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ENVIRONMENTAL ENGINEERING, INC.

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September 26, 2013

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:

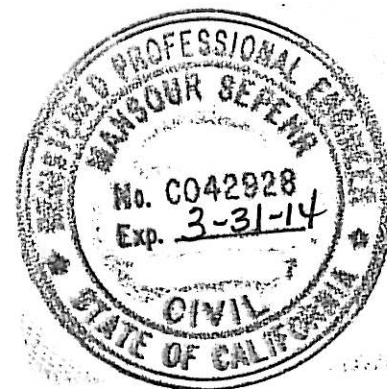
Enclosed for your review is a copy of SOMA's "Third Quarter 2013 Groundwater Monitoring Report" for the subject property. It has been uploaded to the State's GeoTracker database and Alameda County's FTP site.

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



**Third Quarter 2013
Groundwater Monitoring Report**

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

September 26, 2013

Project 5081

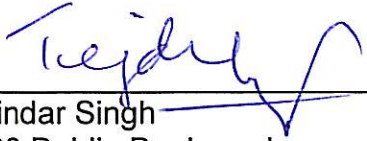
Prepared for

**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 Third Quarter 2013 groundwater monitoring event.



Mansour Sepehr, PhD, PE
Principal Hydrogeologist

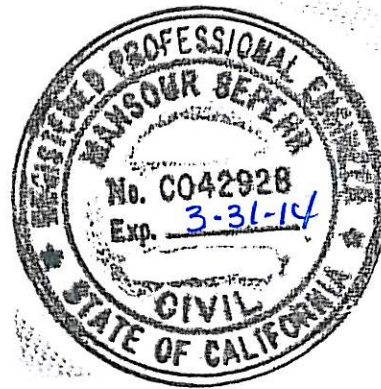


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Appendix C Laboratory Report and Chain of Custody Form

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 Third Quarter 2013 groundwater monitoring event conducted at the site on September 4, 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) 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.

1.2 Summary of Field Activities and Laboratory Analysis

1.2.1 Field Activities

On September 4, 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 all monitoring wells. Properties measured in the field were pH, temperature, and electrical conductivity (EC). 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 September 4, 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 6.91 feet in RS-3 to 9.39 feet in RS-4. Groundwater elevations ranged from 665.88 feet in RS-4 to 669.17 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 (June 2013), the groundwater flow direction has remained southeasterly and gradient has slightly decreased. 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, MW-1 and MW-2 and was detected in RS-4 at 20,000 µg/L. Since the previous monitoring event (June 2013), TPH-g concentration in RS-4 has increased. No comparison can be made for MW-1 and MW-2 due to higher dilution and reporting limits. Figure 4 shows a map of TPH-g concentrations in groundwater.

TPH-d was detected in concentrations ranging from 170 µg/L in RS-3 to 13,000 µg/L in MW-1. Since the previous monitoring event (June 2013), TPH-d has increased in RS-3, decreased in RS-4 and MW-2, 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 and toluene was below laboratory-reporting limits in all other wells also.

- Benzene was below laboratory-reporting limit in RS-4 also and was detected in MW-1 and MW-2 at 2,000 µg/L and 860 µg/L, respectively. Since the previous monitoring event (June 2013) benzene has increased in MW-1 and decreased in MW-2. No comparison can be made for RS-4 due to increased dilution and reporting limit. 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.
- Ethylbenzene concentrations ranged from 660 µg/L in RS-4 to 1,400 µg/L in MW-1. Since the previous monitoring event (June 2013), ethylbenzene increased in RS-4, MW-2, and significantly in MW-1.
- Total xylenes ranged from 1,580 µg/L in MW-2 to 4,200 µg/L in MW-1. Since the previous monitoring event (June 2013), total xylenes increased in significantly in RS-4 and MW-1 and decreased in MW-2.

Methyl tertiary-butyl ether (MtBE) was below laboratory-reporting limit in RS-3 and was detected in concentrations ranging from 18,000 µg/L in RS-4 to 70,000 µg/L in MW-1. Since the previous monitoring event (June 2013), MtBE has decreased in RS-3 and MW-2 and increased in RS-4 and 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) was below laboratory-reporting limit in RS-3 and was detected in concentrations ranging from 31,000 µg/L in MW-2 to 75,000 µg/L in RS-4. Since the previous monitoring event (June 2013), TBA has increased in RS-4 and MW-1 and decreased in MW-2. Figure 7 shows a contour map of TBA concentrations in groundwater. The highest TBA concentrations were detected in the southeast corner of the pump islands around RS-4.

Tertiary amyl methyl ether (TAME) was below laboratory-reporting limit in RS-3 and was detected in concentrations ranging from 1,200 µg/L in RS-4 to 7,700 µg/L in MW-1. Since the previous monitoring event (June 2013), TAME has increased in RS-3 and MW-1 and decreased in 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 Third 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 June 2013, TPH-g in RS-4 increased, no comparison can be made for MW-1 and MW-2 due to higher dilution and reporting limits; TPH-d increased in RS-3, decreased in RS-4 and MW-2, and remained same in MW-1; benzene increased in MW-1 and decreased in MW-2; MtBE decreased in RS-3 and MW-2 and increased in RS-4 and MW-1; TBA increased in RS-4 and MW-1 and decreased in MW-2; and TAME increased in RS-3 and MW-1 and decreased in MW-2.
- The highest TPH-d, benzene, ethylbenzene, total xylenes, MtBE, and TAME concentrations were detected to the southwest of the pump islands around MW-1. The highest TPH-g and TBA concentrations were detected in the southeast corner of the pump islands around RS-4.
- SOMA will continue conducting quarterly groundwater monitoring events at the site.

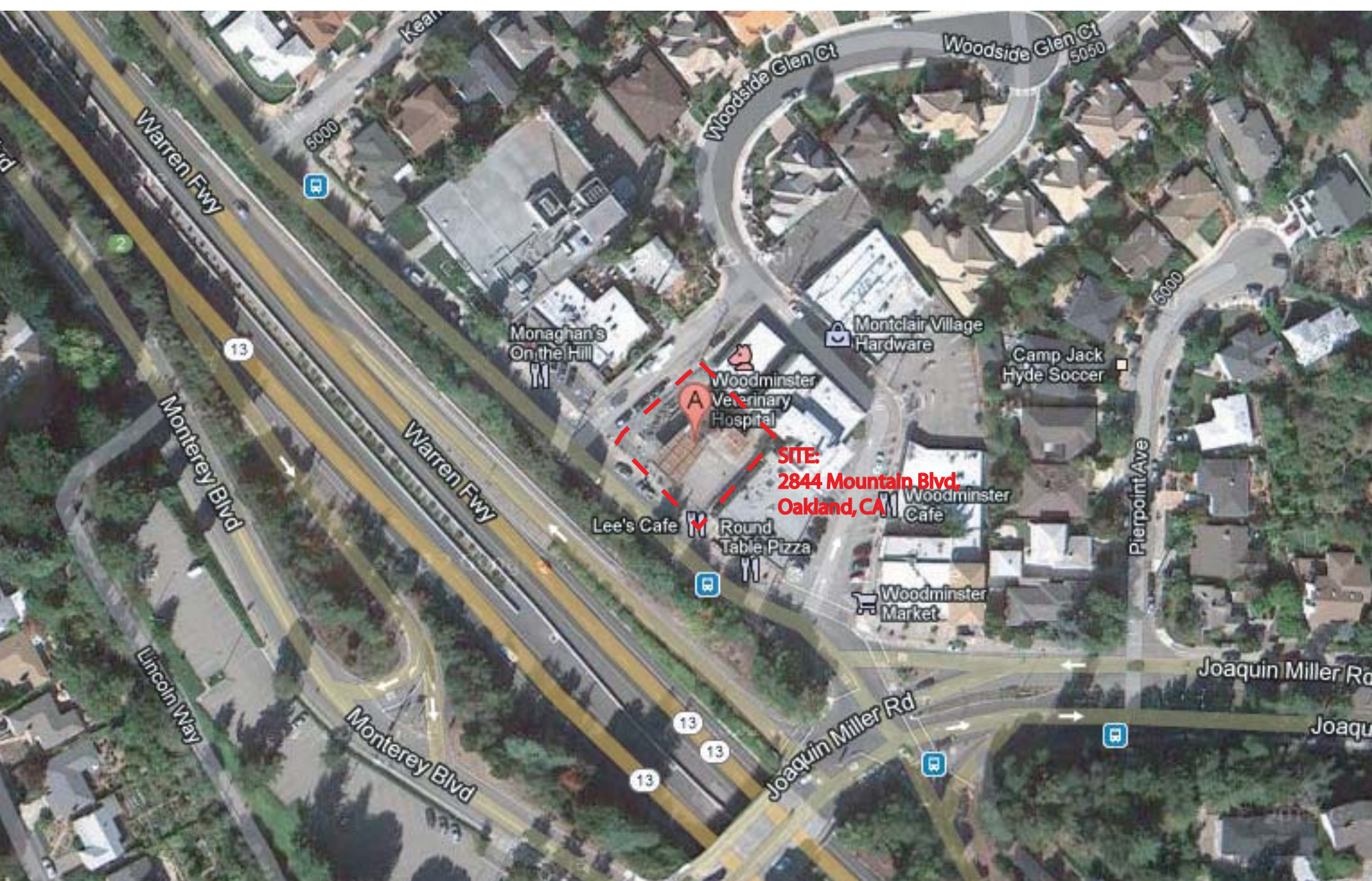
SOMA has recently submitted a report documenting installation of soil borings and monitoring wells dated September 13, 2013. The report recommended installing a groundwater monitoring well in close proximity of boring SS-1 in order to monitor elevated levels of chemicals in groundwater. Based on SFBRWQCB's directive dated April 3, 2013 approving SOMA's December 2012 workplan, SOMA has applied for a permit modification with BAAQMD for conducting the approved MPE pilot test. The permit has to be modified due to the presence of a Montessori school within 1,000 feet of the site. A report documenting field activities and results will be submitted upon completion of MPE pilot testing.

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.

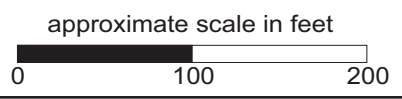
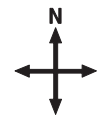
SOMA warrants that services were provided in accordance with generally accepted environmental engineering and consulting practices at the time of this sampling.

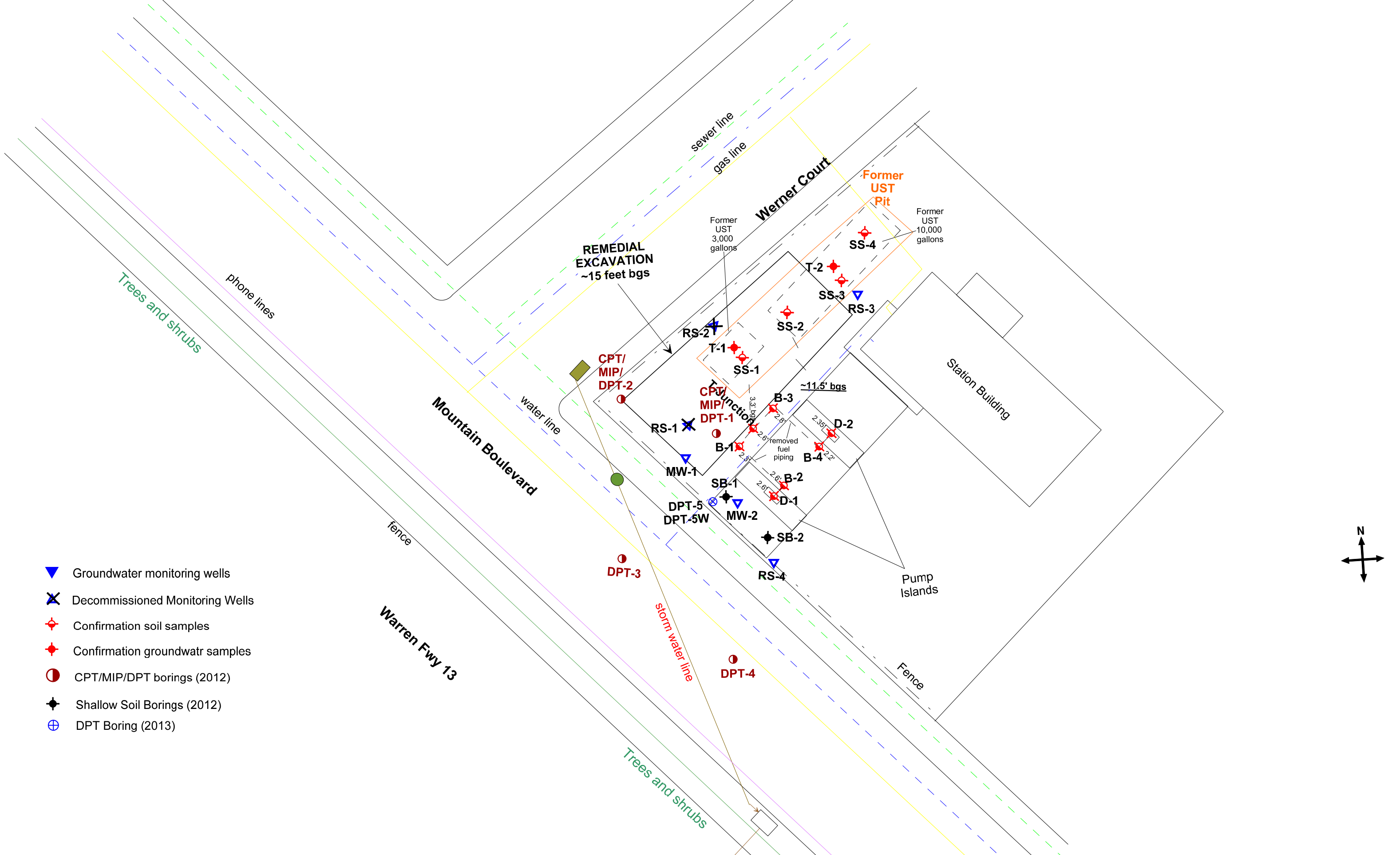
Figures



Source: Google (R) 2012

Figure 1: Site Vicinity Map





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

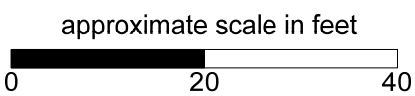


Figure 2: Site Map Showing Locations of Former USTs, Soil Borings, and Groundwater Monitoring Wells

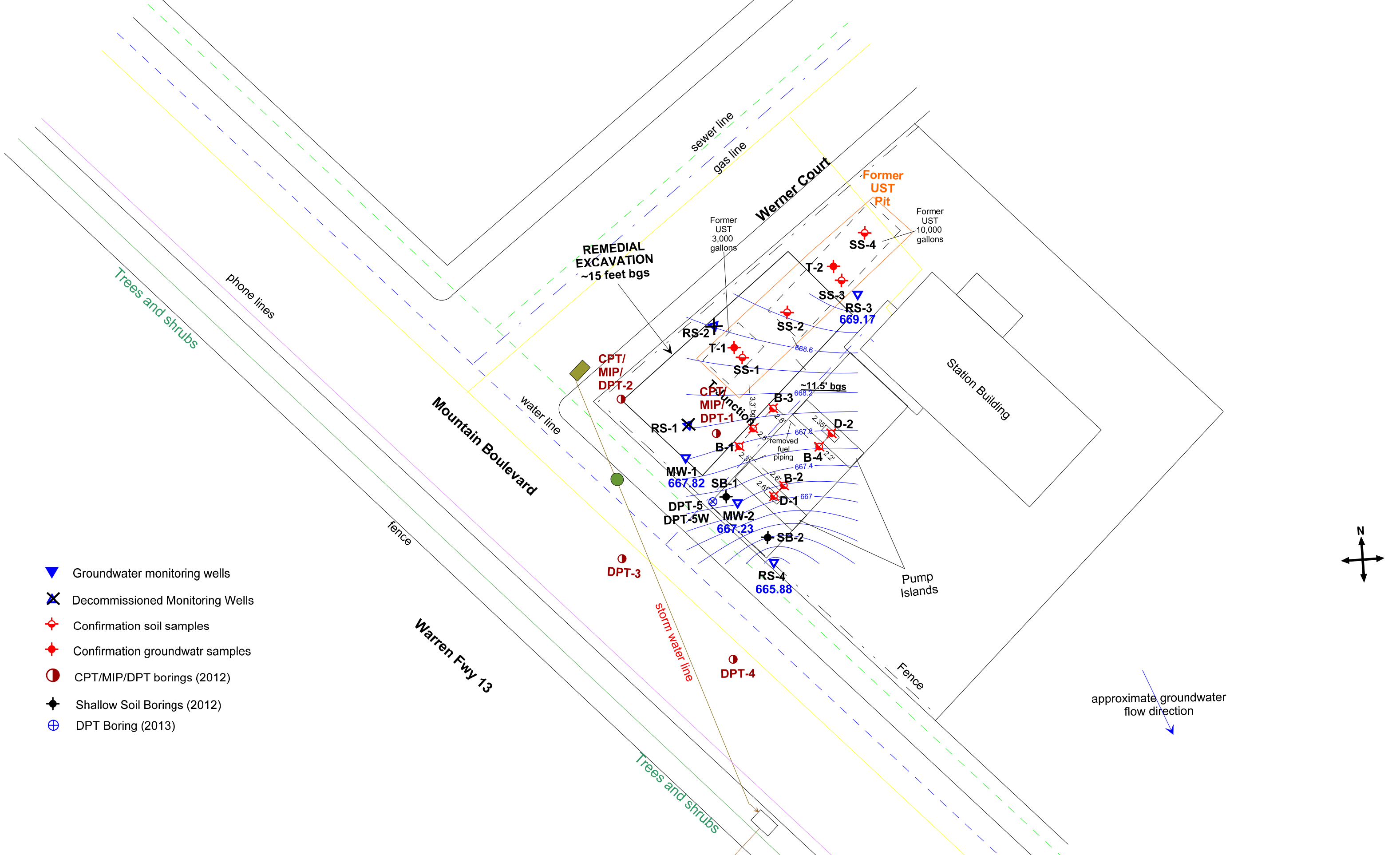
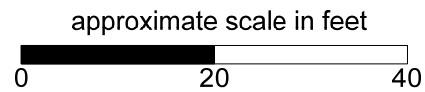


Figure 3: Groundwater Elevation Contour Map in feet, September 4, 2013



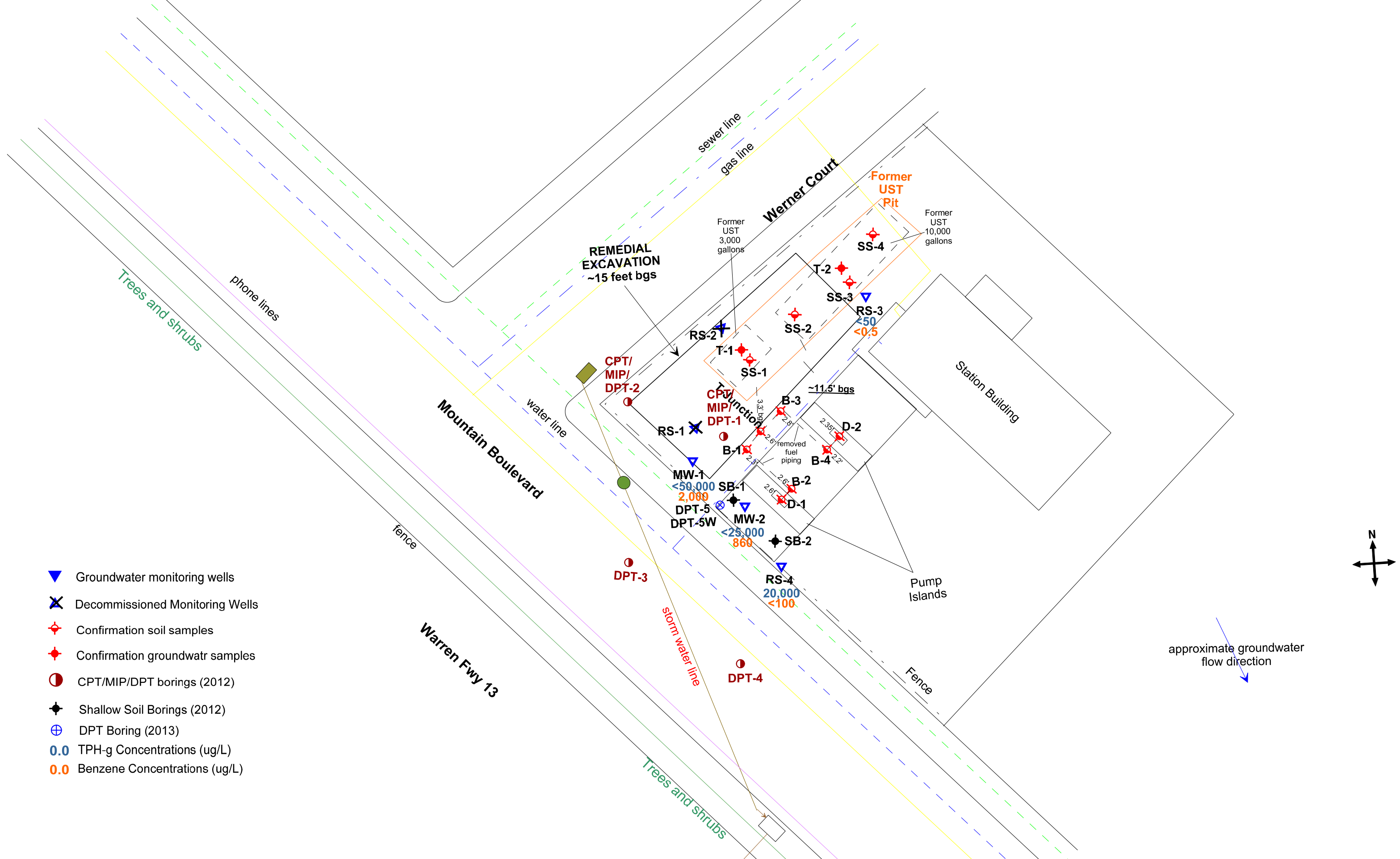


Figure 4: Map Showing TPH-g and Benzene Concentrations in Groundwater, September 4, 2013

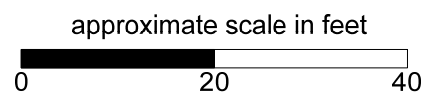
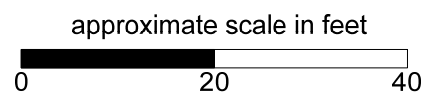




Figure 5: Contour Map Showing TPH-d Concentrations in Groundwater, September 4, 2013



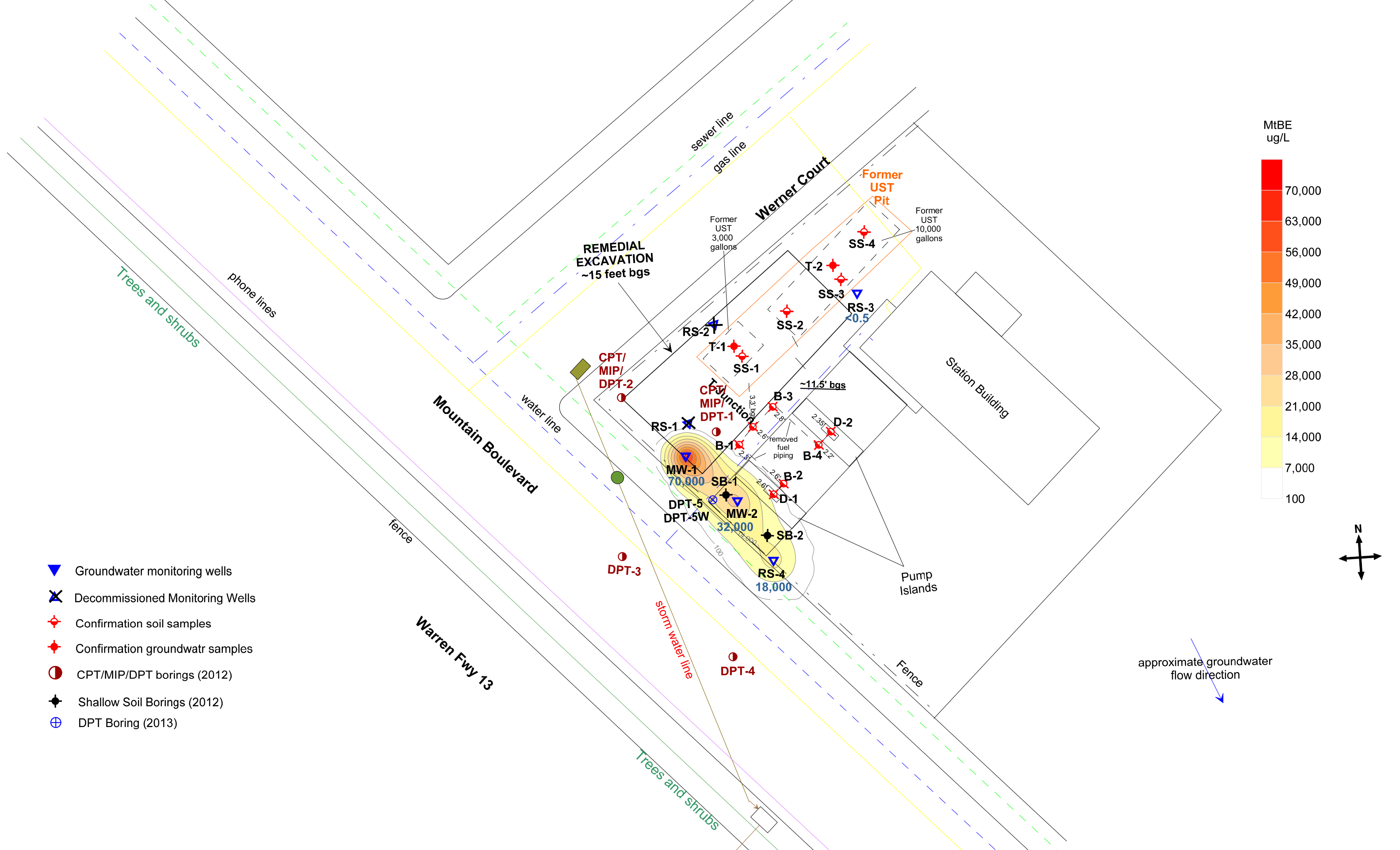
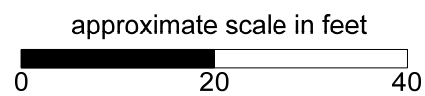
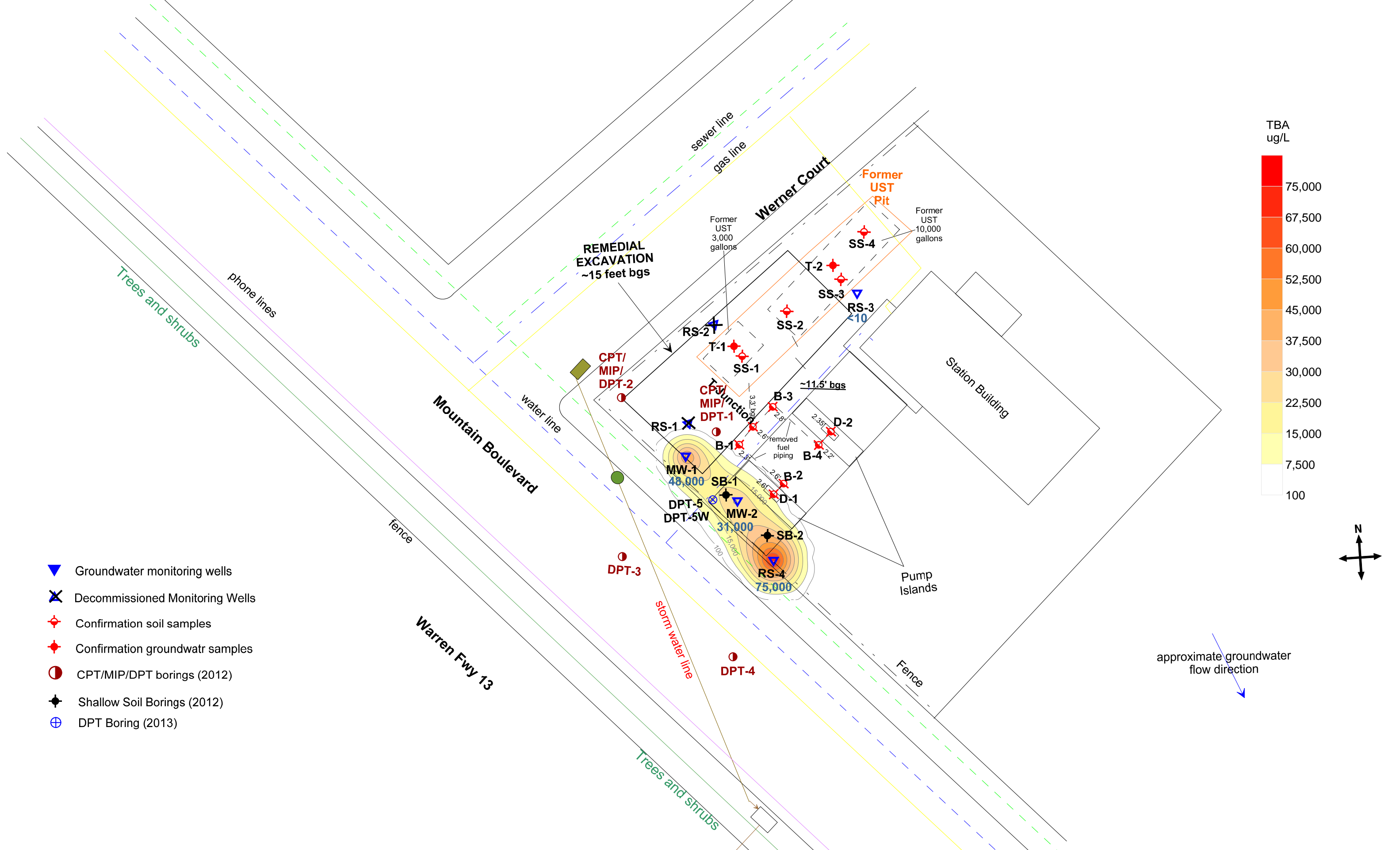


Figure 6: Contour Map Showing MtBE Concentrations in Groundwater, September 4, 2013





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

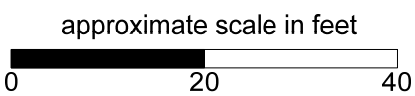
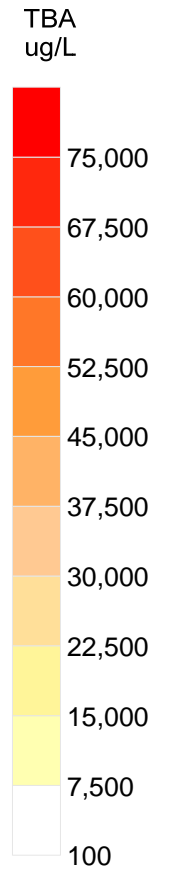


Figure 7: Contour Map Showing TBA Concentrations in Groundwater, September 4, 2013

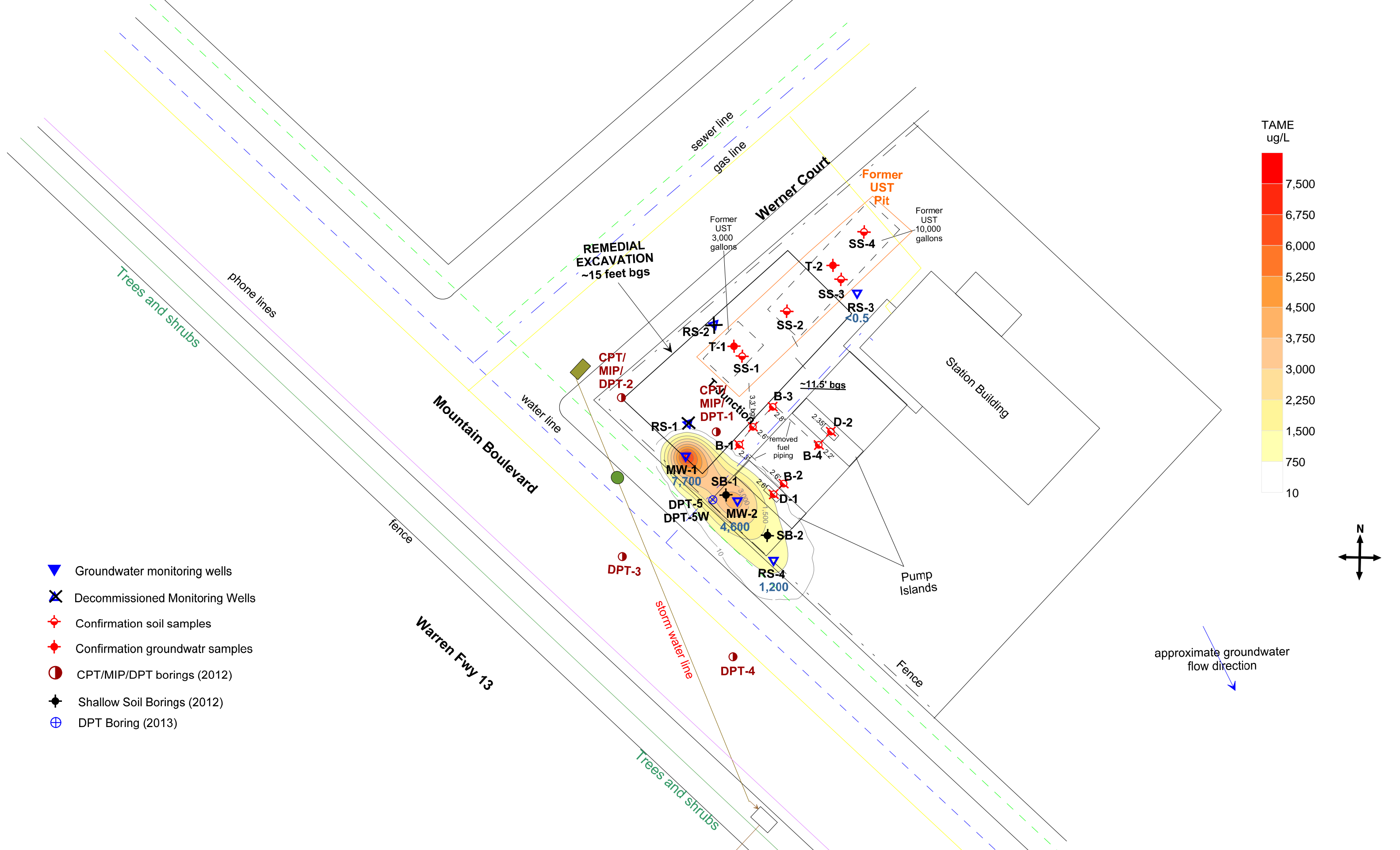
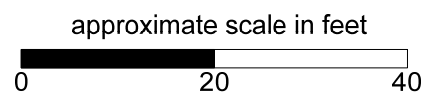


Figure 8: Contour Map Showing TAME Concentrations in Groundwater, September 4, 2013



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	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
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	<0.5	<0.5	<1	100		
	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
Summary for RS-4																
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
Summary for MW-1																
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
Summary for MW-2																
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

revised May 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

DATE: 5/28/2013
JOB# 13004

**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

EDGIS LAND SURVEYING
LAND SURVEYING AND MAPPING
1374 Garland Avenue, Clovis, CA 93612
Phone (559) 803-2679
email: edgis@aol.com



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: 6.91 feet
 Groundwater Elevation: 669.17 feet
 Water Column Height: 18.08 feet
 Purged Volume: 12 gallons

Project No.: 5081
 Address: 2844 Mountain Blvd.
 Oakland, CA
 Date: September 4, 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: _____

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
11:38	started purging well			
11:39	3	7.12	19.3	866
11:40	6	7.12	19.6	837
11:41	9	7.15	20.0	829
11:42	12	7.18	20.7	815
11:47	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: September 4, 2013
 Depth to Groundwater: 9.39 feet Sampler: Lizzie Hightower
 Groundwater Elevation: 665.88 feet
 Water Column Height: 16.15 feet
 Purged Volume: 15 gallons

Purging Method: Bailer Pump
 Sampling Method: Bailer Pump

Color: Yes No Describe: Slightly cloudy
 Sheen: Yes No Describe: Rainbow sheen
 Odor: Yes No Describe: Petro Odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
13:04	started purging well			
13:05	3	7.13	20.5	1385
13:06	6	7.09	20.6	1390
13:07	9	6.86	21.2	1376
13:08	12	6.87	21.6	1341
13:09	15	6.90	21.4	1371
Notes: 13:14	Sampled			



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:	September <u>4</u> , 2013
Depth to Groundwater:	<u>7.10</u> feet	Sampler:	Lizzie Hightower
Groundwater Elevation:	<u>667.82</u> feet		
Water Column Height:	<u>12.65</u> feet		
Purged Volume:	<u>12</u> gallons		

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: Yes No Describe: _____

Sheen: Yes No Describe: _____

Odor: Yes No Describe: Petro odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
12:15	Started purging well			
12:16	3	6.92	20.3	1145
12:17	6	6.90	20.9	1116
12:18	9	6.91	21.7	1080
12:19	12	6.92	22.2	1087
12:24	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: 7.79 feet
 Groundwater Elevation: 667.23 feet
 Water Column Height: 11.95 feet
 Purged Volume: 12 gallons

Project No.: 5081
 Address: 2844 Mountain Blvd.
 Oakland, CA
 Date: September 4, 2013
 Sampler: Lizzie Hightower

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: Yes No Describe: _____

Sheen: Yes No Describe: _____

Odor: Yes No Describe: Petro Odor

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
12:39	Started purging well			
12:40	3	7.06	20.2	1312
12:41	6	7.05	20.7	1187
12:42	9	7.07	21.3	1165
12:43	12	7.07	21.4	1167
12:48	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

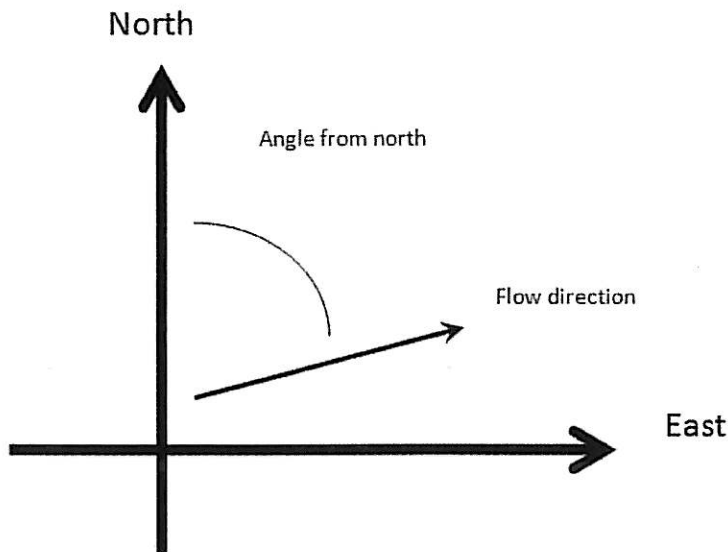
$$\begin{aligned} a x_1 + b y_1 + c &= h_1 \\ a x_2 + b y_2 + c &= h_2 \\ a x_3 + b y_3 + c &= h_3 \\ &\dots \\ a x_{30} + b y_{30} + c &= h_{30} \end{aligned}$$

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

Date Current Date

Calculation basis

Coordinates

I.D.	x-coordinate	y-coordinate	head	ft
1) RS-3	6071215.111	2122442.671	669.17	
2) RS-4	6071195.458	2122379.324	665.88	
3) MW-1	6071174.931	2122404.178	667.82	
4) MW-2	6071186.39	2122393.492	667.23	
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	1.003
Gradient Magnitude (l)	0.06283
Flow direction as degrees from North (positive y axis)	157.3
Coefficient of Determination (R^2)	0.989

WATER

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 248755
ANALYTICAL REPORT**

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

<u>Sample ID</u>	<u>Lab ID</u>
RS-3	248755-001
RS-4	248755-002
MW-1	248755-003
MW-2	248755-004

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: 
Tracy Babjar
Project Manager
(510) 204-2226

Date: 09/19/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: 248755
Client: SOMA Environmental Engineering Inc.
Project: 5081
Location: 2844 Mountain Blvd., Oakland
Request Date: 09/06/13
Samples Received: 09/06/13

This data package contains sample and QC results for four water samples, requested for the above referenced project on 09/06/13. 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):

No analytical problems were encountered.

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 248755 Date Received 9/6/13 Number of coolers 1
Client SOMA Project 5081

Date Opened 9/6/13 By (print) TR (sign) Tina Raikan
Date Logged in By (print) (sign)

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

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 N/A

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) 3.9

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

Blank lines for handwritten comments.

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	5081	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC707324	Batch#:	202946
Matrix:	Water	Prepared:	09/16/13
Units:	ug/L	Analyzed:	09/18/13

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,351	94	59-120

Surrogate	%REC	Limits
o-Terphenyl	94	62-133

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	5081	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	202946
MSS Lab ID:	248770-004	Sampled:	09/06/13
Matrix:	Water	Received:	09/06/13
Units:	ug/L	Prepared:	09/16/13
Diln Fac:	1.000	Analyzed:	09/18/13

Type: MS Cleanup Method: EPA 3630C
 Lab ID: QC707325

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	<15.94	2,451	2,342	96	61-120

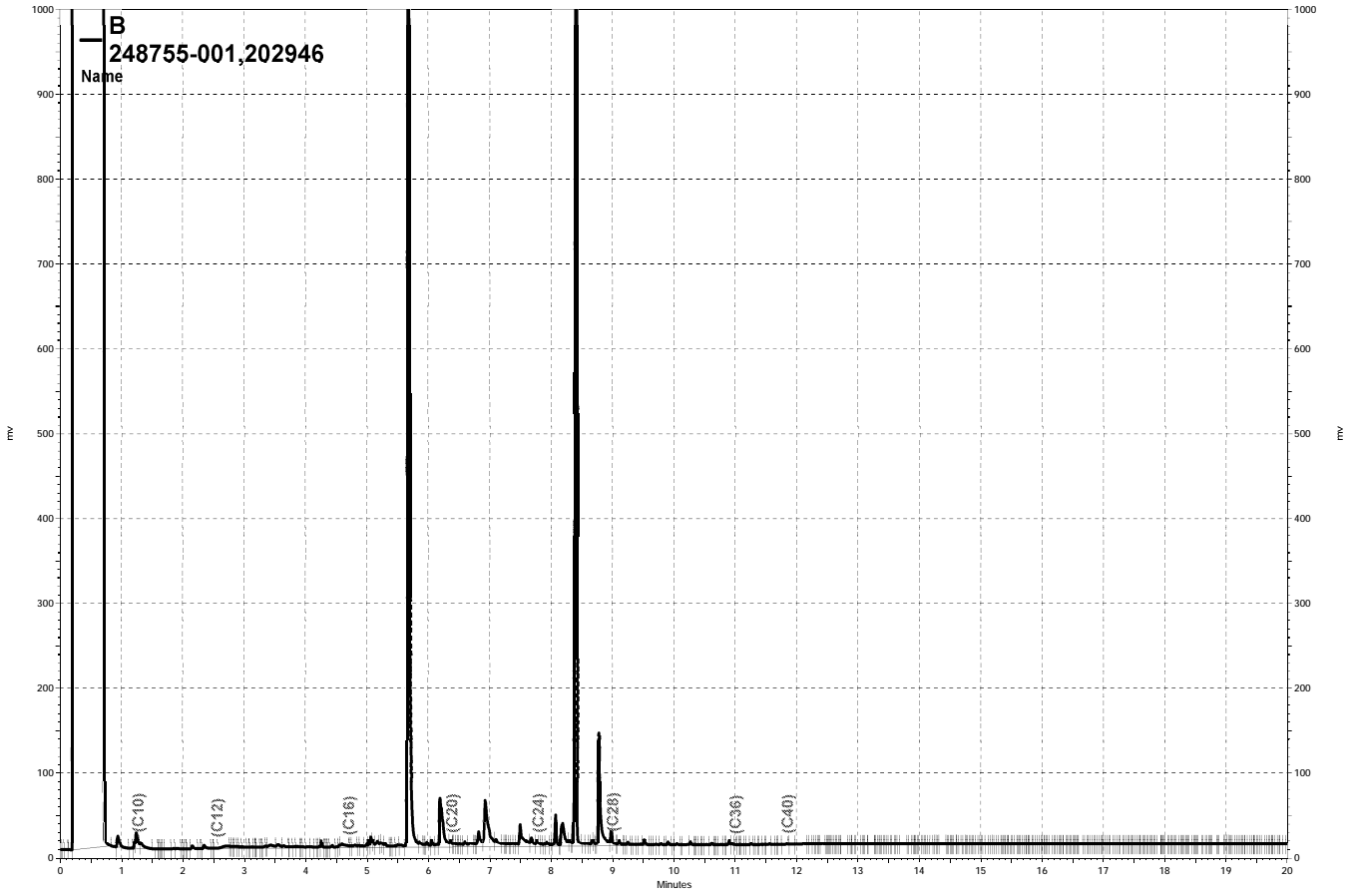
Surrogate	%REC	Limits
o-Terphenyl	108	62-133

Type: MSD Cleanup Method: EPA 3630C
 Lab ID: QC707326

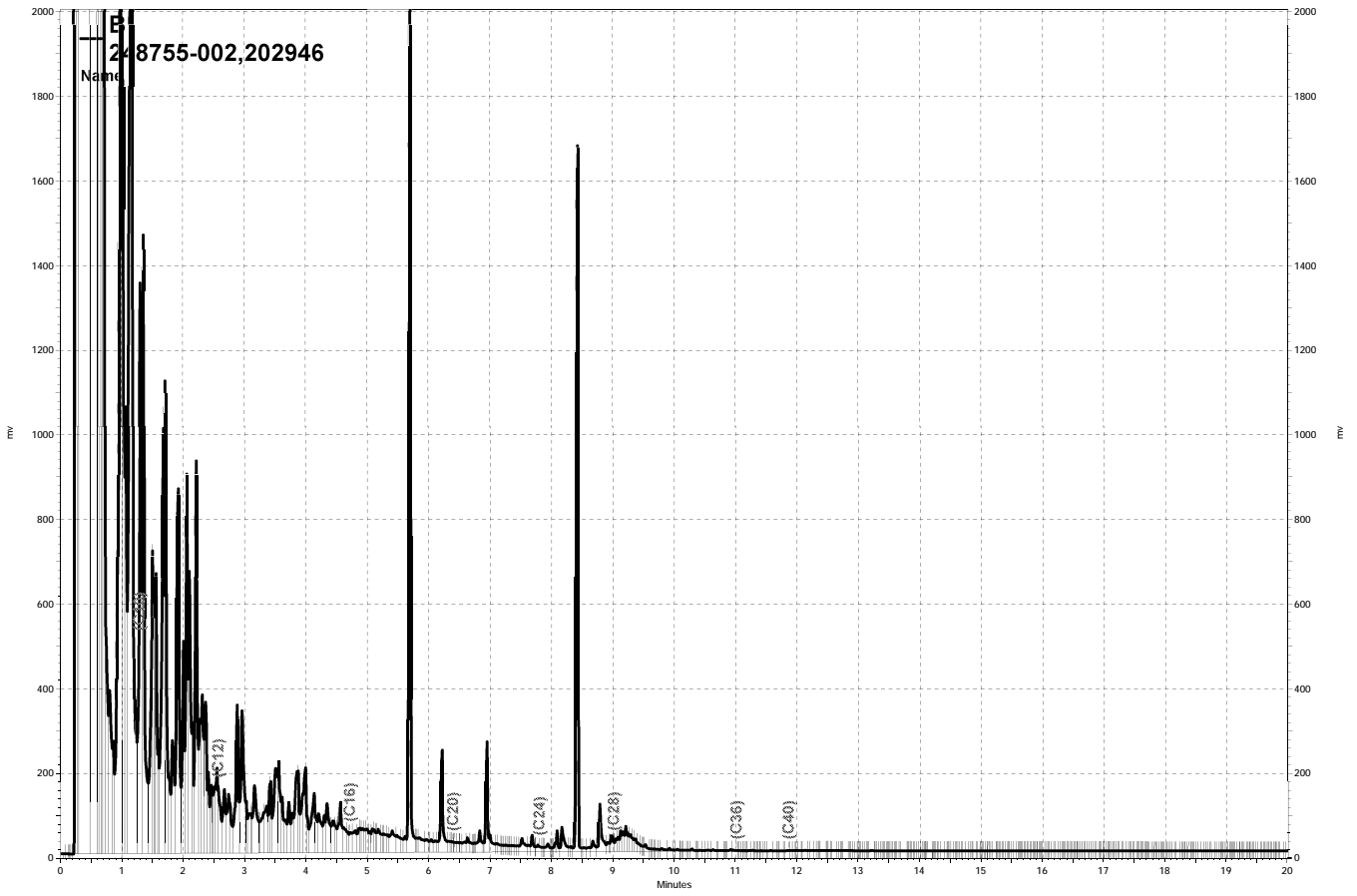
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,451	2,092	85	61-120	11	43

Surrogate	%REC	Limits
o-Terphenyl	80	62-133

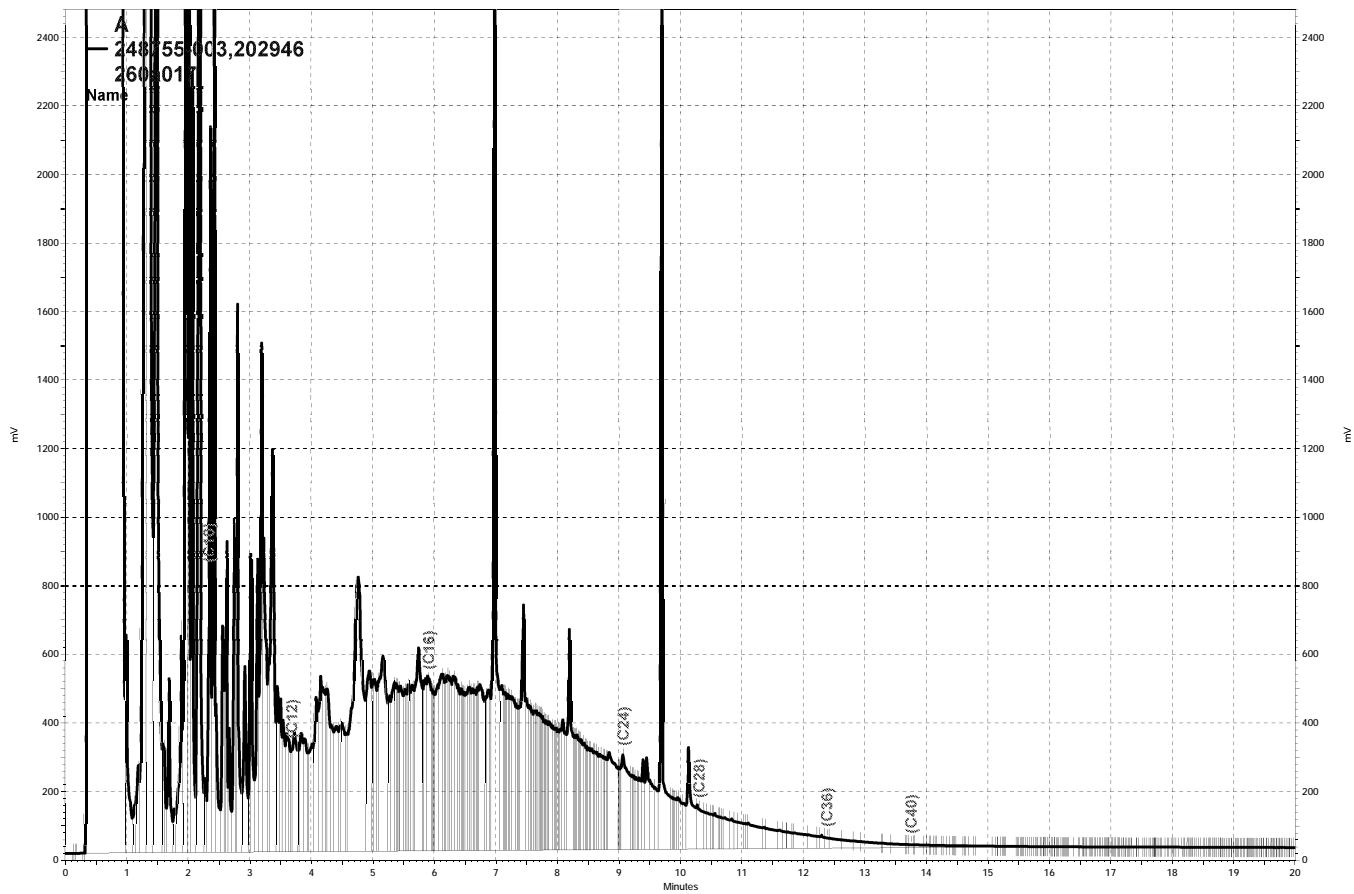
RPD= Relative Percent Difference



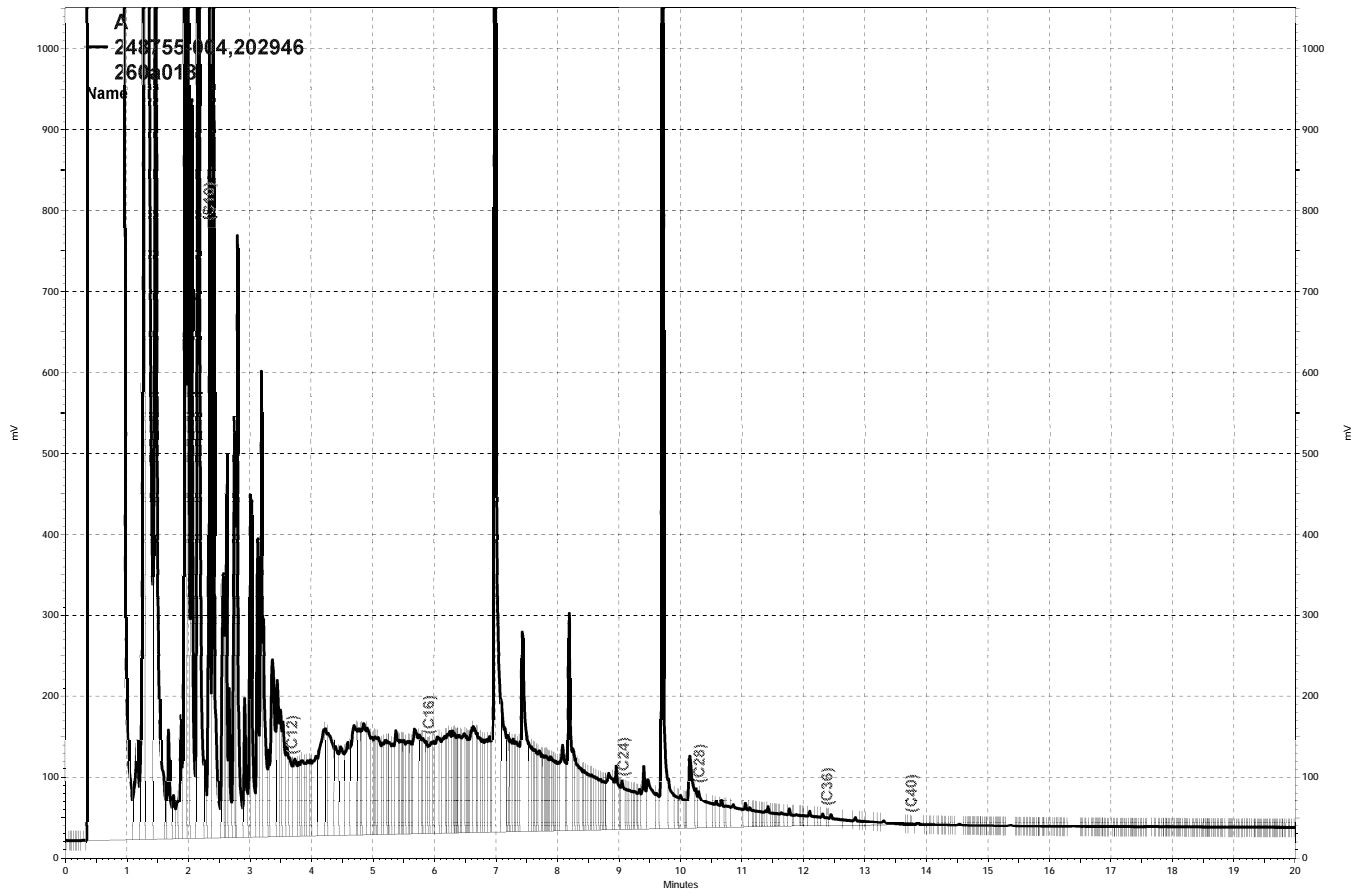
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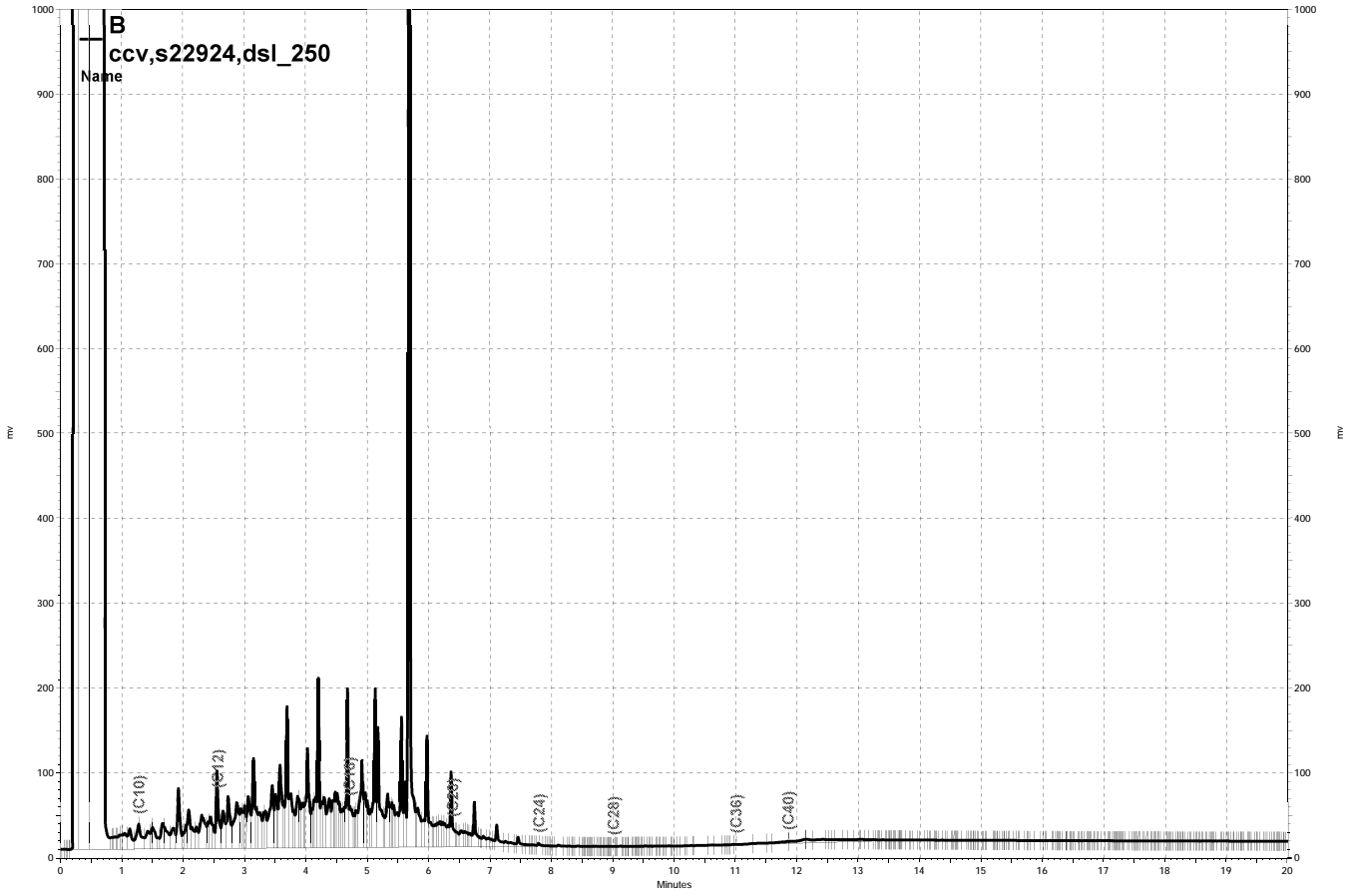
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— \\Lims\gdrive\ezchrom\Projects\GC17A\Data\260a018, A



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Purgeable Organics by GC/MS

Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Field ID:	RS-3	Batch#:	202900
Lab ID:	248755-001	Sampled:	09/04/13
Matrix:	Water	Received:	09/06/13
Units:	ug/L	Analyzed:	09/15/13
Diln Fac:	1.000		

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	90	77-134
1,2-Dichloroethane-d4	90	72-140
Toluene-d8	90	80-120
Bromofluorobenzene	90	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Field ID:	RS-4	Batch#:	202900
Lab ID:	248755-002	Sampled:	09/04/13
Matrix:	Water	Received:	09/06/13
Units:	ug/L	Analyzed:	09/16/13
Diln Fac:	200.0		

Analyte	Result	RL
Gasoline C7-C12	20,000	10,000
tert-Butyl Alcohol (TBA)	75,000	2,000
Isopropyl Ether (DIPE)	ND	100
Ethyl tert-Butyl Ether (ETBE)	ND	100
Methyl tert-Amyl Ether (TAME)	1,200	100
MTBE	18,000	100
Benzene	ND	100
Toluene	ND	100
Ethylbenzene	660	100
m,p-Xylenes	2,500	100
o-Xylene	330	100

Surrogate	%REC	Limits
Dibromofluoromethane	89	77-134
1,2-Dichloroethane-d4	90	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	86	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #: 248755	Location: 2844 Mountain Blvd., Oakland
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 5081	Analysis: EPA 8260B
Field ID: MW-1	Batch#: 202900
Lab ID: 248755-003	Sampled: 09/04/13
Matrix: Water	Received: 09/06/13
Units: ug/L	Analyzed: 09/16/13
Diln Fac: 1,000	

Analyte	Result	RL
Gasoline C7-C12	ND	50,000
tert-Butyl Alcohol (TBA)	48,000	10,000
Isopropyl Ether (DIPE)	ND	500
Ethyl tert-Butyl Ether (ETBE)	ND	500
Methyl tert-Amyl Ether (TAME)	7,700	500
MTBE	70,000	500
Benzene	2,000	500
Toluene	ND	500
Ethylbenzene	1,400	500
m,p-Xylenes	3,100	500
o-Xylene	1,100	500

Surrogate	%REC	Limits
Dibromofluoromethane	90	77-134
1,2-Dichloroethane-d4	92	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	90	80-120

ND= Not Detected
 RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	202960
Lab ID:	248755-004	Sampled:	09/04/13
Matrix:	Water	Received:	09/06/13
Units:	ug/L	Analyzed:	09/18/13
Diln Fac:	500.0		

Analyte	Result	RL
Gasoline C7-C12	ND	25,000
tert-Butyl Alcohol (TBA)	31,000	5,000
Isopropyl Ether (DIPE)	ND	250
Ethyl tert-Butyl Ether (ETBE)	ND	250
Methyl tert-Amyl Ether (TAME)	4,600	250
MTBE	32,000	250
Benzene	860	250
Toluene	ND	250
Ethylbenzene	710	250
m,p-Xylenes	1,300	250
o-Xylene	280	250

Surrogate	%REC	Limits
Dibromofluoromethane	89	77-134
1,2-Dichloroethane-d4	92	72-140
Toluene-d8	95	80-120
Bromofluorobenzene	91	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	248755	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:	QC707101	Batch#:	202900
Matrix:	Water	Analyzed:	09/15/13
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	93	77-134
1,2-Dichloroethane-d4	82	72-140
Toluene-d8	85	80-120
Bromofluorobenzene	86	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	202900
Units:	ug/L	Analyzed:	09/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC707102

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	90.65	91	37-144
Isopropyl Ether (DIPE)	20.00	14.56	73	52-123
Ethyl tert-Butyl Ether (ETBE)	20.00	17.67	88	57-120
Methyl tert-Amyl Ether (TAME)	20.00	18.15	91	59-120
MTBE	20.00	19.80	99	58-120
Benzene	20.00	20.01	100	78-125
Toluene	20.00	18.84	94	79-123
Ethylbenzene	20.00	18.99	95	80-126
m,p-Xylenes	40.00	40.93	102	80-123
o-Xylene	20.00	21.68	108	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	77-134
1,2-Dichloroethane-d4	85	72-140
Toluene-d8	86	80-120
Bromofluorobenzene	90	80-120

Type: BSD Lab ID: QC707103

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	100.0	92.90	93	37-144	2	31
Isopropyl Ether (DIPE)	20.00	13.69	68	52-123	6	20
Ethyl tert-Butyl Ether (ETBE)	20.00	16.79	84	57-120	5	23
Methyl tert-Amyl Ether (TAME)	20.00	18.20	91	59-120	0	22
MTBE	20.00	19.38	97	58-120	2	23
Benzene	20.00	19.84	99	78-125	1	20
Toluene	20.00	17.72	89	79-123	6	20
Ethylbenzene	20.00	18.59	93	80-126	2	20
m,p-Xylenes	40.00	40.02	100	80-123	2	20
o-Xylene	20.00	20.38	102	75-120	6	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	77-134
1,2-Dichloroethane-d4	83	72-140
Toluene-d8	85	80-120
Bromofluorobenzene	89	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	202900
Units:	ug/L	Analyzed:	09/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC707104

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	800.0	752.6	94	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	94	77-134
1,2-Dichloroethane-d4	82	72-140
Toluene-d8	84	80-120
Bromofluorobenzene	87	80-120

Type: BSD Lab ID: QC707105

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	800.0	779.9	97	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	91	77-134
1,2-Dichloroethane-d4	81	72-140
Toluene-d8	86	80-120
Bromofluorobenzene	91	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	202960
Units:	ug/L	Analyzed:	09/17/13
Diln Fac:	1.000		

Type: BS Lab ID: QC707368

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	100.8	81	37-144
Isopropyl Ether (DIPE)	25.00	17.42	70	52-123
Ethyl tert-Butyl Ether (ETBE)	25.00	20.64	83	57-120
Methyl tert-Amyl Ether (TAME)	25.00	22.93	92	59-120
MTBE	25.00	23.13	93	58-120
Benzene	25.00	25.71	103	78-125
Toluene	25.00	27.45	110	79-123
Ethylbenzene	25.00	27.26	109	80-126
m,p-Xylenes	50.00	58.85	118	80-123
o-Xylene	25.00	29.20	117	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	86	77-134
1,2-Dichloroethane-d4	81	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	86	80-120

Type: BSD Lab ID: QC707369

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	98.04	78	37-144	3	31
Isopropyl Ether (DIPE)	25.00	16.53	66	52-123	5	20
Ethyl tert-Butyl Ether (ETBE)	25.00	19.25	77	57-120	7	23
Methyl tert-Amyl Ether (TAME)	25.00	22.11	88	59-120	4	22
MTBE	25.00	21.47	86	58-120	7	23
Benzene	25.00	24.32	97	78-125	6	20
Toluene	25.00	25.58	102	79-123	7	20
Ethylbenzene	25.00	24.92	100	80-126	9	20
m,p-Xylenes	50.00	54.07	108	80-123	8	20
o-Xylene	25.00	27.33	109	75-120	7	20

Surrogate	%REC	Limits
Dibromofluoromethane	88	77-134
1,2-Dichloroethane-d4	81	72-140
Toluene-d8	90	80-120
Bromofluorobenzene	90	80-120

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	248755	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:	QC707370	Batch#:	202960
Matrix:	Water	Analyzed:	09/17/13
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	87	77-134
1,2-Dichloroethane-d4	84	72-140
Toluene-d8	95	80-120
Bromofluorobenzene	87	80-120

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	248755	Location:	2844 Mountain Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	5081	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	202960
Units:	ug/L	Analyzed:	09/17/13
Diln Fac:	1.000		

Type: BS Lab ID: QC707371

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	931.5	93	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	86	77-134
1,2-Dichloroethane-d4	84	72-140
Toluene-d8	90	80-120
Bromofluorobenzene	86	80-120

Type: BSD Lab ID: QC707372

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	908.6	91	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	88	77-134
1,2-Dichloroethane-d4	84	72-140
Toluene-d8	92	80-120
Bromofluorobenzene	86	80-120

RPD= Relative Percent Difference

Date : 16-SEP-2013 02:03

Client ID: DYNA P&T

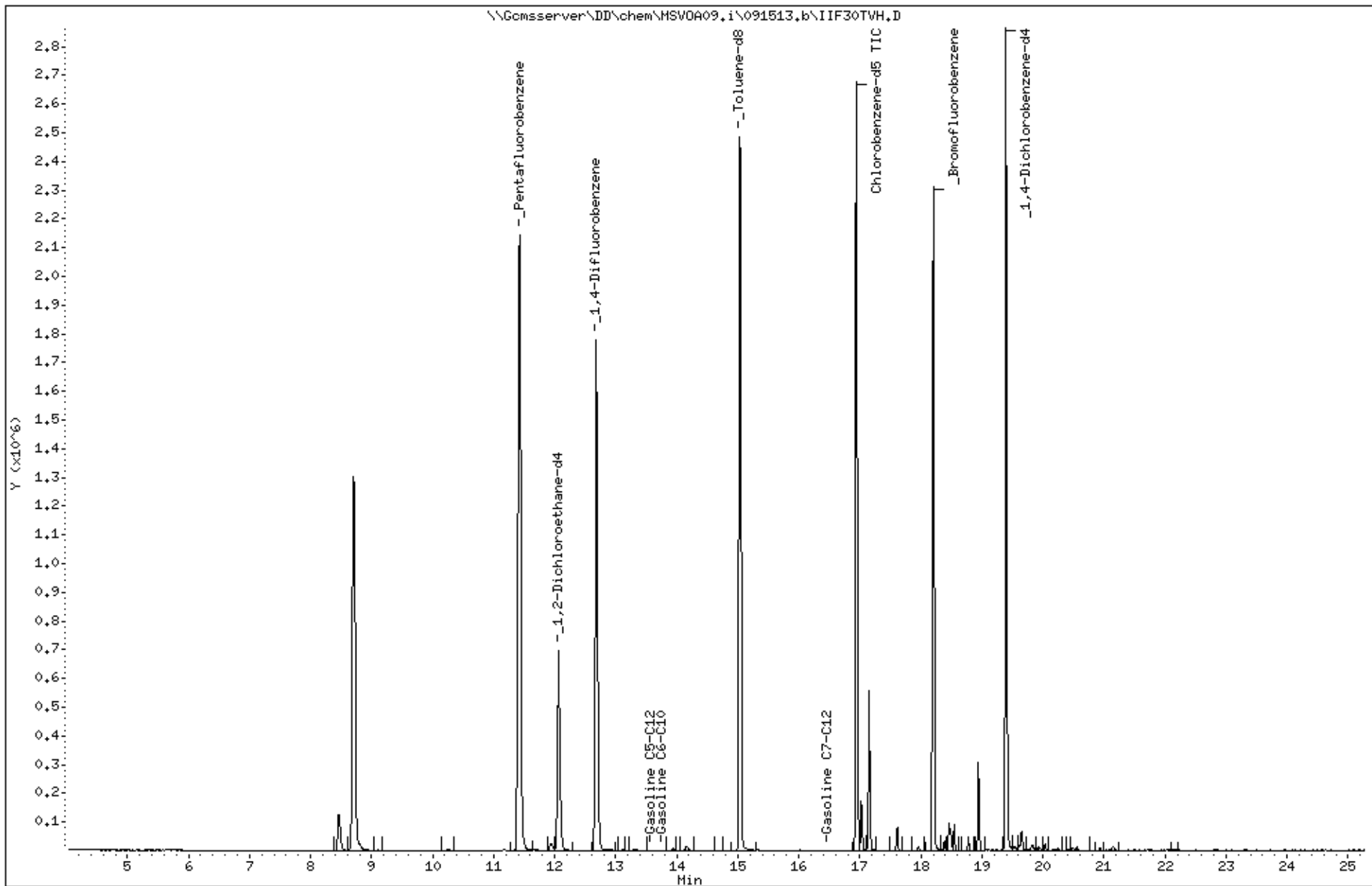
Sample Info: S,248755-002

Instrument: MSV0A09.i

Operator: VOC

Column diameter: 2.00

Column phase:



Date : 15-SEP-2013 16:52

Client ID: DYNA P&T

Sample Info: CCV/BS, QC707104, 202900, S23229, .008/100

Instrument: MSV0A09.i

Operator: VOC

Column diameter: 2.00

Column phase:

