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January 13, 2014

Mr. Martin Musonge
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Subject: **File No. 01-0098 (MYM)**
Site Located at 2844 Mountain Boulevard, Oakland, California

Dear Mr. Musonge:

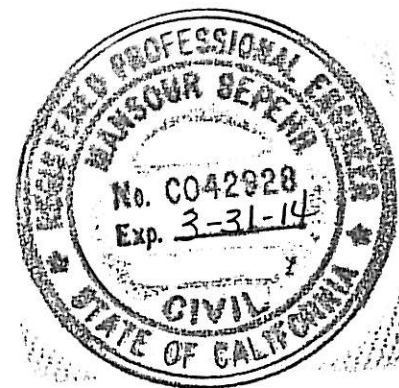
Enclosed for your review is a copy of SOMA's "Fourth Quarter 2013 Groundwater Monitoring Report" for the subject property. It has been uploaded to the State's GeoTracker database and Alameda County's FTP site.

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

Sincerely,

Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist

cc: Mr. Tejindar Singh w/enclosure
Ms. Donna Drogos – Alameda County Env. Health



**Fourth Quarter 2013
Groundwater Monitoring Report**

**2844 Mountain Boulevard
Oakland, California
Regional Board File Number 01-0098**

January 13, 2014

Project 5081

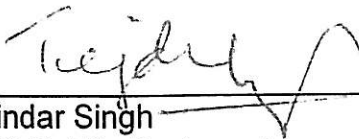
Prepared for

**Tejindar Singh
6400 Dublin Blvd.
Dublin, California, 94568**

PERJURY STATEMENT

Site Location: 2844 Mountain Boulevard, Oakland, California

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



Tejinder Singh
6400 Dublin Boulevard
Dublin, California 94568
Responsible Party

CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this report on behalf of Tejindar Singh, property owner of 2844 Mountain Blvd., Oakland, California, to comply with requirements of the San Francisco Bay Regional Water Quality Control Board for the Fourth Quarter 2013 groundwater monitoring event.



Mansour Sepéhr, PhD, PE
Principal Hydrogeologist



TABLE OF CONTENTS

CERTIFICATION	i
TABLE OF CONTENTS.....	ii
LIST OF FIGURES	iii
LIST OF TABLES.....	iii
LIST OF APPENDICES	iii
1. INTRODUCTION	1
1.1 Previous Activities	1
1.2 Summary of Field Activities and Laboratory Analysis	2
1.2.1 Field Activities	2
1.2.2 Laboratory Analysis	3
2. RESULTS	3
2.1 Field Measurements	3
2.2 Laboratory Analysis	3
3. CONCLUSIONS AND RECOMMENDATIONS.....	5
4. REPORT LIMITATIONS	5

LIST OF FIGURES

- Figure 1 Site Vicinity Map
- Figure 2 Site Map Showing Locations of Former USTs, Soil Borings, and Groundwater Monitoring Wells
- Figure 3 Groundwater Elevation Contour Map in feet, December 30, 2013
- Figure 4 Map Showing TPH-g and Benzene Concentrations in Groundwater, December 30, 2013
- Figure 5 Contour Map Showing TPH-d Concentrations in Groundwater, December 30, 2013
- Figure 6 Contour Map Showing MtBE Concentrations in Groundwater, December 30, 2013
- Figure 7 Contour Map Showing TBA Concentrations in Groundwater, December 30, 2013
- Figure 8 Contour Map Showing TAME Concentrations in Groundwater, December 30, 2013

LIST OF TABLES

- Table 1 Historical Groundwater Analytical Results

LIST OF APPENDICES

- Appendix A Standard Operating Procedures for Conducting Groundwater Monitoring Activities
- Appendix B Tables of Elevations and Coordinates on Wells, Field Measurements of Physical and Chemical Parameters of the Groundwater Samples and Groundwater Gradient Calculations
- Appendix C Laboratory Report and Chain of Custody Form

1. INTRODUCTION

SOMA Environmental Engineering, Inc. (SOMA) has prepared this report on behalf of Mr. Tejindar Singh, property owner of 2844 Mountain Blvd., Oakland, California. The site is located east of Highway 13 and west of Joaquin Miller Park (Figure 1). Former underground storage tank (UST) locations and site features are shown in Figure 2.

This report summarizes results of the Fourth Quarter 2013 groundwater monitoring event conducted at the site on December 30, 2013. It includes physical and chemical properties measured in the field for each groundwater sample and laboratory analytical results for groundwater samples.

1.1 Previous Activities

In March 1989 soil contamination was identified during replacement of product lines. Analytical results for a soil sample collected from the southern edge of a premium unleaded tank reported total petroleum hydrocarbons (TPHs) as gasoline (TPH-g) concentration of 8,400 mg/kg. Samples from beneath the lines near the pump islands reported TPH concentrations of less than 100 mg/kg.

In July 1989, contaminated soil was excavated and from the area of the southern end of the premium unleaded UST disposed of. Analysis of 12 soil samples collected from the sides of the excavation reported TPH concentrations ranging between ND to 3,300 mg/kg.

In May 1990, further site investigation including installation of four monitoring wells (RS-1 through RS-4) was conducted. Analysis of soil samples collected above the water table reported TPH concentrations ranging from 1 to 240 mg/kg. Hydrocarbons were detected in groundwater samples collected from all the wells; the highest concentration was found in a sample monitoring well RS-2.

In June 1991 soil vapor extraction began in June 1991. Groundwater remediation began in October 1992. Remediation was suspended in 1992, apparently due to responsible party financial issues.

In April 1994, one 280-gallon waste oil UST was removed with approximately 280 gallons of fluid and rinsate. The site operated as a retail gasoline station. Three USTs, two pump islands and an office/garage building were among the site features. The USTs contained various grades of unleaded gasoline and diesel with storage capacities of 3,000, 4,000, and 10,000 gallons.

In 1996 free product was reported in RS-1.

In July 1998, one 4,000-gallon gasoline UST was excavated and disposed of off-site.

Between July 29 and August 18, 2011, two USTs, one 10,000 gallon and one 3,000 gallon capacity, were excavated and disposed of off-site. The site is currently fenced in, which limits public access to the property.

Further soil and groundwater investigation was conducted at the site in March 2012.

In October 2012, two wells (RS-1 and RS-2) were decommissioned in anticipation of excavation activities onsite. Excavation activities commenced on October 3, 2012, and an area of approximately 1,200 square feet was excavated to a depth of 15 feet. A total of 788.65 tons of waste soil was removed and replaced with clean fill material.

On May 9 and 10, 2013, two groundwater monitoring wells (MW-1 and MW-2) and soil and groundwater borings (DPT-5/5W) were installed as approved and requested by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). All site wells were surveyed by a licensed surveyor on May 28, 2013.

As approved by SFRWQCB, a multi-phase extraction (MPE) event was conducted at the site from December 2 to December 16, 2013. Details and results of this event are documented in a separate pilot testing report.

1.2 Summary of Field Activities and Laboratory Analysis

1.2.1 Field Activities

On December 30, 2013, four monitoring wells (RS-3, RS-4, MW-1 and MW-2) were measured for depth to groundwater. Additional field measurements and groundwater samples were collected from RS-3, MW-1, and MW-2. Properties measured in the field were pH, temperature, and electrical conductivity (EC). Only a grab sample could be collected from RS-4 because of accessibility issues. This monitoring event was conducted in accordance with procedures and guidelines of SFBRWQCB.

Figure 2 shows well locations. Appendix A details groundwater monitoring procedures followed during this event.

Purged groundwater was temporarily stored on-site in a 55-gallon drum pending transport to an appropriate disposal facility.

1.2.2 Laboratory Analysis

Curtis and Tompkins Laboratories, a California state-certified laboratory, analyzed groundwater samples for the following: TPH-g, and TPH as diesel (TPH-d); BTEX (benzene, toluene, ethylbenzene, and total xylenes), MtBE, gasoline oxygenates. All samples except TPH-d were analyzed using EPA Method 8260. TPH-d samples were analyzed using EPA Method 8015B.

2. RESULTS

Results of field measurements and laboratory analyses for the groundwater monitoring event conducted on December 30, 2013 follow below.

2.1 Field Measurements

Monitoring wells MW-1, MW-2, RS-3 and RS-4 were measured for depth to groundwater (Table 1). Depths to groundwater ranged from 7.21 feet in RS-3 to 9.57 feet in RS-4. Groundwater elevations ranged from 665.70 feet in RS-4 to 668.87 feet in RS-3.

Figure 3 displays the groundwater elevation map. The groundwater flows southeasterly at a gradient of 0.063 ft/ft. Since the previous monitoring event (September 2013), the groundwater flow direction and gradient have remained the same. Groundwater gradient calculations are included in Appendix B.

2.2 Laboratory Analysis

Groundwater analytical data for this monitoring event is shown in Table 1. Appendix C includes the laboratory report and chain of custody form. No measurable floating product was observed during this monitoring event.

TPH-g was below laboratory-reporting limit in RS-3, RS-4, and MW-2 and was detected in MW-1 at 34,000 µg/L. Since the previous monitoring event (September 2013), TPH-g concentration in RS-4 has decreased and remained below laboratory-reporting limits in RS-3 and MW-2. No comparison can be made for MW-1 due to higher dilution and reporting limits during the previous monitoring event. Figure 4 shows a map of TPH-g concentrations in groundwater.

TPH-d was detected in concentrations ranging from 61 µg/L in RS-3 to 13,000 µg/L in MW-1. Since the previous monitoring event (September 2013), TPH-d has increased in RS-4 and MW-2, decreased in RS-3, and remained same in MW-1. Figure 5 shows a contour map of TPH-d concentrations in groundwater. TPH-d plume appears to be centered southwest of the pump islands in the vicinity of MW-1.

During analytical testing of TPH-d, groundwater sample from RS-3 exhibited chromatographic pattern that did not resemble standard. For details of analysis and testing of diesel, refer to the laboratory analytical report in Appendix C.

The following BTEX concentrations were observed during this monitoring event:

- All BTEX analytes were below laboratory-reporting limits in RS-3.
- Benzene was below laboratory-reporting limit in RS-4 also and was detected in MW-1 and MW-2 at 920 µg/L and 180 µg/L, respectively. Since the previous monitoring event (September 2013) benzene has decreased in MW-1 and MW-2. Figure 4 shows a map of benzene concentrations in groundwater. The benzene plume appears to be centered to the southwest of the pump islands in the vicinity of MW-1.
- Toluene was below laboratory-reporting limit in RS-4 and MW-2 also and was detected in MW-1 at 1,000 µg/L. Since the previous monitoring event (September 2013) toluene has increased in MW-1.
- Ethylbenzene was below laboratory-reporting limit in RS-4 and MW-2 also and was detected in MW-1 at 1,300 µg/L. Since the previous monitoring event (September 2013) ethylbenzene has decreased in RS-4, MW-1, and MW-2.
- Total xylenes ranged from 150 µg/L in RS-4 to 4,900 µg/L in MW-1. Since the previous monitoring event (September 2013), total xylenes increased in MW-1 and decreased significantly in RS-4 and MW-2.

Methyl tertiary-butyl ether (MtBE) concentrations ranged from 21 µg/L in RS-3 to 43,000 µg/L in MW-1. Since the previous monitoring event (September 2013), MtBE has increased in RS-3 and decreased in RS-4, MW-2, and significantly in MW-1. Figure 6 shows a contour map of MtBE concentrations in groundwater. The MtBE plume appears to be centered to the southwest of the pump islands in the vicinity of MW-1.

Tertiary-butyl alcohol (TBA) concentrations ranged from 680 µg/L in RS-3 to 53,000 µg/L in MW-2. Since the previous monitoring event (September 2013), TBA has increased in RS-3 and MW-2 and decreased in RS-4 and MW-1. Figure 7 shows a contour map of TBA concentrations in groundwater. The highest TBA concentrations were detected in the vicinity of the pump islands around MW-2.

Tertiary amyl methyl ether (TAME) concentrations ranged from 0.64 µg/L in RS-3 to 4,500 µg/L in MW-1. Since the previous monitoring event (September 2013), TAME has increased in RS-3 and decreased in RS-4, MW-1, and MW-2. Figure 8 shows a contour map of TAME concentrations in groundwater. The highest TAME concentrations were detected to the southwest of the pump islands in the vicinity of MW-1.

3. CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations based on results of Fourth Quarter 2013 groundwater monitoring are summarized below.

- The groundwater flows southeasterly across the site.
- No free/floating product was observed in any monitoring wells during this monitoring event.
- Since the previous monitoring event in September 2013, TPH-g in RS-4 decreased, remained below laboratory-reporting limits in RS-3 and MW-2, no comparison can be made for MW-1 due to higher dilution and reporting limits during the previous monitoring event; TPH-d increased in RS-4 and MW-2, decreased in RS-3, and remained same in MW-1; benzene decreased in MW-1 and MW-2; MtBE increased in RS-3 and decreased in RS-4, MW-2, and significantly in MW-1; TBA increased in RS-3 and MW-2 and decreased in RS-4 and MW-1; and TAME increased in RS-3 and decreased in RS-4, MW-1, and MW-2.
- The highest TPH-g, TPH-d, benzene, toluene, ethylbenzene, total xylenes, MtBE, and TAME concentrations were detected to the southwest of the pump islands around MW-1. The highest TBA concentrations were detected in the vicinity of pump islands around MW-2.
- SOMA will continue conducting quarterly groundwater monitoring events at the site.

Based on SFBRWQCB's approval dated April 3, 2013, SOMA conducted a multi-phase extraction (MPE) pilot test at the site from December 2 through December 16, 2013 and a report documenting details and results will be submitted shortly.

SOMA submitted a report documenting installation of soil borings and monitoring wells dated September 13, 2013. The report recommended installing a groundwater monitoring well in close proximity of boring SS-1 in order to monitor elevated levels of chemicals in groundwater.

