

R0265



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June 21, 2005

Mr. Amir Gholami  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Ste 250  
Alameda, California 94502

Re: Modification to Groundwater Treatment System at 3609 International  
Boulevard, Oakland, California

Dear Mr. Gholami:

SOMA recommends replacing the 2,000-pound liquid phase Granulated Activated Carbon (GAC) vessel located at the above referenced site. The replacement is needed to maintain watertight integrity throughout the system. Due to the overall operating conditions of the system, corrosion of the 2,000-pound GAC vessel has occurred. If the vessel is not replaced, thereby eliminating further corrosion and wear of the existing vessel, safety factors will become an issue.

SOMA has contracted with Cameron Environmental to replace the 2,000-pound GAC vessel during the next carbon change-out cycle, which would likely occur in August 2005. The cost for replacing the tank will be approximately \$3,800; however, this price is subject to change.

After replacing the GAC vessel, SOMA will continue to perform weekly O&M events on the system. During these O&M events SOMA will continue to check for watertight integrity, as well as corrosion problems from normal system wear.

If you have any questions or comments, please do not hesitate to call Tony Perini or myself at (925) 244-6600.

Sincerely,

Mansour Sepehr, Ph.D., P.E.  
Principal Hydrogeologist



cc: Mr. Abolghassem Razi

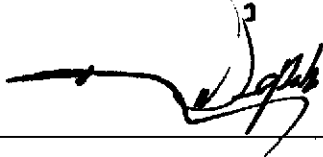
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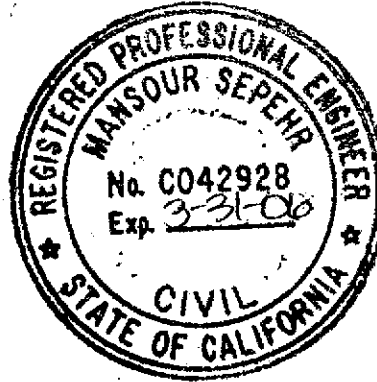
ENVIRONMENTAL HEALTH SERVICES

**Certification**

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Abolghassem Razi, the property owner of 3609 International Boulevard, Oakland, California, to comply with the Alameda County Environmental Health Service's requirements for the Second Quarter 2005 groundwater monitoring event.



Mansour Sepehr, Ph.D., P.E.  
Principal Hydrogeologist



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## 1.0 Introduction

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Abolghassem Razi, the owner of Tony's Express Auto Service, which is located at 3609 International Boulevard at the intersection of 36<sup>th</sup> Avenue in Oakland, California ("the Site"), as shown in Figure 1.

The Site is located in an area where the surrounding properties are primarily commercial businesses and residential housing. The Site currently houses a gasoline service station and convenience store. During the Third Quarter 2002 the station was remodeled and several hydraulic hoists were removed. The station no longer has an auto repair facility. Figure 2 illustrates the locations of the main service station, dispenser islands, underground storage tanks (USTs), the on-site and off-site groundwater monitoring wells, and neighboring properties.

This report summarizes the results of the Second Quarter 2005 groundwater monitoring event conducted at the Site on May 16 and 17, 2005. Included in this report are the results of the laboratory analysis on the groundwater samples that were analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-g),
- Benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX), and
- Methyl tertiary Butyl Ether (MtBE).

In addition to the above laboratory analyses, a natural attenuation study was conducted during this monitoring event. This study consisted of measuring groundwater bioattenuation parameters, which included dissolved oxygen (DO), ferrous iron ( $\text{Fe}^{+2}$ ), nitrate ( $\text{NO}_3^-$ ) and sulfate ( $\text{SO}_4^{-2}$ ). The objective of the natural attenuation study was to evaluate whether the petroleum hydrocarbons found in the groundwater were biodegrading. Therefore, groundwater samples collected during this monitoring event were analyzed for common electron acceptors and other geochemical indicators. The results of these analyses are also described in this report.

These activities were performed in accordance with the general guidelines of the Regional Water Quality Control Board (RWQCB) and the Alameda County Environmental Health Services (ACEHS).

Appendix A details the groundwater monitoring procedures used during the Second Quarter 2005 monitoring event.

This report also describes the operation of the groundwater extraction system installed by SOMA in December 1999. The vapor extraction system was installed by SOMA in July 2000. Due to rainy weather conditions encountered at the Site,

the vapor extraction system was temporarily inoperable from October 28, 2004 to April 11, 2005. The locations of the groundwater extraction system and the vapor extraction system are displayed in Figure 2.

## 1.1 Background

In 1992, Soil Tech Engineering, Inc. (STE) conducted an initial environmental investigation to determine whether or not the soil near the product lines and USTs had been impacted by petroleum hydrocarbons. In July 1993, STE removed one single-walled 10,000-gallon gasoline tank and one single-walled 6,000-gallon gasoline tank along with a 550-gallon waste oil tank from the Site. Three double-walled USTs replaced these tanks. Currently, there is one 10,000-gallon double-walled gasoline tank and two 6,000-gallon double-walled gasoline tanks beneath the Site. The locations of the USTs are shown in Figure 2.

In December 1997, Mr. Razi retained Western Geo-Engineers (WEGE) to conduct additional investigations and perform groundwater monitoring on a quarterly basis. The results of the WEGE groundwater monitoring events indicated elevated levels of petroleum hydrocarbons and MtBE in the groundwater.

In April 1999, Mr. Razi retained SOMA to conduct groundwater monitoring, risk-based corrective action (RBCA), a corrective action plan (CAP), as well as soil and groundwater remediation at the Site. The results of the RBCA study indicated that the Site is a high-risk groundwater site; therefore, the soil and groundwater in the on and off-site areas warranted remedial actions. The source of the petroleum hydrocarbons in the groundwater was believed to have been the former USTs, which were used to store gasoline at the Site. The results of the CAP study indicated that the installation of a French drain combined with a vapor extraction system would be the most cost effective alternative for the Site's remediation.

In late August 1999, SOMA installed a French drain and groundwater treatment system to prevent further migration of the chemically impacted groundwater. This treatment system has been in operation since early December 1999. In July 2000, following approval from the ACEHS, SOMA installed a vapor extraction system as recommended in our CAP document, dated July 1, 1999.

In January 2002, Environmental Fabric removed old product dispensers and installed new ones in the fuel islands.

On July 25, 2003, SOMA installed an additional on-site extraction pump in the western French drain riser. The extraction pump was installed to create a capture zone in the region around the USTs and to contain off-site migration in the southwestern corner of the Site.

## 2.0 Results

The following sections provide the results of the field measurements and laboratory analyses for the May 16 and 17, 2005 groundwater monitoring event.

### 2.1 Field Measurements

Table 1 presents the calculated groundwater elevations, as well as the depths to groundwater for each monitoring well and riser. The calculated groundwater elevation data was used to evaluate the impact of the French drain and determine the extent of the groundwater extraction capture zone.

As shown in Table 1, the depths to groundwater for the monitoring wells ranged from 8.24 feet in monitoring well MW-10 to 10.02 feet in monitoring well MW-6. The corresponding groundwater elevations ranged from 27.77 in well MW-12 to 31.94 feet in well MW-5. The groundwater elevations for the center, east, and west risers were 24.47 feet, 26.13 feet, and 24.56 feet, respectively.

Groundwater elevations in all of the monitoring wells and risers decreased since the First Quarter 2005. The Second Quarter 2005 was the first time newly installed well MW-4R was monitored. Further monitoring events will determine a more detailed groundwater elevation trend in well MW-4R. Local recharge rates in each well, as well as seasonal fluctuations, determine the variations in the groundwater elevations. Due to the drier weather encountered this quarter the water table descended, causing a decrease in the Site's groundwater elevations in comparison with the previous quarter (First Quarter 2005).

Figure 3 displays the groundwater elevation contour map as measured during the Second Quarter 2005 monitoring event. Throughout the Site the groundwater flows towards the French drain at an approximate gradient of 0.107 feet/foot. The groundwater flow direction has remained consistent; however, the groundwater gradient slightly increased since the previous monitoring event.

The lowest site-wide groundwater elevation was measured in the center French drain riser. The calculated groundwater elevation data was also used to evaluate the impact of the French drain's operation. Based on the groundwater elevation data, it appears that the French drain is providing excellent hydraulic control in preventing the contaminants from migrating further off-site.

The field notes for the physical, chemical and biodegradation parameters measured during this monitoring event are included in Appendix B.

Naturally occurring biological processes can enhance the removal rate of contaminants in the subsurface. During the degradation processes, indigenous bacteria that exist in the subsurface utilize the energy released from the transfer of electrons to drive the redox reactions that remove organic mass from

contaminated groundwater. The more positive the redox potential of an electron acceptor, the more energetically favorable is the reaction utilizing that electron acceptor. Based on thermodynamic considerations, the most energetically preferred electron acceptor for redox reactions is DO, followed by nitrate, manganese, ferric iron, sulfate, and carbon dioxide, in descending order of preference. Evaluating the distribution of these electron acceptors can provide evidence of where and to what extent hydrocarbon biodegradation is occurring.

In general, all of the DO concentrations were below the solubility standard of O<sub>2</sub> in the groundwater. The groundwater temperature during this monitoring event ranged from 18.89°C in well MW-10 to 20.48°C in well MW-7. The solubility standard for DO in groundwater at 20.50°C, at an atmospheric pressure of 760 mm/Hg, is approximately 9.0 mg/L. Detectable DO concentrations ranged from 1.74 mg/L in well MW-7 to 6.87 mg/L in well MW-4R. ORP showed negative redox potentials in wells MW-1, MW-3, MW-6 to MW-8, and MW-12. Oxidation of petroleum hydrocarbons could have occurred in these monitoring wells at these low DO readings. Negative redox potentials indicate that contaminants in the groundwater are conducive to anaerobic biodegradation.

The presence of Fe<sup>2+</sup> indicates that the available DO in the subsurface has been consumed and anaerobic bacteria began to utilize other electrons acceptors, such as Fe<sup>3+</sup>, NO<sub>3</sub><sup>-</sup> and SO<sub>4</sub><sup>2-</sup>, to metabolize dissolved hydrocarbons. Ferrous iron concentrations can thus be used as an indicator of anaerobic biodegradation.

Ferrous iron is a product of the reduction reaction of ferric iron and hydrocarbons. Ferrous iron concentrations were detected throughout the Site, with the exception of well MW-4R. Ferrous iron concentrations ranged from 0.15 mg/L in well MW-10 to the maximum equipment allowable tolerance range of 3.30 mg/L in wells MW-1, MW-3, and MW-6.

Nitrate concentrations were below the equipment's minimum allowable level in all of the groundwater samples collected, with the exception of wells MW-1, MW-2, MW-5, and MW-12. Nitrate concentrations in wells MW-1, MW-2, MW-5, and MW-12 were at 4.7 mg/L, 1 mg/L, 2.2 mg/L, and 0.5 mg/L, respectively. The presence of high ferrous iron concentrations in combination with non-detectable nitrate levels is indicative of anaerobic biodegradation beneath the Site.

The absence of sulfate in the groundwater samples may be indicative of an anaerobic methanogenesis process. Sulfate was below the equipment tolerance level in all of the groundwater samples collected throughout the Site, with the exception of wells MW-1, MW-2, and MW-5 to MW-7. Sulfate concentrations ranged from 4 mg/L in well MW-7 to 56 mg/L in well MW-5.



## 2.2 Laboratory Analysis

Table 1 presents the results of the laboratory analyses on the groundwater samples collected during the Second Quarter 2005 monitoring event. In general, the most impacted monitoring wells this quarter were MW-1 and MW-3, which are in the vicinity of the USTs, and MW-6, which is near the soil vapor extraction (SVE) system.

As shown in Table 1, TPH-g was detected throughout the Site during the Second Quarter 2005 monitoring event. Detectable TPH-g concentrations ranged from 262 ug/L in well MW-7 to 38,500 ug/L in well MW-6. High TPH-g concentrations were also detected in wells MW-1, MW-3, and MW-8 at 33,900 ug/L, 17,600 ug/L, and 10,100 ug/L, respectively. Figure 4 displays the contour map of TPH-g concentrations in the groundwater as analyzed during the Second Quarter 2005 monitoring event. As shown in Figure 4, high TPH-g concentrations were detected in the vicinity of the USTs, near the SVE system, and in the vicinity of the French drain.

As shown in Table 1, all BTEX concentrations were below the laboratory reporting limit in wells MW-5 and MW-12. In well MW-7, all BTEX concentrations were at low levels. The highest benzene, toluene, and total xylene concentrations were detected in well MW-1 at 3,440 ug/L, 1,700 ug/L, and 2,276 ug/L, respectively. The highest ethylbenzene concentration was detected in well MW-6 at 1,550 ug/L.

Figure 5 displays the contour map of benzene concentrations in the groundwater during the Second Quarter 2005 monitoring event. As shown in Figure 5, the highest benzene concentration was detected in the vicinity of the USTs in well MW-1. High benzene concentrations were also detected in well MW-6, which is in the vicinity of the vapor extraction system, and in well MW-3, which is near the USTs.

MtBE was below the laboratory reporting limit in monitoring wells MW-2, MW-4R, and MW-6. MtBE concentrations ranged from 0.73 ug/L in well MW-7 to 3,210 ug/L in well MW-1. Figure 6 displays the contour map of MtBE concentrations (analyzed using EPA Method 8260B) in the groundwater during the Second Quarter 2005 monitoring event. In general, with the exception of wells MW-1 and MW-3, which are in the vicinity of the USTs, and well MW-8, which is near the French drain, MtBE was either at low concentrations or below the laboratory reporting limit in the remaining wells.

The laboratory report and COC form for the Second Quarter 2005 monitoring event are included in Appendix C.

### **2.3 Historical Analytical Results**

Table 1 shows the historical groundwater analytical data. The following concentration trends have been observed in the more impacted wells MW-1, MW-3, and MW-6, since the previous monitoring event (First Quarter 2005).

- In well MW-1, TPH-g, total xylenes, and MtBE all decreased, ethylbenzene remained constant, and both benzene and toluene increased.
- In well MW-3, all TPH-g, MtBE, and BTEX constituents, with the exception of ethylbenzene, decreased. Ethylbenzene slightly increased since the previous monitoring event.
- In well MW-6, TPH-g increased by a factor of approximately 2.1, all BTEX analytes increased, and MtBE remained below the laboratory reporting limit.

To review further detailed groundwater concentration trends refer to Table 1.

### **3.0 Groundwater Treatment System Operation**

The treatment system began operating on December 9, 1999. Since that time, 3,000,060 gallons of groundwater has been treated and discharged under the existing discharge permit (as of June 3, 2005), into the East Bay Municipal Utility District's (EBMUD's) sewer system.

On January 9, 2004, the pneumatic downhole pumps in the western and center French drain risers were removed and replaced with electrical downhole pumps. On July 25, 2004, a downhole pneumatic pump was installed in the western riser of the French drain. A schematic diagram of the remediation system is displayed in Figure 7.

On May 4, 2005, to more accurately determine the total flow through the system, the totalizer meter was changed. The meter reading, prior to being replaced, was 2,189,270 gallons. On July 6, 2004, the replacement meter was factory calibrated at a flow rate of 100 gallons. During the testing the meter reading ranged from 100.2 gallons to 99.8 gallons. The new meter is a 5/8-inch Kent positive displacement meter. This is the third flow meter SOMA has installed on the treatment system.

Also on May 4, 2005, to maintain the system's efficiency and ensure that the effluent concentrations remained below the discharge compliance limits, SOMA conducted a carbon change-out. At this time carbon was refurbished in the 2,000-pound carbon vessel and the 55-gallon carbon vessel drum was replaced. The system was temporarily shutdown during this process and then restarted after the change-out. The carbon was previously changed in January 2005.

As required by the discharge permit and the ACEHS, sampling of the groundwater treatment system has been performed on a routine basis. Table 2 presents the total volume of treated groundwater and the groundwater analytical results. Table 2 shows that all of the effluent samples have been below the discharge limits set forth by EBMUD.

The laboratory reports for the groundwater treatment system during this quarter are included in Appendix D of this report.

The treatment system has removed approximately 193.50 pounds of hydrocarbons and 85 pounds of MtBE from the initial start-up in December 1999 to May 9, 2005. Figure 8 shows the approximate masses of TPH-g and MtBE removed from the impacted groundwater during the operation of the treatment system.

#### **4.0 Soil Vapor Extraction System Operation**

The soil vapor extraction (SVE) system consists of 6 vapor extraction wells, a de-moisturizing unit, a blower, and four drums of granulated active carbon (GAC) filters. The vapor extraction system began operating on July 24, 2000. The SVE system has remained in compliance with the Bay Area Air Quality Management District's (BAAQMD's) operating permit.

The operating permit for the SVE system was extended by BAAQMD until August 2005. During rainy periods of the year the thickness of the unsaturated zone layer is reduced when the water table rises; therefore, the SVE system is temporarily shutdown. As such, the SVE system is only operational during the drier seasons when a greater petroleum mass can be removed from the unsaturated zone. The SVE system was shutdown on October 28, 2004 and restarted on April 11, 2005.

On April 11, 2005, all four-vapor phase carbon drums were replaced with newer ones. As of June 3, 2005, approximately 745.09 pounds of petroleum hydrocarbons have removed from the vadose zone beneath the Site. Table 3 presents the total mass of hydrocarbons removed from the Site by the SVE system, as well as the historical operational conditions.

## 5.0 Conclusions and Recommendations

The findings of the Second Quarter 2005 groundwater monitoring event can be summarized as follows:

1. The groundwater remediation system is providing excellent hydraulic control in preventing further migration of the contaminants.
2. The bio-attenuation study confirmed the occurrence of biodegradation beneath the Site. Based on this study, the affected areas appear in the vicinity of the USTs, in wells MW-1 and MW-3, as well as the eastern section of the Site, in well MW-6.
3. The highest TPH-g concentration detected in during the Second Quarter 2005 monitoring event was in well MW-6. TPH-g more than doubled in well MW-6 since the previous monitoring event. However, several constituents decreased in wells MW-1 and MW-3 since the previous monitoring event.
4. In general, the GAC and SVE systems have effectively reduced contaminants beneath the Site. The higher concentrations detected in wells MW-1, MW-3, and MW-6 are still considerably lower than the historical peak values for these wells.
5. Approximately 3,000,060 gallons of groundwater has been treated and discharged into the EBMUD's sewer system under the existing discharge permit (as of June 3, 2005). All effluent samples from the groundwater treatment system have remained below the allowable discharge requirements. From initial start-up to May 9, 2005 approximately 193.50 pounds of hydrocarbons and 85 pounds of MtBE have been removed during the operation of the treatment system.
6. As of June 3, 2005, approximately 745.09 pounds of petroleum hydrocarbons have removed from the vadose zone beneath the Site. Due to the rainy season, the SVE system was temporarily shutdown from October 28, 2004 to April 11, 2005.

Based on the results of this monitoring event, SOMA recommends:

- Continual monitoring of the treatment system to maintain the removal rate of the contaminant mass in the groundwater.
- Continual site monitoring of the biodegradation parameters to determine if the injection of concentrated solutions of terminal electron receptors into the groundwater, in the vicinity of the more contaminated wells, may enhance the biodegradation process.

- Continued quarterly monitoring programs to better understand the seasonal variations in the groundwater quality conditions.
- On April 1, 2005, SOMA conducted a pilot test to evaluate the use of ozone sparging to actively remediate the groundwater at the Site. Based on the test, the sediment was determined to be permeable enough to allow for the operation of an ozone sparging system. Based on the results from the quarterly monitoring events, the source area appears to remain in the vicinity of wells MW-1, MW-3, and MW-6. Therefore, the ozone sparging system should effectively aid in reducing the contaminant source area in these regions. SOMA will initiate the ozone sparging operation upon receiving approval from Alameda County.

## **6.0 Report Limitations**

This report is the summary of work done by SOMA including observations and descriptions of the Site's conditions. It includes the analytical results produced by Pacific Analytical Laboratory as well as the summaries of data produced by previous environmental consultants. The number and location of the wells were selected to provide the required information, but may not be completely representative of the entire site's conditions. All conclusions and recommendations are based on the results of the laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that the services provided were done in accordance with the generally accepted practices in the environmental engineering and consulting field at the time of this sampling.

# TABLES

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE <sup>2</sup> EPA 8260B (µg/L)
MW-1	Oct-94	97.99	15.39	82.60	320,000	24,000	21,000	2,600	15,000	NA
	Dec-94	97.99	9.32	88.67	80,000	3,800	6,600	2,300	11,000	NA
	Mar-95	97.99	8.07	89.92	32,000	190	160	150	490	NA
	Jun-95	97.99	9.53	88.46	21,000	950	650	570	150	NA
	Oct-95	97.99	13.29	84.70	59,000	140	130	140	390	NA
	Jan-96	97.99	10.07	87.92	30,000	71	73	50	120	NA
	Apr-96	97.99	8.29	89.70	31,000	98	120	63	170	NA
	Dec-96	97.99	11.67	86.32	NA	NA	NA	NA	NA	NA
	Apr-97	97.99	11.14	86.85	NA	NA	NA	NA	NA	NA
	Dec-97	97.99	9.30	88.69	27,000	2,300	2,100	1,400	5,100	NA
	Sep-98	97.99	13.58	84.41	NA	NA	NA	NA	NA	NA
	Dec-98	97.99	11.10	86.89	65,000	2,500	2,400	2,300	9,500	160
	Mar-99	97.99	9.91	88.08	17,000	480	860	850	3,000	190
	Jun-99	97.99	11.10	86.89	25,000	1,110	1,460	1,330	5,265	77
	Aug-99	97.99	13.35	84.64	19,750	678	463	893	2,938	38
	Nov-99	97.99	14.45	83.54	10,000	693	15	<5	3,471	50
	Feb-00	97.99	11.20	86.79	40,000	2,280	1,380	8	6,130	47
	May-00	97.99	11.49	86.50	15,610	610	350	310	1,400	<5
	Aug-00	97.99	13.36	84.63	11,000	638	<5	<5	<5	17.1
	Nov-00	97.99	13.20	84.79	7,050	435	52	ND	689	10
	Mar-01	97.99	8.96	89.03	14,570	1,005	440	108	2,030	16
	May-01	97.99	11.50	86.49	4,900	310	81	82	388	150
	Aug-01	97.99	13.51	84.48	14,820	852	342	568	1,606	2,000
Nov-01	97.99	14.01	83.98	41,000	2,700	5,100	1,000	4,570	74,000	
Feb-02	97.99	10.11	87.88	260,000	3,700	12,000	3,700	19,200	23,000	
May-02	97.99	10.86	87.13	53,000	4,400	5,100	1300	7,000	32,000	
Jul-02	40.11	12.80	27.31	29,000	2,400	2,500	920	4,400	13,000	
Oct-02	40.11	15.50	24.61	27,000	2,200	2,400	950	4,500	34,000	

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE <sup>2</sup> EPA 8260B (µg/L)
MW-1 cont.	Jan-03	40.11	9.73	30.38	62,000	3,500	6,000	1600	9,700	48,000
	May-03	40.11	9.71	30.40	59,000	3,100	2,700	1500	7,000	14,000
	Jul-03	40.11	12.44	27.67	36,000	4,800	1,800	1300	5,600	25,000
	Oct-03	40.11	13.89	26.22	630,000 H	3,300	1900 C	3600	27,700	15,000
	Jan-04	40.11	10.45	29.66	39,000	3,100	1,600	950	4,300	8,500
	Apr-04	40.11	11.49	28.62	41,000	1,200	350C	830	2,740	4,300
	Aug-04	40.11	13.81	26.30	22,000	2,000	220	560	3,090	6,900
	Dec-04	40.11	11.10	29.01	22,790	1,634	319	895	2,851	5,504
	Mar-05	40.11	8.40	31.71	44,400	3,150	811	1,090	2,856	7,180
	May-05	40.11	9.72	30.39	33,900	3,440	1,700	1,090	2,276	3,210
MW-2	Oct-94	98.58	15.36	83.22	NA	NA	NA	NA	NA	NA
	Dec-94	98.58	8.60	89.98	NA	NA	NA	NA	NA	NA
	Mar-95	98.58	7.68	90.90	490	3	3	3	1	NA
	Jun-95	98.58	9.59	88.99	8,000	220	330	350	660	NA
	Oct-95	98.58	13.42	85.16	46,000	160	130	93	240	NA
	Jan-96	98.58	9.93	88.65	46,000	160	130	93	240	NA
	Apr-96	98.58	8.13	90.45	27,000	0.1	92	44	13	NA
	Dec-96	98.58	11.67	86.91	6,200	11	7	2	14	ND
	Apr-97	98.58	11.40	87.18	53,000	150	110	37	0.12	ND
	Dec-97	98.58	9.04	89.54	35,000	4,900	4,900	1,600	7,000	NA
	Jun-98	98.58	NM	NM	25,000	2,000	2,000	1,300	4,300	NA
	Sep-98	98.58	13.58	85.00	29,000	290	180	160	380	<0.5
	Dec-98	98.58	10.94	87.64	26,000	1,400	1,600	880	9,500	<5
	Mar-99	98.58	7.60	90.98	7,600	730	830	610	1,900	55
	Jun-99	98.58	11.24	87.34	3,500	290	428	211	744	ND
	Aug-99	98.58	13.50	85.08	60	6	9	4	11	ND
	Nov-99	98.58	14.10	84.48	<50	<5	<5	<5	<5	<5
	Feb-00	98.58	9.85	88.73	6,400	372	639	46	134	8
	May-00	98.58	10.88	87.70	2,930	130	330	130	570	<5
	Aug-00	98.58	13.03	85.55	<50	<5	<5	<5	<5	<5
Nov-00	98.58	12.60	85.98	ND	ND	ND	ND	ND	ND	
Mar-01	98.58	8.55	90.03	932	18	34	1.3	225	ND	
May-01	98.58	11.00	87.58	870	37	75	55	179	2.7	
Aug-01	98.58	13.53	85.05	125	4	4	3	11	ND	
Nov-01	98.58	13.43	85.15	470	13	64	22	83	14	



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**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE <sup>2</sup> EPA 8260B (µg/L)
MW-2 cont.	Feb-02	98.58	8.99	89.59	1,700	26	180	95	360	<2
	May-02	98.58	10.59	87.99	1,800	31	140	110	348	<2
	Jul-02	40.71	12.70	28.01	180	11	6.3	9.4	27	<2.0
	Oct-02	40.71	14.23	26.48	<50	<0.5	<0.5	<0.5	0.64	<2.0
	Jan-03	40.71	8.66	32.05	510	5	30.0	24.0	92	<2.0
	May-03	40.71	9.17	31.54	1,300	14	88.0	78.0	271	<2.0
	Jul-03	40.71	12.23	28.48	220	3.9	4.3	7	14.5	<2.0
	Oct-03	40.71	13.65	27.06	170 H	1.9	<0.5	2.2	2.2	<2.0
	Jan-04	40.71	9.54	31.17	860	7.2	37	50	151	<2.0
	Apr-04	40.71	10.80	29.91	730	6.6	19	38	87	<2.0
	Aug-04	40.71	13.54	27.17	220	2.2	1.9	7	11.7	<0.5
	Dec-04	40.71	10.52	30.19	99	1.7	3.3	8.3	25.1	<0.5
	Mar-05	40.71	8.06	32.65	5,690	18.7	120	315	876	<1.0
	May-05	40.71	9.10	31.61	6,320	12.5	75	429	557	<2.15
	MW-3	Oct-94	97.78	15.79	81.99	3,000,000	190,000	740,000	310,000	130,000
Dec-94		97.78	9.79	87.99	250,000	19,000	22,000	4,400	28,000	NA
Mar-95		97.78	8.69	89.09	350,000	20,000	42,000	5,800	36,000	NA
Jun-95		97.78	10.25	87.53	350,000	20,000	42,000	5,800	36,000	NA
Oct-95		97.78	12.91	84.87	150,000	510	410	210	65	NA
Jan-96		97.78	10.55	87.23	150,000	510	410	210	650	NA
Apr-96		97.78	8.76	89.02	NA	NA	NA	NA	NA	NA
Dec-96		97.78	12.02	85.76	NA	NA	NA	NA	NA	NA
Apr-97		97.78	11.73	86.05	NA	NA	NA	NA	NA	NA
Dec-97		97.78	NM	NM	NA	NA	NA	NA	NA	NA
Sep-98		97.78	14.68	83.10	NA	NA	NA	NA	NA	NA
Dec-98		97.78	11.55	86.23	51,000	5,700	3,900	1,200	6,300	410
Mar-99		97.78	8.44	89.34	45,000	4,100	6,400	1,000	6,100	470
Jun-99		97.78	11.8	85.98	46,000	8,245	6,425	1,015	7,173	274
Aug-99		97.78	13.85	83.93	64,000	7,484	8,052	1,744	9,749	141
Nov-99		97.78	14.7	83.08	26,000	3,218	1,319	<5	6,697	126
Feb-00		97.78	10.95	86.83	44,000	6,090	3,360	<5	5,780	276
May-00		97.78	11.68	86.10	68,000	15,000	8,900	1,500	7,400	<5
Aug-00	97.78	13.73	84.05	76,000	8,900	5,636	883	7,356	176	
Nov-00	97.78	13.4	84.38	48,000	6,789	4,816	676	7,258	83	

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MW-3 cont.	Mar-01	97.78	9.43	88.35	14,754	2,250	140	ND	1,284	110	
	May-01	97.78	11.81	85.97	44,000	5,400	3,100	1,400	6,400	200	
	Aug-01	97.78	14.1	83.68	41,750	3,485	2,670	1,255	5,420	52	
	Nov-01	97.78	14.32	83.46	NA	NA	NA	NA	NA	NA	
	Feb-02	97.78	10.01	87.77	62,000	6,000	7,600	1,900	9,200	12,000	
	May-02	97.78	11.28	86.50	54,000	6,700	3,200	1,800	7,100	9,100	
	Jul-02	40.91	13.25	27.66	45,000	8,900	1,700	1,600	5,600	2,600	
	Oct-02	40.91	14.98	25.93	70,000	4,900	5,100	2,100	11,900	21,000	
	Jan-03	40.91	9.79	31.12	35,000	2,900	1,300	860	5,200	13,000	
	May-03	40.91	10.01	30.90	48,000	5,800	1,400	1,600	7,400	5,900	
	Jul-03	40.91	12.94	27.97	31,000	4,700	990	1,400	5,200	16,000	
	Oct-03	40.91	14.29	26.62	30,000	4,400	930	1,600	5,400	7,400	
	Jan-04	40.91	10.57	30.34	45,000	2,100	850	1,500	5,700	2,900	
	Apr-04	40.91	11.84	29.07	31,000	4,200	590	1,600	4,370	900	
	Aug-04	40.91	14.24	26.67	21,000	3,400	370	1,000	2,350	1,100	
	Dec-04	40.91	11.32	29.59	6,441	978	109	490	941	201	
	Mar-05	40.91	8.87	32.04	22,300	1,280	456	729	1,870	2,400	
	May-05	40.91	9.96	30.95	17,600	764	302	735	1,227	1,800	
	MW-4	Jan-96	97.85	10.11	87.74	9,300	230	110	10	29	NA
		Apr-96	97.85	8.35	89.50	1,900	12	8	5	14	NA
Dec-96		97.85	11.58	86.27	4,000	14	6	4	12	ND	
Apr-97		97.85	11.23	86.62	ND	ND	ND	ND	ND	ND	
Dec-97		97.85	9.43	88.42	2,300	410	270	100	1,500	NA	
Jun-98		97.85	NM	NM	1,700	780	160	54	200	NA	
Sep-98		97.85	13.64	84.21	6,200	910	77	68	200	18	
Dec-98		97.85	11.13	86.72	1,400	590	33	28	94	24	
Mar-99		97.85	8.46	89.39	600	200	35	19	56	11	
Jun-99		97.85	11.30	86.55	1,000	298	44	19	64	13	
Aug-99		97.85	13.20	84.65	660	497	41	54	145	6	
Nov-99		97.85	14.10	83.75	<50	<5	<5	<5	<5	<5	
Feb-00		97.85	11.25	86.60	7,800	1,200	61	<5	781	<5	
May-00		97.85	11.46	86.39	552	42	19	16	67	<5	
Aug-00		97.85	13.35	84.50	370	5.08	<5	<5	<5	<5	
Nov-00		97.85	13.05	84.80	ND	5.30	ND	ND	8	ND	

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MW-4 cont.	Mar-01	97.85	9.24	88.61	62	ND	ND	3.2	8.7	ND
	May-01	97.85	11.50	86.35	80	12	1.9	4.1	9.8	ND
	Aug-01	97.85	13.80	84.05	133	12	2.2	3.9	9	ND
	Nov-01	97.85	13.68	84.17	670	180	5	17	53	ND
	Feb-02	97.85	9.97	87.88	450	63	4.1	22	28.7	<2
	May-02	97.85	10.81	87.04	570	72	29	27	74	<2
	Jul-02	40.01	12.62	27.39	450	20	24	19	74	<2.0
	Oct-02	40.01	14.34	25.67	320	69	0.99	9	5.49	<2.0
	Jan-03	40.01	9.79	30.22	310	49	2.5	13	26.7	<2.0
	May-03	40.01	9.78	30.23	120	27	1.8	9	14.6	<2.0
	Jul-03	40.01	12.44	27.57	<50	1	<0.5	<0.5	<0.5	<0.5
	Oct-03	40.01	13.72	26.29	70	12	<0.5	4.7	3.0	<2.0
	Jan-04	40.01	10.55	29.46	230	18	2.1	8.1	17.1	<2.0
	Apr-04	40.01	11.39	28.62	<50	3.8	<0.5	1.6	1.9	<2.0
	Aug-04	40.01	13.68	26.33	<50	1.6	<0.5	0.66	0.53	<2.0
	Dec-04	40.01	10.95	29.06	<50	1.3	<0.5	2.80	<1.0	<0.5
Mar-05	40.01	8.61	31.40	661	72	4.13	39.7	48.42	<0.5	
<b>MW-4R</b>	<b>May-05</b>	<b>40.34</b>	<b>9.88</b>	<b>30.46</b>	<b>7,780</b>	<b>170</b>	<b>11.1</b>	<b>192</b>	<b>121.2</b>	<b>&lt;0.5</b>
MW-5	Oct-95	99.04	13.57	85.47	1,500	1	1	4	5	NA
	Jan-96	99.04	10.03	89.01	1,500	1	1	4	5	NA
	Apr-96	99.04	8.24	90.80	780	1	1	5	4	NA
	Dec-96	99.04	11.48	87.56	NA	NA	NA	NA	NA	NA
	Apr-97	99.04	11.35	87.69	NA	NA	NA	NA	NA	NA
	Dec-97	99.04	9.15	89.89	790	82	66	59	160	NA
	Jun-98	99.04	NM	NM	400	<5	<5	15	<10	NA
	Sep-98	99.04	13.82	85.22	270	2	1	3	3	<.5
	Dec-98	99.04	11.20	87.84	1,400	1	1	ND	2	ND
	Mar-99	99.04	7.73	91.31	650	3	1	16	2	10
	Jun-99	99.04	11.50	87.54	270	4	3	6	4	ND
	Aug-99	99.04	13.55	85.49	120	ND	4	ND	4	ND
	Nov-99	99.04	14.30	84.74	<50	<5	<5	<5	<5	<5
	Feb-00	99.04	9.85	89.19	70	<5	<5	<5	7	<5
May-00	99.04	11.03	88.01	627.4	7.4	24	12	32.4	<5	
Aug-00	99.04	13.22	85.82	<50	<5	<5	<5	<5	<5	
Nov-00	99.04	13.55	85.49	ND	ND	ND	ND	ND	ND	

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MW-5 cont.	Mar-01	99.04	8.67	90.37	382	6.1	1.9	6.6	5.9	ND
	May-01	99.04	11.12	87.92	180	ND	ND	2.1	0.57	4.4
	Aug-01	99.04	13.79	85.25	258	1	1.1	3.4	7.3	1.4
	Nov-01	99.04	13.72	85.32	920	17	160	26	135	40
	Feb-02	99.04	9.04	90.00	290	3.5	2	6.2	6.2	<0.5
	May-02	99.04	10.69	88.35	160	<0.5	0.78 C	2	2.15	2.3
	Jul-02	41.16	12.94	28.22	110	<0.5	<0.5	0.77	<0.5	<0.5
	Oct-02	41.16	14.51	26.65	77	<0.5	<0.5	<0.5	<0.5	<2.0
	Jan-03	41.16	8.73	32.43	450 Y	<0.5	<0.5	4	0.54	2.1
	May-03	41.16	9.24	31.92	130	<0.5	<0.5	1	<0.5	3.1
	Jul-03	41.16	12.45	28.71	300	<0.5	1.9 C	0.76	<0.5	<2.0
	Oct-03	41.16	13.89	27.27	460 H	<0.5	<0.5	<0.5	<0.5	1.9
	Jan-04	41.16	9.60	31.56	160	<0.5	<0.5	0.55 C	<0.5	<5.0
	Apr-04	41.16	11.06	30.10	280	<0.5	0.74C	0.62	<0.5	2.1
	Aug-04	41.16	13.75	27.41	250	<0.5	<0.5	<0.5	<0.5	2
	Dec-04	41.16	10.73	30.43	150	<0.5	<0.5	<0.5	<1.0	2.6
	Mar-05	41.16	8.18	32.98	496	<0.5	<0.5	<0.5	<1.0	1.91
May-05	41.16	9.22	31.94	360	<0.5	<0.5	<0.5	<1.0	1.72	
MW-6	Oct-95	98.77	13.94	84.83	NA	NA	NA	NA	NA	NA
	Jan-96	98.77	10.55	88.22	120,000	350	310	200	610	NA
	Apr-96	98.77	8.76	90.01	NA	NA	NA	NA	NA	NA
	Dec-96	98.77	12.04	86.73	NA	NA	NA	NA	NA	NA
	Apr-97	98.77	11.76	87.01	NA	NA	NA	NA	NA	NA
	Dec-97	98.77	9.30	89.47	NA	NA	NA	NA	NA	NA
	Sep-98	98.77	14.10	84.67	NA	NA	NA	NA	NA	NA
	Dec-98	98.77	11.60	87.17	NA	NA	NA	NA	NA	NA
	Mar-99	98.77	8.40	90.37	37,000	3,900	4,300	1,600	7,000	180
	Jun-99	98.77	11.90	86.87	18,500	2,060	1,650	735	3,170	ND
	Aug-99	98.77	13.90	84.87	42,000	3,806	3,649	1,554	7,996	10
	Nov-99	98.77	14.75	84.02	40,000	1,084	130	<5	10,940	<5
	Feb-00	98.77	10.95	87.82	17,000	1,360	521	<5	4,150	6
	May-00	98.77	11.70	87.07	21,700	1,700	1,200	17	3,600	<5
	Aug-00	98.77	13.78	84.99	24,000	1,306	870	<5	5,162	<5
	Nov-00	98.77	13.40	85.37	19,000	1,387	618	ND	5,250	ND
	Mar-01	98.77	9.49	89.28	15,637	713	459	238	2,363	ND
May-01	98.77	11.82	86.95	27,000	760	450	1,600	4,270	ND	
Aug-01	98.77	NM	NM	NA	NA	NA	NA	NA	NA	
Nov-01	98.77	NM	NM	NA	NA	NA	NA	NA	NA	

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MW-6 cont.	Feb-02	98.77	9.92	88.85	14,000	440	180	750	1,020	<10
	May-02	98.77	11.33	87.44	10,000	400	160	470	970	<2
	Jul-02	40.92	13.28	27.64	24,000	1,000	410	1,400	3,770	<20
	Oct-02	40.92	14.93	25.99	22,000	1,200	620	1,300	2,800	<20
	Jan-03	40.92	9.78	31.14	12,000	730	230	740	1,690	<20
	May-03	40.92	9.92	31.00	150,000 H	1,400	780	2,500	8,700	<40
	Jul-03	40.92	12.98	27.94	29,000	1,600	520	1,500	4,400	<200
	Oct-03	40.92	14.35	26.57	36,000	1,300	430	1,600	4,570	<40
	Jan-04	40.92	10.60	30.32	30,000	1,300	320	1,500	3,040	<50
	Apr-04	40.92	11.80	29.12	99,000	1,700	580 C	2,200	5,200	<50
	Aug-04	40.92	14.36	26.56	12,000	580	130	520	1,020	<10
	Dec-04	40.92	11.22	29.70	12,631	649	134	1,009	2,037	<2.15
	Mar-05	40.92	8.94	31.98	18,300	546	126	705	1,069	<2.15
	May-05	40.92	10.02	30.90	38,500	1,290	395	1,550	1,652	<5.50
	MW-7	Oct-95	97.83	12.95	84.88	NA	10	12	17	NA
Jan-96		97.83	9.57	88.26	3,300	9	12	17	45	NA
Apr-96		97.83	7.75	90.08	1,900	2	3	5	7	NA
Dec-96		97.83	10.97	86.86	NA	NA	NA	NA	NA	NA
Apr-97		97.83	12.95	84.88	NA	NA	NA	NA	NA	NA
Dec-97		97.83	8.65	89.18	1,400	130	98	75	200	NA
Jun-98		97.83	NM	NM	620	4	<5	9	<10	NA
Sep-98		97.83	13.09	84.74	1,800	1	1	1	2	68
Dec-98		97.83	10.52	87.31	990	5	10	5	20	160
Mar-99		97.83	7.00	90.83	300	3	1	1	1	62
Jun-99		97.83	10.70	87.13	320	3	7	4	3	26
Aug-99		97.83	12.80	85.03	570	5	10	ND	ND	ND
Nov-99		97.83	13.25	84.58	290	<5	9	<5	<5	12
Feb-00		97.83	9.50	88.33	80	<5	<5	<5	<5	23
May-00		97.83	10.52	87.31	494.9	4.9	22	4.2	21.9	29
Aug-00		97.83	12.63	85.20	80	<5	<5	<5	<5	11.7
Nov-00		97.83	11.95	85.88	50	ND	ND	ND	ND	9.1
Mar-01		97.83	8.04	89.79	82	0.97	ND	0.76	ND	78
May-01		97.83	10.60	87.23	370	ND	9.1	1.3	2.3	28
Aug-01		97.83	13.02	84.81	610	3.7	3	6.2	18.9	10
Nov-01	97.83	12.83	85.00	1,700	24	220	41	205	69	

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MW-7 cont.	Feb-02	97.83	8.91	88.92	380	<0.5	2.5	2	3.8	78
	May-02	97.83	10.13	87.70	560	15	28.0	9.2	44.0	37
	Jul-02	39.94	12.15	27.79	270	5.3	1.3 C	2.3	8.1	46
	Oct-02	39.94	13.74	26.20	350	<0.5	2.1 C	<0.5	3.1 C	43
	Jan-03	39.94	8.45	31.49	220 Y	<0.5	<0.5	0.78	0.55	19
	May-03	39.94	7.69	32.25	280	<0.5	<0.5	<0.5	<0.5	11
	Jul-03	39.94	11.72	28.22	230	<0.5	1.3 C	<0.5	0.63	5.9
	Oct-03	39.94	13.10	26.84	460	<0.5	<0.5	<0.5	<0.5	5.0
	Jan-04	39.94	9.23	30.71	380	<0.5	1.4 C	<0.5	<0.5	<5.0
	Apr-04	39.94	10.40	29.54	480	<0.5	2.5 C	<0.5	0.90	0.62
	Aug-04	39.94	12.92	27.02	410	<0.5	.81 C	<0.5	<0.5	1.70
	Dec-04	39.94	10.28	29.66	96	<0.5	<0.5	<0.5	<1.0	<0.5
	Mar-05	39.94	7.44	32.50	209	<0.5	<0.5	<0.5	<1.0	1.74
	May-05	39.94	8.53	31.41	262	4.85	2.19	2.36	4.24	0.73
	MW-8	Oct-95	97.25	12.86	84.39	NA	NA	NA	NA	NA
Jan-96		97.25	9.79	87.46	94,000	310	250	180	480	NA
Apr-96		97.25	7.98	89.27	58,000	250	170	140	330	NA
Dec-96		97.25	11.13	86.12	27,000	88	43	44	80	ND
Apr-97		97.25	12.95	84.30	24,000	86	55	50	100	ND
Dec-97		97.25	8.95	88.30	28,000	6,000	1,600	2,100	4,700	NA
Jun-98		97.25	NM	NM	54,000	4,600	2,800	3,500	7,300	NA
Sep-98		97.25	13.02	84.23	NA	NA	NA	NA	NA	NA
Dec-98		97.25	10.75	86.50	61,000	6,300	1,700	2,200	4,400	1,300
Mar-99		97.25	7.58	89.67	22,000	1,800	470	2,000	2,000	820
Jun-99		97.25	10.80	86.45	39,500	3,610	1,635	2,175	5,913	988
Aug-99		97.25	12.75	84.50	58,000	5,379	2,438	3,001	6,960	639
Nov-99		97.25	13.65	83.60	10,500	92	<5	<5	3,414	769
Feb-00		97.25	10.85	86.40	44,200	1,080	617	<5	4,160	240
May-00		97.25	11.15	86.10	25,940	940	130	1,600	3,960	75
Aug-00		97.25	12.87	84.38	22,000	632	5.38	<5	2,686	37.3
Nov-00		97.25	12.55	84.70	3,000	278	350	209	980	21
Mar-01	97.25	8.75	88.50	2,360	81	16	71	270	221	
May-01	97.25	11.15	86.10	3,100	110	28	140	194	410	
Aug-01	97.25	12.97	84.28	5,620	153	46	373	345	174	
Nov-01	97.25	13.19	84.06	13,000	600	270	750	1,200	400	

