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**ENVIRONMENTAL ENGINEERING, INC**  
6620 Owens Drive, Suite A • Pleasanton, CA 94588-3334  
TEL (925) 734-6400 • FAX (925) 734-6401

March 17, 2006

Mr. Don Hwang  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Subject: Texaco Gasoline Service Station (Formerly Freedom ARCO Station)  
Site Address: 15101 Freedom Avenue, San Leandro, California  
**STID 4473/RO0000473**

Dear Mr. Hwang:

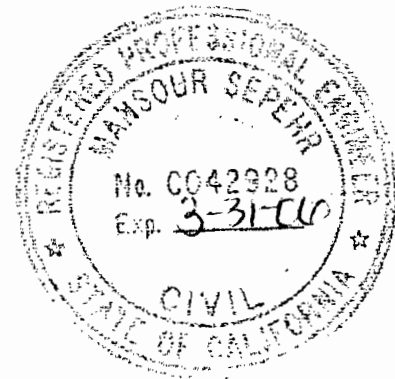
SOMA's "First Quarter 2006 Groundwater Monitoring Report" for the subject property has been uploaded to the State's GeoTracker database and Alameda County's FTP site for your review.

Thank you for your time in reviewing our report. Please do not hesitate to call me at (925) 734-6400, if you have questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mansour Sepehr', written over a horizontal line.

Mansour Sepehr, Ph.D., PE  
Principal Hydrogeologist



cc: Mr. Mohammad Pazdel w/report enclosure

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**FIRST QUARTER 2006  
GROUNDWATER MONITORING REPORT  
TEXACO GASOLINE SERVICE STATION  
15101 FREEDOM AVENUE  
SAN LEANDRO, CALIFORNIA**

**March 17, 2006**

Project 2551

Prepared for

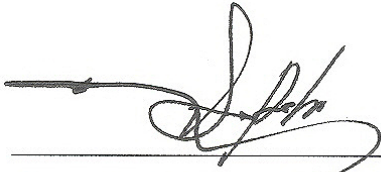
**Mr. Mohammad Pazdel  
1770 Pistacia Court  
Fairfield, California**

Prepared by

**SOMA Environmental Engineering, Inc.  
6620 Owens Drive, Suite A  
Pleasanton, California**

## Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Mohammad Pazdel, the property owner of 15101 Freedom Avenue, San Leandro, California, to comply with the Alameda County Health Care Services' requirements for the First Quarter 2006 groundwater monitoring event.



---

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



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- Appendix C: Laboratory Report and Chain of Custody Form for the First Quarter 2006 Monitoring Event

## **1.0 INTRODUCTION**

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Mohammad Pazdel, the property owner of 15101 Freedom Avenue, San Leandro, California (“the Site”), as shown in Figure 1. The Site is located in an area consisting primarily of residential properties and adjacent commercial areas.

This report summarizes the results of the First Quarter 2006 groundwater monitoring event conducted at the Site on February 9, 2006. Included in this report are the physical and chemical properties measured in the field for each groundwater sample. The physical and chemical properties consisted of measurements of pH, temperature, and electrical conductivity (EC). This report also includes the laboratory analytical results on the groundwater samples.

These activities were performed in accordance with the general guidelines of the California Regional Water Quality Control Board (CRWQCB) and the Alameda County Health Care Services (ACHCS). Appendix A details the procedures used by SOMA during this monitoring event.

### **1.1 Previous Activities**

On May 20, 1999, three 10,000-gallon single-walled USTs were removed and replaced with new double-walled fuel tanks. On July 7, 1999, a 20,000-gallon gasoline UST, an 8,000-gallon gasoline UST, and a 6,000-gallon diesel UST were installed in the tank cavity.

In July 2001, additional soil and groundwater investigations were conducted to further examine potential petroleum hydrocarbon contamination discovered during the removal and upgrade of the USTs. During this investigation five soil borings (SB-1 through SB-5) were drilled. The maximum concentrations of total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, total xylenes (BTEX) in the soil samples collected between 19 and 25.5 feet below ground surface (bgs) were 470, 2.6, 16, 12, and 73 mg/Kg, respectively. Methyl tertiary Butyl Ether (MtBE) was below the laboratory reporting limit of 0.005 mg/Kg in all the soil samples collected. The maximum concentrations of TPH-g and BTEX in the groundwater samples collected from the soil borings were 83, 19, 1.8, 1.5, and 73 mg/L, respectively. The maximum reported MtBE concentration was 87 mg/L in soil boring SB-2. The soil boring locations are shown in Figure 2.

On April 22 and 23, 2002, SOMA installed 5 (4-inch diameter) on-site groundwater monitoring wells (MW-1 to MW-5) to evaluate the groundwater flow gradient, the extent of petroleum hydrocarbons, and MtBE contamination beneath the Site. Figure 2 displays the locations of the monitoring wells.

On July 22, 2003, an additional off-site investigation was conducted by SOMA to evaluate the lateral extent of the soil and groundwater contamination. The off-site investigation included a sensitive receptor survey to locate water supply wells and/or water bodies within a 2,000-foot radius of the Site. In September 2003, six temporary well boreholes were advanced to depths of at least 40 feet bgs. Figure 2 shows the locations of the temporary well boreholes.

In September 2004, SOMA installed four off-site wells (MW-6 to MW-9). Figure 2 shows the locations of the off-site monitoring wells.

## **2.0 RESULTS**

The following sections provide the results of the field measurements and laboratory analyses for the February 9, 2006 groundwater monitoring event. Well MW-7 was inaccessible during this monitoring event; a car was parked over the well.

### **2.1 Field Measurements**

Table 1 presents the calculated groundwater elevations, as well as the depths to groundwater for each monitoring well. Depths to groundwater ranged from 9.74 feet in well MW-8 to 21.81 feet in well MW-1. The corresponding groundwater elevations ranged from 30.21 feet in well MW-9 to 33.00 feet in both wells MW-2 and MW-4.

Figure 3 displays the contour map of groundwater elevations. The groundwater flow direction is south to southwesterly across the Site, at a gradient of 0.007 feet/feet.

The field measurements taken during this monitoring event are shown in Appendix B.

### **2.2 Laboratory Analysis**

Table 1 also presents the TPH-g, BTEX, and MtBE analytical results, as well as the historical groundwater analytical results.

TPH-g concentrations were below the laboratory reporting limit in both off-site wells MW-8 and MW-9. Detectable TPH-g concentrations ranged from 775 ug/L in well MW-1 to 44,500 ug/L in well MW-3. The TPH-g concentration in well MW-3 was several orders of magnitude higher than the remaining site wells. Figure 4 displays a contour map of TPH-g concentrations in the groundwater. As illustrated in Figure 4, the most impacted TPH-g region was in the vicinity of the dispenser islands and former USTs, around well MW-3.

In wells MW-1, MW-4, MW-5, and MW-6, toluene was below the laboratory reporting limit. In well MW-2, both benzene and toluene were below the laboratory reporting limit. In wells MW-8 and MW-9, all BTEX analytes were below the laboratory reporting limit. The most impacted BTEX sample was collected from well MW-3. BTEX concentrations in well MW-3 were detected at 5,070 ug/L, 1,360 ug/L, 1,920 ug/L, and 4,840 ug/L, respectively.

Figure 5 displays a contour map of benzene concentrations in the groundwater. The most impacted benzene region was in the vicinity of the dispenser islands and former USTs, around well MW-3. The benzene concentration detected in well MW-3 was several orders of magnitude higher than the remaining site wells.

MtBE, using EPA Method 8260B, was below the laboratory reporting limit in the samples collected from wells MW-8 and MW-9. Detectable MtBE concentrations ranged from 0.72 ug/L in well MW-2 to 5,120 ug/L in well MW-4. However, high MtBE concentrations were also detected in wells MW-3 and MW-5.

Figure 6 displays the contour map of MtBE concentrations in the groundwater. The most impacted MtBE region was in the vicinity of the dispenser islands, around well MW-4. This can be attributed to the high mobility rate of MtBE and the southerly groundwater flow direction from the former USTs and product lines. MtBE was either at low levels or below the laboratory reporting limit in the sampled off-site wells, as well as MW-1 and MW-2.

Table 2 shows the analytical results for gasoline oxygenates, as well as the historical groundwater gasoline oxygenate analytical results.

All Isopropyl Ether (DIPE), 1,2-Dibromoethane (EDB), Ethanol, and Ethyl tertiary Butyl Ether (EtBE) constituents, with the exception of EtBE in well MW-4 (at 16.4 ug/L), were below the laboratory reporting limit in all of the groundwater samples collected during this monitoring event. 1,2-Dichloroethane (1,2-DCA) was below the laboratory reporting limit throughout the Site, with the exception of wells MW-1 and MW-9. 1,2-DCA was detected in well MW-1 at 0.59 ug/L and in well MW-9 at 1.93 ug/L. The analytical results for 1,2-DCA, ethanol, and EDB constituents are shown in the laboratory report in Appendix C.

Tert-Butyl-Alcohol (TBA) was below the laboratory reporting limit in wells MW-2, MW-3, MW-6, MW-8, and MW-9. The highest TBA concentration was detected in well MW-4 at 769 ug/L. Figure 7 displays the contour map of TBA concentrations in the groundwater. Similar to MtBE, the most impacted TBA region is in the vicinity of the dispenser islands, around well MW-4. This can be attributed to the high mobility rate of TBA and the southerly groundwater flow direction from the former USTs and product lines. The TBA plume appears to be centrally located around well MW-4.



Methyl tert-Amyl Ether (TAME) was detected in wells MW-3 to MW-5 and was below the laboratory reporting limit in the remaining site wells. Figure 8 displays the contour map of TAME concentrations in the groundwater.

Appendix C includes the laboratory report and COC form for the First Quarter 2006 monitoring event.

Refer to Tables 1 and 2 for further detailed historical concentration trends.

### **3.0 CONCLUSION AND RECOMMENDATIONS**

The results of the First Quarter 2006 groundwater monitoring event can be summarized as follows:

- The groundwater flow direction has remained in a south to southwesterly direction throughout the Site; however, the groundwater gradient has slightly increased.
- The hydrocarbon source area still remains in the vicinity of the former UST cavity, near well MW-3, where a previous release of petroleum hydrocarbons occurred.
- The southerly migration of impacted groundwater from the source area of the former UST cavity is evident by the higher MtBE and TBA concentrations in well MW-4.
- Based on the quarterly groundwater monitoring results, the majority of the more soluble compounds, which include MtBE, gasoline oxygenates, and lead scavengers, has been limited to the region of the former UST cavity and dispenser islands, around wells MW-3 to MW-5.
- However, a high TPH-g concentration was detected in off-site well MW-6. Since the previous monitoring event, TPH-g has significantly decreased in well MW-6. This denotes that the Site's hydrocarbon source has affected the immediate off-site regions, however, the TPH-g plume may be decreasing.