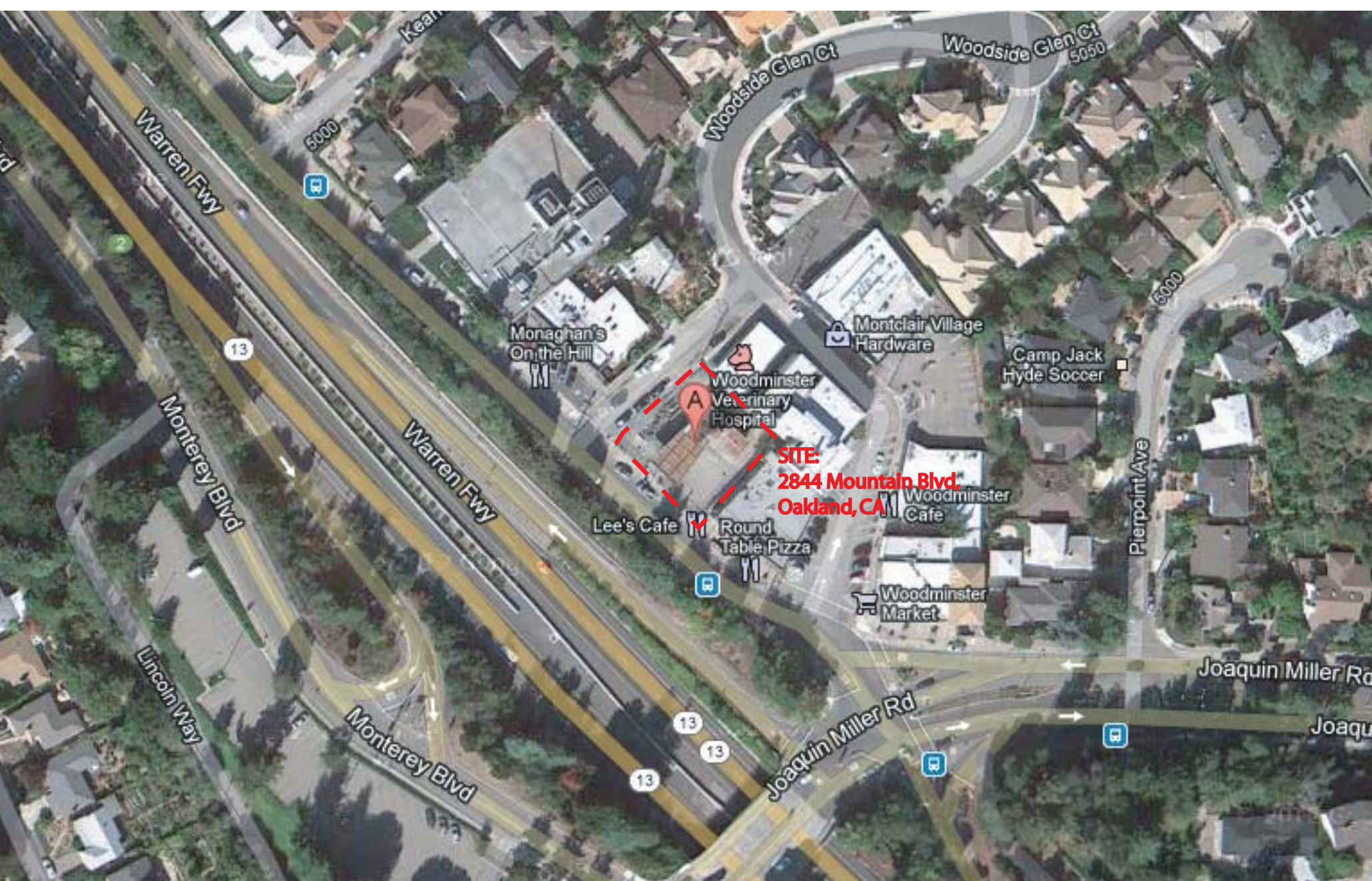
4. REPORT LIMITATIONS

This report is the summary of work done by SOMA, including observations and descriptions of site conditions. It includes analytical results produced by Curtis and Tompkins, Laboratories for the current groundwater monitoring event. Quantities and locations of wells were selected to provide the required information, but may not be completely representative of entire site conditions. All conclusions and recommendations are based on results of laboratory analysis.

Conclusions beyond those specifically stated in this document should not be inferred from this report.

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

Figures



Source: Google (R) 2012

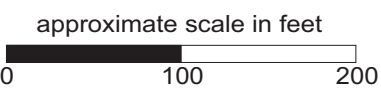


Figure 1: Site Vicinity Map



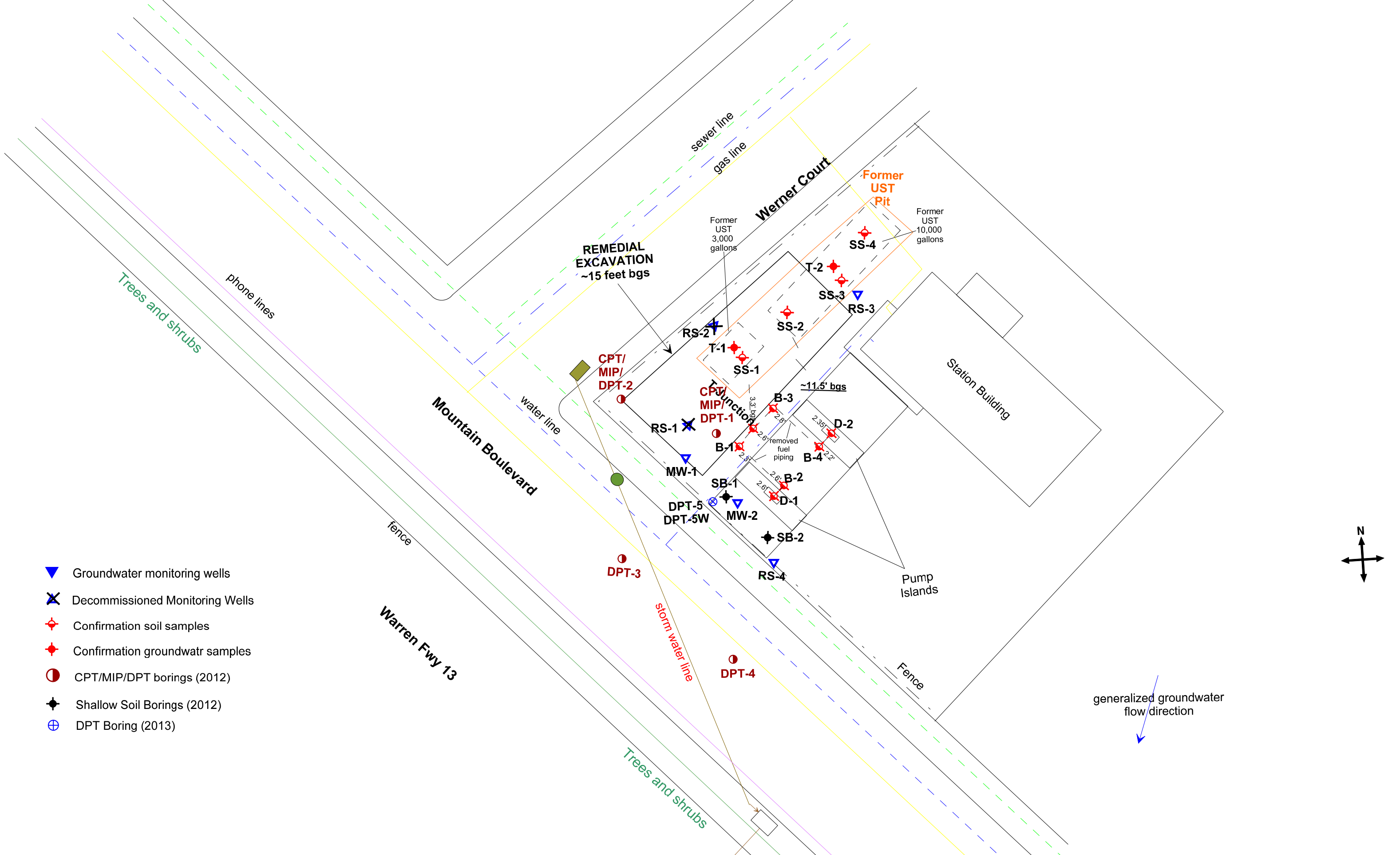
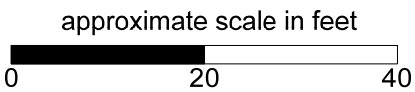


Figure 2: Site Map Showing Locations of Former USTs, Soil Borings, and Groundwater Monitoring Wells



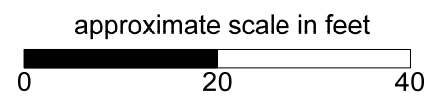
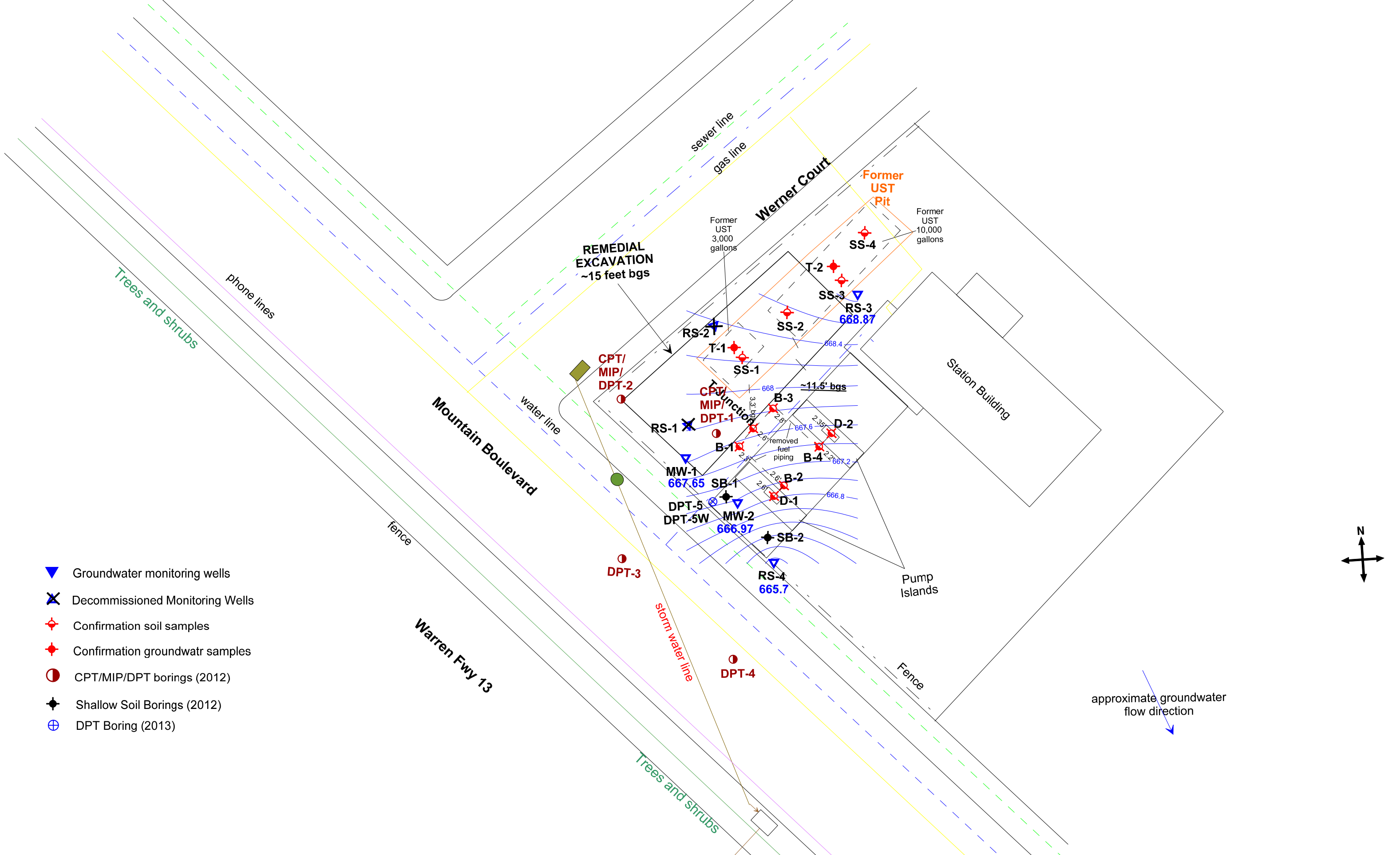


