ENVIRONMENTAL ENGINEERING, INC.

R0473

SECOND QUARTER 2004
GROUNDWATER MONITORING REPORT
TEXACO GASOLINE SERVICE STATION
15101 FREEDOM AVENUE
SAN LEANDRO, CALIFORNIA

June 15, 2004

Project 2551

Prepared for

Mr. Mohammad Pazdel
1770 Pistacia Court
Fairfield, California

Prepared by

SOMA Environmental Engineering, Inc.
2680 Bishop Drive, Suite 203
San Ramon, California

ENVIRONMENTAL ENGINEERING, INC
2680 Bishop Drive • Suite 203 • San Ramon, CA 94583
TEL (925) 244-6600 • FAX (925) 244-6601

June 15, 2004

Ms. Donna Drogos
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 Ms. Drogos:

Enclosed for your review is a copy of SOMA's "Second Quarter 2003 Groundwater Monitoring Report" for the subject property.

Thank you for your time in reviewing our report. If you have any questions or comments, please call me at (925) 244-6600.

Sincerely,

Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist

REGISTERED PROFESSIONAL ENGINEER
MANSOUR SEPEHR
No. C042928
Exp. 3-31-06
CIVIL
STATE OF CALIFORNIA

Enclosure

cc: Mr. Mohammad Pazdel w/enclosure

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 Second Quarter 2004 groundwater monitoring event.

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

TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc., (SOMA) on behalf of Mr. Mohammad Pazdel, the property owner. The property is located at 15101 Freedom Avenue, between 151st Street and Fairmont Boulevard, which is just west of Interstate 580 in San Leandro, California (the "Site"). Formerly, the property was known as Freedom ARCO Station, however, the Site is currently operating as a service station under the brand name of Texaco. Since the 1960's, the Site has been used as a gasoline service station. Figure 1 shows the location of the Site.

This groundwater monitoring report summarizes the results of the Second Quarter 2004 groundwater monitoring event conducted at the Site on May 25, 2004. This report includes the results of the on-site measurements of the physical and chemical properties of the groundwater, which includes pH, temperature, and electrical conductivity (EC). During this monitoring event, five monitoring wells (MW-1 to MW-5) were sampled and analyzed for the following chemicals, as requested by the Alameda County Health Care Services (ACHCS):

- Total petroleum hydrocarbons as gasoline (TPH-g)
- Benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX)
- Methyl tertiary Butyl Ether (MtBE)
- Gasoline oxygenates, which included tertiary Butyl Alcohol (TBA), Isopropyl Ether (DIPE), Ethyl tertiary Butyl Ether (ETBE), Methyl tertiary Amyl Ether (TAME), and Ethanol.
- Lead scavengers, which included 1,2-Dichloroethane (1,2-DCA) and 1,2-Dibromoethane (EDB)

These activities were performed in accordance with the general guidelines of the California Regional Water Quality Control Board (CRWQCB).

1.1 Previous Activities

On May 20, 1999, in order to comply with underground storage tank (UST) upgrade regulations, 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 TPH-g and BTEX in soil samples collected between 19 and 25.5 feet bgs were 470, 2.6, 16, 12, and 73 mg/Kg, respectively. MtBE was below the laboratory reporting limit of 0.005 mg/Kg in all soil samples. 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 at 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.

Based on SOMA's approved workplan submitted on July 22, 2003, an additional off-site investigation was performed 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 below ground surface (bgs).

2.0 FIELD ACTIVITIES

On May 25, 2004, 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 monitoring wells (MW-1 to MW-5) were monitored. Figure 2 shows the locations of the monitoring wells.

The depth to groundwater in each monitoring well 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 was used to calculate the groundwater elevation. Kier and Wright Civil Engineers and Land Surveyors surveyed the wells on May 7, 2002. The top of the casing elevations were based on the survey data measured on May 7, 2002. The elevation data was based on a datum of 67.07 feet M.S.L. The survey data is included in Appendix A.

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. On May 25, 2004, SOMA's field crew delivered the groundwater samples to Curtis & Tompkins, Ltd. laboratory in Berkeley, California.

3.0 LABORATORY ANALYSIS

Curtis & Tompkins, Ltd., a state certified laboratory, analyzed the groundwater samples for TPH-g, BTEX, MtBE, gasoline oxygenates, and lead scavengers. Samples for TPH-g measurement were prepared using EPA Method 5030B and analyzed using Method 8015B. Samples for BTEX measurements were prepared using EPA Method 5030B and analyzed using EPA Method 8021B. MtBE, gasoline oxygenates, and lead scavengers measurements were prepared using EPA Method 5030B and analyzed using EPA Method 8260B.

4.0 RESULTS

The following sections provide the results of the field measurements and laboratory analyses for the May 25, 2004 groundwater monitoring event.

4.1 Field Measurements

Table 1 presents the calculated groundwater elevations at each groundwater monitoring well. As Table 1 shows, groundwater elevations ranged from 28.49 feet in monitoring well MW-5 to 28.77 feet in monitoring well MW-1. Variations in seasonal fluctuations, as well as, local recharge rates at each well determine the deviations in the groundwater elevations. The groundwater elevations decreased

throughout the Site during the Second Quarter 2004. The decrease in groundwater elevations, can be attributed to the drier weather encountered this quarter.

A map of the groundwater elevations, in feet, measured during the Second Quarter 2004, is displayed in Figure 3. In general, the groundwater elevations are consistent throughout the Site, with only a slight south to southeasterly groundwater flow across the Site.

The field measurements taken during the Second Quarter 2004 monitoring event are shown in Appendix A.

4.2 Laboratory Analysis

Table 1 also presents the TPH-g, BTEX, and MtBE analytical results of the groundwater samples during this quarter. In general, the analytical results indicate that the groundwater samples collected from monitoring well MW-3 were the most impacted, with the exception of MtBE, which peaks in monitoring well MW-4. High concentrations of TPH-g and BTEX in monitoring well MW-3 can be attributed to leaks from the former USTs prior to their upgrade in 1999.

TPH-g concentrations ranged from 4,500 µg/L in monitoring well MW-2 to 65,000 µg/L in monitoring well MW-3. Figure 4 displays the contour map of TPH-g concentrations in the groundwater on May 25, 2004. The highest reported TPH-g concentration was in the vicinity of the dispenser islands and former USTs, in well MW-3.

In general, as shown in Table 1, the least impacted BTEX analyte location was in the southwestern section of the Site, in the vicinity of MW-2. The highest BTEX concentrations were detected in the vicinity of the dispenser islands and former USTs, in well MW-3.

Figure 5 displays the contour map of benzene concentrations in the groundwater on May 25, 2004. Similar to the results for TPH-g, the highest benzene concentration was detected in monitoring well MW-3, which is near the dispenser islands.

Table 1 presents the results of the MtBE analysis using EPA Method 8260B. MtBE was detected in all of the wells during the Second Quarter 2004. The highest MtBE concentration was detected in well MW-4, near the southern dispenser islands, at 1,800 µg/L.

Figure 6 displays the contour map of MtBE concentrations in the groundwater on May 25, 2004. As shown in Figure 6, the highest MtBE concentration was detected in the vicinity of the dispenser islands, in monitoring well MW-4. This can be attributed to the location of the product piping from the existing USTs to the dispenser islands and the solubility of MtBE in groundwater.

Table 2 shows the analytical results for gasoline oxygenates for the Second Quarter 2004. DIPE and ETBE were below the laboratory reporting limit in all wells. Figure 7 displays the map of TBA and TAME concentrations in the groundwater on May 25, 2004. As shown in Figure 7, the highest TBA concentration was detected near the dispenser islands in monitoring well MW-4 at 560 µg/L. The highest TAME concentration was detected in well MW-3 at 270 µg/L.

Appendix B includes the laboratory report and COC form for the Second Quarter 2004.

4.3 Historical Analytical Results

Table 1 presents the historical groundwater analytical data. The following concentration trends were observed for TPH-g, BTEX, and MtBE since the previous (First Quarter 2004) monitoring event.

- TPH-g increased in all of the wells, with the exception of well MW-5; TPH-g decreased in well MW-5.
- In wells MW-1 and MW-3 all BTEX analytes increased. In well MW-2 all BTEX analytes increased, with the exception of toluene. Toluene remained below the laboratory reporting limit in MW-2.
- In well MW-4 benzene decreased, all other BTEX analytes increased. In well MW-5 both benzene and ethylbenzene decreased, and both toluene and total xylenes increased.
- MtBE increased in wells MW-1, MW-2, and MW-3. MtBE decreased in wells MW-4 and MW-5.

As presented in Table 2, the following concentration trends were observed for gasoline oxygenates since the previous monitoring event.

- In wells MW-1 and MW-2 TBA increased and DIPE, ETBE, and TAME remained below the laboratory reporting limit. In well MW-3 TBA, DIPE and ETBE remained below the laboratory reporting limit, and TAME increased.
- In well MW-4 TBA and ETBE decreased, DIPE remained below the laboratory reporting limit, and TAME increased. In well MW-5, TBA, DIPE and ETBE remained below the laboratory reporting limit, and TAME decreased.

5.0 CONCLUSION AND RECOMMENDATIONS

The results of the May 25, 2004 groundwater monitoring event can be summarized as follows:

1. The groundwater elevations are fairly consistent throughout the Site, with only a slight south to southeasterly groundwater flow across the Site.

2. The source area still appears to be in the vicinity of the dispenser islands and former USTs, in well MW-3. During the upgrade of the USTs in May 1999, petroleum chemicals were detected in the subsurface soils beneath the former USTs.

3. MtBE still remains the dominant constituent in well MW-4. The highest MtBE concentration was detected in well MW-4. However, MtBE has remained well below the historical peak value of 12,000 µg/L, which was detected in May 2002, and has shown a decreasing trend since the Fourth Quarter 2003.

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 Curtis & Tompkins Laboratories 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

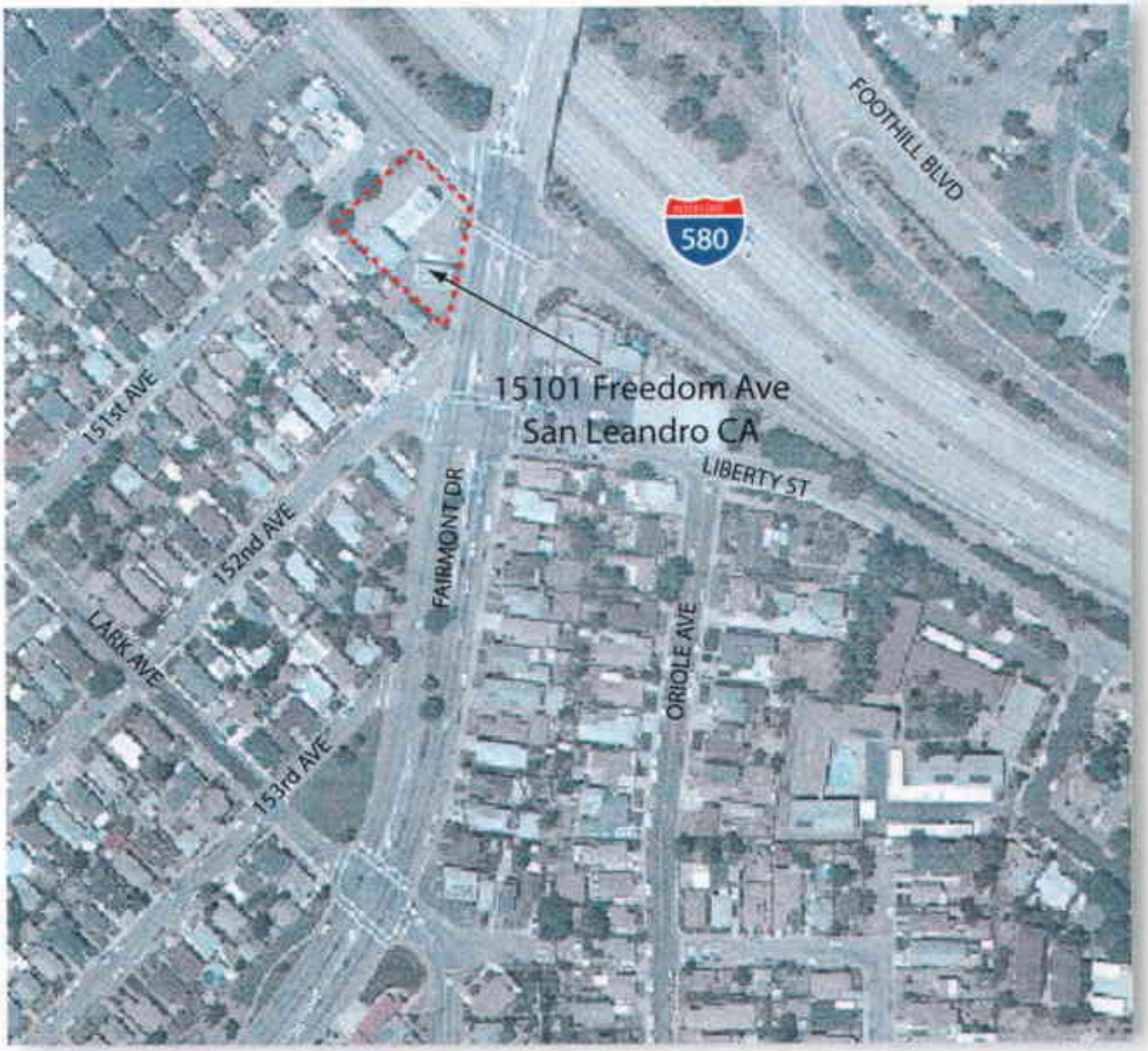


Figure 1: Site vicinity map.

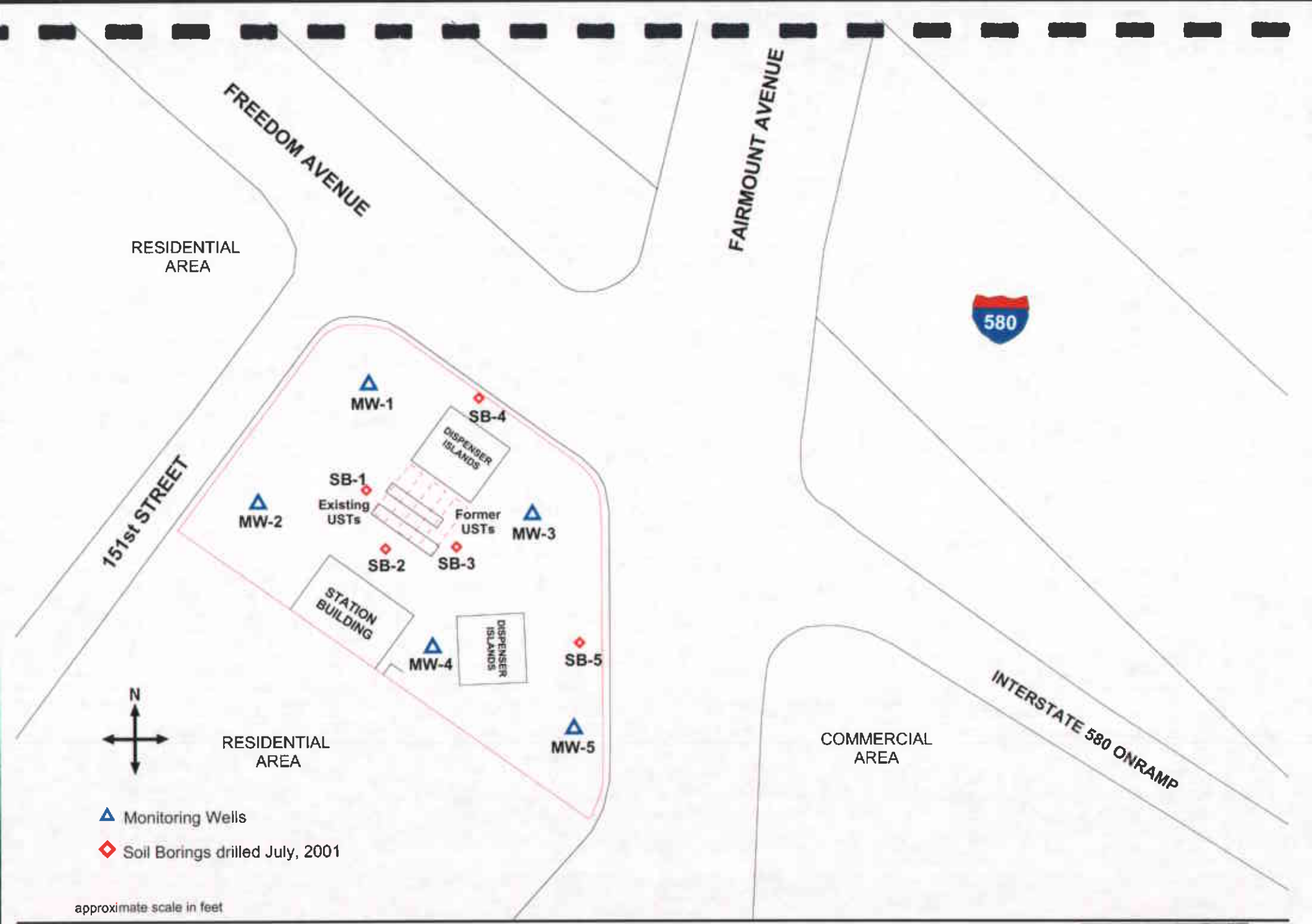


Figure 2: Site map showing locations of groundwater monitoring wells and soil borings.

SOMA ENVIRONMENTAL ENGINEERING, INC.

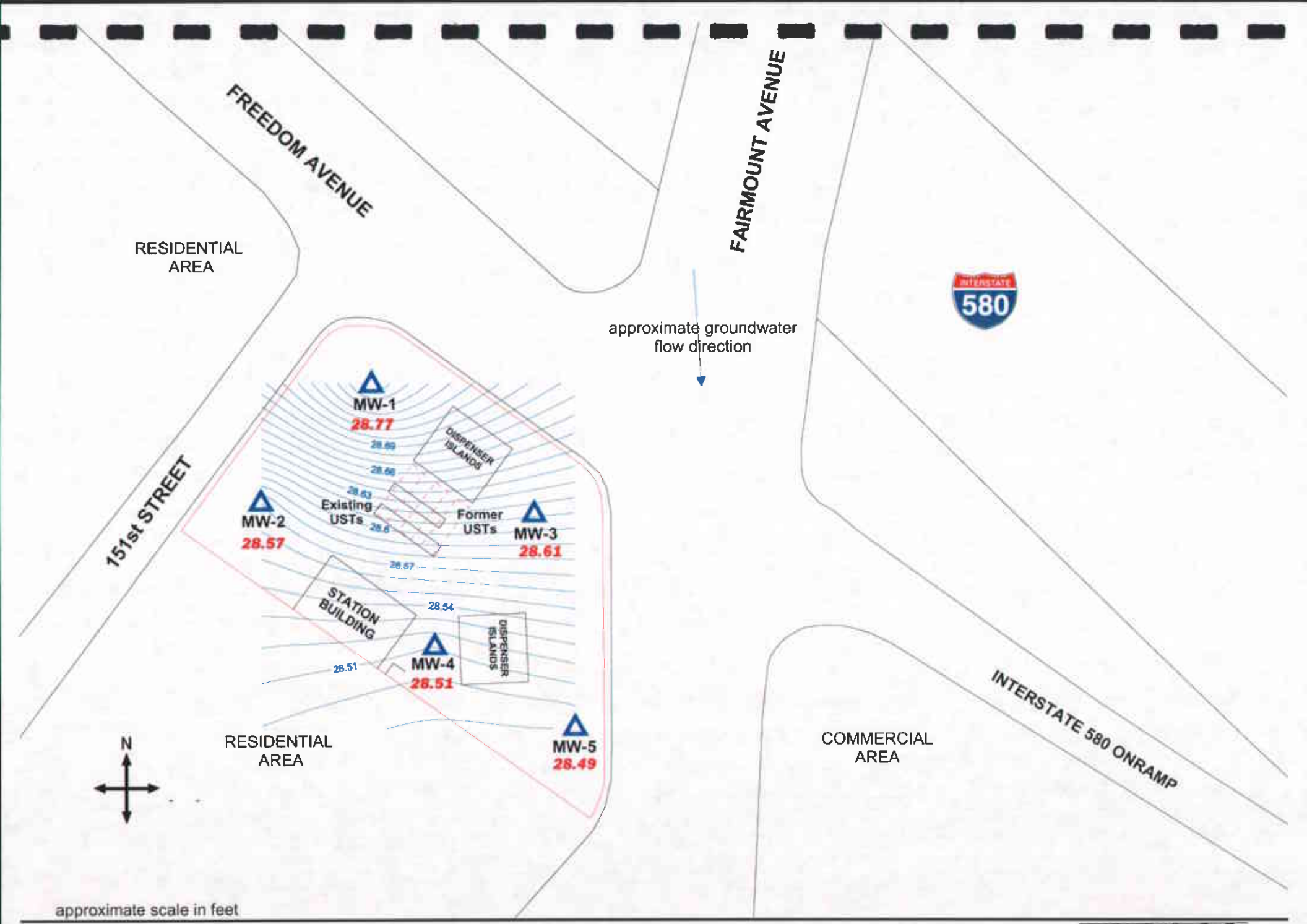


Figure 3: Groundwater elevation contour map in feet.
May, 2004.

SOMA ENVIRONMENTAL ENGINEERING, INC.