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE <sup>2</sup> EPA 8260B (µg/L)
MW-8 cont.	Feb-02	97.25	9.88	87.37	240,000	1,400	<25	4,200	6,560	<100
	May-02	97.25	10.32	86.93	9,000	360	56	560	622	2,100
	Jul-02	39.38	11.79	27.59	8,400	340	78	530	517	1,200
	Oct-02	39.38	13.80	25.58	18,000	950	75	1,400	1,269	700
	Jan-03	39.38	9.48	29.90	8,100	300	29	370	302	1,100
	May-03	39.38	9.48	29.90	18,000	380	33 C	1,000	516	540
	Jul-03	39.38	11.92	27.46	12,000	460	54 C	910	435	890
	Oct-03	39.38	13.09	26.29	16,000	830	87	2,000	675	280
	Jan-04	39.38	10.32	29.06	18,000	330	37 C	860	239	500
	Apr-04	39.38	11.23	28.15	12,000	240	26 C	650	128.8 C	<4
	Aug-04	39.38	13.02	26.36	6,000	310	27	660	56.8 C	<4
	Dec-04	39.38	10.79	28.59	6,650	171	15	360	35	166
	Mar-05	39.38	7.62	31.76	11,400	125	21	418	55.3	865
	May-05	39.38	9.15	30.23	10,100	122	13.2	440	34.73	406
	MW-10	Dec-96	94.54	10.44	84.10	NA	NA	NA	NA	NA
Apr-97		94.54	10.07	84.47	1,000	21	9	3	3	ND
Dec-97		94.54	8.78	85.76	10,000	5,300	76	1,100	780	NA
Sep-98		94.54	11.93	82.61	9,900	5,400	66	970	620	2,600
Dec-98		94.54	10.19	84.35	8,700	3,800	51	790	420	1,800
Mar-99		94.54	7.30	87.24	4,100	15	28	420	250	2,800
Jun-99		94.54	9.95	84.59	4,200	1,168	34	264	154	1,195
Aug-99		94.54	11.60	82.94	3,250	2,135	97	600	248	1,800
Nov-99		94.54	12.50	82.04	2,950	1,134	20	<5	70	652
Feb-00		94.54	9.25	85.29	<50	<5	<5	<5	<5	448
May-00		94.54	9.45	85.09	4,400	1,500	25	390	107.1	580
Aug-00		94.54	11.52	83.02	6,800	1,055	26	54	53.8	1,283
Nov-00	94.54	11.35	83.19	ND	ND	ND	ND	ND	145	

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MW-10 cont.	Mar-01	94.54	8.07	86.47	4,935	969	18	41	72	630
	May-01	94.54	9.80	84.74	2,900	630	11	200	31	270
	Aug-01	94.54	11.64	82.90	242	35	1	11	2	64
	Nov-01	94.54	12.06	82.48	3,500	900	260	310	258	410
	Feb-02	94.54	8.28	86.26	4,700	1,100	20	370	63.7	500
	May-02	94.54	9.49	85.05	3,400	660	13	260	48.0	270
	Jul-02	36.71	10.93	25.78	160	26	0.55	8.1	1.0	72
	Oct-02	36.71	12.54	24.17	550	130	3.00	31.0	2.7	70
	Jan-03	36.71	8.23	28.48	17,000	870	11	290	27	270
	May-03	36.71	8.30	28.41	2,500	650	10	190	15.81 C	180
	Jul-03	36.71	10.76	25.95	750	160	4	58	6.66 C	79
	Oct-03	36.71	11.91	24.80	2,000	410	11	170	9.14 C	110
	Jan-04	36.71	8.91	27.80	4,000	600	15	280	15.3 C	110
	Apr-04	36.71	9.62	27.09	5,100	580	<1	330	26.4	160
	Aug-04	36.71	11.50	25.21	3,400	550	13	240	17.0	100
	Dec-04	36.71	9.29	27.42	2,524	558	10	184	16.0	144
	Mar-05	36.71	7.48	29.23	4,340	354	6.07	166	17.1	258
	May-05	36.71	8.24	28.47	4,750	415	6.87	254	10.4	126
MW-11	Dec-96	95.94	11.99	83.95	NA	NA	NA	NA	NA	NA
	Apr-97	95.94	11.47	84.47	NA	NA	NA	NA	NA	NA
	Dec-97	95.94	10.40	85.54	710	66	97	59	190	NA
	Jun-98	95.94	NM	NM	1,100	45	24	71	100	NA
	Sep-98	95.94	13.24	82.70	170	7	1	4	9	22
	Dec-98	95.94	11.58	84.36	650	27	4	25	33	>0.5
	Mar-99	95.94	8.81	87.13	710	30	6	53	84	8
	Jun-99	95.94	11.50	84.44	4,600	1,240	35	290	159	1,291
	Aug-99	95.94	12.75	83.19	170	4	4	ND	6	ND
	Nov-99	95.94	13.85	82.09	<50	<5	<5	<5	<5	<5
	Feb-00	95.94	13.60	82.34	700	20	15	<5	35	<5
	May-00	95.94	13.80	82.14	477	27	13	9.5	29.0	<5
	Aug-00	95.94	14.87	81.07	590	10.5	5.94	<5	7.75	<5
	Nov-00	95.94	12.55	83.39	60	ND	ND	ND	ND	ND
	Mar-01	95.94	9.61	86.33	273	8.6	2.1	10	14	ND
May-01	95.94	11.15	84.79	280	12	8.3	3.3	9.8	12	
Aug-01	95.94	13.04	82.90	NA	NA	NA	NA	NA	NA	
Nov-01	95.94	13.48	82.46	300	7.9	26	5.1	28.9	ND	



**Table 1**  
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 3609 International Boulevard, Oakland, California

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE <sup>2</sup> EPA 8260B (µg/L)
MW-11 cont.	Feb-02	95.94	9.69	86.25	560	34	20	32	37.3	< 0.5
	May-02	95.94	10.99	84.95	280	16	3	7.6	7.6	<2
	Jul-02	NS	13.24	NC	120	5.6	<0.5	0.61	0.53	<2.0
	Oct-02	NS	NM	NC	NA	NA	NA	NA	NA	NA
	Jan-03	NS	9.76	NC	700	32	5.7	25	14.10	<2.0
	May-03	NS	9.66	NC	280	17	1.5 C	8	4.10	<2.0
	Jul-03	NS	12.30	NC	340	19 C	3.2	0.58	0.89	<2.0
	Oct-03	NS	13.38	NC	210	5.0 C	<0.5	<0.5	<0.5	<0.5
	Jan-04	NS	NM	NC	NA	NA	NA	NA	NA	NA
	Apr-04	NS	NM	NC	NA	NA	NA	NA	NA	NA
	Aug-04	NS	NM	NC	NA	NA	NA	NA	NA	NA
	Dec-04	NS	10.54	NC	486	24	3.0	18	4.00	<0.5
	Mar-05	NS	NM	NC	NA	NA	NA	NA	NA	NA
	May-05	NS	NM	NC	NA	NA	NA	NA	NA	NA
MW-12	Nov-99	94.84	13.20	81.64	80	<5	<5	<5	<5	229
	Feb-00	94.84	10.20	84.64	4,000	351	37	<5	24	513
	May-00	94.84	10.48	84.36	3,930	230	10	34	12	200
	Aug-00	94.84	12.07	82.77	1,730	15.4	12.4	<5	<5	185
	Nov-00	94.84	12.05	82.79	1,010	9.3	19.0	ND	7.40	215
	Mar-01	94.84	9.04	85.80	1,517	13	5.6	5.5	11	214
	May-01	94.84	10.52	84.32	31,000	1,200	ND	95	165	1,900
	Aug-01	94.84	12.24	82.60	2,090	71	1.8	3	4	142
	Nov-01	94.84	12.76	82.08	3,000	81	69	13	73	120
	Feb-02	94.84	8.78	86.06	2,500	77	<0.5	5.7	7.4	95
	May-02	94.84	10.26	84.58	2,700	74	<0.5	20	5.1	94
	Jul-02	36.84	10.93	25.91	2,200	57	<0.5	11	2.6	100
	Oct-02	36.84	13.13	23.71	2,600	71	<0.5	<0.5	10.3	84
	Jan-03	36.84	9.23	27.61	2,300	65	<0.5	1	4.00	86
	May-03	36.84	9.24	27.60	2,200	58	<0.5	4.2 C	4.1 C	96
	Jul-03	36.84	11.44	25.40	2,200	32 C	16 C	<0.5	9.20	66
	Oct-03	36.84	12.50	24.34	2200 H	31 C	<0.5	<0.5	3.5 C	49
	Jan-04	36.84	9.56	27.28	1,700	24 C	14 C	3	5.00	72
	Apr-04	36.84	10.21	26.63	2,000	11 C	<0.5	<0.5	5 C	36
	Aug-04	36.84	12.00	24.84	1,900	8.9 C	<0.5	<0.5	1.1 C	26
Dec-04	36.84	10.03	26.81	1,018	2	<0.5	<0.5	<1.0	26	
Mar-05	36.84	8.49	28.35	1,890	4.25	<0.5	6.38	<1.0	30.6	
May-05	36.84	9.07	27.77	1,080	<0.5	<0.5	<0.5	<1.0	20.6	

**Table 1**  
**Historical Groundwater Elevation Data & Analytical Results**  
**3609 International Boulevard, Oakland, California**

Monitoring Well	Date	Top Of Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE <sup>2</sup> EPA 8260B (µg/L)
FDC	Feb-00	97.10	15.40	81.70	NA	NA	NA	NA	NA	NA
	May-00	97.10	12.41	84.69	NA	NA	NA	NA	NA	NA
	Aug-00	97.10	15.70	81.40	NA	NA	NA	NA	NA	NA
	Nov-00	97.10	16.85	80.25	NA	NA	NA	NA	NA	NA
	Mar-01	97.10	9.39	87.71	NA	NA	NA	NA	NA	NA
	May-01	97.10	15.85	81.25	NA	NA	NA	NA	NA	NA
	Aug-01	97.10	13.30	83.80	NA	NA	NA	NA	NA	NA
	Nov-01	97.10	17.82	79.28	NA	NA	NA	NA	NA	NA
	Feb-02	97.10	16.74	80.36	NA	NA	NA	NA	NA	NA
	May-02	97.10	10.36	86.74	NA	NA	NA	NA	NA	NA
	Jul-02	39.35	11.93	27.42	NA	NA	NA	NA	NA	NA
	Oct-02	39.35	13.74	25.61	NA	NA	NA	NA	NA	NA
	Jan-03	39.35	15.18	24.17	NA	NA	NA	NA	NA	NA
	May-03	39.35	16.20	23.15	NA	NA	NA	NA	NA	NA
	Jul-03	39.35	16.45	22.90	NA	NA	NA	NA	NA	NA
	Oct-03	39.35	16.53	22.82	NA	NA	NA	NA	NA	NA
	Jan-04	39.35	13.74	25.61	NA	NA	NA	NA	NA	NA
	Apr-04	39.35	16.30	23.05	NA	NA	NA	NA	NA	NA
	Aug-04	39.35	16.05	23.30	NA	NA	NA	NA	NA	NA
	Dec-04	39.35	14.56	24.79	NA	NA	NA	NA	NA	NA
Mar-05	39.35	13.55	25.80	NA	NA	NA	NA	NA	NA	
May-05	39.35	14.88	24.47	NA	NA	NA	NA	NA	NA	
FDE	May-00	97.90	13.22	84.68	NA	NA	NA	NA	NA	NA
	Aug-00	97.90	NM	NM	NA	NA	NA	NA	NA	NA
	Nov-00	97.90	12.75	85.15	NA	NA	NA	NA	NA	NA
	Mar-01	97.90	9.14	88.76	NA	NA	NA	NA	NA	NA
	May-01	97.90	13.05	84.85	NA	NA	NA	NA	NA	NA
	Aug-01	97.90	13.69	84.21	NA	NA	NA	NA	NA	NA
	Nov-01	97.90	13.92	83.98	NA	NA	NA	NA	NA	NA
	Feb-02	97.90	13.18	84.72	NA	NA	NA	NA	NA	NA
	May-02	97.90	11.18	86.72	NA	NA	NA	NA	NA	NA
	Jul-02	40.06	12.81	27.25	NA	NA	NA	NA	NA	NA
	Oct-02	40.06	14.53	25.53	NA	NA	NA	NA	NA	NA
	Jan-03	40.06	13.13	26.93	NA	NA	NA	NA	NA	NA
	May-03	40.06	11.79	28.27	NA	NA	NA	NA	NA	NA
	Jul-03	40.06	13.10	26.96	NA	NA	NA	NA	NA	NA
	Oct-03	40.06	13.85	26.21	NA	NA	NA	NA	NA	NA

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FDE cont.	Jan-04	40.06	13.27	26.79	NA	NA	NA	NA	NA	NA
	Apr-04	40.06	13.20	26.86	NA	NA	NA	NA	NA	NA
	Aug-04	40.06	14.97	25.09	NA	NA	NA	NA	NA	NA
	Dec-04	40.06	14.25	25.81	NA	NA	NA	NA	NA	NA
	Mar-05	40.06	12.50	27.56	NA	NA	NA	NA	NA	NA
	May-05	40.06	13.93	26.13	NA	NA	NA	NA	NA	NA
FDW	May-00	96.90	12.20	84.70	NA	NA	NA	NA	NA	NA
	Aug-00	96.90	NM	NM	NA	NA	NA	NA	NA	NA
	Nov-00	96.90	15.50	81.40	NA	NA	NA	NA	NA	NA
	Mar-01	96.90	10.12	86.78	NA	NA	NA	NA	NA	NA
	May-01	96.90	13.50	83.40	NA	NA	NA	NA	NA	NA
	Aug-01	96.90	13.08	83.82	NA	NA	NA	NA	NA	NA
	Nov-01	96.90	14.31	82.59	NA	NA	NA	NA	NA	NA
	Feb-02	96.90	12.78	84.12	NA	NA	NA	NA	NA	NA
	May-02	96.90	10.14	86.76	NA	NA	NA	NA	NA	NA
	Jul-02	39.16	11.79	27.37	NA	NA	NA	NA	NA	NA
	Oct-02	39.16	13.50	25.66	NA	NA	NA	NA	NA	NA
	Jan-03	39.16	12.13	27.03	NA	NA	NA	NA	NA	NA
	May-03	39.16	10.84	28.32	NA	NA	NA	NA	NA	NA
	Jul-03	39.16	12.12	27.04	NA	NA	NA	NA	NA	NA
	Oct-03	39.16	13.48	25.68	NA	NA	NA	NA	NA	NA
	Jan-04	39.16	13.58	25.58	NA	NA	NA	NA	NA	NA
	Apr-04	39.16	13.90	25.26	NA	NA	NA	NA	NA	NA
	Aug-04	39.16	15.69	23.47	NA	NA	NA	NA	NA	NA
	Dec-04	39.16	14.85	24.31	NA	NA	NA	NA	NA	NA
	Mar-05	39.16	13.10	26.06	NA	NA	NA	NA	NA	NA
May-05	39.16	14.60	24.56	NA	NA	NA	NA	NA	NA	

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Notes:

<sup>1</sup> Top of casing elevations were re-surveyed to comply with the EDF requirements for electronic reporting of data to the State Water Resources Control Board Database on August 9, 2002.

<sup>2</sup> MtBE was analyzed using the EPA Method 8021B and confirmed using 8260B.

C Presence confirmed, but confirmation concentration differed by more than a factor of two.

H: Heavier hydrocarbons may have contributed to the quantitation.

NA: Not Analyzed

NA: Not Applicable, Well/Drain did not exist at time of sampling

NC: Not calculated. No top of casing elevation was available for MW-11.

ND, < : Not Detected above laboratory reporting limits.

NM: Not Measured

NS: Not Surveyed.

Y: Sample exhibits fuel pattern which does not resemble standard.

FDC: French drain center riser.

FDE: French drain east riser.

FDW: French drain west riser.

Well MW-4R replaced damaged well MW-4 on April 11, 2005. The first time well MW-4R was monitored was in the Second Quarter 2005

NS: Not surveyed. Well MW-11 was not surveyed due to obstructions surrounding well.

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter Reading (gallons)	Lab Results For Effluent and GAC-1 (concentrations in ug/L)					Total Xylenes
			MtBE <sup>2</sup>	TPH-g	Benzene	Toluene	Ethylbenzene	
<b>2005</b>								
May	5/9/2005	2,971,430	<0.5 <0.5	<200 <200	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0
	5/4/2005	2,964,270	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel totalizer changed at meter reading of 2,189,270					
April	4/4/2005	2,904,500	<0.5 <0.5	<200 <200	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0
March	3/21/2005	2,874,170	<0.5 <0.5	<200 <200	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0
February	2/14/2005	2,828,000	55 Gallon Drum Changed Out					
	2/7/2005	2,819,000	<5.0 <5.0	<50 <50	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
January	1/19/2005	2,775,000	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel					
	1/3/2005	2,730,480	3.6 3.8	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
<b>2004</b>								
December	12/6/2004	2,667,620	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0
November	11/8/2004	2,631,600	<0.5 <0.5	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
October	10/13/2004	2,606,420	< 2.0 <2.0	< 50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
September	9/13/2004	2,594,390	< 2.0 < 2.0	< 50 < 50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
August	8/25/2004	2,586,010	55 Gallon Drum Changed Out					
	8/9/2004	2,581,250	< 2.0 < 2.0	< 50 < 50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
July	7/13/2004	2,568,830	< 2.0 < 2.0	< 50 < 50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5
	7/21/2004	2,564,710	55 Gallon Drum Changed Out					

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter	Lab Results For Effluent and GAC-1					Total Xylenes
		Reading (gallons)	(concentrations in ug/L)					
			MTBE <sup>2</sup>	TPH-g	Benzene	Toluene	Ethylbenzene	
June	6/14/2004	2,549,470	< 2.0	< 50	<0.5	<0.5	<0.5	<0.5
			< 2.0	< 50	<0.5	<0.5	<0.5	<0.5
May	5/26/2004	2,530,000	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel					
	5/10/2004	2,488,760	Semi Annual Treatment System Meeting With Ebrnud					
	5/17/2004	2,518,910	Replaced 55-gallon polishing vessel and restarted the system					
	5/5/2004	2,500,650	Carbon Changed Out and 55 Gallon Drum Changed Out					
	5/3/2004	2,497,350	< 2.0	< 50	<0.5	<0.5	<0.5	<0.5
			< 2.0	< 50	<0.5	<0.5	<0.5	<0.5
April	4/15/2004	2,436,190	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
<b>2003</b>								
March	3/17/2004	2,376,200	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel					
February	2/24/2004	2,276,770	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
January	1/27/2004	2,165,220	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
	1/13/2004	2,116,720	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
December	12/8/2003	2,092,330	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
November	11/17/2003	2,087,670	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
	11/3/2003	2,079,460	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
October	10/13/2003	2,073,060	5.3	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
	10/1/2003	2,072,610	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel					

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter Reading (gallons)	Lab Results For Effluent <sup>1</sup> and GAC-1 (concentrations in ug/L)					Total Xylenes
			MtBE <sup>2</sup>	TPH-g	Benzene	Toluene	Ethylbenzene	
September	9/15/2003	2,056,910	<5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			6	< 50	< 5.0	< 5.0	< 5.0	< 5.0
	9/2/2003	2,040,040	<5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			<5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
August	8/19/2003	2,021,040	<5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			<5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
July	7/21/2003	1,995,240	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			40	< 50	< 5.0	< 5.0	< 5.0	< 5.0
	7/9/2003	1,990,260	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			36	< 50	< 5.0	< 5.0	< 5.0	< 5.0
June	6/18/2003	1,978,560	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel					
	6/10/2003	1,972,780	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
May	5/21/2003	1,951,830	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
	5/1/2003	1,918,270	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
April	4/11/2003	1,882,440	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
March	3/19/2003	1,846,490	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
February	2/25/2003	1,804,960	replaced 55-gallon polishing vessel with new 55 gallon carbon drum					
	2/19/2003	1,791,720	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
January	1/27/2003	1,733,500	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
	1/2/2003	1,675,600	< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter	Lab Results For Effluent and GAC-1					Total Xylenes
		Reading (gallons)	(concentrations in ug/L)					
			MtBE <sup>2</sup>	TPH-g	Benzene	Toluene	Ethylbenzene	
<b>2002</b>								
December	12/10/2002	1,672,870	< 5.0 < 5.0	< 50 < 50	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0
November	11/22/2002	1,668,650	< 5.0 < 5.0	< 50 < 50	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0
	11/13/2002	1,664,780	replaced gasket on top of 2000 lb GAC vessel, slight leak was detected					
	11/7/2002	1,663,880	Carbon Change-out of 2000 lb vessel and 55 gallon polishing vessel					
October	10/16/02 <sup>3</sup>	1,661,590	< 310 < 0.5	2,000 Y Z < 50	< 310 < 0.5	< 310 < 0.5	< 310 < 0.5	< 310 < 0.5
September	9/19/2002	1,653,600	< 5 < 5	< 50 < 50	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5
August	8/23/2002	1,641,650	1 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
July	7/23/2002	1,632,834	< 5.0 < 5.0	< 50 < 50	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0	< 5.0 < 5.0
June	6/24/2002	1,610,050	1.7 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
May	5/30/2002	1,571,630	< 0.5 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
	5/20/2002	1,548,000	removed newly installed compressor, installed another compressor					
	5/8/2002	1,538,850	installed new compressor					
	5/1/2002	1,529,650	installed new 55 gallon GAC Vessel					
April	4/24/2002	1,528,740	< 0.5 < 0.5	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
	4/1/2002	1,478,500	repaired valve plate assembly on compressor					
March	3/25/2002	1,478,420	performed carbon change-out on treatment system					
	3/18/2002	NR	replaced piston on compressor					
	3/14/2002	1,478,330	compressor not building up pressure					
February	2/27/2002	1,449,830	< 0.5 1.1	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
January	1/22/2002	1,381,370	< 2.0 < 2.0	< 50 < 50	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5



**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter	Lab Results For Effluent and GAC-1					Total Xylenes
		Reading (gallons)	(concentrations in ug/L)		Benzene	Toluene	Ethylbenzene	
			MtBE <sup>2</sup>	TPH-g				
<b>2001</b>								
December	12/12/2001	1,311,340	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
November	11/2/2001	1,272,660	ND 0.6	ND ND	ND ND	ND ND	ND ND	ND ND
September	9/28/2001	NA	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
August	8/22/2001	1,243,100	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
July	7/26/2001	1,227,270	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	7/11/2001	1,226,730	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
June	6/29/2001	1,224,600	NA ND	NA ND	NA ND	NA ND	NA ND	NA ND
	6/26/2001	NR	installed new compressor					
	6/16/2001	1,216,580	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	6/7/2001	1,216,580	compressor not working, repaired compressor					
May	5/30/2001	1,205,198	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	5/23/2001	1,194,390	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	5/17/2001	1,182,360	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	5/10/2001	1,166,850	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	5/5/2001	1,151,600	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
April	4/28/2001	1,135,690	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	4/21/2001	1,113,570	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	4/11/2001	1,082,700	NA ND	ND ND	ND ND	ND ND	ND ND	ND ND
	4/6/2001	1,065,540	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter Reading (gallons)	Lab Results For Effluent and GAC-1 (concentrations in ug/L)					Total Xylenes
			MtBE <sup>2</sup>	TPH-g	Benzene	Toluene	Ethylbenzene	
March	3/29/2001	1,036,330	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
			system was re-started					
	3/21/2001	1,036,070	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
			belt replaced on compressor					
	3/17/2001	1,035,100	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	3/13/2001	1,032,500	ND NA	ND NA	ND NA	ND NA	ND NA	ND NA
	3/2/2001	996,520	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
	3/1/2002	NR	system re-started after carbon change-out					
February	2/28/2002	NR	Carbon Change-out was performed on GAC-1, washed algae from holding tank cleaned 2000 lb GAC, re-started system					
	2/10/2001	975,490	System shut down for maintenance and cleaning.					
January	1/29/2001	957,880	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
<b>2000</b>								
December	12/5/2000	883,000	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
November	11/24/2000	NR	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
	11/1/2000	842,000	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter	Lab Results For Effluent and GAC-1					Total Xylenes
		Reading (gallons)	(concentrations in ug/L)					
			MtBE <sup>2</sup>	TPH-g	Benzene	Toluene	Ethylbenzene	
October	10/1/2000	809,000	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
August	8/27/2000	781,000	ND	ND	ND	ND	ND	ND
	8/24/2000	778,000	totalizer changed at meter reading of 775,000					
July	7/26/2000	726,000	ND	ND	ND	ND	ND	ND
	7/19/2000	718,000	ND	ND	ND	ND	ND	ND
	7/13/2000	712,000	ND	ND	ND	ND	ND	ND
	7/7/2000	706,000	ND	ND	ND	ND	ND	ND
June	6/29/2000	700,000	ND	ND	ND	ND	ND	ND
	6/21/2000	682,220	ND	ND	ND	ND	ND	ND
	6/16/2000	669,720	ND	ND	ND	ND	ND	ND
	6/10/2000	651,200	ND	ND	ND	ND	ND	ND
May	5/31/2000	629,000	ND	ND	ND	ND	ND	ND
	5/23/2000	603,700	ND	ND	ND	ND	ND	ND
	5/18/2000	570,000	ND	ND	ND	ND	ND	ND
	5/10/2000	530,400	ND	ND	ND	ND	ND	ND
April	4/30/2000	488,300	ND	ND	ND	ND	ND	ND
	4/18/2000	485,300	ND	ND	ND	ND	ND	0.51
			compressor stopped, system shut down until April 29, 2000					
	4/10/2000	440,200	ND	ND	ND	ND	ND	ND
	4/4/2000	390,100	ND	ND	ND	ND	ND	ND
	4/2/2000	NR	performed a carbon change-out on GAC-1					
March	3/31/2000	NR	replaced GAC-2 with a special GAC designed for removal of MtBE					
	3/24/2000	388,000	ND	ND	ND	ND	ND	ND
	3/17/2000	357,100	ND	ND	ND	ND	ND	ND
	3/10/2000	329,000	ND	ND	ND	ND	ND	ND
	3/3/2000	300,000	transfer overheated, repaired pump, restarted system 3/6/00					
February	2/25/2000	274,000	ND	ND	ND	ND	ND	ND
	2/18/2000	233,000	ND	ND	ND	ND	ND	ND
	2/11/2000	190,000	ND	ND	ND	ND	ND	ND
	2/4/2000	160,800	ND	ND	ND	ND	ND	ND
January	1/28/2000	130,600	ND	ND	ND	ND	ND	ND
	1/21/2000	103,435	ND	ND	ND	ND	ND	ND
	1/17/2000	NR	GAC-1 was replaced with 2,000 lb GAC unit second polishing GAC was replaced with 55 gallon GAC unit					
	1/14/2000	83,500	185	ND	ND	ND	ND	ND

**Table 2**  
**Total Volume of Water Treated, Historical Operational Data, and Effluent and GAC-1 Analytical Results**  
**3609 International Boulevard, Oakland, California**

Month	Date	Meter	Lab Results For Effluent and GAC-1					Total Xylenes
		Reading (gallons)	(concentrations in ug/L)					
			MtBE <sup>2</sup>	TPH-g	Benzene	Toluene	Ethylbenzene	
<b>1999</b>								
December	12/23/1999	51,680	1486	NA	ND	ND	ND	ND
			ND	NA	ND	ND	ND	ND
	12/16/1999	30,450	963	NA	ND	ND	ND	ND
			ND	NA	ND	ND	ND	ND
	12/9/1999	9,000	230	ND	ND	ND	ND	ND
Pumping began on December 6, 1999								

Notes:

- 1 Effluent is equivalent to PSP#1
- 2 MTBE was analyzed using EPA Method 8260B, prior to the September 2003. After September 2003, MtBE was only analyzed by EPA Method 8021B.
- 3 Lab data as shown for Oct. 2002 is erroneous data. During lab analysis a high detection of 2-Butanone was detected in only the effluent sample. The influent sample for 2-Butanone was at only 20 ppb. This caused a high dilution factor causing a high non-detectable value. The high TPH-g value was misrepresentative due to the Y and Z flags.

ND, < : Not Detected above laboratory reporting limits

NA: Not Analyzed

NR: Not recorded. Totalizer reading not recorded.

Y: Sample exhibits fuel pattern which does not resemble standard

Z: Sample exhibits unknown single peak or peaks

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft <sup>3</sup> /min)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent				
7/24/2000	5:00 PM	394	0	85	0.0	0	0.00
7/25/2000	5:15 PM	38	2	95	24.3	3,911,768	1.35
7/26/2000	5:05 PM	207	1	80	24.0	3,260,160	6.15
7/27/2000	9:00 AM	160	5	92	16.0	2,499,456	3.64
7/28/2000	4:30 PM	141	7	87	31.5	4,653,369	5.98
7/29/2000	1:30 PM	225	8	85	21.0	3,030,930	6.21
7/30/2000	9:00 AM	226	12	85	19.5	2,814,435	5.79
7/31/2000	3:00 PM	141	5	85	30.0	4,329,900	5.56
8/1/2000	5:00 PM	135	4	80	26.0	3,531,840	4.34
8/2/2000	4:00 PM	80	4	80	23.0	3,124,320	2.28
8/3/2000	5:00 PM	60	5	85	25.0	3,608,250	1.97
8/4/2000	3:00 PM	57	4	85	22.0	3,175,260	1.65
8/5/2000	2:00 PM	97	8	87	23.0	3,397,698	3.00
8/6/2000	12:00 PM	114	8	80	22.0	2,988,480	3.10
8/7/2000	12:00 PM	93	9	85	24.0	3,463,920	2.93
8/8/2000	4:30 PM	152	10	85	16.5	2,381,445	3.30
8/10/2000	10:00 AM	173	1	85	41.5	5,989,695	9.44
8/11/2000	7:00 AM	78	4	70	21.0	2,496,060	1.77
8/12/2000	9:00 AM	100	6	70	26.0	3,090,360	2.82
8/13/2000	5:00 PM	107	9	70	34.0	4,041,240	3.94
8/14/2000	12:30 PM	122	5	70	19.5	2,317,770	2.58
8/15/2000	6:00 PM	103	12	70	17.5	2,080,050	1.95
8/16/2000	12:30 PM	112	0	70	18.5	2,198,910	2.24
8/18/2000	9:00 AM	90	0	75	44.5	5,667,075	4.65
8/21/2000	12:00 PM	74	5	80	75.0	10,188,000	6.87
8/24/2000	12:00 PM	68	13	80	72.0	9,780,480	6.06
8/27/2000	12:30 PM	68.5	2	80	72.5	9,848,400	6.15
8/31/2000	1:30 PM	52	6	80	97.0	13,176,480	6.24
9/4/2000	12:30 PM	54	5	80	95.0	12,904,800	6.35
9/7/2000	12:00 PM	55	3	80	71.5	9,712,560	4.87
9/11/2000	4:30 PM <sup>2</sup>	141	0	80	100.5	13,651,920	17.54
9/14/2000	9:30 AM	56	5	80	65.0	8,829,600	4.50
9/18/2000	2:00 PM	46	9.5	80	101.5	13,787,760	5.78
9/18/2000	4:30 PM <sup>3</sup>	34	0	80	2.5	339,600	0.11
9/21/2000	4:30 PM	43	1	80	72.0	9,780,480	3.83
9/25/2000	5:30 PM	55	6	80	97.0	13,176,480	6.60
9/28/2000	9:00 AM	47.5	7.5	80	63.5	8,625,840	3.73

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft <sup>3</sup> /min)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent				
10/1/2000	1:00 PM	38.5	6	80	76.0	10,323,840	3.62
10/5/2000	3:00 PM <sup>4</sup>	28.5	3	80	98.0	13,312,320	3.46
10/5/2000	5:00 PM	36	0	80	2.0	271,680	0.09
10/8/2000	3:00 PM	28.5	3	80	70.0	9,508,800	2.47
10/14/2000	3:00 PM	24.5	2.5	80	144.0	19,560,960	4.37
10/17/2000	2:00 PM	36.5	3.5	80	71.0	9,644,640	3.21
10/20/2000	8:30 AM	18.5	3.5	80	66.5	9,033,360	1.52
10/25/2000	2:00 PM	38	3.7	80	125.5	17,047,920	5.90
10/29/2000	10:00 AM	35	4	80	93.0	12,633,120	4.03
11/2/2000	4:00 PM	30.5	4	80	102.0	13,855,680	3.85
11/7/2000	4:00 PM	30	6	80	120.0	16,300,800	4.46
11/19/2000	12:00 PM	92.7	5.5	80	284.0	38,578,560	32.57
11/24/2000	1:30 PM	25	6.5	80	121.5	16,504,560	3.76
11/29/2000	3:00 PM	14.5	3.5	80	121.5	16,504,560	2.18
12/4/2000	4:30 PM	10.7	1	80	121.5	16,504,560	1.61
12/13/2000	3:30 PM	24	3	80	263.0	35,725,920	7.81
12/28/2000	2:30 PM	10	6	85	359.0	51,814,470	4.72
2001							
1/4/2001 <sup>5</sup>	2:00 PM	8.7	3.7	85	167.5	24,175,275	1.92
8/8/2001	3:00 PM	217	0	85	0.5	72,165	0.14
9/6/2001	12:00 PM	85	0	85	693.0	100,020,690	77.45
9/13/2001	4:00 PM	186	8	85	172.0	24,824,760	42.07
9/18/2001	3:00 PM	184	9	85	119.0	17,175,270	28.79
9/21/2001 <sup>6</sup>		--	--	--	NC	NC	NC
10/12/01 <sup>7</sup>		--	--	--	NC	NC	NC
10/23/2001	5:00 PM	114	58	87	0.5	73,863	0.08
10/25/01 <sup>4</sup>	3:00 PM	133	0	85	46.0	6,639,180	8.04
10/29/2001 <sup>8</sup>	1:20 PM	569	0	85	94.5	13,639,185	70.70
11/7/2001	3:30 PM	177	0	87	218.0	32,204,268	51.93
11/16/2001	3:00 PM	117	0	87	215.5	31,834,953	33.93
11/21/01 <sup>9</sup>	12:00 PM	85	72	87	117.0	17,283,942	13.38
2002							
2/15/02 <sup>10</sup>	4:30 PM	49	0	80	0.5	67,920	0.03
2/16/2002	3:45 PM	50	0	80	23.3	3,158,280	1.44
2/21/2002	4:00 PM	37	4	80	120.3	16,334,760	5.51
2/27/2002	10:30 AM	11	0	83	138.5	19,519,359	1.96
3/7/02 <sup>11</sup>	12:20 PM	10		80	194.0	26,352,960	2.40
2003							
6/12/2002 <sup>12</sup>	4:15 PM	53	2	75	NA	NA	NA
6/17/2002	11:00 AM	28	2	80	120.0	16,306,560	4.16
6/24/2002	11:20 AM	24	3.1	80	168.3	22,866,400	5.00

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft <sup>3</sup> /min)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent				
7/5/2002	1:25 PM	20	5	80	266.0	36,133,440	6.58
7/11/2002	3:30 PM	26	8.0	80	146.0	19,832,640	4.70
7/23/2002	10:10 AM	28	7.5	83	282.8	39,849,089	10.16
8/9/2002	12:20 PM	7.5	0	80	410.3	55,728,360	3.81
8/15/2002 <sup>11</sup>	3:00 PM	7.0	1	80	146.5	19,900,560	1.27
8/23/2002 <sup>13</sup>	3:20 PM	NC	NC	NC	NC	NC	NC
8/26/2002	11:15 AM	14.0	2.0	80	71.8	9,757,387	1.24
9/11/2002	10:10 AM	34.4	0	80	383.0	52,020,588	16.30
9/19/2002	10:55 AM	8.8	1.1	80	192.8	26,183,160	2.10
9/25/2002	10:30 AM	18.8	1.8	80	143.5	19,493,040	3.34
10/2/2002	8:10 AM	17.1	2.5	80	165.70	22,508,688	3.51
10/9/2002		PID malfunction		80	NC	NC	NC
10/16/2002	1:45 PM	17.0	4.0	80	341.50	46,389,360	7.18
10/24/2002	10:00 AM	16.5	6.4	80	188.25	25,571,880	3.84
11/1/2002	10:00 AM	21.1	0.0	85	192.00	27,711,360	5.33
11/6/2002	10:12 AM	PID malfunction		87	NC	NC	NC
11/7/2002	11:00 AM	17.5	0.0	85	24.75	3,572,168	0.57
11/13/2002	11:30 AM	15.0	0.0	85	144.50	20,855,685	2.85
11/22/2002	2:30 PM	6.6	0.0	80	219.00	29,748,960	1.79
11/22/2002		system shut-down due to rainy season and low influent readings					
<b>2003</b>							
5/9/2003	10:30 AM	0.1	0.0	82	0.5	69,618	0.00
5/12/2003	10:30 AM	0.4	0.3	85	72.00	10,391,760	0.04
5/21/2003	11:00 AM	2.2	2.2	83	216.50	30,512,211	0.61
6/4/2003	10:30 AM	2.5	0.1	82	335.50	46,713,678	1.06
6/10/2003	10:30 AM	2.2	0.08	82	144.00	20,049,984	0.40
6/16/2003	12:15 PM	2.1	0.07	82	146.25	20,363,265	0.39
6/24/2003	4:55 PM	2.6	0.08	82	196.75	27,394,683	0.65
6/30/2003	11:30 AM	2.2	0.1	82	138.50	19,284,186	0.39
7/16/2003	12:00 PM	2.2	0.22	82	384.50	53,536,242	1.07
7/21/2003	10:50 AM	2.1	0.21	82	119.00	16,569,084	0.32
7/28/2003	11:15 AM	2.2	0.22	82	168.25	23,426,457	0.47
8/11/2003	12:15 PM	2.1	0.21	82	337.00	46,922,532	0.90
8/19/2003	10:05 AM	2.1	0.22	82	190.00	26,454,840	0.51
8/25/2003	11:30 AM	2.2	0.23	81	169.50	23,312,691	0.47
9/2/2003	10:50 AM	2.1	0.21	80	192.00	26,081,280	0.50
9/8/2003	2:10 PM	9.1	3.19	83	147.30	20,759,578	1.72
9/11/2003	10:00 AM	All 4 SVE carbon drums changed-out					
9/22/2003	1:30 PM	7	0.2	88	334.25	49,944,972	3.19

**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft <sup>3</sup> /min)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent				
10/1/2003	10:30 AM	6.5	0.2	85	213.00	30,742,290	1.82
10/6/2003	11:00 AM	7	0.3	85	120.50	17,391,765	1.11
10/13/2003	11:15 AM	5	0.2	85	168.25	24,283,523	1.11
10/29/2003	10:00 AM	2.4	0	85	382.75	55,242,308	1.21
11/3/2003	11:30 AM	3	0	85	121.50	17,536,095	0.48
11/10/2003	11:10 AM	3.5	0	85	167.67	24,199,330	0.77
11/17/2003	1:50 PM	4.1	0	85	170.70	24,637,131	0.92
11/24/2003	11:00 AM	3.8	0	85	165.20	23,843,316	0.83
11/24/2003	system shut-down due to rainy season and low influent readings						
<b>2004</b>							
4/5/2004	1:00 PM	5.6	0.11	85	0.5	72165	0.004
4/12/2004	10:30 AM	6.5	0.2	83	165.5	23,324,577	1.38
4/20/2004	12:00 PM	7.1	0.9	84	193.5	27,599,292	1.79
4/23/2004	11:00 AM	7.2	2.3	80	71	9,644,640	0.63
5/3/2004	12:00 PM	7.1	3.4	80	241	32,737,440	2.12
5/5/2004	11:00 PM	All 4 SVE carbon drums changed-out					
5/17/2004	12:00 PM	2.7	0.8	82	336	46,783,296	1.15
5/26/2004	11:00 AM	3.8	0.5	82	215	29,935,740	1.04
6/1/2004	1:00 PM	3.6	0.9	82	122	16,986,792	0.56
6/7/2004	11:50 AM	3.2	0	82	142.9	19,896,824	0.58
6/14/2004	11:50 AM	10.9	0	86	168	24,532,704	2.44
6/21/2004	10:50: AM	13.5	0	83	167	23,535,978	2.89
6/28/2004	11:50 AM	10.9	0.5	85	169	24,391,770	2.42
7/2/2004	11:30 AM	8.7	0	85	95.8	13,826,814	1.10
7/13/2004	2:00 PM	9.1	0.22	85	266.5	38,463,945	3.19
7/21/2004	12:00 PM	8.9	0.5	85	190	27,422,700	2.22
7/26/2004	11:50 AM	8.5	0.4	85	119.5	17,247,435	1.34
8/2/2004	11:30 AM	4.9	0.1	85	167.8	24,218,574	1.08
8/9/2004	11:50 AM	5.6	0.2	85	168.3	24,290,739	1.24
8/16/2004	12:00 PM	6	0.4	85	168.1	24,261,873	1.33
8/24/2004	11:50 AM	6.2	1.2	85	191.9	27,696,927	1.56
8/30/2004	11:30 AM	6	0.4	85	143.66	20,734,448	1.13
9/7/2004	1:05 PM	5.5	0.8	85	193.5	27,927,855	1.40
9/13/2004	12:05 PM	5.3	0.9	85	143	20,639,190	1.00
9/20/2004	11:08 AM	7	2.9	85	167	24,103,110	1.54
9/27/2004	2:50 PM	6.5	2.1	85	171.75	24,788,678	1.47



**Table 3**  
**Total Mass of Petroleum Hydrocarbons Removed**  
**by the Vapor Extraction System & Historical Operational Data**  
**3609 International Boulevard, Oakland, California**

Date	Time	PID (ppmv)		Flow Rate (ft <sup>3</sup> /min)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed <sup>1</sup> (Pounds)
		Influent	Effluent				
10/4/2004	11:30 AM	6.9	3	85	164.55	23,749,502	1.49
10/13/2004	10:30 AM	6.5	2.9	85	215	31,030,950	1.84
10/18/2004	2:30 PM	6	1.5	85	124	17,896,920	0.98
10/28/2004	2:00 PM	3.1	0.9	85	239.5	34,567,035	0.98
10/28/2004	system shut-down due to rainy season and low influent readings						
<b>2005</b>							
4/11/2005	system re-started, all four vapor phase carbon drums replaced with new carbon						
4/18/2005	10:50 AM	6.5	0.8	85	167.83	24,223,481	1.43
4/25/2005	5:30 PM	6	0.7	85	174.33	25,161,626	1.38
5/4/2005	11:20 AM	0.4	0	85	209.83	30,285,341	0.11
5/9/2005	11:00 AM	1	0.4	85	119.67	17,271,538	0.16
5/16/2005	10:15 AM	3	0	85	167.25	24,139,193	0.66
5/23/2005	11:05 AM	0.4	0	90	168.83	25,801,110	0.09
6/3/2005	3:30 PM	0.2	0	90	268.48	41,029,114	0.07
<b>Total Mass of Petroleum Hydrocarbons Removed =</b>							<b>745.09</b>
<b>Average Daily Removal Rate (pounds / day)=</b>							<b>0.42</b>

Notes:

- <sup>1</sup> The representative molecular weight of hydrocarbons was assumed to be 150 gram/mole and used the measured temperature of Vapor (25 °C) in converting ppm-v to ppm on mass basis.
- <sup>2</sup> System accidentally shut down from main box, readings taken 30 minutes after startup.
- <sup>3</sup> GAC Replaced
- <sup>4</sup> GAC-1 removed, new GAC installed at effluent end
- <sup>5</sup> SVE System turned off for rainy season due to low influent concentrations
- <sup>6</sup> system down, hoses disconnected and GAC moved for replacement
- <sup>7</sup> system down for electrical repair
- <sup>8</sup> Carbon change-out of three drums, moved new effluent drum on 10/25/01 to GAC-1
- <sup>9</sup> system shut-down due to high effluent value
- <sup>10</sup> System re-started (since November 21, 2001), installed new 4-55 gallon vapor phase carbon vessels, repaired blower
- <sup>11</sup> System was shut-down due to low influent reading
- <sup>12</sup> System was restarted on 6/12/02
- <sup>13</sup> System was re-started but no readings were taken

NC: Not Calculated

Calculations

Airflow: Flowrate (ft<sup>3</sup>/min) \* 60 min \* Time Elapsed (hrs) \* 28.3 liters/ft<sup>3</sup>

Mass Removed: Time Elapsed (hrs) \* 60 min \* Flowrate (ft<sup>3</sup>/min) \* (28.3 m<sup>3</sup>/ft<sup>3</sup>) \*

((PID reading \* (102 grams TPH-g /mole) \* (1 mole / 24.4 L)) \* (1/1000 m<sup>3</sup>)) \* (1 lb/454 grams)

# FIGURES



approximate scale in feet

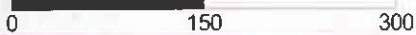
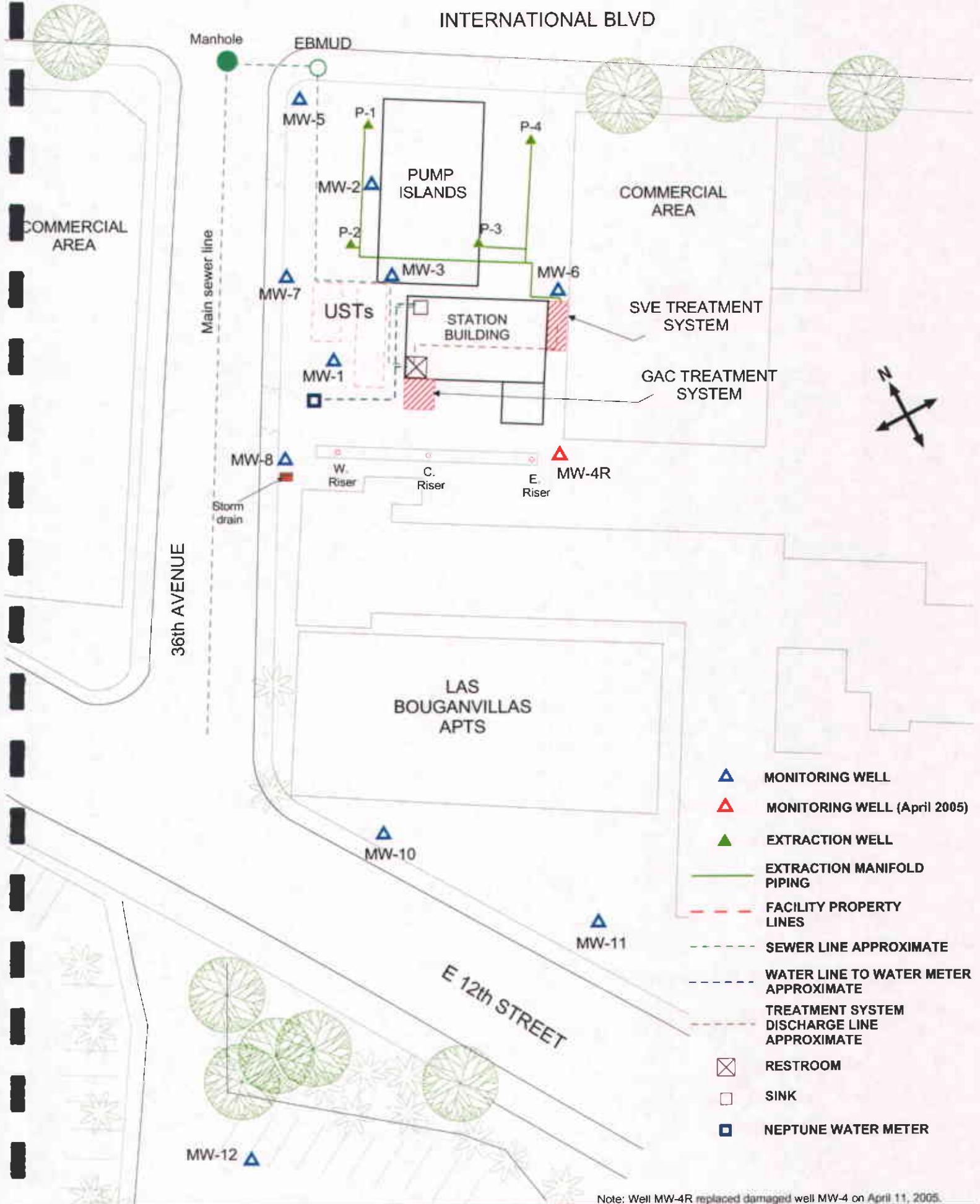


Figure 1: Site vicinity map.

INTERNATIONAL BLVD



- ▲ MONITORING WELL
- ▲ MONITORING WELL (April 2005)
- ▲ EXTRACTION WELL
- EXTRACTION MANIFOLD PIPING
- FACILITY PROPERTY LINES
- SEWER LINE APPROXIMATE
- WATER LINE TO WATER METER APPROXIMATE
- TREATMENT SYSTEM DISCHARGE LINE APPROXIMATE
- ⊗ RESTROOM
- SINK
- NEPTUNE WATER METER

Note: Well MW-4R replaced damaged well MW-4 on April 11, 2005.

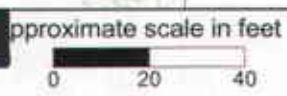


Figure 2: Site map showing location of groundwater monitoring wells, French drain, SVE system, and GAC system.

INTERNATIONAL BLVD

COMMERCIAL AREA

MW-5  
31.94

MW-2  
31.61

PUMP ISLANDS

COMMERCIAL AREA

MW-3  
30.95

30.90  
MW-6

MW-7  
31.41

USTs

STATION BUILDING

SVE TREATMENT SYSTEM

MW-1  
30.39

GAC TREATMENT SYSTEM

MW-8  
30.23

W. Riser  
24.56

C. Riser  
24.47

E. Riser  
26.13

MW-4R  
30.46

36th AVENUE

LAS BOUGANVILLAS APTS

approximate groundwater flow towards French Drain Risers

MW-10  
28.47

NS  
MW-11

E 12th STREET

MW-12  
27.77

- ▲ MONITORING WELL
- ▲ MONITORING WELL (April 2005)
- NS NOT SURVEYED DUE TO OBSTRUCTIONS

Note: Well MW-4R replaced damaged well MW-4 on April 11, 2005.

approximate scale in feet



Figure 3: Groundwater elevation contour map in feet. May 2005.



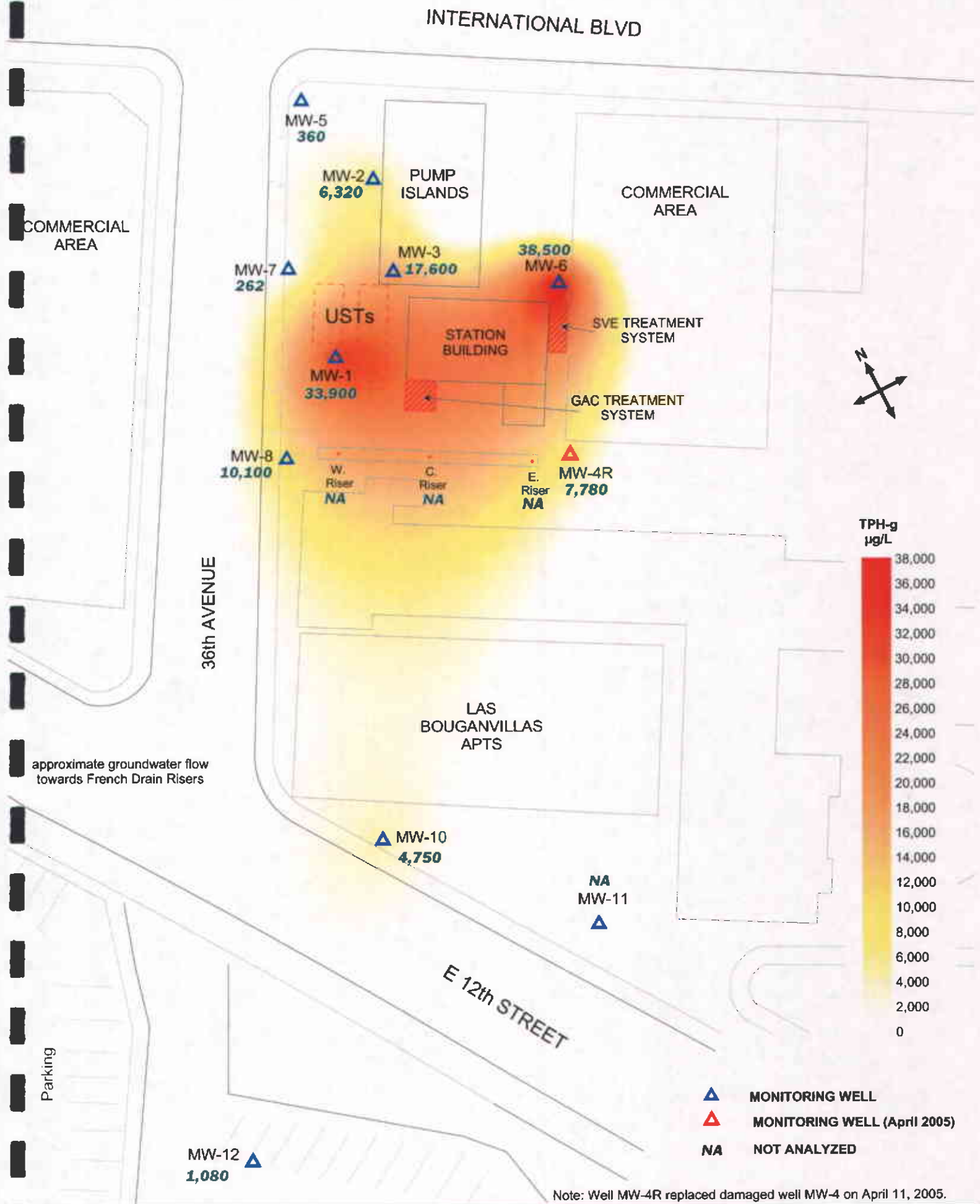


Figure 4: Contour map of TPH-g concentrations in the groundwater. May 2005.

INTERNATIONAL BLVD

COMMERCIAL AREA

MW-5  
<0.5

MW-2  
12.5

PUMP ISLANDS

COMMERCIAL AREA

MW-3  
764

1,290  
MW-6

MW-7  
4.85

USTs

STATION BUILDING

SVE TREATMENT SYSTEM

GAC TREATMENT SYSTEM

MW-1  
3,440

MW-8  
122

W. Riser  
NA

C. Riser  
NA

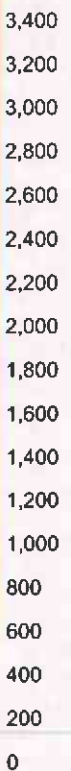
E. Riser  
NA

MW-4R  
170



36th AVENUE

Benzene  
µg/L



approximate groundwater flow towards French Drain Risers

LAS BOUGANVILLAS APTS

MW-10  
415

NA  
MW-11

E 12th STREET

Parking

MW-12  
<0.5

- ▲ MONITORING WELL
- ▲ MONITORING WELL (April 2005)
- NA NOT ANALYZED
- < LESS THAN LABORATORY REPORTING LIMIT

Note: Well MW-4R replaced damaged well MW-4 on April 11, 2005.

approximate scale in feet

Figure 5: Contour map of Benzene concentrations in the groundwater. May 2005.



INTERNATIONAL BLVD

COMMERCIAL AREA

MW-5  
1.72

MW-2  
<2.15

PUMP ISLANDS

COMMERCIAL AREA



MW-3  
1,800

<5.50  
MW-6

MW-7  
0.73

USTs

STATION BUILDING

SVE TREATMENT SYSTEM

MW-1  
3,210

GAC TREATMENT SYSTEM

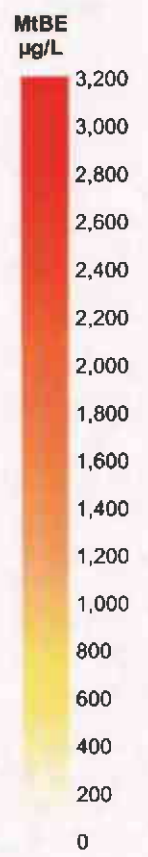
MW-8  
406

W. Riser  
NA

C. Riser  
NA

E. Riser  
NA

MW-4R  
<0.5



36th AVENUE

LAS BOUGANVILLAS APTS

approximate groundwater flow towards French Drain Risers

MW-10  
126

NA  
MW-11

E 12th STREET

Parking

MW-12  
20.6

- ▲ MONITORING WELL
- ▲ MONITORING WELL (April 2005)
- NA NOT ANALYZED
- < LESS THAN LABORATORY REPORTING LIMIT

Note: Well MW-4R replaced damaged well MW-4 on April 11, 2005.

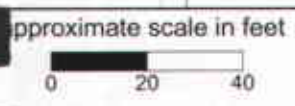
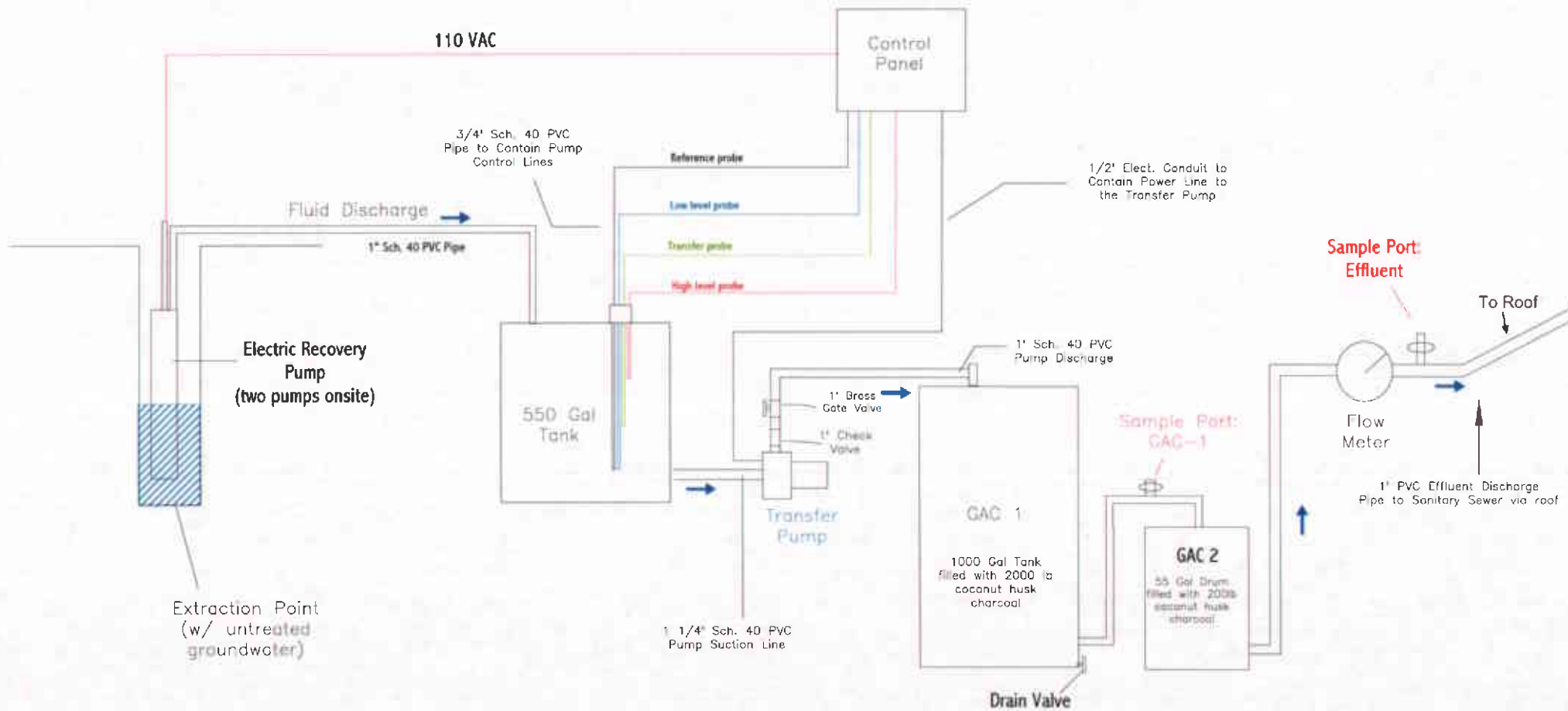


Figure 6: Contour map of MtBE concentrations in the groundwater (EPA Method 8260 B). May 2005.







(Discharge permit No: 504-27421)  
 Tony's Express Auto Service. November 14, 2006 permit expires

Figure 7: Schematic of the Groundwater Remediation System.  
 3609 International Blvd., Oakland, CA

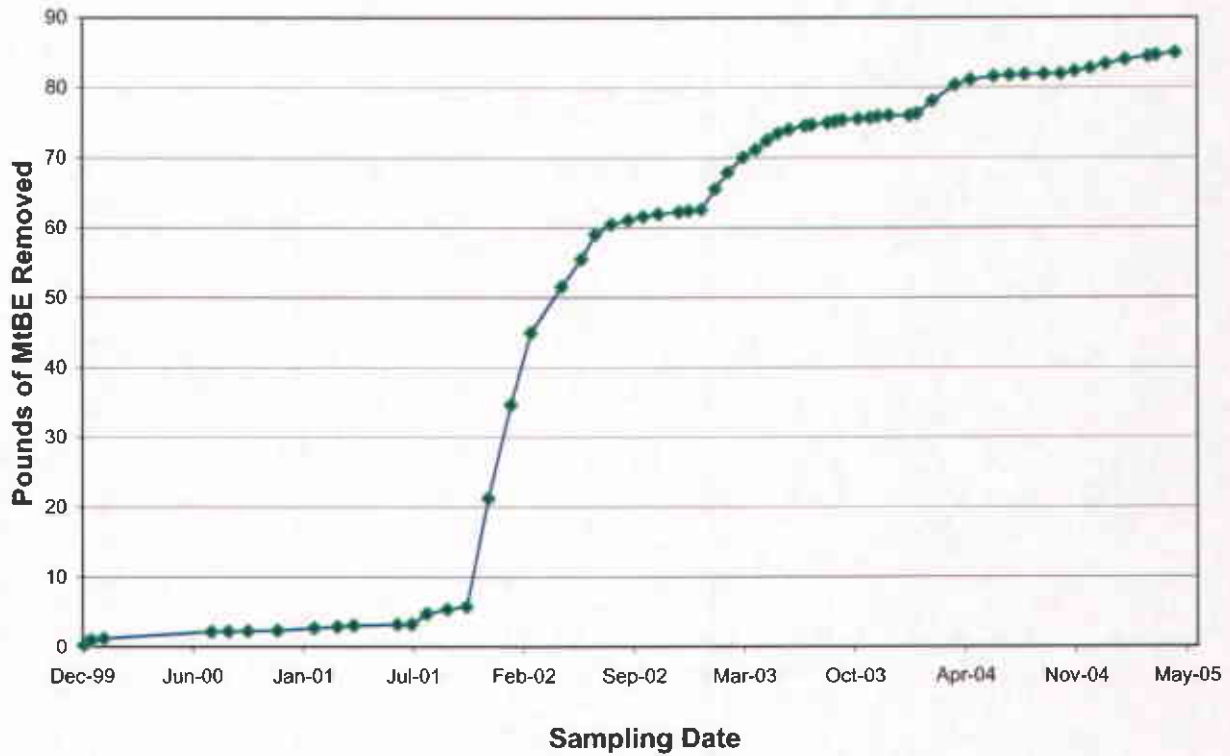
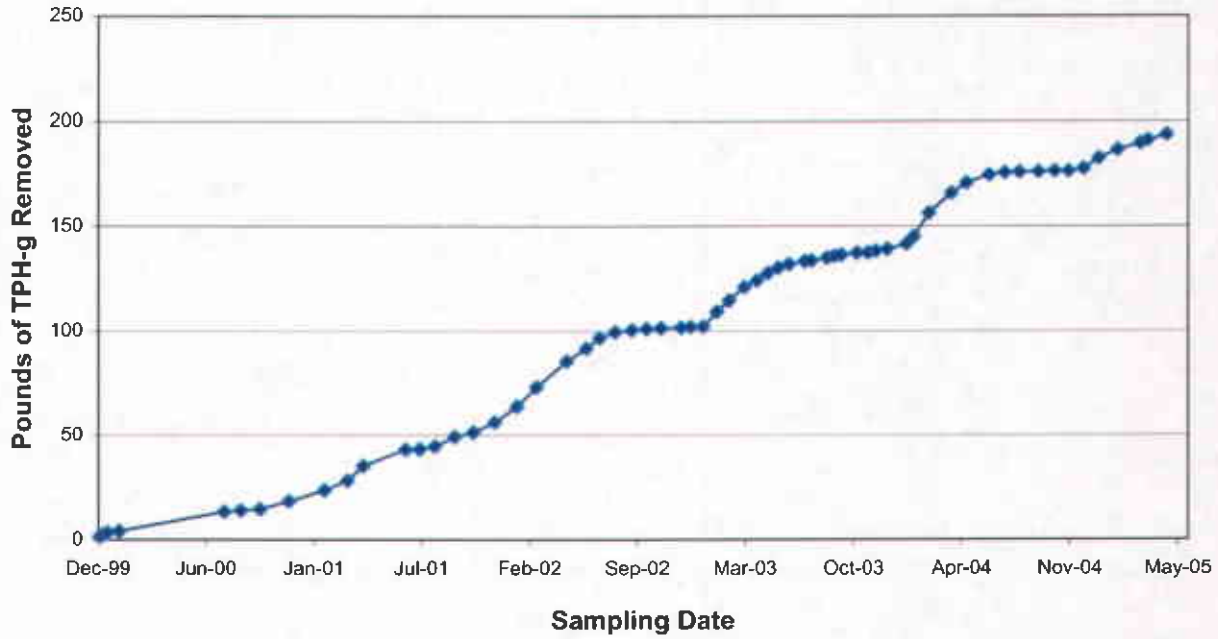


Figure 8. Cumulative mass of TPH-g and MtBE removed from groundwater since the installation of the treatment system.

# APPENDIX A

## SOMA's Groundwater Monitoring Procedures

## **Field Activities**

On May 16 and 17, 2005, SOMA's field crew conducted a groundwater monitoring event in accordance with the procedures and guidelines of the RWQCB, San Francisco Bay Region. During this groundwater monitoring event a total of eight on-site monitoring wells (MW-1 to MW-8), two off-site monitoring wells (MW-10 and MW-12), and three on-site French drain risers were measured for depth to groundwater. Field measurements and grab groundwater samples were collected from all on and off-site monitoring wells.

The depth to groundwater in each monitoring well and riser was measured from the top of the casing to the nearest 0.01 foot using an electric sounder. The top of the casing elevation data and the depth to groundwater in each monitoring well and riser were used to calculate the groundwater elevation.

Kier and Wright Civil Engineers Surveyors, Inc. surveyed the wells and risers on August 9, 2002. At the time of the survey, monitoring well MW-11 could not be accessed due to obstacles preventing the proper use of surveying equipment; therefore, this well was not surveyed. The top of casing elevations were based on the survey data measured at this time. The elevation data was based on a datum of 14.20 NAVD88. The new survey was conducted to comply with an Electronically Deliverable Format (EDF) request made by the State Water Resources Control Board (SWRCB) Database.

Harrington Surveys, Inc. surveyed the newly installed well MW-4R on April 20, 2005. The elevation data for well MW-4R was referenced from wells MW-5 and MW-7. The survey data measured by Kier and Wright and Harrington Surveys are both presented in Appendix B.

Prior to collecting samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC). During the purging activities, in order to obtain accurate measurements of groundwater parameters and especially to avoid the intrusion of oxygen from ambient air into the groundwater samples, field measurements were conducted in-situ (i.e., down-hole inside each monitoring well). The groundwater parameters such as DO, pH, temperature, EC, turbidity, and the ORP were measured in-situ using a Horiba, Model U-22 multi-parameter instrument. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

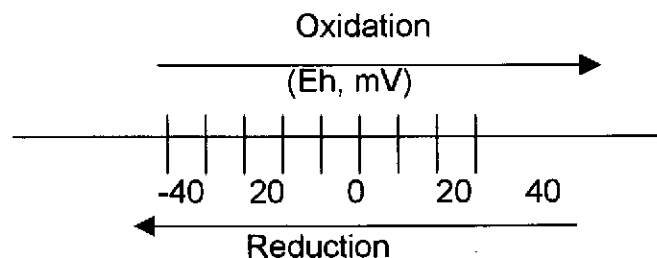
The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater conductivity (EC) is directly related to the concentration of ions in solution.

There is a strong correlation between the turbidity level and the biological oxygen demand of natural water bodies. The main purpose for checking the turbidity

level is to provide a general overview of the extent of the suspended solids in the groundwater.

ORP (oxidation reduction potential) is the measure of the potential for an oxidation or reduction process to occur. In the oxidation process a molecule or ion loses one or several electrons. In the reduction process a molecule or ion gains one or several electrons. The unit of the redox potential is the Volt or m-Volt. The most important redox reaction in petroleum-contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of  $O_2$  in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and because the rate of  $O_2$  replenishment in subsurface environments is limited, DO can be entirely consumed, when the oxidation of only a small amount of petroleum hydrocarbons occurs.

Oxidation of petroleum hydrocarbons can still occur, when all the dissolved  $O_2$  in the groundwater is consumed, however, the oxidizing agents (i.e., the constituents that undergo reduction) now become  $NO_3^-$ ,  $MnO_2$ ,  $Fe(OH)_3$ ,  $SO_4^{2-}$  and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process proceeds far enough, the environment may become so strongly reduced that the petroleum hydrocarbons may undergo anaerobic degradation, resulting in the production of methane and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below.



The purging of the wells continued until the parameters for DO, pH, temperature, EC, turbidity, and redox stabilized or three casing volumes were purged.

Once stabilization occurred, the groundwater samples were also tested on-site for ferrous iron ( $Fe^{+2}$ ), nitrate ( $NO_3^-$ ), and sulfate ( $SO_4^{-2}$ ) concentrations.

$Fe^{+2}$ ,  $NO_3^-$ , and  $SO_4^{-2}$  were measured colorimetrically using the Hach Colorimeter Model 890. The Hach Model 890 Colorimeter is a microprocessor-controlled photometer suitable for colorimetric testing in the laboratory or the field. The required reagents for each specific test are provided in AccuVac ampuls.

Detailed field measurements are shown in Appendix B.

For sampling purposes, after purging, a disposable polyethylene bailer was used to collect sufficient samples from each monitoring well for laboratory analyses. The groundwater sample was transferred into four 40-mL VOA vials and preserved with hydrochloric acid. The vials were then sealed to prevent development of air bubbles within the headspace. After the groundwater samples were collected, they were placed on ice and maintained at 4°C in a cooler. A chain of custody (COC) form was written and placed along with the samples in the cooler. On May 17, 2005, SOMA's field crew delivered the groundwater samples to Pacific Analytical Laboratory in Alameda, California.

### **Laboratory Analysis**

Pacific Analytical Laboratory, a state certified laboratory, analyzed the groundwater samples for TPH-g, BTEX and MtBE. TPH-g, BTEX, and MtBE was prepared using EPA Method 5030B and measured using EPA Method 8260B.

# Appendix B

Table of Elevations & Coordinates on Monitoring Wells  
Surveyed by Kier Wright Civil Engineers Surveyors, Inc.  
& Harrington Surveys, Inc.,

and

Field Measurements of Physical, Chemical, and  
Biodegradation Parameters of Groundwater

**Harrington Surveys Inc.**  
**Land Surveying & Mapping**

2278 Larkey Lane, Walnut Creek, Ca. 94597 Phone (925)935-7228 Fax (925)935-5118  
Cell (925)788-7359 E-Mail (ben5132@pacbell.net)

SOMA ENVIRONMENTAL ENGINEERING  
2680 BISHOP DR. # 203  
SAN RAMON, CA. 94583

MAY 20, 2005

ATTN: ELENA

3609 INTERNATIONAL BLVD.  
OAKLAND CA.

**SURVEY REPORT**

CONTROLLING POINTS FROM SURVEY BY KIER & WRIGHT, DATED 08-27-02:

MW-5 NOTCH, CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD 83.  
NORTH 2,109,410.84 - EAST 6,064,058.45, LAT. N37°46'17.42024"  
W122°13'18.51054".  
ELEVATION 41.06, NAVD 88,

MW-7 NOTCH, CALIFORNIA COORDINATE SYSTEM, ZONE 3,  
NORTH 2,109,368.19 - EAST 6,064,025.54. LAT N37°46'30.32592",  
W122°13'18.88771"  
ELEVATION 39.94 NAVD 88,

INSTRUMENTATION:  
TRIMBLE GPS, MODEL 5800 AND LEICA TCA 1800, 1" HORZ. & VERT.  
OBSERVATION: EPOCH = 180.

FIELD SURVEY: APRIL 20, 2005.

  
BEN HARRINGTON  
PLS 5132







**TABLE OF ELEVATIONS & COORDINATES  
ON MONITORING WELLS  
SOMA ENVIRONMENTAL  
Oakland-E. 14 the St. "International Blvd"**

WELL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
FD-C	2109299.85	6064039.85	39.35 40.25	Notch on north side of PVC Punch north rim of box
FD-E	2109281.13	6064067.87	40.06 40.55	Notch on north side of PVC Punch north rim of box
FD-W	2109314.99	6064017.59	39.16 39.95	Notch on north side of PVC Punch north rim of box
MW-1	2109338.74	6064025.97	40.11 40.76	Notch on north side of PVC Punch north rim of box
MW-2	2109383.20	6064073.06	40.71 41.61	Notch on north side of PVC Punch north rim of box
MW-3	2109351.11	6064064.63	40.91 41.68	Notch on north side of PVC Punch north rim of box
MW-4	2109278.18	6064076.40	40.01 40.67	Notch on north side of PVC Punch north rim of box
MW-5	2109410.84	6064058.46	41.16 41.60	Notch on south side of PVC Punch south rim of box
MW-6	2109320.46	6064105.06	40.92 41.52	Notch on north side of PVC Punch north rim of box
MW-7	2109368.19	6064025.54	39.94 40.54	Notch on north side of PVC Punch north rim of box
MW-8	2109321.68	6064000.46	39.38 39.72	Notch on north side of PVC Punch north rim of box

**Kier Wright Civil Engineers Surveyors, Inc.**  
1233 Quarry Lane, Suite 145, Pleasanton, CA 94566  
(925) 249-6555 (925) 249-6563

**TABLE OF ELEVATIONS & COORDINATES  
ON MONITORING WELLS**  
SOMA ENVIRONMENTAL  
Oakland-E. 14 the St. "International Blvd"

WELL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
MW-10	2109193.97	6063957.39	36.71 37.70	Notch on north side of PVC Punch north rim of box
MW-11	2109125.26	6064007.52	XXXX	NO ELEVATION , BOAT ON TOP
MW-12	2109121.85	6063865.00	36.84 36.87	Notch on north side of PVC

Bench mark: NGS Bench mark No.M-554. To reach the station from the intersection of Interstate Highway 880 and Hegenberger Rd in South Oakland go northeast on Hegenberger Rd for 0.5 MI to a side road right Baldwin St. Turn right and go south on Baldwin St for 0.35 MI to a T-intersection, 85th Ave. for 0.1 MI to a side road right, Railroad Ave. Turn right and go south on Railroad Ave. for 0.1 MI to the station on the left, east, side of the road in a large concrete headwall for a culvert.

Elevation = 14.20 NAVD88 Datum.

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.























# Appendix C

Chain of Custody Form and Laboratory Report  
for the  
Second Quarter 2005 Monitoring Event

**PAL**

**Pacific Analytical Laboratory**

251 West Midway Ave. Suite 201  
Alameda, CA 94501

Phone (510) 864-0364

20 May 2005

Joyce Bobek  
SOMA Environmental Engineering Inc.  
2680 Bishop Dr., Suite 203  
San Ramon, CA 94583

RE: 3609 International Blvd, Oakland

Work Order Number: 5050015

This Laboratory report has been reviewed for technical correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Sincerely,



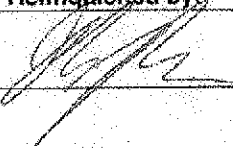
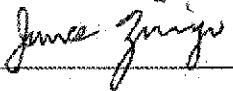
---

Maiid Akhavan  
Laboratory Director

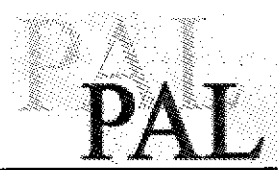
# CHAIN OF CUSTODY FORM

**PAL** Pacific Analytical Laboratory  
 851 West Midway Ave., Suite 201B  
 Alameda, CA 94501  
 510-864-0364 Telephone  
 510-864-0365 Fax

PAL  
 Login# 5050015

Project No: 2331				Sampler: Eric Jennings / John Lohman						Analyses/Method  TPHG, BTEX, MTBE 8260B				
Project Name: 3609 International Blvd Oakland				Report To: Joyce Bobek										
Project P.O.: ---				Company: SOMA Environmental Engineering, Inc.										
Turnaround Time: Standard				Tel: 925-244-6600 Fax: 925-244-6601										
Lab No.	Sample ID	Sampling Date/Time		Matrix			# of Containers	Preservatives				Field Notes		
		Date	Time	Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE			
	MW-1	5/16/05	1:30		X		4 VOAS	X			X	Grab Sample	X	
	MW-2	5/17/05	10:40		X		4 VOAS	X			X		X	
	MW-3	5/17/05	11:10		X		4 VOAS	X			X		X	
	<del>MW-4</del> MW-4R	5/17/05	12:12		X		4 VOAS	X			X		X	
	MW-5	5/17/05	10:12		X		4 VOAS	X			X		X	
	MW-6	5/17/05	11:38		X		4 VOAS	X			X		X	
	MW-7	5/16/05	1:54		X		4 VOAS	X			X		X	
	MW-8		1:02		X		4 VOAS	X			X		X	
	MW-10		11:47		X		4 VOAS	X			X		X	
	<del>MW-11</del>						4 VOAS	X			X		X	
	MW-12	5/16/05	11:18		X		4 VOAS	X			X		X	
Sampler Remarks:  EDF Output Required				Relinquished by: 				Date/Time: 5/17/05 2:00 PM		Received by: 		Date/Time: 5/17/05 2:00 PM		





SOMA Environmental Engineering Inc.  
2680 Bishop Dr., Suite 203  
San Ramon CA, 94583

Project: 3609 International Blvd, Oakland  
Project Number: 2331  
Project Manager: Joyce Bobek

Reported:  
20-May-05 14:47

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	5050015-01	Water	16-May-05 13:30	17-May-05 14:01
MW-2	5050015-02	Water	17-May-05 10:46	17-May-05 14:01
MW-3	5050015-03	Water	17-May-05 11:10	17-May-05 14:01
MW-4R	5050015-04	Water	17-May-05 12:12	17-May-05 14:01
MW-5	5050015-05	Water	17-May-05 10:12	17-May-05 14:01
MW-6	5050015-06	Water	17-May-05 11:38	17-May-05 14:01
MW-7	5050015-07	Water	16-May-05 13:54	17-May-05 14:01
MW-8	5050015-08	Water	16-May-05 13:02	17-May-05 14:01
MW-10	5050015-09	Water	16-May-05 11:47	17-May-05 14:01
MW-12	5050015-10	Water	16-May-05 11:18	17-May-05 14:01



SOMA Environmental Engineering Inc.  
 2680 Bishop Dr., Suite 203  
 San Ramon CA, 94583

Project: 3609 International Blvd, Oakland  
 Project Number: 2331  
 Project Manager: Joyce Bobek

Reported:  
 20-May-05 14:47

**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (5050015-01) Water</b> Sampled: 16-May-05 13:30    Received: 17-May-05 14:01									
Gasoline (C6-C12)	33900	8600	ug/l	43	BE51901	17-May-05	19-May-05	EPA 8260B	
Benzene	3440	21.5	"	"	"	"	"	"	
Ethylbenzene	1090	21.5	"	"	"	"	"	"	
m&p-Xylene	1450	43.0	"	"	"	"	"	"	
o-xylene	826	21.5	"	"	"	"	"	"	
Toluene	1700	21.5	"	"	"	"	"	"	
MTBE	3210	21.5	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		103 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		96.8 %		70-130	"	"	"	"	
<b>MW-2 (5050015-02) Water</b> Sampled: 17-May-05 10:46    Received: 17-May-05 14:01									
Gasoline (C6-C12)	6320	860	ug/l	4.3	BE51901	17-May-05	19-May-05	EPA 8260B	
Benzene	12.5	2.15	"	"	"	"	"	"	
Ethylbenzene	429	2.15	"	"	"	"	"	"	
m&p-Xylene	391	4.30	"	"	"	"	"	"	
o-xylene	166	2.15	"	"	"	"	"	"	
Toluene	75.0	2.15	"	"	"	"	"	"	
MTBE	ND	2.15	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		107 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		98.4 %		70-130	"	"	"	"	
<b>MW-3 (5050015-03) Water</b> Sampled: 17-May-05 11:10    Received: 17-May-05 14:01									
Gasoline (C6-C12)	17600	4300	ug/l	21.5	BE51901	17-May-05	19-May-05	EPA 8260B	
Benzene	764	10.8	"	"	"	"	"	"	
Ethylbenzene	735	10.8	"	"	"	"	"	"	
m&p-Xylene	888	21.5	"	"	"	"	"	"	
o-xylene	339	10.8	"	"	"	"	"	"	
Toluene	302	10.8	"	"	"	"	"	"	
MTBE	1800	10.8	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		108 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		96.6 %		70-130	"	"	"	"	

Pacific Analytical Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



SOMA Environmental Engineering Inc.  
 2680 Bishop Dr., Suite 203  
 San Ramon CA, 94583

Project: 3609 International Blvd, Oakland  
 Project Number: 2331  
 Project Manager: Joyce Bobek

Reported:  
 20-May-05 14:47

**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-4R (5050015-04RE1) Water</b> Sampled: 17-May-05 12:12 Received: 17-May-05 14:01									
Gasoline (C6-C12)	7780	200	ug/l	1	BE51901	17-May-05	20-May-05	EPA 8260B	
Benzene	170	0.500	"	"	"	"	"	"	
Ethylbenzene	192	0.500	"	"	"	"	"	"	
m&p-Xylene	98.5	1.00	"	"	"	"	"	"	
o-xylene	22.7	0.500	"	"	"	"	"	"	
Toluene	11.1	0.500	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		100 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		104 %		70-130	"	"	"	"	
<b>MW-5 (5050015-05) Water</b> Sampled: 17-May-05 10:12 Received: 17-May-05 14:01									
Gasoline (C6-C12)	360	200	ug/l	1	BE51901	17-May-05	19-May-05	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
MTBE	1.72	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.0 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		107 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		97.8 %		70-130	"	"	"	"	
<b>MW-6 (5050015-06RE1) Water</b> Sampled: 17-May-05 11:38 Received: 17-May-05 14:01									
Gasoline (C6-C12)	38500	2200	ug/l	11	BE51901	17-May-05	20-May-05	EPA 8260B	
Benzene	1290	5.50	"	"	"	"	"	"	
Ethylbenzene	1550	5.50	"	"	"	"	"	"	
m&p-Xylene	1220	11.0	"	"	"	"	"	"	
o-xylene	432	5.50	"	"	"	"	"	"	
Toluene	395	5.50	"	"	"	"	"	"	
MTBE	ND	5.50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		101 %		70-130	"	"	"	"	

Pacific Analytical Laboratory

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SOMA Environmental Engineering Inc.  
 2680 Bishop Dr., Suite 203  
 San Ramon CA, 94583

Project: 3609 International Blvd, Oakland  
 Project Number: 2331  
 Project Manager: Joyce Bobek

Reported:  
 20-May-05 14:47

**Volatile Organic Compounds by EPA Method 8260B**

**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-7 (5050015-07) Water</b> Sampled: 16-May-05 13:54 Received: 17-May-05 14:01									
Gasoline (C6-C12)	262	200	ug/l	1	BE51901	17-May-05	19-May-05	EPA 8260B	
Benzene	4.85	0.500	"	"	"	"	"	"	
Ethylbenzene	2.36	0.500	"	"	"	"	"	"	
m&p-Xylene	2.80	1.00	"	"	"	"	"	"	
o-xylene	1.44	0.500	"	"	"	"	"	"	
Toluene	2.19	0.500	"	"	"	"	"	"	
MTBE	0.730	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		108 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		97.8 %		70-130	"	"	"	"	
<b>MW-8 (5050015-08) Water</b> Sampled: 16-May-05 13:02 Received: 17-May-05 14:01									
Gasoline (C6-C12)	10100	860	ug/l	4.3	BE51901	17-May-05	19-May-05	EPA 8260B	
Benzene	122	2.15	"	"	"	"	"	"	
Ethylbenzene	440	2.15	"	"	"	"	"	"	
m&p-Xylene	31.7	4.30	"	"	"	"	"	"	
o-xylene	3.03	2.15	"	"	"	"	"	"	
Toluene	13.2	2.15	"	"	"	"	"	"	
MTBE	406	2.15	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.4 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		99.8 %		70-130	"	"	"	"	
<b>MW-10 (5050015-09) Water</b> Sampled: 16-May-05 11:47 Received: 17-May-05 14:01									
Gasoline (C6-C12)	4750	400	ug/l	2	BE51901	17-May-05	20-May-05	EPA 8260B	
Benzene	415	1.00	"	"	"	"	"	"	
Ethylbenzene	254	1.00	"	"	"	"	"	"	
m&p-Xylene	10.4	2.00	"	"	"	"	"	"	
o-xylene	ND	1.00	"	"	"	"	"	"	
Toluene	6.87	1.00	"	"	"	"	"	"	
MTBE	126	1.00	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		97.0 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		99.4 %		70-130	"	"	"	"	

Pacific Analytical Laboratory

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SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd, Oakland Project Number: 2331 Project Manager: Joyce Bobek	Reported: 20-May-05 14:47
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**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-12 (5050015-10) Water    Sampled: 16-May-05 11:18    Received: 17-May-05 14:01</b>									
Gasoline (C6-C12)	1080	200	ug/l	1	BES1901	17-May-05	19-May-05	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
MTBE	20.6	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		106 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		100 %		70-130	"	"	"	"	



SOMA Environmental Engineering Inc.  
 2680 Bishop Dr., Suite 203  
 San Ramon CA, 94583

Project: 3609 International Blvd, Oakland  
 Project Number: 2331  
 Project Manager: Joyce Bobek

Reported:  
 20-May-05 14:47

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BE51901 - EPA 5030 Water MS**

**Blank (BE51901-BLK1)**

Prepared & Analyzed: 19-May-05

Surrogate: 4-Bromofluorobenzene	44.3		ug/l	50.0		88.6	70-130			
Surrogate: Dibromofluoromethane	56.7		"	50.0		113	70-130			
Surrogate: Perdeuterotoluene	47.9		"	50.0		95.8	70-130			
Gasoline (C6-C12)	ND	200	"							
Benzene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
m&p-Xylene	ND	1.00	"							
o-xylene	ND	0.500	"							
Toluene	ND	0.500	"							
MTBE	ND	0.500	"							

**LCS (BE51901-BS1)**

Prepared & Analyzed: 19-May-05

Surrogate: 4-Bromofluorobenzene	50.5		ug/l	50.0		101	70-130			
Surrogate: Dibromofluoromethane	54.2		"	50.0		108	70-130			
Surrogate: Perdeuterotoluene	48.1		"	50.0		96.2	70-130			
Gasoline (C6-C12)	1710	200	"	2000		85.5	70-130			
Benzene	101	0.500	"	104		97.1	70-130			
Ethylbenzene	117	0.500	"	104		112	70-130			
m&p-Xylene	122	1.00	"	104		117	70-130			
o-xylene	124	0.500	"	104		119	70-130			
Toluene	98.6	0.500	"	104		94.8	70-130			
MTBE	122	0.500	"	104		117	70-130			

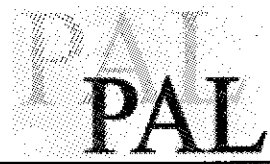
**LCS Dup (BE51901-BSD1)**

Prepared: 19-May-05 Analyzed: 20-May-05

Surrogate: 4-Bromofluorobenzene	48.9		ug/l	50.0		97.8	70-130			
Surrogate: Dibromofluoromethane	51.1		"	50.0		102	70-130			
Surrogate: Perdeuterotoluene	50.3		"	50.0		101	70-130			
Gasoline (C6-C12)	1990	200	"	2000		99.5	70-130	15.1	20	
Benzene	103	0.500	"	104		99.0	70-130	1.96	20	
Ethylbenzene	111	0.500	"	104		107	70-130	5.26	20	
m&p-Xylene	111	1.00	"	104		107	70-130	9.44	20	
o-xylene	111	0.500	"	104		107	70-130	11.1	20	
Toluene	101	0.500	"	104		97.1	70-130	2.40	20	
MTBE	116	0.500	"	104		112	70-130	5.04	20	

Pacific Analytical Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



SOMA Environmental Engineering Inc.  
2680 Bishop Dr., Suite 203  
San Ramon CA, 94583

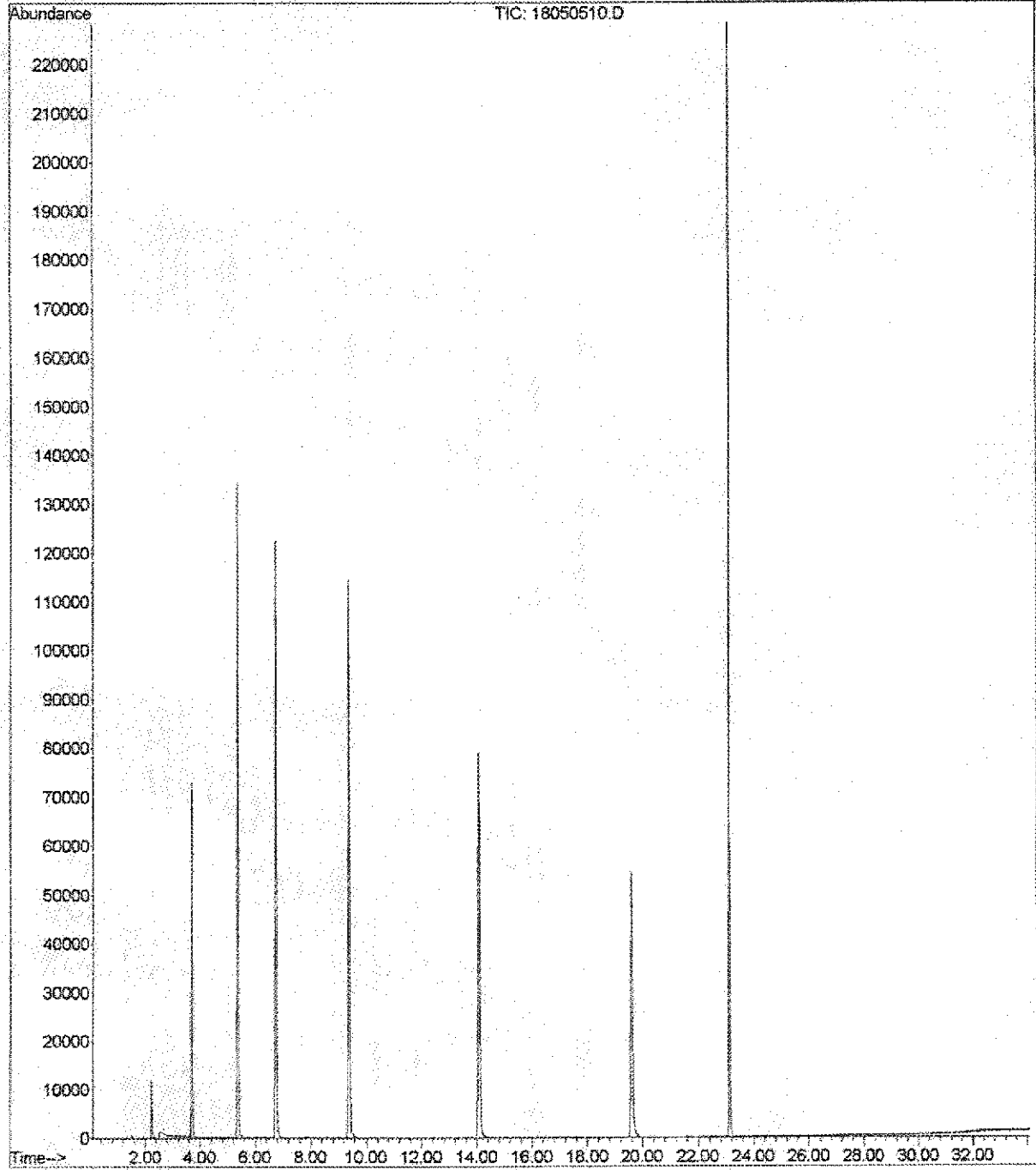
Project: 3609 International Blvd, Oakland  
Project Number: 2331  
Project Manager: Joyce Bobek

Reported:  
20-May-05 14:47

### Notes and Definitions

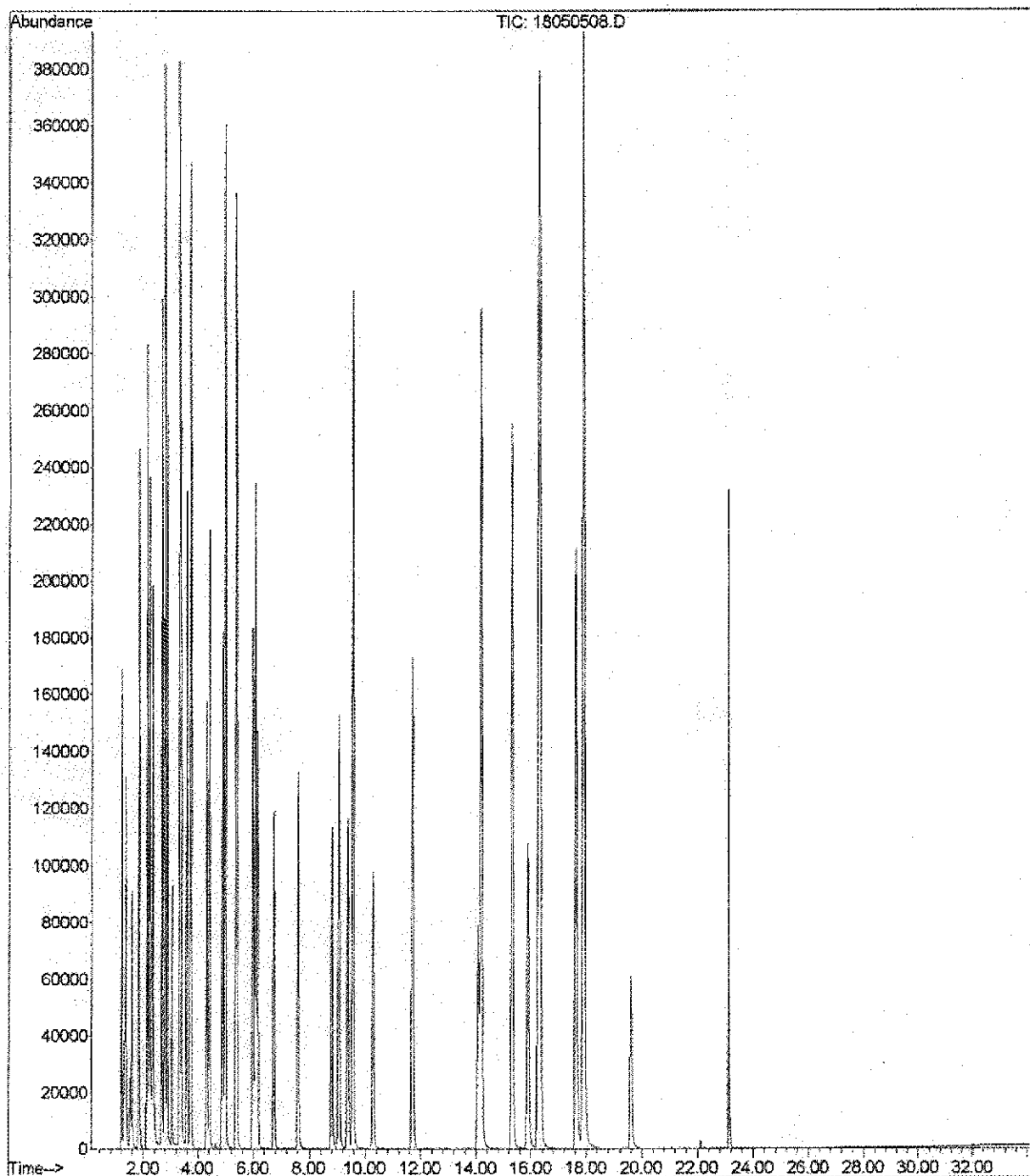
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

File :C:\MSDCHEM\1\DATA\2005-May-18-1510.b\18050510.D  
Operator :  
Acquired : 19 May 2005 4:16 pm using AcqMethod VOCCOXY.M  
Instrument : PAL GCMS  
Sample Name: BE51901-BLK1  
Misc Info :  
Vial Number: 10

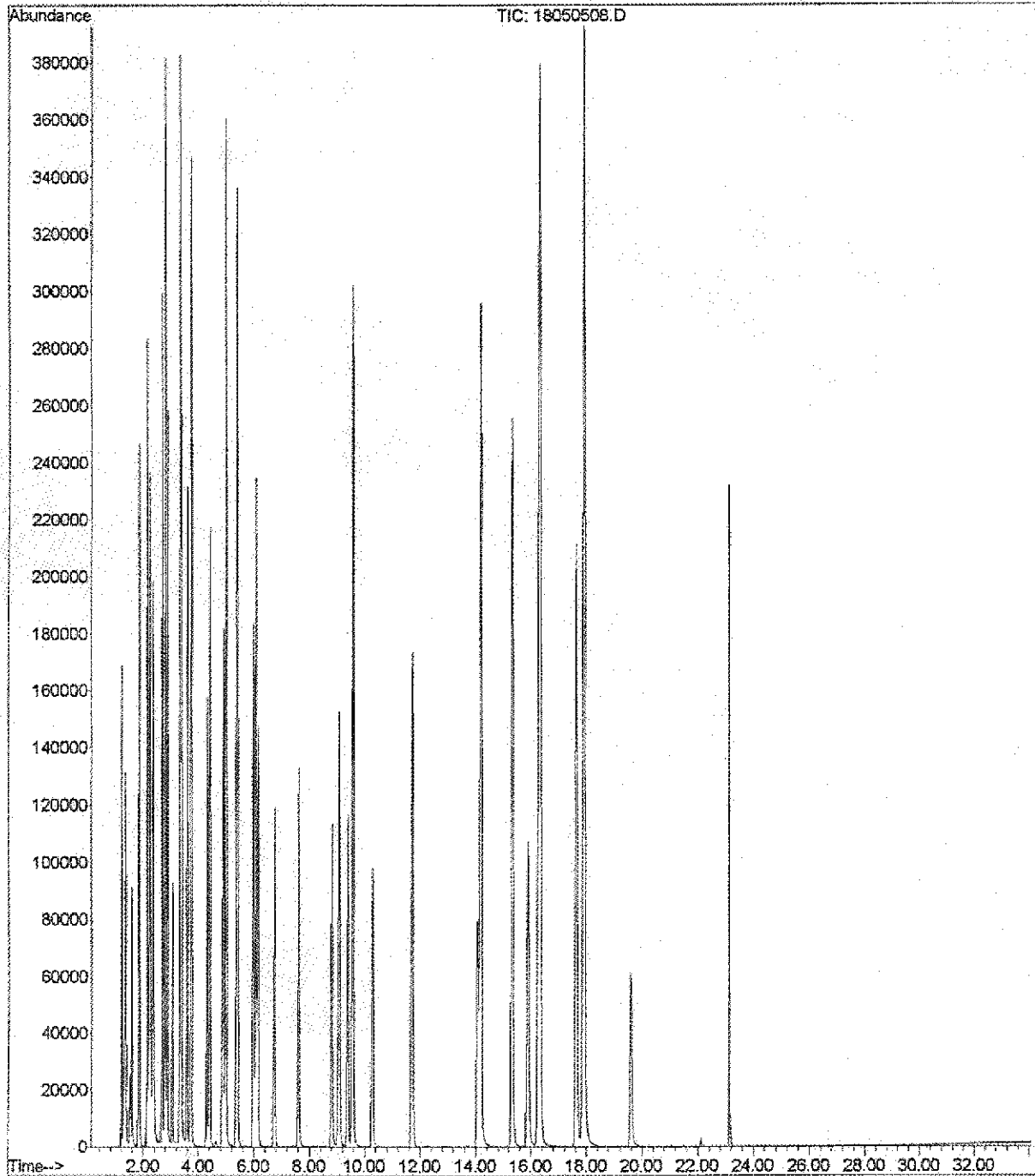




File :C:\MSDCHEM\1\DATA\2005-May-18-1510.b\18050508.D  
Operator :  
Acquired : 19 May 2005 2:47 pm using AcqMethod VOCCOXY.M  
Instrument : PAL GCMS  
Sample Name: BE51901-BS1@voc  
Misc Info :  
Vial Number: 8



File : C:\MSDCHEM\1\DATA\2005-May-18-1510.b\18050508.D  
Operator :  
Acquired : 19 May 2005 2:47 pm using AcqMethod VOCCOXY.M  
Instrument : PAL GCMS  
Sample Name: BE51901-BS1@voc  
Misc Info :  
Vial Number: 8



# Appendix D

Chain of Custody Forms and Laboratory Reports  
for the  
Groundwater Extraction Treatment System

---

**PAL** Pacific Analytical Laboratory  
251 West Midway Ave. Suite 201  
Alameda, CA 94501 Phone (510) 864-0364

---

11 May 2005


Joyce Bobek  
SOMA Environmental Engineering Inc.  
2680 Bishop Dr., Suite 203  
San Ramon, CA 94583

RE: 3609 International Blvd., Oakland

Work Order Number: 5050007

This Laboratory report has been reviewed for technical correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Sincerely,



---

Maiid Akhavan  
Laboratory Director

# CHAIN OF CUSTODY FORM

Page 1 of 1

**PAL** Pacific Analytical Laboratory  
 851 West Midway Ave., Suite 201B  
 Alameda, CA 94501  
 510-864-0364 Telephone  
 510-864-0365 Fax

PAL  
 Login# 5050007

Project No: 2333				Sampler: <i>Mehran Nawrozi</i>				Analyses/Method						
Project Name: 3609 International Blvd. Oakland				Report To: Joyce Bobak				TPH, BTEX, MIBE 8260B						
Project P.O.: ---				Company: SOMA Environmental Engineering, Inc.										
Turnaround Time: Standard				Tel: 925-244-6600 Fax: 925-244-6601										
		Sampling Date/Time		Matrix		# of Containers			Preservatives					
Lab No.	Sample ID	Date	Time	Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE	Field Notes		
	Influent	5/9/05	11:45 AM	X			3-VOAs	X			X	Grab Sample		
	GAC-1		11:45 AM	X			3-VOAs	X			X	Grab Sample		
	PSP-1	↓	11:45 AM	X			3-VOAs	X			X	Grab Sample		
Sampler Remarks: EDF Output Required				Relinquished by:		Date/Time:		Received by:		Date/Time:				
				<i>Mehran Nawrozi</i>		5/9/05		<i>[Signature]</i>		5-9-05 300				



SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd., Oakland Project Number: 2333 Project Manager: Joyce Bobek	Reported: 11-May-05 11:32
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Influent	5050007-01	Water	09-May-05 11:00	09-May-05 14:56
GAC-1	5050007-02	Water	09-May-05 11:05	09-May-05 14:56
PSP-1	5050007-03	Water	09-May-05 11:10	09-May-05 14:56



SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd., Oakland Project Number: 2333 Project Manager: Joyce Bobek	Reported: 11-May-05 11:32
--	--	------------------------------

**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Influent (5050007-01) Water    Sampled: 09-May-05 11:00    Received: 09-May-05 14:56</b>									
Gasoline (C6-C12)	4530	2200	ug/l	11	BE50901	09-May-05	10-May-05	EPA 8260B	
Benzene	635	5.50	"	"	"	"	"	"	
Ethylbenzene	37.9	5.50	"	"	"	"	"	"	
m&p-Xylene	162	11.0	"	"	"	"	"	"	
o-xylene	134	5.50	"	"	"	"	"	"	
Toluene	23.4	5.50	"	"	"	"	"	"	
MTBE	522	5.50	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.0 %		70-130	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		98.2 %		70-130	"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		95.2 %		70-130	"	"	"	"	
<b>GAC-1 (5050007-02) Water    Sampled: 09-May-05 11:05    Received: 09-May-05 14:56</b>									
Gasoline (C6-C12)	ND	200	ug/l	1	BE50901	09-May-05	10-May-05	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		81.6 %		70-130	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		115 %		70-130	"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		95.2 %		70-130	"	"	"	"	
<b>PSP-1 (5050007-03) Water    Sampled: 09-May-05 11:10    Received: 09-May-05 14:56</b>									
Gasoline (C6-C12)	ND	200	ug/l	1	BE50901	09-May-05	10-May-05	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		84.8 %		70-130	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		109 %		70-130	"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		96.6 %		70-130	"	"	"	"	

Pacific Analytical Laboratory

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd., Oakland Project Number: 2333 Project Manager: Joyce Bobek	Reported: 11-May-05 11:32
--	--	------------------------------

**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						





SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd., Oakland Project Number: 2333 Project Manager: Joyce Bobek	Reported: 11-May-05 11:32
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BE50901 - EPA 5030 Water MS**

<b>Blank (BE50901-BLK1)</b>										
Prepared & Analyzed: 09-May-05										
Surrogate: 4-Bromofluorobenzene	45.3		ug/l	50.0		90.6	70-130			
Surrogate: Dibromofluoromethane	56.3		"	50.0		113	70-130			
Surrogate: Perdeuterotoluene	47.9		"	50.0		95.8	70-130			
Gasoline (C6-C12)	ND	200	"							
Benzene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
m&p-Xylene	ND	1.00	"							
o-xylene	ND	0.500	"							
Toluene	ND	0.500	"							
MTBE	ND	0.500	"							

<b>LCS (BE50901-BS1)</b>										
Prepared & Analyzed: 09-May-05										
Surrogate: 4-Bromofluorobenzene	52.7		ug/l	50.0		105	70-130			
Surrogate: Dibromofluoromethane	57.0		"	50.0		114	70-130			
Surrogate: Perdeuterotoluene	50.3		"	50.0		101	70-130			
Gasoline (C6-C12)	1970	200	"	2000		98.5	70-130			
Benzene	110	0.500	"	104		106	70-130			
Ethylbenzene	119	0.500	"	104		114	70-130			
m&p-Xylene	123	1.00	"	104		118	70-130			
o-xylene	126	0.500	"	104		121	70-130			
Toluene	109	0.500	"	104		105	70-130			
MTBE	124	0.500	"	104		119	70-130			

<b>LCS Dup (BE50901-BSD1)</b>										
Prepared & Analyzed: 09-May-05										
Surrogate: 4-Bromofluorobenzene	52.4		ug/l	50.0		105	70-130			
Surrogate: Dibromofluoromethane	54.6		"	50.0		109	70-130			
Surrogate: Perdeuterotoluene	48.9		"	50.0		97.8	70-130			
Gasoline (C6-C12)	2020	200	"	2000		101	70-130	2.51	20	
Benzene	107	0.500	"	104		103	70-130	2.76	20	
Ethylbenzene	117	0.500	"	104		112	70-130	1.69	20	
m&p-Xylene	123	1.00	"	104		118	70-130	0.00	20	
o-xylene	125	0.500	"	104		120	70-130	0.797	20	
Toluene	105	0.500	"	104		101	70-130	3.74	20	
MTBE	121	0.500	"	104		116	70-130	2.45	20	

Pacific Analytical Laboratory

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SOMA Environmental Engineering Inc.  
2680 Bishop Dr., Suite 203  
San Ramon CA, 94583

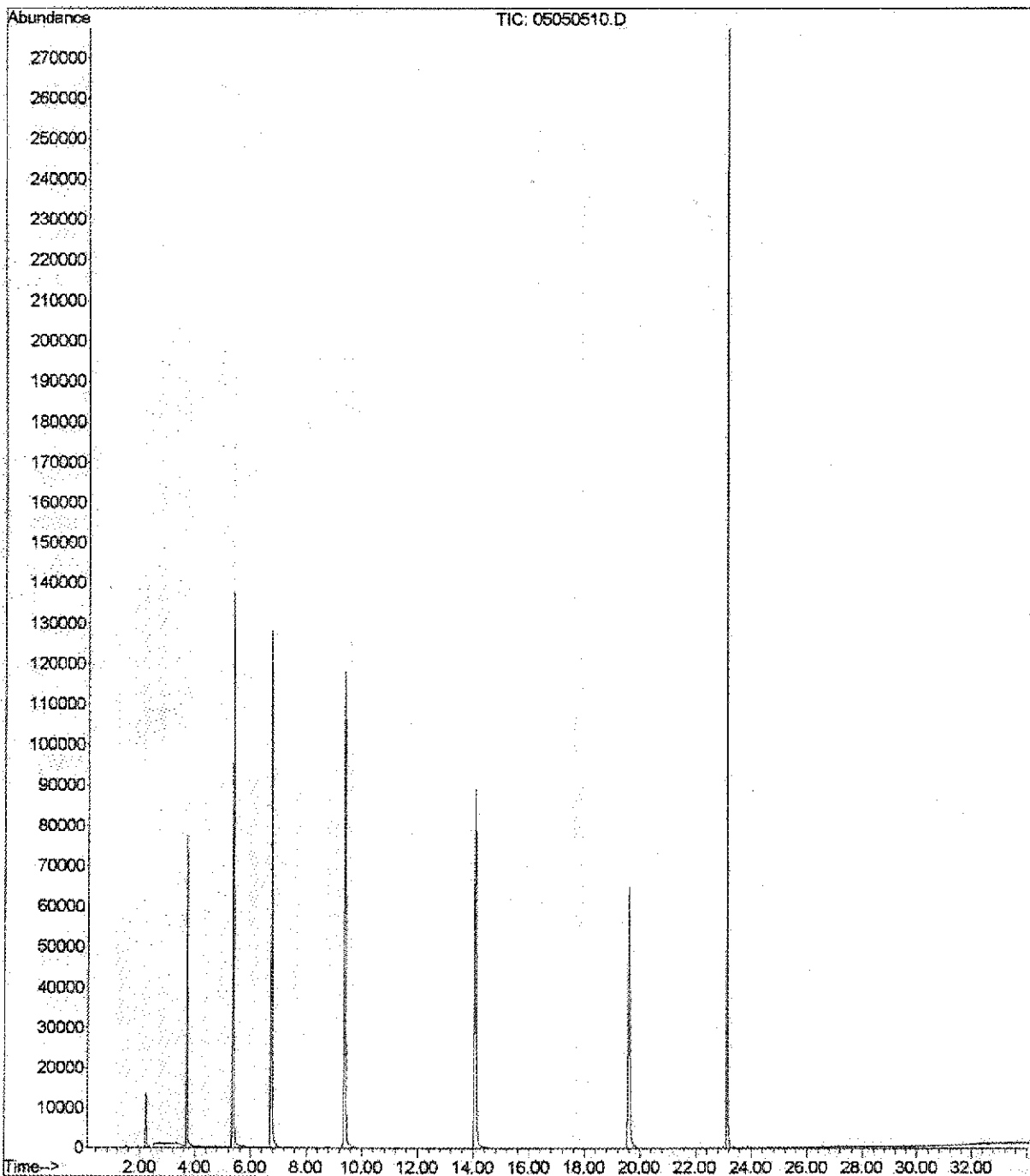
Project: 3609 International Blvd., Oakland  
Project Number: 2333  
Project Manager: Joyce Bobek

Reported:  
11-May-05 11:32

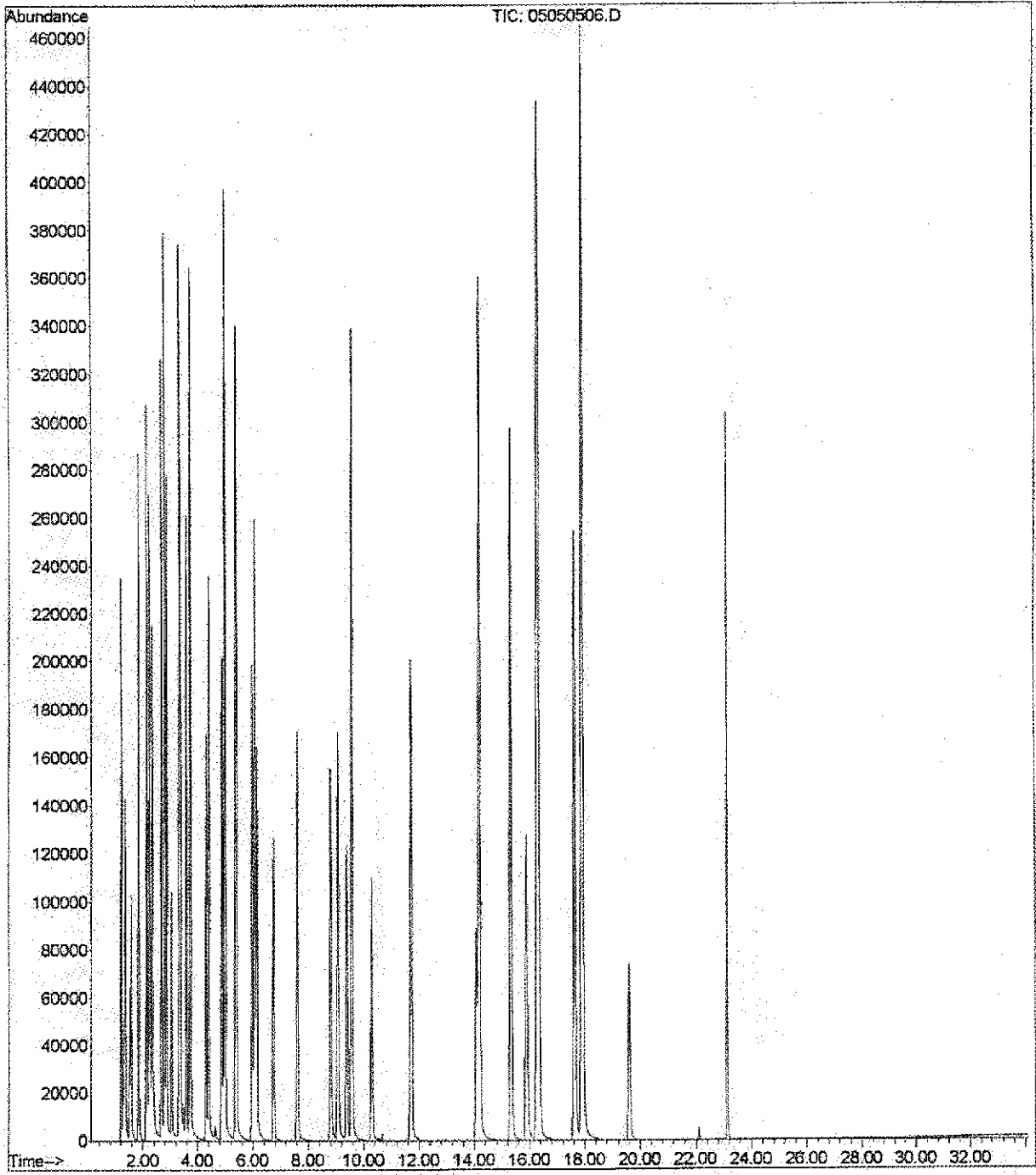
### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

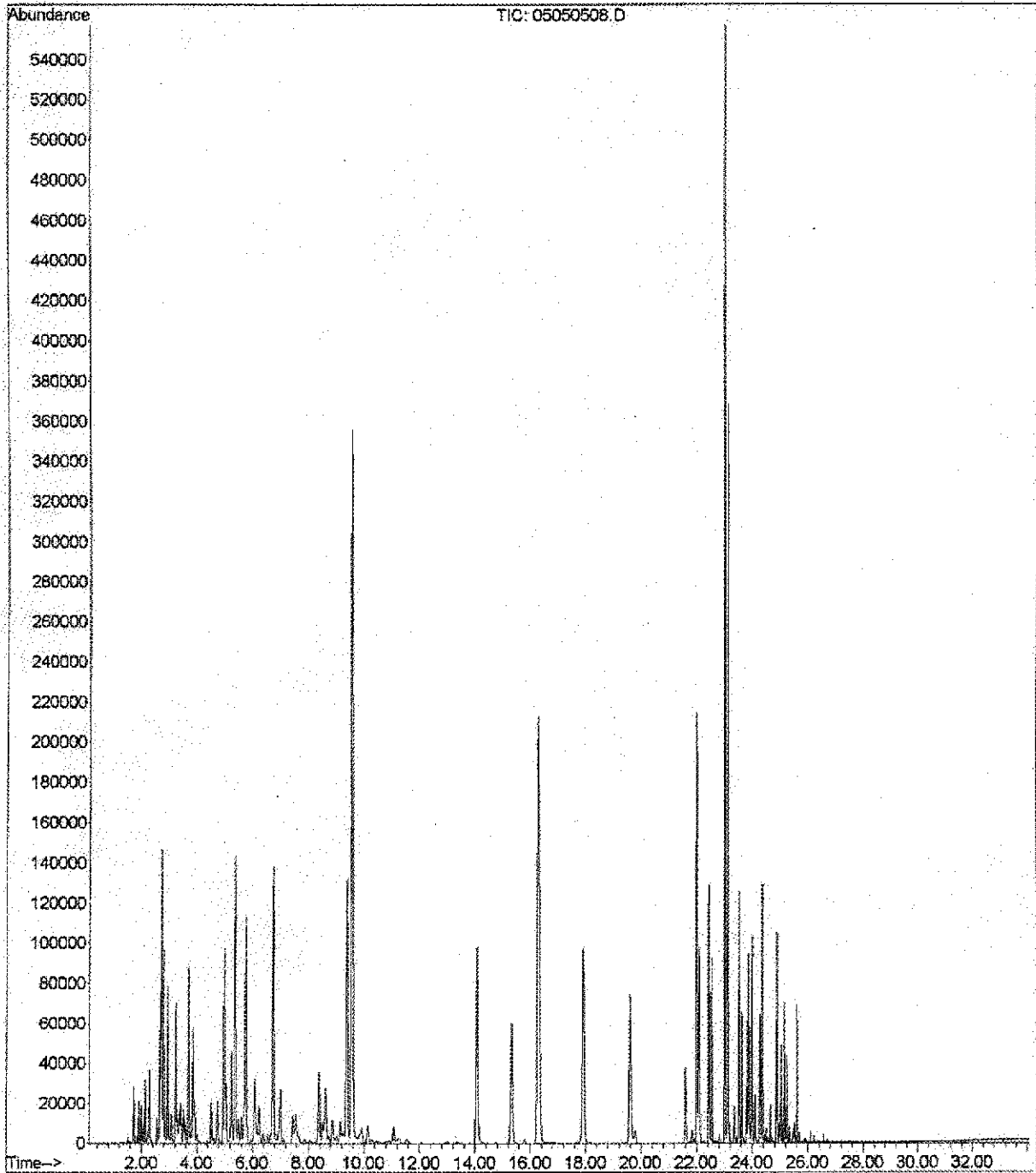
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Operator :  
Acquired : 6 May 2005 4:41 pm using AcqMethod VOCCOXY.M  
Instrument : PAL GCMS  
Sample Name: BE50901-BLK1  
Misc Info :  
Vial Number: 10



File : C:\MSDCHEM\1\DATA\2005-May-05-1354.b\05050506.D  
Operator :  
Acquired : 6 May 2005 1:36 pm using AcqMethod VOOCOXY.M  
Instrument : PAL GCMS  
Sample Name: BE50901-BS1@voc  
Misc Info :  
Vial Number: 6



File :C:\MSDCHEM\1\DATA\2005-May-05-1354.b\05050508.D  
Operator :  
Acquired : 6 May 2005 3:08 pm using AcqMethod VOCCOXY.M  
Instrument : PAL GCMS  
Sample Name: BE50901-BS1@gas  
Misc Info :  
Vial Number: 8



---

**PAL** Pacific Analytical Laboratory  
851 West Midway Ave. Suite 201  
Alameda, CA 94501 Phone (510) 864-0364

---

22 April 2005

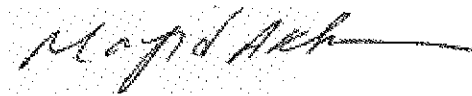
Joyce Bobek  
SOMA Environmental Engineering Inc.  
2680 Bishop Dr., Suite 203  
San Ramon, CA 94583

RE: 3609 International Blvd., Oakland

Work Order Number: 5040003

This Laboratory report has been reviewed for technical correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Sincerely,



---

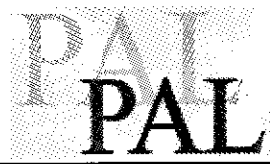
Majid Akhavan  
Laboratory Director

# CHAIN OF CUSTODY FORM

**PAL** Pacific Analytical Laboratory  
 851 West Midway Ave., Suite 201B  
 Alameda, CA 94501  
 510-864-0364 Telephone  
 510-864-0365 Fax

PAL  
 Login# 5040003

Project No: 2333				Sampler: <i>Mehran Nawroozi</i>				Analyses/Method											
Project Name: 3609 International Blvd. Oakland				Report To: Joyce Bobek				TPHQ, BTEX, MBE 8260B											
Project P.O.: ---				Company: SOMA Environmental Engineering, Inc.															
Turnaround Time: Standard				Tel: 925-244-6600 Fax: 925-244-6601															
		Sampling Date/Time		Matrix			# of Containers	Preservatives				Field Notes							
Lab No.	Sample ID	Date	Time	Soil	Water	Waste		HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE								
	Influent	<i>4/4/05</i>	<i>12:10 PM</i>		<input checked="" type="checkbox"/>		3-VOAs	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	Grab Sample	<input checked="" type="checkbox"/>						
	GAC-1	<i>↓</i>	<i>12:05 PM</i>		<input checked="" type="checkbox"/>		3-VOAs	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	Grab Sample	<input checked="" type="checkbox"/>						
	PSP-1	<i>↓</i>	<i>12:00 PM</i>		<input checked="" type="checkbox"/>		3-VOAs	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	Grab Sample	<input checked="" type="checkbox"/>						
Sampler Remarks: EDF Output Required				Relinquished by: <i>M. Alsemer</i>				Date/Time: <i>1:10 PM 4/4/05</i>		Received by: <i>Mehran Nawroozi</i>				Date/Time: <i>1:10 PM 4-4-05</i>					

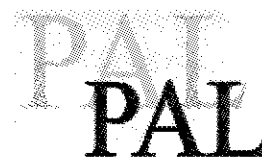


SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd., Oakland Project Number: 2333 Project Manager: Joyce Bobek	Reported: 22-Apr-05 14:20
--	--	------------------------------

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Influent	5040003-01	Water	04-Apr-05 12:10	04-Apr-05 13:36
GAC-1	5040003-02	Water	04-Apr-05 12:05	04-Apr-05 13:36
PSP-1	5040003-03	Water	04-Apr-05 12:00	04-Apr-05 13:36





SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd., Oakland Project Number: 2333 Project Manager: Joyce Bobek	Reported: 22-Apr-05 14:20
--	--	------------------------------

**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Influent (5040003-01) Water</b> Sampled: 04-Apr-05 12:10    Received: 04-Apr-05 13:36									
Gasoline (C6-C12)	5920	2200	ug/l	11	BD50401	04-Apr-05	04-Apr-05	EPA 8260B	
Benzene	712	5.50	"	"	"	"	"	"	
Ethylbenzene	52.7	5.50	"	"	"	"	"	"	
m&p-Xylene	453	11.0	"	"	"	"	"	"	
o-xylene	186	5.50	"	"	"	"	"	"	
Toluene	41.6	5.50	"	"	"	"	"	"	
MTBE	839	5.50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		117 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		94.8 %		70-130	"	"	"	"	
<b>GAC-1 (5040003-02) Water</b> Sampled: 04-Apr-05 12:05    Received: 04-Apr-05 13:36									
Gasoline (C6-C12)	ND	200	ug/l	1	BD50401	04-Apr-05	04-Apr-05	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.4 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		123 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		99.4 %		70-130	"	"	"	"	
<b>PSP-1 (5040003-03RE1) Water</b> Sampled: 04-Apr-05 12:00    Received: 04-Apr-05 13:36									
Gasoline (C6-C12)	ND	200	ug/l	1	BD50401	04-Apr-05	05-Apr-05	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %		70-130	"	"	"	"	
Surrogate: Dibromofluoromethane		128 %		70-130	"	"	"	"	
Surrogate: Perdeuterotoluene		98.6 %		70-130	"	"	"	"	

Pacific Analytical Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



SOMA Environmental Engineering Inc. 2680 Bishop Dr., Suite 203 San Ramon CA, 94583	Project: 3609 International Blvd., Oakland Project Number: 2333 Project Manager: Joyce Bobek	Reported: 22-Apr-05 14:20
--	--	------------------------------

**Volatile Organic Compounds by EPA Method 8260B**  
**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SOMA Environmental Engineering Inc.  
 2680 Bishop Dr., Suite 203  
 San Ramon CA, 94583

Project: 3609 International Blvd., Oakland  
 Project Number: 2333  
 Project Manager: Joyce Bobek

Reported:  
 22-Apr-05 14:20

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch BD50401 - EPA 5030 Water MS**

**Blank (BD50401-BLK1)**

Prepared & Analyzed: 04-Apr-05

Surrogate: 4-Bromofluorobenzene	43.8		ug/l	50.0		87.6	70-130			
Surrogate: Dibromofluoromethane	64.1		"	50.0		128	70-130			
Surrogate: Perdeuterotoluene	48.8		"	50.0		97.6	70-130			
Gasoline (C6-C12)	ND	200	"							
Benzene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
m&p-Xylene	ND	1.00	"							
o-xylene	ND	0.500	"							
Toluene	ND	0.500	"							
MTBE	ND	0.500	"							

**LCS (BD50401-BS1)**

Prepared & Analyzed: 04-Apr-05

Surrogate: 4-Bromofluorobenzene	50.5		ug/l	50.0		101	70-130			
Surrogate: Dibromofluoromethane	55.5		"	50.0		111	70-130			
Surrogate: Perdeuterotoluene	45.7		"	50.0		91.4	70-130			
Gasoline (C6-C12)	2080	200	"	2000		104	70-130			
Benzene	96.9	0.500	"	100		96.9	70-130			
Ethylbenzene	113	0.500	"	100		113	70-130			
m&p-Xylene	115	1.00	"	100		115	70-130			
o-xylene	114	0.500	"	100		114	70-130			
Toluene	95.4	0.500	"	100		95.4	70-130			
MTBE	106	0.500	"	100		106	70-130			

**LCS Dup (BD50401-BSD1)**

Prepared & Analyzed: 04-Apr-05

Surrogate: 4-Bromofluorobenzene	50.3		ug/l	50.0		101	70-130			
Surrogate: Dibromofluoromethane	54.3		"	50.0		109	70-130			
Surrogate: Perdeuterotoluene	45.6		"	50.0		91.2	70-130			
Gasoline (C6-C12)	1890	200	"	2000		94.5	70-130	9.57	20	
Benzene	96.1	0.500	"	100		96.1	70-130	0.829	20	
Ethylbenzene	114	0.500	"	100		114	70-130	0.881	20	
m&p-Xylene	115	1.00	"	100		115	70-130	0.00	20	
o-xylene	113	0.500	"	100		113	70-130	0.881	20	
Toluene	95.0	0.500	"	100		95.0	70-130	0.420	20	
MTBE	104	0.500	"	100		104	70-130	1.90	20	

Pacific Analytical Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



SOMA Environmental Engineering Inc.  
2680 Bishop Dr., Suite 203  
San Ramon CA, 94583

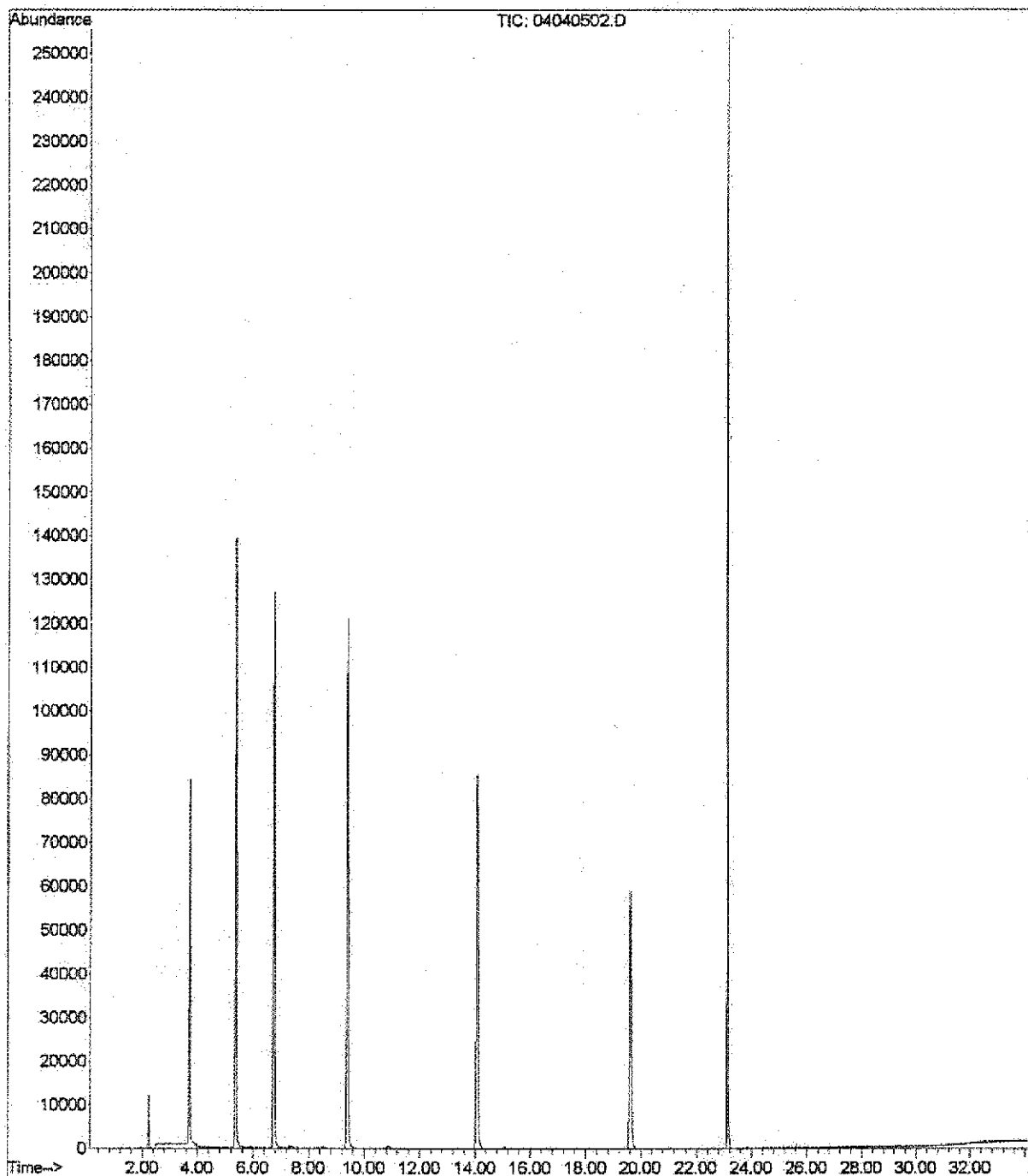
Project: 3609 International Blvd., Oakland  
Project Number: 2333  
Project Manager: Joyce Bobek

Reported:  
22-Apr-05 14:20

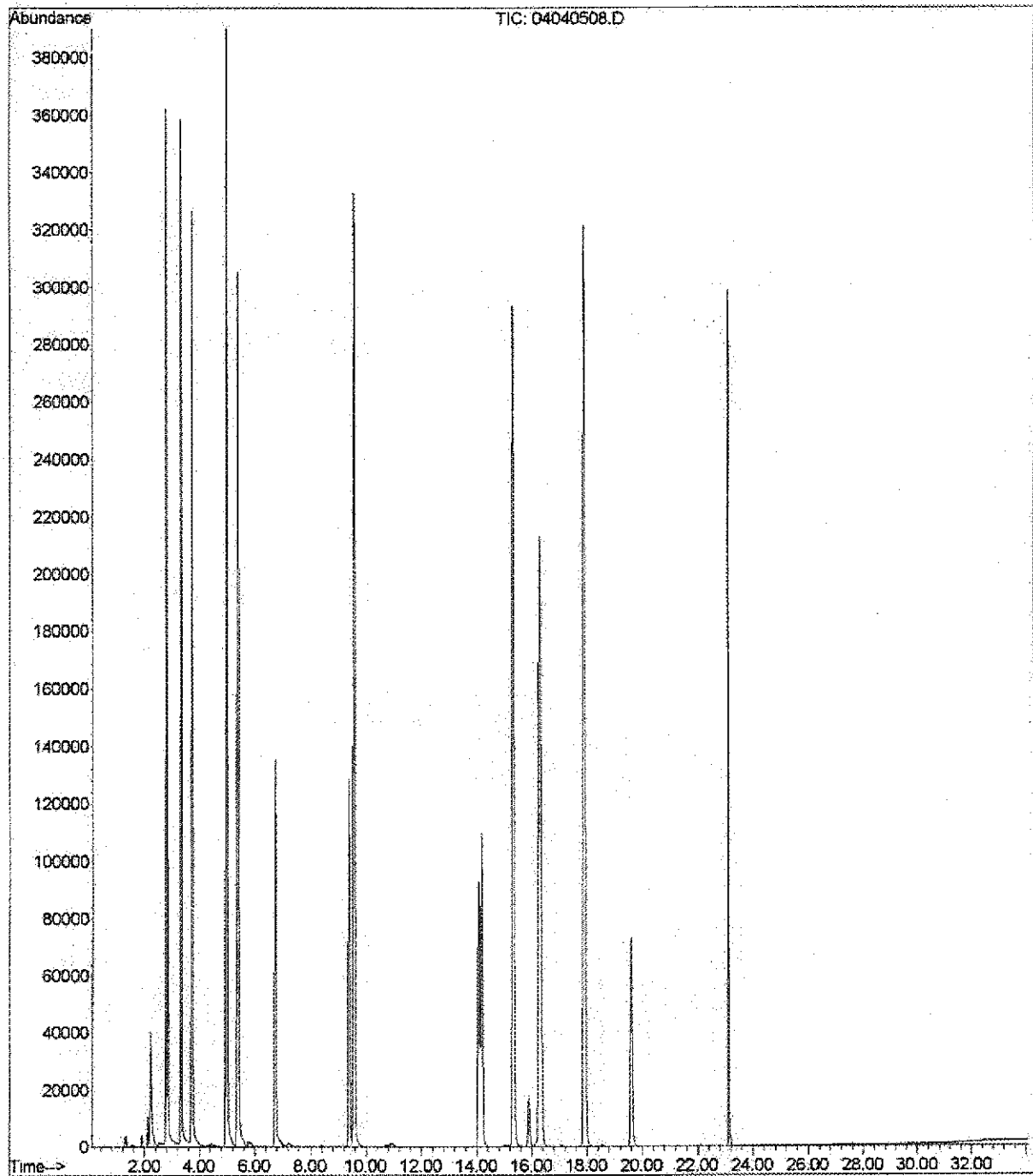
### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

File : C:\MSDCHEM\1\DATA\2005-Apr-04-1150.b\04040502.D  
Operator :  
Acquired : 4 Apr 2005 1:11 pm using AcqMethod VOCOXY.M  
Instrument : PAL GCMS  
Sample Name: BD50401-BLK1  
Misc Info :  
Vial Number: 2



File : C:\MSDCHEM\1\DATA\2005-Apr-04-1150.b\04040508.D  
Operator :  
Acquired : 4 Apr 2005 5:56 pm using AcqMethod VOCCOXY.M  
Instrument : PAL GCMS  
Sample Name: BD50401-BS1@btex  
Misc Info :  
Vial Number: 8



File : C:\MSDCHEM\1\DATA\2005-Apr-04-1150.b\04040504.D  
Operator :  
Acquired : 4 Apr 2005 2:56 pm using AcqMethod VOCOXY.M  
Instrument : PAL GCMS  
Sample Name: BD50401-BS1@gas  
Misc Info :  
Vial Number: 4