Figure 3: Groundwater Elevation Contour Map in feet, December 30, 2013

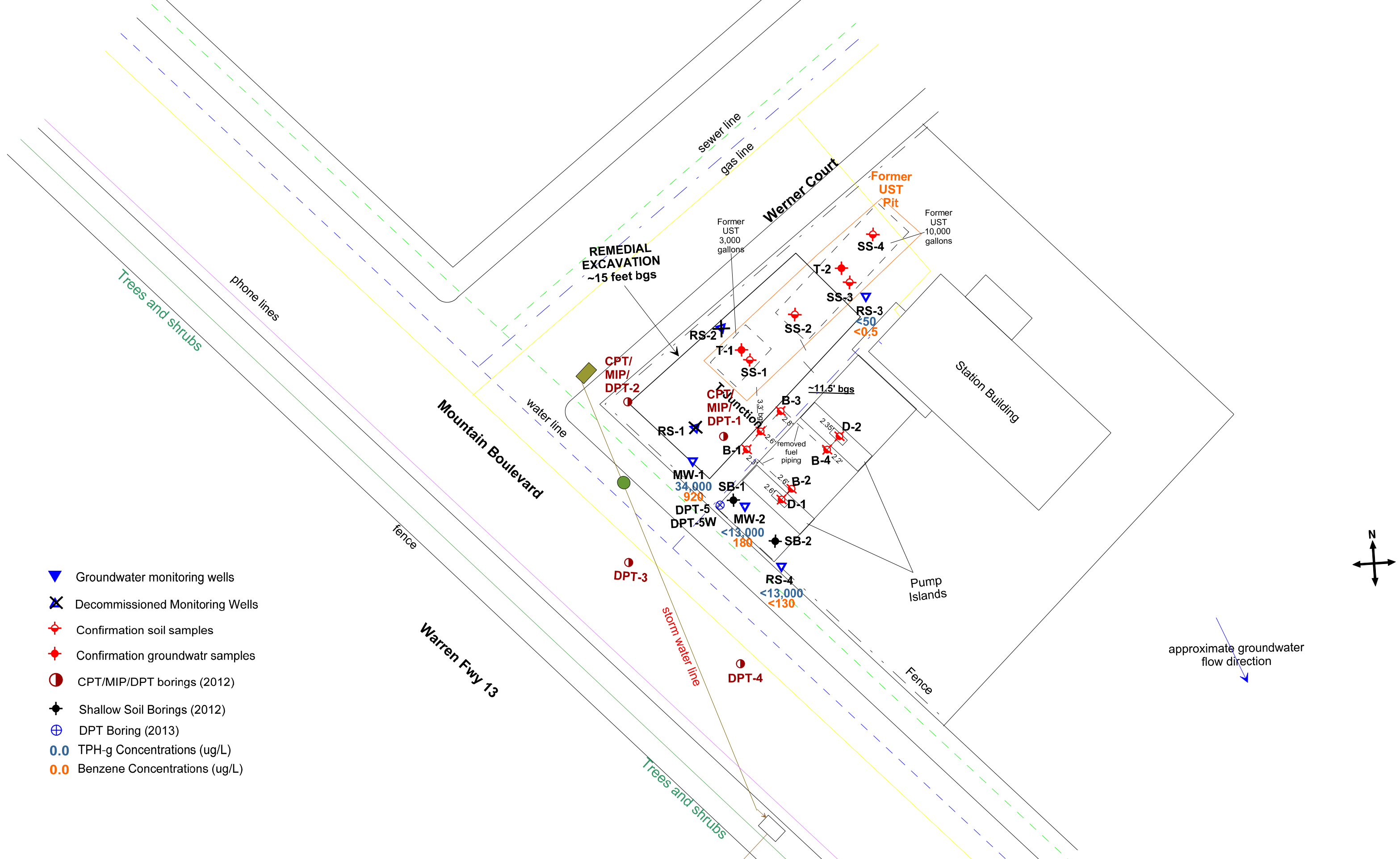
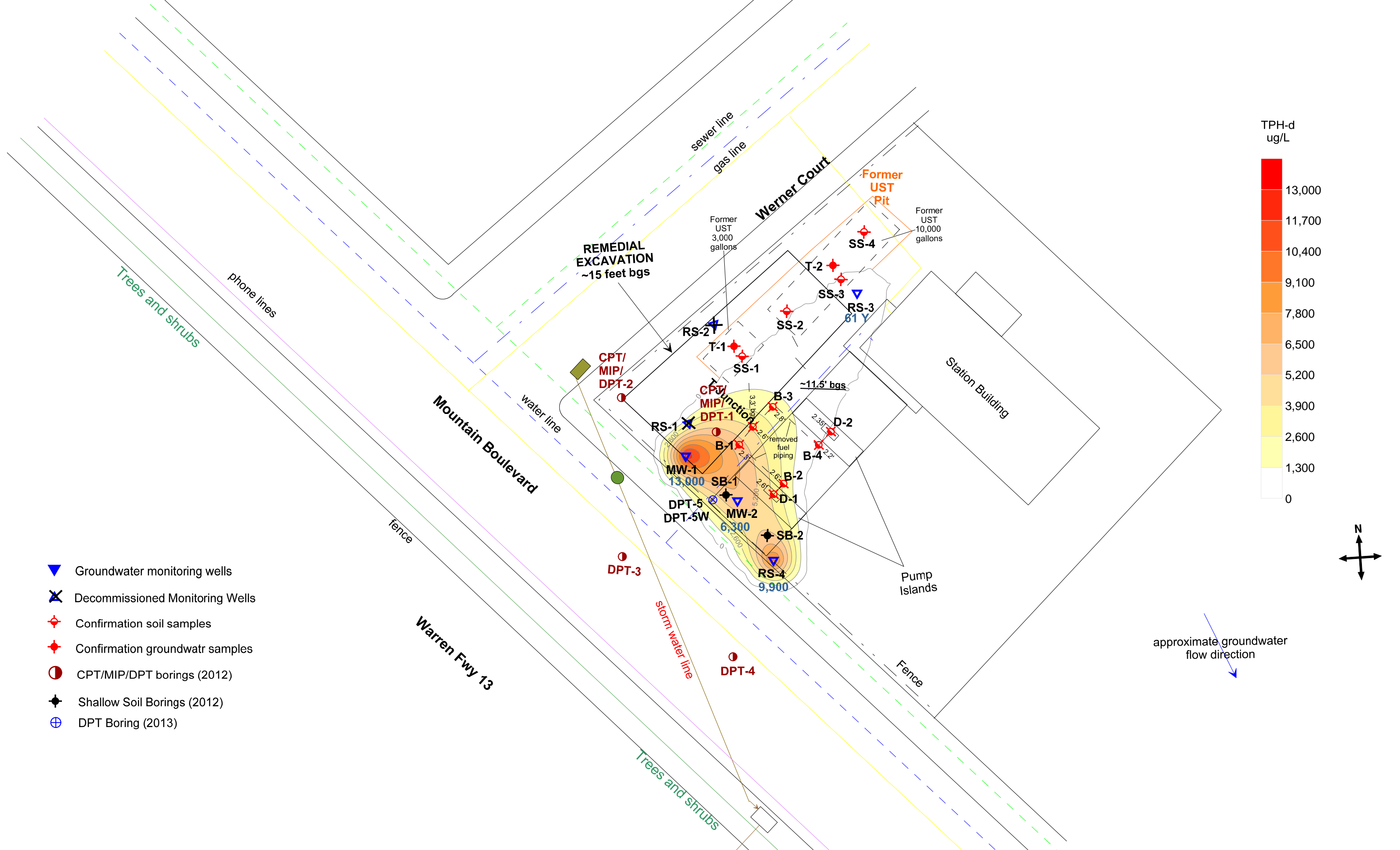


Figure 4: Map Showing TPH-g and Benzene Concentrations in Groundwater, December 30, 2013



- ▼ Groundwater monitoring wells
- ✕ Decommissioned Monitoring Wells
- ⊕ Confirmation soil samples
- ⊕ Confirmation groundwatr samples
- CPT/MIP/DPT borings (2012)
- ◆ Shallow Soil Borings (2012)
- ⊕ DPT Boring (2013)

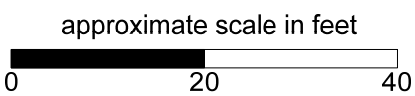
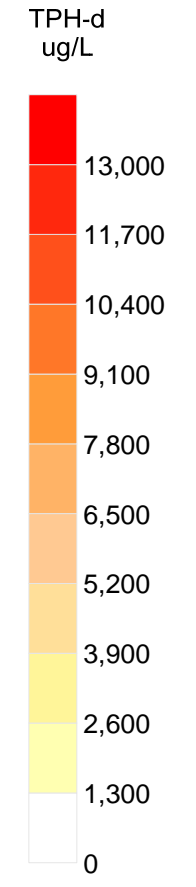


Figure 5: Contour Map Showing TPH-d Concentrations in Groundwater, December 30, 2013

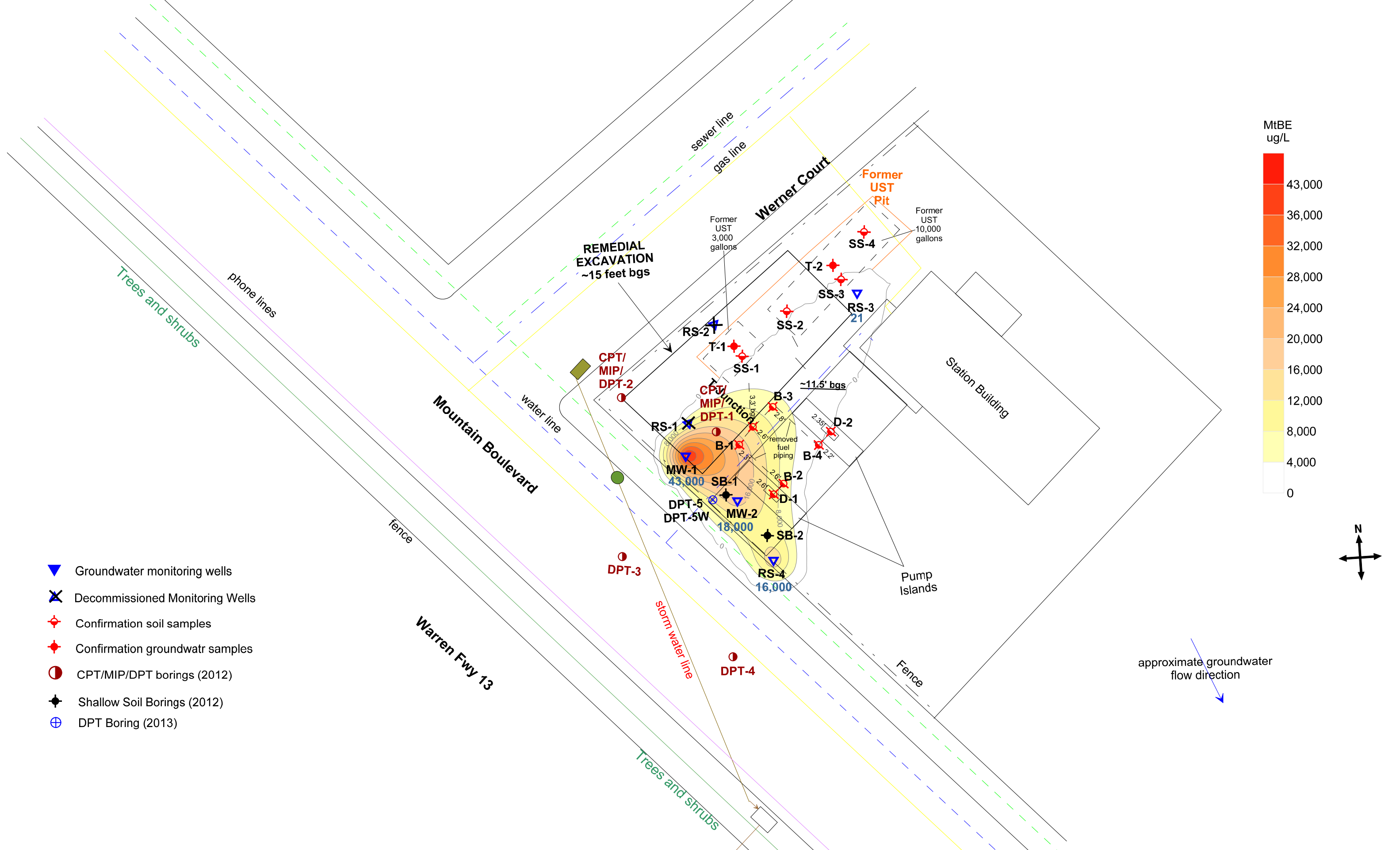
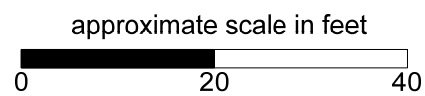


Figure 6: Contour Map Showing MtBE Concentrations in Groundwater, December 30, 2013



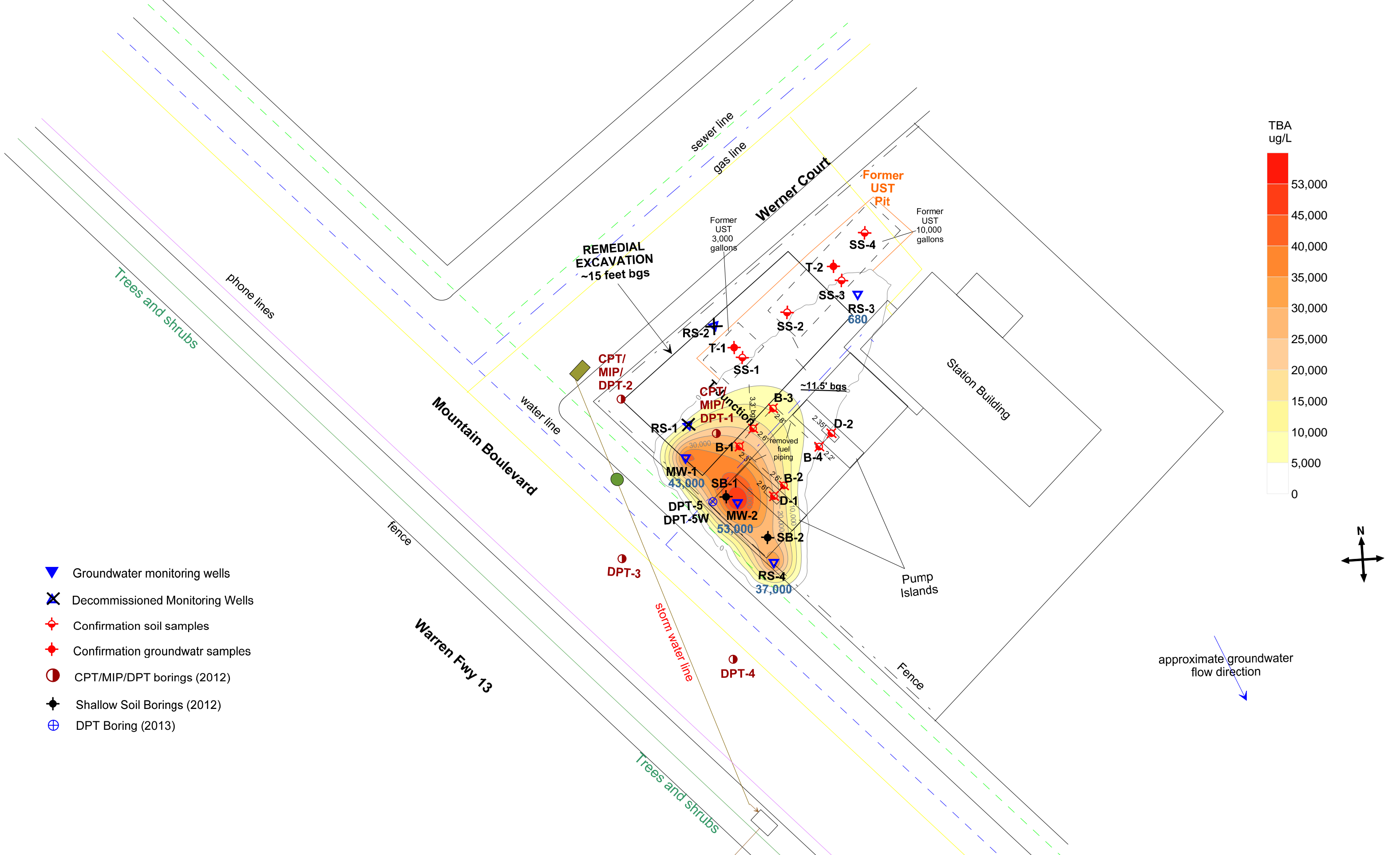


Figure 7: Contour Map Showing TBA Concentrations in Groundwater, December 30, 2013