Based on the results of this monitoring event, SOMA recommends continuing the quarterly monitoring programs to better understand the seasonal variations in the groundwater quality conditions.

In a letter dated November 21, 2005, the ACHCS requested a workplan to:

- Effectively remediate the source area, especially in the vicinity of the UST cavity, by initiating interim onsite groundwater remediation; and
- Conduct an additional site investigation to determine if the dissolved contaminant plume may have migrated to nearby residential areas.

On December 28, 2005, SOMA submitted a workplan to the ACHCS and is still waiting for approval.

#### **4.0 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 for the current groundwater monitoring event. 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.

# Figures

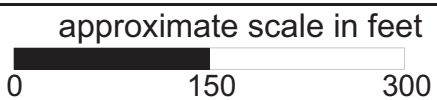
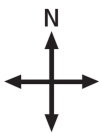
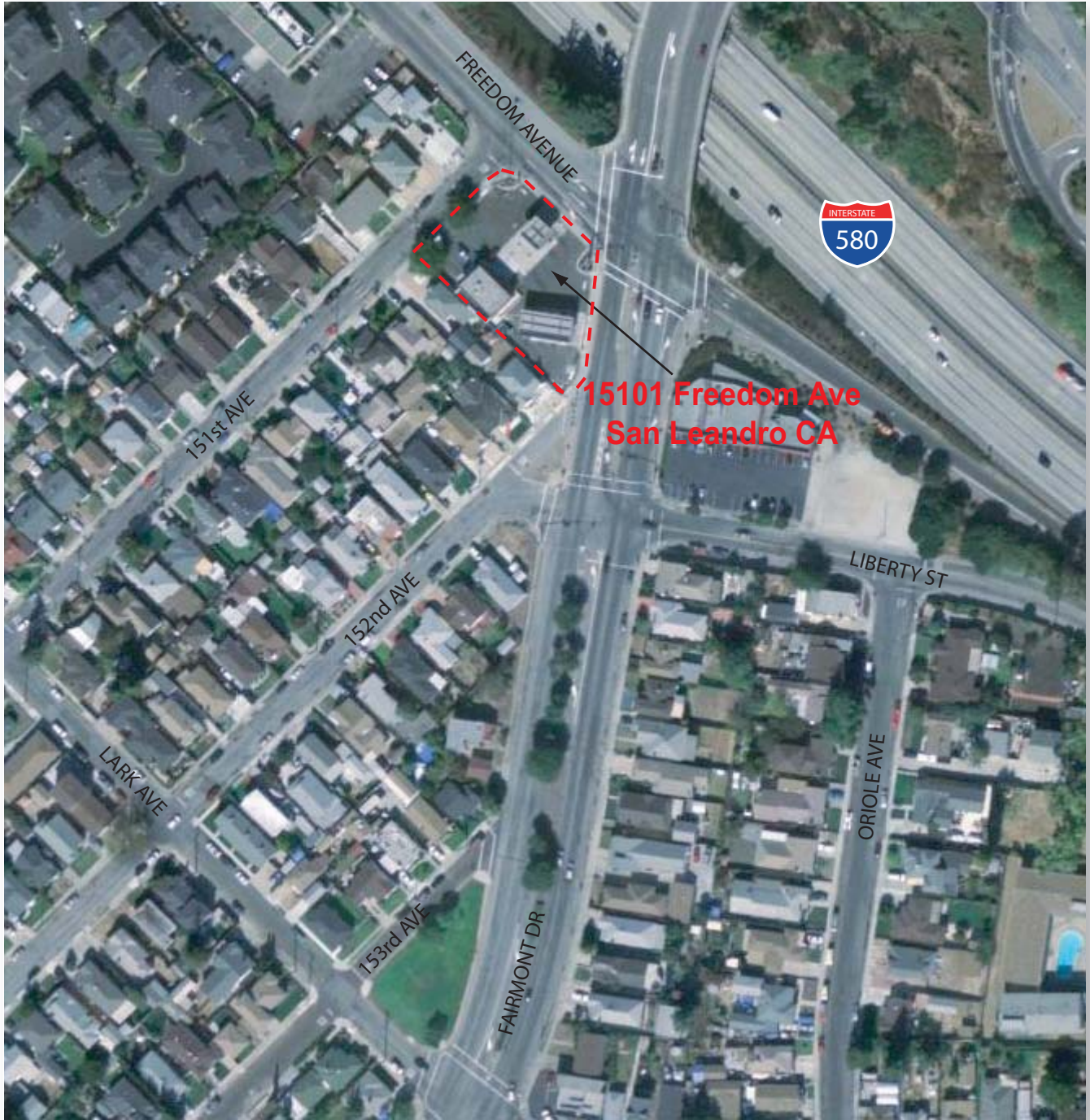
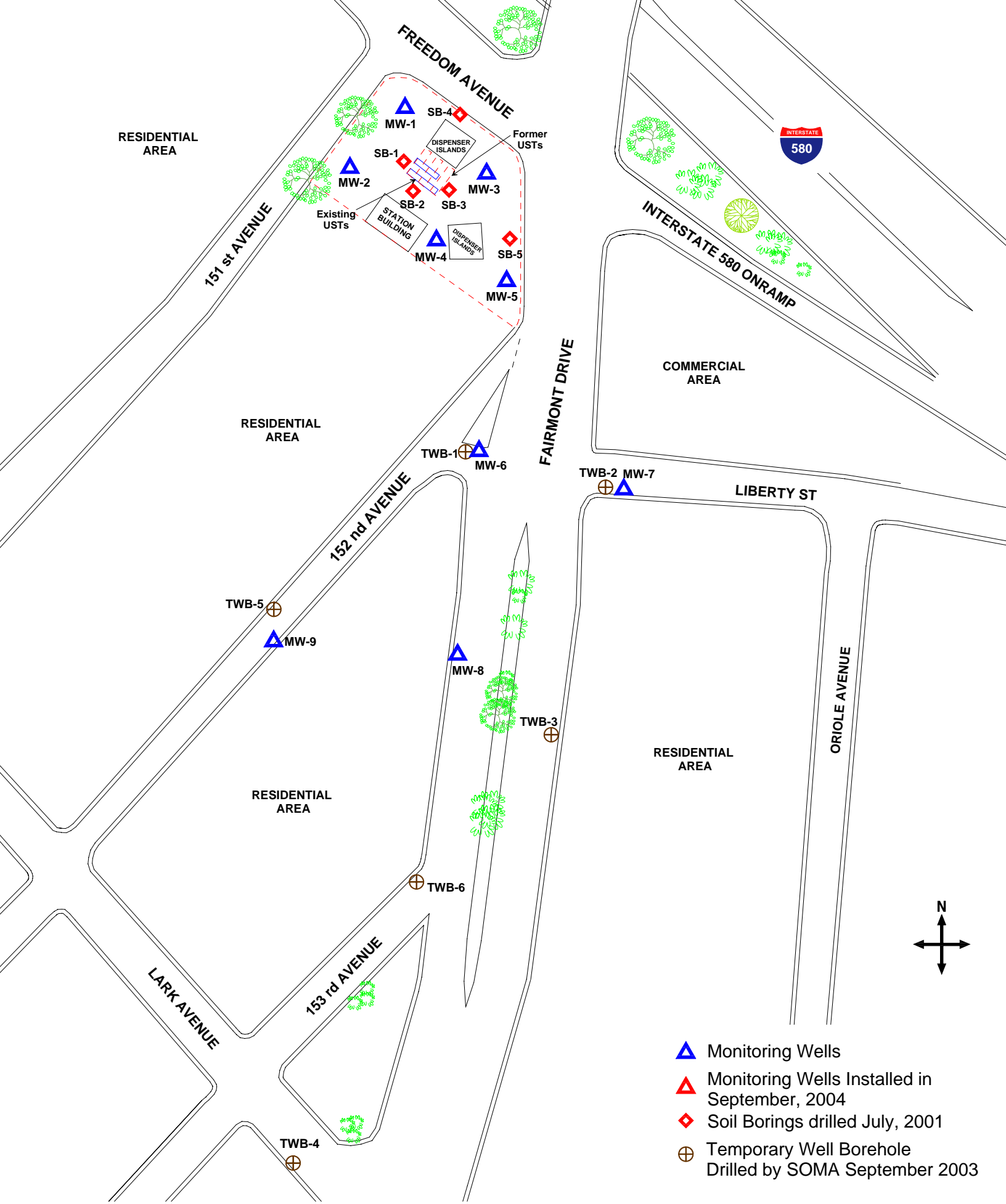
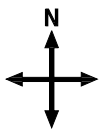


Figure 1: Site vicinity map.



approximate scale in feet  
 0 50 100

Figure 2: Site map showing locations of groundwater monitoring wells and soil borings.



RESIDENTIAL AREA

FREEDOM AVENUE



INTERSTATE 580 ONRAMP

COMMERCIAL AREA

151 st AVENUE

MW-1  
32.65

MW-2  
33.00

MW-3  
32.79

MW-4  
33.00

MW-5  
32.95

RESIDENTIAL AREA

MW-6  
31.90

152 rd AVENUE

Approximate droundwater flow direction

MW-9  
30.21

MW-8  
31.40

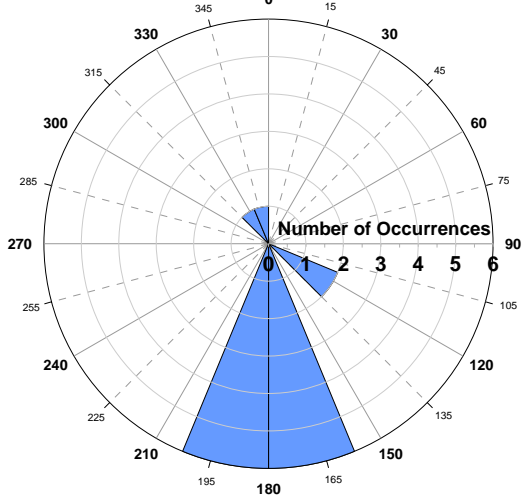
RESIDENTIAL AREA

LIBERTY ST

MW-7  
NM

RESIDENTIAL AREA

ORIOLE AVENUE



Rose Diagram of Groundwater Flow Direction (June 2002-February 2006)

- Monitoring Wells
- Not Measured

Note: Monitoring wells MW-6 through MW-9 installed in September 2004.