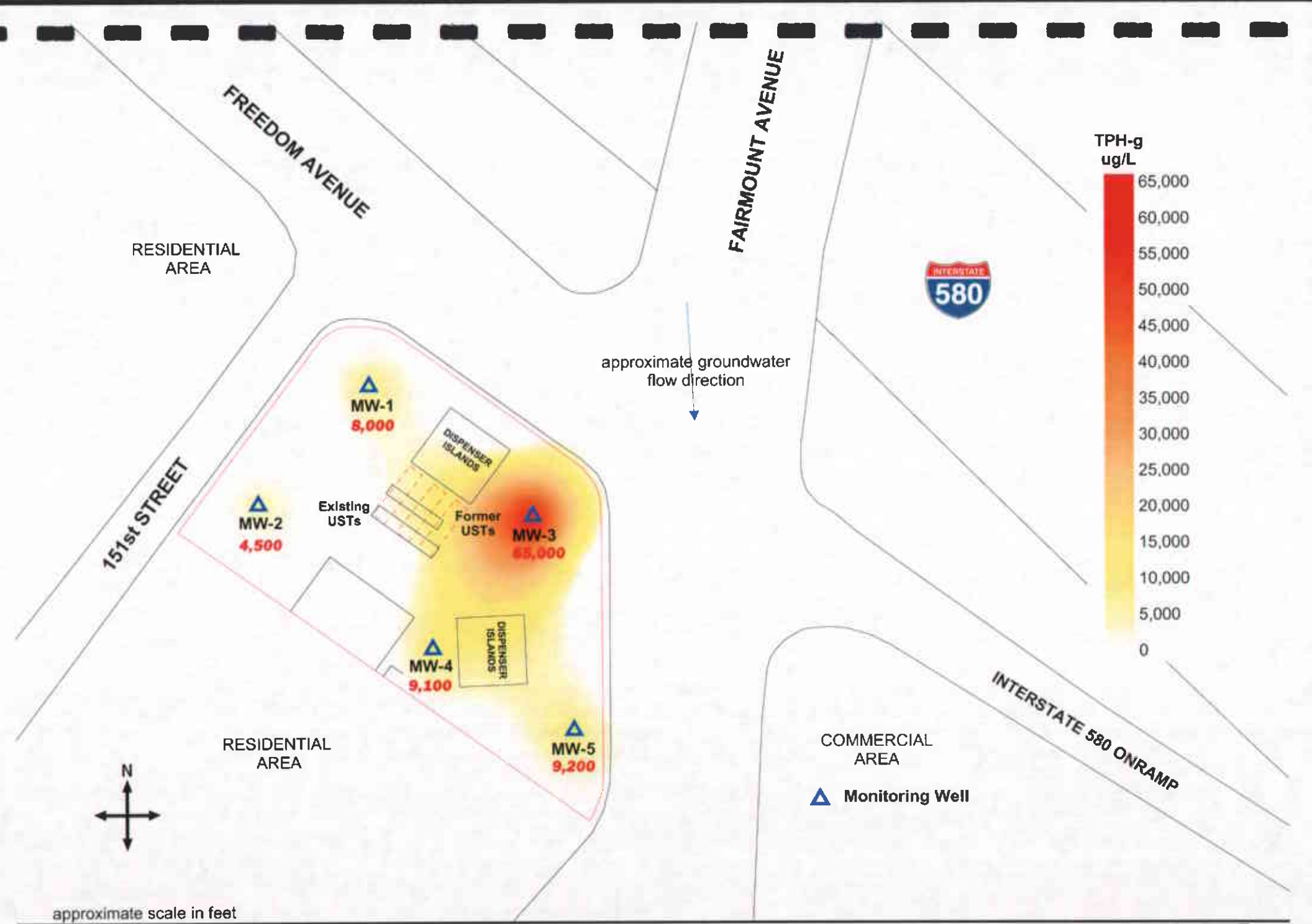


Figure 4: Contour map of TPH-g concentrations in groundwater.
May, 2004.

SOMA ENVIRONMENTAL ENGINEERING, INC.

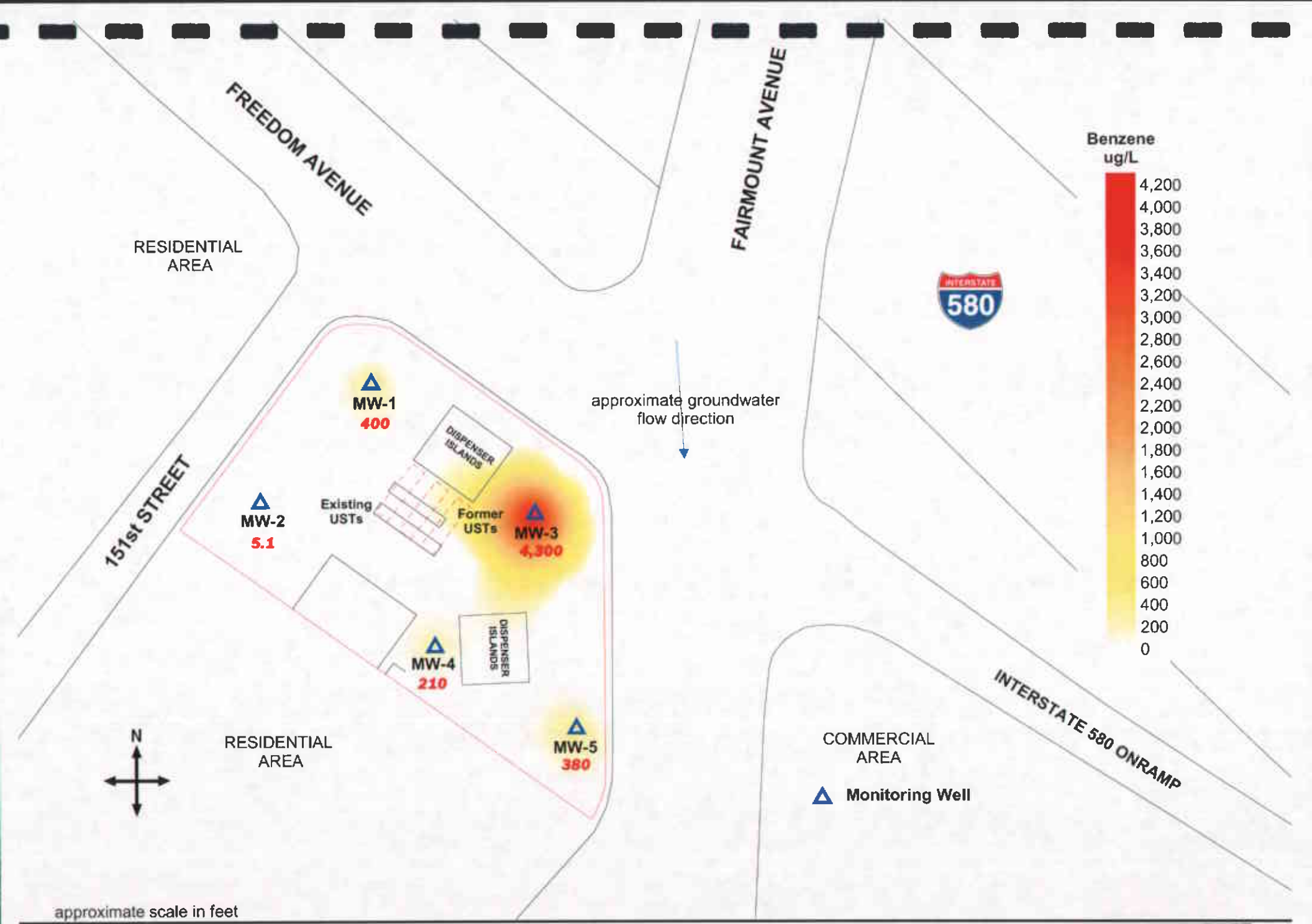


Figure 5: Contour map of Benzene concentrations in groundwater.
May, 2004.

SOMA ENVIRONMENTAL ENGINEERING, INC.

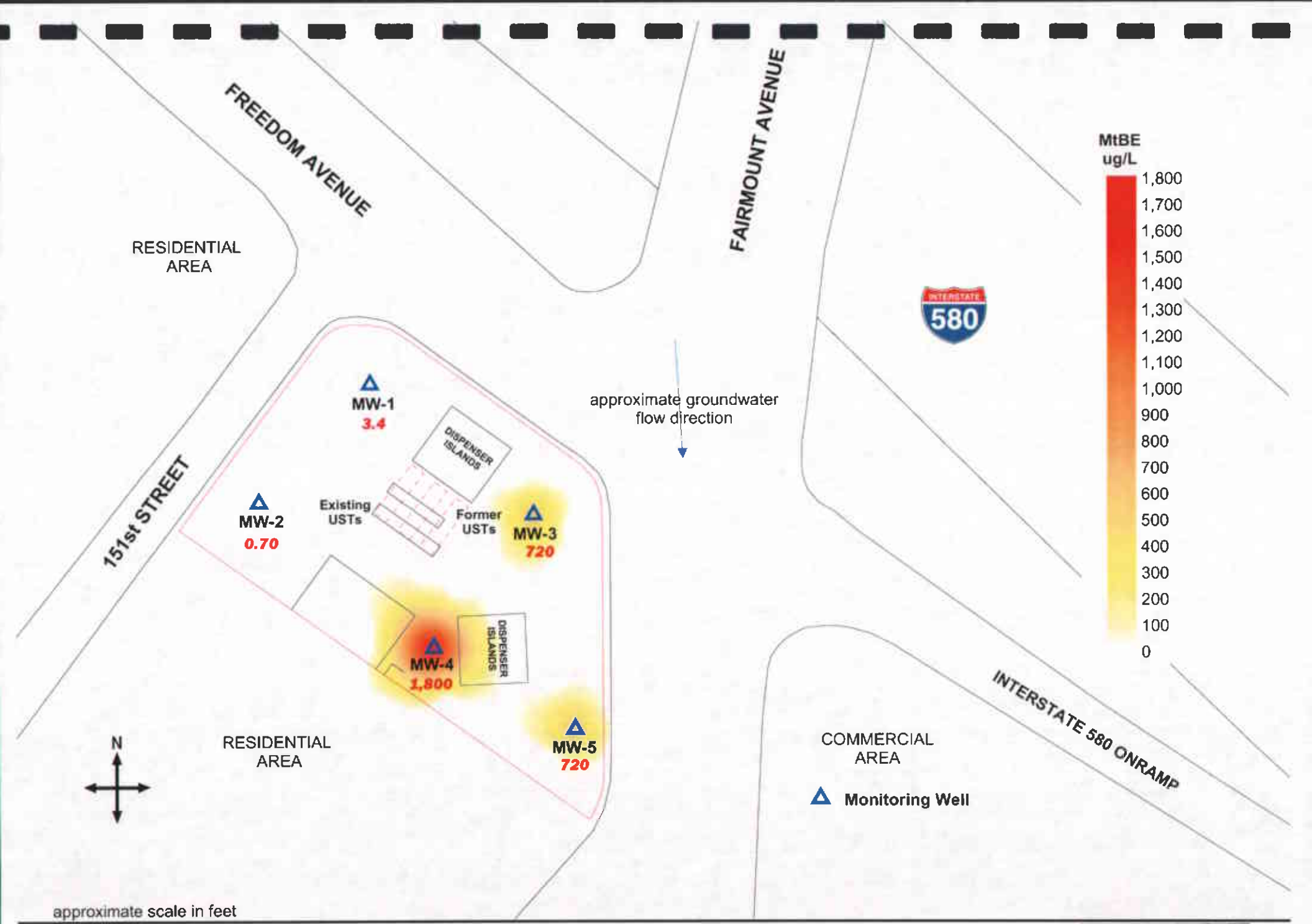


Figure 6: Contour map of MtBE concentrations in groundwater (EPA Method 8260). May, 2004.