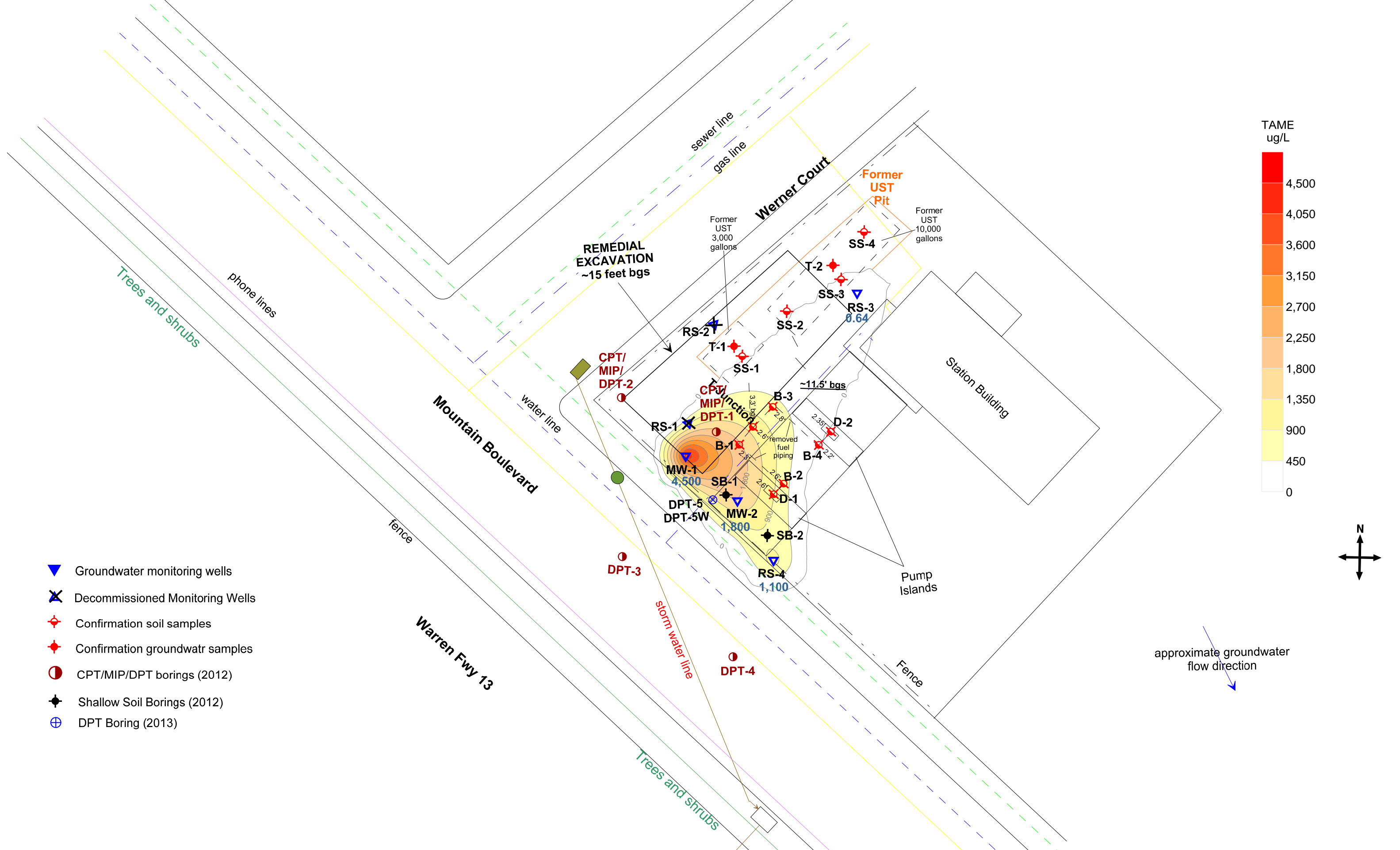
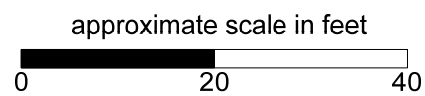


Figure 8: Contour Map Showing TAME Concentrations in Groundwater, December 30, 2013



Tables

Table 1
Historical Groundwater Analytical Results
2844 Mountain Boulevard, Oakland, CA

Monitoring Well	Date	Casing Elevation (Ft.)	Depth to Top Fluid (Ft.)	Depth to Groundwater (Ft.)	Free-Product Thickness	Groundwater Elevation	TPH-g µg/L	TPH-d µg/L	TPH-mo µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MtBE µg/L	TBA µg/L	TAME µg/L	
RS-1	May-90	675.63	7.20	7.20	0.00	668.43	2,700			370	420	40	320				
	May-91	675.63	8.35	8.35	0.00	667.28	1,300			580	130	62	240				
	Oct-91	675.63	10.22	10.22	0.00	665.41	1,100			140	100	45	210				
	Jan-92	675.63	8.06	8.06	0.00	667.57	1,700			9.9	31	9.7	170				
	Jan-93	675.63	5.30	5.30	0.00	670.33	3,700			650	9.2	51	170				
	Aug-93	675.63	8.56	8.56	0.00	667.07	900			14	0.6	2.1	8				
	Nov-93	675.63	8.44	8.44	0.00	667.19	1,400			9.6	ND	0.9	5				
	Jan-94	675.63	6.88	6.88	0.00	668.75	4,200			95	3.1	58	130				
	May-94	675.63	7.87	7.87	0.00	667.76	7,500			270	11	37	96				
	Aug-94	675.63	16.28	16.28	0.00	659.35	130			12	0.5	2.6	5				
	Nov-94	675.63	8.02	8.02	0.00	667.61	270			4.7	0.7	0.6	15				
	Feb-95	675.63	6.51	6.51	0.00	669.12	12,000			81	2.3	1	12				
	Jun-95	675.63	7.34	7.34	0.00	668.29	37,000			460	ND	ND	ND	63,000			
	Nov-95	675.63	8.71	8.71	0.00	666.92	ND			660	16	140	330	31,000			
	Feb-96	675.63	6.95	6.95	0.00	668.68	66,000			110	ND	12	21	84,000			
	9/18/1996	675.63	8.44	8.52	0.08	667.17	1 INCH FLOATING PRODUCT										
	12/11/1996	675.63	6.42	6.62	0.20	669.17	79,000			4,000	37,000	8,000	45,000	220,000			
	2/21/1997	675.63	6.88	6.92	0.04	668.74	1/2 INCH FLOATING PRODUCT										
	5/28/1997	675.63	7.88	7.96	0.08	667.73	156,000			9,400	51,000	7,000	45,000	112,000			
	9/2/1997	675.63	8.34	8.38	0.04	667.28	1/2 INCH FLOATING PRODUCT										
	11/24/1997	675.63	6.98	7.00	0.02	668.65	1/4 INCH FLOATING PRODUCT										
	2/25/1998	675.63	3.51	3.52	0.01	672.12	1/8 INCH FLOATING PRODUCT										
	5/27/1998	675.63	7.31	7.31	0.00	668.32	40,000			2,200	4,000	2,300	19,000	350,000			
	9/16/1998	675.63	8.10	8.10	0.00	667.53	62,000			2,400	2,300	2,100	14,000	250,000			
	11/23/1998	675.63	7.10	7.10	0.00	668.53	99,000			2,600	5,800	2,500	18,000	130,000			
	2/23/1999	675.67	4.82	4.87	0.05	670.84	5/8 INCH FLOATING PRODUCT										
5/5/1999	675.67	6.86	6.90	0.04	668.80	FLOATING PRODUCT											
8/24/1999	675.67	7.87	7.90	0.03	667.80	FLOATING PRODUCT											
2/8/2012	675.67	6.80	6.80	0.00	668.87	60,000 x	8,200 x	<936	790	<6.4	2,000	430	65,000	41,000	5,100		
5/4/2012	675.67	6.57	6.57	0.00	669.10	18,000	10,000	NA	600	<36	2,000	870	22,000	11,000	1,800		
8/6/2012	675.67	7.61	7.61	0.00	668.06	16,000	12,000	NA	940	<130	2,000	560	42,000	35,000	3,400		
Well Destroyed October 1, 2012																	
RS-2	May-90	689.00	7.06	7.06	0.00	681.94	23,000			7,200	4,800	300	3,300				
	May-91	689.00	7.14	7.14	0.00	681.86	26,000			14,000	1,800	750	2,900				
	Oct-91	688.89	8.84	8.84	0.00	680.05	13,000			4,300	910	300	2,300				
	Jan-92	688.89	7.34	7.34	0.00	681.55	8,300			1,800	920	140	1,700				
	Jan-93	688.89	4.10	4.10	0.00	684.79	41,000			7,000	210	1,200	4,200				
	Aug-93	688.89	7.32	7.32	0.00	681.57	19,000			5,300	62	810	1,600				
Nov-93	688.89	7.34	7.34	0.00	681.55	9,300			2,400	3.90	46	800					

Table 1
Historical Groundwater Analytical Results
2844 Mountain Boulevard, Oakland, CA

Monitoring Well	Date	Casing Elevation (Ft.)	Depth to Top Fluid (Ft.)	Depth to Groundwater (Ft.)	Free-Product Thickness	Groundwater Elevation	TPH-g µg/L	TPH-d µg/L	TPH-mo µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MtBE µg/L	TBA µg/L	TAME µg/L
RS-2 cont.	Jan-94	688.89	5.52	5.52	0.00	683.37	30,000			4,900	ND	880	2,600			
	May-94	675.25	6.40	6.40	0.00	668.85	120,000			3,300	330	ND	2,200			
	Aug-94	675.25			0.00	675.25	510			7.30	3.80	3.50	32			
	Nov-94	675.25	9.82	9.82	0.00	665.43	620			6.60	3.90	1.10	47			
	Feb-95	675.25	4.81	4.81	0.00	670.44	22,000			228	80	2	463			
	Jun-95	675.25	5.80	5.80	0.00	669.45	49,000			1,300	160	200	1,600	71,000		
	Nov-95	675.25	7.64	7.64	0.00	667.61	ND			670	25	150	360	65,000		
	Feb-96	675.25	4.69	4.69	0.00	670.56	75,000			1,400	170	59	460	71,000		
	9/18/1996	675.25	7.34	7.34	0.00	667.91	6,300			2,000	48	350	570	160,000		
	12/11/1996	675.25	5.08	5.08	0.00	670.17	16,000			2,000	840	200	3,200	180,000		
	2/21/1997	675.25	5.42	5.42	0.00	669.83	22,000			2,100	1,300	600	5,100	56,000		
	5/28/1997	675.25	6.40	6.40	0.00	668.85	156,000			4,200	89	1,000	6,900	390,000		
	9/2/1997	675.25	6.93	6.93	0.00	668.32	<50			1,300	25	360	1,400	180,000		
	11/24/1997	675.25	5.93	5.93	0.00	669.32	<50			600	ND	ND	ND	610,000		
	2/25/1998	675.25	4.59	4.59	0.00	670.66	11,000			1,100	<50	320	2,400	330,000		
	5/27/1998	675.25	5.61	5.61	0.00	669.64	13,000			2,000	150	600	2,700	380,000		
	9/16/1998	675.25	6.84	6.84	0.00	668.41	11,000			1,600	20	1,600	1,600	280,000		
	11/23/1998	675.25	6.24	6.24	0.00	669.01	12,000			1,200	84	<5	960	140,000		
	2/23/1999	675.28	4.62	4.62	0.00	670.66	8,800			1,500	650	640	1,500	450,000		
	5/5/1999	675.28	7.55	7.55	0.00	667.73	29,000			2,000	1,300	500	3,700	270,000		
	8/24/1999	675.28	6.62	6.62	0.00	668.66	12,000			1,900	20	370	980	340,000		
	2/8/2012	675.28	5.52	5.52	0.00	669.76	18,000 x	6,800 x	<378	540	<6.4	120	710	2,800	64,000	420
	5/4/2012	675.28	5.18	5.18	0.00	670.10	16,000	13,000	NA	690	23	460	1,140	6,800	21,000	960
8/6/2012	675.28	6.33	6.33	0.00	668.95	11,000	10,000	NA	810	<25	210	473	3,300	18,000	580	
Well Destroyed October 1, 2012																
RS-3	May-90	670.00	6.00	6.00	0.00	664.00	330			2	1	1	150			
	May-91	670.00	6.76	6.76	0.00	663.24	ND			0.40	ND	0.80	8			
	Oct-91	670.00	8.98	8.98	0.00	661.02	ND			ND	ND	ND	ND			
	Jan-92	670.00	6.81	6.81	0.00	663.19	ND			2.20	7.20	0.60	4			
	Jan-93	670.00	4.05	4.05	0.00	665.95	ND			ND	ND	ND	ND			
	Aug-93	670.00	7.19	7.19	0.00	662.81	ND			30	6	2.40	5			
	Nov-93	670.00	7.12	7.12	0.00	662.88	ND			4.80	0.40	0.60	2			
	Jan-94	670.00	5.42	5.42	0.00	664.58	330			25	3.20	3.90	12			
	May-94	676.20	5.78	5.78	0.00	670.42	670			34	4	28	70			
	Aug-94	676.20	5.86	5.86	0.00	670.34	ND			ND	ND	ND	ND			
	Nov-94	676.20	5.08	5.08	0.00	671.12	69			2.50	3.10	1	4			
	Feb-95	676.20	4.51	4.51	0.00	671.69	ND			0.30	0.40	ND	1			
	Jun-95	676.20	5.29	5.29	0.00	670.91	ND			ND	ND	ND	ND	66		
Nov-95	676.20	7.10	7.10	0.00	669.10	ND			ND	ND	ND	ND	44			