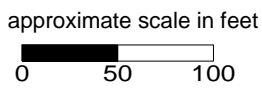
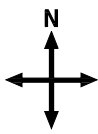


Figure 3: Groundwater elevation contour map in feet. February 2006.





RESIDENTIAL AREA

FREEDOM AVENUE



151 st AVENUE

MW-1  
775

MW-2  
1,410

MW-3  
44,500

Existing USTs

MW-4  
6,850

MW-5  
7,640

INTERSTATE 580 ONRAMP

COMMERCIAL AREA

RESIDENTIAL AREA

FAIRMONT DRIVE

152 nd AVENUE

MW-6  
2,790

LIBERTY ST

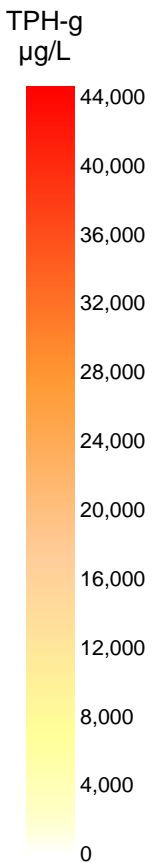
MW-9  
<50

MW-8  
<50

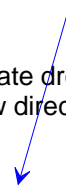
MW-7  
NA

RESIDENTIAL AREA

RESIDENTIAL AREA



Approximate groundwater flow direction



▲ Monitoring Wells

< Less than Laboratory Reporting Limit

NA Not Analyzed

Note: Monitoring wells MW-6 through MW-9 installed in September 2004.

approximate scale in feet

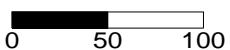
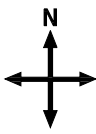


Figure 4: Contour map of TPH-g concentrations in groundwater. February 2006.





RESIDENTIAL AREA

FREEDOM AVENUE



151 st AVENUE

MW-1 14  
MW-2 <0.5  
Former USTs  
STATION BUILDING  
Existing USTs  
MW-3 5,070  
DISPENSER ISLANDS  
DISPENSER ISLANDS

INTERSTATE 580 ONRAMP

COMMERCIAL AREA

RESIDENTIAL AREA

FAIRMONT DRIVE

152 nd AVENUE

MW-6 32.3

LIBERTY ST

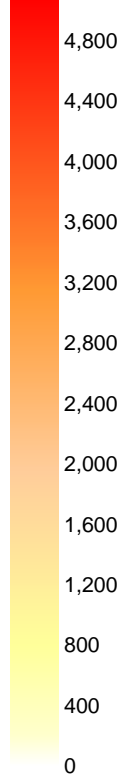
MW-9 <0.50

MW-8 <0.50

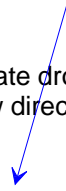
MW-7 NA

RESIDENTIAL AREA

Benzene  $\mu\text{g/L}$



Approximate groundwater flow direction



▲ Monitoring Wells

< Less than Laboratory Reporting Limit

NA Not Analyzed

Note: Monitoring wells MW-6 through MW-9 installed in September 2004.

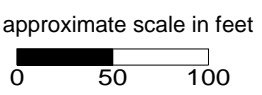
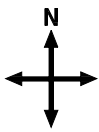


Figure 5: Contour map of Benzene concentrations in groundwater. February 2006.







RESIDENTIAL AREA

FREEDOM AVENUE



151 st AVENUE

MW-1  
4.01

MW-2  
0.72

MW-3  
3,280

Existing USTs

MW-4  
5,120

MW-5  
2,050

INTERSTATE 580 ONRAMP

COMMERCIAL AREA

RESIDENTIAL AREA

FAIRMONT DRIVE

MW-6  
7.3

152 nd AVENUE

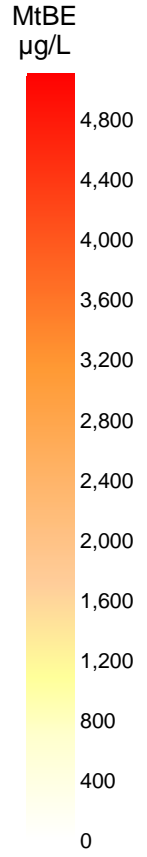
LIBERTY ST

MW-7  
NA

MW-9  
<0.50

MW-8  
<0.50

RESIDENTIAL AREA



Approximate groundwater flow direction

Monitoring Wells

< Less than Laboratory Reporting Limit

NA Not Analyzed

Note: Monitoring wells MW-6 through MW-9 installed in September 2004.

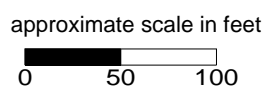
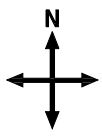


Figure 6: Contour map of MtBE concentrations in groundwater (EPA Method 8260B). February 2006.





RESIDENTIAL AREA

FREEDOM AVENUE



151 st AVENUE

MW-1  
11.3

Former USTs

MW-2  
<10

MW-3  
<430

Existing USTs

STATION BUILDING

MW-4  
769

MW-5  
218

INTERSTATE 580 ONRAMP

COMMERCIAL AREA

RESIDENTIAL AREA

FAIRMONT DRIVE

MW-6  
<43

152 nd AVENUE

LIBERTY ST

MW-9  
<10

MW-8  
<10

MW-7  
NA

RESIDENTIAL AREA

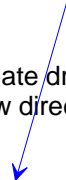
RESIDENTIAL AREA

ORIOLE AVENUE

TBA  
µg/L



Approximate groundwater flow direction



▲ Monitoring Wells

< Less than Laboratory Reporting Limit

NA Not Analyzed

Note: Monitoring wells MW-6 through MW-9 installed in September 2004.

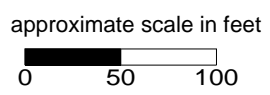
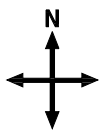


Figure 7: Contour map of TBA concentrations in groundwater. February 2006.



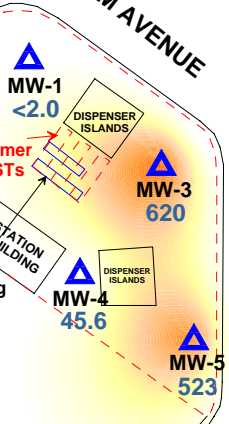


RESIDENTIAL AREA

FREEDOM AVENUE



151 st AVENUE



INTERSTATE 580 ONRAMP

COMMERCIAL AREA

RESIDENTIAL AREA

FAIRMONT DRIVE

152 nd AVENUE

MW-6 <8.6

LIBERTY ST

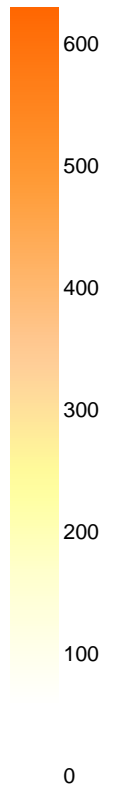
MW-9 <2.0

MW-8 <2.0

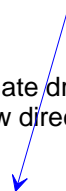
MW-7 NA

RESIDENTIAL AREA

TAME  $\mu\text{g/L}$



Approximate groundwater flow direction



- Monitoring Wells
- < Less than Laboratory Reporting Limit
- NA Not Analyzed

Note: Monitoring wells MW-6 through MW-9 installed in September 2004.

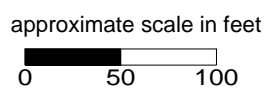


Figure 8: Contour map of TAME concentrations in groundwater. February 2006.



# Tables

**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
<b>MW-1</b>	May-02	51.71	22.85	28.86	5,700	360	4.5	340	450	2
	Aug-02	51.71	23.31	28.40	9,100	590	2.6	830	362	<1.3
	Nov-02	51.71	23.58	28.13	7,900	570	3.1	680	392	< 1.0
	Feb-03	51.71	22.62	29.09	2,900	160	1.6 C	170	211	<0.5
	May-03	51.71	22.43	29.28	1,700	55	<0.5	90	115	2.00
	Aug-03	51.71	21.30	30.41	2,600	2.5	<0.5	190	130	<0.5
	Oct-03	51.71	23.49	28.22	9,200	560.0	2.7 C	670	648	<1.0
	Jan-04	51.71	22.43	29.28	5,500	190	<1.0	220	124.4	<0.5
	May-04	51.71	22.94	28.77	8,000	400	1.50	420	393	3.40
	Sep-04	54.46	23.49	30.97	9,300	580	9.30	690	683	4.60
	Dec-04	54.46	23.01	31.45	7,360	337	<4.3	731	633	<4.3
	Mar-05	54.46	21.48	32.98	2,510	45.2	<0.5	23.2	39.63	2.80
	Jun-05	54.46	22.42	32.04	1,690	36.3	<2.0	59.5	28.73	2.01
	Aug-05	54.46	23.00	31.46	7,310	318	<8.60	475	316	5.15
	Nov-05	54.46	21.40	33.06	9,640	341	<8.6	467	329.7	6.04
	<b>Feb-06</b>	<b>54.46</b>	<b>21.81</b>	<b>32.65</b>	<b>775</b>	<b>14</b>	<b>&lt;2.0</b>	<b>12.6</b>	<b>10.32</b>	<b>4.01</b>
<b>MW-2</b>	May-02	49.66	22.83	26.83 *	3,100	67	8	250	215	56
	Aug-02	49.66	21.41	28.25	2,700	4.6	<0.5	310	140	<0.5
	Nov-02	49.66	21.79	27.87	3,400	4.6	< 0.5	310	160	< 0.5
	Feb-03	49.66	20.51	29.15	890	1.7 C	0.80 C	68	38.92 C	<0.5
	May-03	49.66	20.33	29.33	2,700	5.2 C	<0.5	120	140	1.2
	Aug-03	49.66	23.18	26.48*	8,500	640	<2.5	560	659	<0.8
	Oct-03	49.66	21.71	27.95	3100 H	4.3 C	<0.5	210	160	<0.5

