.97
	28	Sep-05	16.00	62.45
	29	Dec-05	14.88	63.57
	30	Mar-06	12.20	66.25
	31	Jun-06	14.15	64.30
	32	Sep-06	16.00	62.45
	33	Dec-06	15.19	63.26
	34	Mar-07	14.78	63.67
	35	Jun-07	20.60	57.85
36	Sep-07	23.80	54.65 (dry)	

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

Data prior to August 2003 are likely not valid as well elevations were not surveyed.

**Table D-1 (continued)**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-3	1	Aug-97	15.36	62.22
	2	Dec-97	NA	NA
	3	Mar-98	12.18	65.40
	4	Jul-98	14.08	63.50
	5	Oct-98	14.24	63.34
	6	Jan-99	13.74	63.84
	7	Jun-00	13.94	63.64
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	14.08	63.50
	11	Jul-01	14.99	62.59
	12	Oct-01	16.26	61.32
	13	Dec-01	13.62	63.96
	14	Mar-02	13.19	64.39
	15	May-02	NA	NA
	16	Jul-02	14.97	62.61
	17	Oct. 2002	15.44	62.14
	18	Jan-03	13.49	64.09
	19	Mar-03	13.83	63.75
	20	Aug-03	14.90	62.68
	21	Dec-03	15.10	62.48
	22	Mar-04	12.93	64.65
	23	Jun-04	14.90	62.68
	24	Sep-04	15.61	61.97
	25	Dec-04	14.77	62.81
	26	Mar-05	12.60	64.98
	27	Jun-05	13.73	63.85
	28	Sep-05	15.14	62.44
	29	Dec-05	13.94	63.64
	30	Mar-06	11.25	66.33
	31	Jun-06	13.27	64.31
	32	Sep-06	15.12	62.46
	33	Dec-06	14.34	63.24
	34	Mar-07	13.96	63.62
	35	Jun-07	19.60	57.98
	36	Sep-07	22.90	54.68

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

Data prior to August 2003 are likely not valid as well elevations were not surveyed.

**Table D-1 (continued)**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-4	1	Aug-97	NA	NA
	2	Dec-97	NA	NA
	3	Mar-98	11.87	65.87
	4	Jul-98	13.90	63.84
	5	Oct-98	14.10	63.64
	6	Jan-99	13.56	64.18
	7	Jun-00	13.75	63.99
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	13.65	64.09
	11	Jul-01	14.87	62.87
	12	Oct-01	15.78	61.96
	13	Dec-01	13.54	64.20
	14	Mar-02	13.02	64.72
	15	May-02	NA	NA
	16	Jul-02	14.81	62.93
	17	Oct-02	15.56	62.18
	18	Jan-03	13.39	64.35
	19	Mar-03	13.75	63.99
	20	Aug-03	14.75	62.99
	21	Dec-03	15.11	62.63
	22	Mar-04	12.78	64.96
	23	Jun-04	14.68	63.06
	24	Sep-04	15.17	62.57
	25	Dec-04	14.90	62.84
	26	Mar-05	12.57	65.17
	27	Jun-05	13.43	64.31
	28	Sep-05	15.13	62.61
	29	Dec-05	13.83	63.91
	30	Mar-06	10.90	66.84
	31	Jun-06	13.02	64.72
	32	Sep-06	15.16	62.58
	33	Dec-06	14.35	63.39
	34	Mar-07	13.85	63.89
	35	Jun-07	18.41	59.33
	36	Sep-07	19.36	58.38

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

Data prior to August 2003 are likely not valid as well elevations were not surveyed.

**Table D-1 (continued)**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-5	9	Feb-01	NA	NA
	10	May-01	15.65	63.71
	11	Jul-01	16.50	62.86
	12	Oct-01	17.46	61.90
	13	Dec-01	15.28	64.08
	14	Mar-02	14.62	64.74
	15	May-02	NA	NA
	16	Jul-02	16.46	62.90
	17	Oct-02	17.18	62.18
	18	Jan-03	14.99	64.37
	19	Mar-03	15.33	64.03
	20	Aug-03	16.34	63.02
	21	Dec-03	16.90	62.46
	22	Mar-04	14.44	64.92
	23	Jun-04	16.43	62.93
	24	Sep-04	17.07	62.29
	25	Dec-04	16.59	62.77
	26	Mar-05	14.08	65.28
	27	Jun-05	15.33	64.03
	28	Sep-05	16.61	62.75
	29	Dec-05	15.81	63.55
	30	Mar-06	12.75	66.61
	31	Jun-06	14.65	64.71
	32	Sep-06	16.66	62.70
	33	Dec-06	16.10	63.26
	34	Mar-07	15.22	64.14
	35	Jun-07	19.29	60.07
	36	Sep-07	NM	dry

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

NM = Not Measurable

Data prior to August 2003 are likely not valid as well elevations were not surveyed.



**Table D-1 (continued)**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-6	9	Feb-01	NA	NA
	10	May-01	15.54	62.89
	11	Jul-01	15.56	62.87
	12	Oct-01	16.41	62.02
	13	Dec-01	14.37	64.06
	14	Mar-02	13.75	64.68
	15	May-02	NA	NA
	16	Jul-02	15.55	62.88
	17	Oct-02	16.24	62.19
	18	Jan-03	14.17	64.26
	19	Mar-03	14.52	63.91
	20	Aug-03	15.50	62.93
	21	Dec-03	16.19	62.24
	22	Mar-04	13.51	64.92
	23	Jun-04	15.42	63.01
	24	Sep-04	16.13	62.30
	25	Dec-04	15.40	63.03
	26	Mar-05	13.28	65.15
	27	Jun-05	14.14	64.29
	28	Sep-05	15.61	62.82
	29	Dec-05	14.90	63.53
	30	Mar-06	11.85	66.58
	31	Jun-06	13.73	64.70
	32	Sep-06	15.71	62.72
	33	Dec-06	15.15	63.28
	34	Mar-07	14.58	63.85
	35	Jun-07	19.40	59.03
	36	Sep-07	20.00	58.43 (dry)

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

Data prior to August 2003 are likely not valid as well elevations were not surveyed.

**Table D-1 (continued)**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-7	9	Feb-01	NA	NA
	10	May-01	15.04	62.23
	11	Jul-01	15.69	62.58
	12	Oct-01	16.59	61.68
	13	Dec-01	14.30	63.97
	14	Mar-02	13.87	64.40
	15	May-02	NA	NA
	16	Jul-02	15.72	62.55
	17	Oct-02	16.36	61.91
	18	Jan-03	14.22	64.05
	19	Mar-03	14.57	63.70
	20	Aug-03	15.61	62.66
	21	Dec-03	16.04	62.23
	22	Mar-04	13.57	64.70
	23	Jun-04	15.63	62.64
	24	Sep-04	16.33	61.94
	25	Dec-04	15.70	62.57
	26	Mar-05	13.42	64.85
	27	Jun-05	14.53	63.74
	28	Sep-05	15.81	62.46
	29	Dec-05	14.88	63.39
	30	Mar-06	13.00	65.27
	31	Jun-06	13.98	64.29
	32	Sep-06	15.82	62.45
	33	Dec-06	15.12	63.15
	34	Mar-07	14.66	63.61
	35	Jun-07	19.18	59.09
	36	Sep-07	19.96	58.31 (dry)

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

Data prior to August 2003 are likely not valid as well elevations were not surveyed.

**Table D-1 (continued)**

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Water Level Elevation (b)
MW-8	10	May-01	12.75	63.64
	11	Jul-01	13.84	62.55
	12	Oct-01	14.65	61.74
	13	Dec-01	12.39	64.00
	14	Mar-02	11.89	64.50
	15	May-02	NA	NA
	16	Jul-02	13.96	62.43
	17	Oct-02	14.48	61.91
	18	Jan-03	12.49	63.90
	19	Mar-03	12.85	63.54
	20	Aug-03	13.75	62.65
	21	Dec-03	14.50	61.89
	22	Mar-04	11.78	64.61
	23	Jun-04	13.71	62.68
	24	Sep-04	14.43	61.96
	25	Dec-04	13.64	62.75
	26	Mar-05	11.52	64.87
	27	Jun-05	12.50	63.89
	28	Sep-05	13.90	62.49
	29	Dec-05	12.75	63.64
	30	Mar-06	10.80	65.59
	31	Jun-06	12.10	64.29
	32	Sep-06	13.93	62.46
	33	Dec-06	13.12	63.27
	34	Mar-07	12.76	63.63
	35	Jun-07	18.40	57.99
	36	Sep-07	19.12	57.27 (dry)

Notes:

(a) Feet below well top of casing.

(b) Relative to mean sea level.

NA = Data Not Available

Data prior to August 2003 are likely not valid as well elevations were not surveyed.