Table 1
Historical Groundwater Analytical Results
2844 Mountain Boulevard, Oakland, CA

Monitoring Well	Date	Casing Elevation (Ft.)	Depth to Top Fluid (Ft.)	Depth to Groundwater (Ft.)	Free-Product Thickness	Groundwater Elevation	TPH-g µg/L	TPH-d µg/L	TPH-mo µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MtBE µg/L	TBA µg/L	TAME µg/L
RS-3 cont.	Feb-96	676.20	4.48	4.48	0.00	671.72	120			ND	ND	ND	ND	110		
	9/18/1996	676.20	6.92	6.92	0.00	669.28	1,000			13	8.60	10	17	33		
	12/11/1996	676.20	4.90	4.90	0.00	671.30	85			20	2	<0.5	14	4,700		
	2/21/1997	676.20	4.94	4.94	0.00	671.26	120			5	2	2	6	850		
	5/28/1997	676.20	7.92	7.92	0.00	668.28	<50			6	<0.5	<0.5	<2	2,400		
	9/2/1997	676.20	6.60	6.60	0.00	669.60	<50			0.90	<0.5	<0.5	<2	8,600		
	11/24/1997	676.20	5.89	5.89	0.00	670.31	140			13	2	1	12	3,600		
	2/25/1998	676.20	4.29	4.29	0.00	671.91	<50			<0.5	<0.5	<0.5	4	850		
	5/27/1998	676.20	5.01	5.01	0.00	671.19	<50			7	<0.5	<0.5	11	940		
	9/16/1998	676.20	6.21	6.21	0.00	669.99	<50			2	2	2	10	670		
	11/24/1998	676.20	5.58	5.58	0.00	670.62	85			9	23	<0.5	19	180		
	2/24/1999	676.23	4.30	4.30	0.00	671.93	<50			<0.5	0.90	<0.5	<1.0	150		
	5/5/1999	676.23	4.92	4.92	0.00	671.31	<50			1	2	1	6	130		
	8/24/1999	676.23	6.64	6.64	0.00	669.59	80			0.80	<0.5	0.60	<1	300		
	2/8/2012	676.23	5.72	5.72	0.00	670.51	130 x	<42	<94	<0.13	0.59	2.90	18.1	7.9	<1.5	<0.17
	5/4/2012	676.23	5.25	5.25	0.00	670.98	<50	330 Y	NA	<0.5	<0.5	<0.5	<0.5	10	18	2.4
	8/6/2012	676.23	6.65	6.65	0.00	669.58	<50	390 Y	NA	<0.5	<0.5	<0.5	<0.5	13	<10	3.2
	3/29/2013	676.23	6.01	6.01	0.00	670.22	<50	90 Y	NA	<0.5	<0.5	<0.5	<0.5	3.6	<10	<0.5
	6/6/2013	676.08	6.45	6.45	0.00	669.63	<50	66 Y	NA	<0.5	<0.5	<0.5	<0.5	1.5	<10	<0.5
	9/4/2013	676.08	6.91	6.91	0.00	669.17	<50	170 Y	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5
12/30/2013	676.08	7.21	7.21	0.00	668.87	<50	61 Y	NA	<0.5	<0.5	<0.5	<0.5	21	680	0.64	
RS-4	May-90	675.38	8.34	8.34	0.00	667.04	440			9	11	9	49			
	May-91	675.38	9.50	9.50	0.00	665.88	ND			8	4	3	5			
	Oct-91	675.38	10.82	10.82	0.00	664.56	830			280	120	24	170			
	Jan-92	675.38	9.31	9.31	0.00	666.07	620			34	8.30	2.10	21			
	Jan-93	675.38	6.89	6.89	0.00	668.49	150			32	1.70	5.80	13			
	Aug-93	675.38	9.68	9.68	0.00	665.70	ND			0.90	0.70	ND	0			
	Nov-93	675.38	9.83	9.83	0.00	665.55	ND			ND	ND	ND	ND			
	Jan-94	675.38	8.17	8.17	0.00	667.21	ND			1.70	ND	0.81	2			
	May-94	675.38	8.69	8.69	0.00	666.69	ND			ND	ND	ND	1			
	Aug-94	675.38	9.04	9.04	0.00	666.34	420			6.50	4.10	1.90	40			
	Nov-94	675.38	8.00	8.00	0.00	667.38	130			4.10	0.70	1.70	8			
	Feb-95	675.38	7.93	7.93	0.00	667.45	ND			6	1.20	3.50	13			
	Jun-95	675.38	8.61	8.61	0.00	666.77	ND			ND	ND	ND	ND	69		
	Nov-95	675.38	10.43	10.43	0.00	664.95	ND			ND	ND	ND	ND	47		
	Feb-96	675.38	7.44	7.44	0.00	667.94	960			ND	ND	0.60	ND	80		
	9/18/1996	675.38	9.58	9.58	0.00	665.80	<50			<0.5	<0.5	<0.5	<2	200		
	12/11/1996	675.38	7.50	7.50	0.00	667.88	75			<0.5	0.60	<0.5	<0.5	104		
	2/21/1997	675.38	8.26	8.26	0.00	667.12	<50			1	1	<0.5	1	190		
	5/28/1997	675.38	8.92	8.92	0.00	666.46	<50			6	<0.5	<0.5	<2	110		
	9/2/1997	675.38	9.39	9.39	0.00	665.99	100			3	<0.5	<0.5	<2	39		
11/24/1997	675.38	8.22	8.22	0.00	667.16	41			<0.5	2	<0.5	<2	210			

Table 1
Historical Groundwater Analytical Results
2844 Mountain Boulevard, Oakland, CA

Monitoring Well	Date	Casing Elevation (Ft.)	Depth to Top Fluid (Ft.)	Depth to Groundwater (Ft.)	Free-Product Thickness	Groundwater Elevation	TPH-g µg/L	TPH-d µg/L	TPH-mo µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MtBE µg/L	TBA µg/L	TAME µg/L
RS-4 cont.	2/25/1998	675.38	7.19	7.19	0.00	668.19	<50			3	<0.5	<0.5	<1	5,600		
	5/27/1998	675.38	8.40	8.40	0.00	666.98	<50			<0.5	<0.5	<0.5	<1	2,400		
	9/16/1998	675.38	9.26	9.26	0.00	666.12	<50			<0.5	<0.5	<0.5	<1	230		
	11/24/1998	675.38	8.50	8.50	0.00	666.88	<50			2	<0.5	<0.5	<1	100		
	2/24/1999	675.42	7.20	7.20	0.00	668.22	<50			2	3	0.80	5	670		
	5/5/1999	675.42	8.37	8.37	0.00	667.05	100			<0.5	<0.5	<0.5	<1	440		
	8/24/1999	675.42	8.36	8.36	0.00	667.06	<50			<0.5	<0.5	<0.5	<1	<500		
	2/8/2012	675.42	8.11	8.11	0.00	667.31	140,000	130,000 x	<9,360	120	2,600	4,700	28,200	28,000	100,000	1,800
	5/4/2012	675.42	8.31	8.31	0.00	667.11	67,000	12,000 Y	NA	61	900	2,100	9,700	32,000	69,000	1,700
	8/6/2012	675.42	9.01	9.01	0.00	666.41	49,000	8,900	NA	<130	350	1,700	8,100	19,000	90,000	1,300
	3/29/2013	675.42	8.49	8.49	0.00	666.93	14,000	14,000	NA	<100	<100	440	1,340	14,000	110,000	590
	6/6/2013	675.27	8.48	8.48	0.00	666.79	12,000	7,200	NA	11	<3.6	420	886	16,000	66,000	970
	9/4/2013	675.27	9.39	9.39	0.00	665.88	20,000	5,100	NA	<100	<100	660	2,830	18,000	75,000	1,200
12/30/2013	675.27	9.57	9.57	0.00	665.70	<13,000	9,900	NA	<130	<130	<130	150	16,000	37,000	1,100	
MW-1	6/6/13	674.92	6.03	6.03	0.00	668.89	<17,000	13,000	NA	930	370	470	1,760	55,000	32,000	7,200
	9/4/13	674.92	7.10	7.10	0.00	667.82	<50,000	13,000	NA	2,000	<500	1,400	4,200	70,000	48,000	7,700
	12/30/13	674.92	7.27	7.27	0.00	667.65	34,000	13,000	NA	920	1,000	1,300	4,900	43,000	43,000	4,500
MW-2	6/6/13	675.02	6.70	6.70	0.00	668.32	16,000	5,400	NA	910	<130	610	2,290	59,000	64,000	7,700
	9/4/13	675.02	7.79	7.79	0.00	667.23	<25,000	3,900	NA	860	<250	710	1,580	32,000	31,000	4,600
	12/30/13	675.02	8.05	8.05	0.00	666.97	<13,000	6,300	NA	180	<130	<130	330	18,000	53,000	1,800
ESLs (µg/L)	Ground-water						100	100	100	1.00	40	30	20	5.00	12	NL
	Vapor Intrusion						NV	NV	NV	27	95,000	310	37,000	9,900	NV	NL

Note:

< : Below Laboratory Reporting Limit (Method Detection Limit)

x : Does not match pattern of reference Gasoline standard/ Not typical of diesel standard pattern (possibly fuel lighter than diesel)

ESL: Environmental Screening Level by California Regional Water Quality Control Board San Francisco Bay Region

December 2013 (Table-F1a, groundwater is a current or potential drinking water source)

NL: Not Listed

NV: No Value

Appendix A

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Water Level Measurements

Prior to measurement of groundwater depth at each monitoring well, equalization with the surrounding aquifer must be achieved. Initially, the well cap is removed and the pressure is allowed to dissipate, creating a more stable water table level within the well. After about 10-15 minutes, once the water level in the well stabilizes, the depth to groundwater in each monitoring well is measured from the top of the casing to the nearest 0.01 foot using an electric sounder.

Purging and Field Measurements

Prior to sample collection, each monitoring well is purged using a battery-operated, 2-inch-diameter pump (Model ES-60 DC). To ensure that final samples are in equilibrium with, and representative of, the surrounding groundwater, during purging several samples are taken for field measurements of pH, temperature and electrical conductivity (EC). These parameters are measured with a Hanna pH, conductivity, and temperature meter. Equipment is calibrated on-site using standard solutions and procedures provided by the manufacturer.

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

Purging continues until these parameters stabilize or three casing volumes are purged.

Sampling

For sampling purposes, after purging a disposable polyethylene bailer is used to collect sufficient samples from each monitoring well for laboratory analyses. Groundwater samples are transferred to 40-mL VOA vials and preserved with hydrochloric acid. The vials are sealed to prevent air bubbles from forming within the headspace. For TPH-d and TPH-mo analysis, groundwater samples are collected using 1-L, amber, nonpreserved glass containers. Samples are placed in an ice-filled cooler and maintained at 4°C. A chain of custody form for all samples is prepared to accompany the samples, which are promptly delivered to a California state-certified analytical laboratory.

Appendix B

Tables of Elevations and Coordinates on Wells,
Field Measurements of Physical and Chemical
Parameters of the Groundwater Samples
and Groundwater Gradient Calculations

**TABLE OF ELEVATIONS & COORDINATES
ON MONITORING WELLS**
SOMA ENVIRONMENTAL ENGINEERING
2844 MOUNTAIN BLVD
OAKLAND, CA 94602

WELL ID #	NORTHING (FT.) / LATITUDE (D.DEG.)	EASTING (FT.) / LONGITUDE (D.DEG.)	ELEVATION (FT.)	DESCRIPTION
MW-1	2122404.169	6071174.709	674.92	SET NOTCH N. SIDE 4" PVC
	N37.81151896	W122.1980061	675.50	SET PUNCH N. SIDE
			675.49	NORTH SIDE AC
MW-2	2122393.627	6071186.912	675.02	SET NOTCH N. SIDE 4" PVC
	N37.81149062	W122.1979632	675.53	SET PUNCH N. SIDE
			675.51	
RS-3	2122442.569	6071215.114	676.08	SET NOTCH N. SIDE 4" PVC
	N37.81162641	W122.1978687	676.47	SET PUNCH N. SIDE
			676.38	NORTH SIDE AC
RS-4	2122379.611	6071195.421	675.27	TOP 4" PVC
	N37.81145256	W122.1979329	675.70	SET PUNCH N. SIDE
			675.59	NORTH SIDE AC

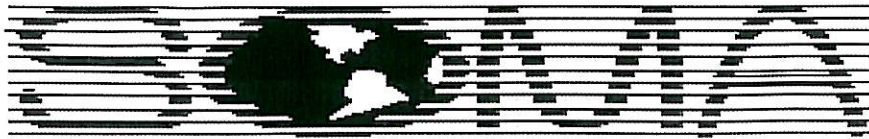
HORIZONTAL CONTROL: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD83.
 ELLIPSOID: WGS 1984
 EPOCH: NAD_83 (2011) 2010.0000
 GEOID MODEL: GEOID12A

VERTICAL CONTROL: BENCH MARK: CITY OF OAKLAND BM 2806
 CINCH NAIL IN SOUTHWESTERLY CURB OF MOUNTAIN BLVD, 150' SOUTHEASTERLY FROM THE CENTERLINE OF KEARNEY AVE EXTENDED. NORTHING 2,122,547.687', EASTING 6,070,956.301' ELEVATION= 674.892' NAVD 88 DATUM



EQUIPMENT USED: TRIMBLE GPS-R8 & TS S6, TOPCON AT-G2 LEVEL

E. Espinoza
6/03/13



ENVIRONMENTAL ENGINEERING, INC

Well No.: RS-3
 Casing Diameter: 4 inches
 Depth of Well: 24.99 feet
 Top of Casing Elevation: 676.08 feet
 Depth to Groundwater: 7.21 feet
 Groundwater Elevation: 668.87 feet
 Water Column Height: 17.78 feet
 Purged Volume: 12 gallons

Project No.: 5081
 Address: 2844 Mountain Blvd.
 Oakland, CA
 Date: December 30, 2013
 Sampler: Lizzie Hightower

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: Yes No Describe: Slightly Cloudy
 Sheen: Yes No Describe: _____
 Odor: Yes No Describe: _____

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
11:59	Started purging well			
12:00	3	7.04	18.2	977
12:01	6	7.11	18.2	971
12:02	9	7.10	18.1	969
12:03	12	7.12	18.0	960
12:08	Sampled			

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: RS-4 Project No.: 5081
 Casing Diameter: 4 inches Address: 2844 Mountain Blvd.
 Depth of Well: 25.54 feet Oakland, CA
 Top of Casing Elevation: 675.27 feet Date: December 30, 2013
 Depth to Groundwater: 9.57 feet Sampler: Lizzie Hightower
 Groundwater Elevation: 665.70 feet
 Water Column Height: 15.97 feet
 Purged Volume: — gallons
not purged

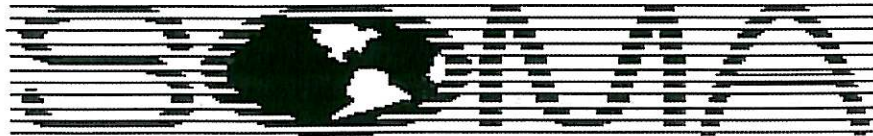
Purging Method: Bailer Pump
 Sampling Method: Bailer Pump

Color: Yes No Describe: Slightly Cloudy
 Sheen: Yes No Describe: _____
 Odor: Yes No Describe: Petroleum odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
13:30	Grab sample			

Notes: Cap left off well from MPE event. Unable to remove because it is too tight. Only able to take a grab sample through hole in the cap.



ENVIRONMENTAL ENGINEERING, INC

Well No.:	<u>MW-1</u>	Project No.:	5081
Casing Diameter:	<u>4</u> inches	Address:	2844 Mountain Blvd.
Depth of Well:	<u>19.75</u> feet		Oakland, CA
Top of Casing Elevation:	<u>674.92</u> feet	Date:	December 30, 2013
Depth to Groundwater:	<u>7.27</u> feet	Sampler:	Lizzie Hightower
Groundwater Elevation:	<u>667.65</u> feet		
Water Column Height:	<u>12.48</u> feet		
Purged Volume:	<u>12</u> gallons		

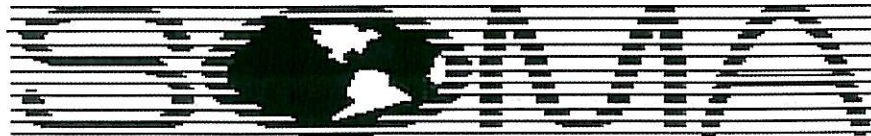
Purging Method:	Bailer	<input type="checkbox"/>	Pump	<input checked="" type="checkbox"/>
Sampling Method:	Bailer	<input checked="" type="checkbox"/>	Pump	<input type="checkbox"/>

Color:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Describe:	_____
Sheen:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Describe:	_____
Odor:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Describe:	<u>Petro odor</u>

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
12:26	Started purging well			
12:27	3	6.86	19.5	939
12:28	6	6.98	19.8	895
12:29	9	6.99	20.0	897
12:30	12	7.01	20.1	922
12:35	Sampled			

Notes:



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-2
 Casing Diameter: 4 inches
 Depth of Well: 19.74 feet
 Top of Casing Elevation: 675.02 feet
 Depth to Groundwater: 8.05 feet
 Groundwater Elevation: 666.97 feet
 Water Column Height: 11.69 feet
 Purged Volume: 12 gallons

Project No.: 5081
 Address: 2844 Mountain Blvd.
 Oakland, CA
 Date: December 30, 2013
 Sampler: Lizzie Hightower

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: Yes No Describe: Cloudy

Sheen: Yes No Describe: _____

Odor: Yes No Describe: Petro Odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
12:53	Started purging well			
12:54	3	7.15	19.9	1042
12:55	6	7.20	20.2	1027
12:56	9	7.23	20.2	1027
12:57	12	7.20	20.1	1069
13:02	Sampled			

Notes:



EPA On-line Tools for Site Assessment Calculation

Hydraulic Gradient -- Magnitude and Direction

Gradient Calculation from fitting a plane to as many as thirty points

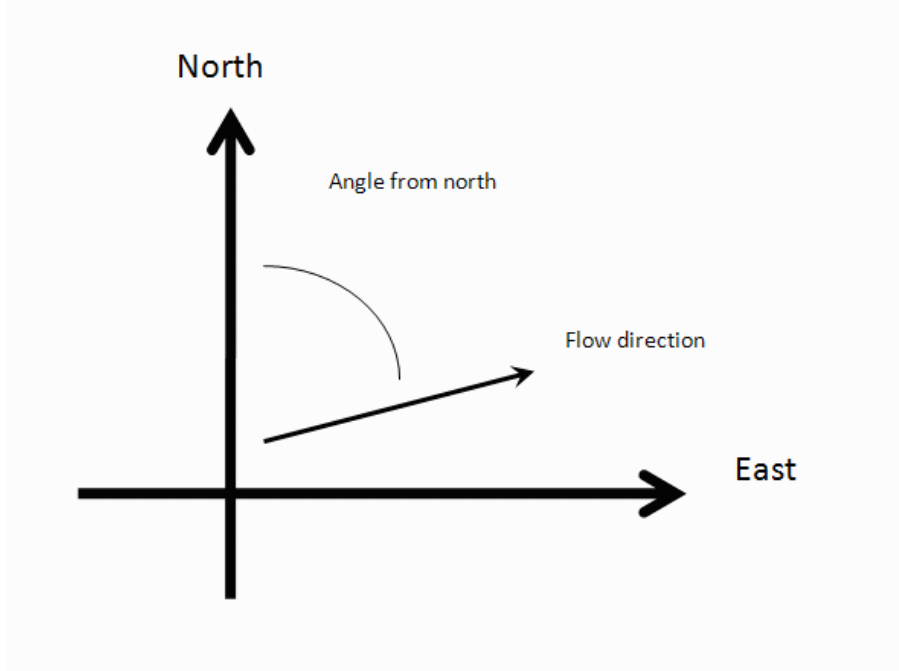
$$\begin{aligned}
 a x_1 + b y_1 + c &= h_1 \\
 a x_2 + b y_2 + c &= h_2 \\
 a x_3 + b y_3 + c &= h_3 \\
 &\dots \\
 a x_{30} + b y_{30} + c &= h_{30}
 \end{aligned}$$

where (x_i, y_i) are the coordinates of the well and h_i is the head

$i = 1, 2, 3, \dots, 30$

The coefficients a , b , and c are calculated by a least-squares fitting of the the data to a plane

The gradient is calculated from the square root of $(a^2 + b^2)$ and the angle from the arctangent of a/b or b/a depending on the quadrant



Inputs

Example Data Set 1 Example Data Set 2 Calculate Clear

Save Data Recall Data Go Back

Site Name 2844 Mountain Blvd., Or

Date December 30, 2013 Current Date

Calculation basis Head

Coordinates ft

I.D.	x-coordinate	y-coordinate	head	ft
1) RS-3	6071215.111	2122442.671	668.87	
2) RS-4	6071195.458	2122379.324	665.70	
3) MW-1	6071174.931	2122404.178	667.65	
4) MW-2	6071186.39	2122393.492	666.97	
5)				
6)				
7)				
8)				
9)				
10)				
11)				
12)				
13)				
14)				

15)				
16)				
17)				
18)				
19)				
20)				
21)				
22)				
23)				
24)				
25)				
26)				
27)				
28)				
29)				
30)				

Results

Number of Points Used in Calculation	4
Max. Difference Between Head Values	0.9662
Gradient Magnitude (i)	0.06261
Flow direction as degrees from North (positive y axis)	155.5
Coefficient of Determination (R^2)	0.993

WCMS

Last updated on 1/10/2013

Appendix C

Laboratory Report and Chain of Custody Form



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 251991
ANALYTICAL REPORT

SOMA Environmental Engineering Inc. Project : 5081
6620 Owens Dr. Location : 2844 Mountain Blvd., Oakland
Pleasanton, CA 94588 Level : II

Table with 2 columns: Sample ID, Lab ID. Rows include RS-3, RS-4, MW-1, MW-2 and their corresponding Lab IDs.

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 signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: [Handwritten Signature]
Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

Date: 01/06/2014

CASE NARRATIVE

Laboratory number: 251991
Client: SOMA Environmental Engineering Inc.
Project: 5081
Location: 2844 Mountain Blvd., Oakland
Request Date: 12/30/13
Samples Received: 12/30/13

This data package contains sample and QC results for four water samples, requested for the above referenced project on 12/30/13. The samples were received cold and intact.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

High recovery was observed for o-xylene in the BS for batch 206693; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples. No other analytical problems were encountered.

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 25199 Date Received 12/30/13 Number of coolers 1
 Client SOMA Project 5031

Date Opened 12/30 By (print) ML (sign) [Signature]
 Date Logged in 6 By (print) t (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO

2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO

3. Were custody papers dry and intact when received? _____ YES NO

4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) _____ YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap
- Foam blocks
- Bags
- None
- Cloth material
- Cardboard
- Styrofoam
- Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) _____

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO

If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? _____ YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? _____ YES NO

12. Are sample labels present, in good condition and complete? _____ YES NO

13. Do the sample labels agree with custody papers? _____ YES NO

14. Was sufficient amount of sample sent for tests requested? _____ YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? _____ YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO

If YES, Who was called? _____ By _____ Date: _____

COMMENTS

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	5081	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	206736
Units:	ug/L	Prepared:	01/02/14
Diln Fac:	1.000	Analyzed:	01/03/14

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC722816

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,910	76	61-120

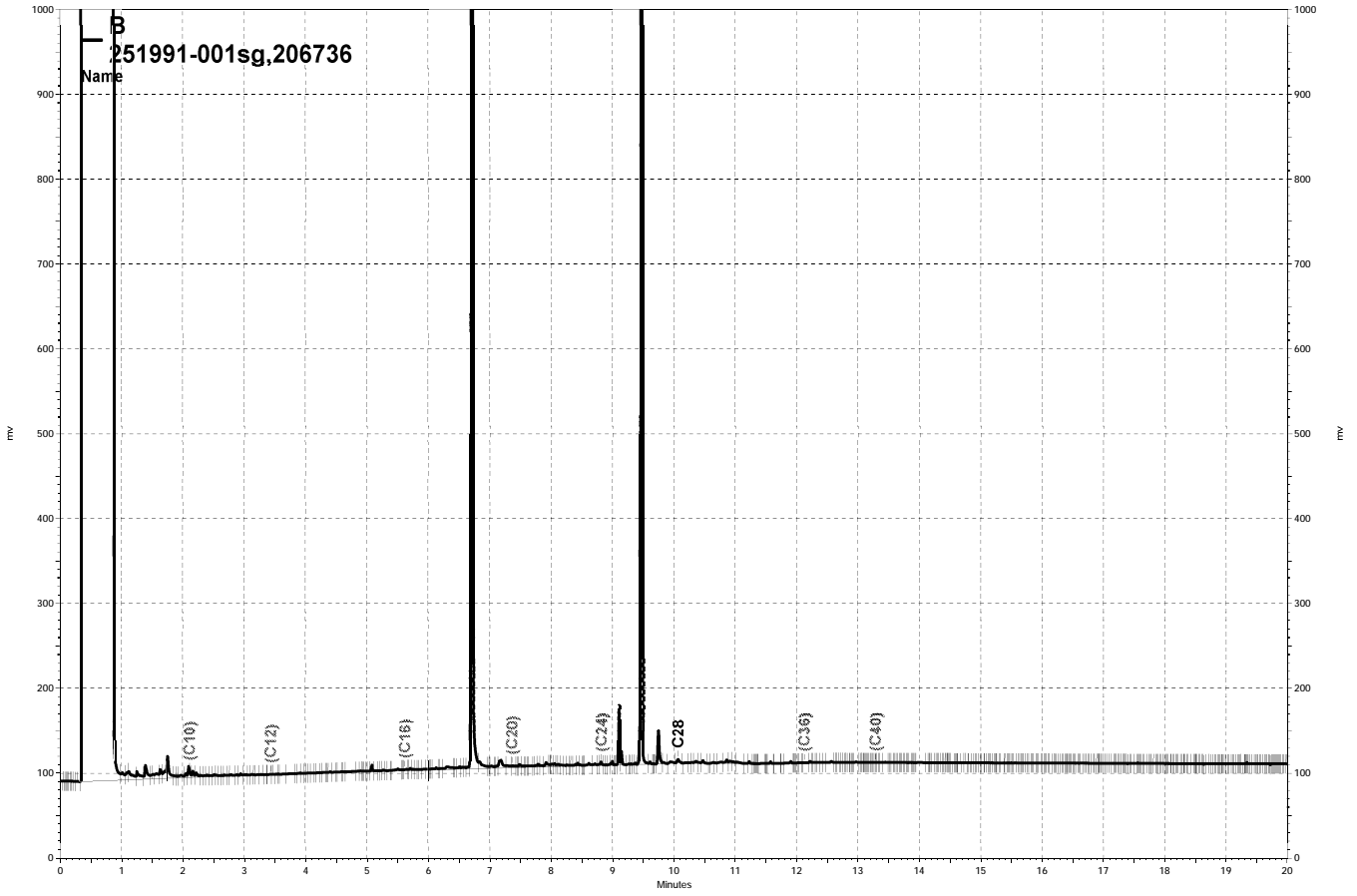
Surrogate	%REC	Limits
o-Terphenyl	97	66-129

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC722817

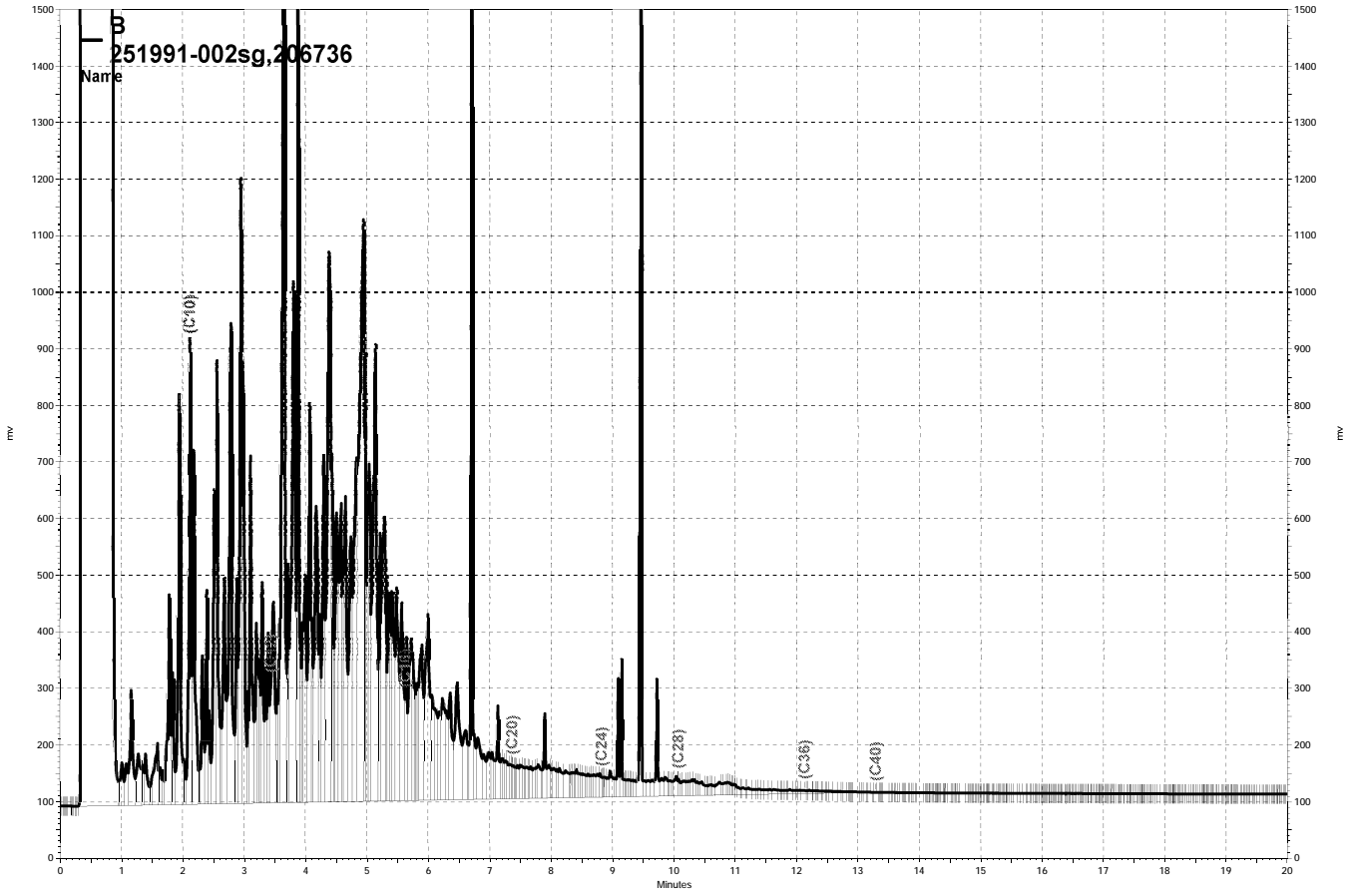
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,986	79	61-120	4	45

Surrogate	%REC	Limits
o-Terphenyl	99	66-129

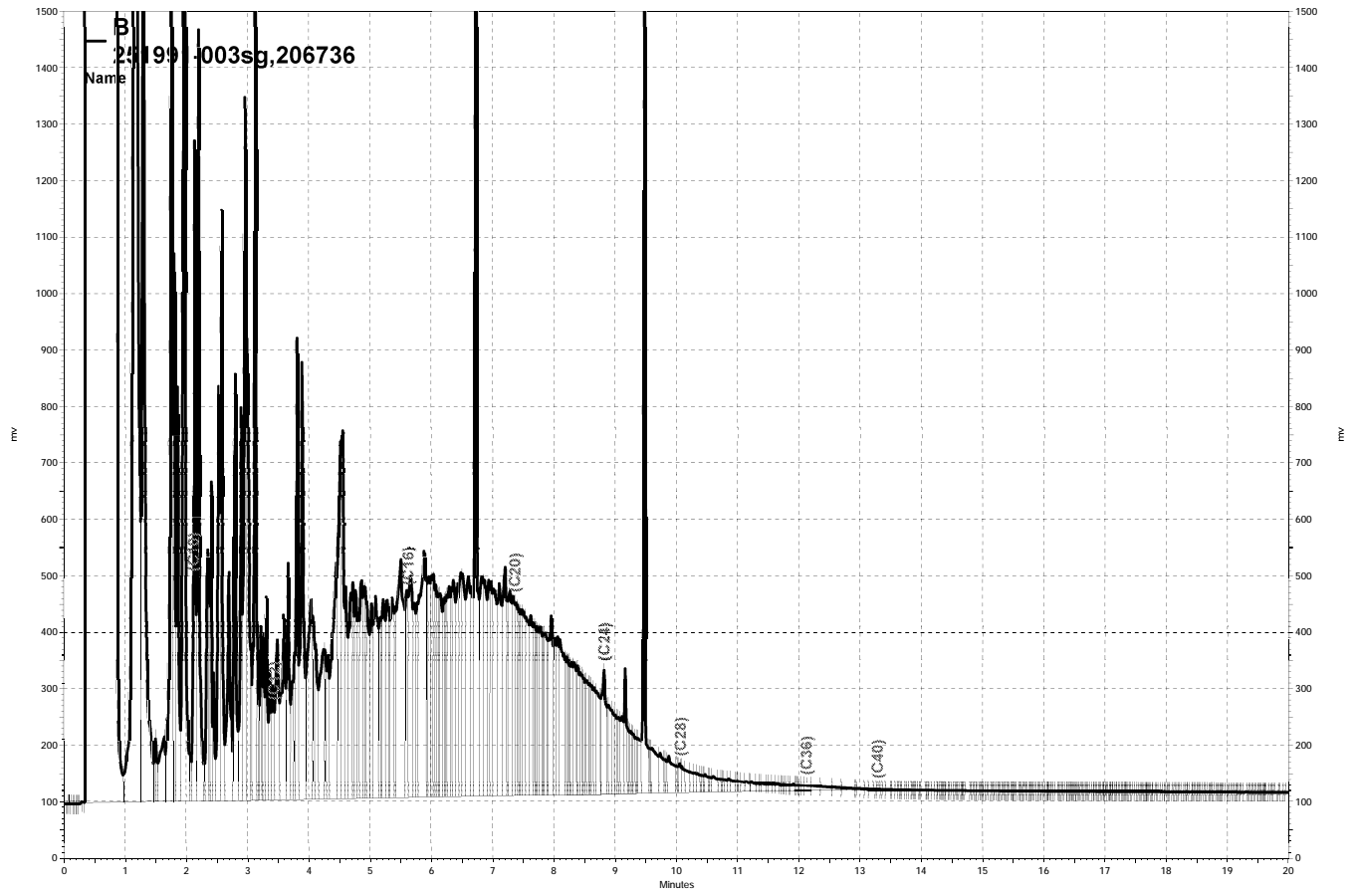
RPD= Relative Percent Difference



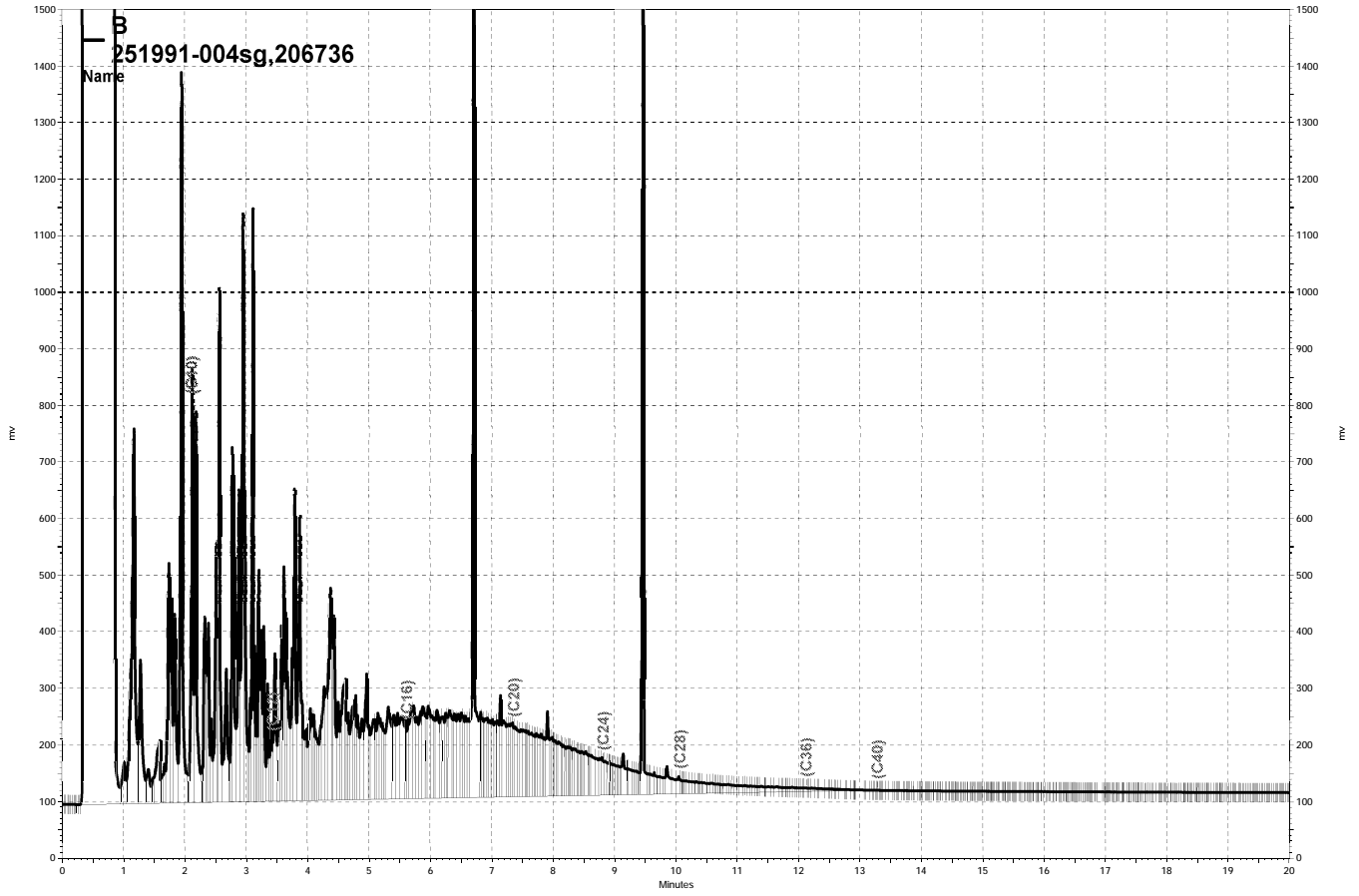
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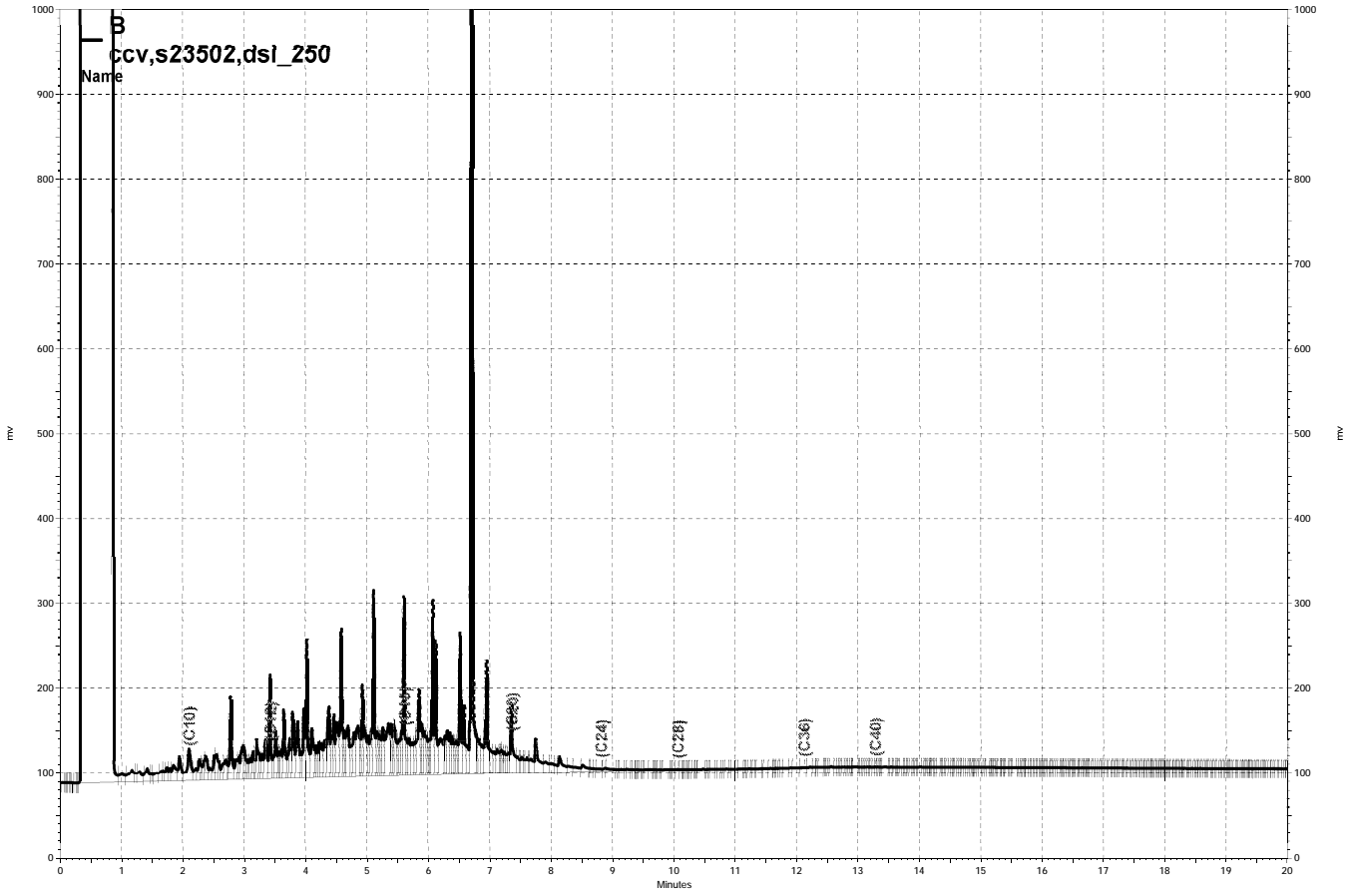
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— \\Lims\gdrive\ezchrom\Projects\GC15B\Data\003b016, B



