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June 28, 2013

Ms. Dilan Roe, P.E.
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Freedom Food and Gas (Formerly Freedom ARCO Mini-Mart)
Site Address: 15101 Freedom Avenue, San Leandro, California
STID 4473/RO0000473

Dear Ms. Roe:

SOMA's "Second Quarter 2013 Groundwater Monitoring and Remediation Progress Report" for the subject property has been uploaded to the State's GeoTracker database and Alameda County's FTP site for your review.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Mansour Sepehr".

Mansour Sepehr, Ph.D.,PE
Principal Hydrogeologist

cc: Mr. Mohammad Pazdel w/report enclosure



**Second Quarter 2013
Groundwater Monitoring and
Remediation Progress Report**

**Freedom Food and Gas
15101 Freedom Avenue
San Leandro, California**

June 28, 2013

Project 2551/2553

Prepared for

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

PERJURY STATEMENT

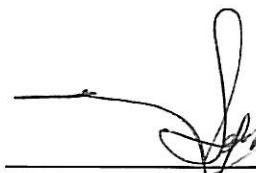
Site Location: 15101 Freedom Avenue, San Leandro, California

"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".

Mohammad Pazdel
Mohammad Pazdel
1770 Pistacia Court
Fairfield, California 94533
Responsible Party

CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this report on behalf of the responsible party, Mr. Mohammad Pazdel, for property located at 15101 Freedom Avenue, San Leandro, California, to comply with Alameda County Health Care Services requirements for the Second Quarter 2013 groundwater monitoring event.



Mansour Sepehr, PhD, PE
Principal Hydrogeologist



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- Appendix D: Laboratory Report and Chain of Custody Form for the Treatment System

1. INTRODUCTION

SOMA Environmental Engineering, Inc. (SOMA) has prepared this report on behalf of the responsible party, Mr. Mohammad Pazdel, for property located at 15101 Freedom Avenue, San Leandro, California. The site is located in an area of primarily residential properties and adjacent commercial areas (Figure 1). The property was formerly owned by Mr. Mohammad Pazdel. In late 2009, the property was sold to DDH, LLC, Assignee and in early 2010 it was sold to Mr. Mohammad Mashhoon. Under the new management, the site is currently operational with the business name “Freedom Food and Gas” (formerly “Freedom Arco Mini-Mart”).

This report summarizes results of the Second Quarter 2013 groundwater monitoring event conducted on June 10 and 11, 2013. It includes physical and chemical properties measured in the field and laboratory analysis results for each groundwater sample. It also presents the remediation progress report for Second Quarter 2013, which includes operation of a groundwater extraction and treatment system. During this reporting period, a month-long multi-phase extraction (MPE) event was conducted from May 1 through 31, 2013.

1.1 Field Activities

In June 2013, SOMA’s field crew conducted a groundwater monitoring event in accordance with procedures and guidelines of Alameda County Health Care Services (ACHCS) and the California Regional Water Quality Control Board (CRWQCB). Figure 2 shows well locations.

On June 10, 2013, the following wells were measured for depth to groundwater: five on-site monitoring wells (MW-1 to MW-5) and two off-site wells (MW-6 and MW-7) in the First water-bearing zone (WBZ); two extraction wells (EX-1 and EX-2), two MPE wells (MPE-1 and MPE-2), and three on-site monitoring wells (MW-1D, MW-3D, and MW-4D) in the Second WBZ. On June 10 and 11, 2013, additional field measurements and groundwater samples were collected from all monitoring and MPE wells. Grab groundwater samples were also collected from the two extraction wells. Properties measured include pH, temperature, and electrical conductivity (EC).

A natural attenuation study was conducted during this event to determine whether petroleum hydrocarbons in groundwater are biodegrading. Dissolved oxygen (DO) and oxidation reduction potential (ORP) measurements were taken for all monitoring and MPE wells.

1.2 Laboratory Analysis

Curtis & Tompkins Laboratories, a California state-certified laboratory, analyzed groundwater samples for the following: total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, total xylenes (collectively termed BTEX); methyl tertiary-butyl ether (MtBE); and gasoline oxygenates, ethanol and lead scavengers. Samples were prepared using EPA Method 5030B and analyzed using EPA Method 8260B.

2. RESULTS

Following are results of field measurements and laboratory analysis for the Second Quarter 2013 groundwater monitoring event.

2.1 Field Measurements, First WBZ Wells

Table 1 presents calculated groundwater elevations and depths to groundwater for each monitoring well. Depths to groundwater ranged from 15.06 feet in MW-7 to 23.48 feet in MW-1. No Free-Product (FP) was observed during this monitoring event. Appendix A includes the procedure for FP measurement.

Corresponding groundwater elevations ranged from 28.45 feet in MW-6 to 30.98 feet in MW-1. Groundwater elevations at extraction wells EX-1 and EX-2 were 23.11 feet and 22.85 feet, respectively.

Figure 3 displays the contour map of groundwater elevations. As illustrated, groundwater flows towards extraction wells, at a gradient of 0.0082 feet/feet. Since the previous monitoring event (First Quarter 2013) the gradient has slightly decreased. Groundwater gradient calculations are attached in Appendix B.

Upon equalization with the surrounding aquifer at each well location, when the purge cycle was terminated, DO in the First WBZ ranged from 0.38 mg/L in MW-3 to 2.55 mg/L in MW-7. ORP showed negative redox potentials in MW-1 through MW-6, MPE-1 and MPE-2. Negative redox potentials indicate that contaminants in groundwater are conducive to anaerobic biodegradation. ORP showed positive redox potentials in MW-7. Positive redox potentials are more energetically favorable in utilizing electron acceptors during chemical reactions. This promotes the removal of organic mass from the contaminated groundwater by indigenous bacteria in the subsurface during the release of the transfer of electrons.

Field measurements taken during this monitoring event are included in Appendix B (Table A).

2.2 Laboratory Analysis, First WBZ Wells

Appendix C includes the laboratory report and chain-of-custody form for this monitoring event.

Table 1 presents TPH-g, BTEX, and MtBE analysis results for the current and historical groundwater monitoring events.

TPH-g ranged from 340 µg/L in EX-1 to 42,000 µg/L in MPE-1. Since the previous monitoring event (First Quarter 2013), TPH-g increased in MW-1, MW-3 through MW-7, MPE-2, EX-1 and EX-2, and decreased in MW-2 and MPE-1.

Figure 4 displays the contour map of TPH-g concentrations in groundwater. As illustrated, the highest TPH-g impact is in the southern portion of the site and in the vicinity of the dispenser islands around MPE-1.

The following BTEX concentrations were observed:

- Benzene was below laboratory-reporting limits in MW-7. Detectable benzene concentrations ranged from 20 µg/L in MW-6 to 1,900 µg/L in MPE-1.
- Toluene was below laboratory-reporting limits in MW-1, MW-2, MW-4, MW-6, MW-7, EX-1, and MPE-2. Detectable toluene concentrations ranged from 3.9 µg/L in MW-5 to 980 µg/L in MPE-1.
- Ethylbenzene was detected in concentrations ranging from 2.6 µg/L in MW-7 to 1,500 µg/L in MPE-2.
- Total xylenes were below laboratory-reporting limits in MW-4 and MW-7. Detectable concentrations ranged from 12.3 µg/L in MW-2 to 4,400 µg/L in MPE-1.

Figure 5 displays the contour map of benzene in groundwater. The highest benzene impact is in the southern portion of the site and in the vicinity of the dispenser islands around MPE-1. Since the previous monitoring event (First Quarter 2013), benzene has increased in MW-2, MW-4, EX-1 and EX-2, decreased in MW-1, MW-3, MW-5, MW-6, MPE-1 and MPE-2.

MtBE was below the laboratory-reporting limit in MW-1, MW-6, and MPE-2. Detectable MtBE ranged from 2.3 µg/L in MW-7 to 670 µg/L in MPE-1. Figure 6 displays the contour map of MtBE concentrations in groundwater. The highest MtBE impact is in the southern portion of the site and in the vicinity of the dispenser islands around MPE-1 where MtBE concentration is significantly higher than in other wells. Since the previous monitoring event (First Quarter 2013), MtBE has increased in MW-2, MW-4, EX-1, and EX-2 and decreased in MW-1, MW-3, MW-5, MW-7, and significantly in MPE-1.

As shown in Table 1, TPH-g, benzene, toluene, ethylbenzene, total xylenes and MtBE all decreased in more impacted well MPE-1 since the previous monitoring event (First Quarter 2013).

Table 2 shows analysis results for gasoline oxygenate and lead scavenger concentrations for the current as well as historical events.

The following gasoline oxygenate and lead scavenger concentrations were observed:

- In MW-1, MW-3, MW-6, MW-7, and MPE-2, all gasoline oxygenates and lead scavengers were below laboratory-reporting limits.
- Tertiary-butyl alcohol (TBA) was below laboratory-reporting limits in MW-1, MW-3, MW-5 through MW-7, and MPE-2. Detectable TBA concentrations ranged from 32 µg/L in EX-2 to 890 µg/L in MW-4. Figure 7 shows the contour map of TBA concentrations in First WBZ wells.
- Methyl tertiary-amyl ether (TAME) was detected in MW-5 at 2.5 µg/L, EX-1 at 1.6 µg/L and MPE-1 at 380 µg/L, and was below the laboratory-reporting limit in remaining wells. Figure 7 displays the map of TAME concentrations in First WBZ wells.
- Ethyl tertiary-butyl ether (ETBE) was detected in MW-2 at 1.6 µg/L, MW-4 at 12 µg/L, and EX-1 at 4 µg/L, and was below laboratory-reporting limits in remaining wells. Figure 7 displays the map of ETBE concentrations in First WBZ wells.
- 1,2-dichloroethane (1,2-DCA), Isopropyl ether (DIPE), 1,2-dibromoethane (EDB), and ethanol were below laboratory-reporting limits in all groundwater samples. Analysis results for ethanol are shown in Appendix C.

2.3 Field Measurements, Second WBZ Wells

Table 1 presents calculated groundwater elevations and depths to groundwater for each Second WBZ monitoring well. Depths to groundwater ranged from 22.55 feet in MW-4D to 23.69 feet in MW-1D. Corresponding groundwater elevations ranged from 30.57 feet in MW-4D to 30.83 feet in MW-3D.

Figure 8 displays the contour map of groundwater elevations in the Second WBZ. Groundwater flows from northwesterly to southwesterly at a gradient of 0.0030 feet/feet. The groundwater gradient increased and the flow direction has changed since the previous monitoring event (First Quarter 2013). Groundwater gradient calculations are attached in Appendix B.

Upon equalization with the surrounding aquifer at each well location, when the purge cycle was terminated, DO in the Second WBZ ranged from 0.52 mg/L in MW-1D to 0.75 mg/L in MW-4D. ORP showed positive redox potentials in all

second WBZ wells. Positive redox potentials are more energetically favorable in utilizing electron acceptors during chemical reactions. This promotes the removal of organic mass from the contaminated groundwater by indigenous bacteria in the subsurface during the release of the transfer of electrons.

Field measurements taken during this monitoring event are included in Appendix B.

2.4 Laboratory Analysis for Second WBZ Wells

Appendix C includes the laboratory report and chain-of-custody form for this monitoring event.

Table 1 presents TPH-g, BTEX, and MtBE analysis results for the current and historical groundwater monitoring events.

TPH-g was below the laboratory-reporting limit in MW-3D and MW-4D and was detected in MW-1D at 110 µg/L. Since the previous monitoring event (First Quarter 2013) TPH-g has increased in MW-1D. Figure 9 shows the map of TPH-g concentrations in the Second WBZ.

BTEX concentrations were below laboratory-reporting limits in all second WBZ wells similar to the previous monitoring event (First Quarter 2013).

MtBE was below the laboratory-reporting limit in MW-1D and was detected in MW-3D and MW-4D at 3.5 µg/L and 1.7 µg/L, respectively. Since the previous monitoring event (First Quarter 2013), MtBE has decreased in MW-3D and MW-4D. Figure 9 shows the map of MtBE concentrations in Second WBZ.

Table 2 shows analysis results for gasoline oxygenate and lead scavenger concentrations for the current as well as historical events.

All gasoline oxygenate, lead scavenger, and ethanol concentrations were below laboratory-reporting limits in Second WBZ wells.

3. OPERATION OF TREATMENT SYSTEM

SOMA installed a groundwater treatment system at the site in December 2009. The system includes two extraction wells (EX-1 and EX-2), trenching containing influent and effluent lines and electrical conduits, and the treatment system compound. During system operation, extracted groundwater is pumped from extraction wells through underground piping to a fenced treatment compound, adjacent to the existing service station building.

In the treatment compound, groundwater is treated using granular activated carbon (GAC) and subsequently discharged to the sanitary sewer. Two GAC vessels are connected in series. The first unit (1,000 gallons) serves as the primary treatment unit, and the second (55 gallons) provides an additional safety buffer prior to discharge. Effectiveness of the GAC units is monitored by collection and analysis of samples from the system discharge, including a sample collected from water that has passed only through the first GAC unit. When analytical results indicate that the first GAC unit is no longer effectively treating groundwater, the vessel will be removed from the treatment line and refurbished with new carbon. Since the system began discharging, approximately 2,273,686 gallons of groundwater have been treated and discharged at the site (as of June 10, 2013).

The treatment system operates under discharge permit issued by Oro Loma Sanitary District (OLSD) in May 2009. This discharge permit was most recently renewed in May 2012. Treated groundwater has been discharging to the OLSD sewer since December 9, 2009. Figure 10 shows the schematic diagram of the groundwater treatment system. Treatment system effluent is sampled monthly to comply with OLSD discharge permit requirements. Table 3 includes analytical results and operational history of the treatment system. As shown in Table 4, as of April 12, 2013, cumulative masses of TPH-g and BTEX extracted from groundwater were approximately 22.96 pounds, 1.08 pounds, 0.24 pounds, 0.51 pounds, and 3.32 pounds, respectively. Appendix D includes laboratory analytical results.

4. MULTI-PHASE EXTRACTION EVENTS

During Second Quarter 2013, SOMA performed an MPE event May 1-31, utilizing MPE-1, MPE-2 and MW-5.

The estimated mass of volatile organic compounds (VOCs) removed from soil vapor extraction and VOC mass removal rate for the May 2013 event was 300 lbs at 16 lbs/day.

The overall estimated total mass of VOCs extracted by previous MPE events is 1,106 pounds. This includes the following: 106 pounds, November 2007 pilot test; 243 pounds, October 2009 event; 72 pounds, November 2009 event; 97 pounds, December 2009 event; 17 pounds, February 2010 event; 11 pounds, March 2010 event; 30 pounds, June 2010 event; 30 pounds, August 2010 event; 79 pounds, October 2010 event; 27 pounds, April 2011 event; 94 pounds, August 2011 event; and 300 pounds, May 2013 event. Figure 11 shows the cumulative mass of VOCs removed in pounds.

Further details of this event will be included in SOMA's upcoming Updated Site Conceptual Model and Data Gap workplan report.

5. CONCLUSIONS AND RECOMMENDATIONS

Second Quarter 2013 groundwater monitoring and previous MPE events results are summarized below.

- Groundwater flows towards extraction wells in the First WBZ and westerly in the Second WBZ.
- The highest hydrocarbon concentrations were observed in the southern portion of the site and in the vicinity of the dispenser islands around MPE extraction well MPE-1. TPH-g concentrations in MPE-1 and MPE-2 were significantly higher than in other site wells.
- Since the previous quarterly monitoring event (First Quarter 2013), TPH-g increased in MW-1, MW-3 through MW-7, MPE-2, EX-1 and EX-2, and decreased in MW-2 and MPE-1.
- In the Second WBZ, TPH-g was below the laboratory-reporting limit in MW-3D and MW-4D, BTEX concentrations were below laboratory-reporting limits, and MtBE was below laboratory-reporting limit in MW-1D. Since the previous monitoring event (First Quarter 2013), TPH-g increased in MW-1D, MtBE decreased in MW-3D and MW-4D.
- The total hydrocarbon removed by MPE operation which ended in May 2013 was estimated to be 1,106 pounds.

Based on results of this monitoring event and previous MPE events, SOMA recommends the following action items:

- Continue quarterly groundwater monitoring to increase understanding of seasonal variations in groundwater quality conditions.

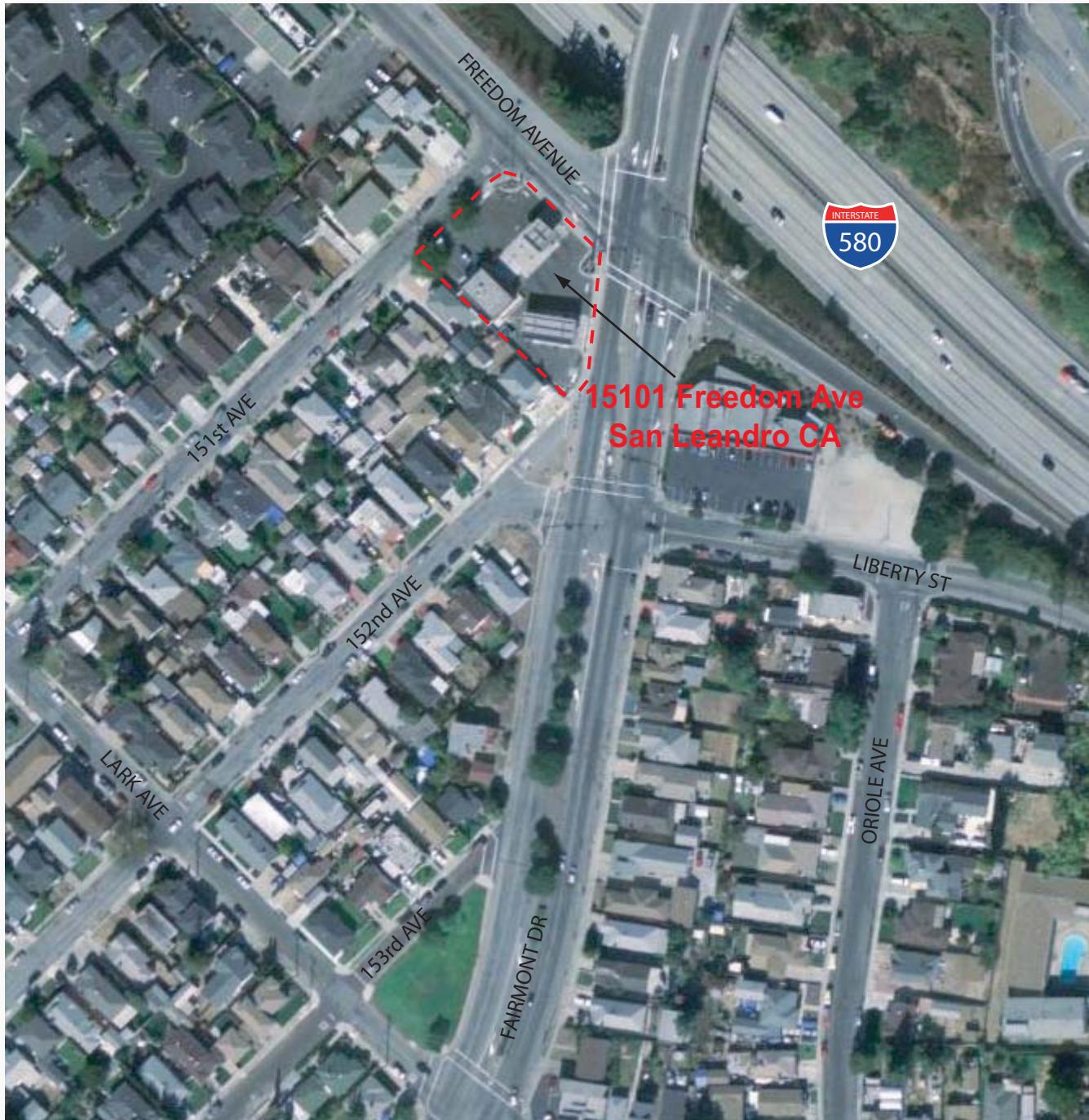
Other ongoing activities: Based on ACHCS directive dated April 22, 2013, SOMA is currently preparing an Updated Site Conceptual Model and Data Gap Work Plan as requested by ACHCS. As mentioned above, results and details of the most recent MPE event (May 2013) will be documented in this report. As approved, SOMA is also preparing to conduct another extended MPE event in August 2013.

6. REPORT LIMITATIONS

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

Figures



approximate scale in feet

0 150 300

Figure 1: Site vicinity map.

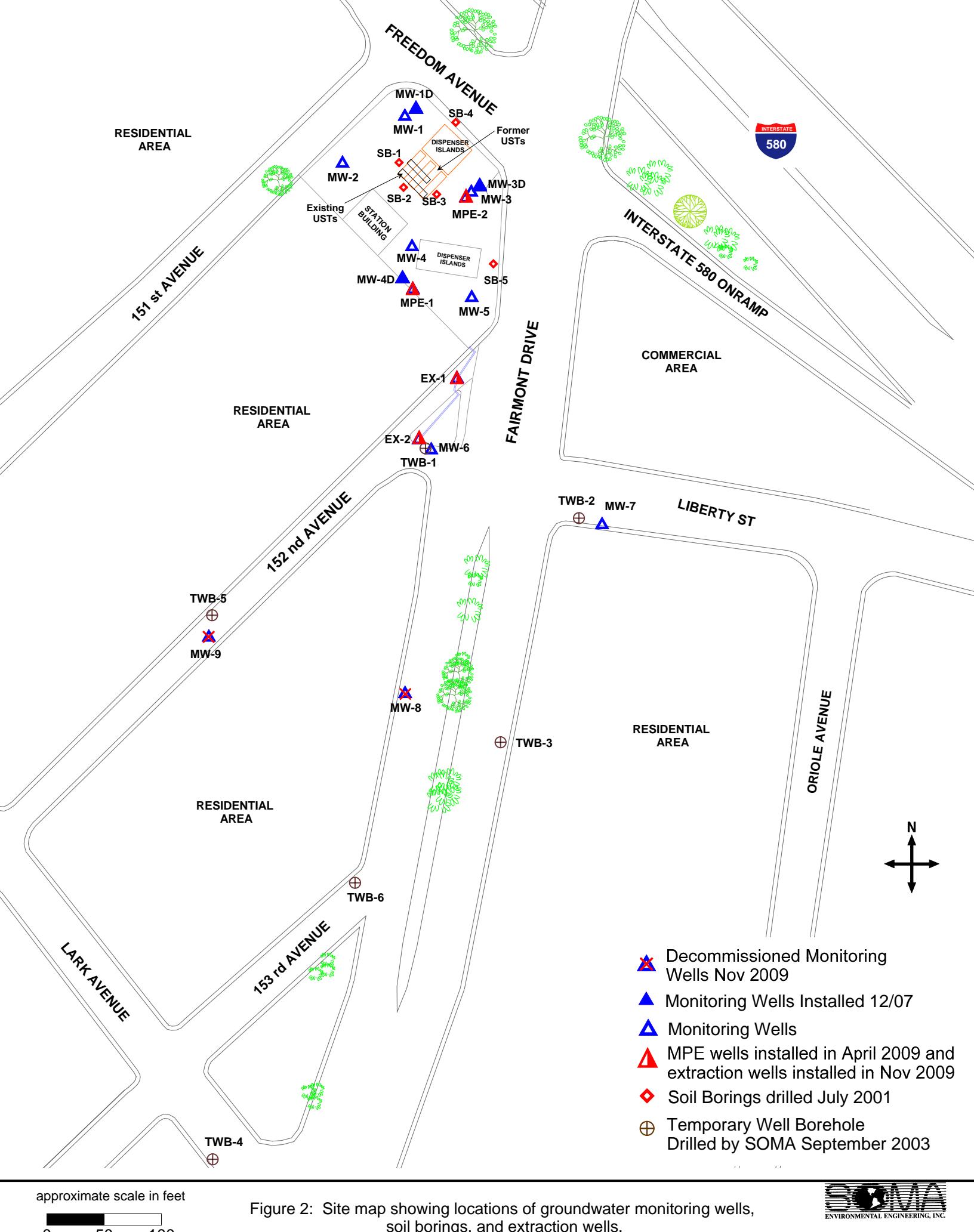
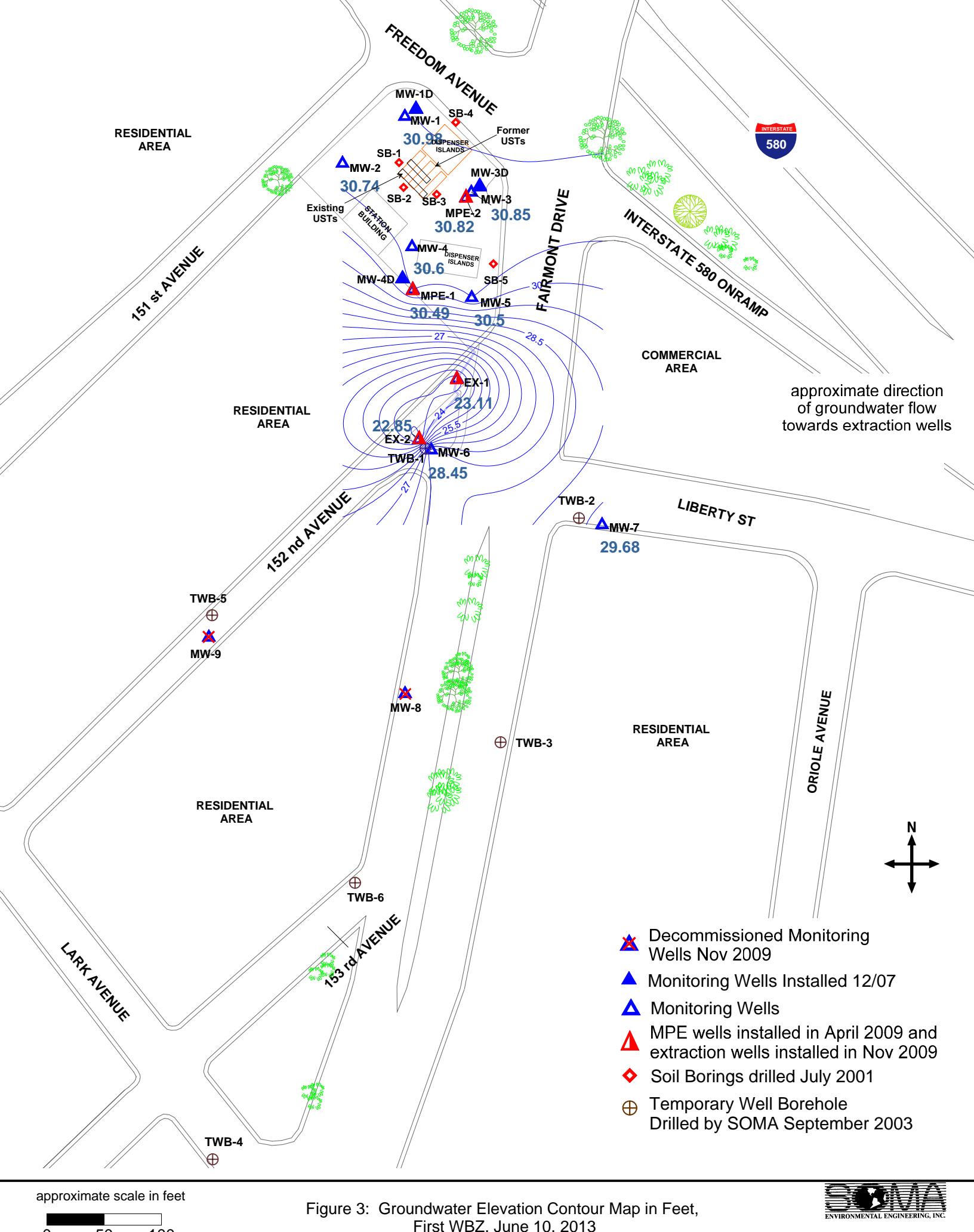
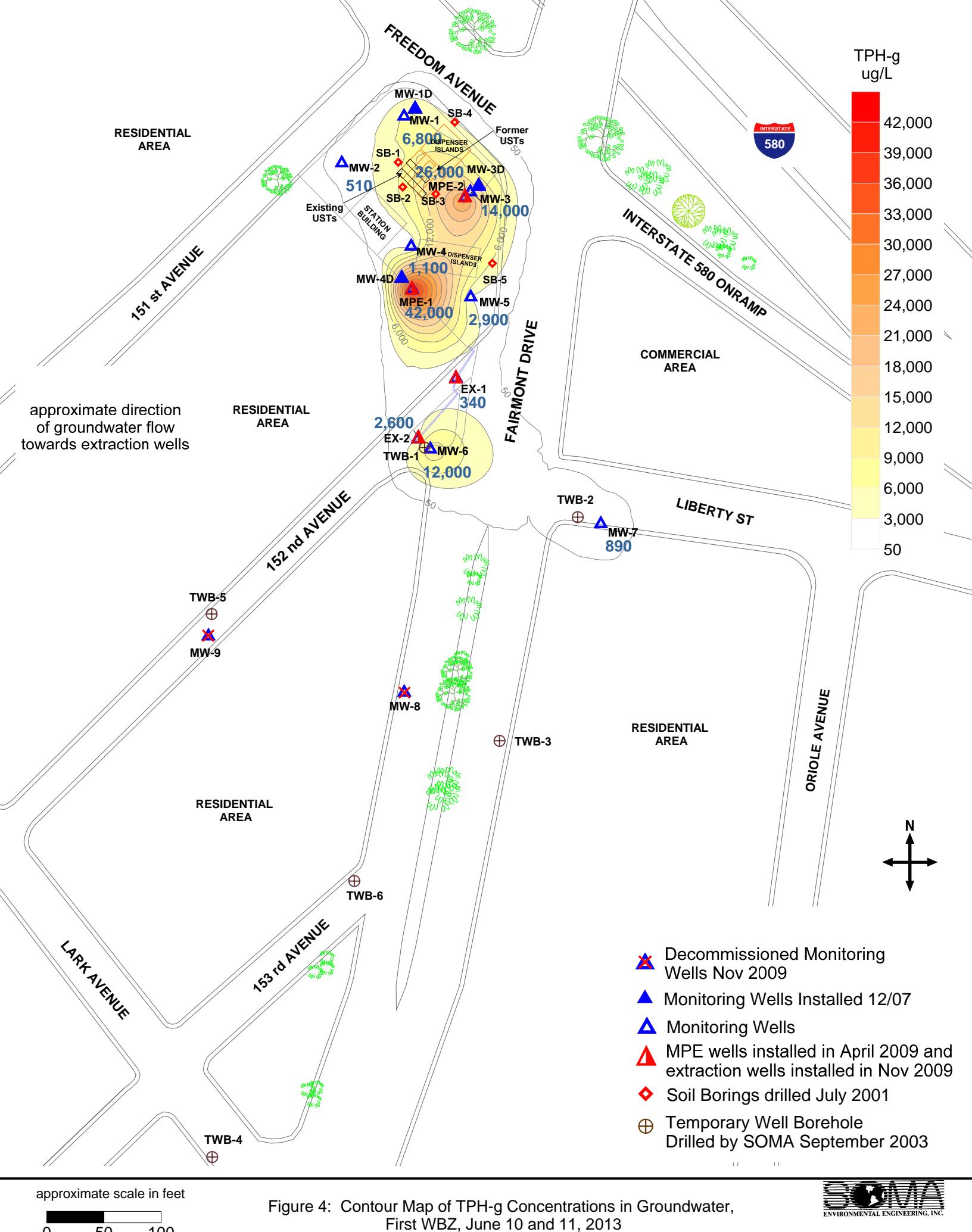
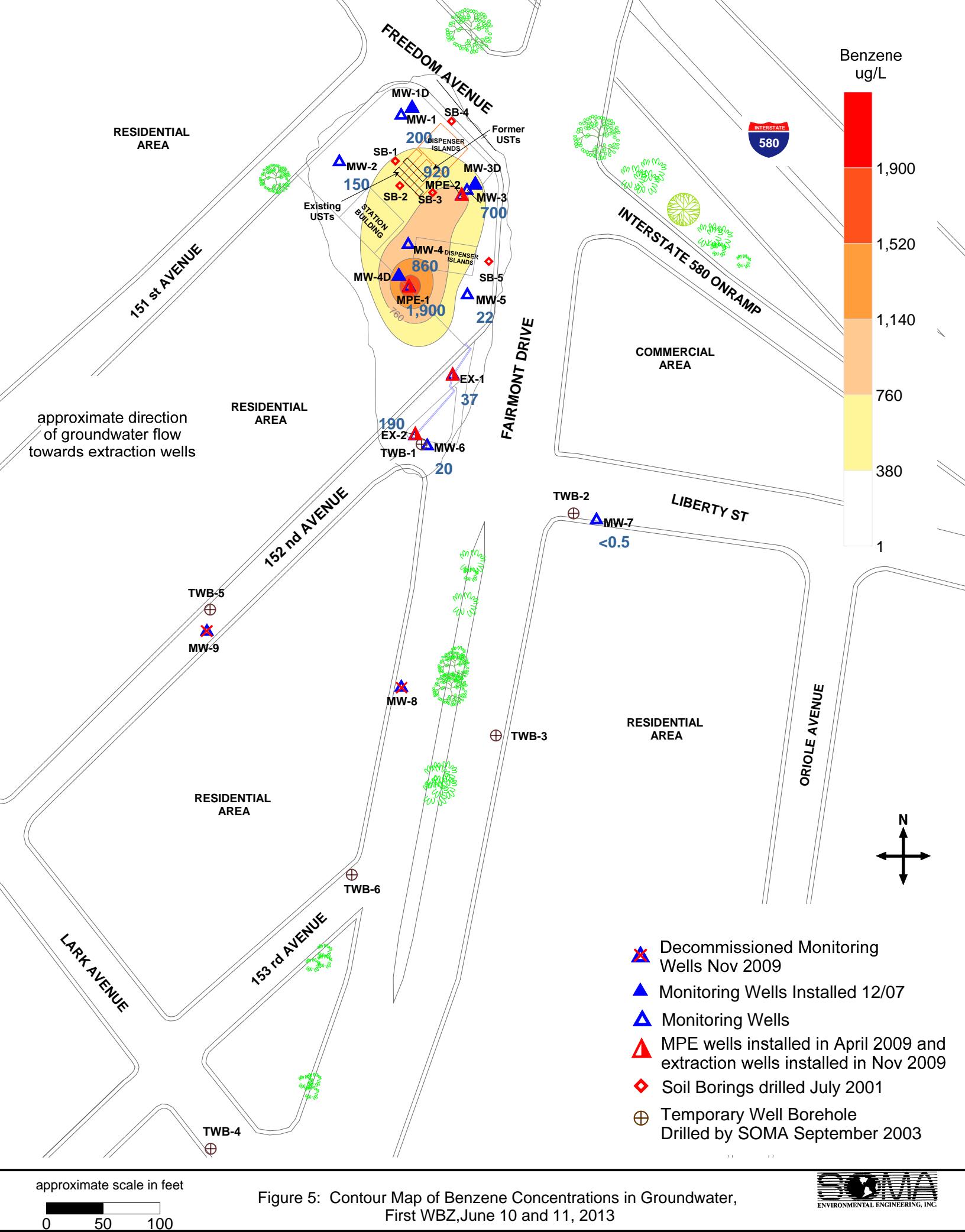
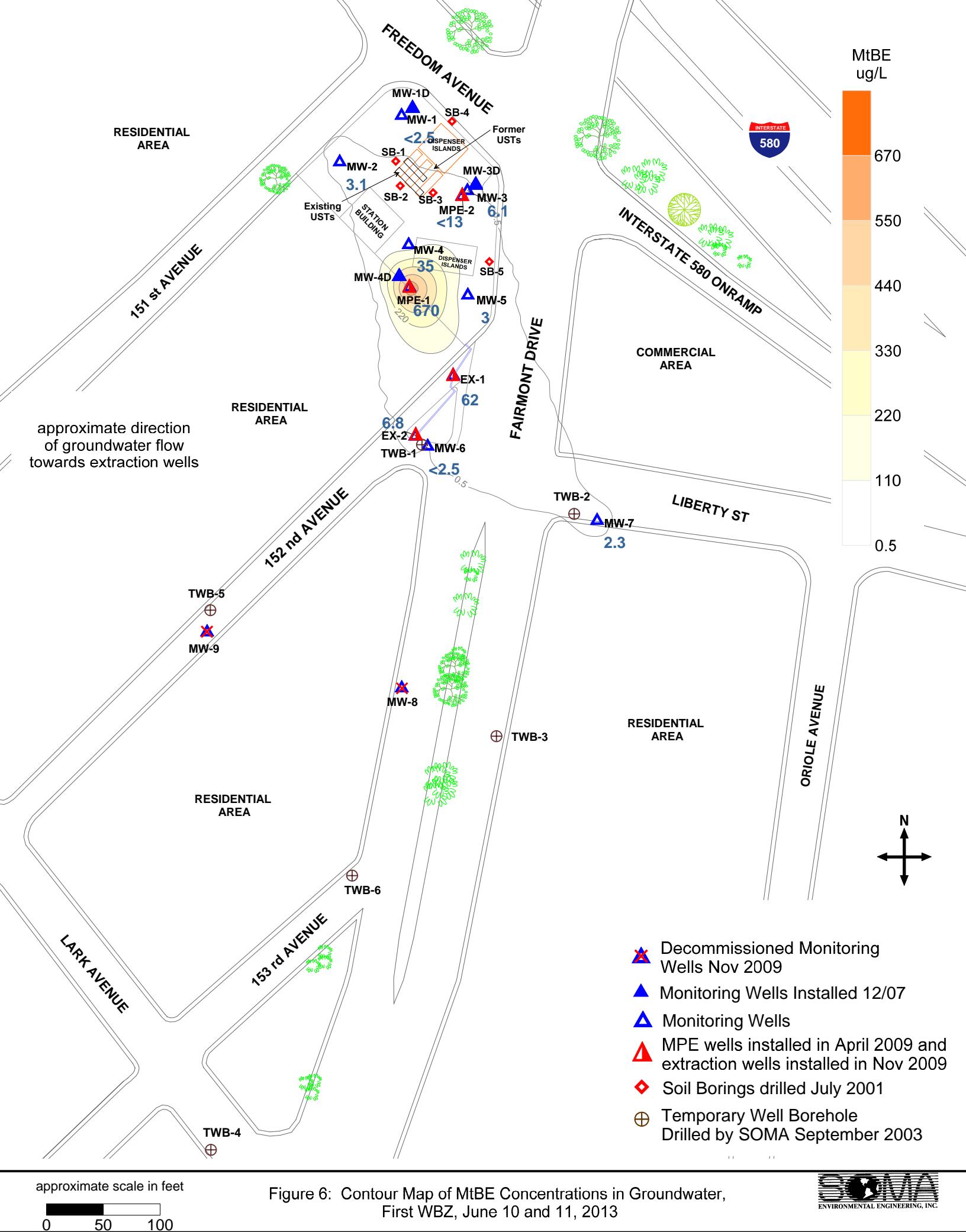


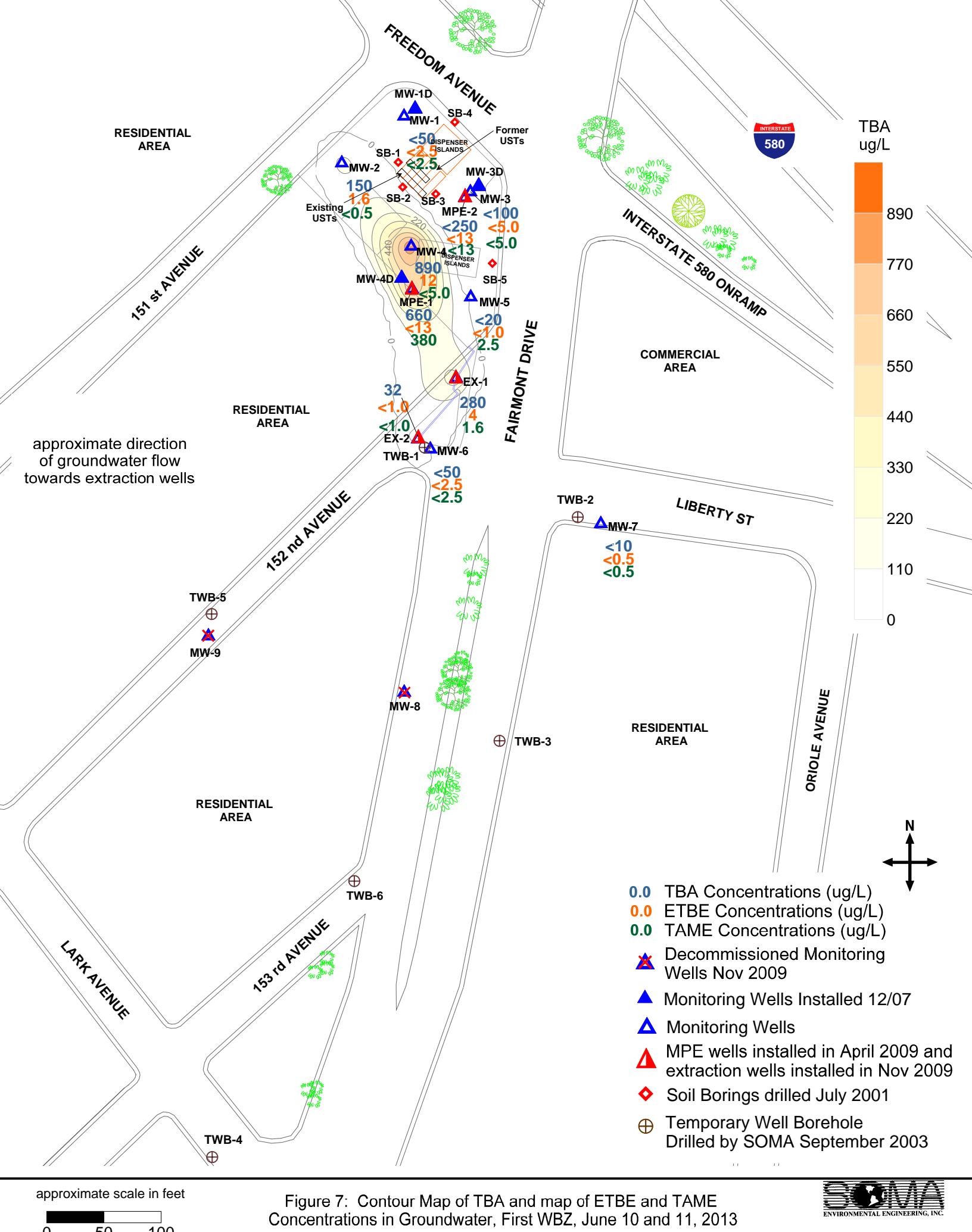
Figure 2: Site map showing locations of groundwater monitoring wells, soil borings, and extraction wells.











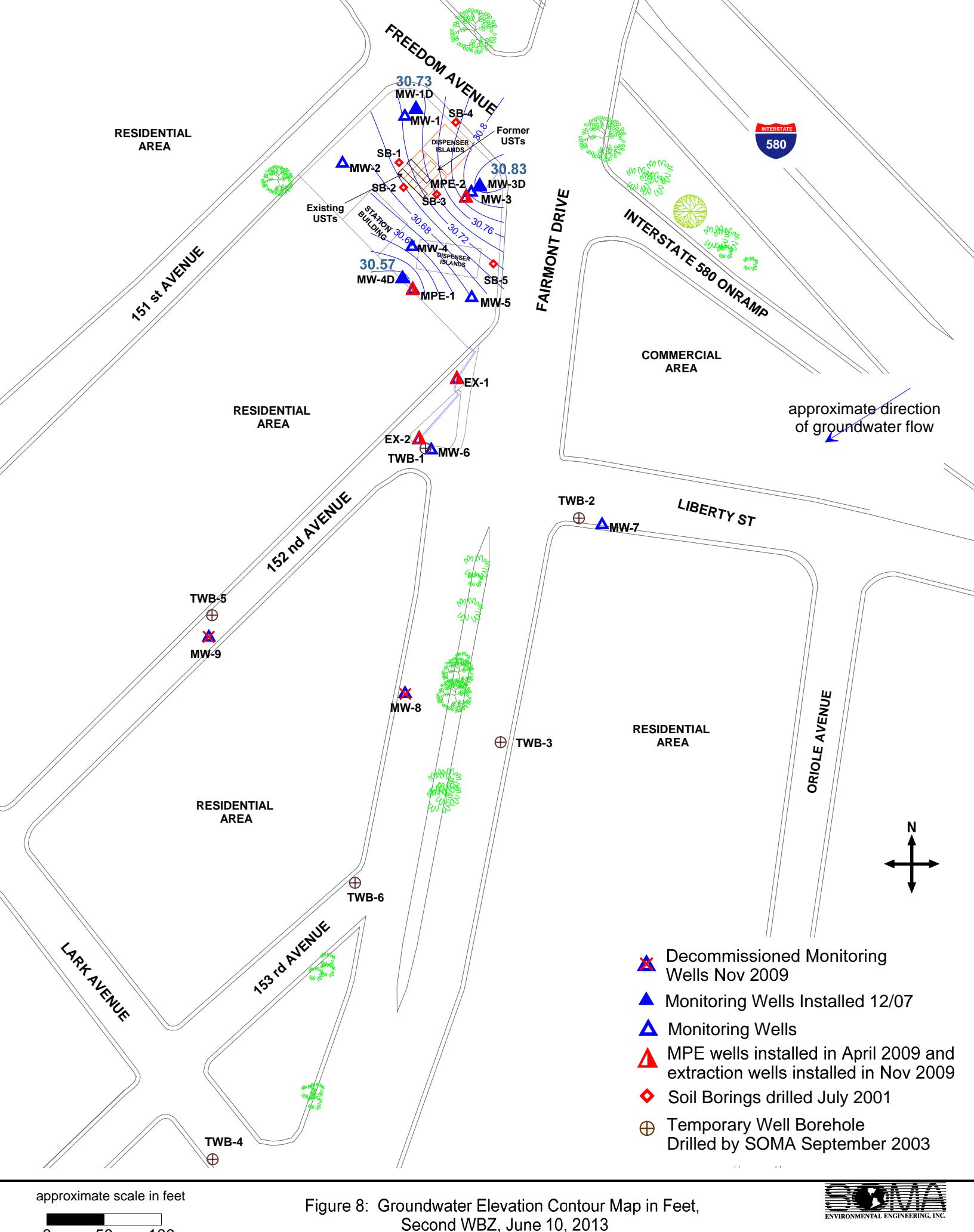


Figure 8: Groundwater Elevation Contour Map in Feet,
Second WBZ, June 10, 2013

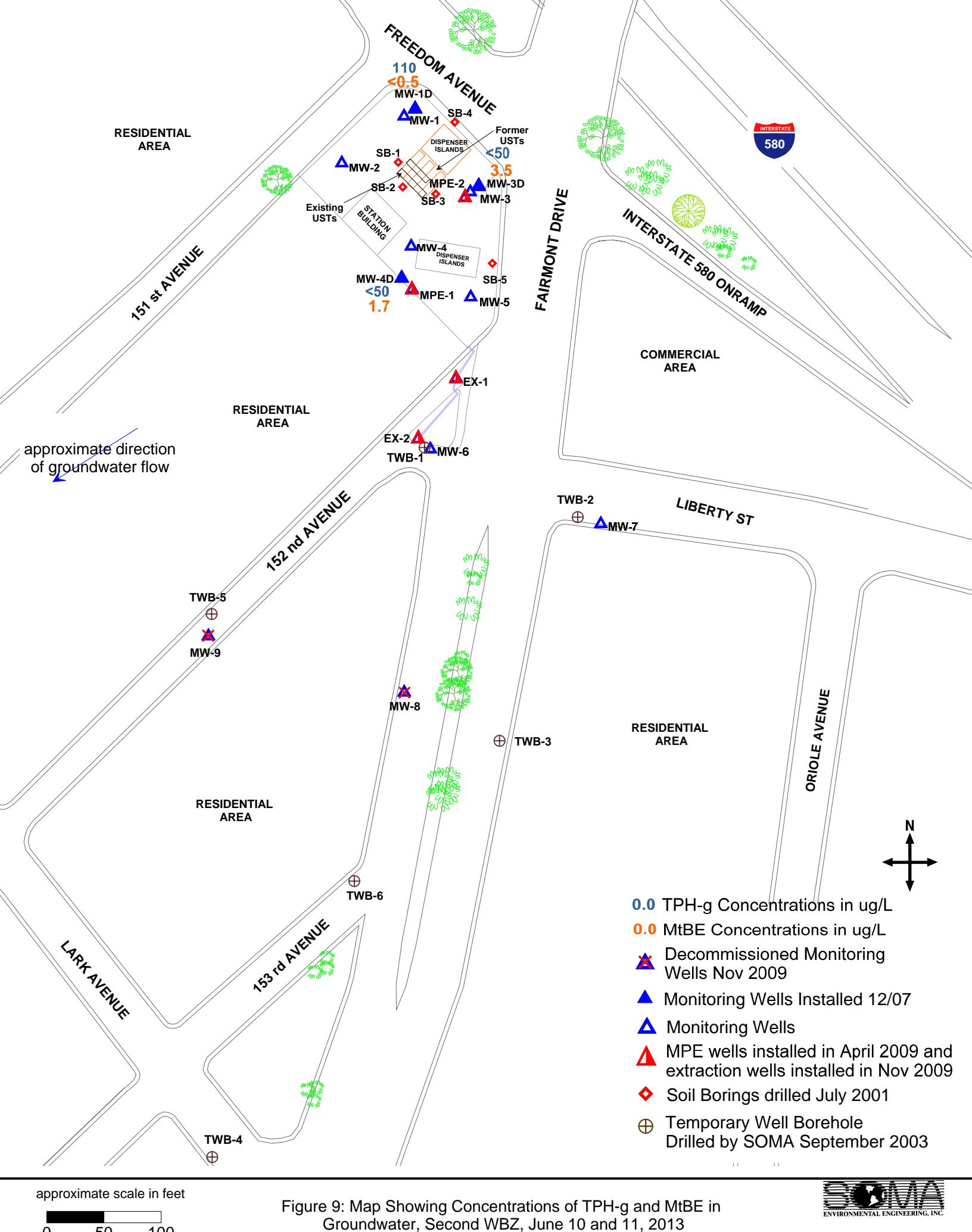


Figure 9: Map Showing Concentrations of TPH-g and MtBE in Groundwater, Second WBZ, June 10 and 11, 2013

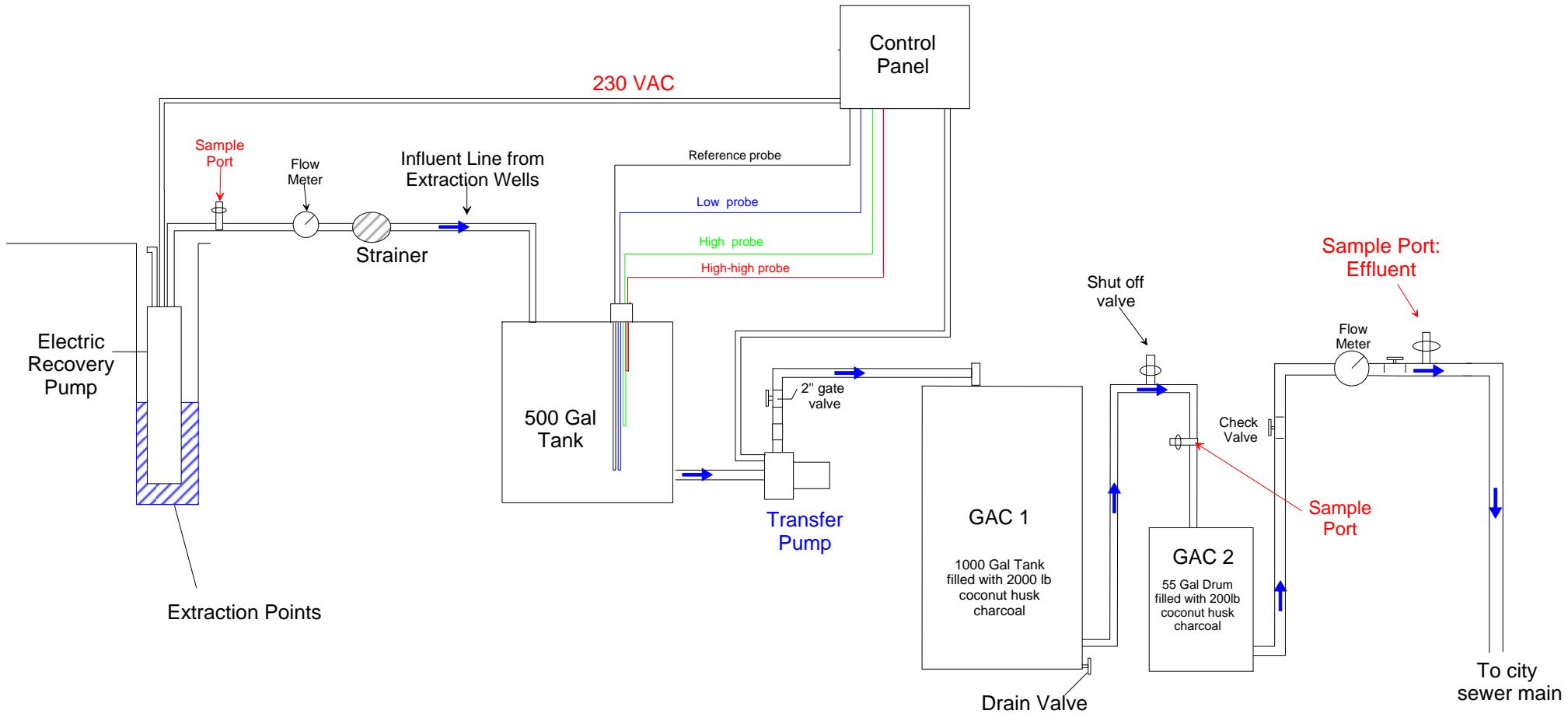


Figure 10: Schematic diagram of Groundwater Remediation System

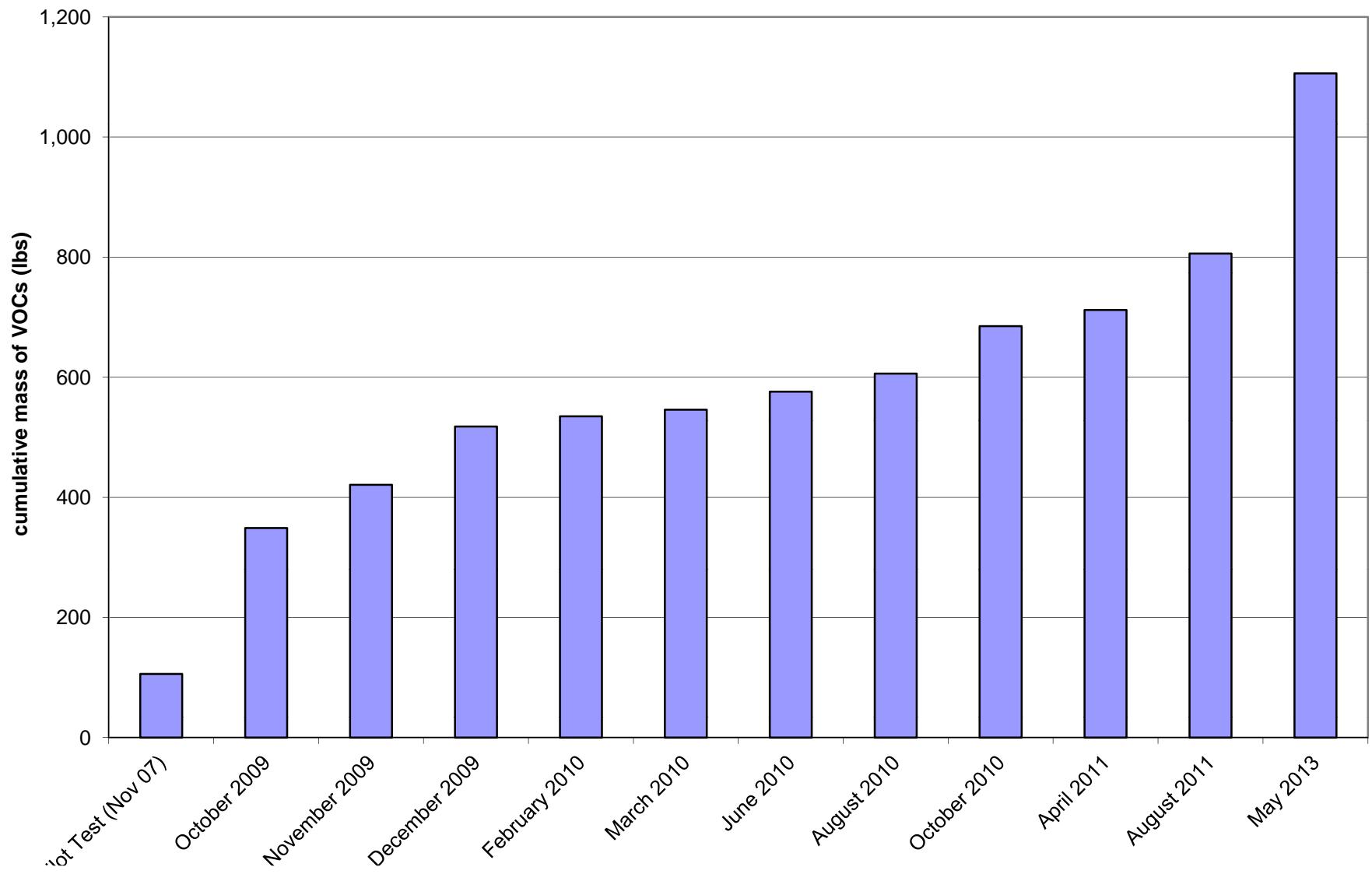


Figure 11: Cumulative mass of VOCs removed

Tables

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

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B ² (µg/L)
1st WBZ											
MW-1	5/10/2002	51.71	22.85	-	28.86	5,700	360	4.5	340	450	2
	8/8/2002	51.71	23.31	-	28.40	9,100	590	2.6	830	362	<1.3
	11/8/2002	51.71	23.58	-	28.13	7,900	570	3.1	680	392	<1.0
	2/21/2003	51.71	22.62	-	29.09	2,900	160	1.6 C	170	211	<0.5
	5/28/2003	51.71	22.43	-	29.28	1,700	55	<0.5	90	115	2.00
	8/12/2003	51.71	21.30	-	30.41	2,600	2.5	<0.5	190	130	<0.5
	10/9/2003	51.71	23.49	-	28.22	9,200	560.0	2.7 C	670	648	<1.0
	1/15/2004	51.71	22.43	-	29.28	5,500	190	<1.0	220	124.4	<0.5
	5/25/2004	51.71	22.94	-	28.77	8,000	400	1.50	420	393	3.40
	9/21/2004	54.46	23.49	-	30.97	9,300	580	9.30	690	683	4.60
	12/14/2004	54.46	23.01	-	31.45	7,360	337	<4.3	731	633	<4.3
	3/11/2005	54.46	21.48	-	32.98	2,510	45.2	<0.5	23.2	39.63	2.80
	6/15/2005	54.46	22.42	-	32.04	1,690	36.3	<2.0	59.5	28.73	2.01
	8/26/2005	54.46	23.00	-	31.46	7,310	318	<8.60	475	316	5.15
	11/11/2005	54.46	21.40	-	33.06	9,640	341	<8.6	467	329.7	6.04
	2/9/2006	54.46	21.81	-	32.65	775	14	<2.0	12.6	10.32	4.01
	5/9/2006	54.46	21.68	-	32.78	444	7.80	<2.0	12.1	6.31	1.75
	8/10/2006	54.46	22.79	-	31.67	5,090	324	<8.60	108	59.9	8.24
	10/26/2006	54.46	23.19	-	31.27	6,950	556	<4.0	190	136.09	8.61
	1/25/2007	54.46	22.82	-	31.64	2,640	196	<2.0	105	25.5	7.92
	4/26/2007	54.46	22.67	-	31.79	861	95.5	<2.0	17	6.36	4.00
	7/25/2007	54.46	23.25	-	31.21	4,520	412	<4.0	182	77.9	7.48
	10/23/2007	54.46	23.42	-	31.04	3,900	117	<2.0	87.1	23.87	4.54

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

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	MtBE 8260B ² ($\mu\text{g/L}$)
MW-1 cont	1/22/2008	54.46	22.59	-	31.87	2,260	81.3	<2.0	17.5	<2.0	4.23
	4/16/2008	54.46	22.89	-	31.57	2,320	248	<2.0	54.1	37.3	<0.5
	7/3/2008	54.46	23.33	-	31.13	5,240	414	<2.0	168	94	6.56
	10/15/2008	54.46	23.76	-	30.70	4,500 ^Y	260	<1.0	150	130	3.40
	1/7/2009	54.46	23.25	-	31.21	4,800	140	<1.3	48	32	1.70
	4/14/2009	54.46	22.52	-	31.94	1,800 ^Y	78	<0.5	35	18	2.50
	8/27/2009	54.46	23.6	-	30.86	4,500	330	<2.0	97	42	4.60
	12/2/2009	54.46	23.43	-	31.03	3,800 ^Y	250	<2.0	110	25	2.50
	3/17/2010	54.46	22.32	-	32.14	1,100	33	<0.50	46	18	1.70
	6/3/2010	54.46	22.88	-	31.58	10,000	330	4.3	680	841.5	5.20
	9/2/2010	54.46	23.28	-	31.18	8,900	440	<5.0	510	310	<5.0
	12/2/2010	54.46	23.21	-	31.25	7,400	250	<3.1	390	180	<3.1
	3/4/2011	54.46	21.95	-	32.51	2,400	67	<0.5	45	8.4	2.20
	5/20/2011	54.46	22.8	-	31.66	9,500	260	6.2	970	480	<3.6
	9/9/2011	54.46	22.81	-	31.65	6,400	220	<1.3	380	160	2.30
	12/2/2011	54.46	21.97	-	32.49	4,700 ^X	96	<1.7	310	200	<3.3
	3/2/2012	54.46	22.82	-	31.64	6,800	320	<2.5	430	120	<2.5
	6/7/2012	54.46	22.92	-	31.54	5,600	130	<2.5	360	160	2.9
	9/21/2012	54.46	23.56	-	30.90	8,000	300	<2.5	410	340	2.6
	12/14/2012	54.46	22.77	-	31.69	5,900	130	<2.5	320	97	<2.5
	3/28/2013	54.46	23.15	N	31.31	5,100	230	<2.5	280	48	3.6
	6/11/2013	54.46	23.48	N	30.98	6,800	200	<2.5	300	120	<2.5
MW-2	5/10/2002	49.66	22.83	-	26.83 *	3,100	67	8	250	215	56
	8/8/2002	49.66	21.41	-	28.25	2,700	4.6	<0.5	310	140	<0.5
	11/8/2002	49.66	21.79	-	27.87	3,400	4.6	<0.5	310	160	<0.5
	2/21/2003	49.66	20.51	-	29.15	890	1.7 C	0.80 C	68	38.92 C	<0.5
	5/28/2003	49.66	20.33	-	29.33	2,700	5.2 C	<0.5	120	140	1.2
	8/12/2003	49.66	23.18	-	26.48*	8,500	640	<2.5	560	659	<0.8
	10/9/2003	49.66	21.71	-	27.95	3100 H	4.3 C	<0.5	210	160	<0.5

Table 1
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15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	MtBE 8260B ² ($\mu\text{g/L}$)
MW-2 cont.	1/15/2004	49.66	20.31	-	29.35	660 H	1.5 C	<0.5	8.9	25	<0.5
	5/25/2004	49.66	21.09	-	28.57	4,500	5.1 C	<0.5	190	230	0.70
	9/21/2004	52.41	21.71	-	30.70	370	0.76 C	<0.5	25	16	0.50
	12/14/2004	52.41	21.20	-	31.21	880	1.0	<0.5	66	52	<0.5
	3/11/2005	52.41	19.15	-	33.26	564	<0.5	<0.5	21	11.9	<0.5
	6/15/2005	52.41	20.30	-	32.11	2,040	1.2	<2.0	78.2	22	<0.5
	8/26/2005	52.41	20.97	-	31.44	1,500	0.930	<2.00	87.6	21	0.86
	11/11/2005	52.41	25.30	-	27.11	2,140	1.08	<2.0	104	29	0.79
	2/9/2006	52.41	19.41	-	33.00	1,410	<0.5	<2.0	99.6	21.4	0.72
	5/9/2006	52.41	19.41	-	33.00	1,100	<0.5	<2.0	86.5	17	<0.5
	8/10/2006	52.41	20.8	-	31.61	3,180	2.87	<2.0	88.9	24.8	<0.50
	10/26/2006	52.41	21.22	-	31.19	1,200	<0.5	<2.0	23.5	4.79	0.6
	1/25/2007	52.41	20.89	-	31.52	623	0.64	<2.0	42.4	4.37	0.66
	4/26/2007	52.41	20.65	-	31.76	169	<0.5	<2.0	15.2	2.3	<0.5
	7/25/2007	52.41	21.43	-	30.98	276	0.78	<2.0	22.1	4.04	<0.5
	10/23/2007	52.41	21.59	-	30.82	535	<0.5	<2.0	18	5.11	<0.5
	1/22/2008	52.31	20.45	-	31.86	132	<0.5	<2.0	12.2	<2.0	<0.5
	4/15/2008	52.41	20.89	-	31.52	852	<0.5	<2.0	27.2	4.78	<0.5
	7/2/2008	52.41	21.5	-	30.91	98.3	<0.5	<2.0	2.76	<2.0	<0.5
	10/15/2008	52.41	22.06	-	30.35	1,400 ^Y	<0.5	<0.5	60	17	<0.5
	1/7/2009	52.41	21.35	-	31.06	93	<0.5	<0.5	2.1	0.74	<0.5
	4/13/2009	52.41	20.52	-	31.89	480 ^Y	<0.5	<0.5	20	5.5	<0.5
	8/27/2009	52.41	21.85	-	30.56	130	<0.5	<0.5	2.5	0.61	<0.5
	12/1/2009	52.41	21.59	-	30.82	760 ^Y	<0.5	<0.5	14	1.5	<0.5
	3/17/2010	52.41	20.11	-	32.30	480	<0.5	<0.5	30	6.9	<0.5
	6/3/2010	52.41	21	-	31.41	690	<0.5	<0.5	14	2.6	<0.5
	9/2/2010	52.41	21.42	-	30.99	470	<0.5	<0.5	7.6	1	<0.5
	12/2/2010	52.41	21.44	-	30.97	470	<0.5	<0.5	7.6	3.3	<0.5

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15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	MtBE 8260B ² ($\mu\text{g/L}$)
MW-2 cont.	3/4/2011	52.41	19.65	-	32.76	240	<0.5	<0.5	6.6	0.8	<0.5
	5/20/2011	52.41	20.75	-	31.66	310	<0.5	<0.5	4.8	<0.5	<0.5
	9/9/2011	52.41	21.05	-	31.36	1,000	<0.5	<0.5	12	0.76	<0.5
	12/2/2011	52.41	20.14	-	32.27	900 *	<2.9	<1.7	14	1.9	<3.3
	3/2/2012	52.41	19.98	-	32.43	880	<0.5	<0.5	5.3	0.58	<0.5
	6/7/2012	52.41	21.04	-	31.37	720	<0.5	<0.5	7.9	0.79	<0.5
	9/21/2012	52.41	21.78	-	30.63	1,400	<0.5	<0.5	11	<0.5	<0.5
	12/14/2012	52.41	20.71	-	31.70	760	<0.5	<0.5	10	1.5	<0.5
	3/28/2013	52.41	21.24	N	31.17	890	<0.5	<0.5	4.3	<0.5	<0.5
	6/11/2013	52.41	21.67	N	30.74	510	150	<0.5	15	12.3	3.1
MW-3	5/10/2002	51.16	22.28	-	28.88	44,000	6,000	900	1,500	6,200	2,400
	8/8/2002	51.16	22.88	-	28.28	40,000	5,800	1,100	1,600	6,500	1,300
	11/8/2002	51.16	23.19	-	27.97	47,000	5,300	1,200	2,200	8,600	1,000
	2/21/2003	51.16	22.02	-	29.14	39,000	5,500	1,500	2,000	8,600	1,300
	5/28/2003	51.16	21.89	-	29.27	52,000	7,300	3,000	2,800	12,700	2,100
	8/12/2003	51.16	22.66	-	28.50	31,000	6,100	860	1,500	6,900	1,200
	10/9/2003	51.16	23.06	-	28.10	41,000	6,100	1,100	2,200	10,200	960
	1/15/2004	51.16	21.85	-	29.31	51,000	4,100	1,100	2,000	8,400	590
	5/25/2004	51.16	22.55	-	28.61	65,000	4,300	1,300	2,500	10,500	720
	9/21/2004	53.91	23.08	-	30.83	42,000	4,900	890	2,200	8,700	480
	12/14/2004	53.91	22.52	-	31.39	35,151	4,066	972	2,942	13,032	491
	3/11/2005	53.91	20.90	-	33.01	42,600	3,040	1,100	1,530	6,670	968
	6/15/2005	53.91	21.85	-	32.06	84,100	5,110	2,160	3,030	8,800	2,670
	8/26/2005	53.91	22.49	-	31.42	43,500	3,630	1,080	2,500	6,830	1,440
	11/11/2005	53.91	22.81	-	31.10	47,700	4,240	520	2,170	6,320	1,390
	2/9/2006	53.91	21.12	-	32.79	44,500	5,070	1360	1,920	4,840	3,280
	5/9/2006	53.91	21.09	-	32.82	48,100	2,510	1,140	1,950	5,030	2,210
	8/10/2006	53.91	22.26	-	31.65	42,100	3,450	869	1,760	5,650	3,570
	10/26/2006	53.91	22.73	-	31.18	33,400	4,800	331	1,170	3,510	4,790

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MW-3 cont.	1/25/2007	53.91	22.34	-	31.57	19,300	4,820	167	1,540	3,740	3,430
	4/26/2007	53.91	22.24	-	31.67	30,700	2,350	158	1,470	4,320	1,330
	7/25/2007	53.91	22.83	-	31.08	34,900	5,400	364	2,080	6,360	1,980
	10/23/2007	53.91	23.01	-	30.9	22,600	4,070	<86	1,120	3,095	970
	1/2/2008	53.96	22.04	-	31.92	22,100	1,280	453	1,330	3,520	490
	4/16/2008	53.91	22.4	-	31.51	20,700	2,790	182	860	3,389	263
	7/3/2008	53.91	22.9	-	31.01	48,500	3,760	346	3,130	12,980	573
	10/16/2008	53.91	23.36	-	30.55	50,000	3,900	300	3,100	11,000	460
	1/8/2009	53.91	22.82	-	31.09	54,000	2,600	180	2,500	8,800	220
	4/13/2009	53.91	22.06	-	31.85	49,000	2,900	170	2,100	8,100	490
	8/27/2009	53.91	23.11	-	30.80	43,000	2,500	160	1,900	7,000	210
	12/2/2009	53.91	23.00	-	30.91	30,000	2,100	180	1,600	5,600	91
	3/17/2010	53.91	21.90	-	32.01	24,000	970	81	1,100	3,700	38
	6/3/2010	53.91	22.49	-	31.42	31,000	1,200	110	1,300	4,400	34
	9/2/2010	53.91	22.76	-	31.15	26,000	1,100	81	1,200	3,810	26
	12/2/2010	53.91	22.86	-	31.05	18,000	830	47	780	2,360	14
	3/4/2011	53.91	21.44	-	32.47	18,000	410	32	850	2,480	16
	5/20/2011	53.91	22.36	-	31.55	12,000	710	24	620	1,460	11
	9/9/2011	53.91	22.44	-	31.47	11,000	1,100	26	580	1,430	7.8
	12/2/2011	53.91	21.60	-	32.31	5,100 ^x	280	12	370	740	<1.7
	3/2/2012	53.91	22.39	-	31.52	13,000	440	23	690	1,570	<5.0
	6/7/2012	53.91	22.50	-	31.41	9,000	290	9.3	520	900	<5.0
	9/21/2012	53.91	23.17	-	30.74	12,000	710	26	630	1,230	8.2
	12/14/2012	53.91	22.32	-	31.59	8,500	350	8.7	550	1,003	<5
	3/28/2013	53.91	22.69	Y	31.22	9,300	790	8.2	760	974	8.7
	6/11/2013	53.91	23.06	Y	30.85	14,000	700	26	860	1,630	6.1
MW-4	5/10/2002	50.54	21.78	-	28.76	880	25	1.0C	110	52	12,000
	8/8/2002	50.54	22.50	-	28.04	3,800	70	<5.0	300	115	4,800
	11/8/2002	50.54	22.81	-	27.73	5,100	150	10	460	258	2,400

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MW-4 cont.	2/21/2003	50.54	21.48	-	29.06	3,200	98	66	220	360	6,600
	5/28/2003	50.54	21.24	-	29.30	6,200	140	46	200	790	2,300
	8/12/2003	50.54	22.32	-	28.22	7,500	180	57	220	1450	1,900
	10/9/2003	50.54	22.74	-	27.80	5,800	250	32	300	970	7,800
	1/15/2004	50.54	21.19	-	29.35	5,900	270	17 C	150	640	7,300
	5/25/2004	50.54	22.03	-	28.51	9,100	210	51	200	1190	1800
	9/21/2004	53.31	22.76	-	30.55	5,200	290	12	370	600	7300
	12/14/2004	53.31	21.99	-	31.32	8,937	538	114	416	2379	5021
	3/11/2005	53.31	20.01	-	33.30	12,300	225	39.6	80.1	1465	3870
	6/15/2005	53.31	21.25	-	32.06	7,690	114	32.6	77.1	555	1150
	8/26/2005	53.31	22.03	-	31.28	8,850	175	24.6	150	851	1380
	11/11/2005	53.31	22.43	-	30.88	9,990	356	<43	196	700	3,640
	2/9/2006	53.31	20.31	-	33.00	6,850	205	<43	67.2	255.2	5,120
	5/9/2006	53.31	20.33	-	32.98	1,290	18.1	<8.6	12.9	25.87	799
	8/10/2006	53.31	21.74	-	31.57	7,830	118	<8.60	25.3	174.6	919
	10/26/2006	53.31	22.29	-	31.02	1,540	81.9	<43	96	46.4	3,610
	1/25/2007	53.31	21.86	-	31.45	4,370	163	<8.6	85.1	269.1	1,050
	4/26/2007	53.31	21.63	-	31.68	4,380	140	<8.6	67	276.8	576
	7/25/2007	53.31	22.49	-	30.82	4,970	220	<8.60	198	241.5	1,040
	10/23/2007	53.31	22.69	-	30.62	4,200	267	<8.6	147	155.5	1,220
	1/22/2008	53.36	21.39	-	31.97	2,180	133	<22.0	43.1	32.2	1,800
	4/15/2008	53.31	21.9	-	31.41	4,240	90.4	<22.0	107	380	674
	7/2/2008	53.31	22.55	-	30.76	2,300	193	<22.0	212	183	4,050
	10/16/2008	53.31	23.13	-	30.18	8,900	320	3.7	430	1,160	450
	1/8/2009	53.31	22.42	-	30.89	19,000	430	44	590	3,380	440
	4/13/2009	53.31	21.51	-	31.80	21,000	400	38	450	2,880	330
	8/27/2009	53.31	22.94	-	30.37	16,000	960	64	560	2,120	290
	12/2/2009	53.31	22.36	-	30.95	4,400	480	6	170	640	110

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MW-4 cont.	3/17/2010	53.31	21.39	-	31.92	14,000	260	6	230	1,220	93
	6/3/2010	53.31	22.23	-	31.08	18,000	240	4	310	770	41
	9/2/2010	53.31	22.51	-	30.80	1,800	800	<3.6	150	25	33
	12/2/2010	53.31	22.71	-	30.60	3,800	1,500	<10	200	115	29
	3/3/2011	53.31	20.64	-	32.67	2,400	28	<0.71	28	17	3
	5/19/2011	53.31	21.84	-	31.47	1,800	27	<0.5	29	11.2	4.8
	9/8/2011	53.31	22.11	-	31.20	3,600	300	2.6	270	68.5	59
	12/1/2011	53.31	21.38	-	31.93	1,400 ^x	370	<0.84	110	30.6	110
	3/2/2012	53.31	22.02	-	31.29	3,100	780	<2.0	150	59.6	50
	6/7/2012	53.31	22.24	-	31.07	2,000	290	<2.5	66	23	29
	9/21/2012	53.31	22.87	-	30.44	2,900	820	<2.5	75	17	72
	12/14/2012	53.31	21.84	-	31.47	840	48	<0.5	14	4.5	2.5
	3/28/2013	53.31	22.24	N	31.07	790	650	<5.0	26	<5.0	15
	6/11/2013	53.31	22.71	N	30.60	1,100	860	<5.0	64	<5.0	35
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MW-5	5/10/2002	47.79	19.02	-	28.77	25,000	1,000	1200	1,100	3,060	1,800
	8/8/2002	47.79	19.80	-	27.99	18,000	1,000	660	950	1,720	1,500
	11/8/2002	47.79	20.14	-	27.65	16,000	1,300	380	930	1,550	1,200
	2/21/2003	47.79	18.70	-	29.09	12,000	390	71	770	1,100	860
	5/28/2003	47.79	18.52	-	29.27	9,100	210	31	560	790	600
	8/12/2003	47.79	19.54	-	28.25	12,000	660	75	660	1,110	1,000
	10/9/2003	47.79	20.06	-	27.73	15,000	1,000	130	1,000	1,430	1,700
	1/15/2004	47.79	18.42	-	29.37	9,900	450 C	16	500	431	1,100
	5/25/2004	47.79	19.30	-	28.49	9,200	380	24	490	536	720
	9/21/2004	50.53	20.15	-	30.38	10,000	980	71	560	770	1200
	12/14/2004	50.53	19.30	-	31.23	10,502	587	64	1040	1133	1015
	3/11/2005	50.53	17.20	-	33.33	8,390	407	<5.5	83	42.5	1530
	6/15/2005	50.53	18.54	-	31.99	9,350	147	18.3	435	146.2	573
	8/26/2005	50.53	19.31	-	31.22	9,500	261	<22	726	321.3	749
	11/11/2005	50.53	19.75	-	30.78	10,000	443	41.5	527	278.5	1,430

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MW-5 cont.	2/9/2006	50.53	17.58	-	32.95	7,640	237	<22	187	50.2	2,050
	5/9/2006	50.53	17.54	-	32.99	8,360	111	<8.6	300	75.84	566
	8/10/2006	50.53	19.02	-	31.51	16,100	250	<22	455	187.4	1,590
	10/26/2006	50.53	19.61	-	30.92	10,100	430	<22	375	192.6	3,060
	1/25/2007	50.53	19.19	-	31.34	3,960	340	<22	323	150.1	1,740
	4/26/2007	50.53	18.89	-	31.64	4,590	187	<8.6	307	116.5	861
	7/25/2007	50.53	19.81	-	30.72	6,490	419	21.8	413	223.2	913
	10/23/2007	50.53	19.98	-	30.55	6,120	550	11	284	141.4	433
	1/22/2008	50.18	18.69	-	31.49	9,810	572	22	574	184.1	126
	4/15/2008	50.18	19.16	-	31.02	8,890	335	15.1	477	397.5	136
	7/3/2008	50.53	19.88	-	30.65	13,100	949	34.4	875	825.5	176
	10/16/2008	50.53	20.45	-	30.08	11,000	870	25	820	668	160
	1/8/2009	50.53	19.72	-	30.81	12,000	490	21	690	456	76
	4/13/2009	50.53	18.81	-	31.72	9,000 ^Y	200	11	390	198	44
	8/27/2009	50.53	21.30	-	29.23	7,400	610	15	320	185	66
	12/2/2009	50.53	20.00	-	30.53	8,400 ^Y	400	12	540	296	45
	3/17/2010	50.53	18.73	-	31.80	4,800	120	8.7	120	107	14
	6/4/2010	50.53	19.60	-	30.93	7,200	160	5.7	190	149.2	24
	9/2/2010	50.53	19.82	-	30.71	9,200	110	12	270	318	35
	12/2/2010	50.53	20.10	-	30.43	9,100	170	6.7	350	442	23
Pre-MPE	3/4/2011	50.53	18.00	-	32.53	2,600	18	0.62	54	18.1	3
	5/20/2011	50.53	19.18	-	31.35	4,000	91	8.5	110	106	33
	8/4/2011	50.53	NM	-	NC	3,000	23	0.95	92	43.7	5.4
	9/9/2011	50.53	19.41	-	31.12	4,200	120	2.8	140	61.1	22
	12/2/2011	50.53	18.59	-	31.94	6,900 ^X	96	12	220	104	32
	3/2/2012	50.53	19.30	-	31.23	5,400	43	1.8	110	85	7
	6/7/2012	50.53	19.45	-	31.08	3,700	32	<1.0	100	59	4.4
	9/21/2012	50.53	20.17	-	30.36	3,900	68	1.5	140	88.5	9.8
	12/14/2012	50.53	19.12	-	31.41	3,100	48	6.7	100	62.3	5.2
	3/28/2013	50.53	19.47	N	31.06	1,900	30	<1.0	59	48.4	4.5
	6/11/2013	50.53	20.03	N	30.50	2,900	22	3.9	110	131	3.0

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

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B ² (µg/L)
<hr/>											
MW-6	9/21/2004	45.82	17.64	-	28.18	34,000	150	130	2200	8100	0.6
	12/14/2004	45.82	15.75	-	30.07	5,161	137	7	436	1136	<5.5
	3/11/2005	45.82	13.80	-	32.02	6,040	125	3.22	260	722.1	4.94
	6/15/2005	45.82	14.78	-	31.04	5,590	44.3	6.60	272	382	5.85
	8/26/2005	45.82	15.91	-	29.91	6,130	99	<8.6	378	492.9	5.66
	11/11/2005	45.82	16.55	-	29.27	11,400	101	<8.6	645	834.7	4.33
	2/9/2006	45.82	13.92	-	31.90	2,790	32.3	<8.6	131	131.22	7.30
	5/9/2006	45.82	13.95	-	31.87	3,730	25	<2.0	213	207.82	5.87
	8/10/2006	45.82	15.28	-	30.54	4,800	41.9	<2.0	201	189	10.4
	10/26/2006	45.82	16.11	-	29.71	6,080	37.4	<2.0	116	183	9.78
	1/25/2007	45.82	15.76	-	30.06	3,220	25.2	<2.0	219	174	14.7
	4/26/2007	45.82	15.18	-	30.64	3,110	28	<2.0	165	138.47	14.6
	7/25/2007	45.82	16.82	-	29.00	4,960	54.1	<2.0	199	255.87	8.05
	10/23/2007	45.82	16.91	-	28.91	9,610	64.3	<2.0	188	302.6	5.81
	1/21/2008	45.82	15.36	-	30.46	3,290	33	<2.0	149	131.31	3.86
	4/15/2008	45.82	15.73	-	30.09	2,070	10.8	<2.0	51.1	67	<0.5
	7/2/2008	45.82	16.9	-	28.92	7,900	42.4	<2.0	194	296	3.58
	10/15/2008	45.82	17.21	-	28.61	18,000 ^Y	42	1.4	320	673	1.7
	1/7/2009	45.82	17.08	-	28.74	13,000	47	<3.1	210	425	<3.1
	4/13/2009	45.82	15.52	-	30.30	7,200 ^Y	26	<1.3	170	312.6	2.6
	8/26/2009	45.82	17.82	-	28.00	10,000 ^Y	25	<2.0	130	294	2.2
	12/1/2009	45.82	17.34	-	28.48	11,000 ^Y	31	6.1	220	539	<2.0
	3/16/2010	45.82	14.81	-	31.01	31,000	63	140	970	4,200	64
	6/3/2010	45.82	15.72	-	30.10	27,000	22	67	840	3,100	32
	9/1/2010	45.82	16.86	-	28.96	33,000	24	34	1,100	3,780	12
	12/2/2010	45.82	16.98	-	28.84	70,000	32	55	1,700	5,670	18

Table 1
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15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B ² (µg/L)
MW-6 cont.	3/3/2011	45.82	14.35	-	31.47	7,000	18	<2.5	97	237	11
	5/20/2011	45.82	14.95	-	30.87	14,000	14	<2.5	300	823	7.2
	9/8/2011	45.82	16.14	-	29.68	23,000	28	<2.5	360	812	3.4
	12/1/2011	45.82	16.17	-	29.65	NA	NA	NA	NA	NA	NA
	3/2/2012	45.82	16.11	-	29.71	14,000	23	<4.2	400	694.4	<4.2
	6/6/2012	45.82	16.31	-	29.51	9,200	12	<1.7	210	320	<1.7
	9/20/2012*	45.82	17.36	17.32	28.49	NA	NA	NA	NA	NA	NA
	12/13/2012	45.82	15.46	-	30.36	13,000	22	<0.71	83	62.8	5.1
	3/27/2013	45.82	16.3	Y	29.52	7,400	27	<1.3	190	221.8	<1.3
	6/10/2013	45.82	17.37	Y	28.45	12,000	20	<2.5	280	230	<2.5
MW-7	9/21/2004	44.74	15.21	-	29.53	2,900	<0.5	<0.5	52	61	8.1
	12/14/2004	44.74	13.90	-	30.84	<50	1.6	<0.5	29	58	6.0
	3/11/2005	44.74	11.46	-	33.28	2,230	<2.5	<2.5	39.4	51.4	12.4
	6/15/2005	44.74	12.97	-	31.77	2,940	0.85	<2.0	50.6	31.9	13.7
	8/26/2005	44.74	14.10	-	30.64	2,310	<0.50	<2.0	55.7	29.6	4.01
	11/11/2005	44.74	14.59	-	30.15	3,030	<0.5	<2.0	66.5	42.3	9.76
	2/9/2006	44.74	NM	-	NM	NA	NA	NA	NA	NA	NA
	5/9/2006	44.74	12.02	-	32.72	1,400	<0.5	<2.0	19.8	12.4	2.30
	8/10/2006	44.74	13.72	-	31.02	604	<0.50	<2.0	6.2	4.63	1.42
	10/26/2006	44.74	14.38	-	30.36	1350	<0.50	<2.0	16.6	10.8	1.87
	1/25/2007	44.74	13.93	-	30.81	340	<0.5	<2.0	6.84	2.44	1.63
	4/26/2007	44.74	14.44	-	30.30	552	<0.5	<2.0	11.4	6.11	4.12
	7/25/2007	44.74	14.79	-	29.95	1,230	<0.5	<2.0	27	19.24	3.2
	10/23/2007	44.74	14.88	-	29.86	1,730	0.67	<2.0	20.7	17.31	8.44
	1/21/2008	44.74	13.34	-	31.40	610	1.15	<2.0	8.4	4.34	17.2
	4/15/2008	44.74	13.91	-	30.83	1,460	<0.5	<2.0	15.9	19.7	17.3
	7/2/2008	44.74	14.87	-	29.87	1,450	<0.5	<2.0	11	6.8	22.1
	10/15/2008	44.74	15.68	-	29.06	1,900 Y	0.56	1.2	27	39.5	55
	1/7/2009	44.74	14.72	-	30.02	2,700	1.2	2.9	11	25	39
	4/13/2009	44.74	13.54	-	31.20	2,300 Y	<0.5	<0.5	15	6.3	63
	8/26/2009	44.74	15.84	-	28.90	2,700 Y	<0.5	<0.5	48	53	140
	12/1/2009	44.74	15.03	-	29.71	1,800 Y	<0.5	<0.5	22	15	120

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

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	MtBE 8260B ² ($\mu\text{g/L}$)
MW-7 cont.	3/16/2010	44.74	12.56	-	32.18	1,100	<0.5	<0.5	3.2	1.4	65
	6/3/2010	44.74	13.80	-	30.94	740	<0.5	<0.5	1.8	0.62	28
	9/1/2010	44.74	14.84	-	29.90	1,200	<0.5	<0.5	10	3.2	29
	12/2/2010	44.74	14.74	-	30.00	1,400	<0.5	<0.5	8	0.74	21
	3/3/2011	44.74	13.31	-	31.43	1,000	<0.5	<0.5	1.8	<0.5	16
	5/19/2011	44.74	13.43	-	31.31	810	<0.5	<0.5	2.2	0.79	7.8
	9/8/2011	44.74	14.38	-	30.36	1,000	<0.5	<0.5	8.3	2.9	5.4
	12/1/2011	44.74	13.57	-	31.17	1,500 ^x	<0.33	<0.19	12	5.7	13
	3/2/2012	44.74	14.16	-	30.58	1,000	<0.5	<0.5	4	1.1	5.1
	6/6/2012	44.74	14.00	-	30.74	780	<0.5	<0.5	2.9	1.0	2.6
	9/20/2012	44.74	15.26	-	29.48	1,200	<0.5	<0.5	4.3	0.92	2.7
	12/13/2012	44.74	13.34	-	31.40	1,100	<0.5	<0.5	0.99	<0.5	3.4
	3/27/2013	44.74	14.30	N	30.44	680	<0.5	<0.5	1.8	<0.5	4.2
	6/10/2013	44.74	15.06	N	29.68	890	<0.5	<0.5	2.6	<0.5	2.3
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MW-8	9/21/2004	41.14	12.98	-	28.16	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/14/2004	41.14	11.22	-	29.92	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	3/11/2005	41.14	NM	-	NM	NA	NA	NA	NA	NA	NA
	6/15/2005	41.14	10.46	-	30.68	<200	0.53	<2.0	<0.5	<1.0	<0.5
	8/26/2005	41.14	11.53	-	29.61	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	11/11/2005	41.14	11.92	-	29.22	<50	<0.5	<2.0	1.36	1.8	<0.5
	2/9/2006	41.14	9.74	-	31.40	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	5/9/2006	41.14	9.90	-	31.24	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	8/10/2006	41.14	10.9	-	30.24	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	10/26/2006	41.14	11.68	-	29.46	<50	<0.50	<2.0	3.37	<1.0	<0.50
	1/25/2007	41.14	11.44	-	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/26/2007	41.14	10.81	-	30.33	<50	<0.5	<2.0	4.29	<2.0	<0.5
	7/25/2007	41.14	12.31	-	28.83	<50	<0.5	<2.0	4.39	<2.0	<0.5
	10/23/2007	41.14	12.37	-	28.77	<50	<0.5	<2.0	4.31	<2.0	<0.5
	1/21/2008	41.14	11.02	-	30.12	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/15/2008	41.14	11.44	-	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/2/2008	41.14	12.39	-	28.75	94.8	<0.5	<2.0	1	<2.0	<0.5
	10/15/2008	41.14	13.42	-	27.72	<50	<0.5	<0.5	<0.5	<0.5	<0.5

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15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	MtBE 8260B ² ($\mu\text{g/L}$)
MW-8 cont.	1/7/2009	41.14	12.50	-	28.64	<50	<0.5	<0.5	<0.5	0.6	<0.5
	4/13/2009	41.14	11.23	-	29.91	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	8/27/2009	41.14	13.24	-	27.90	<50	<0.5	<0.5	<0.5	<0.5	<0.5
Well Decommissioned 11/13/2009											
MW-9	9/21/2004	40.26	12.18	-	28.08	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/14/2004	40.26	10.91	-	29.35	<50	<0.5	<0.5	<0.5	<1.0	<0.5
	3/11/2005	40.26	10.52	-	29.74	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	6/15/2005	40.26	14.73	-	25.53	<200	<0.5	<2.0	<0.5	<1.0	<0.5
	8/26/2005	40.26	10.59	-	29.67	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	11/11/2005	40.26	11.25	-	29.01	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	2/9/2006	40.26	10.05	-	30.21	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	5/9/2006	40.26	9.06	-	31.20	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	8/10/2006	40.26	10.01	-	30.25	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	10/26/2006	40.26	10.81	-	29.45	<50	<0.50	<2.0	<0.50	<1.0	<0.50
	1/25/2007	40.26	10.67	-	29.59	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/26/2007	40.26	10.05	-	30.21	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/25/2007	40.26	11.44	-	28.82	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/23/2007	40.26	11.59	-	28.67	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	1/21/2008	40.26	10.37	-	29.89	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/15/2008	40.26	10.56	-	29.70	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/2/2008	40.26	11.95	-	28.31	161	<0.5	<2.0	2.15	<2.0	<0.5
	10/15/2008	40.26	12.64	-	27.62	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/7/2009	40.26	11.75	-	28.51	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	4/13/2009	40.26	10.89	-	29.37	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	8/26/2009	40.26	12.50	-	27.76	<50	<0.5	<0.5	<0.5	<0.5	<0.5
Well Decommissioned 11/13/2009											

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15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free- Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B ² (µg/L)
Extraction Wells											
EX-1	12/2/2009	47.36	17.02	-	30.34	2,900	120	4	64	410	25
	3/16/2010	47.36	19.08	-	28.28	2,200	150	18	94	326	210
	6/3/2010	47.36	17.02	-	30.34	3,600	180	6.3	150	428	83
	9/1/2010	47.36	16.88	-	30.48	550	6.5	0.5	6.9	31.7	38
	12/2/2010	47.36	19.84	-	27.52	<200	3.1	<2.0	<2.0	<2.0	210
	3/3/2011	47.36	14.96	-	32.4	530	51	0.94	15	31.3	110
	5/19/2011	47.36	16.12	-	31.24	370	42	<0.71	7.6	17.2	110
	9/8/2011	47.36	16.47	-	30.89	110	5	<0.5	2.2	6.4	12
	12/1/2011	47.36	16.1	-	31.26	780 ^x	91	3	29	85	150
	3/2/2012	47.36	16.35	-	31.01	140	6	<0.5	3.5	8	14
	6/6/2012	47.36	24.76	-	22.6	250	22	<0.5	4.7	20	71
	9/20/2012	47.36	17.26	-	30.1	95	24	<0.5	<0.5	2.61	36
	12/13/2012	47.36	16.55	-	30.81	1,000	73	2.3	47	110	48
	3/27/2013	47.36	16.15	N	31.21	69	4.1	<0.5	3.3	10	1.8
	6/10/2013	47.36	24.25	N	23.11	340	37	<0.5	5.9	15.1	62
MPE Wells											
MPE-1	12/1/2009	51.96	21.41	-	30.55	NA	NA	NA	NA	NA	NA

Table 1
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15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free- Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B ² (µg/L)
MPE-1 cont.	3/16/2010	51.96	20.22	-	31.74	NA	NA	NA	NA	NA	NA
	6/3/2010	51.96	21.18	-	30.78	NA	NA	NA	NA	NA	NA
	9/1/2010	51.96	21.25	-	30.71	NA	NA	NA	NA	NA	NA
	12/2/2010	51.96	21.64	-	30.32	NA	NA	NA	NA	NA	NA
Pre-MPE	3/3/2011	51.96	19.33	-	32.63	NA	NA	NA	NA	NA	NA
	5/19/2011	51.96	20.6	-	31.36	NA	NA	NA	NA	NA	NA
	8/4/2011	51.96	NM	-	NC	49,000	210	100	840	7,070	45
	9/8/2011	51.96	20.83	-	31.13	NA	NA	NA	NA	NA	NA
Post-MPE	9/26/2011	51.96	20.94	-	31.02	62,000	6,300	3,700	1,800	9,400	1,200
	12/2/2011	51.96	20.14	-	31.82	56,000	9,000	7,700	2,200	10,800	2,600
	3/2/2012	51.96	20.73	-	31.23	97,000	11,000	11,000	2,600	12,600	2,700
	6/6/2012	51.96	20.96	-	31.00	78,000	4,500	4,900	2,300	10,700	750
	9/20/2012	51.96	21.58	-	30.38	89,000	8,600	9,200	3,400	14,800	1,900
	12/14/2012	51.96	20.57	-	31.39	98,000	7,400	9,600	2,900	13,300	1,300
	3/27/2013	51.96	20.91	Y	31.05	61,000	6,600	4,500	2,200	9,400	1,500
	6/10/2013	51.96	21.47	Y	30.49	42,000	1,900	980	630	4,400	670
MPE-2	12/1/2009	53.72	22.87	-	30.85	NA	NA	NA	NA	NA	NA
	3/16/2010	53.72	21.7	-	32.02	NA	NA	NA	NA	NA	NA
	6/3/2010	53.72	22.35	-	31.37	NA	NA	NA	NA	NA	NA
	9/1/2010	53.72	23.7	-	30.02	NA	NA	NA	NA	NA	NA
	12/2/2010	53.72	22.7	-	31.02	NA	NA	NA	NA	NA	NA
Pre-MPE	3/3/2011	53.72	21.25	-	32.47	NA	NA	NA	NA	NA	NA
	5/19/2011	53.72	22.19	-	31.53	NA	NA	NA	NA	NA	NA
	8/4/2011	53.72	NM	-	NC	46,000	2,100	80	1,900	5,300	75
	9/8/2011	53.72	22.31	-	31.41	NA	NA	NA	NA	NA	NA
Post-MPE	9/26/2011	53.72	22.38	-	31.34	37,000	1,800	33	1,700	2,760	<17
	12/2/2011	53.72	21.44	-	32.28	26,000	1,600	43	1,800	3,370	<17
	3/2/2012	53.72	22.24	-	31.48	36,000	1,100	19	1,700	2,970	<17
	6/7/2012	53.72	22.35	-	31.37	33,000	1,800	27	1,600	2,700	29
	9/21/2012	53.72	23.03	-	30.69	31,000	1,700	13	1,900	2,747	14
	12/14/2012	53.72	22.17	-	31.55	31,000	1,700	20	1,800	2,490	16
	3/28/2013	53.72	22.53	N	31.19	20,000	2,200	<20	1,300	960	<20
	6/11/2013	53.72	22.9	N	30.82	26,000	920	<13	1,500	1,352	<13

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

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free- Product (feet)/ Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B ² (µg/L)
2nd WBZ											
MW-1D	1/3/2008	54.42		-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	1/22/2008	54.42	22.85	-	31.57	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	4/16/2008	54.42	23.10	-	31.32	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/3/2008	54.42	23.44	-	30.98	75.9	<0.5	<2.0	0.54	<2.0	<0.5
	10/15/2008	54.42	23.82	-	30.60	120	1.6	<0.5	2.8	3.6	<0.5
	1/8/2009	54.42	23.44	-	30.98	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	4/14/2009	54.42	23.06	-	31.36	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	8/26/2009	54.42	23.73	-	30.69	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/1/2009	54.42	23.59	-	30.83	330 Y	<0.5	<0.5	1.3	2.2	<0.5
	3/16/2010	54.42	22.60	-	31.82	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	6/4/2010	54.42	23.10	-	31.32	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/1/2010	54.42	23.51	-	30.91	<50	<0.5	<0.5	0.52	1.8	<0.5
	12/3/2010	54.42	23.41	-	31.01	61	<0.5	<0.5	1.0	3.73	<0.5
	3/3/2011	54.42	22.27	-	32.15	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	5/19/2011	54.42	22.89	-	31.53	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/2011	54.42	23.08	-	31.34	220	<0.5	<0.5	0.6	1.4	<0.5
	12/1/2011	54.42	22.26	-	32.16	<22	<0.33	<0.19	<0.15	<0.20	<0.38
MW-3D	3/2/2012	54.42	23.01	-	31.41	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	6/6/2012	54.42	23.18	-	31.24	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/20/2012	54.42	23.76	-	30.66	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	12/13/2012	54.42	23.04	-	31.38	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	3/27/2013	54.42	23.34	N	31.08	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	6/10/2013	54.42	23.69	N	30.73	110	<0.5	<0.5	0.55	<0.5	<0.5
	1/3/2008	54.10		-	-	<50	<0.50	<2.0	<0.50	<2.0	87.6
	1/22/2008	54.10	22.31	-	31.79	<50	<0.50	<2.0	<0.50	<2.0	88.3

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

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE 8260B ² (µg/L)
MW-3D cont.	3/16/2010	54.10	22.10	-	32.00	<50	<0.5	<0.5	<0.5	<0.5	7.1
	6/4/2010	54.10	22.70	-	31.40	<50	<0.5	<0.5	<0.5	<0.5	17
	9/1/2010	54.10	23.09	-	31.01	78	<0.5	<0.5	1.1	4.71	24
	12/3/2010	54.10	22.90	-	31.20	<50	<0.5	<0.5	0.56	1.4	13
	3/3/2011	54.10	21.66	-	32.44	<50	1.3	<0.5	<0.5	0.59	14
	5/19/2011	54.10	22.61	-	31.49	<50	<0.5	<0.5	<0.5	<0.5	5.2
	9/8/2011	54.10	22.68	-	31.42	69	<0.5	<0.5	<0.5	0.62	4.8
	12/1/2011	54.10	22.86	-	31.24	<22	<0.33	<0.19	<0.15	<0.20	10
	3/2/2012	54.10	22.60	-	31.50	<50	<0.5	<0.5	<0.5	<0.5	4.2
	6/6/2012	54.10	22.77	-	31.33	<50	<0.5	<0.5	<0.5	<0.5	4.8
	9/20/2012	54.10	23.42	-	30.68	<50	<0.5	<0.5	<0.5	<0.5	5.1
	12/13/2012	54.10	22.57	-	31.53	<50	<0.5	<0.5	<0.5	<0.5	4.4
	3/27/2013	54.10	22.87	N	31.23	<50	<0.5	<0.5	<0.5	<0.5	4.4
	6/10/2013	54.10	23.27	N	30.83	<50	<0.5	<0.5	<0.5	<0.5	3.5
MW-4D	1/4/2008	53.12		-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
	1/22/2008	53.12	21.11	-	32.01	91.5	18.7	<2.0	7.08	11.42	219
	4/15/2008	53.12	21.67	-	31.45	<50	<0.5	<2.0	<0.5	<2.0	27
	7/3/2008	53.12	22.39	-	30.73	<50	<0.5	<2.0	<0.5	<2.0	6.27
	10/16/2008	53.12	22.98	-	30.14	<50	<0.5	<0.5	<0.5	<0.5	1.9
	1/8/2009	53.12	22.25	-	30.87	<50	<0.5	<0.5	<0.5	<0.5	2
	4/14/2009	53.12	21.34	-	31.78	<50	<0.5	<0.5	<0.5	<0.5	2.2
	8/27/2009	53.12	22.79	-	30.33	<50	<0.5	<0.5	<0.5	<0.5	2.2
	12/1/2009	53.12	22.49	-	30.63	120 ^y	<0.5	<0.5	1.4	2.3	2.3
	3/16/2010	53.12	21.02	-	32.10	<50	<0.5	<0.5	<0.5	<0.5	0.65
	6/4/2010	53.12	21.93	-	31.19	<50	<0.5	<0.5	<0.5	<0.5	1.1
	9/1/2010	53.12	23.32	-	29.80	<50	<0.5	<0.5	0.85	3.76	2.2
	12/3/2010	53.12	22.46	-	30.66	<50	<0.5	<0.5	<0.5	0.67	<0.5
	3/3/2011	53.12	20.45	-	32.67	<50	<0.5	<0.5	<0.5	<0.5	0.58
	5/19/2011	53.12	21.57	-	31.55	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	9/8/2011	53.12	21.92	-	31.20	59	<0.5	<0.5	<0.5	0.51	1.7
	12/1/2011	53.12	21.19	-	31.93	<22	<0.33	<0.19	<0.15	<0.20	4.2

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

Monitoring Well	Date	Casing Elevation ¹ (feet)	Depth to Groundwater (feet)	Free-Product (feet)/Sheen (Y/N)	Groundwater Elevation (feet)	TPH-g ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	MtBE 8260B ² ($\mu\text{g/L}$)
MW-4D cont.	3/2/2012	53.12	21.8	-	31.32	<50	<0.5	<0.5	0.85	1.2	2.7
	6/6/2012	53.12	22.00	-	31.12	<50	<0.5	<0.5	<0.5	<0.5	1.3
	9/20/2012	53.12	22.67	-	30.45	<50	<0.5	<0.5	<0.5	<0.5	1.6
	12/13/2012	53.12	21.55	-	31.57	<50	<0.5	<0.5	<0.5	<0.5	0.94
	3/27/2013	53.12	21.98	N	31.14	<50	<0.5	<0.5	<0.5	<0.5	2.1
	6/10/2013	53.12	22.55	N	30.57	<50	<0.5	<0.5	<0.5	<0.5	1.7
1573 153 RD	7/2/2008	NS	NM	-	NC	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/16/2008	NS	NM	-	NC	<50	<0.5	<0.5	<0.5	<0.5	<0.5
Equipment Blanks											
EB-PMP	1/21/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PRB	1/21/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PMP2	1/22/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
EB-PRB2	1/22/2008	-	-	-	-	<50	<0.50	<2.0	<0.50	<2.0	<0.50
ESL (ug/L)	-	-	-	-	-	100	1	40	30	20	5

Notes:

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

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

NC: Not Calculated

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

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

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

<: Not detected above the laboratory reporting limit.

Y: Sample exhibits chromatographic pattern which does not resemble standard

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

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

H: Heavier hydrocarbon contributed to the quantitation.

x: Does not match pattern of reference Gasoline Standard. Hydrocarbons in the range of C5-C12 quantified as gasoline (possibly aged gasoline)

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

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

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

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

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

EB-PMP/EB-PRB: Equipment Blanks for Pump and Probe

ESL: Environmental Screening Levels per CRWQCB SFBay Region Interim Final Nov. 2007 (Revised May 2008);

Table F-1a, Groundwater Screening Levels (groundwater is a current or potential drinking water resource)

MW-8 and MW-9 were decommissioned November 13, 2009

* During September 2012 groundwater monitoring event, free-product was observed in MW-6. groundwater elevation in this well has been corrected for the presence of FP:

Corrected depth to groundwater is equal to (measured depth) - 0.68 (free product thickness)

The correction factor is derived by the following: specific gravity of gas at 20°C is 0.68, then specific gravity is multiplied by the thickness of free product

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

Monitoring Well	Date	TBA ($\mu\text{g/L}$)	DIPE ($\mu\text{g/L}$)	ETBE ($\mu\text{g/L}$)	TAME ($\mu\text{g/L}$)	1,2-DCA ($\mu\text{g/L}$)	EDB ($\mu\text{g/L}$)
1st WBZ							
MW-1	8/8/2002	78	<1.3	<1.3	<1.3	NA	NA
	11/1/2002	42	< 1.0	< 1.0	< 1.0	NA	NA
	2/21/2003	47	<0.5	<0.5	<0.5	NA	NA
	5/28/2003	25	<0.5	<0.5	<0.5	NA	NA
	8/12/2003	<10	<0.5	<0.5	<0.5	NA	NA
	10/9/2003	70	<1.0	<1.0	<1.0	NA	NA
	1/15/2004	55	<0.5	<0.5	<0.5	NA	NA
	5/25/2004	62	<0.7	<0.7	<0.7	NA	NA
	9/21/2004	<10	<0.5	<0.5	<0.5	NA	NA
	12/14/2004	<21.5	<4.3	<4.3	<17.2	NA	NA
	3/11/2005	81	<0.5	<0.5	<2.0	NA	NA
	6/15/2005	<10	<0.5	<0.5	<2.0	NA	NA
	8/26/2005	68.9	<2.15	<2.15	<8.6	NA	NA
	11/11/2005	46	<2.15	<2.15	<8.6	NA	NA
	2/9/2006	11.3	<0.5	<0.5	<2.0	NA	NA
	5/9/2006	<10	<0.5	<0.5	<2.0	0.51	<0.5
	8/10/2006	<43	<2.15	<2.15	<8.60	3.37	<2.15
	10/26/2006	39.4	<1.0	<1.0	<4.0	2.92	<1.0
	1/25/2007	41.4	<0.5	<0.5	<2.0	1.36	<0.5
	4/26/2007	39.6	<0.5	<0.5	<2.0	<0.5	<0.5
	7/25/2007	46.5	<1.0	<1.0	<4.0	<1.0	<1.0
	10/23/2007	53.7	<0.5	<0.5	<2.0	<0.5	<0.5
MW-2	1/22/2008	23.8	<0.5	<0.5	2.16	<0.5	<0.5
	4/16/2008	8.36	<0.5	<0.5	<2.0	164	<0.5
	7/3/2008	30.5	<0.5	<0.5	<2.0	1.08	<0.5
	10/15/2008	<20	<1.0	<1.0	<1.0	<1.0	<1.0
	1/7/2009	<25	<1.3	<1.3	<1.3	<1.3	<1.3
	4/14/2009	15	<0.5	<0.5	<0.5	<0.5	<0.5
	8/27/2009	<40	<2.0	<2.0	<2.0	<2.0	<2.0
	12/2/2009	<40	<2.0	<2.0	<2.0	<2.0	<2.0
	3/17/2010	<10	<0.5	<0.5	<0.5	<0.5	<0.5
	6/3/2010	26	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	9/2/2010	<100	<5.0	<5.0	<5.0	<5.0	<5.0
	12/2/2010	<63	<3.1	<3.1	<3.1	<3.1	<3.1
	3/4/2011	40	<0.5	<0.5	<0.5	<0.5	<0.5
	5/20/2011	<71	<3.6	<3.6	<3.6	<3.6	<3.6
	9/9/2011	33	<1.3	<1.3	<1.3	<1.3	<1.3
	12/2/2011	49	<3.2	<3.5	<2.8	<2.4	<1.7
	3/2/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5
	6/7/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5
	9/21/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5
	12/14/2012	<50	<2.5	<2.5	<2.5	<2.5	<2.5
MW-2	3/28/2013	<50	<2.5	<2.5	<2.5	<2.5	<2.5
	6/11/2013	<50	<2.5	<2.5	<2.5	<2.5	<2.5

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

Monitoring Well	Date	TBA ($\mu\text{g/L}$)	DIPE ($\mu\text{g/L}$)	ETBE ($\mu\text{g/L}$)	TAME ($\mu\text{g/L}$)	1,2-DCA ($\mu\text{g/L}$)	EDB ($\mu\text{g/L}$)
1573 153 RD	7/2/2008 10/16/2008	<2.0 <10	<0.5 <0.5	<0.5 <0.5	<2.0 <0.5	<0.5 <0.5	<0.5 <0.5
EB-PMP	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PRB	1/21/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PMP2	1/22/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
EB-PRB2	1/22/2008	<2.0	<0.5	<0.5	<2.0	<0.5	<0.5
ESL		12	NE	NE	NE	0.5	0.05

Notes:

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

<: Not detected above the laboratory reporting limit.

NA: Not Analyzed. Well MW-8 was inaccessible during the 1Q05

& well MW-7 (1Q06) car was parked over each well.

NE: Not Established

TBA: tert-Butyl Alcohol

DIPE: Isopropyl Ether

ETBE: Ethyl tert-Butyl Ether

TAME: Methyl tert-Amyl Ether

ESL: Environmental Screening Levels per CRWQCB SFBay Region Interim Final Nov. 2007 (Revised May 2008);

Table F-1a, Groundwater Screening Levels (groundwater is a current or potential drinking water resource)

MW-8 and MW-9 were decommissioned November 13, 2009

Table 3
Effluent Chemical Analytical Results
and Operational History of Remediation System
 15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylben- zene (µg/L)	Total Xylenes (µg/L)	COD (mg/L)	TSS (mg/L)	pH
2009											
8-Oct-2009	15,351	<50	120 ^Y	NA	NA	NA	NA	NA	NA	NA	NA
19-Nov-2009	8,287	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.7
9-Dec-2009	0										
16-Dec-2009	20,000	<50	<50	<300	<0.5	0.65 C	<0.5	0.84 C	<10	<5	7.4
2010											
18-Jan-2010	215,453	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.4
15-Feb-2010	297,560	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	11	<5	6.7
15-Mar-2010	475,245	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5.0	6.5
19-Apr-2010	621,180	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	8	6.6
17-May-2010	705,770	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	8	6.7
16-Jun-2010	825,200	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	17	9	6.8
19-Jul-2010	910,652	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	8	6.6
16-Aug-2010	939,935	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.6
28-Sep-2010	970,450	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	10	6.8
26-Oct-2010	1,013,700	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.2
15-Nov-2010	1,052,591	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.5
7-Dec-2010	1,100,492	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.6
2011											
11-Jan-2011	1,179,075	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	12	6	6.6
10-Feb-2011	1,249,569	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.6
14-Mar-2011	1,336,784	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.5
11-Apr-2011	1,364,272	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.5
10-May-2011	1,466,472	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	12	7	6.6
7-Jun-2011	1,532,263	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	6	6.6

Table 3
Effluent Chemical Analytical Results
and Operational History of Remediation System
 15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	COD (mg/L)	TSS (mg/L)	pH
28-Jul-2011	1,573,295	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	5	6.3
25-Aug-2011	1,613,935	77	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.1
23-Sep-2011	1,631,273	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.7
27-Oct-2011	1,642,277	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	7	7.1
18-Nov-2011	1,676,170	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.8
1-Dec-2011	1,694,889	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.97
2012											
19-Jan-2012	1,715,163	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	7.02
23-Feb-2012	1,794,185	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	<5	6.98
20-Mar-2012	1,803,832	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<10	7	7.02
17-Apr-2012	1,876,439	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.95
29-May-2012	1,900,111	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.89
11-Jun-2012	1,914,130	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.1
12-Jul-2012	1,943,456	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.3
17-Aug-2012	1,955,438	<50	<52	<310	<0.5	<0.5	<0.5	<0.5	NA	NA	7.04
17-Sep-2012	1,979,852	<50	<54	<330	<0.5	<0.5	<0.5	<0.5	NA	NA	7.02
23-Oct-2012	1,989,022	<50	<49	<290	<0.5	<0.5	<0.5	<0.5	NA	NA	6.95
12-Nov-2012	1,995,170	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.90
4-Dec-2012	2,024,040	<50	<49	<290	<0.5	<0.5	<0.5	<0.5	NA	NA	6.86
2013											
7-Jan-2013	2,099,002	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.01
14-Feb-2013	2,186,595	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	7.08
14-Mar-2013	2,193,121	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.98
12-Apr-2013	2,198,793	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	NA	NA	6.83
10-Jun-2013	2,273,686	<50	<58	<350	<0.5	<0.5	<0.5	<0.5	NA	NA	6.91

Table 3
Effluent Chemical Analytical Results
and Operational History of Remediation System
 15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	COD (mg/L)	TSS (mg/L)	pH
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Note:

NA: Not Available/Not Applicable

< : Less than Laboratory-reporting limit

In October and November 2009 discharge occurred only during MPE events

GWETS and totalizer installed in December 2009.

Week # 1 sampling conducted on Oct 8, 2009

C: Presence confirmed, but RPD between column exceeds 40%

Volume discharged during the October 2009 MPE event was 18,669 gallons

Volume discharged during the November 2009 MPE event was 10,507 gallons

Volume discharged during the December 2009 MPE event was 20,298 gallons

Volume discharged during the February 2010 MPE event was 6,339 gallons

Volume discharged during the March 2010 MPE event was 3,810 gallons

Volume discharged during the June 2010 MPE event was 15, 600 gallons

Volume discharged during the August 2010 MPE event was 1,421 gallons

Volume discharged during the October 2010 MPE event was 13,282 gallons

SOMA ceased COD and TSS testing based on a request from OLSD dated April 5, 2012

Table 4
Cumulative Masses of Petroleum Hydrocarbons Removed from
the Groundwater Since Installation of the Treatment System
 15101 Freedom Ave, San Leandro, CA

Date	Volume (gallons)	Influent Concentration ($\mu\text{g/L}$)					Mass removed (pounds)					
		TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
2009												
9-Dec-2009	0		Installation of GWETS, began discharging treated groundwater to site sewer main									
2010												
18-Jan-2010	215,453	1,900	79	32.00	2.4	260	3.41	0.14	0.06	0.00	0.47	
19-Apr-2010	621,180	2,100	75	28	56	332	10.50	0.40	0.15	0.19	1.59	
19-Jul-2010	910,652	56 ^Y	<0.5	<0.5	<0.5	<0.5	10.64	0.40	0.15	0.19	1.59	
26-Oct-2010	1,013,700	2,600	200	25	68	405	12.87	0.57	0.17	0.25	1.94	
2011												
11-Jan-2011	1,179,075	1,700	80	19	50	295	15.21	0.68	0.20	0.32	2.34	
11-Apr-2011	1,364,272	1,200	41	3.3	23	185	17.06	0.75	0.20	0.36	2.63	
28-Jul-2011	1,573,295	540	21	2.8	5.4	49	18.00	0.78	0.21	0.37	2.71	
27-Oct-2011	1,642,277	<50	1.50	<0.5	<0.5	2.9	18.00	0.78	0.21	0.37	2.71	
2012												
19-Jan-2012	1,715,163	110 ^Y	<0.5	<0.5	<0.5	<0.5	18.07	0.78	0.21	0.37	2.71	
17-Apr-2012	1,876,439	1,100	60	6.8	24	161	19.54	0.87	0.22	0.40	2.93	
12-Jul-2012	1,943,456	320	30	1.6	15	34	19.72	0.88	0.22	0.41	2.95	
23-Oct-2012	1,989,022	1,400 ^Y	130	12	42	153	20.25	0.93	0.22	0.42	3.01	
2013												
7-Jan-2013	2,099,002	1,500	66	9.8	37	228	21.63	0.99	0.23	0.46	3.22	
12-Apr-2013	2,198,793	1,600	110	3.8	64	131	22.96	1.08	0.24	0.51	3.32	

Notes:

< : Below laboratory-reporting limit

Y : sample exhibits chromatographic pattern which does not resemble standard

Appendix A

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Standard Operating Procedures for Conducting Groundwater Monitoring Activities

Water Level and Free-Product Measurements

Prior to measurement of groundwater depth at each 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 is measured from the top of the casing to the nearest 0.01 foot using an electric sounder.

For free-product (FP) measurement, an oil-water interface probe is used. When the probe is lowered into the FP, the oil/water light and beeper are continuously on at which point a reading for depth to FP is noted. The probe is lowered further into the well until the water signal is given (light flashes and beeps intermittently). Then the probe is carefully raised until the FP signal is given and the reading is noted. This gives the depth to interface of product and water.

Purging and Field Measurements

Prior to sample collection, each well is purged using a battery-operated, 2-inch-diameter pump (Model ES-60 DC). During purging, groundwater is measured for parameters such as dissolved oxygen (DO), pH, temperature, electrical conductivity (EC), and oxygen-reduction potential (ORP) using a Hanna HI-9828 multi-parameter instrument. Turbidity is measured using a Hanna HI-98703 portable turbidimeter. The equipment is calibrated at the site using standard solutions and procedures provided by the manufacturer.

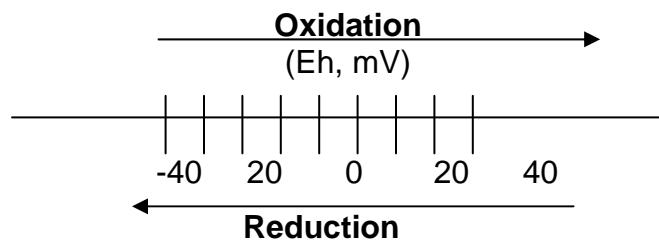
The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater EC is directly related to the concentration of total dissolved solids (TDS) in solution.

There is a strong correlation between the turbidity level and the biological oxygen demand of natural water bodies. The main purpose for checking the turbidity level is to provide a general overview of the extent of the suspended solids in the groundwater.

ORP is the measure of the potential for an oxidation or reduction process to occur. In the oxidation process, a molecule or ion loses one or several electrons. In the reduction process, a molecule or ion gains one or several electrons. The unit of the redox potential is the volt or millivolt. The most important redox reaction in petroleum-contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of O₂ in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and

because the rate of O₂ replenishment in subsurface environments is limited, DO can be entirely consumed when the oxidation of only a small amount of petroleum hydrocarbons occurs.

Oxidation of petroleum hydrocarbons can still occur when all the dissolved O₂ in the groundwater is consumed; however, the oxidizing agents (i.e., the constituents that undergo reduction) now become NO₃⁻, MnO₂, Fe(OH)₃, SO₄²⁻ and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process advances far enough, the environment may become so strongly reduced that the petroleum hydrocarbons undergo anaerobic degradation, resulting in the production of methane and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below.



Purging of wells continues until the parameters for DO, pH, temperature, EC, turbidity, and redox stabilize, or three casing volumes are purged.

Once stabilization occurs, the groundwater samples are also tested on-site for ferrous iron (Fe⁺²), nitrate (NO₃⁻), and sulfate (SO₄²⁻) concentrations.

Fe⁺², NO₃⁻, and SO₄²⁻ are measured colorimetrically using the Hach Colorimeter Model 890, a microprocessor-controlled photometer suitable for colorimetric testing in the laboratory or the field. The required reagents for each specific test are provided in AccuVac ampuls.

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 into 40-mL VOA vials and preserved with hydrochloric acid. The vials are sealed to prevent air bubbles from developing within the headspace. For TPH-d analysis, groundwater samples are collected using 1-L, amber, non-preserved 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

Table of Elevations and Coordinates on Monitoring Wells,
Field Measurements of Physical, Chemical, and Natural
Attenuation Parameters of Groundwater Samples, and
Groundwater Gradient Calculations

Harrington Surveys Inc.

Land Surveying & Mapping

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

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

Oct. 14, 2004

Attn: Elena Manzo
Job # 2445

Ref: 15101 Freedom Ave, San Leandro, Ca.

HORIZONTAL CONTROL, NAD 88:

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

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

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

VERTICAL CONTROL, NAVD 88:

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

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

EPOCH DATE 1998.5

OBSERVATION: EPOCH=180.

FIELD SURVEY: OCT. 11, 2004.


Ben Harrington
PLS 5132



DATE: 1/08/2008
JOB NUMBER 0208101
DATE OF SURVEY 1/03/08
INSTRUMENT LIECA SR520

TABLE OF ELEVATIONS & COORDINATES
ON MONITORING WELLS

SOMA ENVIRONMENTAL, PROJECT 15101 FREEDOM DRIVE - SAN LEANDRO

WELL ID#	NORTHING (ft.) LATITUDE	EASTING (ft.) LONGITUDE	ELEVATION (ft.)	DESCRIPTION
MW-1D	2084371.23	6092127.90	54.42	MW-1D NOTCH
	37.708104856	122.123200912	54.94	MW-1D RIM
	37° 42' 29.1" N	122° 07' 23" W	54.74	PAVEMENT
MW-3D	2084303.98	6092183.53	54.10	MW-3D NOTCH
	37.707922851	122.123004590	54.56	MW-3D RIM
	37° 42' 28.5" N	122° 07' 22" W	54.47	PAVEMENT
MW-4D	2084222.77	6092116.37	53.12	MW-4D NOTCH
	37.707696648	122.123231858	53.37	MW-4D RIM
	37° 42' 27.7" N	122° 07' 23" W	53.39	PAVEMENT

BENCH MARK: NGS BENCH MARK NO. HT1871

3.0 KM (1.85 MI) NORTH FROM SAM LORENZO. 1.85 MILES NORTH ALONG INTERSTATE HIGHWAY 580 FROM THE JUNCTION OF STATE HIGHWAY 238 IN SAN LORENZO, IN THE WEST CORNER OF THE CROSSING OF 150TH AVENUE, IN TOP OF THE CONCRETE BRIDGE DECK, 15.5 FEET NORTHWEST OF THE SOUTHWEST BOUND LANES OF THE AVENUE, 10.9 FEET NORTHEAST OF THE SOUTH CORNER OF THE SOUTHWEST END OF THE NORTHWEST CONCRETE GUARDRAIL, 0.7 FOOT NORTHEAST OF THE SOUTHWEST EDGE OF THE DECK, 0.9 FOOT SOUTHEAST OF THE NORTHWEST CONCRETE GUARDRAIL, AND ABOUT LEVEL WITH THE HIGHWAY.

ELEVATION = 58.50 NAVD 88 DATUM

HORIZONTAL AND VERTICAL CONTROL BASED ON HARRINGTON SURVEY DATED 10-12-2004

FD CHABOT A, CALIFORNIA STATE PLAIN COORDINATE SYSTEM, NAD 83, ZONE 3. NORTH 2,088,584.99 EAST 6,093,351.39. LAT N 37°43'11.04190" LONG W 122°07'09.20691", ELEVATION 492.08 NAVD 88.

FD CHABOT B, CALIFORNIA STATE PLAIN COORDINATE SYSTEM, NAD 83, ZONE 3. NORTH 2,087,731.02 EAST 6,094,039.23. . LAT N 37°43'02.71762" LONG W 122°07'00.46339", ELEVATION 442.77 NAVD 88.

DATE: 12/11/2009

JOB# 09039

TABLE OF ELEVATIONS & COORDINATES**ON MONITORING WELLS**

SOMA ENVIRONMENTAL ENGINEERING

15101 FREEDOM AVENUE

SAN LEANDRO, CA 94579

WELL ID #	NORTHING (FT.) / LATITUDE (D.DEG.)	EASTING (FT.) / LONGITUDE (D.DEG.)	ELEVATION (FT.)	DESCRIPTION
EX-1	2084135.454 37.707459134	6092163.720 122.123062972	47.36 47.61 47.60	4" PVC NOTCH NORTH SIDE SET PUNCH NORTH SIDE RIM PAVEMENT NORTH SIDE
EX-2	2084082.018 37.707310806	6092130.224 122.123175540	45.96 47.04 47.00	4" PVC NOTCH NORTH SIDE SET PUNCH NORTH SIDE RIM CONCRETE NORTH SIDE
MPE-1	2084213.168 37.707670702	6092125.258 122.123200567	51.96 52.49 52.51	4" PVC NOTCH NORTH SIDE SET PUNCH NORTH SIDE RIM CONCRETE NORTH SIDE
MPE-2	2084293.133 37.707892479	6092171.374 122.123045970	53.72 54.29 54.27	4" PVC NOTCH NORTH SIDE SET PUNCH NORTH SIDE RIM PAVEMENT NORTH SIDE

HORIZONTAL AND VERTICAL CONTROL

SURVEY BASED ON PREVIOUS SURVEY BY HARRINGTON SURVEY INC. DATED: 2/21/2008

COORDINATE VALUES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD83.
ELEVATIONS ARE NAVD 88 DATUM.

MW-2, PUNCH

NORTHING 2,084323.44, EASTING 6,092063.77, ELEVATION 52.92

MW-4 PUNCH

NORTHING 2,084250.55, EASTING 6,092124.46, ELEVATION 53.74

EQUIPMENT USED: TRIMBLE S6

Edgis Land Surveying
 Land Surveying and mapping
 1374 Garland Avenue, Clovis, CA 93612
 Phone (559) 906-3554 Fax (559) 292-0560
 email: edgis@aol.com





ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-1
Casing Diameter: 4 inches
Depth of Well: 30.50 feet
Top of Casing Elevation: 54.46 feet
Depth to Groundwater: 23.48 feet
Groundwater Elevation: 30.98 feet
Water Column Height: 7.02 feet
Purged Volume: 12 gallons

Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 11, 2013
Sampler: Lizzie Hightower
Parsa Motavalli

Purging Method: Bailer Pump
Sampling Method: Bailer Pump

Color: Yes No Describe: _____
Sheen: Yes No Describe: _____
Odor: Yes No Describe: Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
3:56	Started purging well						
3:57	2	2.87	6.72	20.45	1276	17.8	-46.1
3:58	4	1.18	6.61	20.47	1250	16.9	-53.7
4:00	8	0.86	6.55	20.47	1243	11.9	-51.8
4:02	12	0.71	6.52	20.43	1284	11.1	-49.4
	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-2
Casing Diameter: 4 inches
Depth of Well: 30.15 feet
Top of Casing Elevation: 52.41 feet
Depth to Groundwater: 21.67 feet
Groundwater Elevation: 30.74 feet
Water Column Height: 8.48 feet
Purged Volume: 14 gallons

Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 11, 2013
Sampler: Lizzie Hightower
Parsha Motavalli

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: Yes No Describe: _____

Sheen: Yes No Describe: _____

Odor: Yes No Describe: _____

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
3:11	Started purging well						
3:12	2	2.57	6.84	20.42	1322	23.2	-35.2
3:14	6	1.08	6.63	20.44	1034	16.5	-40.4
3:16	10	0.64	6.61	20.43	984	22.0	-40.7
3:18	14	0.50	6.61	20.44	1118	20.9	-42.7
3:29	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-3
Casing Diameter: 4 inches
Depth of Well: 29.90 feet
Top of Casing Elevation: 53.91 feet
Depth to Groundwater: 23.06 feet
Groundwater Elevation: 30.85 feet
Water Column Height: 6.84 feet
Purged Volume: 12 gallons

Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 11, 2013
Sampler: Lizzie Hightower
Parisa Motavalli

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: Yes No Describe: _____

Sheen: Yes No Describe: Slight Rainbow Sheen

Odor: Yes No Describe: Petro Odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
4:25	Started purging well						
4:26	2	0.60	6.73	20.70	1280	27.1	-29.9
4:27	4	0.43	6.66	20.67	1295	13.1	-33.1
4:29	8	0.45	6.65	20.64	1297	76.5	-38.3
4:31	12	0.38	6.64	20.67	1280	96.3	-39.6
4:	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-4
Casing Diameter: 4 inches
Depth of Well: 30.20 feet
Top of Casing Elevation: 53.31 feet
Depth to Groundwater: 22.71 feet
Groundwater Elevation: 30.60 feet
Water Column Height: 7.49 feet
Purged Volume: 12 gallons

Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 11, 2013
Sampler: Lizzie Hightower
Parsha Motavalli

Purging Method: Bailer Pump
Sampling Method: Bailer Pump

Color: Yes No Describe: _____
Sheen: Yes No Describe: _____
Odor: Yes No Describe: Slight Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
2:24	Started purging	well					
2:25	2	2.55	6.75	20.05	1310	70.3	-14.1
2:27	6	1.49	6.55	20.06	1323	26.1	-8.3
2:29	10	0.96	6.47	20.05	1350	19.8	-4.0
2:30	12	0.81	6.47	20.06	1372	16.2	-3.0
2:39	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-5
Casing Diameter: 4 inches
Depth of Well: 29.80 feet
Top of Casing Elevation: 50.53 feet
Depth to Groundwater: 20.03 feet
Groundwater Elevation: 30.50 feet
Water Column Height: 9.77 feet
Purged Volume: 14 gallons

Project No.: 2551
Address: 15101 Freedom Avenue

San Leandro, CA

Date: June 11, 2013

Sampler: Lizzie Hightower

Parisa Motavalli

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

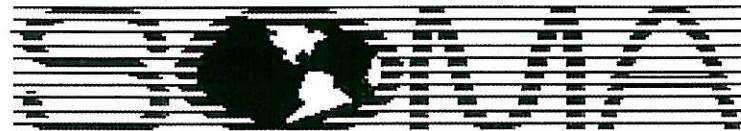
Color: Yes No Describe: _____

Sheen: Yes No Describe: _____

Odor: Yes No Describe: Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
10:13	Started purging well						
10:14	2	0.90	6.65	20.84	1023	28.0	-41.7
10:16	6	0.67	6.64	20.95	1019	16.7	-42.2
10:18	10	0.57	6.68	20.93	1018	14.2	-43.0
10:20	14	0.50	6.69	20.94	1016	17.0	-44.8
10:31	Sampled						



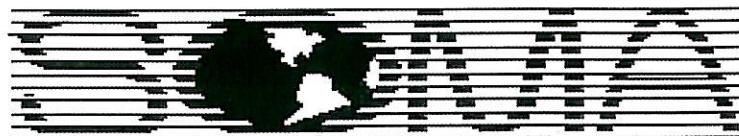
ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-6 Project No.: 2551
Casing Diameter: 4 inches Address: 15101 Freedom Avenue
Depth of Well: 27.30 feet San Leandro, CA
Top of Casing Elevation: 45.82 feet Date: June 10, 2013
Depth to Groundwater: 17.37 feet Sampler: Lizzie Hightower
Groundwater Elevation: 28.45 feet *Pursu Motavalli*
Water Column Height: 9.93 feet
Purged Volume: 14 gallons

Purging Method: Bailer Pump
Sampling Method: Bailer Pump
Color: Yes No Describe: _____
Sheen: Yes No Describe: Rainbow Sheen
Odor: Yes No Describe: Strong Petro Odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
11:54	Started purging well						
11:55	2	1.12	6.70	20.48	1206	40.1	-7.2
11:57	6	0.94	6.64	20.49	1207	13.7	-8.9
11:59	10	0.84	6.65	20.52	1208	16.8	-13.4
12:01	14	0.70	6.64	20.55	1209	13.0	-13.9
12:06	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-7
Casing Diameter: 2 inches
Depth of Well: 21.00 feet
Top of Casing Elevation: 44.74 feet
Depth to Groundwater: 15.06 feet
Groundwater Elevation: 29.68 feet
Water Column Height: 5.94 feet
Purged Volume: 3 gallons

Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 10, 2013
Sampler: Lizzie Hightower
Parsa Motavali

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: Yes No Describe: Cloudy

Sheen: Yes No Describe: _____

Odor: Yes No Describe: _____

Field Measurements:

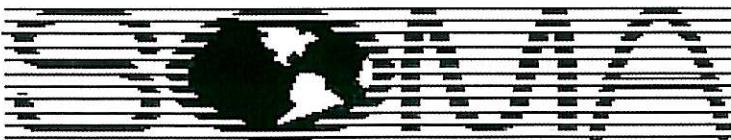
Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
11:26	Started purging well						
11:29	1	6.43	6.15	18.04	1135	356	+49.3
11:31	2	3.21	6.20	17.90	1182	499	+14.0
11:33	3	2.55	6.22	17.81	1232	672	+8.0
11:38	Sampled						



ENVIRONMENTAL ENGINEERING, INC.

Well No.:	<u>EX-1</u>		Project No.:	2551	
Casing Diameter:	<u>4</u>	inches	Address:	15101 Freedom Avenue	
Depth of Well:	<u>—</u> feet		San Leandro, CA		
Top of Casing Elevation:	<u>47.36</u> feet		Date:	June <u>10</u> , 2013	
Depth to Groundwater:	<u>24.25</u> feet		Sampler:	Lizzie Hightower	
Groundwater Elevation:	<u>23.11</u> feet		<u>Parisa Motavalli</u>		
Water Column Height:	<u>NC</u> feet				
Purged Volume:	<u>—</u> gallons				
<u>not purged</u>					
Purging Method:	Bailer	<input type="checkbox"/>	Pump	<input 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>Slight Petro</u>

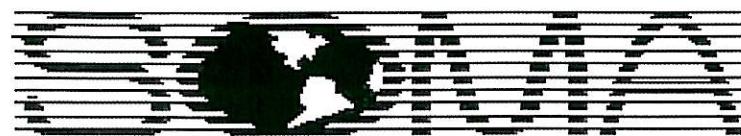
Field Measurements:



ENVIRONMENTAL ENGINEERING, INC.

Well No.:	<u>EX-2</u>		Project No.:	2551	
Casing Diameter:	<u>4</u>	inches	Address:	15101 Freedom Avenue	
Depth of Well:	<u> </u> feet		San Leandro, CA		
Top of Casing Elevation:	<u>45.96</u>	feet	Date:	June <u>10</u> , 2013	
Depth to Groundwater:	<u>23.11</u>	feet	Sampler:	Lizzie Hightower	
Groundwater Elevation:	<u>22.85</u>	feet			
Water Column Height:	<u>NC</u>	feet			
Purged Volume:	<u>—</u> gallons				
	<u>NST purged</u>				
Purging Method:	Bailer	<input type="checkbox"/>	Pump	<input 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>Slight Petro</u>

Field Measurements:



ENVIRONMENTAL ENGINEERING, INC

Well No.: MPE-1 Project No.: 2551
Casing Diameter: 4 inches Address: 15101 Freedom Avenue
Depth of Well: 30.00 feet San Leandro, CA
Top of Casing Elevation: 51.96 feet Date: June 10, 2013
Depth to Groundwater: 21.47 feet Sampler: Lizzie Hightower
Groundwater Elevation: 30.49 feet Parisa Motavalli
Water Column Height: 8.53 feet
Purged Volume: 14 gallons

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

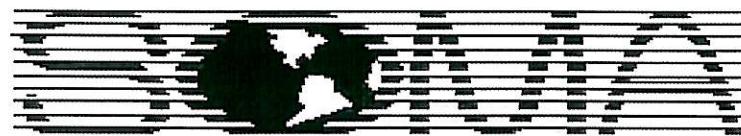
Color: Yes No Describe: Cloudy

Sheen: Yes No Describe: Rainbow Sheen

Odor: Yes No Describe: Petro Odor

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
14:53	Started purging well						
14:54	2	1.18	6.84	20.11	1492	17.0	-59.7
14:56	6	1.02	6.71	20.04	1493	15.4	-59.1
14:58	10	0.75	6.67	20.08	1492	15.7	-59.4
15:00	14	0.59	6.62	20.05	1497	20.0	-59.7
15:05	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MPE-2 Project No.: 2551
Casing Diameter: 4 inches Address: 15101 Freedom Avenue
Depth of Well: 30.00 feet San Leandro, CA
Top of Casing Elevation: 53.72 feet Date: June 11, 2013
Depth to Groundwater: 22.90 feet Sampler: Lizzie Hightower
Groundwater Elevation: 30.82 feet *Parisa Motavallli*
Water Column Height: 7.10 feet
Purged Volume: 12 gallons

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

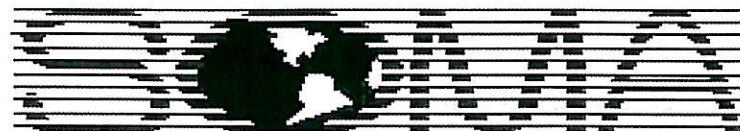
Color: Yes No Describe: Cloudy

Sheen: Yes No Describe: _____

Odor: Yes No Describe: Petro

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
5:02	Started purging well						
5:03	2	7.30	6.82	20.77	1197	56.0	-48.4
5:04	4	1.16	6.73	20.81	1180	19.5	-52.0
5:06	8	0.64	6.69	20.33	1188	55.2	-55.4
5:08	12	0.52	6.63	20.34	1192	29.7	-56.8
5:12	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-1D
Casing Diameter: 2 inches
Depth of Well: 59.81 feet
Top of Casing Elevation: 54.42 feet
Depth to Groundwater: 23.69 feet
Groundwater Elevation: 30.73 feet
Water Column Height: 36.12 feet
Purged Volume: 14 gallons

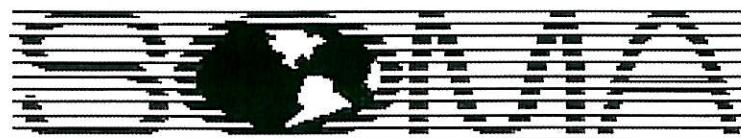
Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 10, 2013
Sampler: Lizzie Hightower
Parsa Motavalli

Purging Method: Bailer Pump
Sampling Method: Bailer Pump

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

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
13:24	Started purging well						
13:25	2	1.39	7.55	20.06	1232	14.5	+141.3
13:27	6	0.86	7.31	19.93	1235	14.1	+132.1
13:29	10	0.67	7.26	19.91	1237	17.3	+127.5
13:31	14	0.52	7.27	19.88	1238	16.0	+111.5
13:34	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW -3D
Casing Diameter: 2 inches
Depth of Well: 58.59 feet
Top of Casing Elevation: 54.10 feet
Depth to Groundwater: 23.27 feet
Groundwater Elevation: 30.83 feet
Water Column Height: 35.32 feet
Purged Volume: 14 gallons

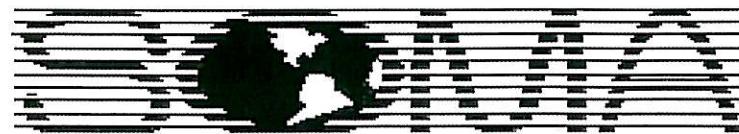
Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 10, 2013
Sampler: Lizzie Hightower

Purging Method: Bailer Pump
Sampling Method: Bailer Pump

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

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
13:53	Started purging well						
13:54	2	1.72	7.36	20.19	1206	24.3	+110.5
13:56	6	1.15	7.21	20.44	1234	14.3	+110.3
13:58	10	0.90	7.18	20.35	1237	15.2	+104.8
14:00	14	0.73	7.19	20.32	1238	12.6	+100.2
14:05	Sampled						



ENVIRONMENTAL ENGINEERING, INC

Well No.: MW-4D
Casing Diameter: 2 inches
Depth of Well: 58.79 feet
Top of Casing Elevation: 53.12 feet
Depth to Groundwater: 22.55 feet
Groundwater Elevation: 30.57 feet
Water Column Height: 36.24 feet
Purged Volume: 14 gallons

Project No.: 2551
Address: 15101 Freedom Avenue
San Leandro, CA
Date: June 10, 2013
Sampler: Lizzie Hightower

Purging Method: Bailer Pump
Sampling Method: Bailer Pump

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

Field Measurements:

Time	Volume (gallons)	D.O. mg/L	pH	Temp °C	E.C. (µS/cm)	Turb. NTU	ORP
14:26	Started purging well						
14:27	2	4.69	9.22	19.51	1223	29.5	+18.2
14:29	6	1.10	7.19	19.53	1223	24.8	+26.1
14:31	10	1.06	7.15	19.56	1223	29.9	+38.3
14:33	14	0.75	7.14	19.54	1223	24.7	+43.7
14:38	Sampled						

Table A
Historical Field Parameters
15101 Freedom Avenue, San Leandro, CA

Monitoring Well	Date	Dissolved Oxygen (mg/L)	pH	Temperature °C	Electrical Conductivity µS/cm	Turbidity NTU	ORP
MW-4D	8/27/2009	0.98	6.93	19.46	1280	4.31	-26.4
	12/1/2009	1.9	7.36	19.42	1249	4.66	-24.2
	3/16/2010	1.4	6.36	19.58	1283	24.8	-16.7
	6/4/2010	1.3	6.53	19.49	1259	5.1	115.8
	9/1/2010	1.44	6.92	19.67	1333	2.2	-26.9
	12/3/2010	1.3	6.5	19.4	1266	1.57	-116.6
	3/3/2011	2.11	7.36	19.42	1219	1.8	-96.4
	5/19/2011	2.12	6.95	19.56	1262	2.09	-15.5
	9/8/2011	2.03	6.57	19.62	1261	3.13	-54
	3/2/2012	2.15	6.92	19.39	1272	13.1	-86.5
	6/6/2012	0.32	7.27	19.25	1189	6.32	22.9
	9/20/2012	0.39	6.76	19.21	1232	6.12	91.1
	12/13/2012	0.89	7.2	18.46	1210	7.34	-15.7
	3/27/2013	2.01	7.02	19.39	1236	5.31	47.4
	6/10/2013	0.75	7.14	19.54	1223	24.7	43.7



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

$$a x_1 + b y_1 + c = h_1$$

$$a x_2 + b y_2 + c = h_2$$

$$a x_3 + b y_3 + c = h_3$$

...

$$a x_{30} + b y_{30} + c = h_{30}$$

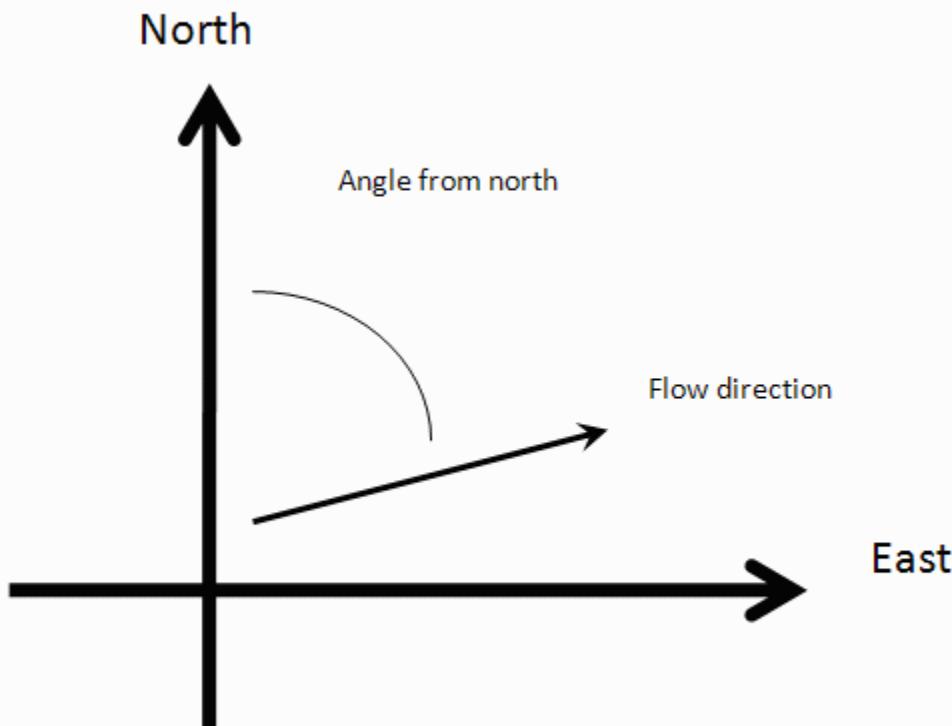
where (x_i, y_i) are the coordinates of the well and

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 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



Inputs

Example Data Set 1	Example Data Set 2	Calculate	Clear
Save Data	Recall Data	Go Back	

Site Name	15101 Freedom Ave, Sar			http://www.epa.gov/athens/learn2model/part-two/onsite/gradient4plus-ns.html	
Date	6/10/2013			Current Date	
Calculation basis	Head			<input type="checkbox"/>	
Coordinates	ft	<input type="checkbox"/>			
I.D.		x-coordinate	y-coordinate	head	ft
1) MW-1		6092119.016	2084364.691	31.69	<input type="checkbox"/>
2) MW-2		6092063.978	2084323.224	31.70	<input type="checkbox"/>
3) MW-3		6092176.317	2084298.343	31.59	<input type="checkbox"/>
4) MW-4		6092124.294	2084251.598	31.47	<input type="checkbox"/>
5) MW-5		6092177.071	2084206.361	31.41	<input type="checkbox"/>
6) MW-6		6092140.881	2084072.911	30.36	<input type="checkbox"/>
7) MW-7		6092290.918	2084008.071	31.40	<input type="checkbox"/>
8) EX-1		6092163.5	2084133.982	30.81	<input type="checkbox"/>
9) EX-2		6092131.08	2084082.713	30.00	<input type="checkbox"/>
10) MPE-1		6092125.048	2084212.393	31.39	<input type="checkbox"/>
11) MPE-2		6092171.793	2084292.312	31.55	<input type="checkbox"/>
12)					<input type="checkbox"/>
13)					<input type="checkbox"/>
14)					<input type="checkbox"/>
15)					<input type="checkbox"/>
16)					<input type="checkbox"/>
17)					<input type="checkbox"/>
18)					<input type="checkbox"/>
19)					<input type="checkbox"/>
20)					<input type="checkbox"/>
21)					<input type="checkbox"/>
22)					<input type="checkbox"/>
23)					<input type="checkbox"/>
24)					<input type="checkbox"/>
25)					<input type="checkbox"/>
26)					<input type="checkbox"/>
27)					<input type="checkbox"/>
28)					<input type="checkbox"/>
29)					<input type="checkbox"/>
30)					<input type="checkbox"/>

Results

Number of Points Used in Calculation	<input type="text" value="11"/>
Max. Difference Between Head Values	<input type="text" value="0.5182"/>
Gradient Magnitude (i)	<input type="text" value="0.008155"/>
Flow direction as degrees from North (positive y axis)	<input type="text" value="230.3"/>
Coefficient of Determination (R^2)	<input type="text" value="0.756"/>

WCMS

Last updated on Thursday, January 10, 2013



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

$$a x_1 + b y_1 + c = h_1$$

$$a x_2 + b y_2 + c = h_2$$

$$a x_3 + b y_3 + c = h_3$$

...

$$a x_{30} + b y_{30} + c = h_{30}$$

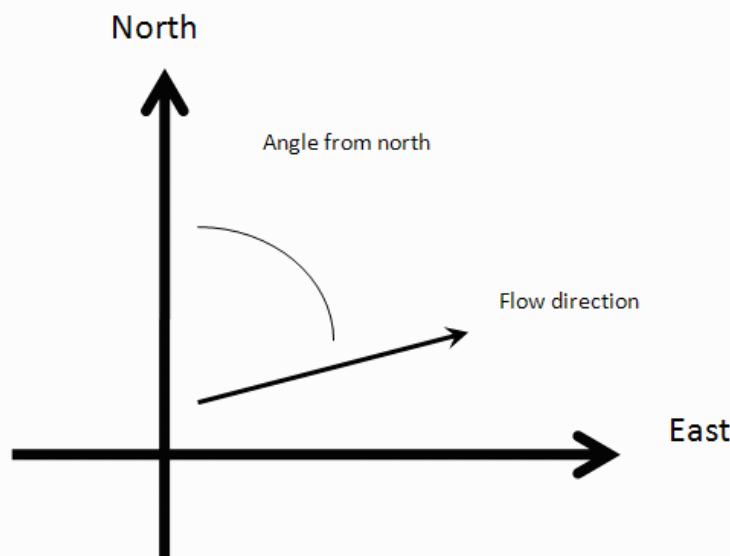
where (x_i, y_i) are the coordinates of the well and

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 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) MW-1D	6092128.064	2084372.231	30.73	
2) MW-3D	6092183.856	2084303.621	30.83	
3) MW-4D	6092116.755	2084222.948	30.57	
4)				
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	3
Max. Difference Between Head Values	0.07925
Gradient Magnitude (i)	0.002971
Flow direction as degrees from North (positive y axis)	253.3
Coefficient of Determination (R^2)	1.00

WCMS

Last updated on 1/10/2013

Appendix C

Laboratory Report and Chain of Custody Form
for the First Quarter 2013 Monitoring Event



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

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

**Laboratory Job Number 246075
ANALYTICAL REPORT**

SOMA Environmental Engineering Inc.
6620 Owens Dr.
Pleasanton, CA 94588

Project : 2551
Location : 15101 Freedom Avenue San Leandro
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-1	246075-001
MW-2	246075-002
MW-3	246075-003
MW-4	246075-004
MW-5	246075-005
MW-6	246075-006
MW-7	246075-007
MW-1D	246075-008
MW-3D	246075-009
MW-4D	246075-010
EX-1	246075-011
EX-2	246075-012
MPE-1	246075-013
MPE-2	246075-014

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: 06/21/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: **246075**
Client: **SOMA Environmental Engineering Inc.**
Project: **2551**
Location: **15101 Freedom Avenue San Leandro**
Request Date: **06/12/13**
Samples Received: **06/12/13**

This data package contains sample and QC results for fourteen water samples, requested for the above referenced project on 06/12/13. The samples were received cold and intact.

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

Low response was observed for tert-butyl alcohol (TBA) in the CCV analyzed 06/17/13 13:30; this analyte met minimum response criteria, and affected data was qualified with "b". Low response was observed for tert-butyl alcohol (TBA) in the CCV analyzed 06/15/13 14:25; this analyte met minimum response criteria, and affected data was qualified with "b". Low recoveries were observed for tert-butyl alcohol (TBA) in the MS/MSD for batch 199812; the parent sample was not a project sample, the BS/BSD were within limits, and the associated RPD was within limits. High RPD was observed for gasoline C7-C12 in the BS/BSD for batch 199682; this analyte was not detected at or above the RL in the associated samples. High RPD was observed for tert-butyl alcohol (TBA) in the BS/BSD for batch 199901; this analyte was not detected at or above the RL in the associated sample. No other analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins, Ltd.

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

C&T LOGIN # 246075

Analyses

Page _____ of _____

Project No: <u>2551</u>		Report To: <u>Joyce Bobek</u>		Turnaround Time: Standard		Fax: <u>925-734-6401</u>		Preservative			
Lab No.	Sample ID.	Sampling Date	Time	# of Containers	Matrix	Water	Soil	HCl	H ₂ SO ₄	NH ₃	ICP
1	MW-1	6/11/13	4:02	*				*	3-VOAs	*	*
2	MW-2	6/11/13	7:29	*				*	3-VOAs	*	*
3	MW-3	6/11/13	7:29	*				*	3-VOAs	*	*
4	MW-4	6/11/13	2:30	*				*	3-VOAs	*	*
5	MW-5	6/11/13	10:13	*				*	3-VOAs	*	*
6	MW-6	6/10/13	12:06	*				*	3-VOAs	*	*
7	MW-7	6/10/13	11:38	*				*	3-VOAs	*	*
8	MW-10	6/10/13	13:16	*				*	3-VOAs	*	*
9	MW-3D	6/10/13	14:05	*				*	3-VOAs	*	*
10	MW-4D	6/10/13	14:38	*				*	3-VOAs	*	*
11	EX-1	6/10/13	12:21	*				*	3-VOAs	*	*
12	EX-2	6/10/13	12:28	*				*	3-VOAs	*	*
13	MPE-1	6/10/13	15:05	*				*	3-VOAs	*	*
14	MPE-2	6/11/13	17:12	*				*	3-VOAs	*	*

Notes: EDF OUTPUT REQUIRED

Ethanol

RELINQUISHED BY:

<u>Ethanol</u>	<u>6/11/13, 17:14</u>	<u>DATE/TIME</u>	<u>Ethan</u>	<u>6/12/13, 9:10</u>	<u>DATE/TIME</u>
<u>JULY 13</u>	<u>4/13/13</u>	<u>DATE/TIME</u>	<u>JULY 13</u>	<u>4/13/13</u>	<u>DATE/TIME</u>
		<u>DATE/TIME</u>			<u>DATE/TIME</u>

RECEIVED BY:

<u>Vincent</u>	<u>6/11/13</u>	<u>DATE/TIME</u>	<u>Vincent</u>	<u>6/12/13, 14:15</u>	<u>DATE/TIME</u>
<u>Vincent</u>	<u>6/11/13</u>	<u>DATE/TIME</u>	<u>Vincent</u>	<u>6/12/13, 14:15</u>	<u>DATE/TIME</u>
		<u>DATE/TIME</u>			<u>DATE/TIME</u>

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 246075 Date Received 6/12/13 Number of coolers 1
 Client SOMA ENVIRONMENTAL Project 15101 FREEDOM AVE, SAN LEANDRO (2553)

Date Opened 6/12/13 By (print) TR (sign) Tina Rakka
 Date Logged in 6/12/13 By (print) MK (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) 2.7

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

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	199812
Lab ID:	246075-001	Sampled:	06/11/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	6,800	250
tert-Butyl Alcohol (TBA)	ND	50
Isopropyl Ether (DIPE)	ND	2.5
Ethyl tert-Butyl Ether (ETBE)	ND	2.5
Methyl tert-Amyl Ether (TAME)	ND	2.5
Ethanol	ND	5,000
MTBE	ND	2.5
1,2-Dichloroethane	ND	2.5
Benzene	200	2.5
Toluene	ND	2.5
1,2-Dibromoethane	ND	2.5
Ethylbenzene	300	2.5
m,p-Xylenes	120	2.5
o-Xylene	ND	2.5

Surrogate	%REC	Limits
Dibromofluoromethane	105	77-134
1,2-Dichloroethane-d4	113	72-140
Toluene-d8	105	80-120
Bromofluorobenzene	110	80-120

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-2	Units:	ug/L
Lab ID:	246075-002	Sampled:	06/11/13
Matrix:	Water	Received:	06/12/13

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Gasoline C7-C12	510	130	2.500	199812	06/18/13
tert-Butyl Alcohol (TBA)	150	10	1.000	199682	06/14/13
Isopropyl Ether (DIPE)	ND	0.50	1.000	199682	06/14/13
Ethyl tert-Butyl Ether (ETBE)	1.6	0.50	1.000	199682	06/14/13
Methyl tert-Amyl Ether (TAME)	ND	0.50	1.000	199682	06/14/13
Ethanol	ND	1,000	1.000	199682	06/14/13
MTBE	3.1	0.50	1.000	199682	06/14/13
1,2-Dichloroethane	ND	0.50	1.000	199682	06/14/13
Benzene	150	1.3	2.500	199812	06/18/13
Toluene	ND	0.50	1.000	199682	06/14/13
1,2-Dibromoethane	ND	0.50	1.000	199682	06/14/13
Ethylbenzene	15	0.50	1.000	199682	06/14/13
m,p-Xylenes	10	0.50	1.000	199682	06/14/13
o-Xylene	2.3	0.50	1.000	199682	06/14/13

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	87	77-134	1.000	199682	06/14/13
1,2-Dichloroethane-d4	93	72-140	1.000	199682	06/14/13
Toluene-d8	97	80-120	1.000	199682	06/14/13
Bromofluorobenzene	94	80-120	1.000	199682	06/14/13

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-3	Batch#:	199901
Lab ID:	246075-003	Sampled:	06/11/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/20/13
Diln Fac:	10.00		

Analyte	Result	RL
Gasoline C7-C12	14,000	500
tert-Butyl Alcohol (TBA)	ND	100
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	10,000
MTBE	6.1	5.0
1,2-Dichloroethane	ND	5.0
Benzene	700	5.0
Toluene	26	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	860	5.0
m,p-Xylenes	1,400	5.0
o-Xylene	230	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	99	77-134
1,2-Dichloroethane-d4	112	72-140
Toluene-d8	106	80-120
Bromofluorobenzene	109	80-120

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-4	Batch#:	199812
Lab ID:	246075-004	Sampled:	06/11/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	10.00		

Analyte	Result	RL
Gasoline C7-C12	1,100	500
tert-Butyl Alcohol (TBA)	890	100
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	12	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	10,000
MTBE	35	5.0
1,2-Dichloroethane	ND	5.0
Benzene	860	5.0
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	64	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	111	72-140
Toluene-d8	101	80-120
Bromofluorobenzene	112	80-120

ND= Not Detected

RL= Reporting Limit

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Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-5	Batch#:	199812
Lab ID:	246075-005	Sampled:	06/11/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	2.000		

Analyte	Result	RL
Gasoline C7-C12	2,900	100
tert-Butyl Alcohol (TBA)	ND	20
Isopropyl Ether (DIPE)	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	1.0
Methyl tert-Amyl Ether (TAME)	2.5	1.0
Ethanol	ND	2,000
MTBE	3.0	1.0
1,2-Dichloroethane	ND	1.0
Benzene	22	1.0
Toluene	3.9	1.0
1,2-Dibromoethane	ND	1.0
Ethylbenzene	110	1.0
m,p-Xylenes	100	1.0
o-Xylene	31	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	107	72-140
Toluene-d8	110	80-120
Bromofluorobenzene	115	80-120

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-6	Batch#:	199812
Lab ID:	246075-006	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	12,000	250
tert-Butyl Alcohol (TBA)	ND	50
Isopropyl Ether (DIPE)	ND	2.5
Ethyl tert-Butyl Ether (ETBE)	ND	2.5
Methyl tert-Amyl Ether (TAME)	ND	2.5
Ethanol	ND	5,000
MTBE	ND	2.5
1,2-Dichloroethane	ND	2.5
Benzene	20	2.5
Toluene	ND	2.5
1,2-Dibromoethane	ND	2.5
Ethylbenzene	280	2.5
m,p-Xylenes	230	2.5
o-Xylene	ND	2.5

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	112	72-140
Toluene-d8	109	80-120
Bromofluorobenzene	116	80-120

ND= Not Detected

RL= Reporting Limit

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Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-7	Diln Fac:	1.000
Lab ID:	246075-007	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L		

Analyte	Result	RL	Batch#	Analyzed
Gasoline C7-C12	890	50	199759	06/17/13
tert-Butyl Alcohol (TBA)	ND	10	199682	06/14/13
Isopropyl Ether (DIPE)	ND	0.50	199759	06/17/13
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	199759	06/17/13
Methyl tert-Amyl Ether (TAME)	ND	0.50	199759	06/17/13
Ethanol	ND	1,000	199759	06/17/13
MTBE	2.3	0.50	199759	06/17/13
1,2-Dichloroethane	ND	0.50	199759	06/17/13
Benzene	ND	0.50	199759	06/17/13
Toluene	ND	0.50	199759	06/17/13
1,2-Dibromoethane	ND	0.50	199759	06/17/13
Ethylbenzene	2.6	0.50	199759	06/17/13
m,p-Xylenes	ND	0.50	199759	06/17/13
o-Xylene	ND	0.50	199759	06/17/13

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	101	77-134	199759	06/17/13
1,2-Dichloroethane-d4	118	72-140	199759	06/17/13
Toluene-d8	108	80-120	199759	06/17/13
Bromofluorobenzene	112	80-120	199759	06/17/13

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-1D	Diln Fac:	1.000
Lab ID:	246075-008	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L		

Analyte	Result	RL	Batch#	Analyzed
Gasoline C7-C12	110	50	199759	06/17/13
tert-Butyl Alcohol (TBA)	ND	10	199682	06/14/13
Isopropyl Ether (DIPE)	ND	0.50	199759	06/17/13
Ethyl tert-Butyl Ether (ETBE)	ND	0.50	199759	06/17/13
Methyl tert-Amyl Ether (TAME)	ND	0.50	199759	06/17/13
Ethanol	ND	1,000	199759	06/17/13
MTBE	ND	0.50	199759	06/17/13
1,2-Dichloroethane	ND	0.50	199759	06/17/13
Benzene	ND	0.50	199759	06/17/13
Toluene	ND	0.50	199759	06/17/13
1,2-Dibromoethane	ND	0.50	199759	06/17/13
Ethylbenzene	0.55	0.50	199759	06/17/13
m,p-Xylenes	ND	0.50	199759	06/17/13
o-Xylene	ND	0.50	199759	06/17/13

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	102	77-134	199759	06/17/13
1,2-Dichloroethane-d4	113	72-140	199759	06/17/13
Toluene-d8	111	80-120	199759	06/17/13
Bromofluorobenzene	113	80-120	199759	06/17/13

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-3D	Batch#:	199682
Lab ID:	246075-009	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/14/13
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
Ethanol	ND	1,000
MTBE	3.5	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	86	77-134
1,2-Dichloroethane-d4	93	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	91	80-120

ND= Not Detected

RL= Reporting Limit

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11.0

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MW-4D	Batch#:	199682
Lab ID:	246075-010	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/14/13
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
Ethanol	ND	1,000
MTBE	1.7	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	85	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	92	80-120

ND= Not Detected

RL= Reporting Limit

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Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	EX-1	Diln Fac:	1.000
Lab ID:	246075-011	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L		

Analyte	Result	RL	Batch#	Analyzed
Gasoline C7-C12	340	50	199759	06/17/13
tert-Butyl Alcohol (TBA)	280	10	199682	06/14/13
Isopropyl Ether (DIPE)	ND	0.50	199759	06/17/13
Ethyl tert-Butyl Ether (ETBE)	4.0	0.50	199759	06/17/13
Methyl tert-Amyl Ether (TAME)	1.6	0.50	199759	06/17/13
Ethanol	ND	1,000	199759	06/17/13
MTBE	62	0.50	199759	06/17/13
1,2-Dichloroethane	ND	0.50	199759	06/17/13
Benzene	37	0.50	199759	06/17/13
Toluene	ND	0.50	199759	06/17/13
1,2-Dibromoethane	ND	0.50	199759	06/17/13
Ethylbenzene	5.9	0.50	199759	06/17/13
m,p-Xylenes	13	0.50	199759	06/17/13
o-Xylene	2.1	0.50	199759	06/17/13

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	102	77-134	199759	06/17/13
1,2-Dichloroethane-d4	113	72-140	199759	06/17/13
Toluene-d8	110	80-120	199759	06/17/13
Bromofluorobenzene	111	80-120	199759	06/17/13

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	EX-2	Batch#:	199812
Lab ID:	246075-012	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	2.000		

Analyte	Result	RL
Gasoline C7-C12	2,600	100
tert-Butyl Alcohol (TBA)	32	20
Isopropyl Ether (DIPE)	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	1.0
Ethanol	ND	2,000
MTBE	6.8	1.0
1,2-Dichloroethane	ND	1.0
Benzene	190	1.0
Toluene	20	1.0
1,2-Dibromoethane	ND	1.0
Ethylbenzene	100	1.0
m,p-Xylenes	200	1.0
o-Xylene	48	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	100	77-134
1,2-Dichloroethane-d4	101	72-140
Toluene-d8	110	80-120
Bromofluorobenzene	116	80-120

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MPE-1	Batch#:	199812
Lab ID:	246075-013	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	25.00		

Analyte	Result	RL
Gasoline C7-C12	42,000	1,300
tert-Butyl Alcohol (TBA)	660	250
Isopropyl Ether (DIPE)	ND	13
Ethyl tert-Butyl Ether (ETBE)	ND	13
Methyl tert-Amyl Ether (TAME)	380	13
Ethanol	ND	25,000
MTBE	670	13
1,2-Dichloroethane	ND	13
Benzene	1,900	13
Toluene	980	13
1,2-Dibromoethane	ND	13
Ethylbenzene	630	13
m,p-Xylenes	3,100	13
o-Xylene	1,300	13

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	109	72-140
Toluene-d8	109	80-120
Bromofluorobenzene	115	80-120

ND= Not Detected

RL= Reporting Limit

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	MPE-2	Batch#:	199724
Lab ID:	246075-014	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/16/13
Diln Fac:	25.00		

Analyte	Result	RL
Gasoline C7-C12	26,000	1,300
tert-Butyl Alcohol (TBA)	ND	250
Isopropyl Ether (DIPE)	ND	13
Ethyl tert-Butyl Ether (ETBE)	ND	13
Methyl tert-Amyl Ether (TAME)	ND	13
Ethanol	ND	25,000
MTBE	ND	13
1,2-Dichloroethane	ND	13
Benzene	920	13
Toluene	ND	13
1,2-Dibromoethane	ND	13
Ethylbenzene	1,500	13
m,p-Xylenes	1,300	13
o-Xylene	52	13

Surrogate	%REC	Limits
Dibromofluoromethane	89	77-134
1,2-Dichloroethane-d4	103	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199682
Units:	ug/L	Analyzed:	06/14/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693590

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	62.50	54.78	88	37-144
Isopropyl Ether (DIPE)	12.50	9.309	74	52-123
Ethyl tert-Butyl Ether (ETBE)	12.50	10.51	84	57-120
Methyl tert-Amyl Ether (TAME)	12.50	11.82	95	59-120
MTBE	12.50	11.30	90	58-120
1,2-Dichloroethane	12.50	12.64	101	73-136
Benzene	12.50	12.28	98	78-125
Toluene	12.50	14.71	118	79-123
1,2-Dibromoethane	12.50	13.13	105	78-120
Ethylbenzene	12.50	14.70	118	80-126
m,p-Xylenes	25.00	28.82	115	80-123
o-Xylene	12.50	14.17	113	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	86	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	98	80-120
Bromofluorobenzene	94	80-120

Type: BSD Lab ID: QC693591

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	62.50	48.79	78	37-144	12	31
Isopropyl Ether (DIPE)	12.50	8.807	70	52-123	6	20
Ethyl tert-Butyl Ether (ETBE)	12.50	9.821	79	57-120	7	23
Methyl tert-Amyl Ether (TAME)	12.50	11.58	93	59-120	2	22
MTBE	12.50	10.87	87	58-120	4	23
1,2-Dichloroethane	12.50	12.04	96	73-136	5	20
Benzene	12.50	11.86	95	78-125	3	20
Toluene	12.50	13.74	110	79-123	7	20
1,2-Dibromoethane	12.50	12.39	99	78-120	6	20
Ethylbenzene	12.50	13.38	107	80-126	9	20
m,p-Xylenes	25.00	27.30	109	80-123	5	20
o-Xylene	12.50	13.20	106	75-120	7	20

Surrogate	%REC	Limits
Dibromofluoromethane	87	77-134
1,2-Dichloroethane-d4	97	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-120

RPD= Relative Percent Difference

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Batch QC Report
Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC693592	Batch#:	199682
Matrix:	Water	Analyzed:	06/14/13
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
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	84	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	93	80-120

ND= Not Detected

RL= Reporting Limit

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18.0

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199682
Units:	ug/L	Analyzed:	06/14/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693593

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,045	104	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	85	77-134
1,2-Dichloroethane-d4	96	72-140
Toluene-d8	100	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC693594

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	803.4	80	80-120	26	* 20

Surrogate	%REC	Limits
Dibromofluoromethane	87	77-134
1,2-Dichloroethane-d4	101	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	96	80-120

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Batch QC Report
Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199724
Units:	ug/L	Analyzed:	06/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693756

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	62.50	40.23 b	64	37-144
Isopropyl Ether (DIPE)	12.50	9.451	76	52-123
Ethyl tert-Butyl Ether (ETBE)	12.50	9.925	79	57-120
Methyl tert-Amyl Ether (TAME)	12.50	11.49	92	59-120
MTBE	12.50	10.45	84	58-120
1,2-Dichloroethane	12.50	12.21	98	73-136
Benzene	12.50	12.86	103	78-125
Toluene	12.50	13.73	110	79-123
1,2-Dibromoethane	12.50	12.34	99	78-120
Ethylbenzene	12.50	13.86	111	80-126
m,p-Xylenes	25.00	26.82	107	80-123
o-Xylene	12.50	13.69	110	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	85	77-134
1,2-Dichloroethane-d4	90	72-140
Toluene-d8	98	80-120
Bromofluorobenzene	92	80-120

Type: BSD Lab ID: QC693757

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	62.50	42.62 b	68	37-144	6	31
Isopropyl Ether (DIPE)	12.50	8.773	70	52-123	7	20
Ethyl tert-Butyl Ether (ETBE)	12.50	9.520	76	57-120	4	23
Methyl tert-Amyl Ether (TAME)	12.50	10.71	86	59-120	7	22
MTBE	12.50	10.17	81	58-120	3	23
1,2-Dichloroethane	12.50	11.59	93	73-136	5	20
Benzene	12.50	11.46	92	78-125	11	20
Toluene	12.50	12.30	98	79-123	11	20
1,2-Dibromoethane	12.50	11.62	93	78-120	6	20
Ethylbenzene	12.50	12.33	99	80-126	12	20
m,p-Xylenes	25.00	24.82	99	80-123	8	20
o-Xylene	12.50	12.00	96	75-120	13	20

Surrogate	%REC	Limits
Dibromofluoromethane	85	77-134
1,2-Dichloroethane-d4	91	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	93	80-120

b= See narrative

RPD= Relative Percent Difference

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20.0

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199724
Units:	ug/L	Analyzed:	06/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693758

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	962.2	96	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	85	77-134
1,2-Dichloroethane-d4	96	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	94	80-120

Type: BSD Lab ID: QC693759

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,000	902.9	90	80-120	6 20

Surrogate	%REC	Limits
Dibromofluoromethane	85	77-134
1,2-Dichloroethane-d4	94	72-140
Toluene-d8	98	80-120
Bromofluorobenzene	95	80-120

RPD= Relative Percent Difference

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21.0

Batch QC Report
Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC693760	Batch#:	199724
Matrix:	Water	Analyzed:	06/15/13
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
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	84	77-134
1,2-Dichloroethane-d4	93	72-140
Toluene-d8	98	80-120
Bromofluorobenzene	91	80-120

ND= Not Detected

RL= Reporting Limit

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22.0

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC693889	Batch#:	199759
Matrix:	Water	Analyzed:	06/17/13
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
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	117	72-140
Toluene-d8	104	80-120
Bromofluorobenzene	112	80-120

ND= Not Detected

RL= Reporting Limit

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23.0

Batch QC Report
Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199759
Units:	ug/L	Analyzed:	06/17/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693890

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	60.76 b	61	37-144
Isopropyl Ether (DIPE)	20.00	18.83	94	52-123
Ethyl tert-Butyl Ether (ETBE)	20.00	18.86	94	57-120
Methyl tert-Amyl Ether (TAME)	20.00	17.68	88	59-120
MTBE	20.00	18.17	91	58-120
1,2-Dichloroethane	20.00	24.05	120	73-136
Benzene	20.00	20.98	105	78-125
Toluene	20.00	21.91	110	79-123
1,2-Dibromoethane	20.00	17.36	87	78-120
Ethylbenzene	20.00	23.03	115	80-126
m,p-Xylenes	40.00	43.68	109	80-123
o-Xylene	20.00	19.77	99	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	117	72-140
Toluene-d8	107	80-120
Bromofluorobenzene	112	80-120

Type: BSD Lab ID: QC693891

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	100.0	59.65 b	60	37-144	2	31
Isopropyl Ether (DIPE)	20.00	18.16	91	52-123	4	20
Ethyl tert-Butyl Ether (ETBE)	20.00	18.40	92	57-120	3	23
Methyl tert-Amyl Ether (TAME)	20.00	17.54	88	59-120	1	22
MTBE	20.00	18.13	91	58-120	0	23
1,2-Dichloroethane	20.00	22.83	114	73-136	5	20
Benzene	20.00	19.95	100	78-125	5	20
Toluene	20.00	20.81	104	79-123	5	20
1,2-Dibromoethane	20.00	17.42	87	78-120	0	20
Ethylbenzene	20.00	22.73	114	80-126	1	20
m,p-Xylenes	40.00	42.24	106	80-123	3	20
o-Xylene	20.00	19.22	96	75-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	77-134
1,2-Dichloroethane-d4	117	72-140
Toluene-d8	108	80-120
Bromofluorobenzene	114	80-120

b= See narrative
RPD= Relative Percent Difference

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Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199759
Units:	ug/L	Analyzed:	06/17/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693892

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	900.0	978.2	109	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	77-134
1,2-Dichloroethane-d4	118	72-140
Toluene-d8	109	80-120
Bromofluorobenzene	115	80-120

Type: BSD Lab ID: QC693893

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	900.0	930.9	103	80-120	5 20

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	118	72-140
Toluene-d8	107	80-120
Bromofluorobenzene	114	80-120

RPD= Relative Percent Difference

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25.0

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199812
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	1.000		

Type: BS Lab ID: QC694115

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	89.69	72	37-144
Isopropyl Ether (DIPE)	25.00	24.19	97	52-123
Ethyl tert-Butyl Ether (ETBE)	25.00	23.23	93	57-120
Methyl tert-Amyl Ether (TAME)	25.00	22.05	88	59-120
MTBE	25.00	23.06	92	58-120
1,2-Dichloroethane	25.00	26.96	108	73-136
Benzene	25.00	25.57	102	78-125
Toluene	25.00	27.65	111	79-123
1,2-Dibromoethane	25.00	22.13	89	78-120
Ethylbenzene	25.00	29.02	116	80-126
m,p-Xylenes	50.00	53.95	108	80-123
o-Xylene	25.00	25.42	102	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	110	72-140
Toluene-d8	109	80-120
Bromofluorobenzene	114	80-120

Type: BSD Lab ID: QC694116

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	83.09	66	37-144	8	31
Isopropyl Ether (DIPE)	25.00	23.57	94	52-123	3	20
Ethyl tert-Butyl Ether (ETBE)	25.00	22.55	90	57-120	3	23
Methyl tert-Amyl Ether (TAME)	25.00	21.18	85	59-120	4	22
MTBE	25.00	22.32	89	58-120	3	23
1,2-Dichloroethane	25.00	27.02	108	73-136	0	20
Benzene	25.00	25.34	101	78-125	1	20
Toluene	25.00	27.30	109	79-123	1	20
1,2-Dibromoethane	25.00	21.99	88	78-120	1	20
Ethylbenzene	25.00	28.57	114	80-126	2	20
m,p-Xylenes	50.00	53.26	107	80-123	1	20
o-Xylene	25.00	24.37	97	75-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	111	72-140
Toluene-d8	110	80-120
Bromofluorobenzene	113	80-120

RPD= Relative Percent Difference

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26.0

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC694117	Batch#:	199812
Matrix:	Water	Analyzed:	06/18/13
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
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	112	72-140
Toluene-d8	111	80-120
Bromofluorobenzene	112	80-120

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199812
Units:	ug/L	Analyzed:	06/18/13
Diln Fac:	1.000		

Type: BS Lab ID: QC694118

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,007	101	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	103	77-134
1,2-Dichloroethane-d4	115	72-140
Toluene-d8	110	80-120
Bromofluorobenzene	116	80-120

Type: BSD Lab ID: QC694119

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	1,000	947.4	95	80-120	6 20

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	111	72-140
Toluene-d8	109	80-120
Bromofluorobenzene	115	80-120

RPD= Relative Percent Difference

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28.0

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	246234-002	Batch#:	199812
Matrix:	Water	Sampled:	06/17/13
Units:	ug/L	Received:	06/17/13

Type: MS Analyzed: 06/18/13
 Lab ID: QC694161

Analyte	MSS	Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	<2.239	250.0	85.38	34 *	42-140	
Isopropyl Ether (DIPE)	<0.1000	25.00	23.75	95	59-120	
Ethyl tert-Butyl Ether (ETBE)	<0.1000	25.00	22.78	91	62-120	
Methyl tert-Amyl Ether (TAME)	<0.1002	25.00	21.18	85	63-120	
MTBE	<0.1119	25.00	22.44	90	63-120	
1,2-Dichloroethane	<0.1071	25.00	26.20	105	80-133	
Benzene	0.2188	25.00	25.93	103	80-125	
Toluene	6.307	25.00	32.64	105	80-122	
1,2-Dibromoethane	<0.1341	25.00	22.40	90	80-120	
Ethylbenzene	2.002	25.00	30.12	112	80-124	
m,p-Xylenes	21.08	50.00	69.87	98	80-121	
o-Xylene	9.799	25.00	33.35	94	77-120	

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	108	72-140
Toluene-d8	109	80-120
Bromofluorobenzene	114	80-120

Type: MSD Analyzed: 06/19/13
 Lab ID: QC694162

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	250.0	77.30	31 *	42-140	10	39
Isopropyl Ether (DIPE)	25.00	22.60	90	59-120	5	25
Ethyl tert-Butyl Ether (ETBE)	25.00	21.97	88	62-120	4	27
Methyl tert-Amyl Ether (TAME)	25.00	20.41	82	63-120	4	27
MTBE	25.00	23.71	95	63-120	5	27
1,2-Dichloroethane	25.00	25.49	102	80-133	3	21
Benzene	25.00	25.28	100	80-125	3	21
Toluene	25.00	32.39	104	80-122	1	21
1,2-Dibromoethane	25.00	21.76	87	80-120	3	22
Ethylbenzene	25.00	30.10	112	80-124	0	21
m,p-Xylenes	50.00	69.36	97	80-121	1	21
o-Xylene	25.00	33.03	93	77-120	1	22

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	106	72-140
Toluene-d8	110	80-120
Bromofluorobenzene	112	80-120

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

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29.0

Batch QC Report
Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC694475	Batch#:	199901
Matrix:	Water	Analyzed:	06/20/13
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
Ethanol	ND	1,000
MTBE	ND	0.50
1,2-Dichloroethane	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
1,2-Dibromoethane	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Dibromofluoromethane	98	77-134
1,2-Dichloroethane-d4	115	72-140
Toluene-d8	106	80-120
Bromofluorobenzene	107	80-120

ND= Not Detected

RL= Reporting Limit

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30.0

Batch QC Report
Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199901
Units:	ug/L	Analyzed:	06/20/13
Diln Fac:	1.000		

Type: BS Lab ID: QC694476

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	106.3	97.27	92	37-144
Isopropyl Ether (DIPE)	21.25	18.67	88	52-123
Ethyl tert-Butyl Ether (ETBE)	21.25	20.51	97	57-120
Methyl tert-Amyl Ether (TAME)	21.25	21.12	99	59-120
MTBE	21.25	21.82	103	58-120
1,2-Dichloroethane	21.25	25.10	118	73-136
Benzene	21.25	19.87	93	78-125
Toluene	21.25	21.50	101	79-123
1,2-Dibromoethane	21.25	20.31	96	78-120
Ethylbenzene	21.25	22.78	107	80-126
m,p-Xylenes	42.50	42.36	100	80-123
o-Xylene	21.25	19.85	93	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	126	72-140
Toluene-d8	105	80-120
Bromofluorobenzene	106	80-120

Type: BSD Lab ID: QC694477

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	106.3	61.91	58	37-144	44	*
Isopropyl Ether (DIPE)	21.25	17.38	82	52-123	7	20
Ethyl tert-Butyl Ether (ETBE)	21.25	17.50	82	57-120	16	23
Methyl tert-Amyl Ether (TAME)	21.25	17.61	83	59-120	18	22
MTBE	21.25	17.85	84	58-120	20	23
1,2-Dichloroethane	21.25	22.98	108	73-136	9	20
Benzene	21.25	19.63	92	78-125	1	20
Toluene	21.25	21.21	100	79-123	1	20
1,2-Dibromoethane	21.25	17.32	82	78-120	16	20
Ethylbenzene	21.25	22.36	105	80-126	2	20
m,p-Xylenes	42.50	42.82	101	80-123	1	20
o-Xylene	21.25	19.22	90	75-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	77-134
1,2-Dichloroethane-d4	114	72-140
Toluene-d8	105	80-120
Bromofluorobenzene	106	80-120

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	246075	Location:	15101 Freedom Avenue San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2551	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	199901
Units:	ug/L	Analyzed:	06/20/13
Diln Fac:	1.000		

Type: BS Lab ID: QC694478

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	800.0	834.0	104	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	77-134
1,2-Dichloroethane-d4	116	72-140
Toluene-d8	107	80-120
Bromofluorobenzene	108	80-120

Type: BSD Lab ID: QC694479

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	800.0	762.4	95	80-120	9 20

Surrogate	%REC	Limits
Dibromofluoromethane	96	77-134
1,2-Dichloroethane-d4	112	72-140
Toluene-d8	106	80-120
Bromofluorobenzene	108	80-120

RPD= Relative Percent Difference

Page 1 of 1

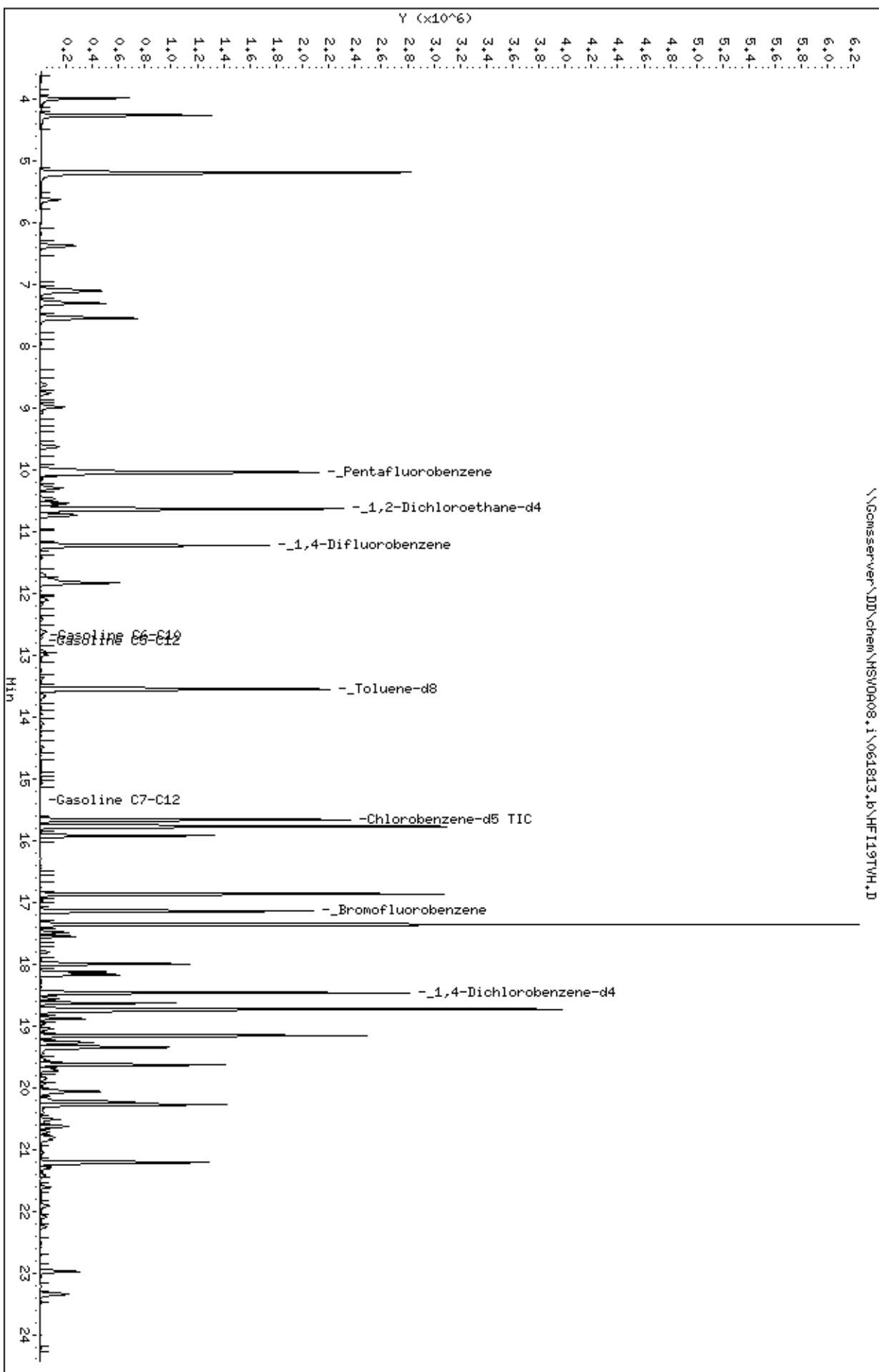
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Sample Info: S,246075-001

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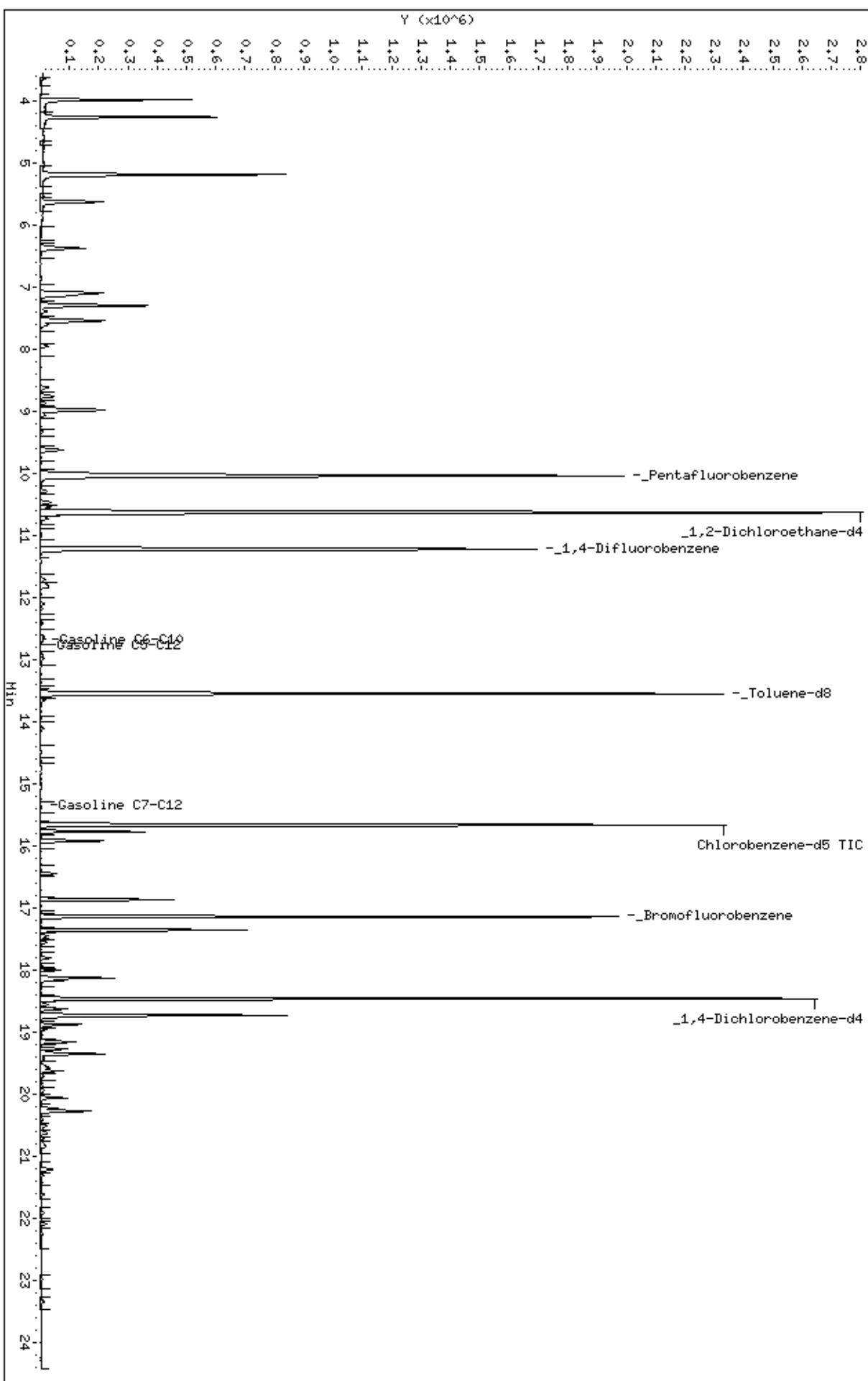
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Operator: VOC
Column diameter: 2.00



Column phase:

Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00

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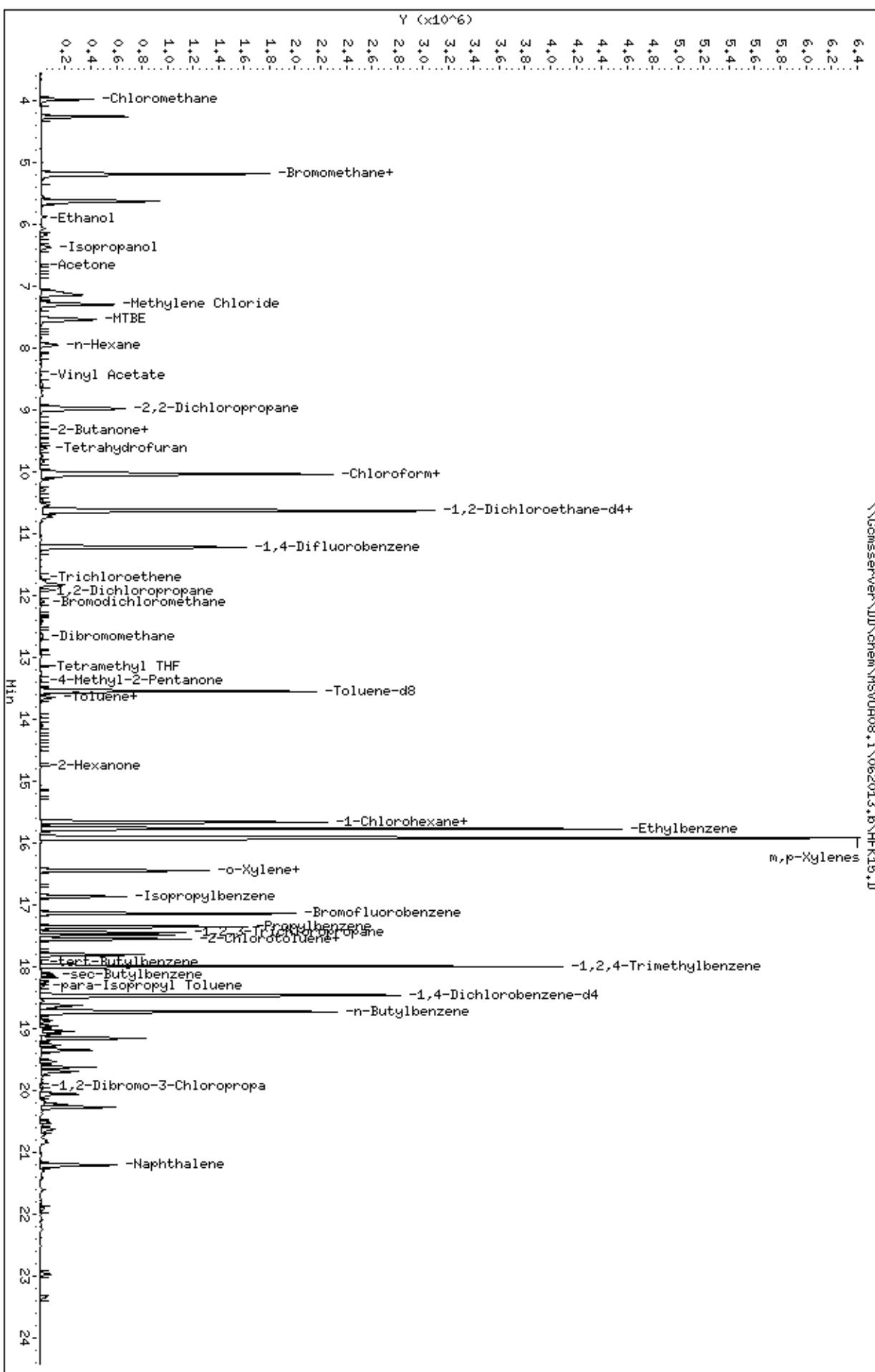
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Purge Volume: 5.0

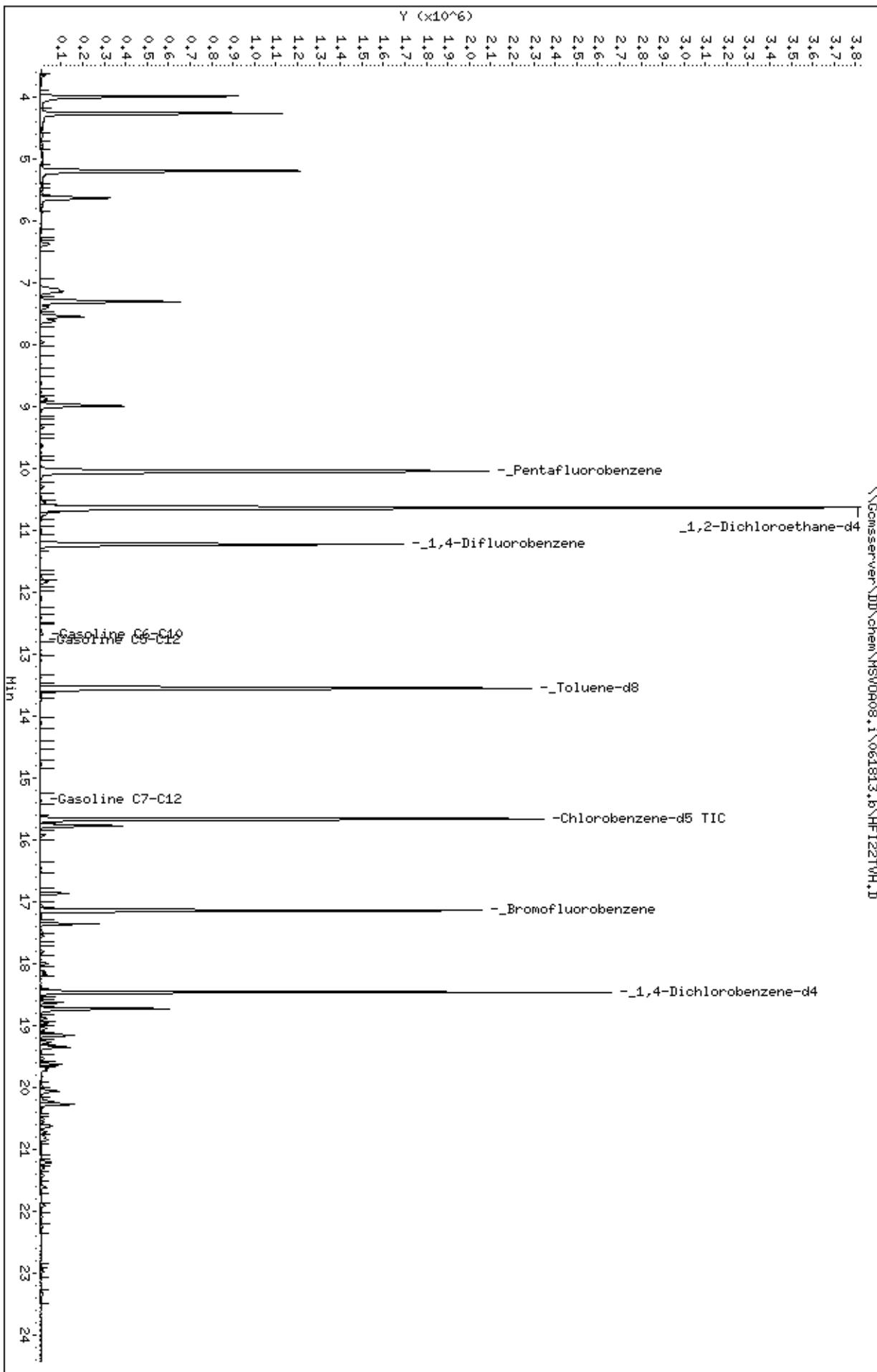
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Operator: VOC
Column diameter: 0.25

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Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00
Column phase:
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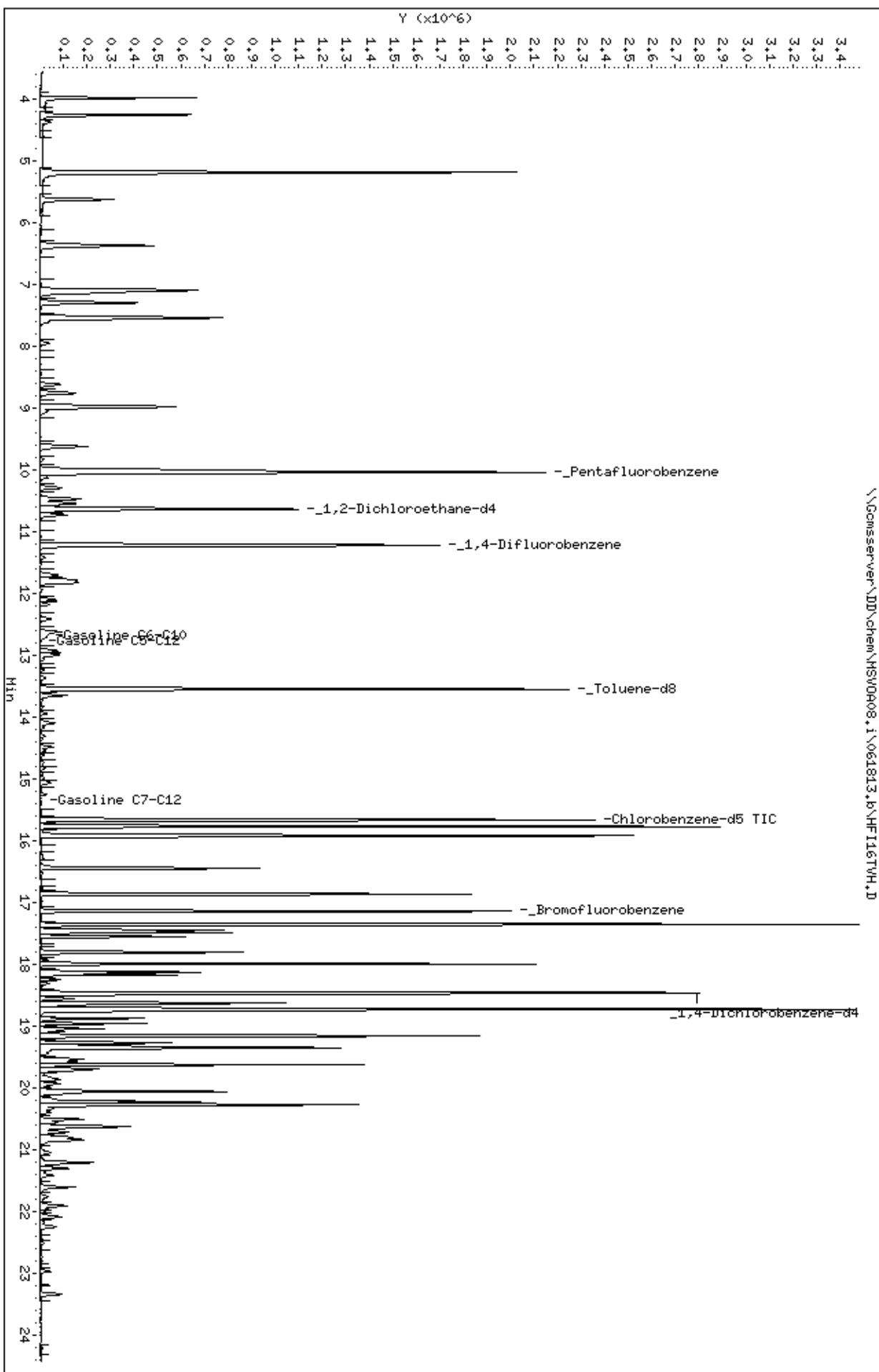


Client ID: DYNH P&T
Sample Info: S.246075-005

Column phase:

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Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00



Date : 18-JUN-2013 20:59

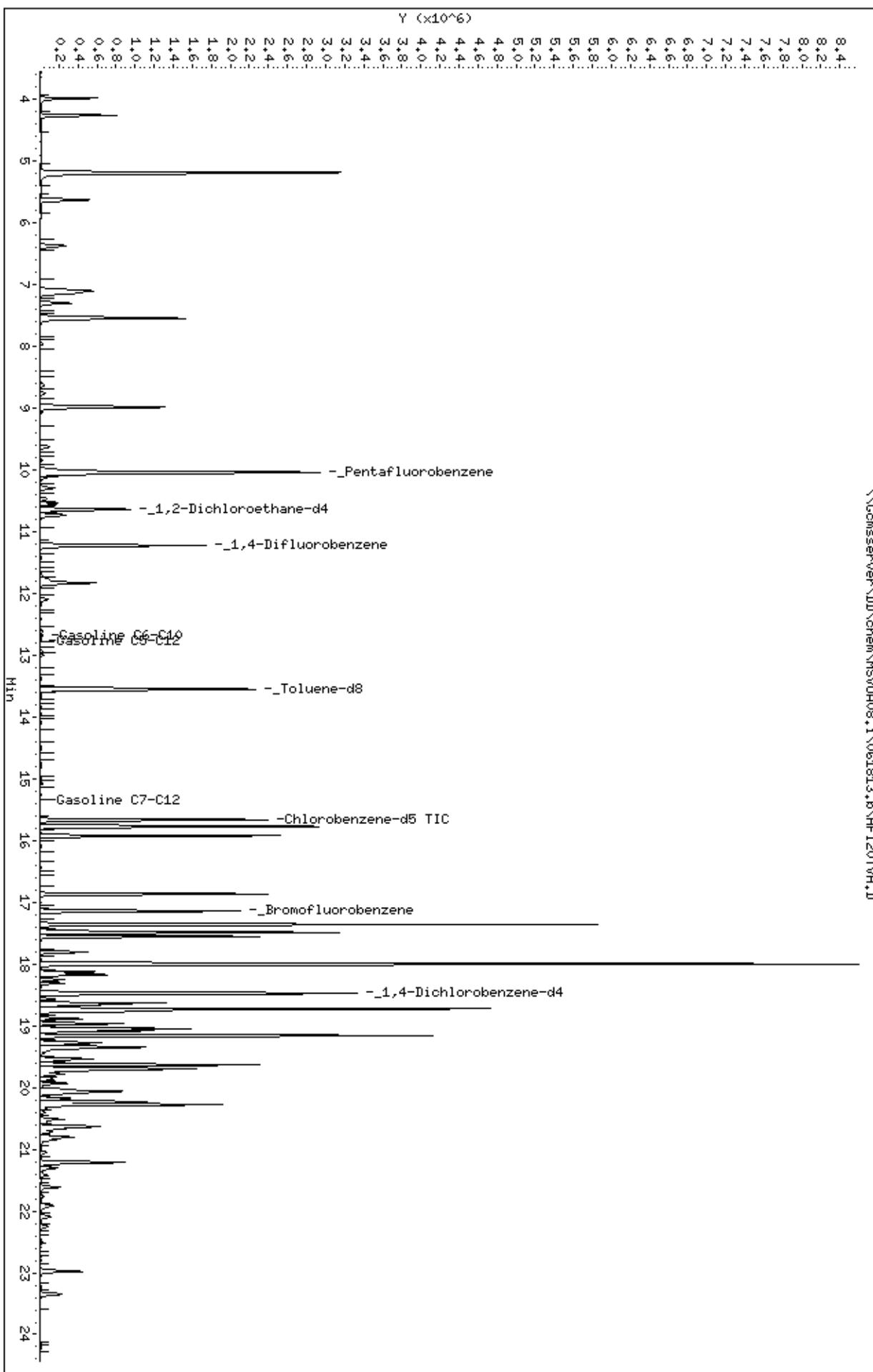
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Sample Info: S.246075-006

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Instrument: MSWD08.i
Operator: VOC
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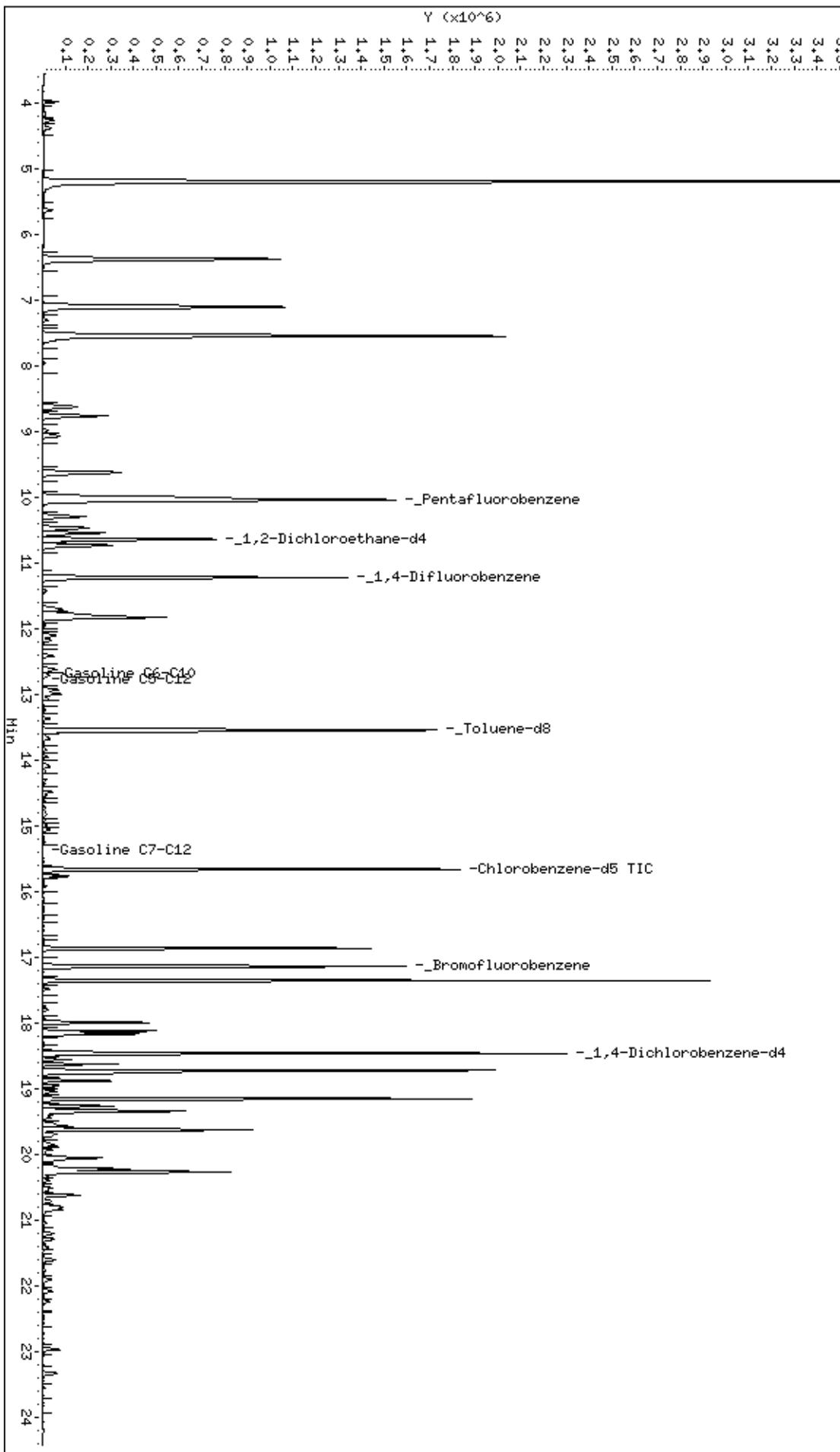
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Sample Info: S,246075-007

Column phase:

Instrument: MSWD08.i
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Column diameter: 2.00

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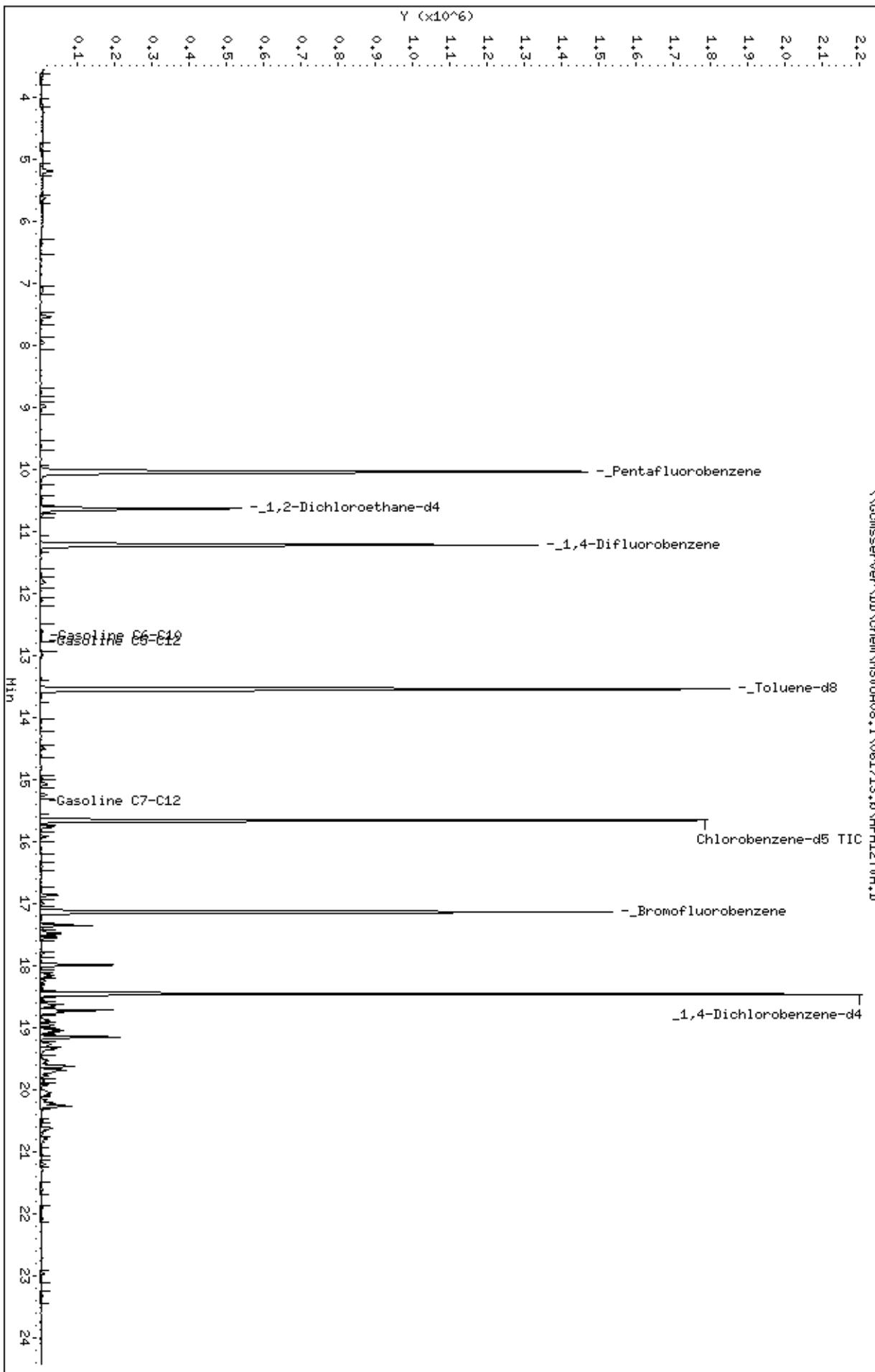


Sample Info: S_246075-008

Column phase:

Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00

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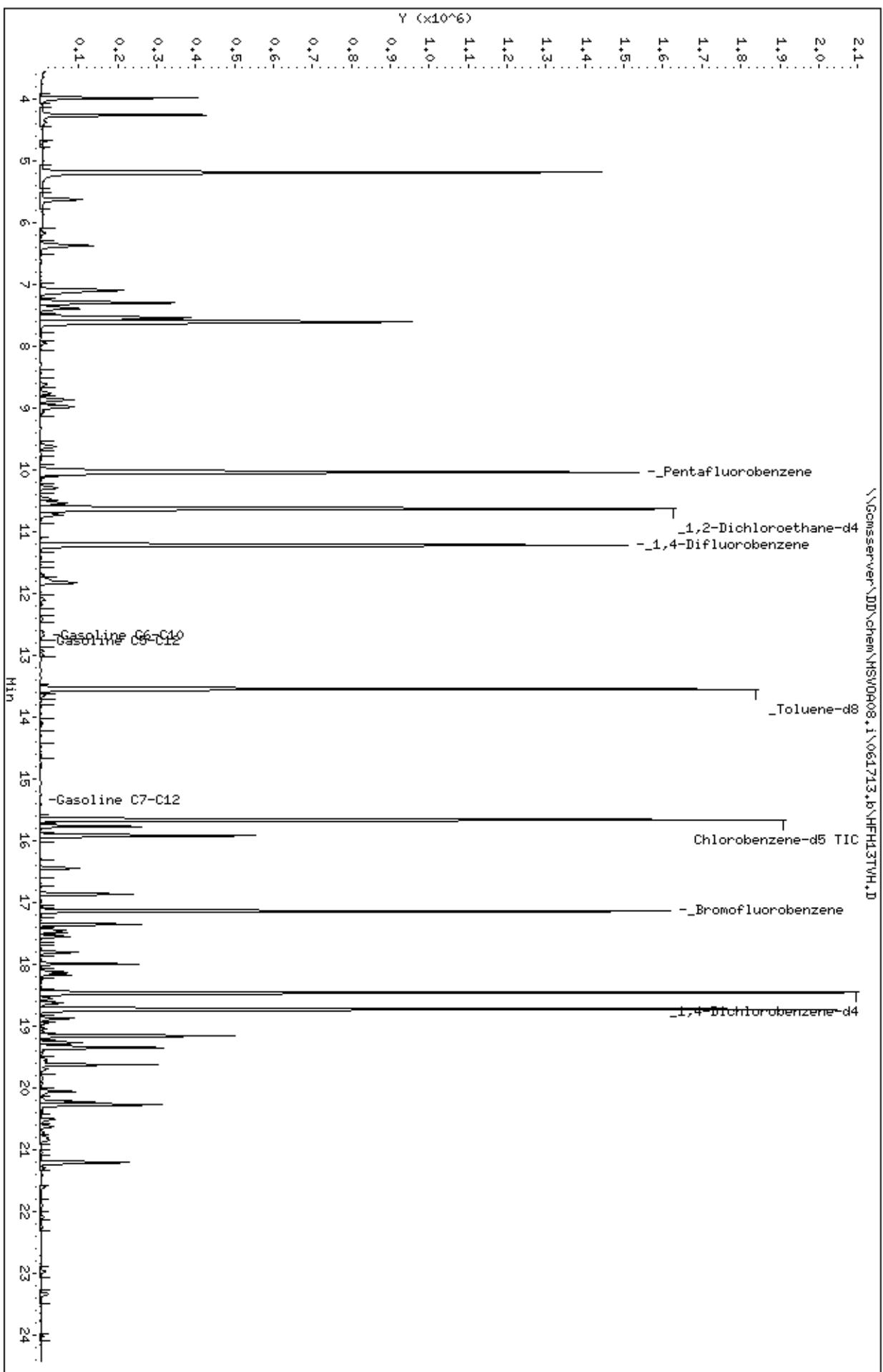


Sample Info: S.246075-011

Column phase:

Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00

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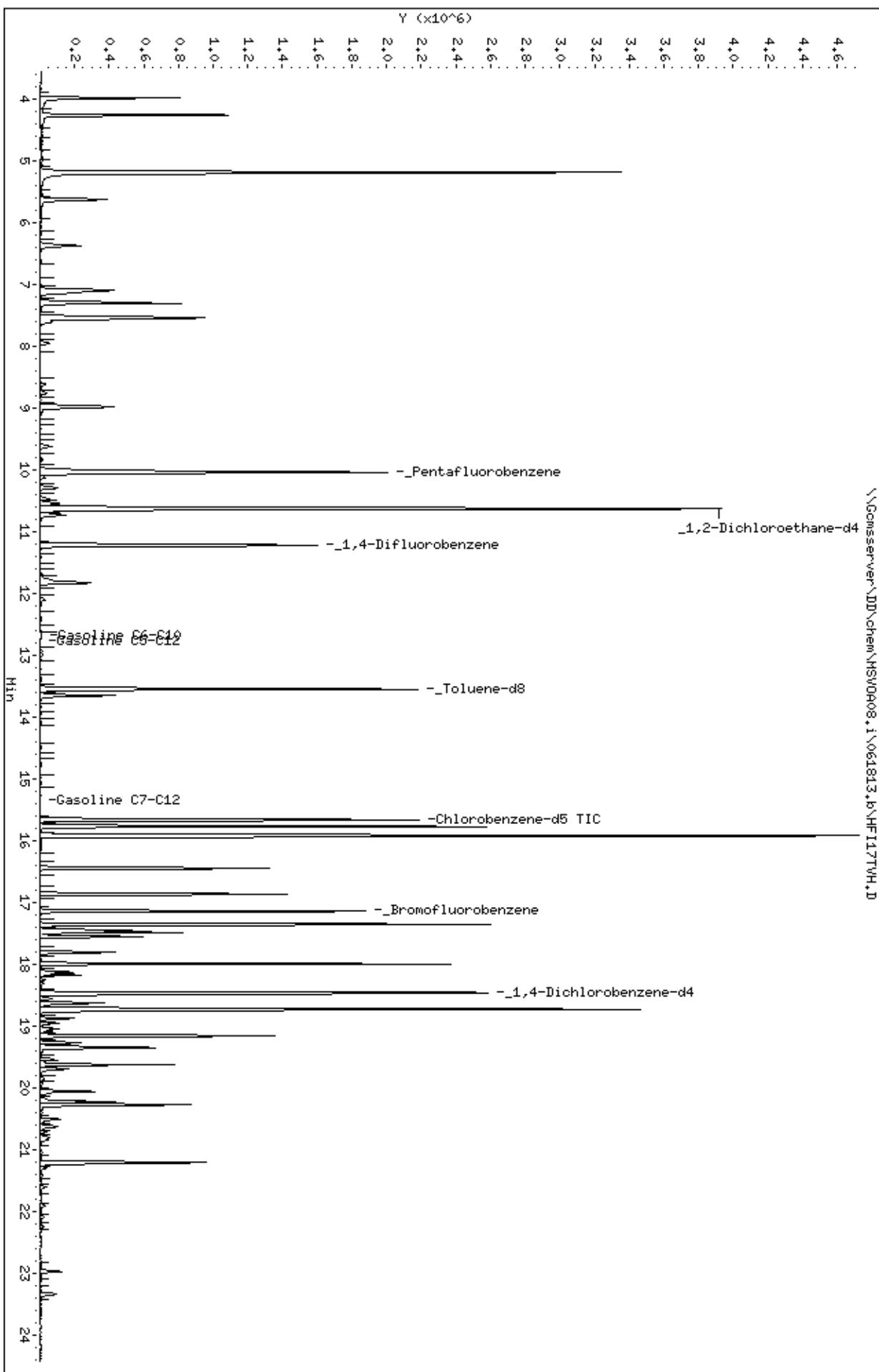


Sample Info: S_246075-012

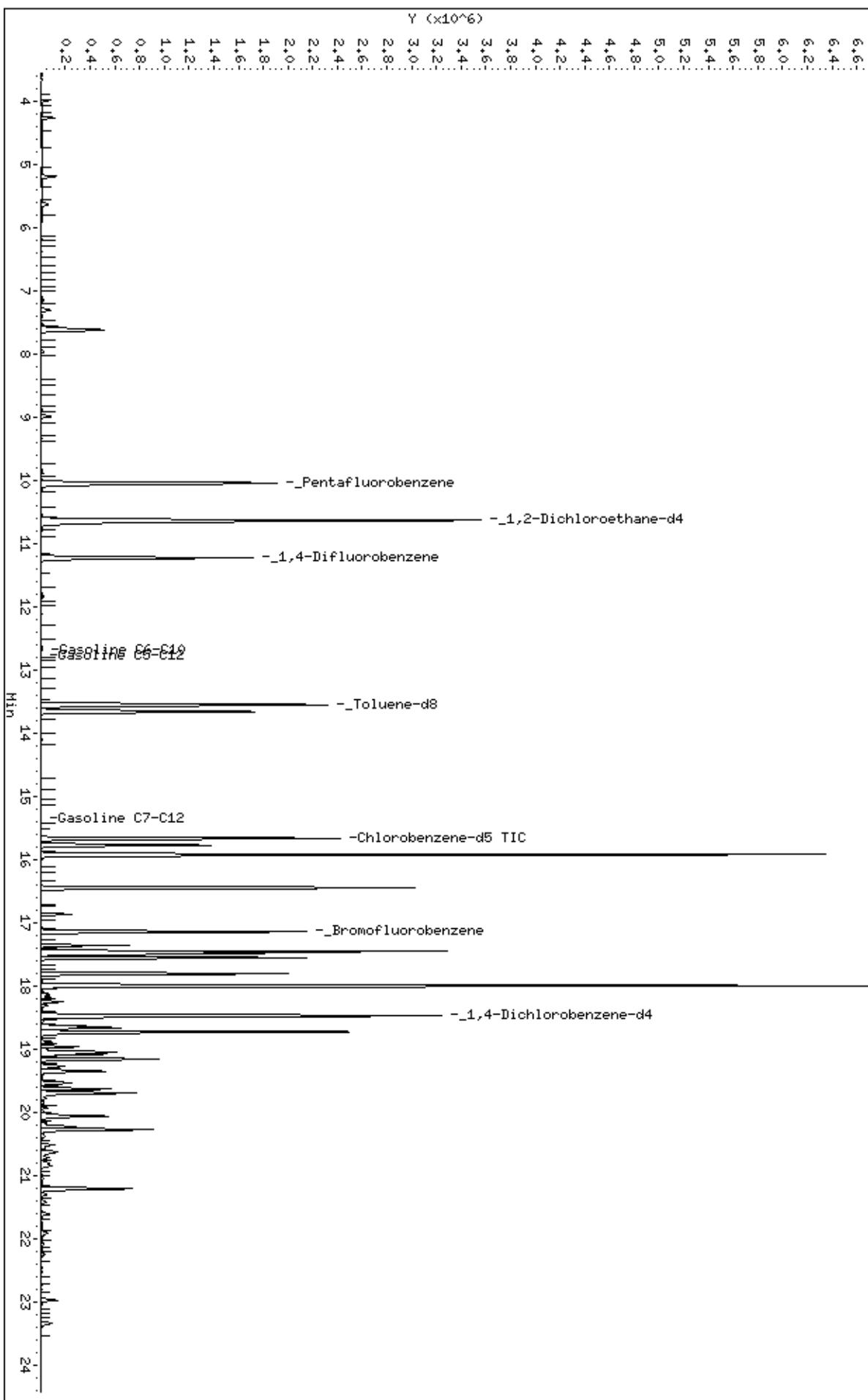
Column phase:

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Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00



Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00
Column phase:
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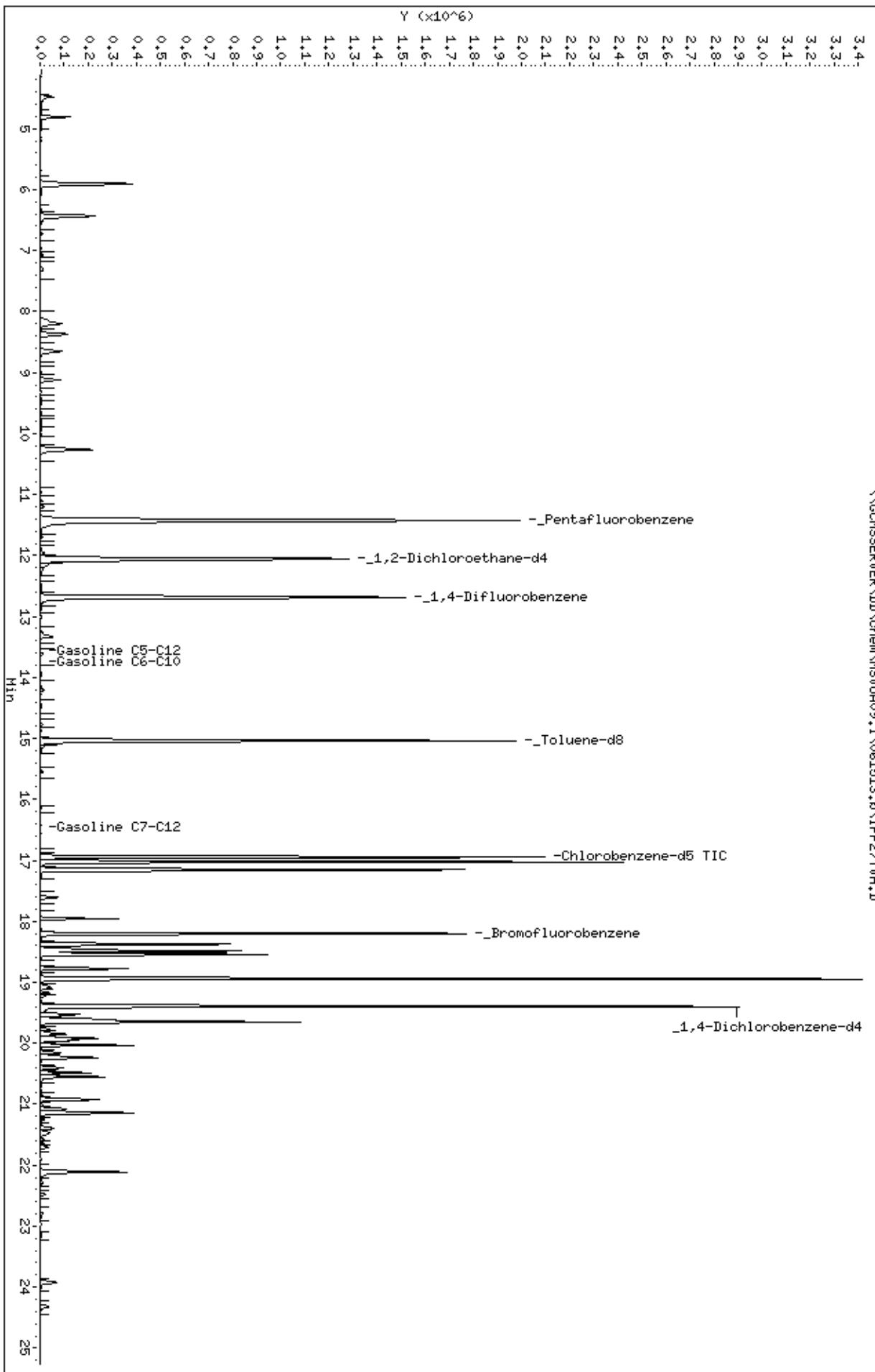


Sample Info: S,245075-014

Column phase:

Instrument: MSWD09.i
Operator: VOC
Column diameter: 2.00

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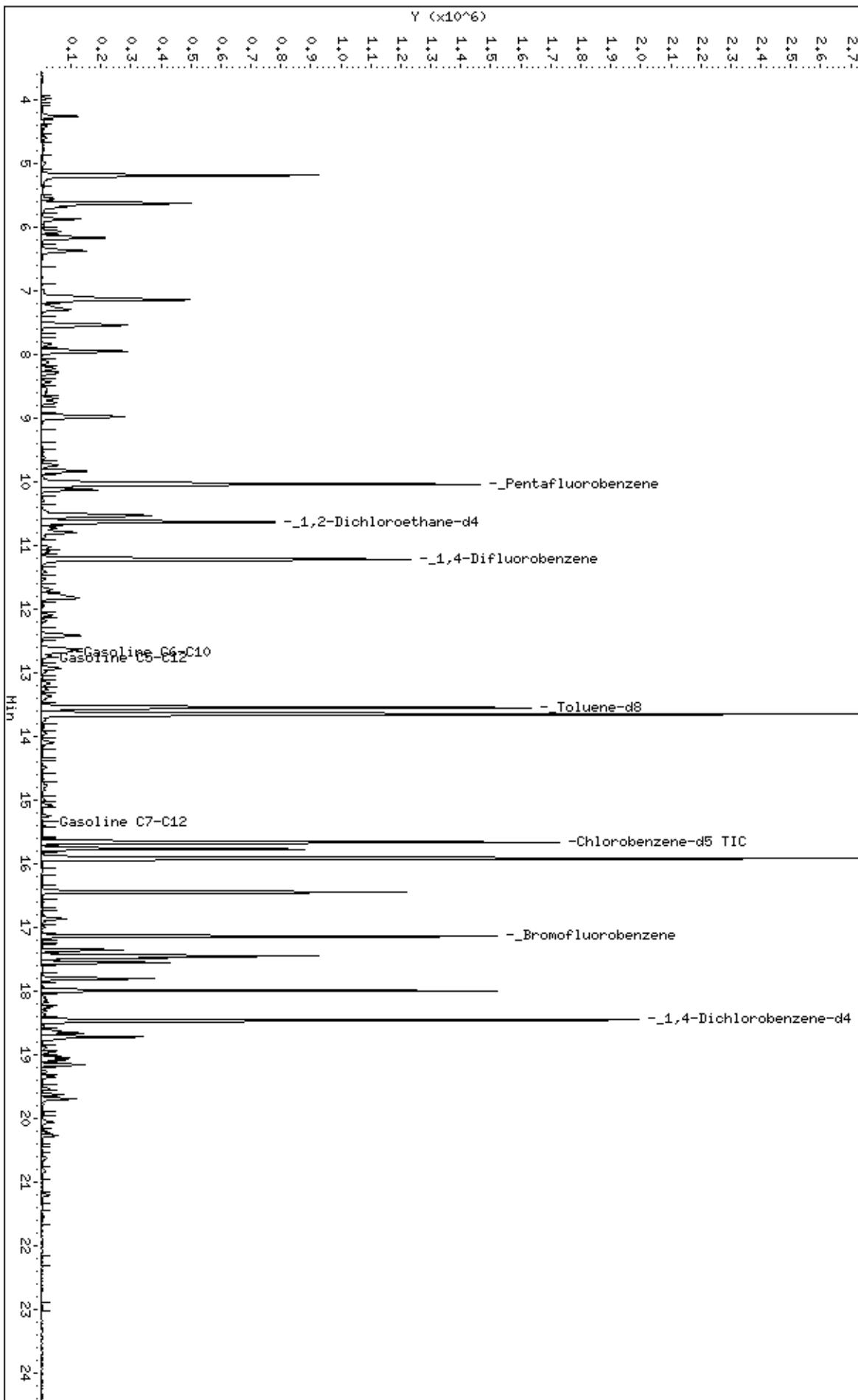


Sample Info: CCW/BS, QC693892,199759,S22314.,.009/100

Column phase:

Instrument: MSWD08.i
Operator: VOC
Column diameter: 2.00

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Appendix D

**Laboratory Report and Chain of Custody
Form for the Treatment System**



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

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

**Laboratory Job Number 244512
ANALYTICAL REPORT**

SOMA Environmental Engineering Inc.
6620 Owens Dr.
Pleasanton, CA 94588

Project : 2553
Location : 15101 Freedom Ave. San Leandro
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
EFFLUENT	244512-001
GAC-1	244512-002
INFLUENT	244512-003

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: 04/19/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: **244512**
Client: **SOMA Environmental Engineering Inc.**
Project: **2553**
Location: **15101 Freedom Ave. San Leandro**
Request Date: **04/12/13**
Samples Received: **04/12/13**

This data package contains sample and QC results for three water samples, requested for the above referenced project on 04/12/13. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

CHAIN OF CUSTODY

Page 1 of 1

Curtis & Tompkins, Ltd

Analytical Laboratory Since 1878

2323 Fifth Street

Berkeley, CA 94710

(510)486-0900 Phone

(510)486-0532 Fax

LOGIN # 244572

Project No: 2553

Sampler: MASOUD - SEPEHR

Project Name: 15101 Freedom Ave, San Leandro

Report To: Joyce Bobek

Company : SOMA Environmental

Turnaround Time: Standard

Telephone: 925-734-6400

Fax: 925-734-6401

Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative			
			Soil	Water	Waste		HCl	H ₂ SO ₄	HNO ₃	ICE
1	EFFLUENT	4/12/13 - 11	*			6 VOAs	*		*	
			*			2-500 ml Ambers			*	
2	GAC-1		*			6 VOAs	*		*	
3	INFLUENT		*			6 VOAs	*		*	

Notes: EDF OUTPUT REQUIRED

RELINQUISHED BY:

4/12/13 12:35

DATE/TIME

4/12/13 12:35

DATE/TIME

4/12/13 12:35

DATE/TIME

RECEIVED BY:

4/12/13 12:35

DATE/TIME

4/12/13 12:35

DATE/TIME

4/12/13 12:35

DATE/TIME

COOLER RECEIPT CHECKLIST



Login # 244572 Date Received 4/12/13 Number of coolers 0
 Client SUMA Project 2553

Date Opened 4/12/13 By (print) EL (sign) E. L. D.
 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) _____

<input type="checkbox"/> Bubble Wrap	<input checked="" type="checkbox"/> Foam blocks	<input type="checkbox"/> Bags	<input type="checkbox"/> None
<input type="checkbox"/> Cloth material	<input type="checkbox"/> Cardboard	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> 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

26) -001: 1 of 6 VOA's re'd by bubble

Curtis & Tompkins Laboratories Analytical Report

Lab #:	244512	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553		
Matrix:	Water	Sampled:	04/12/13
Units:	ug/L	Received:	04/12/13
Diln Fac:	1.000	Analyzed:	04/15/13
Batch#:	197395		

Field ID: **EFFLUENT** Lab ID: **244512-001**
Type: **SAMPLE**

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	97	76-128	EPA 8015B
Bromofluorobenzene (PID)	101	70-136	EPA 8021B

Field ID: **GAC-1** Lab ID: **244512-002**
Type: **SAMPLE**

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	97	76-128	EPA 8015B
Bromofluorobenzene (PID)	95	70-136	EPA 8021B

ND= Not Detected

RL= Reporting Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	244512	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553		
Matrix:	Water	Sampled:	04/12/13
Units:	ug/L	Received:	04/12/13
Diln Fac:	1.000	Analyzed:	04/15/13
Batch#:	197395		

Field ID: INFLUENT Lab ID: 244512-003
 Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	1,600	50	EPA 8015B
Benzene	110	0.50	EPA 8021B
Toluene	3.8	0.50	EPA 8021B
Ethylbenzene	64	0.50	EPA 8021B
m,p-Xylenes	110	0.50	EPA 8021B
o-Xylene	21	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	96	76-128	EPA 8015B
Bromofluorobenzene (PID)	98	70-136	EPA 8021B

Type: BLANK Lab ID: QC684293

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	93	76-128	EPA 8015B
Bromofluorobenzene (PID)	94	70-136	EPA 8021B

ND= Not Detected

RL= Reporting Limit

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	244512	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	197395
Units:	ug/L	Analyzed:	04/15/13
Diln Fac:	1.000		

Type: BS Lab ID: QC684290

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	9.978	100	80-120
Toluene	10.00	9.650	96	80-120
Ethylbenzene	10.00	10.20	102	80-120
m,p-Xylenes	10.00	10.20	102	80-120
o-Xylene	10.00	10.17	102	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	94	70-136

Type: BSD Lab ID: QC684291

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	10.16	102	80-120	2	20
Toluene	10.00	9.816	98	80-120	2	20
Ethylbenzene	10.00	10.35	103	80-120	1	20
m,p-Xylenes	10.00	10.18	102	80-120	0	20
o-Xylene	10.00	10.29	103	80-120	1	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	98	70-136

RPD= Relative Percent Difference

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	244512	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC684292	Batch#:	197395
Matrix:	Water	Analyzed:	04/15/13
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,060	106	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	90	76-128

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	244512	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8015B
Field ID:	EFFLUENT	Batch#:	197395
MSS Lab ID:	244512-001	Sampled:	04/12/13
Matrix:	Water	Received:	04/12/13
Units:	ug/L	Analyzed:	04/15/13
Diln Fac:	1.000		

Type: MS Lab ID: QC684294

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	18.48	2,000	2,077	103	76-120
Surrogate					
Bromofluorobenzene (FID)	99	76-128			

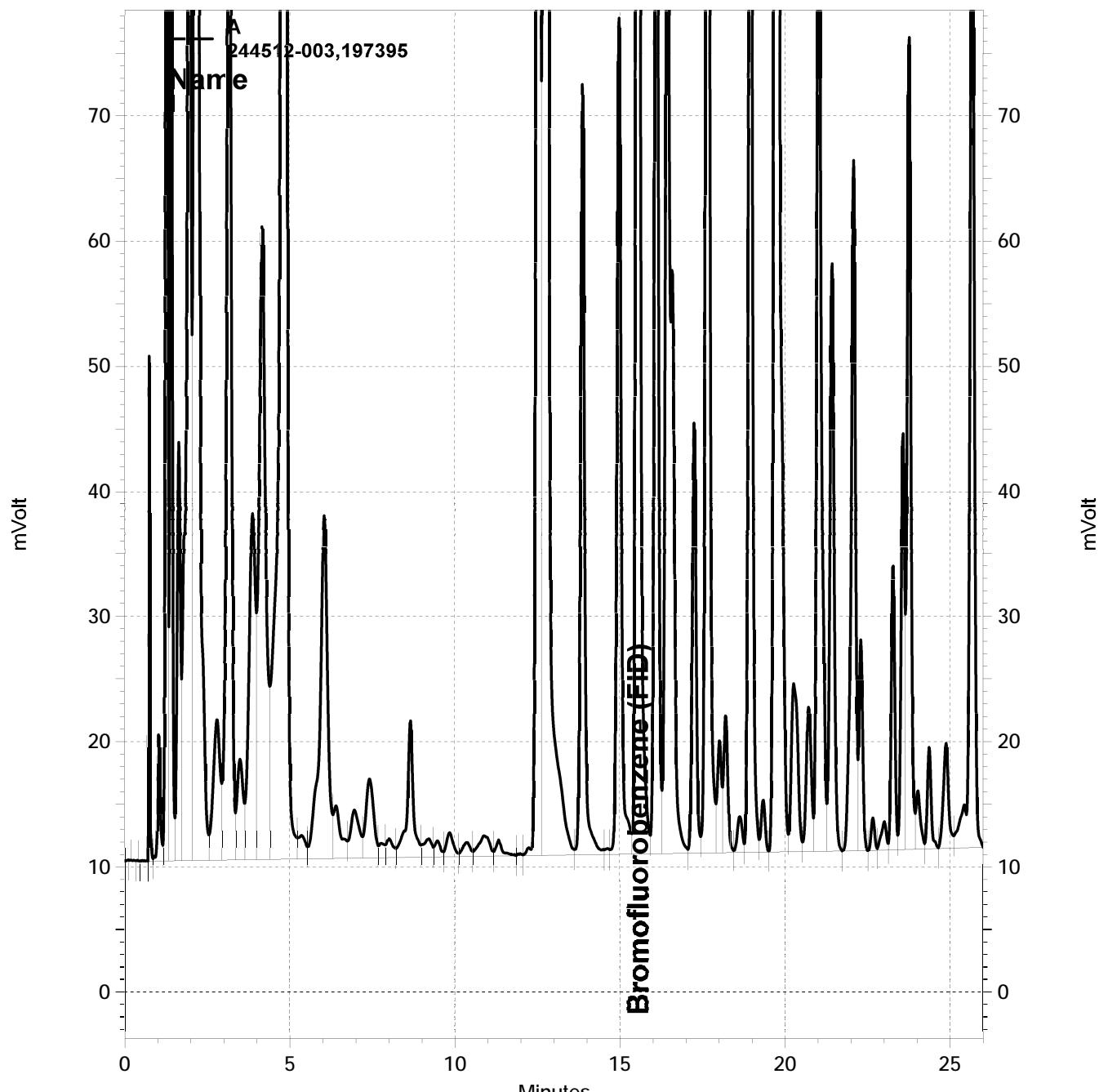
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Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	2,000	1,998	99	76-120	4 20
Surrogate					
Bromofluorobenzene (FID)	99	76-128			

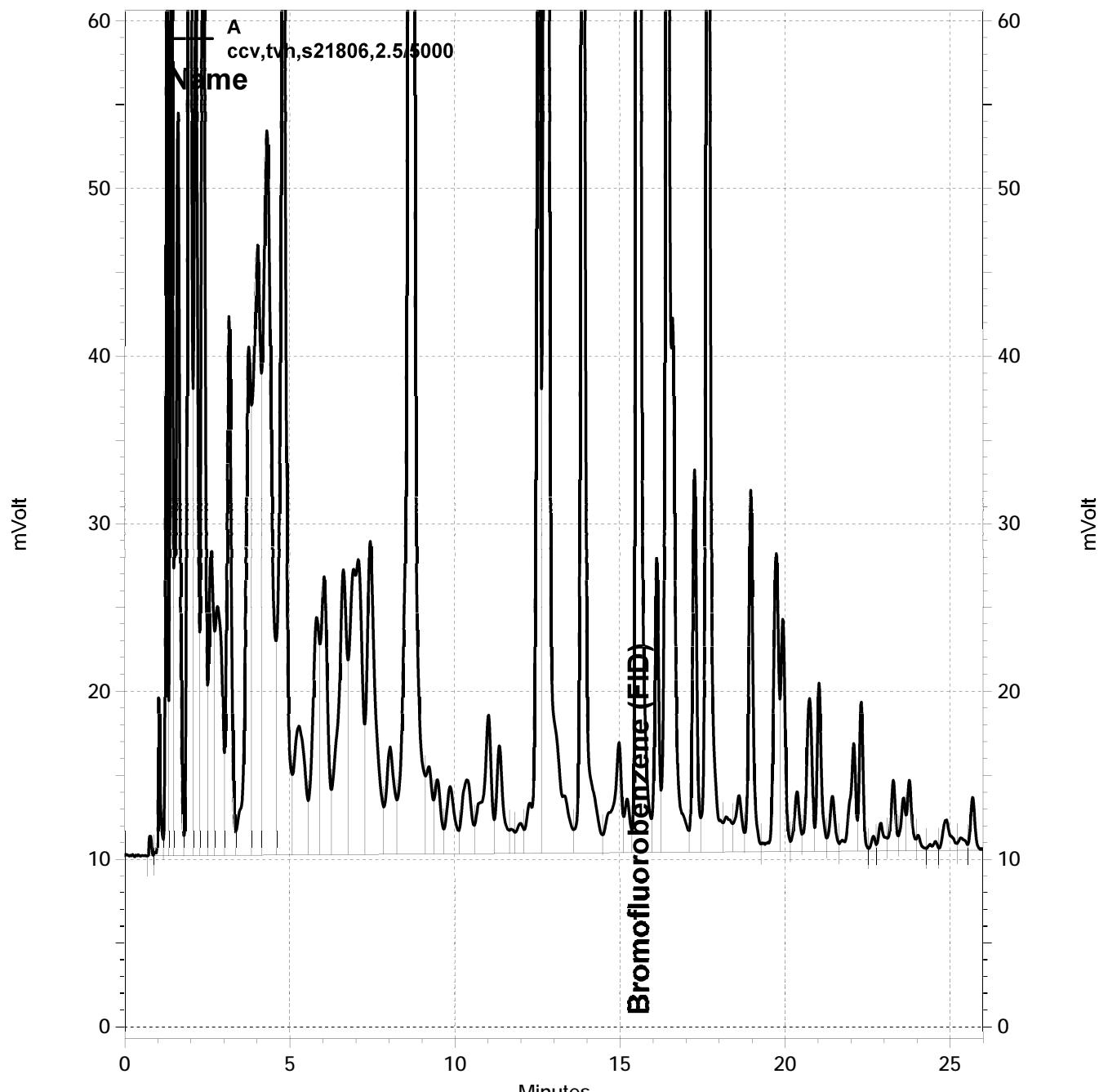
RPD= Relative Percent Difference

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6.0



— \\Lims\\gdrive\\ezchrom\\Projects\\GC07\\Data\\105-012, A



— \\Lims\\gdrive\\ezchrom\\Projects\\GC07\\Data\\105-003, A

Total Extractable Hydrocarbons

Lab #:	244512	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Field ID:	EFFLUENT	Sampled:	04/12/13
Matrix:	Water	Received:	04/12/13
Units:	ug/L	Prepared:	04/17/13
Diln Fac:	1.000	Analyzed:	04/18/13
Batch#:	197484		

Type: SAMPLE Lab ID: 244512-001

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	104	62-133

Type: BLANK Lab ID: QC684626

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	97	62-133

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

8.0

Batch QC Report
Total Extractable Hydrocarbons

Lab #:	244512	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	197484
Units:	ug/L	Prepared:	04/17/13
Diln Fac:	1.000	Analyzed:	04/18/13

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC684627

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,419	97	59-120

Surrogate	%REC	Limits
o-Terphenyl	101	62-133

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC684628

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,567	103	59-120	6	46

Surrogate	%REC	Limits
o-Terphenyl	107	62-133

RPD= Relative Percent Difference

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9.0



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

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

Laboratory Job Number 246076
ANALYTICAL REPORT

SOMA Environmental Engineering Inc.
6620 Owens Dr.
Pleasanton, CA 94588

Project : 2553
Location : 15101 Freedom Ave. San Leandro
Level : II

Sample ID
EFFLUENT

Lab ID
246076-001

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: 06/18/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: **246076**
Client: **SOMA Environmental Engineering Inc.**
Project: **2553**
Location: **15101 Freedom Ave. San Leandro**
Request Date: **06/12/13**
Samples Received: **06/12/13**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 06/12/13. The sample was received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

CHAIN OF CUSTODY

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Curtis & Tompkins, Ltd

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

Project No: 2553

LOGIN # 246076

Analyses

Sampler: Parsa Motavalli

Report To: Joyce Bobek

Project Name: 15101 Freedom Ave, San Leandr Company : SOMA Environmental

Turnaround Time: Standard Telephone: 925-734-6400

Fax: 925-734-6401

Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative			
			Soil	Water	Waste		HCL	H ₂ SO ₄	HNO ₃	ICE
1	Effluent	6/10/13, 15:50	*			6 VOAs	*		*	
		6/10/13, 15:50	*			2-500 mL Ambers			*	

Notes: EDF OUTPUT REQUIRED

RELINQUISHED BY:

Parsa Motavalli

6/12/13 910
DATE/TIME

Joyce Bobek

6/12/13 1415
DATE/TIME

RECEIVED BY:

Ruby Lee

6/12/13 910
DATE/TIME

Vigil C

6/12/13 1415
DATE/TIME

DATE/TIME

DATE/TIME

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 246076 Date Received 6/12/13 Number of coolers 1
 Client SOMA ENVIRONMENTAL Project 15101 FREEDOM AVE, SAN LEANDRO (2553)

Date Opened 6/12/13 By (print) TR (sign) Tina Rakas
 Date Logged in 6/12/13 By (print) m.s. (sign) vj

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) 27

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

Curtis & Tompkins Laboratories Analytical Report

Lab #:	246076	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553		
Field ID:	EFFLUENT	Batch#:	199668
Matrix:	Water	Sampled:	06/10/13
Units:	ug/L	Received:	06/12/13
Diln Fac:	1.000	Analyzed:	06/13/13

Type: SAMPLE Lab ID: 246076-001

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	103	76-128	EPA 8015B
Bromofluorobenzene (PID)	90	70-136	EPA 8021B

Type: BLANK Lab ID: QC693532

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	102	76-128	EPA 8015B
Bromofluorobenzene (PID)	96	70-136	EPA 8021B

ND= Not Detected

RL= Reporting Limit

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	246076	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	199668
Units:	ug/L	Analyzed:	06/13/13
Diln Fac:	1.000		

Type: BS Lab ID: QC693529

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	9.739	97	80-120
Toluene	10.00	9.638	96	80-120
Ethylbenzene	10.00	9.921	99	80-120
m,p-Xylenes	10.00	9.658	97	80-120
o-Xylene	10.00	9.801	98	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	92	70-136

Type: BSD Lab ID: QC693530

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	10.18	102	80-120	4	20
Toluene	10.00	10.15	102	80-120	5	20
Ethylbenzene	10.00	10.16	102	80-120	2	20
m,p-Xylenes	10.00	10.24	102	80-120	6	20
o-Xylene	10.00	10.32	103	80-120	5	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	96	70-136

RPD= Relative Percent Difference

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	246076	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC693531	Batch#:	199668
Matrix:	Water	Analyzed:	06/13/13
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,027	103	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	76-128

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	246076	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2553	Analysis:	EPA 8015B
Field ID:	EFFLUENT	Batch#:	199668
MSS Lab ID:	246076-001	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Analyzed:	06/13/13
Diln Fac:	1.000		

Type: MS Lab ID: QC693533

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<10.56	2,000	1,916	96	76-120
Surrogate					
Bromofluorobenzene (FID)	107	76-128			

Type: MSD Lab ID: QC693534

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Gasoline C7-C12	2,000	1,904	95	76-120	1 20
Surrogate					
Bromofluorobenzene (FID)	107	76-128			

RPD= Relative Percent Difference

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Total Extractable Hydrocarbons

Lab #:	246076	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Field ID:	EFFLUENT	Sampled:	06/10/13
Matrix:	Water	Received:	06/12/13
Units:	ug/L	Prepared:	06/13/13
Diln Fac:	1.000	Analyzed:	06/16/13
Batch#:	199658		

Type: SAMPLE Lab ID: 246076-001

Analyte	Result	RL
Diesel C10-C24	ND	58
Motor Oil C24-C36	ND	350
Surrogate	%REC	Limits
o-Terphenyl	105	62-133

Type: BLANK Lab ID: QC693492

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300
Surrogate	%REC	Limits
o-Terphenyl	101	62-133

ND= Not Detected

RL= Reporting Limit

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7.0

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	246076	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC693493	Batch#:	199658
Matrix:	Water	Prepared:	06/13/13
Units:	ug/L	Analyzed:	06/16/13

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,350	94	59-120

Surrogate	%REC	Limits
o-Terphenyl	119	62-133

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	246076	Location:	15101 Freedom Ave. San Leandro
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2553	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	199658
MSS Lab ID:	246017-001	Sampled:	06/07/13
Matrix:	Water	Received:	06/10/13
Units:	ug/L	Prepared:	06/13/13
Diln Fac:	1.000	Analyzed:	06/16/13

Type: MS Cleanup Method: EPA 3630C
 Lab ID: QC693494

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	<7.661	2,451	2,043	83	61-120

Surrogate	%REC	Limits
o-Terphenyl	105	62-133

Type: MSD Cleanup Method: EPA 3630C
 Lab ID: QC693495

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,278	91	61-120	9	43

Surrogate	%REC	Limits
o-Terphenyl	115	62-133

RPD= Relative Percent Difference