SOMA ENVIRONMENTAL ENGINEERING, INC.

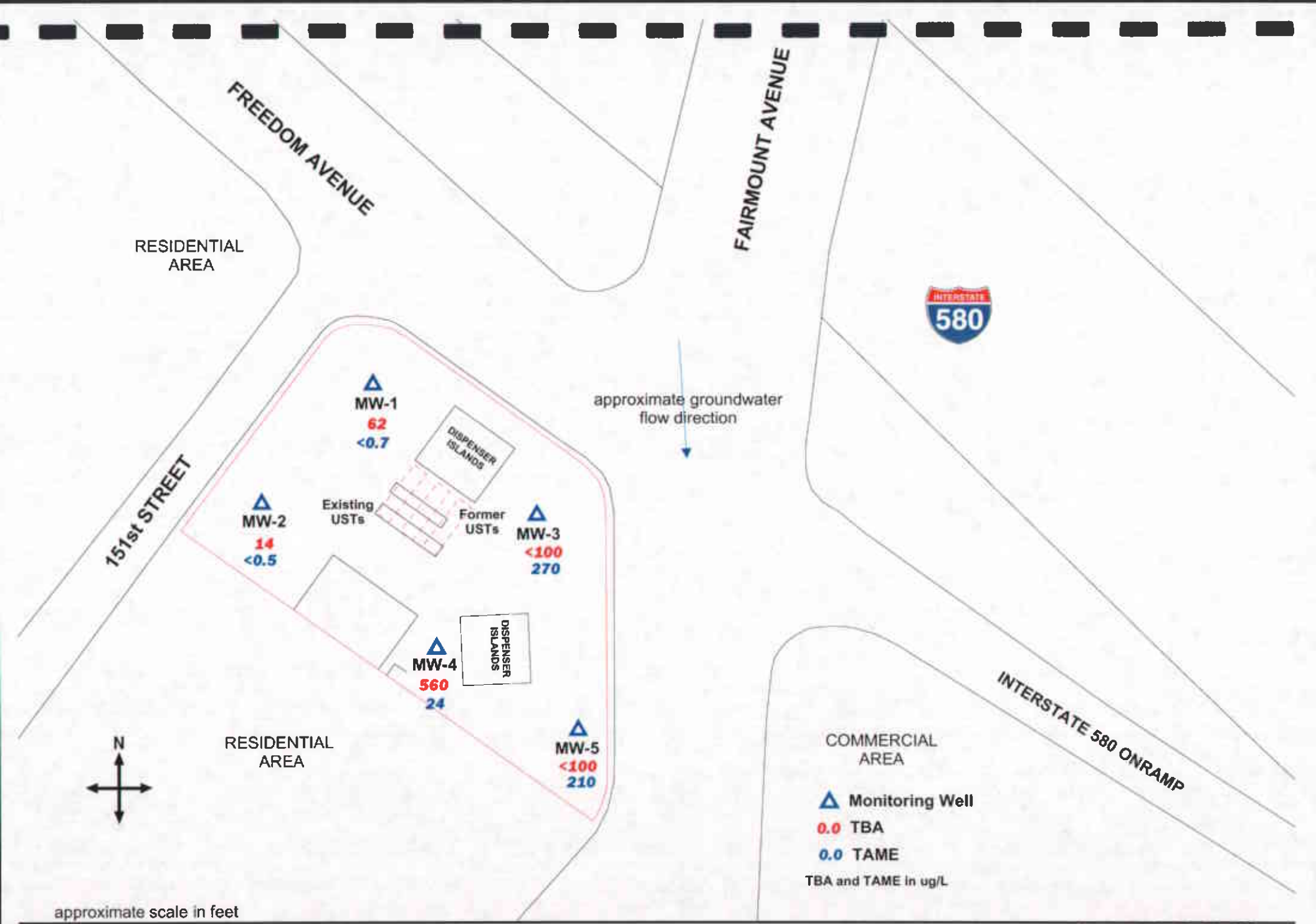


Figure 7: Map of TBA and TAME concentrations in the groundwater.
May, 2004.

SOMA ENVIRONMENTAL ENGINEERING, INC

Tables

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

Monitoring Well	Date	Casing Elevation [1] (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B [2] (µg/L)
MW-1	May-02	51.71	28.86	5,700	360	4.5	340	450	2
	Aug-02	51.71	28.40	9,100	590	2.6	830	362	<1.3
	Nov-02	51.71	28.13	7,900	570	3.1	680	392	< 1.0
	Feb-03	51.71	29.09	2,900	160	1.6 C	170	211	<0.5
	May-03	51.71	29.28	1,700	55	<0.5	90	115	2.00
	Aug-03	51.71	30.41	2,600	2.5	<0.5	190	130	<0.5
	Oct-03	51.71	28.22	9,200	560.0	2.7 C	670	648	<1.0
	Jan-04	51.71	29.28	5,500	190	<1.0	220	124.4	<0.5
	May-04	**51.71**	**28.77**	**8,000**	**400**	**1.50**	**420**	**393**	**3.40**
MW-2	May-02	49.66	26.83 *	3,100	67	8	250	215	56
	Aug-02	49.66	28.25	2,700	4.6	<0.5	310	140	<0.5
	Nov-02	49.66	27.87	3,400	4.6	< 0.5	310	160	< 0.5
	Feb-03	49.66	29.15	890	1.7 C	0.80 C	68	38.92 C	<0.5
	May-03	49.66	29.33	2,700	5.2 C	<0.5	120	140	1.2
	Aug-03	49.66	26.48*	8,500	640	<2.5	560	659	<0.8
	Oct-03	49.66	27.95	3100 H	4.3 C	<0.5	210	160	<0.5
	Jan-04	49.66	29.35	660 H	1.5 C	<0.5	8.9	25	<0.5
	May-04	**49.66**	**28.57**	**4,500**	**5.1 C**	**<0.5**	**190**	**230**	**0.70**
MW-3	May-02	51.16	28.88	44,000	6,000	900	1,500	6,200	2,400
	Aug-02	51.16	28.28	40,000	5,800	1,100	1,600	6,500	1,300
	Nov-02	51.16	27.97	47,000	5,300	1,200	2,200	8,600	1,000
	Feb-03	51.16	29.14	39,000	5,500	1,500	2,000	8,600	1,300
	May-03	51.16	29.27	52,000	7,300	3,000	2,800	12,700	2,100
	Aug-03	51.16	28.50	31,000	6,100	860	1,500	6,900	1,200
	Oct-03	51.16	28.10	41,000	6,100	1,100	2,200	10,200	960
	Jan-04	51.16	29.31	51,000	4,100	1,100	2,000	8,400	590
	May-04	**51.16**	**28.61**	**65,000**	**4,300**	**1,300**	**2,500**	**10,500**	**720**

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

Monitoring Well	Date	Casing Elevation [1] (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B [2] (µg/L)
MW-4	May-02	50.54	28.76	880	25	1.0C	110	52	12,000
	Aug-02	50.54	28.04	3,800	70	<5.0	300	115	4,800
	Nov-02	50.54	27.73	5,100	150	10	460	258	2,400
	Feb-03	50.54	29.06	3,200	98	66	220	360	6,600
	May-03	50.54	29.30	6,200	140	46	200	790	2,300
	Aug-03	50.54	28.22	7,500	180	57	220	1450	1,900
	Oct-03	50.54	27.80	5,800	250	32	300	970	7,800
	Jan-04	50.54	29.35	5,900	270	17 C	150	640	7,300
	May-04	**50.54**	**28.51**	**9,100**	**210**	**51**	**200**	**1190**	**1860**
MW-5	May-02	47.79	28.77	25,000	1,000	1200	1,100	3,060	1,800
	Aug-02	47.79	27.99	18,000	1,000	660	950	1,720	1,500
	Nov-02	47.79	27.65	16,000	1,300	380	930	1,550	1,200
	Feb-03	47.79	29.09	12,000	390	71	770	1,100	860
	May-03	47.79	29.27	9,100	210	31	560	790	600
	Aug-03	47.79	28.25	12,000	660	75	660	1,110	1,000
	Oct-03	47.79	27.73	15,000	1,000	130	1,000	1,430	1,700
	Jan-04	47.79	29.37	9,900	450 C	16	500	431	1,100
	May-04	**47.79**	**28.49**	**9,200**	**380**	**24**	**490**	**536**	**720**

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.

Monitoring wells were surveyed by Kier and Wright Civil Engineer & Land Surveyors.

Surveying was conducted on May 7, 2002.

[1] : Top of casing elevations were surveyed to an assumed datum of 67.07 M.S.L.

<: Not detected above the laboratory reporting limit.

C 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.

[2] MtBE analyzed by EPA Method 8021B, and confirmed by EPA Method 8260B.

NA Not Analyzed

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)
MW-1	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**
MW-2	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**
MW-3	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**
MW-4	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**
MW-5	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**

Notes:

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

<: Not detected above the laboratory reporting limit.

TBA: tert-Butyl Alcohol

DIPE: isopropyl Ether

ETBE: Ethyl tert-Butyl Ether

TAME: Methyl tert-Amyl Ether

Appendix A

Table of Elevations & Coordinates on Monitoring Wells Measured by Kier Wright Civil Engineers Surveyors, Inc., and Field Measurements of Physical and Chemical Parameters of Groundwater Samples

Survey Date 05/07/02
Job No. A02545

Table of Elevations & Coordinates

On Monitoring Wells
Texaco Service Station
15101 Freedom Avenue
San Leandro, California

Well No.	Northing	Easting	Elevation
MW-1	5106.89	4812.60	51.71 -Top of PVC casing, North side @ Punch Mark 52.08 – Top North Rim of Box
MW-2	5056.82	4766.17	49.66 – Top of PVC Casing, North Side @ Punch Mark 50.19 - Top North Rim of Box
MW-3	5051.97	4881.26	51.16 - Top of PVC Casing, North side @ Punch Mark 51.60 - Top North Rim of Box
MW-4	4996.14	4839.06	50.54 – Top of PVC Casing, North side @ Punch Mark 50.98 - Top North Rim of Box
MW-5	4961.75	4898.20	47.79 – Top of PVC Casing, North side @Punch Mark 48.25 - Top North Rim of Box
Building Corner	5035.26	4796.09	
Building Corner	5009.72	4831.30	
Building Corner	4979.40	4808.97	
Building Corner	5005.06	4773.92	

Benchmark: Alameda County Benchmark "Fair-580"
Alameda County disc stamped "Fair-580 – 1976" set in the top of the Northwesterly concrete walk at the Northwest corner of the Fairmont Drive over-crossing of I-580, 1' southeast of the northwesterly concrete bridge rail, 1.9' southwesterly of the northeasterly end of the northwest concrete walk for the bridge.
Elevation = 67.07 M.S.L. Datum

Kier & Wright Civil Engineer & Land Surveyors, Inc.
1233 Quarry Lane, Suite 145 ♦ PLEASANTON, CALIFORNIA 94566 ♦ (925) 249-6555 ♦ (925) 249-6563

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-1	Project No.:	2551
Casing Diameter:	4 inches	Address:	15101 Freedom Ave.
Depth of Well:	30.14 feet		San Leandro, CA
Top of Casing Elevation:	51.71 feet	Date:	25-May-04
Depth to Groundwater:	22.94 feet	Sampler:	Mehran Nowroozi
Groundwater Elevation:	28.77 feet		Elena Manzo
Water Column Height:	7.20 feet		
Purged Volume:	8 gallons		

Purging Method:	Bailer ☐		Pump ■	
Sampling Method:	Bailer ■		Pump ☐	
Color:	Yes ☐	No ☑	Describe:	
Sheen:	Yes ☐	No ☑	Describe:	
Odor:	Yes ☑	No ☐	Describe:	slight odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (° C)	E.C. (µs/cm)
10:40 am	1gal	6.80	19.3	1258
10:43 am	4gal	6.69	20.5	1232
10:45 am	6gal	6.70	20.7	1235
10:47 am	8gal	6.69	20.6	1250
10:50 am	samples			

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-2	**Project No.:**	2551
Casing Diameter:	4 inches	**Address:**	15101 Freedom Ave.
Depth of Well:	30.05 feet		San Leandro, CA
Top of Casing Elevation:	49.66 feet	**Date:**	25-May-04
Depth to Groundwater:	21.09 feet	**Sampler:**	Mehran Nowroozi
Groundwater Elevation:	28.57 feet		Elena Manzo
Water Column Height:	8.96 feet		
Purged Volume:	8 gallons		

Purging Method:	**Bailer**	☐	**Pump**	■
Sampling Method:	**Bailer**	■	**Pump**	☐

Color:	**Yes** ☐	**No** ☑	**Describe:**	
Sheen:	**Yes** ☐	**No** ☑	**Describe:**	
Odor:	**Yes** ☑	**No** ☐	**Describe:**	little odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
11:10 am	1gal	6.91	21.2	1399
11:13 am	4gal	6.81	20.7	1368
11:15am	6gal	6.80	20.5	1364
11:17am	8gal	6.80	20.4	1357
11:25 am	samples			

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW 3	**Project No.:**	2551
Casing Diameter:	4 inches	**Address:**	15101 Freedom Ave.
Depth of Well:	29.80 feet		San Leandro, CA
Top of Casing Elevation:	51.16 feet	**Date:**	25-May-04
Depth to Groundwater:	22.55 feet	**Sampler:**	Mehran Nowroozi
Groundwater Elevation:	28.61 feet		Elena Manzo
Water Column Height:	7.25 feet		
Purged Volume:	8.0 gallons		

Purging Method: Bailer ☐ Pump ■

Sampling Method: Bailer ■ Pump ☐

Color: Yes ☐ No ☑ **Describe:** _____

Sheen: Yes ☐ No ☑ **Describe:** _____

Odor: Yes ☑ No ☒ **Describe:** petro. odor (strong)

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
1:00 pm.	1.0	6.68	24.6	1312
1:03 pm	4.0	6.71	21.5	1273
1:05 pm	6.0	6.76	21.7	1239
1:07 pm	8.0	6.76	21.5	1240
1:15 pm.	samples			

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-4	**Project No.:**	2551
Casing Diameter:	4 inches	**Address:**	15101 Freedom Ave.
Depth of Well:	30.10 feet		San Leandro, CA
Top of Casing Elevation:	50.54 feet	**Date:**	25-May-04
Depth to Groundwater:	22.03 feet	**Sampler:**	Mehran Nowroozi
Groundwater Elevation:	28.51 feet		Elena Manzo
Water Column Height:	8.07 feet		
Purged Volume:	8 gallons		

Purging Method:	**Bailer**	☐		**Pump**	■
Sampling Method:	**Bailer**	■		**Pump**	☐
Color:	**Yes**	☐	**No**	☑	**Describe:** _____
Sheen:	**Yes**	☐	**No**	☑	**Describe:** _____
Odor:	**Yes**	☑	**No**	☐	**Describe:** slight odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
12:25 pm	1.0	6.66	23.3	1604
12:28 pm	4.0	6.73	21.2	1545
12:30 pm	6.0	6.70	21.1	1528
12:32 pm.	8.0	6.69	20.8	1527
12:40 pm.	samples			

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-5	Project No.:	2551
Casing Diameter:	2 inches	Address:	15101 Freedom Ave.
Depth of Well:	29.8 feet		San Leandro, CA
Top of Casing Elevation:	47.79 feet	Date:	25-May-04
Depth to Groundwater:	19.3 feet	Sampler:	Mehran Nowroozi
Groundwater Elevation:	28.49 feet		Elena Manzo
Water Column Height:	10.5 feet		
Purged Volume:	8.0 gallons		

Purging Method:	Bailer ☐	Pump ■
Sampling Method:	Bailer ■	Pump ☐

Color:	Yes ☐	No ☑	Describe:	
Sheen:	Yes ☐	No ☑	Describe:	
Odor:	Yes ☐	No ☑	Describe:	

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
11:40 am.	1.0	6.74	21.7	1214
11:43 am.	4.0	6.73	21.2	1208
11:45 am	6.0	6.76	21.3	1205
11:47 am	8.0	6.74	21.4	1210.
11:55 am.	samples			

Appendix B

Laboratory Report and Chain of Custody Form

for the

Second Quarter 2004 Monitoring Event

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

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

Date: 11-JUN-04
Lab Job Number: 172485
Project ID: 2551
Location: 15101 Freedom Avenue

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

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

CHAIN OF CUSTODY

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

C&T LOGIN # 172485

Sampler: Mehran Nourroozi / Mauro E.

Project No: 2551

Report To: Tony Perini

Project Name: 15101 Freedom Ave.,San Leandro

Company : SOMA Environmental

Turnaround Time: Standard

Telephone: 925-244-6600

Fax: 925-244-6601

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE	Analyses: TPHg 8015	Analyses: BTEX 8021 GC	Analyses: Gasoline Oxygenates & MtBE 8260B
-1	MW-1	5/25/04 10:50am		X		4-VOAs	X			X	X	X	X
-2	MW-2	5/25/04 11:25am		X		↓	X			X	↓	↓	↓
-3	MW-3	5/25/04 1:15pm		X			X			X			
-4	MW-4	5/25/04 12:40pm		X			X			X			
-5	MW-5	5/25/04 11:55am		X			X			X			

Notes: EDF OUTPUT REQUIRED

Received: Ice ☒ Cold ☐ Ambient ☒ Intact

RELINQUISHED BY:

Mehran Nourroozi 2:10 pm 5/25/04 DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY:

Lavanne Curtis 5/25/04 2:10pm DATE/TIME

DATE/TIME

DATE/TIME

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551		
Matrix:	Water	Sampled:	05/25/04
Units:	ug/L	Received:	05/25/04
Batch#:	91428	Analyzed:	05/25/04

Field ID: MW-1 Lab ID: 172485-001
Type: SAMPLE Diln Fac: 2.000

Analyte	Result	RL	Analysis
Gasoline C7-C12	8,000	100	EPA 8015B
Benzene	400	1.0	EPA 8021B
Toluene	1.5	1.0	EPA 8021B
Ethylbenzene	420	1.0	EPA 8021B
m,p-Xylenes	350	1.0	EPA 8021B
o-Xylene	43	1.0	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	105	74-142	EPA 8015B
Bromofluorobenzene (FID)	102	80-139	EPA 8015B
Trifluorotoluene (PID)	81	55-139	EPA 8021B
Bromofluorobenzene (PID)	95	62-134	EPA 8021B

Field ID: MW-2 Lab ID: 172485-002
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL	Analysis
Gasoline C7-C12	4,500	50	EPA 8015B
Benzene	5.1 C	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	190	0.50	EPA 8021B
m,p-Xylenes	230	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	101	74-142	EPA 8015B
Bromofluorobenzene (FID)	103	80-139	EPA 8015B
Trifluorotoluene (PID)	75	55-139	EPA 8021B
Bromofluorobenzene (PID)	96	62-134	EPA 8021B

Field ID: MW-3 Lab ID: 172485-003
Type: SAMPLE Diln Fac: 20.00

Analyte	Result	RL	Analysis
Gasoline C7-C12	65,000	1,000	EPA 8015B
Benzene	4,300	10	EPA 8021B
Toluene	1,300	10	EPA 8021B
Ethylbenzene	2,500	10	EPA 8021B
m,p-Xylenes	7,500	10	EPA 8021B
o-Xylene	3,000	10	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	85	74-142	EPA 8015B
Bromofluorobenzene (FID)	102	80-139	EPA 8015B
Trifluorotoluene (PID)	73	55-139	EPA 8021B
Bromofluorobenzene (PID)	95	62-134	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551		
Matrix:	Water	Sampled:	05/25/04
Units:	ug/L	Received:	05/25/04
Batch#:	91428	Analyzed:	05/25/04

Field ID: MW-4 Lab ID: 172485-004
Type: SAMPLE Diln Fac: 2.000

Analyte	Result	RL	Analysis
Gasoline C7-C12	9,100	100	EPA 8015B
Benzene	210	1.0	EPA 8021B
Toluene	51	1.0	EPA 8021B
Ethylbenzene	200	1.0	EPA 8021B
m,p-Xylenes	770	1.0	EPA 8021B
o-Xylene	420	1.0	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	109	74-142	EPA 8015B
Bromofluorobenzene (FID)	106	80-139	EPA 8015B
Trifluorotoluene (PID)	84	55-139	EPA 8021B
Bromofluorobenzene (PID)	96	62-134	EPA 8021B

Field ID: MW-5 Lab ID: 172485-005
Type: SAMPLE Diln Fac: 10.00

Analyte	Result	RL	Analysis
Gasoline C7-C12	9,200	500	EPA 8015B
Benzene	380	5.0	EPA 8021B
Toluene	24	5.0	EPA 8021B
Ethylbenzene	490	5.0	EPA 8021B
m,p-Xylenes	480	5.0	EPA 8021B
o-Xylene	56	5.0	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	87	74-142	EPA 8015B
Bromofluorobenzene (FID)	100	80-139	EPA 8015B
Trifluorotoluene (PID)	70	55-139	EPA 8021B
Bromofluorobenzene (PID)	96	62-134	EPA 8021B

Type: BLANK Diln Fac: 1.000
Lab ID: QC252235

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	76	74-142	EPA 8015B
Bromofluorobenzene (FID)	99	80-139	EPA 8015B
Trifluorotoluene (PID)	69	55-139	EPA 8021B
Bromofluorobenzene (PID)	92	62-134	EPA 8021B

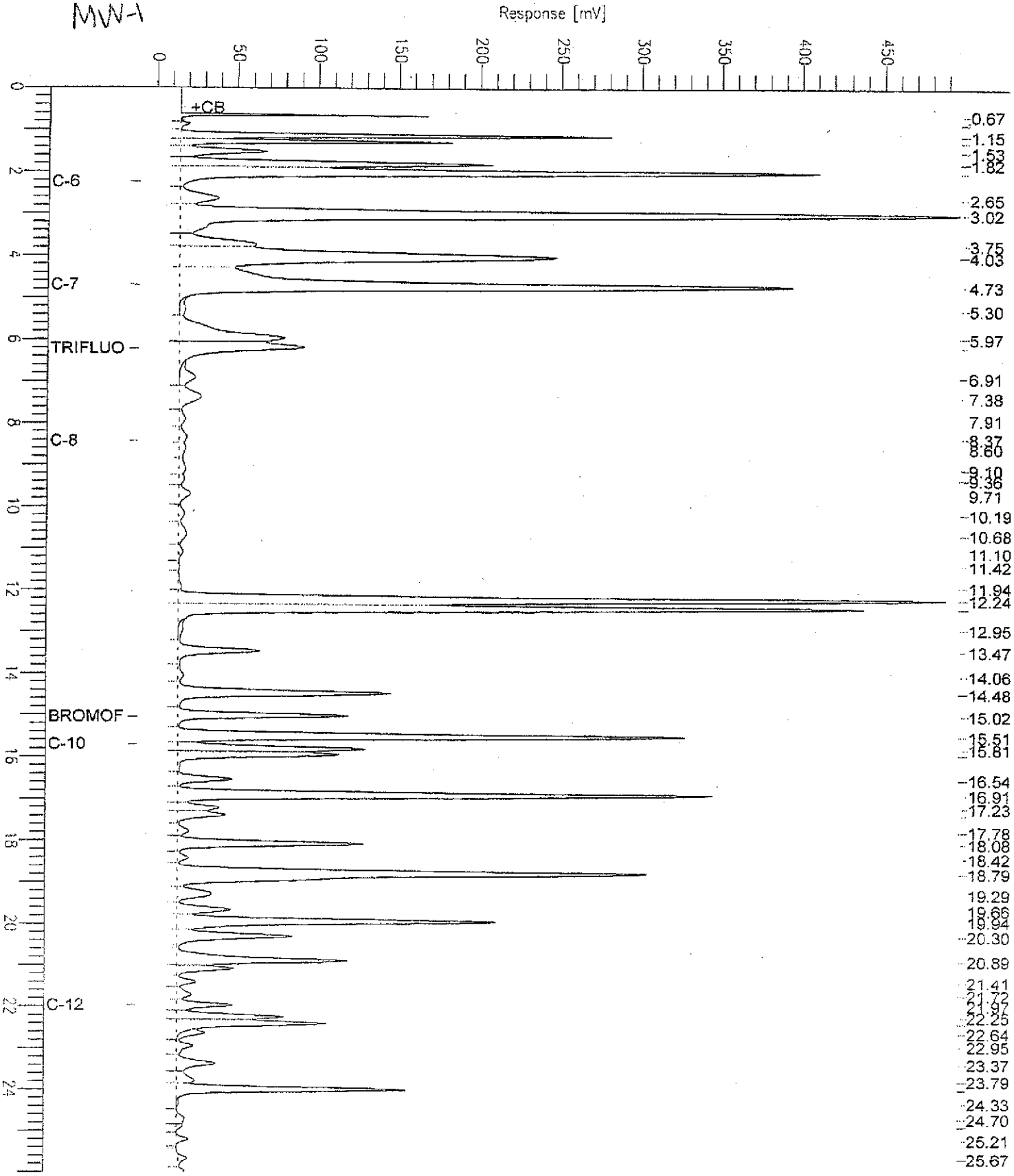
C= Presence confirmed, but RPD between columns exceeds 40%
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 172485-001,91428
FileName : G:\GC07\DATA\146A0I0.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -10 mV

Sample #: a1.0 Page 1 of 1
Date : 5/25/04 05:33 PM
Time of Injection: 5/25/04 05:07 PM
Low Point : -9.58 mV High Point : 496.90 mV
Plot Scale: 506.5 mV

MW-1

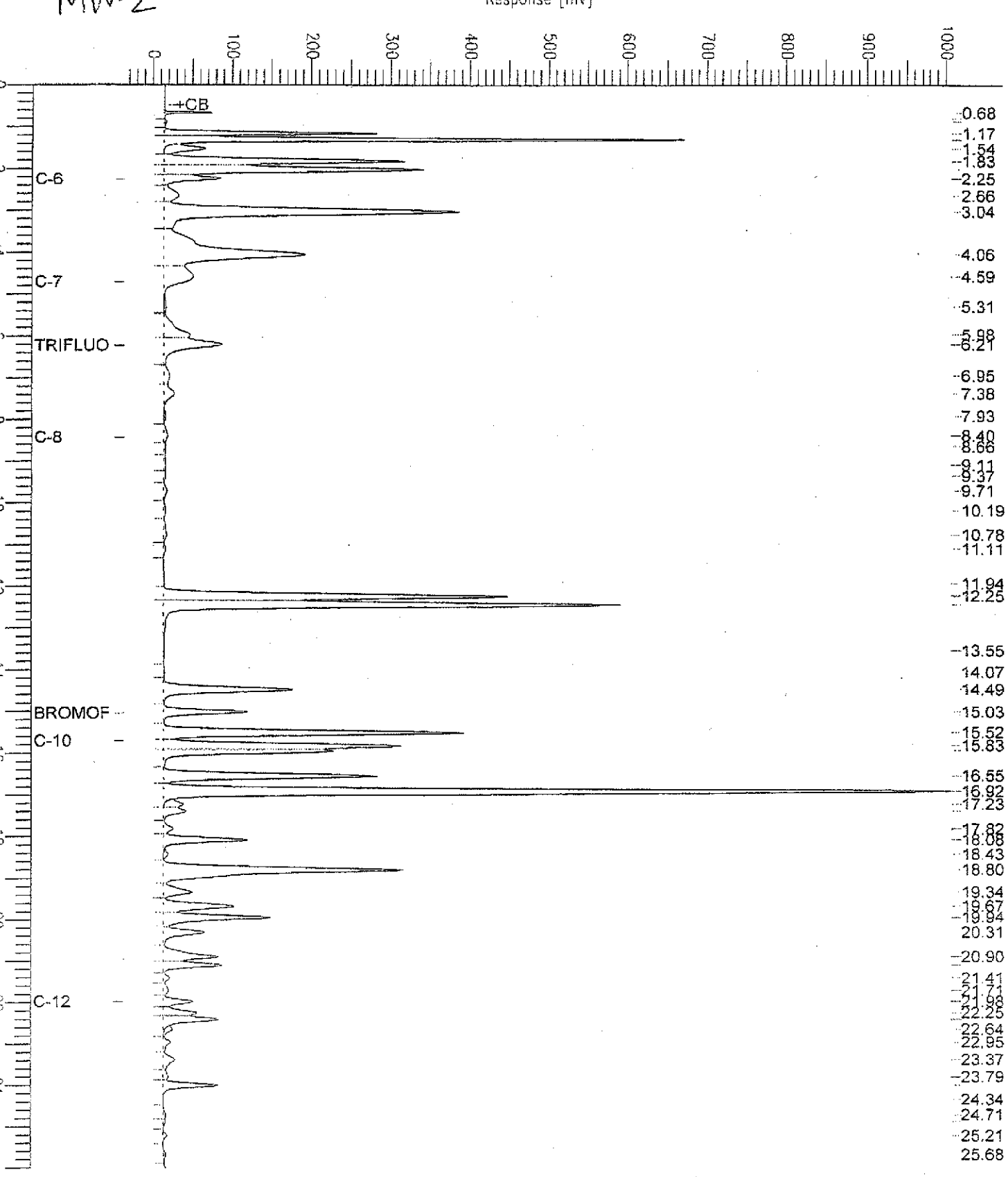


GC07 TVH 'A' Data File RTX 502

Sample Name : 172485-002,91428
FileName : G:\GC07\DATA\146A008.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -35 mV

Sample #: a1.0 Page 1 of 1
Date : 5/25/04 03:50 PM
Time of Injection: 5/25/04 03:24 PM
Low Point : -34.91 mV High Point : 1007.54 mV
Plot Scale: 1042.5 mV

MW-2

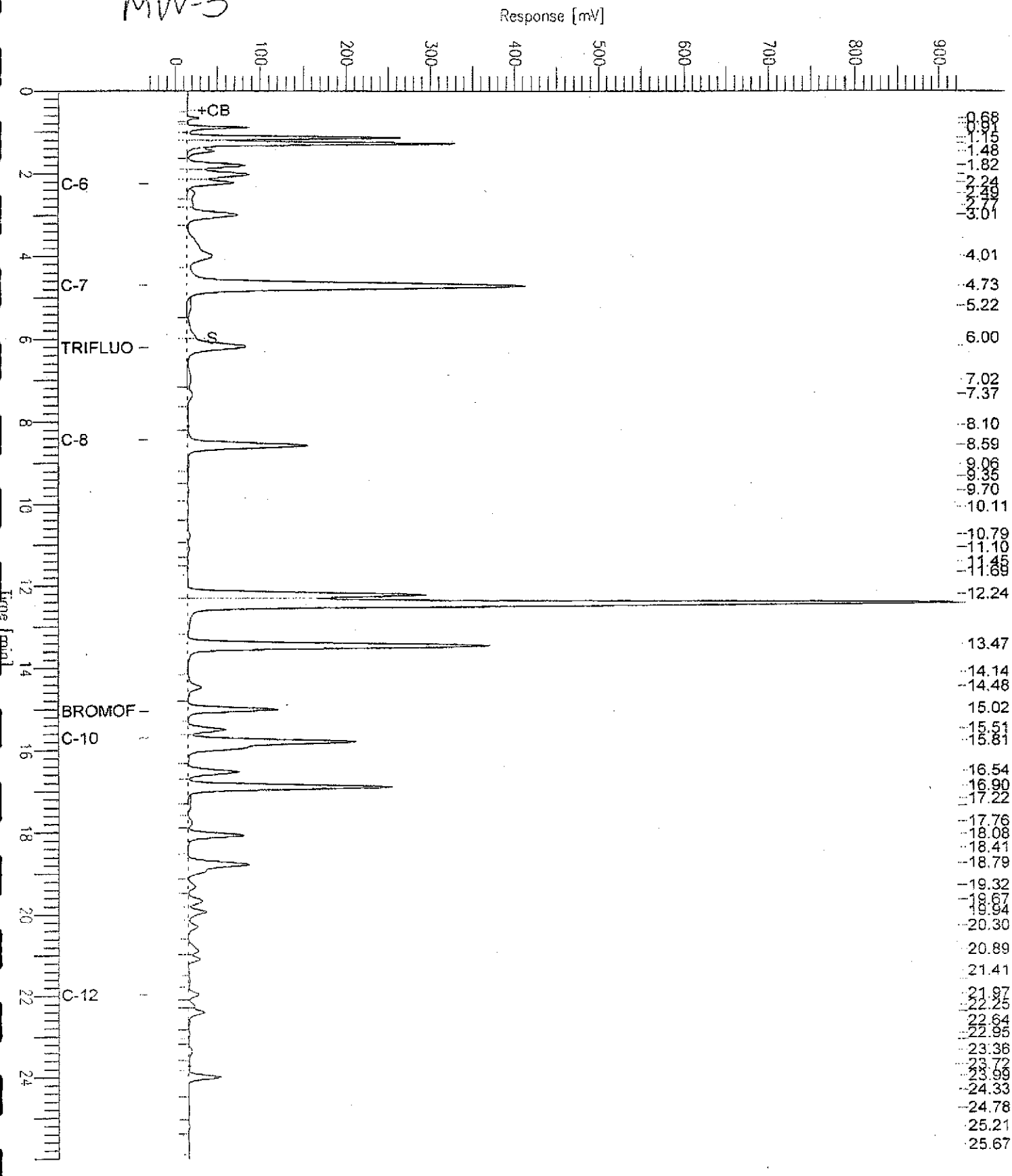


GC07 TVH 'A' Data File RTX 502

Sample Name : 172485-003,91428
FileName : G:\GC07\DATA\146A015.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -31 mV

Sample #: a1.0 Page 1 of 1
Date : 5/26/04 07:26 AM
Time of Injection: 5/25/04 08:02 PM
Low Point : -30.75 mV High Point : 920.48 mV
Plot Scale: 951.2 mV

MW-3

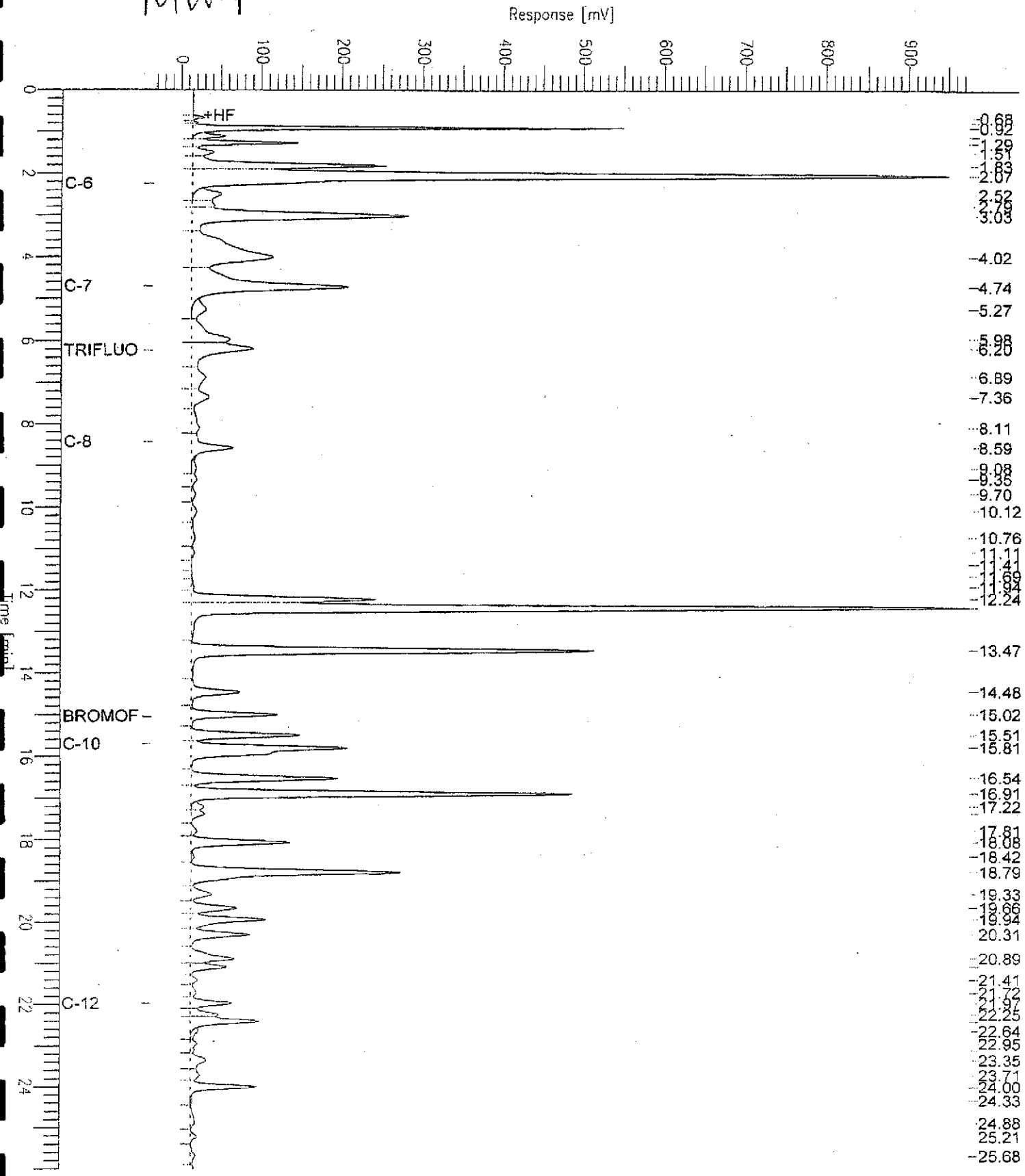


GC07 TVH 'A' Data File RTX 502

Sample Name : 172485-004,9142B
FileName : G:\GC07\DATA\146A016.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -33 mV

Sample #: a1.0 Page 1 of 1
Date : 5/26/04 07:26 AM
Time of Injection: 5/25/04 08:37 PM
Low Point : -33.47 mV High Point : 975.39 mV
Plot Scale: 1008.9 mV

MW-4

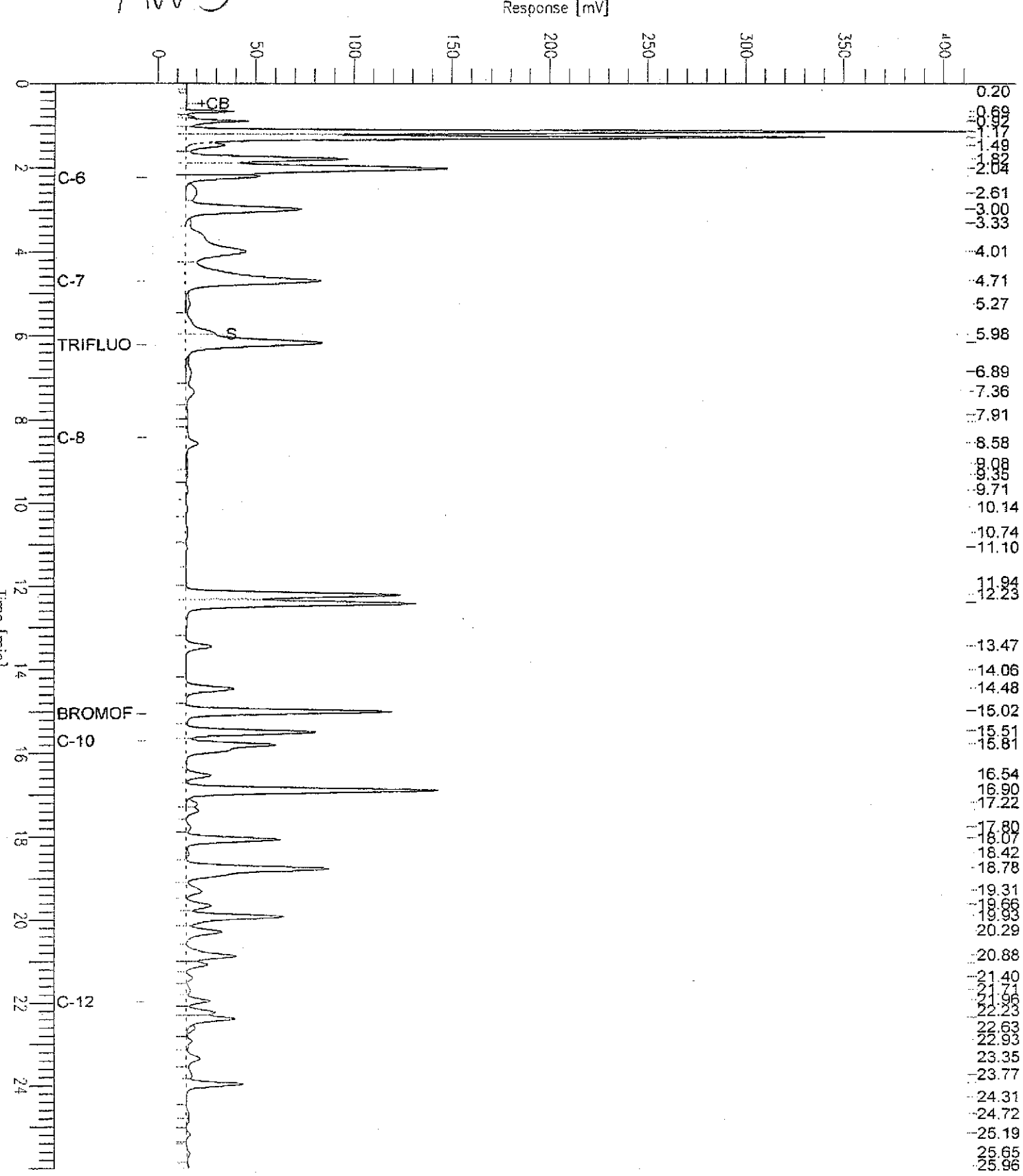


GC07 TVH 'A' Data File RTX 502

Sample Name : 172485-005,91428
FileName : G:\GC07\DATA\146A009.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -5 mV

Sample #: a1.0 Page 1 of 1
Date : 5/26/04 07:26 AM
Time of Injection: 5/25/04 03:59 PM
Low Point : -5.21 mV High Point : 411.27 mV
Plot Scale: 416.5 mV

MW-5

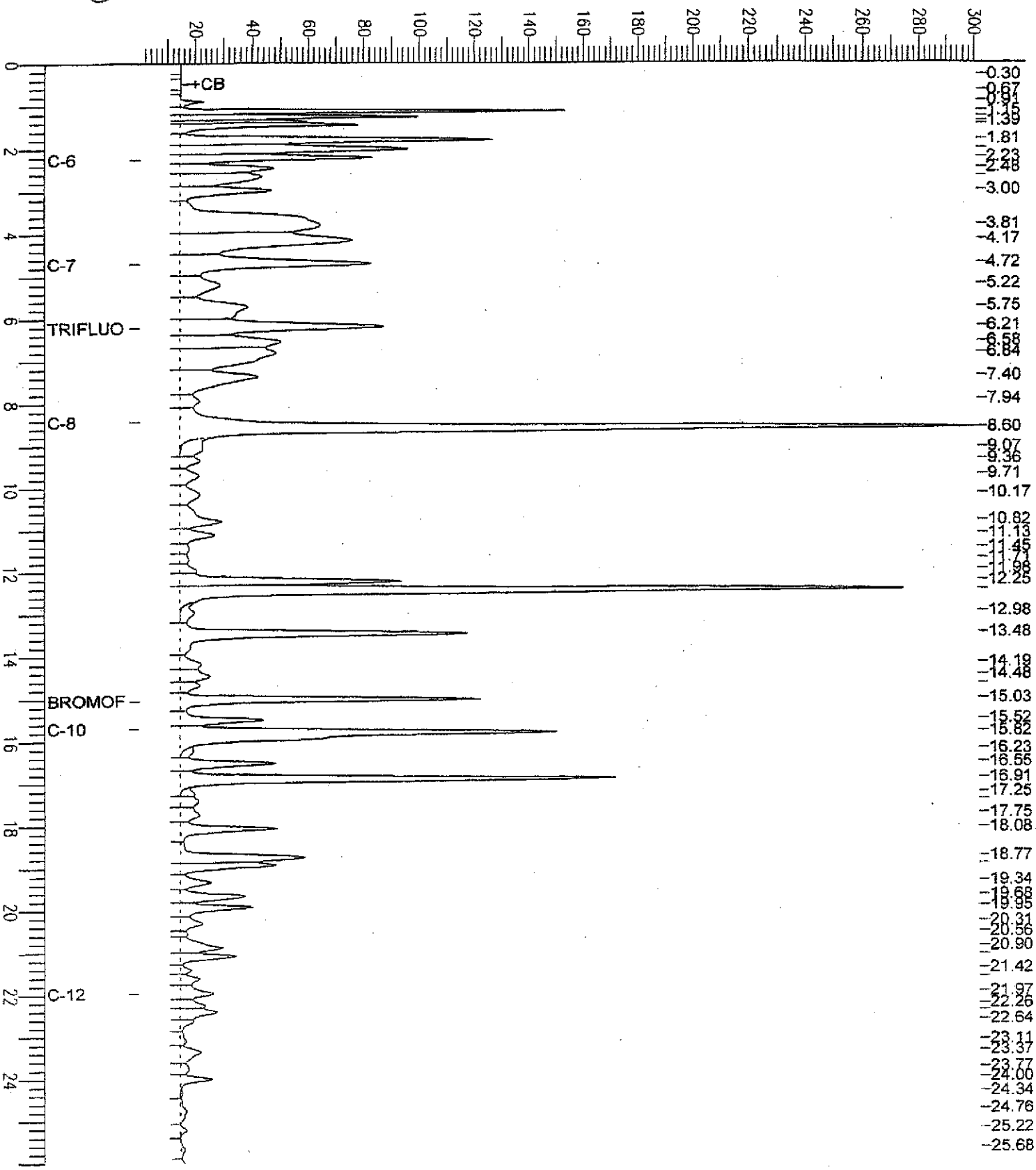


GC07 TVH 'A' Data File RTX 502

Sample Name : ccv/lcs,qc252237,91428,04ws0931,5/5000
FileName : G:\GC07\DATA\146A002.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 0 mV

Sample #: Page 1 of 1
Date : 5/25/04 10:24 AM
Time of Injection: 5/25/04 09:57 AM
Low Point : 0.28 mV High Point : 300.93 mV
Plot Scale: 300.6 mV

Gasoline



Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC252236	Batch#:	91428
Matrix:	Water	Analyzed:	05/25/04
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Benzene	20.00	19.43	97	80-120
Toluene	20.00	19.31	97	80-120
Ethylbenzene	20.00	19.82	99	80-120
m,p-Xylenes	20.00	19.20	96	80-120
o-Xylene	20.00	19.57	98	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	70	55-139
Bromofluorobenzene (PID)	96	62-134

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC252237	Batch#:	91428
Matrix:	Water	Analyzed:	05/25/04
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,105	105	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	74-142
Bromofluorobenzene (FID)	107	80-139

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	91428
MSS Lab ID:	172470-013	Sampled:	05/24/04
Matrix:	Water	Received:	05/24/04
Units:	ug/L	Analyzed:	05/25/04
Diln Fac:	1.000		

Type: MS Lab ID: QC252282

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	19.30	2,000	2,018	100	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	90	74-142
Bromofluorobenzene (FID)	106	80-139

Type: MSD Lab ID: QC252283

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,984	98	80-120	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	92	74-142
Bromofluorobenzene (FID)	104	80-139

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	05/25/04
Units:	ug/L	Received:	05/25/04

Field ID:	MW-1	Diln Fac:	1.429
Type:	SAMPLE	Batch#:	91603
Lab ID:	172485-001	Analyzed:	06/02/04

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	62	14
MTBE	3.4	0.7
Isopropyl Ether (DIPE)	ND	0.7
Ethyl tert-Butyl Ether (ETBE)	ND	0.7
Methyl tert-Amyl Ether (TAME)	ND	0.7
1,2-Dichloroethane	ND	0.7
1,2-Dibromoethane	ND	0.7
Ethanol	ND	1,400

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	96	80-124
Toluene-d8	102	80-120
Bromofluorobenzene	95	80-120

Field ID:	MW-2	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	91603
Lab ID:	172485-002	Analyzed:	06/02/04

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	14	10
MTBE	0.7	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethanol	ND	1,000

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-120
1,2-Dichloroethane-d4	95	80-124
Toluene-d8	101	80-120
Bromofluorobenzene	97	80-120

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	05/25/04
Units:	ug/L	Received:	05/25/04

Field ID: MW-3
Type: SAMPLE
Lab ID: 172485-003
Diln Fac: 10.00
Batch#: 91603
Analyzed: 06/02/04

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	720	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
Methyl tert-Amyl Ether (TAME)	270	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethanol	ND	10,000

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	96	80-124
Toluene-d8	100	80-120
Bromofluorobenzene	96	80-120

Field ID: MW-4
Type: SAMPLE
Lab ID: 172485-004

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
tert-Butyl Alcohol (TBA)	560	170	16.67	91603	06/01/04
MTBE	1,800	13	25.00	91634	06/02/04
Isopropyl Ether (DIPE)	ND	8.3	16.67	91603	06/01/04
Ethyl tert-Butyl Ether (ETBE)	ND	8.3	16.67	91603	06/01/04
Methyl tert-Amyl Ether (TAME)	24	8.3	16.67	91603	06/01/04
1,2-Dichloroethane	ND	8.3	16.67	91603	06/01/04
1,2-Dibromoethane	ND	8.3	16.67	91603	06/01/04
Ethanol	ND	17,000	16.67	91603	06/01/04

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	93	80-120	16.67	91603	06/01/04
1,2-Dichloroethane-d4	96	80-124	16.67	91603	06/01/04
Toluene-d8	100	80-120	16.67	91603	06/01/04
Bromofluorobenzene	102	80-120	16.67	91603	06/01/04

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

6.0

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	05/25/04
Units:	ug/L	Received:	05/25/04

Field ID:	MW-5	Diln Fac:	10.00
Type:	SAMPLE	Batch#:	91634
Lab ID:	172485-005	Analyzed:	06/02/04

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	720	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
Methyl tert-Amyl Ether (TAME)	210	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethanol	ND	10,000

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-120
1,2-Dichloroethane-d4	96	80-124
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-120

Type:	BLANK	Batch#:	91603
Lab ID:	QC252867	Analyzed:	06/01/04
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethanol	ND	1,000

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	95	80-124
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-120

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	05/25/04
Units:	ug/L	Received:	05/25/04

Type: BLANK Lab ID: QC252868

Analyte	Result
tert-Butyl Alcohol (TBA)	NA
MTBE	NA
Isopropyl Ether (DIPE)	NA
Ethyl tert-Butyl Ether (ETBE)	NA
Methyl tert-Amyl Ether (TAME)	NA
1,2-Dichloroethane	NA
1,2-Dibromoethane	NA
Ethanol	NA

Surrogate	Result
Dibromofluoromethane	NA
1,2-Dichloroethane-d4	NA
Toluene-d8	NA
Bromofluorobenzene	NA

Type:	BLANK	Batch#:	91634
Lab ID:	QC253006	Analyzed:	06/02/04
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethanol	ND	1,000

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-120
1,2-Dichloroethane-d4	96	80-124
Toluene-d8	99	80-120
Bromofluorobenzene	104	80-120

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	05/25/04
Units:	ug/L	Received:	05/25/04

Type:	BLANK	Batch#:	91634
Lab ID:	QC253007	Analyzed:	06/02/04
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethanol	ND	1,000

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	95	80-124
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-120

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline Oxygenates by GC/MS

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	91603
Units:	ug/L	Analyzed:	06/01/04
Diln Fac:	1.000		

Type: BS Lab ID: QC252865

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	100.2	80	80-140
MTBE	50.00	40.23	80	76-123
Isopropyl Ether (DIPE)	25.00	20.55	82	80-124
Ethyl tert-Butyl Ether (ETBE)	25.00	20.80	83	80-120
Methyl tert-Amyl Ether (TAME)	25.00	20.71	83	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	91	80-120
1,2-Dichloroethane-d4	95	80-124
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-120

Type: BSD Lab ID: QC252866

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	99.89	80	80-140	0	20
MTBE	50.00	40.33	81	76-123	0	20
Isopropyl Ether (DIPE)	25.00	20.58	82	80-124	0	20
Ethyl tert-Butyl Ether (ETBE)	25.00	20.89	84	80-120	0	20
Methyl tert-Amyl Ether (TAME)	25.00	20.51	82	80-120	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	95	80-124
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-120

RPD= Relative Percent Difference

7.0

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline Oxygenates by GC/MS

Lab #:	172485	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	91634
Units:	ug/L	Analyzed:	06/02/04
Diln Fac:	1.000		

Type: BS Lab ID: QC253004

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	110.5	88	80-140
MTBE	50.00	41.40	83	76-123
Isopropyl Ether (DIPE)	25.00	21.18	85	80-124
Ethyl tert-Butyl Ether (ETBE)	25.00	21.41	86	80-120
Methyl tert-Amyl Ether (TAME)	25.00	21.05	84	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-120
1,2-Dichloroethane-d4	96	80-124
Toluene-d8	98	80-120
Bromofluorobenzene	100	80-120

Type: BSD Lab ID: QC253005

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	123.5	99	80-140	11	20
MTBE	50.00	41.58	83	76-123	0	20
Isopropyl Ether (DIPE)	25.00	20.49	82	80-124	3	20
Ethyl tert-Butyl Ether (ETBE)	25.00	21.01	84	80-120	2	20
Methyl tert-Amyl Ether (TAME)	25.00	20.95	84	80-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-120
1,2-Dichloroethane-d4	97	80-124
Toluene-d8	100	80-120
Bromofluorobenzene	100	80-120

RPD= Relative Percent Difference

8.0