**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
<b>MW-2 cont.</b>	Jan-04	49.66	20.31	29.35	660 H	1.5 C	<0.5	8.9	25	<0.5
	May-04	49.66	21.09	28.57	4,500	5.1 C	<0.5	190	230	0.70
	Sep-04	52.41	21.71	30.70	370	0.76 C	<0.5	25	16	0.50
	Dec-04	52.41	21.20	31.21	880	1.0	<0.5	66	52	<0.5
	Mar-05	52.41	19.15	33.26	564	<0.5	<0.5	21	11.9	<0.5
	Jun-05	52.41	20.30	32.11	2,040	1.2	<2.0	78.2	22	<0.5
	Aug-05	52.41	20.97	31.44	1,500	0.930	<2.00	87.6	21	0.86
	Nov-05	52.41	25.30	27.11	2,140	1.08	<2.0	104	29	0.79
	<b>Feb-06</b>	<b>52.41</b>	<b>19.41</b>	<b>33.00</b>	<b>1,410</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>	<b>99.6</b>	<b>21.4</b>	<b>0.72</b>
<b>MW-3</b>	May-02	51.16	22.28	28.88	44,000	6,000	900	1,500	6,200	2,400
	Aug-02	51.16	22.88	28.28	40,000	5,800	1,100	1,600	6,500	1,300
	Nov-02	51.16	23.19	27.97	47,000	5,300	1,200	2,200	8,600	1,000
	Feb-03	51.16	22.02	29.14	39,000	5,500	1,500	2,000	8,600	1,300
	May-03	51.16	21.89	29.27	52,000	7,300	3,000	2,800	12,700	2,100
	Aug-03	51.16	22.66	28.50	31,000	6,100	860	1,500	6,900	1,200
	Oct-03	51.16	23.06	28.10	41,000	6,100	1,100	2,200	10,200	960
	Jan-04	51.16	21.85	29.31	51,000	4,100	1,100	2,000	8,400	590
	May-04	51.16	22.55	28.61	65,000	4,300	1,300	2,500	10,500	720
	Sep-04	53.91	23.08	30.83	42,000	4,900	890	2,200	8,700	480
	Dec-04	53.91	22.52	31.39	35,151	4,066	972	2,942	13,032	491
	Mar-05	53.91	20.90	33.01	42,600	3,040	1,100	1,530	6,670	968
	Jun-05	53.91	21.85	32.06	84,100	5,110	2,160	3,030	8,800	2,670
	Aug-05	53.91	22.49	31.42	43,500	3,630	1,080	2,500	6,830	1,440

**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
	Nov-05	53.91	22.81	31.10	47,700	4,240	520	2,170	6,320	1,390
	<b>Feb-06</b>	<b>53.91</b>	<b>21.12</b>	<b>32.79</b>	<b>44,500</b>	<b>5,070</b>	<b>1360</b>	<b>1,920</b>	<b>4,840</b>	<b>3,280</b>
<b>MW-4</b>	May-02	50.54	21.78	28.76	880	25	1.0C	110	52	12,000
	Aug-02	50.54	22.50	28.04	3,800	70	<5.0	300	115	4,800
	Nov-02	50.54	22.81	27.73	5,100	150	10	460	258	2,400
	Feb-03	50.54	21.48	29.06	3,200	98	66	220	360	6,600
	May-03	50.54	21.24	29.30	6,200	140	46	200	790	2,300
	Aug-03	50.54	22.32	28.22	7,500	180	57	220	1450	1,900
	Oct-03	50.54	22.74	27.80	5,800	250	32	300	970	7,800
	Jan-04	50.54	21.19	29.35	5,900	270	17 C	150	640	7,300
	May-04	50.54	22.03	28.51	9,100	210	51	200	1190	1800
	Sep-04	53.31	22.76	30.55	5,200	290	12	370	600	7300
	Dec-04	53.31	21.99	31.32	8,937	538	114	416	2379	5021
	Mar-05	53.31	20.01	33.30	12,300	225	39.6	80.1	1465	3870
	Jun-05	53.31	21.25	32.06	7,690	114	32.6	77.1	555	1150
	Aug-05	53.31	22.03	31.28	8,850	175	24.6	150	851	1380
	Nov-05	53.31	22.43	30.88	9,990	356	<43	196	700	3,640
	<b>Feb-06</b>	<b>53.31</b>	<b>20.31</b>	<b>33.00</b>	<b>6,850</b>	<b>205</b>	<b>&lt;43</b>	<b>67.2</b>	<b>255.2</b>	<b>5,120</b>
<b>MW-5</b>	May-02	47.79	19.02	28.77	25,000	1,000	1200	1,100	3,060	1,800
	Aug-02	47.79	19.80	27.99	18,000	1,000	660	950	1,720	1,500
	Nov-02	47.79	20.14	27.65	16,000	1,300	380	930	1,550	1,200
	Feb-03	47.79	18.70	29.09	12,000	390	71	770	1,100	860
	May-03	47.79	18.52	29.27	9,100	210	31	560	790	600
	Aug-03	47.79	19.54	28.25	12,000	660	75	660	1,110	1,000
	Oct-03	47.79	20.06	27.73	15,000	1,000	130	1,000	1,430	1,700
	Jan-04	47.79	18.42	29.37	9,900	450 C	16	500	431	1,100

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**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	Casing Elevation <sup>1</sup> (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B <sup>2</sup> (µg/L)
<b>MW-5 cont.</b>	May-04	47.79	19.30	28.49	9,200	380	24	490	536	720
	Sep-04	50.53	20.15	30.38	10,000	980	71	560	770	1200
	Dec-04	50.53	19.30	31.23	10,502	587	64	1040	1133	1015
	Mar-05	50.53	17.20	33.33	8,390	407	<5.5	83	42.5	1530
	Jun-05	50.53	18.54	31.99	9,350	147	18.3	435	146.2	573
	Aug-05	50.53	19.31	31.22	9,500	261	<22	726	321.3	749
	Nov-05	50.53	19.75	30.78	10,000	443	41.5	527	278.5	1,430
	<b>Feb-06</b>	<b>50.53</b>	<b>17.58</b>	<b>32.95</b>	<b>7,640</b>	<b>237</b>	<b>&lt;22</b>	<b>187</b>	<b>50.2</b>	<b>2,050</b>
<b>MW-6</b>	Sep-04	45.82	17.64	28.18	34,000	150	130	2200	8100	0.6
	Dec-04	45.82	15.75	30.07	5,161	137	7	436	1136	<5.5
	Mar-05	45.82	13.80	32.02	6,040	125	3.22	260	722.1	4.94
	Jun-05	45.82	14.78	31.04	5,590	44.3	6.60	272	382	5.85
	Aug-05	45.82	15.91	29.91	6,130	99	<8.6	378	492.9	5.66
	Nov-05	45.82	16.55	29.27	11,400	101	<8.6	645	834.7	4.33
	<b>Feb-06</b>	<b>45.82</b>	<b>13.92</b>	<b>31.90</b>	<b>2,790</b>	<b>32.3</b>	<b>&lt;8.6</b>	<b>131</b>	<b>131.22</b>	<b>7.30</b>
<b>MW-7</b>	Sep-04	44.74	15.21	29.53	2,900	<0.5	<0.5	52	61	8.1
	Dec-04	44.74	13.90	30.84	<50	1.6	<0.5	29	58	6.0
	Mar-05	44.74	11.46	33.28	2,230	<2.5	<2.5	39.4	51.4	12.4
	Jun-05	44.74	12.97	31.77	2,940	0.85	<2.0	50.6	31.9	13.7
	Aug-05	44.74	14.10	30.64	2,310	<0.50	<2.0	55.7	29.6	4.01
	Nov-05	44.74	14.59	30.15	3,030	<0.5	<2.0	66.5	42.3	9.76
	<b>Feb-06</b>	<b>44.74</b>	<b>NM</b>	<b>NM</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>MW-8</b>	Sep-04	41.14	12.98	28.16	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	Dec-04	41.14	11.22	29.92	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	Mar-05	41.14	NM	NM	NA	NA	NA	NA	NA	NA
	Jun-05	41.14	10.46	30.68	<200	0.53	<2.0	<0.5	<1.0	<0.5
	Aug-05	41.14	11.53	29.61	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	Nov-05	41.14	11.92	29.22	<50	<0.5	<2.0	1.36	1.8	<0.5
	<b>Feb-06</b>	<b>41.14</b>	<b>9.74</b>	<b>31.40</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;2.0</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;0.50</b>



**Table 1**  
**Historical Groundwater Elevation Data and Analytical Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	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 8260B <sup>2</sup> (µg/L)
<b>MW-9</b>	Sep-04	40.26	12.18	28.08	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	Dec-04	40.26	10.91	29.35	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	Mar-05	40.26	10.52	29.74	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	Jun-05	40.26	14.73	25.53	<200	<0.5	<2.0	<0.5	<1.0	<0.5
	Aug-05	40.26	10.59	29.67	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	Nov-05	40.26	11.25	29.01	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	<b>Feb-06</b>	<b>40.26</b>	<b>10.05</b>	<b>30.21</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;2.0</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;0.50</b>

Notes:

The first time SOMA monitored this Site was in May 2002.

\*: Due to minimal recharge rates in well MW-2, the groundwater elevation recorded on these dates did not match the overall site conditions, May 2002 & August 2003.

<sup>1</sup> : Top of casing elevations were surveyed to a datum of 67.07 M.S.L by Kier & Wright Civil Engineers & Land Surveyors on May 7, 2002.

On October 11, 2004, the site was re-surveyed by Harrington Surveys, Inc. of Walnut Creek, CA to a datum of California Coordinate System, Zone 3, NAD 83.

<sup>2</sup> MIBE analyzed by EPA Method 8021B, and confirmed by EPA Method 8260B.

<: Not detected above the laboratory reporting limit.

<sup>c</sup> Presence confirmed, but confirmation concentration differed by more than a factor of two.

C: Presence confirmed, but RPD between columns exceeds 40%.

H: Heavier hydrocarbons contributed to the quantitation.

NA: Not Analyzed. Well MW-8 was inaccessible during the First Quarter 2005, car was parked over well.

Not Analyzed. Well MW-7 was inaccessible during the First Quarter 2006, car was parked over well.

NM: Not Measured. Well MW-8 was inaccessible during the First Quarter 2005, car was parked over well.

Not Measured. Well MW-7 was inaccessible during the First Quarter 2006, car was parked over well.

The first time SOMA monitored wells MW-6 to MW-9 was in September 2004.

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
<b>MW-1</b>	Aug-02	78	<1.3	<1.3	<1.3
	Nov-02	42	< 1.0	< 1.0	< 1.0
	Feb-03	47	<0.5	<0.5	<0.5
	May-03	25	<0.5	<0.5	<0.5
	Aug-03	<10	<0.5	<0.5	<0.5
	Oct-03	70	<1.0	<1.0	<1.0
	Jan-04	55	<0.5	<0.5	<0.5
	May-04	62	<0.7	<0.7	<0.7
	Sep-04	<10	<0.5	<0.5	<0.5
	Dec-04	<21.5	<4.3	<4.3	<17.2
	Mar-05	81	<0.5	<0.5	<2.0
	Jun-05	<10	<0.5	<0.5	<2.0
	Aug-05	68.9	<2.15	<2.15	<8.6
	Nov-05	46	<2.15	<2.15	<8.6
	<b>Feb-06</b>	<b>11.3</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>
<b>MW-2</b>	Aug-02	21	<0.5	<0.5	<0.5
	Nov-02	15	<0.5	<0.5	<0.5
	Feb-03	12	<0.5	<0.5	<0.5
	May-03	31	<0.5	<0.5	<0.5
	Aug-03	69	<0.8	<0.8	<0.8
	Oct-03	12	<0.5	<0.5	<0.5
	Jan-04	<10	<0.5	<0.5	<0.5
	May-04	14	<0.5	<0.5	<0.5
	Sep-04	<10	<0.5	<0.5	<0.5
	Dec-04	<2.5	<0.5	<0.5	<2.0
	Mar-05	<2.5	<0.5	<0.5	<2.0
	Jun-05	<10	<0.5	<0.5	<2.0
	Aug-05	<10	<0.5	<0.5	<2.0
	Nov-05	<10	<0.5	<0.5	<2.0
	<b>Feb-06</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
<b>MW-3</b>	Aug-02	<330	<8.3	<8.3	330
	Nov-02	85	< 1.3	<1.3	220
	Feb-03	140	<5.0	<5.0	320
	May-03	520	<10	<10	530
	Aug-03	180	<4.2	<4.2	270
	Oct-03	<170	<8.3	<8.3	200
	Jan-04	<100	<5.0	<5.0	150
	May-04	<100	<5.0	<5.0	270
	Sep-04	<140	<7.1	<7.1	110
	Dec-04	<100	<20	<20	154
	Mar-05	<215	<43	<43	256
	Jun-05	<215	<10.8	<10.8	374
	Aug-05	699	<21.5	<21.5	277
	Nov-05	<430	<21.5	<21.5	171
<b>Feb-06</b>	<b>&lt;430</b>	<b>&lt;21.5</b>	<b>&lt;21.5</b>	<b>620</b>	
<b>MW-4</b>	Aug-02	1500	<17	<17	18
	Nov-02	580	< 5.0	6	13
	Feb-03	1600	<20	22	<20
	May-03	690	<8.3	<8.3	17
	Aug-03	550	<7.1	7.3	18
	Oct-03	1400	<31	50	<31
	Jan-04	1,300	<20	25	21
	May-04	560	<8.3	<8.3	24
	Sep-04	1,300	<50	<50	<50
	Dec-04	826	<10.75	21	49
	Mar-05	1,110	<10.8	12.1	<43
	Jun-05	<110	<5.5	<5.5	22.9
	Aug-05	902	<5.50	<5.50	37.4
	Nov-05	884	<10.8	<10.8	<43
<b>Feb-06</b>	<b>769</b>	<b>&lt;10.8</b>	<b>16.4</b>	<b>45.6</b>	
<b>MW-5</b>	Aug-02	<250	<6.3	<6.3	510
	Nov-02	66	< 2.0	< 2.0	560
	Feb-03	<63	<3.1	<3.1	280
	May-03	<33	<1.7	<1.7	110
	Aug-03	130	<3.6	<3.6	270
	Oct-03	<100	<5.0	<5.0	740
	Jan-04	<63	<3.1	<3.1	300
	May-04	<100	<5.0	<5.0	210
	Sep-04	<130	<6.3	<6.3	550
	Dec-04	40	<5.5	<5.5	444
	Mar-05	88.8	<5.5	<5.5	448
	Jun-05	<43	<2.15	<2.15	88.1
	Aug-05	274	<5.50	<5.50	195
	Nov-05	192	<5.50	<5.50	360
<b>Feb-06</b>	<b>218</b>	<b>&lt;5.50</b>	<b>&lt;5.50</b>	<b>523</b>	

**Table 2**  
**Historical Gasoline Oxygenates Results**  
**15101 Freedom Avenue, San Leandro, CA**

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
<b>MW-6</b>	Sep-04	<10	<0.5	<0.5	<0.5
	Dec-04	<5.5	<5.5	<5.5	<22
	Mar-05	2.54	<0.5	<0.5	<2.0
	Jun-05	<20	<1.0	<1.0	<4.0
	Aug-05	<43	<2.15	<2.15	<8.6
	Nov-05	<43	<2.15	<2.15	<8.6
	<b>Feb-06</b>	<b>&lt;43</b>	<b>&lt;2.15</b>	<b>&lt;2.15</b>	<b>&lt;8.6</b>
<b>MW-7</b>	Sep-04	<10	<0.5	<0.5	1.5
	Dec-04	<2.5	<0.5	<0.5	<2.0
	Mar-05	<12.5	<2.5	<2.5	<10
	Jun-05	<10	<0.5	<0.5	2.23
	Aug-05	<10	<0.5	<0.5	<2.0
	Nov-05	<10	<0.5	<0.5	<2.0
	<b>Feb-06</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>MW-8</b>	Sep-04	<10	<0.5	<0.5	<0.5
	Dec-04	<2.5	<0.5	<0.5	<2.0
	Mar-05	NA	NA	NA	NA
	Jun-05	<10	<0.5	<0.5	<2.0
	Aug-05	<10	<0.5	<0.5	<2.0
	Nov-05	<10	<0.5	<0.5	<2.0
	<b>Feb-06</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>
<b>MW-9</b>	Sep-04	<10	<0.5	<0.5	<0.5
	Dec-04	<2.5	<0.5	<0.5	<2.0
	Mar-05	<2.5	<0.5	<0.5	<2.0
	Jun-05	<10	<0.5	<0.5	<2.0
	Aug-05	<10	<0.5	<0.5	<2.0
	Nov-05	<10	<0.5	<0.5	<2.0
	<b>Feb-06</b>	<b>&lt;10</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>

Notes:

August 8, 2002 was the first time that samples were analyzed for Gasoline Oxygenates

<: Not detected above the laboratory reporting limit.

NA: Not Analyzed. Well MW-8 was inaccessible during the 1Q05 & well MW-7 (1Q06) car was parked over each well.

TBA: tert-Butyl Alcohol

DIPE: Isopropyl Ether

ETBE: Ethyl tert-Butyl Ether

TAME: Methyl tert-Amyl Ether

# Appendix A

## SOMA's Groundwater Monitoring Procedures

## **FIELD ACTIVITIES**

On February 9, 2006, SOMA's field crew conducted a groundwater monitoring event in accordance with the procedures and guidelines of the CRWQCB. During this groundwater monitoring event, five on-site wells (MW-1 to MW-5) and three off-site wells (MW-6, MW-8, and MW-9) were monitored. Well MW-7 was inaccessible, a car was parked over the well. Figure 2 shows the locations of the monitoring wells.

The depth to groundwater in each on-site monitoring well was measured from the top of the casing to the nearest 0.01 foot using an electric sounder. The Site was re-surveyed by Harrington Surveys Inc., of Walnut Creek, on October 11, 2004. The survey datum was based on California Coordinate System, Zone 3, NAVD 83. The elevation data was based on a datum of 58.50 feet NAVD88. Top of casing elevation data and the depth to groundwater in each monitoring well was used to calculate the groundwater elevation.

The survey data is included in Appendix B.

Prior to collecting samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC).

In order to ensure that the final samples were in equilibrium with and representative of the surrounding groundwater, several samples were taken during the purging for field measurements of pH, temperature and EC. These parameters were measured using a Hanna pH, conductivity, and temperature meter. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

The purging continued until these parameters stabilized or three casing volumes were purged. For sampling purposes, after purging, a disposable polyethylene bailer was used to collect sufficient samples from each monitoring well for laboratory analyses.

The groundwater samples collected from each monitoring well were transferred to four 40-mL VOA vials, which had been prepared with a hydrochloric acid preservative. The vials were sealed to prevent the development of air bubbles within the headspace area. After the groundwater samples were collected, they were placed in an ice chest and maintained at 4 °C. A chain of custody (COC) form was completed for all of the samples and was submitted along with the samples to the laboratory. Upon completion of this monitoring event, 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, MtBE, gasoline oxygenates, ethanol and lead scavengers. Samples for TPH-g, BTEX, MtBE, gasoline oxygenates, ethanol and lead scavengers measurements were prepared using EPA Method 5030B and analyzed using Method 8260B.

# Appendix B

Table of Elevations & Coordinates on Monitoring Wells  
Measured by Harrington Surveys, Inc.,  
and  
Field Measurements of Physical and Chemical  
Parameters of Groundwater Samples



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

2278 Larkey Lane, Walnut Creek, Ca. 94596 Phone (925)935-7228 Fax (925)935-5118  
Cel (925)788-7359 E-Mail (ben5132@pacbell.net)

Soma Environmental Engineering  
2680 Bishop Dr. # 203  
San Ramon, Ca. 94583

Oct. 14, 2004

Attn: Elena Manzo  
Job # 2445

Ref: 15101 Freedom Ave, San Leandro, Ca.

**HORIZONTAL CONTROL, NAD 88:**

Survey based on California Coordinate System, Zone 3, NAD 83.

CHABOT "B", NORTH 2,087,731.02 EAST 6,094,039.23 sft. LAT. N37°43'02.71762"  
W122°07'00.46339", NAVD 88, ELEV. 134.957.

CHABOT "A", NORTH 2,088,584.99 EAST 6,093,351.39 sft. LAT. N37°43'11.04190"  
W122°07'09.20691", NAVD 88, ELEV. 492.08.

**VERTICAL CONTROL, NAVD 88:**

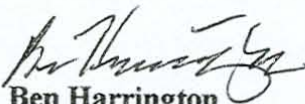
NGS 1974, STATION K 1256, NAVD 88 ELEV. 58.50.  
PID # HT1871

GPS: TRIMBLE 5800, LEICA TCA 1800, 1" HORZ. & VERT.

EPOCH DATE 1998.5

OBSERVATION: EPOCH=180.

FIELD SURVEY: OCT. 11, 2004.

  
Ben Harrington  
PLS 5132



**SURVEY REPORT**  
15101 FREEDOM AVE  
SAN LEANDRO, CA.

**HARRINGTON SURVEYS INC.**  
2278 LARKEY LANE  
WALNUT CREEK, CA. 94597  
925-935-7228 FAX. 935-5118

**JOB NO. 2445**  
**DATE: OCT. 12, 2004**

	NAD 83	NAD 83	NAVD 88		NORTH	WEST
PT	NORTH (sft)	EAST(sft)	ELEV.	DESCRIPTION	LATITUDE (DMS)	LONGITUDE (DMS)
1	2087731.02	6094039.23	442.77	FD CHABOT B	37°43'02.71762"	122°07'00.46339"
2	2088584.99	6093351.39	492.08	FD CHABOT A	37°43'11.04190"	122°07'09.20691"
51	2084348.54	6092159.32	55.44	FD. X-8		
52	2084073.17	6092141.24	46.15	MW-6 PAV		
53	2084072.72	6092140.95	46.15	MW-6 PUNCH		
54	2084072.47	6092140.95	45.82	MW-6 NOTCH	37°42'26.22635"	122°07'23.29643
55	2083909.71	6091947.10	40.61	MW-9 PAV		
56	2083909.10	6091946.97	40.61	MW-9 PUNCH		
57	2083908.71	6091947.00	40.26	MW-9 NOTCH	37°42'24.57425"	122°07'25.67431"
58	2083861.20	6092118.11	41.38	MW-8 PAV		
59	2083860.43	6092118.36	41.44	MW-8 PUNCH		
60	2083860.03	6092118.52	41.14	MW-8 NOTCH	37°42'24.12245"	122°07'23.52966"
61	2084008.21	6092290.11	44.94	MW-7 PAV		
62	2084007.88	6092290.27	44.95	MW-7 PVNCH		
63	2084007.68	6092290.40	44.74	MW-7 NOTCH	37°42'25.61150"	122°07'21.42290"
64	2084206.49	6092175.95	51.03	MW-5 PAV		
65	2084206.17	6092176.55	50.96	MW-5 PUNCH		
66	2084206.01	6092176.79	50.53	MW-5 NOTCH	37°42'27.55260	122°07'22.87930
67	2084670.41	6092307.68	69.79	FD BM FAIR580		
68	2084443.65	6092198.88	53.70	MW-4 PAV		
69	2084444.39	6092199.72	53.74	MW-4 PUNCH		
70	2084444.59	6092199.51	53.31	MW-4 NOTCH	37°42'29.91496"	122°07'22.64809"
71	2084399.10	6092145.43	54.37	MW-3 PAV		
72	2084399.78	6092145.28	54.33	MW-3 PUNCH		
73	2084400.15	6092145.27	53.91	MW-3 NOTCH	37°42'29.46636"	122°07'23.31339"
74	2084329.47	6092199.72	54.82	MW-1 PAV		
75	2084330.44	6092199.45	54.79	MW-1 PUNCH		
76	2084330.75	6092199.20	54.46	MW-1 NOTCH	37°42'28.78955"	122°07'22.62738"
77	2084367.59	6092256.38	52.88	MW-2 PAV		
78	2084368.15	6092256.14	52.92	MW-2 PUNCH		
79	2084368.53	6092256.06	52.41	MW-2 NOTCH	37°42'29.17277"	122°07'21.92804"
80	2084930.49	6091759.33	58.50	FD BM K1256	37°42'34.64279"	122°07'28.23011"





Well No.: MW-1  
 Casing Diameter: 4 inch  
 Depth of Well: 30.40 ft  
 Top of Casing Elevation: 54.46 ft  
 Depth to Groundwater: 21.31 ft  
 Groundwater Elevation: 32.65 ft  
 Water Column Height: 8.59 ft  
 Purged Volume: 14 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe \_\_\_\_\_

Sheen: No  Yes  Describe \_\_\_\_\_

Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.C. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
12:40 PM	Started purging well						
12:43 PM	2.0	2.28	6.44	21.31	890	388	-61
12:46 PM	2.0	1.90	6.26	21.42	897	304	-77
12:50 PM	10	2.86	6.19	21.40	897	261	-86
12:53 PM	14	3.77	6.18	21.35	899	228	-90
12:55 PM	Sampled						

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-2  
 Casing Diameter: 4 inch  
 Depth of Well: 30.30 ft  
 Top of Casing Elevation: 52.41 ft  
 Depth to Groundwater: 19.41 ft  
 Groundwater Elevation: 33.00 ft  
 Water Column Height: 10.89 ft  
 Purged Volume: 16 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump   
 Sampling Method: Bailer  Pump   
 Color: No  Yes  Describe \_\_\_\_\_  
 Sheen: No  Yes  Describe \_\_\_\_\_  
 Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.C. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turb. (NTU)	ORP
12:10 PM	started purging well						
12:12 PM	1.5	8.19	6.59	21.34	1310	319	26
12:18 PM	5	3.81	6.43	21.40	1280	260	18
12:21 PM	9	3.13	6.31	21.48	<del>1280</del>	209	16
12:24 PM	13	3.79	6.29	21.39	1280	190	5
12:27 PM	16	1.46	6.29	21.34	1290	181	-27
12:30 PM	sampled						

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: 17W-3  
 Casing Diameter: 4 inch  
 Depth of Well: 30 ft  
 Top of Casing Elevation: 53.91 ft  
 Depth to Groundwater: 21.12 ft  
 Groundwater Elevation: 32.79 ft  
 Water Column Height: 8.88 ft  
 Purged Volume: 12 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe \_\_\_\_\_

Sheen: No  Yes  Describe \_\_\_\_\_

Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.C. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turb. (NTU)	ORP
1:58 PM	Starts purging well						
2 PM	1.5	4.41	6.48	21.68	1440	356	-42
2:03 PM	5	7.00	6.21	21.75	1400	336	-62
2:06 PM	8	7.90	6.15	21.74	1400	206	-75
2:09 PM	12	7.90	6.12	21.72	1400	181	-81
2:10 PM	Sampled						

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: 17W-4  
 Casing Diameter: 4 inch  
 Depth of Well: 30.10 ft  
 Top of Casing Elevation: 53.31 ft  
 Depth to Groundwater: 20.31 ft  
 Groundwater Elevation: 33.00 ft  
 Water Column Height: 9.79 ft  
 Purged Volume: 16 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe \_\_\_\_\_

Sheen: No  Yes  Describe \_\_\_\_\_

Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (uS/cm)	Turb. NTU	ORP
1:03 PM	Started purging well						
1:06 PM	2.5	2.90	6.22	20.72	1580	356	-41
1:10 PM	5	7.52	6.16	20.67	1580	249	-55
1:13 PM	7	8.50	6.15	20.67	1590	199	-61
1:16 PM	10	8.10	6.15	20.64	1570	185	-62
1:19 PM	16	5.07	6.16	20.65	1570	174	-63
1:22 PM	Sampled						

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: 12741-5  
 Casing Diameter: 4 inch  
 Depth of Well: 29.85 ft  
 Top of Casing Elevation: 50.53 ft  
 Depth to Groundwater: 17.58 ft  
 Groundwater Elevation: 32.95 ft  
 Water Column Height: 12.27 ft  
 Purged Volume: 14 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe \_\_\_\_\_

Sheen: No  Yes  Describe \_\_\_\_\_

Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turb. (NTU)	ORP
1:30 PM	Started purging well						
1:34 PM	2.5	5.73	6.36	21.63	1300	407	-54
1:38 PM	6	7.74	6.25	21.76	1290	249	-71
1:42 PM	10	8.30	6.20	21.83	1290	202	-80
1:46 PM	14	6.46	6.19	21.89	1290	206	-84
1:50 PM	Sampled						

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-6  
 Casing Diameter: 4 inch  
 Depth of Well: 27.40 ft  
 Top of Casing Elevation: 45.82 ft  
 Depth to Groundwater: 13.92 ft  
 Groundwater Elevation: 31.90 ft  
 Water Column Height: 13.48 ft  
 Purged Volume: 17 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe \_\_\_\_\_

Sheen: No  Yes  Describe \_\_\_\_\_

Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turb. (NTU)	ORP
10:04 AM	started purging well						
10:06 AM	2.0	5.07	5.91	21.75	907	175	56
10:08 AM	4.0	3.76	5.98	21.72	908	144	21
10:11 AM	8.0	3.21	6.06	21.79	904	116	-40
10:14 AM	13	5.25	6.11	21.73	900	118	-70
10:17 AM	17	6.18	6.13	21.74	902	117	-94
10:20 AM	sampled						

Notes:





ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-8  
 Casing Diameter: 2 inch  
 Depth of Well: 28.75 ft  
 Top of Casing Elevation: 41.14 ft  
 Depth to Groundwater: 9.74 ft  
 Groundwater Elevation: 31.40 ft  
 Water Column Height: 19.01 ft  
 Purged Volume: 13 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump

Sampling Method: Bailer  Pump

Color: No  Yes  Describe cloudy

Sheen: No  Yes  Describe \_\_\_\_\_

Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turb. (NTU)	ORP
11 AM	started purging well						
11:02 AM	2	4.93	6.60	20.34	1320	999	55
11:04 AM	5	3.15	6.50	20.29	1340	273	48
11:07 AM	9	2.77	6.47	20.31	1340	205	42
11:10 AM	13	3.30	6.46	20.30	1340	197	35
11:12 AM	sampled						

Notes:



Well No.: MW-9  
 Casing Diameter: 2 inch  
 Depth of Well: 32.60 ft  
 Top of Casing Elevation: 40.26 ft  
 Depth to Groundwater: 10.05 ft  
 Groundwater Elevation: 30.21 ft  
 Water Column Height: 22.55 ft  
 Purged Volume: 9 gallons

Project No.: 2551  
 Address: 15101 Freedom Ave.  
 San Leandro, CA  
 Date: February 9, 2006  
 Sampler: Tony Perini  
 Mehran Nowroozi

Purging Method: Bailer  Pump   
 Sampling Method: Bailer  Pump   
 Color: No  Yes  Describe \_\_\_\_\_  
 Sheen: No  Yes  Describe \_\_\_\_\_  
 Odor: No  Yes  Describe \_\_\_\_\_

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
10:35 AM	5 feet purging well						
10:37 AM	2	7.18	6.47	20.20	875	180	13
10:39 AM	5	5.16	6.51	20.08	876	146	7
10:43 AM	9	3.59	5.53	19.90	874	66.8	3
10:45 AM	sampled						

Notes:

# Appendix C

Laboratory Report and Chain of Custody Form  
for the  
First Quarter 2006 Monitoring Event

22 February 2006

Mansour Sepehr  
SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton, CA 94588

RE: 15101 Freedom Ave., San Leandro

Work Order Number: 6020008

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# 6020008

Project No: 2551		Sampler: <i>Tony Perini / Mehram Nouroozi</i>		Analyses/Method									
Project Name: 15101 Freedom Avenue San Leandro		Report To: Tony Perini											
Turnaround Time: Standard		Company: SOMA Environmental Engineering, Inc.		TPH-g, BTEX, MIBE Gasoline Oxygenates & Lead Scavengers									
		Tel: 925-244-6600 Fax: 925-244-6601											
Lab No.	Sample ID	Sampling Date/Time		Matrix	# of Containers	Preservatives				Field Notes	Date/Time:		
		Date	Time			Soil	Water	Waste	HCL			H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>
	MW-1	2/9/06	12:55 PM	X	4 VOAs	X	X	X	X	X	X	X	3:15 PM
	MW-2	2/9/06	12:30 AM	X		X	X	X	X	X	X	X	2/9/06
	MW-3	2/9/06	2:10 PM	X		X	X	X	X	X	X	X	
	MW-4	2/9/06	1:22 PM	X		X	X	X	X	X	X	X	
	MW-5	2/9/06	1:50 PM	X		X	X	X	X	X	X	X	
	MW-6	2/9/06	10:20 AM	X		X	X	X	X	X	X	X	
	<del>MW-7</del>			<del>X</del>		<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	
	MW-8	2/9/06	11:12 AM	X		X	X	X	X	X	X	X	
	MW-9	2/9/06	10:45 AM	X		X	X	X	X	X	X	X	
Sampler Remarks:		Relinquished by: <i>Tony Perini</i>		Date/Time: <i>3:15 PM 2/9/06</i>		Received by: <i>James Young</i>		Date/Time: <i>3:15 PM 2/9/06</i>					
EDF REQUIRED Ethanol													



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 15101 Freedom Ave., San Leandro  
Project Number: 2551  
Project Manager: Mansour Sepehr

**Reported:**  
22-Feb-06 17:01

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	6020008-01	Water	09-Feb-06 12:55	09-Feb-06 17:23
MW-2	6020008-02	Water	09-Feb-06 12:30	09-Feb-06 17:23
MW-3	6020008-03	Water	09-Feb-06 14:10	09-Feb-06 17:23
MW-4	6020008-04	Water	09-Feb-06 13:22	09-Feb-06 17:23
MW-5	6020008-05	Water	09-Feb-06 13:50	09-Feb-06 17:23
MW-6	6020008-06	Water	09-Feb-06 10:20	09-Feb-06 17:23
MW-8	6020008-07	Water	09-Feb-06 11:12	09-Feb-06 17:23
MW-9	6020008-08	Water	09-Feb-06 10:45	09-Feb-06 17:23



SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 15101 Freedom Ave., San Leandro  
Project Number: 2551  
Project Manager: Mansour Sepehr

Reported:  
22-Feb-06 17:01

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (602008-01) Water</b> <b>Sampled: 09-Feb-06 12:55</b> <b>Received: 09-Feb-06 17:23</b>									
<b>Gasoline (C6-C12)</b>	<b>775</b>	50.0	ug/l	1	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
<b>Benzene</b>	<b>14.0</b>	0.500	"	"	"	"	"	"	"
<b>Ethylbenzene</b>	<b>12.6</b>	0.500	"	"	"	"	"	"	"
<b>m&amp;p-Xylene</b>	<b>7.51</b>	1.00	"	"	"	"	"	"	"
<b>o-xylene</b>	<b>2.81</b>	0.500	"	"	"	"	"	"	"
Toluene	ND	2.00	"	"	"	"	"	"	"
<b>MTBE</b>	<b>4.01</b>	0.500	"	"	"	"	"	"	"
DIPE	ND	0.500	"	"	"	"	"	"	"
ETBE	ND	0.500	"	"	"	"	"	"	"
TAME	ND	2.00	"	"	"	"	"	"	"
<b>TBA</b>	<b>11.3</b>	10.0	"	"	"	"	"	"	"
<b>1,2-dichloroethane</b>	<b>0.590</b>	0.500	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"	"	"	"
Ethanol	ND	1000	"	"	"	"	"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>101 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Surrogate: Dibromofluoromethane</i>		<i>100 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Surrogate: Perdeuterotoluene</i>		<i>99.2 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<b>MW-2 (602008-02) Water</b> <b>Sampled: 09-Feb-06 12:30</b> <b>Received: 09-Feb-06 17:23</b>									
<b>Gasoline (C6-C12)</b>	<b>1410</b>	50.0	ug/l	1	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	"
<b>Ethylbenzene</b>	<b>99.6</b>	0.500	"	"	"	"	"	"	"
<b>m&amp;p-Xylene</b>	<b>21.4</b>	1.00	"	"	"	"	"	"	"
o-xylene	ND	0.500	"	"	"	"	"	"	"
Toluene	ND	2.00	"	"	"	"	"	"	"
<b>MTBE</b>	<b>0.720</b>	0.500	"	"	"	"	"	"	"
DIPE	ND	0.500	"	"	"	"	"	"	"
ETBE	ND	0.500	"	"	"	"	"	"	"
TAME	ND	2.00	"	"	"	"	"	"	"
TBA	ND	10.0	"	"	"	"	"	"	"
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"	"	"	"
Ethanol	ND	1000	"	"	"	"	"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>102 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>

Pacific Analytical Laboratory

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SOMA Environmental Engineering Inc.  
6620 Owens Drive, Suite A  
Pleasanton CA, 94588

Project: 15101 Freedom Ave., San Leandro  
Project Number: 2551  
Project Manager: Mansour Sepehr

Reported:  
22-Feb-06 17:01

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

**Pacific Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-2 (602008-02) Water Sampled: 09-Feb-06 12:30 Received: 09-Feb-06 17:23</b>									
<i>Surrogate: Dibromofluoromethane</i>		100 %	70-130		BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
<i>Surrogate: Perdeuterotoluene</i>		100 %	70-130		"	"	"	"	
<b>MW-3 (602008-03) Water Sampled: 09-Feb-06 14:10 Received: 09-Feb-06 17:23</b>									
<b>Gasoline (C6-C12)</b>	<b>44500</b>	2150	ug/l	43	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
<b>Benzene</b>	<b>5070</b>	21.5	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1920</b>	21.5	"	"	"	"	"	"	
<b>m&amp;p-Xylene</b>	<b>2820</b>	43.0	"	"	"	"	"	"	
<b>o-xylene</b>	<b>2020</b>	21.5	"	"	"	"	"	"	
<b>Toluene</b>	<b>1360</b>	86.0	"	"	"	"	"	"	
<b>MTBE</b>	<b>3280</b>	21.5	"	"	"	"	"	"	
DIPE	ND	21.5	"	"	"	"	"	"	
ETBE	ND	21.5	"	"	"	"	"	"	
<b>TAME</b>	<b>620</b>	86.0	"	"	"	"	"	"	
TBA	ND	430	"	"	"	"	"	"	
1,2-dichloroethane	ND	21.5	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	21.5	"	"	"	"	"	"	
Ethanol	ND	43000	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	70-130		"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		101 %	70-130		"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		99.2 %	70-130		"	"	"	"	
<b>MW-4 (602008-04) Water Sampled: 09-Feb-06 13:22 Received: 09-Feb-06 17:23</b>									
<b>Gasoline (C6-C12)</b>	<b>6850</b>	1080	ug/l	21.5	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
<b>Benzene</b>	<b>205</b>	10.8	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>67.2</b>	10.8	"	"	"	"	"	"	
<b>m&amp;p-Xylene</b>	<b>222</b>	21.5	"	"	"	"	"	"	
<b>o-xylene</b>	<b>33.2</b>	10.8	"	"	"	"	"	"	
Toluene	ND	43.0	"	"	"	"	"	"	
<b>MTBE</b>	<b>5120</b>	10.8	"	"	"	"	"	"	
DIPE	ND	10.8	"	"	"	"	"	"	
<b>ETBE</b>	<b>16.4</b>	10.8	"	"	"	"	"	"	
<b>TAME</b>	<b>45.6</b>	43.0	"	"	"	"	"	"	
<b>TBA</b>	<b>769</b>	215	"	"	"	"	"	"	
1,2-dichloroethane	ND	10.8	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	10.8	"	"	"	"	"	"	
Ethanol	ND	21500	"	"	"	"	"	"	

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Project: 15101 Freedom Ave., San Leandro  
Project Number: 2551  
Project Manager: Mansour Sepehr

Reported:  
22-Feb-06 17:01

**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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**MW-4 (6020008-04) Water** Sampled: 09-Feb-06 13:22 Received: 09-Feb-06 17:23

Surrogate: 4-Bromofluorobenzene	99.6 %	70-130			BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
Surrogate: Dibromofluoromethane	100 %	70-130			"	"	"	"	
Surrogate: Perdeuterotoluene	99.6 %	70-130			"	"	"	"	

**MW-5 (6020008-05) Water** Sampled: 09-Feb-06 13:50 Received: 09-Feb-06 17:23

<b>Gasoline (C6-C12)</b>	<b>7640</b>	550	ug/l	11	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
<b>Benzene</b>	<b>237</b>	5.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>187</b>	5.50	"	"	"	"	"	"	
<b>m&amp;p-Xylene</b>	<b>50.2</b>	11.0	"	"	"	"	"	"	
o-xylene	ND	5.50	"	"	"	"	"	"	
Toluene	ND	22.0	"	"	"	"	"	"	
<b>MTBE</b>	<b>2050</b>	5.50	"	"	"	"	"	"	
DIPE	ND	5.50	"	"	"	"	"	"	
ETBE	ND	5.50	"	"	"	"	"	"	
<b>TAME</b>	<b>523</b>	22.0	"	"	"	"	"	"	
<b>TBA</b>	<b>218</b>	110	"	"	"	"	"	"	
1,2-dichloroethane	ND	5.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.50	"	"	"	"	"	"	
Ethanol	ND	11000	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	
Surrogate: Dibromofluoromethane	101 %	70-130			"	"	"	"	
Surrogate: Perdeuterotoluene	99.6 %	70-130			"	"	"	"	

**MW-6 (6020008-06) Water** Sampled: 09-Feb-06 10:20 Received: 09-Feb-06 17:23

<b>Gasoline (C6-C12)</b>	<b>2790</b>	215	ug/l	4.3	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
<b>Benzene</b>	<b>32.3</b>	2.15	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>131</b>	2.15	"	"	"	"	"	"	
<b>m&amp;p-Xylene</b>	<b>126</b>	4.30	"	"	"	"	"	"	
<b>o-xylene</b>	<b>5.22</b>	2.15	"	"	"	"	"	"	
Toluene	ND	8.60	"	"	"	"	"	"	
<b>MTBE</b>	<b>7.30</b>	2.15	"	"	"	"	"	"	
DIPE	ND	2.15	"	"	"	"	"	"	
ETBE	ND	2.15	"	"	"	"	"	"	
TAME	ND	8.60	"	"	"	"	"	"	
TBA	ND	43.0	"	"	"	"	"	"	
1,2-dichloroethane	ND	2.15	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	2.15	"	"	"	"	"	"	

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Reported:  
22-Feb-06 17:01

**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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**MW-6 (6020008-06) Water** Sampled: 09-Feb-06 10:20 Received: 09-Feb-06 17:23

Ethanol	ND	4300	ug/l	4.3	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	70-130		"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		101 %	70-130		"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		100 %	70-130		"	"	"	"	

**MW-8 (6020008-07) Water** Sampled: 09-Feb-06 11:12 Received: 09-Feb-06 17:23

Gasoline (C6-C12)	ND	50.0	ug/l	1	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	10.0	"	"	"	"	"	"	
1,2-dichloroethane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.500	"	"	"	"	"	"	
Ethanol	ND	1000	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.2 %	70-130		"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		101 %	70-130		"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		99.8 %	70-130		"	"	"	"	

**MW-9 (6020008-08) Water** Sampled: 09-Feb-06 10:45 Received: 09-Feb-06 17:23

Gasoline (C6-C12)	ND	50.0	ug/l	1	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
Benzene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
m&p-Xylene	ND	1.00	"	"	"	"	"	"	
o-xylene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
MTBE	ND	0.500	"	"	"	"	"	"	
DIPE	ND	0.500	"	"	"	"	"	"	
ETBE	ND	0.500	"	"	"	"	"	"	
TAME	ND	2.00	"	"	"	"	"	"	
TBA	ND	10.0	"	"	"	"	"	"	
<b>1,2-dichloroethane</b>	<b>1.93</b>	0.500	"	"	"	"	"	"	

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Project Manager: Mansour Sepehr

**Reported:**  
22-Feb-06 17:01

### Volatil Organic Compounds by EPA Method 8260B

#### Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-9 (6020008-08) Water    Sampled: 09-Feb-06 10:45    Received: 09-Feb-06 17:23</b>									
1,2-Dibromoethane (EDB)	ND	0.500	ug/l	1	BB62201	09-Feb-06	21-Feb-06	EPA 8260B	
Ethanol	ND	1000	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.8 %	70-130	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		101 %	70-130	"	"	"	"	"	
<i>Surrogate: Perdeuterotoluene</i>		98.8 %	70-130	"	"	"	"	"	



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22-Feb-06 17:01

**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 BB62201 - EPA 5030 Water MS**

**Blank (BB62201-BLK1)**

Prepared & Analyzed: 22-Feb-06

Surrogate: 4-Bromofluorobenzene	50.4		ug/l	50.0		101	70-130			
Surrogate: Dibromofluoromethane	50.4		"	50.0		101	70-130			
Surrogate: Perdeuterotoluene	49.7		"	50.0		99.4	70-130			
MTBE	ND	0.500	"							
DIPE	ND	0.500	"							
ETBE	ND	0.500	"							
TAME	ND	2.00	"							
Gasoline (C6-C12)	ND	50.0	"							
TBA	ND	10.0	"							
1,2-dichloroethane	ND	0.500	"							
1,2-Dibromoethane (EDB)	ND	0.500	"							
Ethanol	ND	1000	"							
Benzene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
m&p-Xylene	ND	1.00	"							
o-xylene	ND	0.500	"							
Toluene	ND	2.00	"							

**LCS (BB62201-BS1)**

Prepared & Analyzed: 22-Feb-06

Surrogate: 4-Bromofluorobenzene	48.8		ug/l	50.0		97.6	70-130			
Surrogate: Dibromofluoromethane	47.0		"	50.0		94.0	70-130			
Surrogate: Perdeuterotoluene	47.0		"	50.0		94.0	70-130			
MTBE	107	0.500	"	100		107	70-130			
ETBE	87.0	0.500	"	100		87.0	70-130			
TAME	86.0	2.00	"	100		86.0	70-130			
Gasoline (C6-C12)	2570	50.0	"	2000		128	70-130			
TBA	384	10.0	"	500		76.8	70-130			
Benzene	94.5	0.500	"	100		94.5	70-130			
Toluene	93.7	2.00	"	100		93.7	70-130			



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Reported:  
 22-Feb-06 17:01

**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 BB62201 - EPA 5030 Water MS**

**LCS Dup (BB62201-BSD1)**

Prepared & Analyzed: 22-Feb-06

Surrogate: 4-Bromofluorobenzene	49.0		ug/l	50.0		98.0	70-130			
Surrogate: Dibromofluoromethane	47.7		"	50.0		95.4	70-130			
Surrogate: Perdeuterotoluene	46.9		"	50.0		93.8	70-130			
MTBE	114	0.500	"	100		114	70-130	6.33	20	
ETBE	99.1	0.500	"	100		99.1	70-130	13.0	20	
TAME	95.1	2.00	"	100		95.1	70-130	10.0	20	
TBA	416	10.0	"	500		83.2	70-130	8.00	20	
Gasoline (C6-C12)	1850	50.0	"	2000		92.5	70-130	32.6	20	QR-02
Benzene	104	0.500	"	100		104	70-130	9.57	20	
Toluene	102	2.00	"	100		102	70-130	8.48	20	



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22-Feb-06 17:01

### Notes and Definitions

QR-02      The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

DET        Analyte DETECTED

ND        Analyte NOT DETECTED at or above the reporting limit

NR        Not Reported

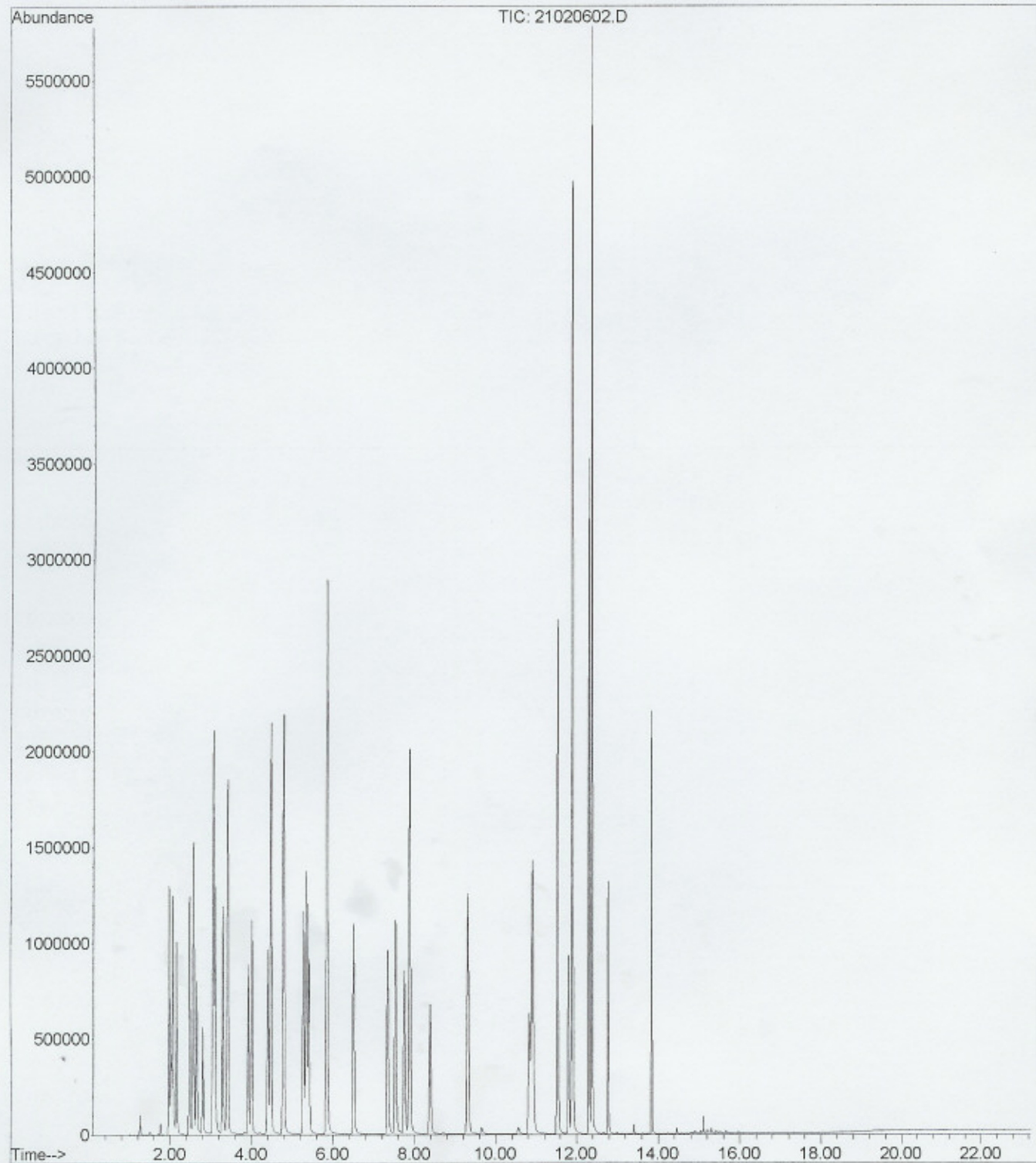
dry        Sample results reported on a dry weight basis

RPD        Relative Percent Difference

File :C:\MSDCHEM\1\DATA\2006-Feb-21-0924.b\21020605.D  
Operator :  
Acquired : 21 Feb 2006 11:41 am using AcqMethod OXY21506.M  
Instrument : PAL GCMS  
Sample Name: BB62201-BLK1  
Misc Info :  
Vial Number: 5



File :C:\MSDChem\1\DATA\2006-Feb-21-0924.b\21020602.D  
Operator :  
Acquired : 21 Feb 2006 10:08 am using AcqMethod OXY21506.M  
Instrument : PAL GCMS  
Sample Name: BB62201-BS1@voc  
Misc Info :  
Vial Number: 2





File :C:\MSDChem\1\DATA\2006-Feb-21-0924.b\21020603.D  
Operator :  
Acquired : 21 Feb 2006 10:39 am using AcqMethod OXY21506.M  
Instrument : PAL GCMS  
Sample Name: BB62201-BS1@gas  
Misc Info :  
Vial Number: 3