— \\Lims\gdrive\ezchrom\Projects\GC15B\Data\003b017, B



— \\Lims\gdrive\ezchrom\Projects\GC15B\Data\003b007, B

Purgeable Organics by GC/MS

Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Field ID:	RS-3	Batch#:	206693
Lab ID:	251991-001	Sampled:	12/30/13
Matrix:	Water	Received:	12/30/13
Units:	ug/L	Analyzed:	12/31/13
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50
tert-Butyl Alcohol (TBA)	680	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	0.64	0.50
MTBE	21	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	96	77-136
1,2-Dichloroethane-d4	88	75-139
Toluene-d8	91	80-120
Bromofluorobenzene	96	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 251991	Location: 2844 Mountain Blvd., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5081	Analysis: EPA 8260B
Field ID: RS-4	Batch#: 206693
Lab ID: 251991-002	Sampled: 12/30/13
Matrix: Water	Received: 12/30/13
Units: ug/L	Analyzed: 12/31/13
Diln Fac: 250.0	

Analyte	Result	RL
Gasoline C7-C12	ND	13,000
tert-Butyl Alcohol (TBA)	37,000	2,500
Isopropyl Ether (DIPE)	ND	130
Ethyl tert-Butyl Ether (ETBE)	ND	130
Methyl tert-Amyl Ether (TAME)	1,100	130
MTBE	16,000	130
Benzene	ND	130
Toluene	ND	130
Ethylbenzene	ND	130
m,p-Xylenes	150	130
o-Xylene	ND	130

Surrogate	%REC	Limits
Dibromofluoromethane	96	77-136
1,2-Dichloroethane-d4	87	75-139
Toluene-d8	85	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 251991	Location: 2844 Mountain Blvd., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5081	Analysis: EPA 8260B
Field ID: MW-1	Batch#: 206717
Lab ID: 251991-003	Sampled: 12/30/13
Matrix: Water	Received: 12/30/13
Units: ug/L	Analyzed: 01/02/14
Diln Fac: 500.0	

Analyte	Result	RL
Gasoline C7-C12	34,000	25,000
tert-Butyl Alcohol (TBA)	43,000	5,000
Isopropyl Ether (DIPE)	ND	250
Ethyl tert-Butyl Ether (ETBE)	ND	250
Methyl tert-Amyl Ether (TAME)	4,500	250
MTBE	43,000	250
Benzene	920	250
Toluene	1,000	250
Ethylbenzene	1,300	250
m,p-Xylenes	3,800	250
o-Xylene	1,100	250

Surrogate	%REC	Limits
Dibromofluoromethane	100	77-136
1,2-Dichloroethane-d4	94	75-139
Toluene-d8	87	80-120
Bromofluorobenzene	98	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 251991	Location: 2844 Mountain Blvd., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5081	Analysis: EPA 8260B
Field ID: MW-2	Batch#: 206717
Lab ID: 251991-004	Sampled: 12/30/13
Matrix: Water	Received: 12/30/13
Units: ug/L	Analyzed: 01/02/14
Diln Fac: 250.0	

Analyte	Result	RL
Gasoline C7-C12	ND	13,000
tert-Butyl Alcohol (TBA)	53,000	2,500
Isopropyl Ether (DIPE)	ND	130
Ethyl tert-Butyl Ether (ETBE)	ND	130
Methyl tert-Amyl Ether (TAME)	1,800	130
MTBE	18,000	130
Benzene	180	130
Toluene	ND	130
Ethylbenzene	ND	130
m,p-Xylenes	330	130
o-Xylene	ND	130

Surrogate	%REC	Limits
Dibromofluoromethane	99	77-136
1,2-Dichloroethane-d4	94	75-139
Toluene-d8	90	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC722651	Batch#:	206693
Matrix:	Water	Analyzed:	12/31/13
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	96	77-136
1,2-Dichloroethane-d4	85	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	99	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	206693
Units:	ug/L	Analyzed:	12/31/13
Diln Fac:	1.000		

Type: BS Lab ID: QC722652

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	95.91	96	37-151
Isopropyl Ether (DIPE)	20.00	18.60	93	56-124
Ethyl tert-Butyl Ether (ETBE)	20.00	19.89	99	61-122
Methyl tert-Amyl Ether (TAME)	20.00	18.54	93	65-120
MTBE	20.00	20.27	101	64-121
Benzene	20.00	20.20	101	80-124
Toluene	20.00	21.47	107	80-122
Ethylbenzene	20.00	22.81	114	80-124
m,p-Xylenes	40.00	47.37	118	80-122
o-Xylene	20.00	24.45	122 *	77-120

Surrogate	%REC	Limits
Dibromofluoromethane	97	77-136
1,2-Dichloroethane-d4	88	75-139
Toluene-d8	92	80-120
Bromofluorobenzene	98	80-120

Type: BSD Lab ID: QC722653

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	100.0	102.2	102	37-151	6	30
Isopropyl Ether (DIPE)	20.00	17.38	87	56-124	7	20
Ethyl tert-Butyl Ether (ETBE)	20.00	18.99	95	61-122	5	22
Methyl tert-Amyl Ether (TAME)	20.00	18.19	91	65-120	2	22
MTBE	20.00	20.26	101	64-121	0	20
Benzene	20.00	18.74	94	80-124	8	20
Toluene	20.00	18.92	95	80-122	13	20
Ethylbenzene	20.00	20.88	104	80-124	9	20
m,p-Xylenes	40.00	43.75	109	80-122	8	20
o-Xylene	20.00	22.37	112	77-120	9	20

Surrogate	%REC	Limits
Dibromofluoromethane	97	77-136
1,2-Dichloroethane-d4	90	75-139
Toluene-d8	87	80-120
Bromofluorobenzene	97	80-120

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	206693
Units:	ug/L	Analyzed:	12/31/13
Diln Fac:	1.000		

Type: BS Lab ID: QC722654

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	800.0	843.6	105	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	95	77-136
1,2-Dichloroethane-d4	84	75-139
Toluene-d8	87	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC722655

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	800.0	846.8	106	80-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	77-136
1,2-Dichloroethane-d4	82	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	95	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	206717
Units:	ug/L	Analyzed:	01/02/14
Diln Fac:	1.000		

Type: BS Lab ID: QC722733

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	141.8	113	37-151
Isopropyl Ether (DIPE)	25.00	25.38	102	56-124
Ethyl tert-Butyl Ether (ETBE)	25.00	25.96	104	61-122
Methyl tert-Amyl Ether (TAME)	25.00	23.45	94	65-120
MTBE	25.00	27.14	109	64-121
Benzene	25.00	25.28	101	80-124
Toluene	25.00	25.38	102	80-122
Ethylbenzene	25.00	26.68	107	80-124
m,p-Xylenes	50.00	54.26	109	80-122
o-Xylene	25.00	29.01	116	77-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	77-136
1,2-Dichloroethane-d4	88	75-139
Toluene-d8	85	80-120
Bromofluorobenzene	96	80-120

Type: BSD Lab ID: QC722734

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	128.2	103	37-151	10	30
Isopropyl Ether (DIPE)	25.00	23.93	96	56-124	6	20
Ethyl tert-Butyl Ether (ETBE)	25.00	25.19	101	61-122	3	22
Methyl tert-Amyl Ether (TAME)	25.00	23.39	94	65-120	0	22
MTBE	25.00	26.01	104	64-121	4	20
Benzene	25.00	25.16	101	80-124	0	20
Toluene	25.00	26.50	106	80-122	4	20
Ethylbenzene	25.00	27.30	109	80-124	2	20
m,p-Xylenes	50.00	57.18	114	80-122	5	20
o-Xylene	25.00	30.06	120	77-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	96	77-136
1,2-Dichloroethane-d4	85	75-139
Toluene-d8	86	80-120
Bromofluorobenzene	94	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC722735	Batch#:	206717
Matrix:	Water	Analyzed:	01/02/14
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
Isopropyl Ether (DIPE)	ND	0.50
Ethyl tert-Butyl Ether (ETBE)	ND	0.50
Methyl tert-Amyl Ether (TAME)	ND	0.50
MTBE	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	94	77-136
1,2-Dichloroethane-d4	84	75-139
Toluene-d8	87	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	251991	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	206717
Units:	ug/L	Analyzed:	01/02/14
Diln Fac:	1.000		

Type: BS Lab ID: QC722736

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,018	102	80-120

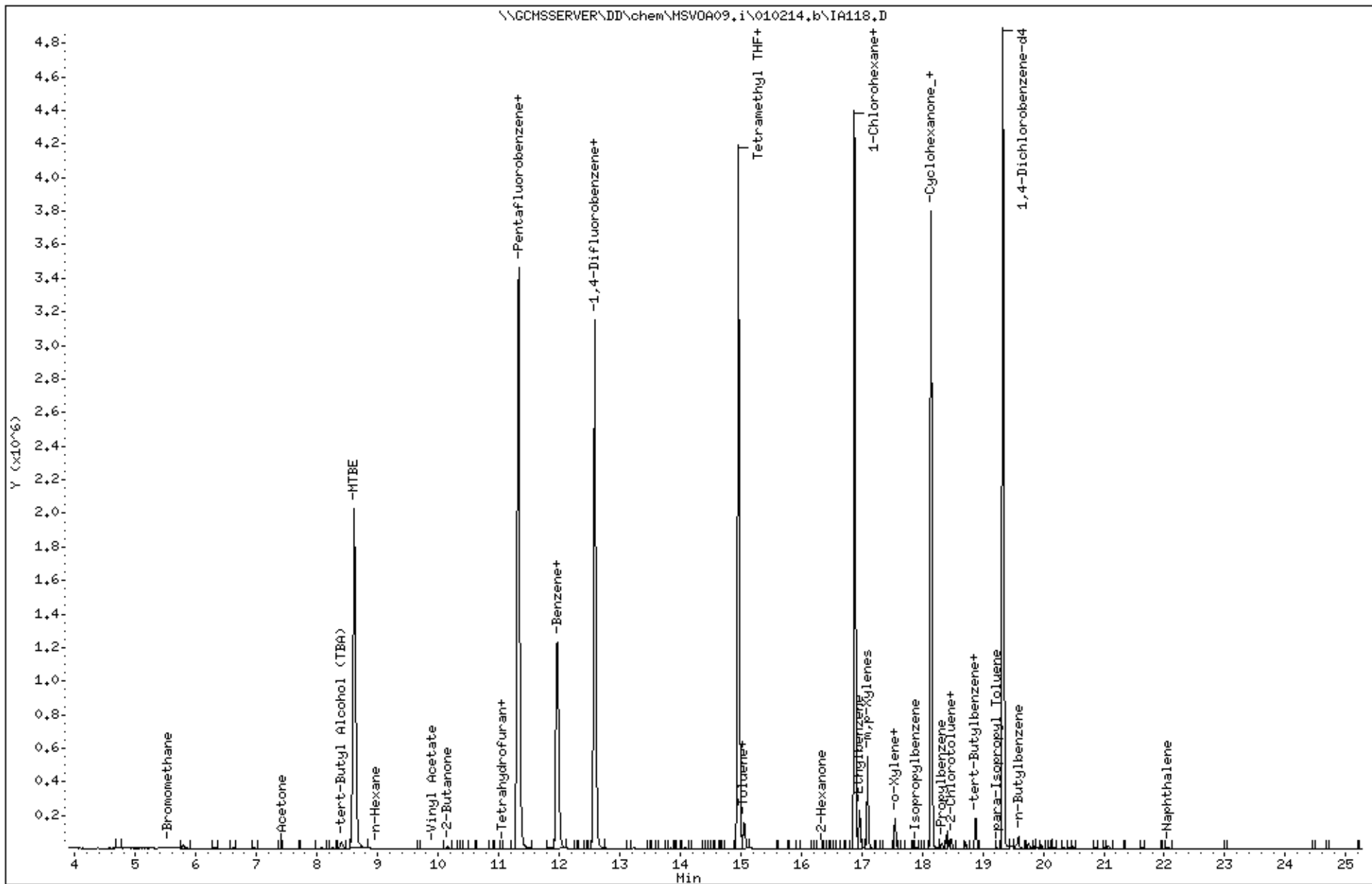
Surrogate	%REC	Limits
Dibromofluoromethane	96	77-136
1,2-Dichloroethane-d4	90	75-139
Toluene-d8	85	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC722737

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	1,034	103	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	77-136
1,2-Dichloroethane-d4	85	75-139
Toluene-d8	84	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference



Date : 31-DEC-2013 14:06

Client ID: DYNA P&T

Sample Info: BSD, QC722655, 206693, S23229, .008/100

Instrument: MSV0A09.i

Operator: VOC

Column diameter: 2.00

Column phase:

