R0317

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

Fourth Quarter 2004

Groundwater Monitoring Report

Mash Petroleum Inc.

5725 Thornhill Drive

Oakland, California

December 2, 2004

Project 2831

Prepared for

Mr. Mo Mashhoon

1721 Jefferson Street

Oakland, California 94612

Prepared by

SOMA Environmental Engineering, Inc.

2680 Bishop Drive, Suite 203

San Ramon, California 94583

Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Mo Mashhoon, the property owner of 5725 Thornhill Drive, Oakland, California, to comply with the Alameda County Health Care Services Agency's and California Regional Water Quality Control Board's requirements for the Fourth Quarter 2004 groundwater monitoring event.

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

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1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Mo Mashhoon, the property owner of 5725 Thornhill Drive, Oakland, California (the "Site"), as shown in Figure 1. The Site is currently an active ARCO station that is located in an area consisting primarily of commercial and residential land uses.

This report summarizes the results of the Fourth Quarter 2004 groundwater monitoring event conducted at the Site on October 28, 2004. Included in this report are the results of the physical and chemical properties measured in the field for each groundwater sample. The physical and chemical properties consisted of measurements of pH, temperature, and electrical conductivity (EC). Also included in this report are the results of the laboratory analyses for each groundwater sample, which was analyzed for:

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

The groundwater monitoring activities for this quarter were performed in accordance with the general guidelines of the California Regional Water Quality Control Board (CRWQCB) and the Alameda County Health Care Services Agency (ACHCSA). Appendix A details the groundwater monitoring procedures used during the Fourth Quarter 2004 monitoring event.

1.1 Previous Activities

In November 1998, Penn Environmental removed a 550-gallon steel underground waste oil tank (WOT) from the Site. Soil samples collected from the WOT excavation contained up to 1,100,000 µg/Kg of TPH-g, 2,700,000 µg/Kg of TPH-d, and 4,200,000 µg/Kg of TPH-Mo.

On February 4, 1999, Penn Environmental over-excavated the contaminated soil surrounding the former WOT. Aqua Science Engineers, Inc., (ASE) collected

confirmation soil samples from two sidewalls of the excavation. The only compound detected in one of these two soil samples was MtBE at 40 µg/Kg.

In July 1999, ASE drilled borehole BH-A in the vicinity of the former WOT. On September 6, 2000, ASE drilled soil boreholes BH-B and BH-C. On October 23, 2000, ASE drilled soil boreholes BH-D and BH-E. ASE also collected water samples from Temescal Creek. No hydrocarbons were detected in the water sample collected from Temescal Creek. Figure 2 shows the locations of the borings.

On March 1 and 2, 2004, nine temporary well boreholes, HP-1 through HP-7, HP-9 and HP-10 were advanced by Gregg Drilling & Testing (Gregg). Due to the excessive traffic hazards and the disruption of local traffic flow posed by advancing HP-8 in the middle of the street, this borehole was not drilled. Groundwater samples were collected following the completion of each temporary well borehole. The locations of the boreholes are shown in Figure 2.

During the Site's investigation activities, Gregg decommissioned the three existing on-site monitoring wells, MW-1, MW-2 and MW-3, under the supervision of SOMA. On March 12, 2004, Woodward Drilling installed three new monitoring wells: SOMA-1, SOMA-2 and SOMA-3. On March 19, 2004, licensed surveyors from Kier & Wright surveyed the casing elevations of the monitoring wells and water level elevations along Temescal Creek. Kier & Wright performed a horizontal and vertical survey on the wells in accordance with the requirements set forth by the State for the GeoTracker database. On April 7, 2004, Gregg developed the recently installed monitoring wells. Figure 2 shows the locations of the monitoring wells.

2.0 RESULTS

The following sections provide the results of the field measurements and laboratory analyses for the October 28, 2004 groundwater monitoring event.

2.1 Field Measurements

Table 1 presents the calculated groundwater elevations, as well as the depth to groundwater in each monitoring well. As shown in Table 1, the depth to groundwater ranged from 5.76 feet in SOMA-1 to 7.62 feet in SOMA-2. The corresponding groundwater elevations ranged from 567.88 feet in SOMA-2 to 570.71 feet in SOMA-1. Based on the data measured, the groundwater flows south to southwesterly across the Site, at a gradient of 0.036 feet/feet, as displayed in Figure 3.

The groundwater elevations increased slightly throughout the Site since the previous monitoring event (Third Quarter 2004). The variations in groundwater elevations throughout the Site can be attributed to seasonal climatological conditions, as well as local recharge rates in each well. During rainy times of the year, the water table ascends causing an increase in the groundwater elevations.

The field notes in Appendix B show the detailed measurements of the physical and chemical parameters of the groundwater for each well during this monitoring event.

2.2 Laboratory Analyses

Table 1 presents the results of the laboratory analyses for hydrocarbons, BTEX, and MtBE for the groundwater samples collected during this monitoring event. Previous site investigation data is also shown in Table 1 to depict the overall site conditions for hydrocarbons and MtBE.

As shown in Table 1, the main constituents of concern during this monitoring event appear to be TPH-g, TPH-d, and MtBE. TPH-mo was below the laboratory reporting limit in all of the groundwater samples. All BTEX concentrations were below the laboratory reporting limit for all groundwater samples. The highest TPH-g, TPH-d, and MtBE concentrations were detected in well SOMA-2. Based on the groundwater elevation data, SOMA-2 appears to be the most downgradient well from the UST cavity and pump islands.

Figures 4, 5, and 7 display the contour maps of TPH-g, TPH-d, and MtBE in the groundwater. Figure 6 shows the benzene concentrations in groundwater during the Fourth Quarter 2004. This figure further illustrates that benzene has not impacted the groundwater.

Table 2 presents the analytical results for gasoline oxygenates and lead scavengers. As shown in Table 2, with the exception of trace concentrations of TBA and TAME in SOMA-2, all gasoline oxygenate and lead scavenger constituents were below the laboratory reporting limit in the groundwater samples collected during this monitoring event.

Appendix C contains the laboratory report and COC form from the Fourth Quarter 2004 monitoring event.

3.0 CONCLUSIONS & RECOMMENDATIONS

The findings of the Fourth Quarter 2004 groundwater monitoring event can be summarized as follows:

- The groundwater seems to flow south to southwest across the Site.

- The most impacted well appears to be SOMA-2, which is the most downgradient well. Based on previous site investigations, both hydrocarbon and MtBE plumes have migrated southwesterly off-site with the flow of groundwater.

- Due to the close proximity of Temescal Creek in relation to the Site, SOMA recommends the installation of additional off-site wells. This will aid in determining the extent of the off-site contamination and possible impact on Temescal Creek.

4.0 REPORT LIMITATIONS

This report is the summary of work done by SOMA, including observations and descriptions of the Site's conditions. It includes the analytical results produced by Pacific Analytical Laboratory, in Alameda, California for the current groundwater monitoring event. The number and location of the wells were selected to provide the required information, but may not be completely representative of the entire site's conditions. All conclusions and recommendations are based on the results of the laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

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

Tables

Table 1
SOMA Historical Groundwater Elevation Data
& Analytical Results (Hydrocarbons, BTEX, & MtBE)
5725 Thornhill Drive,Oakland California

Monitoring Well	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE* 8260B (µg/L)
SOMA-1	Apr-04	576.47	5.75	570.72	63	<50	<300	<0.5	<0.5	<0.5	<0.5	7.7
	Jul-04	576.47	6.21	570.26	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	9.1
	Oct-04	**576.47**	**5.76**	**570.71**	**<50**	**<1.0**	**<1.0**	**<0.5**	**<0.5**	**<0.5**	**<1.0**	**6.4**
SOMA-2	Apr-04	575.50	7.40	568.10	1,900	690 LY	<300	<0.5	<0.5	5.2	9.9	1,900
	Jul-04	575.50	7.92	567.58	1,500	710 LY	<300	8.9 C	<0.5	1.5 C	2.9 C	740
	Oct-04	**575.50**	**7.62**	**567.88**	**955**	**790 LY**	**<1.0**	**<2.5**	**<2.5**	**<2.5**	**< 5**	**785**
SOMA-3	Apr-04	575.92	7.14	568.78	190	120 Y	<300	<0.5	<0.5	<0.5	<0.5	5.1
	Jul-04	575.92	7.95	567.97	130	120 LY	<300	<0.5	<0.5	<0.5	<0.5	9.1
	Oct-04	**575.92**	**7.60**	**568.32**	**57**	**280 LY**	**<1.0**	**<0.5**	**<0.5**	**<0.5**	**<2**	**11.3**
BH-A	Jul-99	NM	NM	NM	1,700	10,000	4,700	NA	NA	NA	NA	NA
BH-B	Sep-00	NM	NM	NM	12,000	11,000	11,000	NA	NA	NA	NA	4,300
BH-C	Sep-00	NM	NM	NM	7,300	25,000	620	NA	NA	NA	NA	5,300
BH-D	Sep-00	NM	NM	NM	13,000	110,000	18,000	NA	NA	NA	NA	16,000
BH-E	Sep-00	NM	NM	NM	NA	NA	NA	NA	NA	NA	NA	730
HP-1	Mar-04	NM	NM	NM	4,200	5,900	11,000	NI	NI	NI	NI	11
HP-2	Mar-04	NM	NM	NM	360	10,000	58,000	NI	NI	NI	NI	20
HP-3	Mar-04	NM	NM	NM	<50	3,500	3,500	NI	NI	NI	NI	<0.5
HP-4	Mar-04	NM	NM	NM	<50	740	6,300	NI	NI	NI	NI	<0.5
HP-5	Mar-04	NM	NM	NM	6,700	3,600	650	NI	NI	NI	NI	33
HP-6	Mar-04	NM	NM	NM	250	370	730	NI	NI	NI	NI	8
HP-7	Mar-04	NM	NM	NM	<50	1,600	1,400	NI	NI	NI	NI	<0.5
HP-9	Mar-04	NM	NM	NM	<50	160	1,700	NI	NI	NI	NI	440
HP-10	Mar-04	NM	NM	NM	9,700	21,000	5,700	NI	NI	NI	NI	1,100

Notes:
<: not detected at or above laboratory reporting limits.
C: Presence confirmed, but RPD between columns exceeds 40%.
L: Lighter hydrocarbons contributed to the quantitation.
NA: Not Analyzed or Data Not Available
NI: Not Inputted, only lab data for hydrocarbons and MtBE is shown in this table.
Y: Sample exhibits chromatographic pattern which did not resemble standard.

The Second Quarter 2004 was the first time SOMA monitored the site.
Boring BH-A was drilled by Aqua Science Engineers (ASE) in July 1999, Borings BH-B & BH-C,and BH-D & BH-E drilled by ASE in September 2000 and October 2000, respectively.
Hydropunches HP-1 to HP-7, HP-9, HP-10 drilled by SOMA in March 2004.
The boring and hydropunch data is shown in this table to further illustate the overall site conditions.

Table 2
Groundwater Analytical Results
Gasoline Oxygenates & Lead Scavengers
5725 Thornhill Drive,Oakland California

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
SOMA-1	Apr-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Jul-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Oct-04	**<2.5**	**<0.5**	**<0.5**	**<2**	**<0.5**	**<0.5**	**<1.0**
SOMA-2	Apr-04	<100	<5.0	<5.0	19.0	<5.0	<5.0	<10000
	Jul-04	<33	<1.7	<1.7	9.8	<1.7	<1.7	<3300
	Oct-04	**36.3**	**<2.5**	**<2.5**	**12.85**	**<0.5**	**<0.5**	**<1.0**
SOMA-3	Apr-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Jul-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Oct-04	**<2.5**	**<0.5**	**<0.5**	**<2**	**<0.5**	**<0.5**	**<1.0**

Notes:
<: Not detected above the laboratory reporting limit.
The Second Quarter 2004 was the first time SOMA monitored the site.

Gasoline Oxygenates:
TBA: tertiary butyl alcohol
DIPE: Isopropyl ether
ETBE: Ethyl tertiary butyl ether
TAME: Methyl tertiary amyl ether
Ethanol

Lead Scavengers:
1,2-Dichloroethane
EDB: 1,2-Dibromoethane

Figures

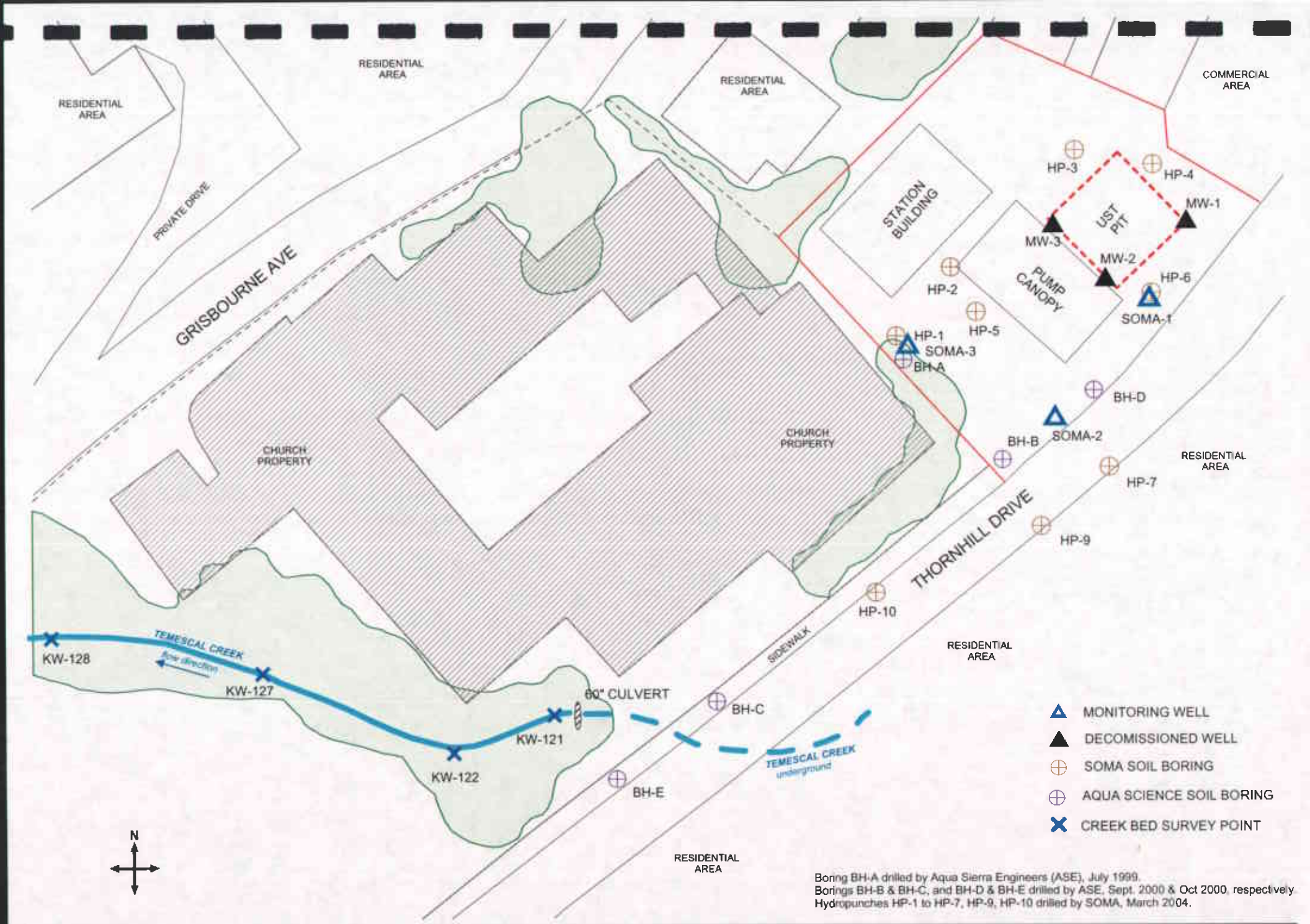
N

approximate scale in feet

0 100 200

Figure 1: Site vicinity map.

SOMA
ENVIRONMENTAL ENGINEERING, INC.



Boring BH-A drilled by Aqua Sierra Engineers (ASE), July 1999.
Borings BH-B & BH-C, and BH-D & BH-E drilled by ASE, Sept. 2000 & Oct 2000, respectively.
Hydropunches HP-1 to HP-7, HP-9, HP-10 drilled by SOMA, March 2004.

approximate scale in feet
0 25 50

Figure 2: Site map showing locations of monitoring wells, soil borings, creekbed survey points, decomissioned UST backfill wells, and previously drilled soil borings.

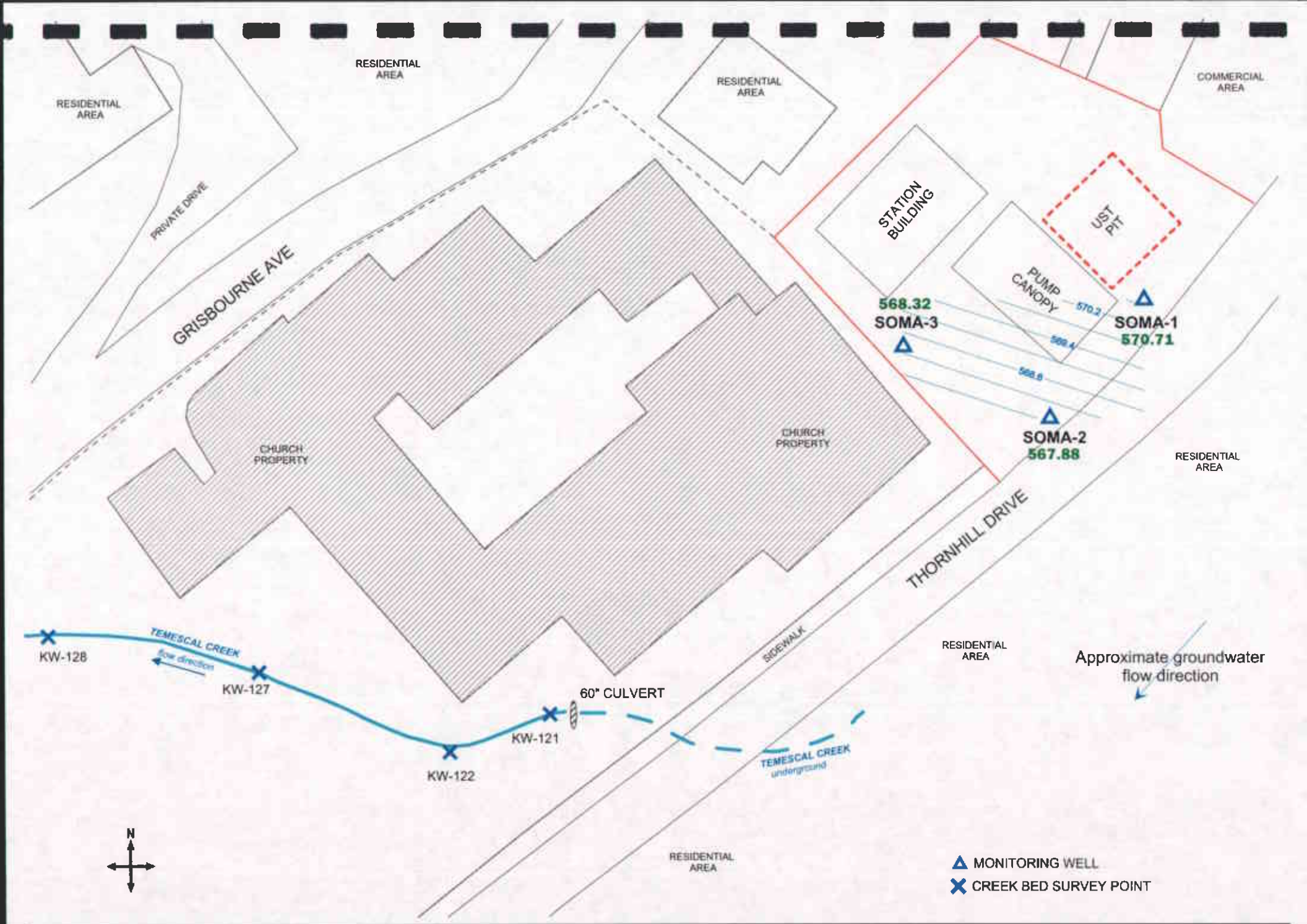


Figure 3: Groundwater elevation contour map in feet. October 2004.

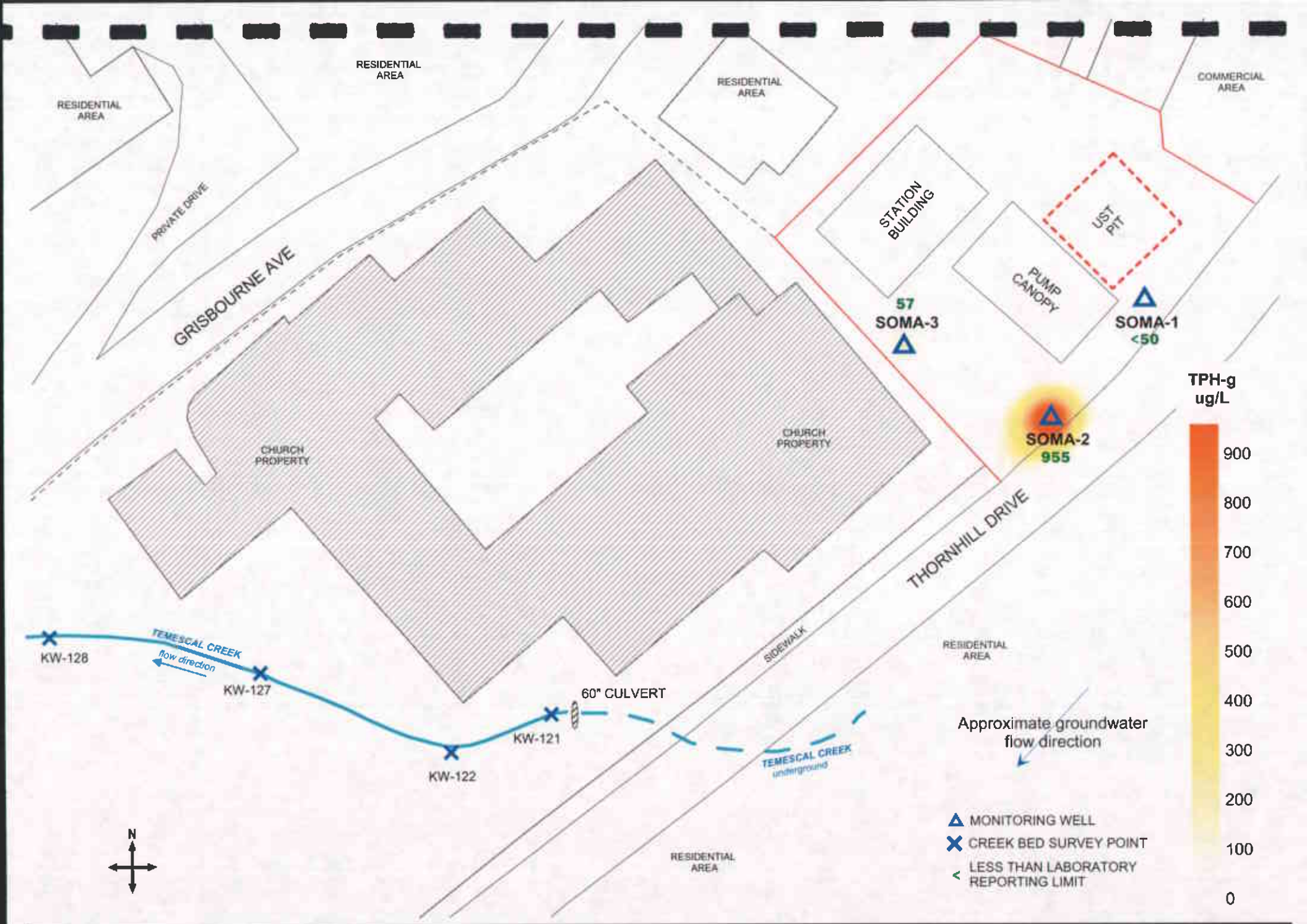


Figure 4: Contour Map of TPH-g concentrations in groundwater. October 2004.

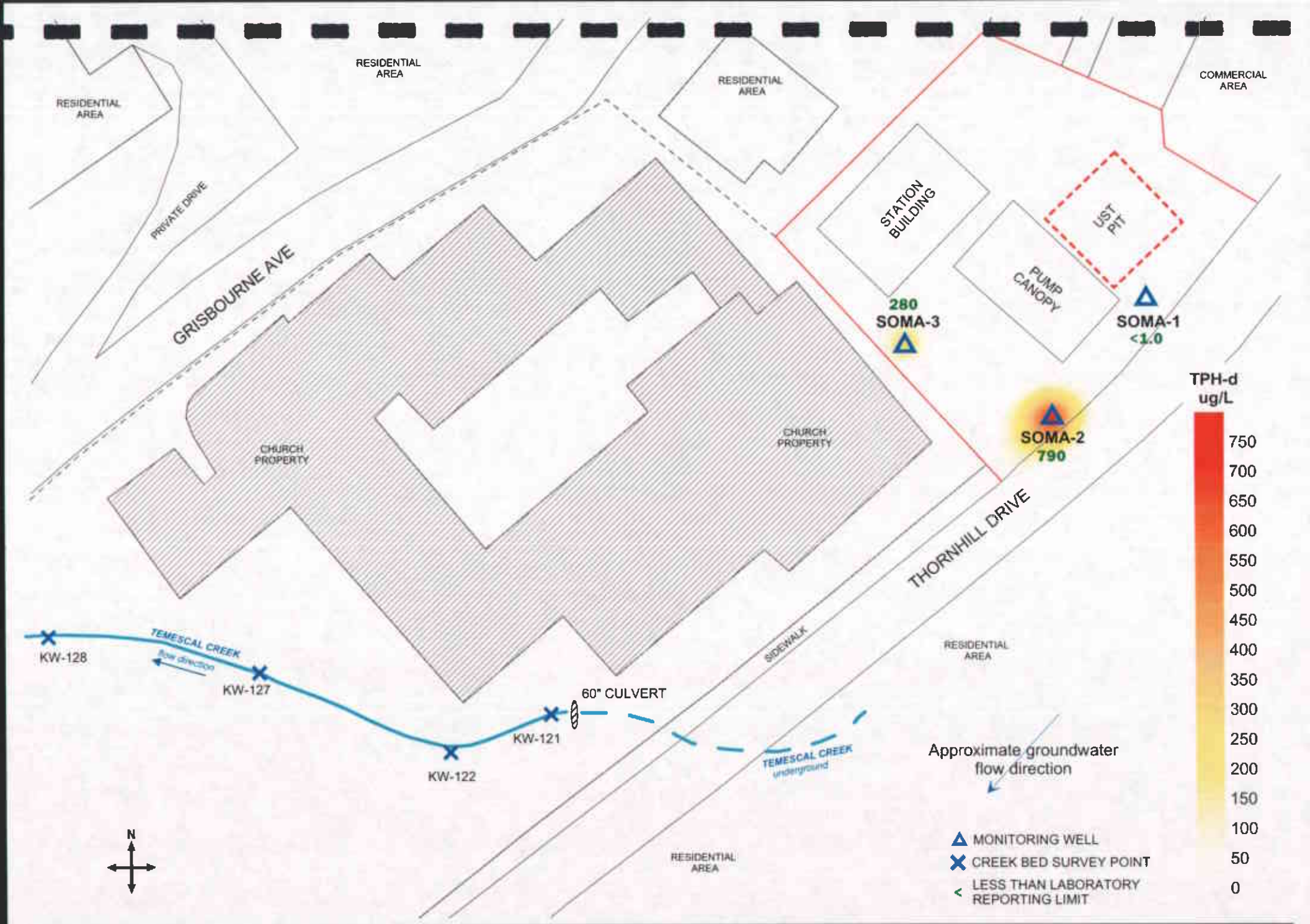


Figure 5: Contour Map of TPH-d concentrations in groundwater. October 2004.

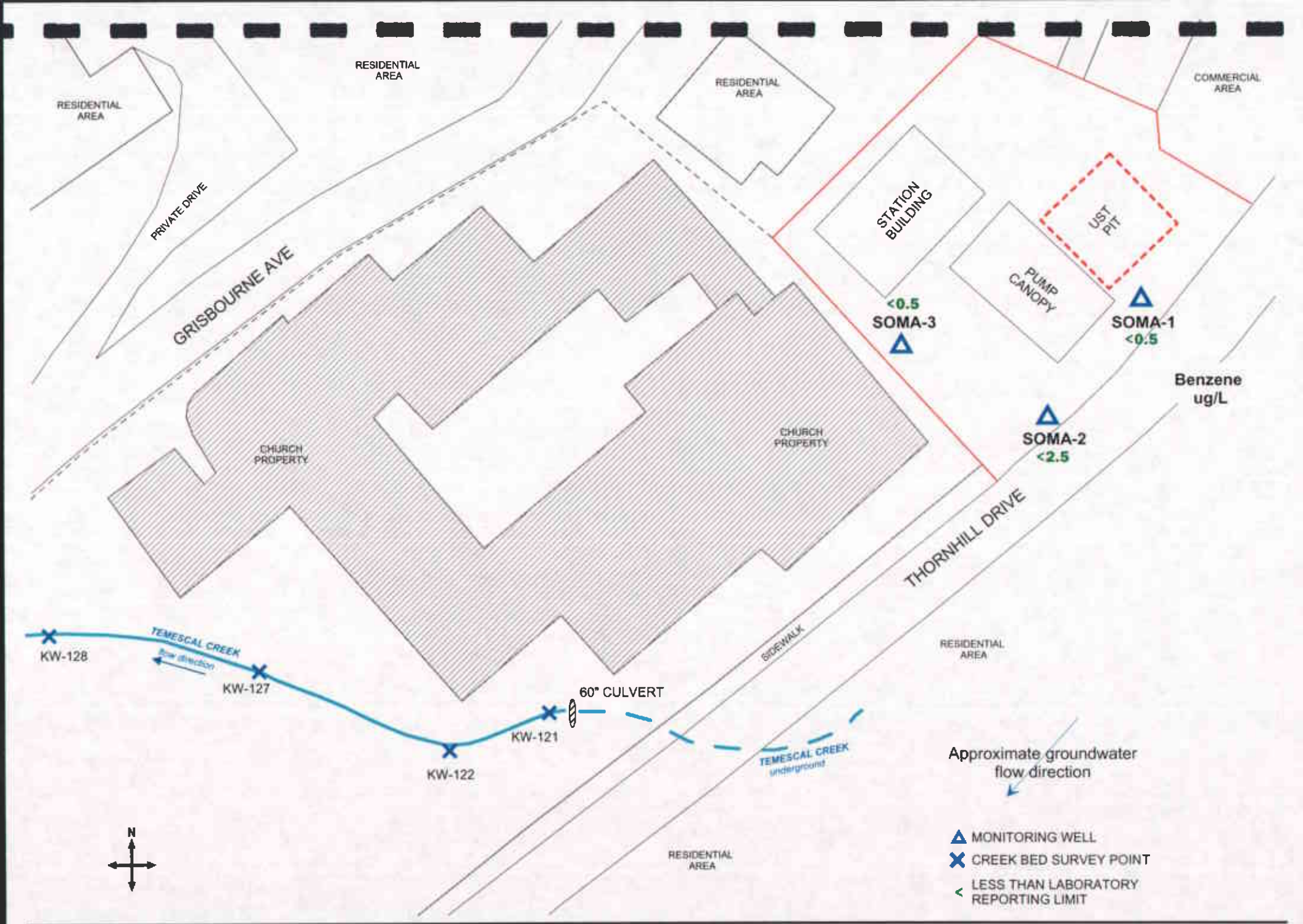


Figure 6: Map of Benzene concentrations in groundwater. October 2004.

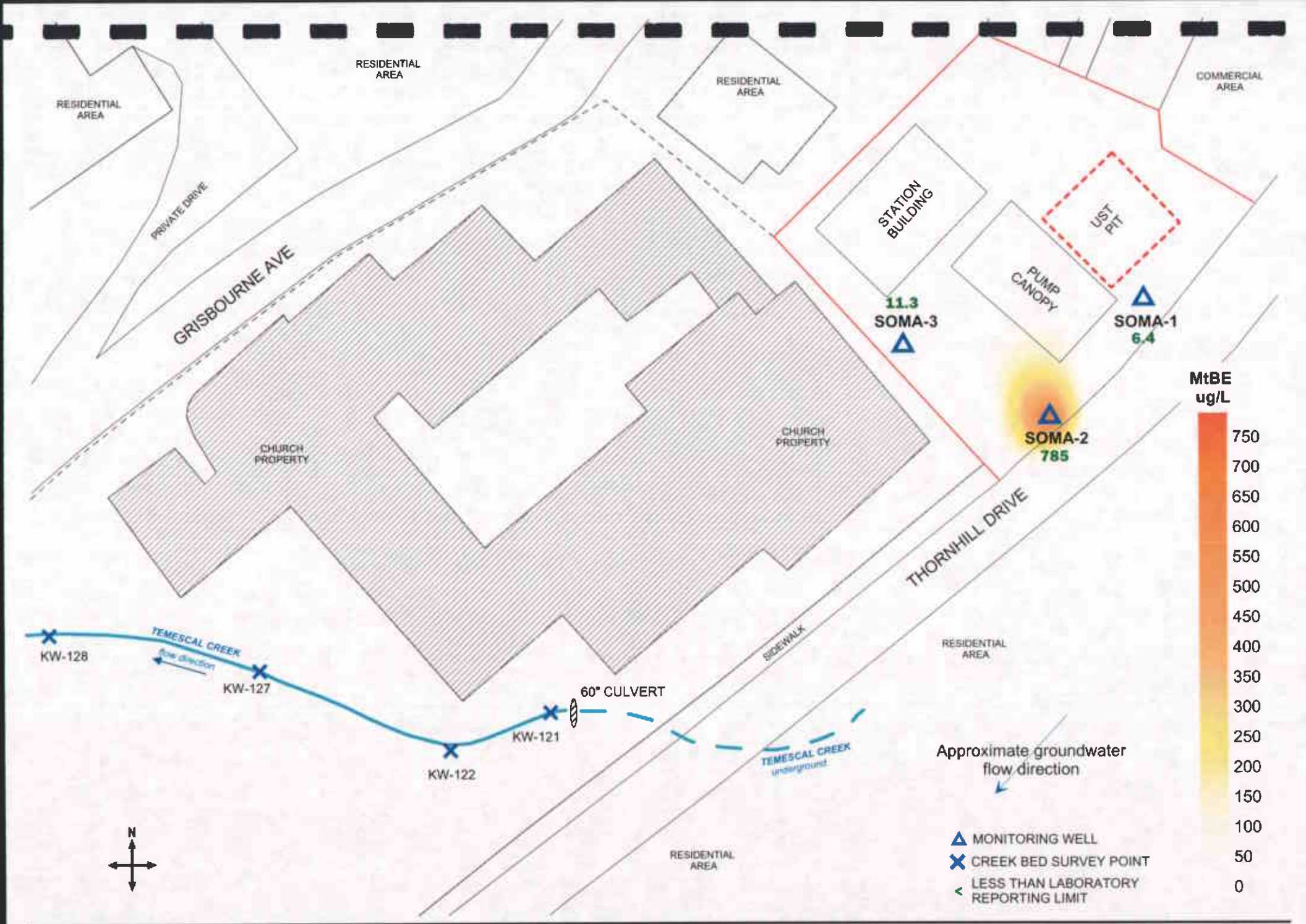


Figure 7: Contour Map of MtBE concentrations in groundwater (EPA Method 8260 B). October 2004.

APPENDIX A

SOMA's Groundwater Monitoring Procedures

Field Activities

On October 28, 2004, SOMA's field crew conducted a groundwater monitoring event in accordance with the procedures and guidelines of the California Regional Water Quality Control Board and the Alameda County Health Care Services. During this groundwater monitoring event three on-site wells (SOMA-1, SOMA-2, and SOMA-3) were monitored.

The depth to groundwater in each monitoring well was measured from the top of the casing to the nearest 0.01 foot using an electric sounder. The top of the casing elevation data and the depth to groundwater in each monitoring well were used to calculate the groundwater elevation. The top of casing elevation was based on an elevation datum of 37 feet NAVD88.

Prior to the collection of samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC). In order to ensure that the final samples were in equilibrium with (and representative of) the surrounding groundwater, during purging, several samples were taken for field measurements of pH, temperature and EC. The field parameters were measured using a Hanna pH, conductivity, and temperature meter. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

Appendix B details the field measurements taken during the monitoring event.

The purging of the wells continued until the parameters for pH, temperature and EC stabilized or three casing volumes were purged. A disposable polyethylene bailer was used to collect sufficient samples from each well for laboratory analyses. The groundwater sample was transferred to five 40-mL VOA vials and preserved with hydrochloric acid. The vials were then sealed to prevent the development of air bubbles within the headspace. The groundwater sample collected from each well was also transferred into two 1-liter amber non-preserved glass containers. After the groundwater samples were collected they were placed on ice in an ice chest and maintained at 4^0C. A chain of custody (COC) form was written for all the samples. After the sampling was complete, on October 28, 2004, SOMA's field crew delivered the groundwater samples along with the COC form to Pacific Analytical Laboratory, in Alameda, California.

Laboratory Analysis

Pacific Analytical Laboratory, in Alameda, California, a state certified laboratory, analyzed the groundwater samples for TPH-g, BTEX, TPH-d, TPH-mo, ethanol, gasoline oxygenates, and lead scavengers. All TPH-g, BTEX, gasoline and lead scavenger constituents were analyzed by EPA Method 8260B. Methanol, Ethanol, TPH-d, and TPH-mo constituent was analyzed by EPA Method 8015B.

Appendix B

Field Measurements of Physical and Chemical Properties of Groundwater Samples Collected During the Fourth Quarter 2004

ENVIRONMENTAL ENGINEERING, INC

Well No.:	SOMA 1	**Project No.:**	2831
Casing Diameter:	2 inches	**Address:**	5725 Thornhill Drive
Depth of Well:	27.85 feet		Oakland, CA
Top of Casing Elevation:	576.47 feet	**Date:**	October 28, 2004
Depth to Groundwater:	5.76 feet	**Sampler:**	Tony Perini, John Lohman
Groundwater Elevation:	570.71 feet		
Water Column Height:	22.09 feet		
Purged Volume:	13 gallons		

Purging Method:	**Bailer** ☒	**Pump** ☐		
Sampling Method:	**Bailer** ☒	**Pump** ☐		
Color:	**No** ☒	**Yes** ☐	**Describe:**	
Sheen:	**No** ☒	**Yes** ☐	**Describe:**	
Odor:	**No** ☒	**Yes** ☐	**Describe:**	

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
10:00 AM	Start purge			
10:04 AM	3	6.66	17.2	830
10:09 AM	7	6.73	17.9	790
10:15 AM	10	6.73	18.6	780
10:19 AM	13	6.74	18.9	760

10:22 AM Samples

ENVIRONMENTAL ENGINEERING, INC

Well No.:	SoMA2	**Project No.:**	2831
Casing Diameter:	2 inches	**Address:**	5725 Thornhill Drive
Depth of Well:	28.00 feet		Oakland, CA
Top of Casing Elevation:	575.50 feet	**Date:**	October 28, 2004
Depth to Groundwater:	7.62 feet	**Sampler:**	Tony Perini
Groundwater Elevation:	567.88 feet		John Lehman
Water Column Height:	20.38 feet		
Purged Volume:	8 gallons		

Purging Method:	**Bailer** ☒	**Pump** ☐		
Sampling Method:	**Bailer** ☒	**Pump** ☐		
Color:	**No** ☐	**Yes** ☑	**Describe:**	cloudy
Sheen:	**No** ☑	**Yes** ☐	**Describe:**	
Odor:	**No** ☑	**Yes** ☐	**Describe:**	

Field Measurements:

Time	Vol (gallons)	pH	Temp (^{0}C)	E.C. (µs/cm)
10:54 AM	Start	purge		
11:04 AM	4	7.25	18.7	910
11:10 AM	8	7.24	18.4	930
11:12 AM	Samples			

ENVIRONMENTAL ENGINEERING, INC

Well No.:	SoMA 3	**Project No.:**	2831
Casing Diameter:	2 inches	**Address:**	5725 Thornhill Drive
Depth of Well:	27.80 feet		Oakland, CA
Top of Casing Elevation:	575.92 feet	**Date:**	October 28, 2004
Depth to Groundwater:	7.60 feet	**Sampler:**	Tony Perini
Groundwater Elevation:	568.32 feet		John Lohman
Water Column Height:	20.20 feet		
Purged Volume:	11 gallons		

Purging Method:	**Bailer**	☑	**Pump**	☐	
Sampling Method:	**Bailer**	☑	**Pump**	☐	
Color:	**No**	☐	**Yes**	☑	**Describe:** cloudy
Sheen:	**No**	☑	**Yes**	☐	**Describe:**
Odor:	**No**	☑	**Yes**	☐	**Describe:**

Field Measurements:

Time	Vol (gallons)	pH	Temp (^{0}C)	E.C. (µs/cm)
10:25 AM	starts purging well			
10:34 AM	4	7.51	17.50	1150
10:42 AM	8	7.34	17.40	1050
10:49 AM	11	7.34	17.30	1000
10:52 AM	sampler			

Appendix C

Chain of Custody Form and Laboratory Report

for the

Fourth Quarter 2004 Monitoring Event

PAL Pacific Analytical Laboratory
851 West Midway Ave. Suite 201
Alameda, CA 94501
Phone (510) 864-0364

LABORATORY REPORT

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

Attention: Joyce Bobek
Date: 11/12/2004
Project ID: 2831
Location: Oakland-Thornhill
Lab Job Number: 1004

This Laboratory report has been reviewed for technical Correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Reviewed by: _____

Laboratory Director

CHAIN OF CUSTODY FORM

Page ___ of ___

PAL Pacific Analytical Laboratory
851 West Midway Ave., Suite 201B
Alameda, CA 94501
510-864-0364 Telephone
510-864-0365 Fax

PAL
Login# 1004

Project No: 2831
Project Name: Oakland - Thornhill
Project P.O.: ----
Turnaround Time: Standard

Sampler: Tony Perini / John Lohmann
Report To: Joyce Bobek
Company: SOMA Environmental Engineering, Inc.
Tel: 925-244-6600
Fax: 925-244-6601

Lab No.	Sample ID	Sampling Date/Time: Date	Time	Matrix: Soil	Water	Waste	# of Containers	Preservatives: HCl	H_2SO_4	HNO_3	ICE	none	Field Notes	Analyses/Method: TPHg 8015	BTEX 8021	Gasoline Oxygenates Lead Scavengers	Ethanol	TPHd 8015	TPHmo 8015
	SOMA-1	10/28/04	1022		✓		2L Amber 5-vials	✓			✓	✓	Grab Sample	✓	✓	✓	✓	✓	✓
	SOMA-2	↓	1112 AM		✓		↓	↓			↓	✓	↓	↓	↓	↓	↓	↓	↓
	SOMA-3	↓	1052 AM		✓		↓	↓			↓	✓	↓	↓	↓	↓	↓	↓	↓

Sampler Remarks:
EDF output required
Gas Ox - DIPE, ETBE, TAME, TBA, MTBE
LEAD SCAVENGERS
EDB, 1,2-DCA

Relinquished by:	Date/Time:	Received by:	Date/Time:
Tony Perini			
Tony Perini	10/28/04 1PM	[signature]	10.28.04

SOMA Environmental	Lab Job #	1004
2680 Bishop Dr.	Project ID:	2831
Suite 203	Project Location:	Oakland Thornhill
San Ramon, CA 94583	Sampled:	10/28/2004
	Received:	10/28/2004

Volatile Fuel Hydrocarbons

Field ID:	SOMA-1	Lab ID:	102804-004
Type:	Sample	Dilution Factor:	1

Matrix:	Water	Prep:	10/28/2004
Units:	µg/L	Date Analyzed:	11/2/2004
Batch:			

Analyte	Result	Reporting Limit	Analysis
Gasoline (C6-C12)	ND	50	8260B
TBA	ND	2.5	8260B
MTBE	6.4	0.5	8260B
DIPE	ND	0.5	8260B
ETBe	ND	0.5	8260B
TAME (tert-Amyl	ND	2.0	8260B
Benzene	ND	0.5	8260B
Toluene	ND	0.5	8260B
Ethyl Benzene	ND	0.5	8260B
m&p-xylene	ND	1.0	8260B
0-xylene	ND	0.5	8260B

Surrogate	% REC	%REC Limits	Analysis
DiBromofluoromethane	82.5	70-130	8260B
Toluene-d8	75	70-130	8260B
BromofluoroBenzene	75	70-130	8260B

Analyte	Result	%REC Limits	Analysis
1,2 DCA	ND	70-130	8260B
EDB	ND	70-130	8260B

Surrogate	% REC	%REC Limits	Analysis
BromofluoroBenzene	78	70-130	8260B
DiBromofluoromethane	75	70-130	8260B
Toluene-d8	78	70-130	8260B

Alcohols by GC-FID

Field ID:	SOMA-1	Lab ID:	102804-004
Type:	Sample	Dilution Factor:	1
Matrix:	Water	Sampled	10/28/2004
Units:	µg/L	Prep:	
Batch:		Date Analyzed:	11/1/2004

Analyte	Result	Reporting Limit	Analysis
Methanol	ND	1.0	8015B
Ethanol	ND	1.0	8015B
Surrogate	**% REC**	**%REC Limits**	8015B
1-Pentanol	72	60-120	8015B

Total Extractable Hydrocarbons

Field ID:	SOMA-1	Lab ID:	102804-004
Type:	Sample	Dilution Factor:	1
Matrix:	Water	Sampled	10/28/2004
Units:	µg/L	Prep:	
Batch:		Date Analyzed:	11/1/2004

Analyte	Result	Reporting Limit	Analysis
Diesel C10-C24	ND	1.0	8015B
Motor Oil C24-C36	ND	1.0	8015B
Surrogate	**% REC**	**%REC Limits**	
Hexacosane	122	53-143	

ND= Not Detected

RL= Reporting Limits

L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

Volatile Fuel Hydrocarbons

Field ID:	SOMA-2	Lab ID:	102804-005
Type:	Sample	Dilution Factor:	5

Matrix:	Water	Prep:	10/29/2004
Units:	µg/L	Date Extracted:	
Batch:		Date Analyzed:	11/2/2004

Analyte	Result	Reporting Limit	Analysis
Gasoline (C6-C12)	955	50	8260B
TBA	36.3	12.5	8260B
MTBE	785	2.5	8260B
DIPE	ND	2.5	8260B
ETBE	ND	2.5	8260B
TAME (tert-Amyl	12.85	10	8260B
Benzene	ND	2.5	8260B
Toluene	ND	2.5	8260B
Ethyl Benzene	ND	2.5	8260B
m&p-xylene	ND	5	8260B
0-xylene	ND	2.5	8260B

Surrogate	% REC	%REC Limits
DiBromofluoromethane	78	70-130
Toluene-d8	75	70-130
BromofluoroBenzenee	75	70-130

Volatile Fuel Hydrocarbons

Field ID:	SOMA-2	Lab ID:	102804-005
Type:		Dilution Factor:	1

Analyte	Result	Reporting Limit	Analysis
1,2 DCA	ND	0.5	8260B
EDB	ND	0.5	8260B
Surrogate	**% REC**	**%REC Limits**	8260B
BromofluoroBenzene	75	70-130	8260B
DiBromofluoromethane	83	70-130	8260B
Toluene-d8	75	70-130	8260B

Pacific Analytical Laboratory
Majid Akhavan
Laboratory Director

Alcohols by GC-FID

Field ID:	SOMA-2	Lab ID:	102804-005
Type:	Sample	Dilution Factor:	1

Matrix:	Water	Sampled	10/28/2004
Units:	µg/L	Prep:	
Batch:		Date Analyzed:	11/1/2004

Analyte	Result	Reporting Limit	Analysis
Methanol	ND	1.0	8015B
Ethanol	ND	1.0	8015B
Surrogate	**% REC**	**%REC Limits**	
1-Pentanol	77	60-120	

Alcohols by GC-FID

Field ID:	SOMA-2	Lab ID:	102804-005
Type:	Sample	Dilution Factor:	1

Matrix:	Water	Sampled	10/28/2004
Units:	µg/L	Prep:	
Batch:		Date Analyzed:	11/1/2004

Analyte	Result	Reporting Limit	Analysis
Diesel C10-C24	790 L Y	1.0	8015B
Motor Oil C24-C36	ND	1.0	8015B
Surrogate	**% REC**	**%REC Limits**	
Hexacone	96	53-143	

ND= Not Detected
RL= Reporting Limits
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard

Pacific Analytical Laboratory
Majid Akhavan
Laboratory Director

Volatile Fuel Hydrocarbons

Field ID:	SOMA-3	Lab ID:	102804-006
Type:	Sample	Dilution Factor:	1
Matrix:	Water	Prep:	10/29/2004
Units:	µg/L	Date Extracted:	
Batch:		Date Analyzed:	10/29/2004

Analyte	Result	Reporting Limit	Analysis
Gasoline (C6-C12)	57	50	8260B
TBA	ND	2.5	8260B
MTBE	11.3	0.5	8260B
DIPE	ND	0.5	8260B
ETBE	ND	0.5	8260B
TAME (tert-Amyl	ND	2	8260B
Benzene	ND	0.5	8260B
Toluene	ND	0.5	8260B
Ethyl Benzene	ND	0.5	8260B
m&p-xylene	ND	2	8260B
0-xylene	ND	0.5	8260B

Surrogate	% REC	%REC Limits	Analysis
			8260B
BromofluoroBenzenee	78	70-130	8260B
DiBromofluoromethane	80	70-130	8260B
Toluene-d8	83	70-130	8260B

Volatile Fuel Hydrocarbons

Field ID:	SOMA-3	Lab ID:	102804-006
Type:	Sample	Dilution Factor:	1

Analyte	Result	Reporting Limit	Analysis
1,2 DCA	ND	0.5	8260B
EDB	ND	0.5	8260B

Surrogate	% REC	%REC Limits	8260B
BromofluoroBenzenee	78	70-130	8260B
DiBromofluoromethane	80	70-130	8260B
Toluene-d8	83	70-130	8260B

Alcohols by GC-FID			
Field ID:	SOMA-3	Lab ID:	102804-006
Type:	Sample	Dilution Factor:	1

Matrix:	Water	Sampled	10/28/2004
Units:	µg/L	Prep:	
Batch:		Date Analyzed:	11/1/2004

Analyte	Result	Reporting Limit	Analysis
Methanol	ND	1.0	8015B
Ethanol	ND	1.0	8015B
Surrogate	**% REC**	**%REC Limits**	**Analysis**
1-Pentanol	83	60-120	8015B

Alcohols by GC-FID			
Field ID:	SOMA-3	Lab ID:	102804-006
Type:	Sample	Dilution Factor:	1

Matrix:	Water	Sampled	10/28/2004
Units:	µg/L	Prep:	
Batch:		Date Analyzed:	11/1/2004

Analyte	Result	Reporting Limit	Analysis
Diesel C10-C24	280 L Y	1.0	8015B
Motor Oil C24-C36	ND	1.0	8015B
Surrogate	**% REC**	**%REC Limits**	**Analysis**
Hexacone	133	53-143	8015B

ND= Not Detected

RL= Reporting Limits

L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

Method Blank/QC Data

Field ID:	NA	Lab ID:	Blank
Type:	Blank	Dilution Factor:	1.00
Matrix:	Water	Prep:	10/29/2004
Units:	µg/L	Date Extracted:	
Batch:		Date Analyzed:	11/2/2004

Analyte	Result	Reporting Limits	%REC Limits
Gasoline (C6-C12)	ND	50.0	70-130
TBA	ND	0.5	70-130
MTBE	ND	0.5	70-130
DIPE	ND	0.5	70-130
ETBE	ND	0.5	70-130
TAME (tert-Amyl	ND	2.0	70-130
Benzene	ND	0.5	70-130
Toluene	ND	0.5	70-130
Ethyl Benzenee	ND	0.5	70-130
m&p-xylene	ND	1.0	70-130
0-xylene	ND	0.5	70-130
1,2 DCA	ND	0.5	70-130
EDB	ND	0.5	70-130

Surrogate	% REC	%REC Limits
BromofluoroBenzenee	78	70-130
DiBromofluoromethane	78	70-130
Toluene-d8	78	70-130

Volatile Fuel Hydrocarbons

Field ID:	N/A	Lab ID:	Blank
Type:	Blank	Dilution Factor:	1

Analyte	Result	Reporting Limit	Analysis
1,2 DCA	ND	0.5	8260B
EDB	ND	0.5	8260B

Surrogate	% REC	%REC Limits
BromofluoroBenzenee	78	70-130
DiBromofluoromethane	80	70-130
Toluene-d8	78	70-130

Alcohols By GC-FID

Field ID:	N/A	Lab ID:	Blank
Type:	Blank	Dilution Factor:	1

Analyte	Result	Reporting Limit	Analysis
Ethanol	ND	1	8015B
Methanol	ND	1	8015B

Surrogate	% REC	%REC Limits
1-pentanol	90	60-120

Total Extractable

Field ID:		Lab ID:	Blank
Type:	Blank	Dilution Factor:	1

Analyte	Result	Reporting Limit	Analysis
Diesel C10-C24	ND	1	8015B
Motor Oil C24-C36	ND	1	8015B

Surrogate	% REC	%REC Limits
Hexacosane	C24-C36	53-143

Matrix Spike/QC Data

Field ID:	NA	Lab ID:	MS
Type:	QC	Dilution Factor:	
Matrix:	Water	Prep:	10/29/2004
Units:	µg/L	Date Extracted:	
Batch:		Date Analyzed:	11/2/2004

Analyte	Result	Spike	% REC	%REC Limits
Gasoline (C6-C12)	2064	2000	103	70-130
TBA	365	300	122	70-130
MTBE	73	60	122	70-130
DIPE	74	60	123	70-130
ETBE	75	60	125	70-130
TAME (tert-Amyl	67	60	112	70-130
Benzene	70	60	117	70-130
Toluene	63	60	105	70-130
Ethyl Benzenee	66	60	110	70-130
m&p-xylene	124	120	103	70-130
0-xylene	62	60	103	70-130

Surrogate	% REC	%REC Limits
DiBromofluoromethane	78	70-130
Toluene-d8	75	70-130
BromofluoroBenzenee	75	70-130

ND= Not Detected
RL= Reporting Limits

Volatile Fuel Hydrocarbons

Field ID:	N/A	Lab ID:	MS
Type:	QC	Dilution Factor:	1

Analyte	Result	% REC	%REC Limits	Analysis
1,2 DCA	22.0	110	70-130	8260B
EDB	21.0	105	70-130	8260B

Surrogate	% REC	%REC Limits
BromofluoroBenzenee	78	70-130
DiBromofluoromethane	80	70-130
Toluene-d8	83	70-130

Matrix Spike Duplicate/QC Data			
Field ID:	NA	Lab ID:	MSD
Type:	QC	Dilution Factor:	
Matrix:	Water	Prep:	10/29/2004
Units:	µg/L	Date Extracted:	
Batch:		Date Analyzed:	11/2/2004

Analyte	Result	Spike	% REC	%REC Limits
Gasoline (C6-C12)	2012	2000	101	70-130
TBA	336	300	112	70-130
MTBE	70	60	117	70-130
DIPE	73	60	122	70-130
ETBE	73	60	122	70-130
TAME (tert-Amyl	64	60	107	70-130
Benzene	71	60	118	70-130
Toluene	64	60	107	70-130
Ethyl Benzenee	67	60	112	70-130
m&p-xylene	131	120	109	70-130
0-xylene	66	60	110	70-130

Analyte	Result	% REC
DiBromofluoromethane	78	70-130
Toluene-d8	75	70-130
BromofluoroBenzenee	80	70-130

Volatile Fuel Hydrocarbons			
Field ID:	N/A	Lab ID:	MSD
Type:	QC	Dilution Factor:	1

Analyte	Result	% REC	%REC Limits	Analysis
1,2 DCA	22.0	110	70-130	8260B
EDB	22.0	110	70-130	8260B

Surrogate	% REC	%REC Limits
BromofluoroBenzenee	78	70-130
DiBromofluoromethane	80	70-130
Toluene-d8	83	70-130

Lab Control Spike/QC Data

Field ID:	NA	Lab ID:	LCS
Type:	QC	Dilution Factor:	1.00
Matrix:	Water	Prep:	10/29/2004
Units:	µg/L	Date Extracted:	
Batch:		Date Analyzed:	11/2/2004

Analyte	Result	Spike	% REC	%REC Limits
Gasoline (C6-C12)	1978	2000	99	70-130
TBA	260	300	87	70-130
MTBE	62	60	103	70-130
DIPE	66	60	110	70-130
ETBE	65	60	108	70-130
TAME (tert-Amyl	59	60	98	70-130
Benzene	66	60	110	70-130
Toluene	64	60	107	70-130
Ethyl Benzenee	65	60	108	70-130
m&p-xylene	133	120	111	70-130
0-xylene	66	60	110	70-130

Surrogate	% REC	%REC Limits
DiBromofluoromethane	75	70-130
Toluene-d8	78	70-130
BromofluoroBenzenee	78	70-130

Lead Scavenger

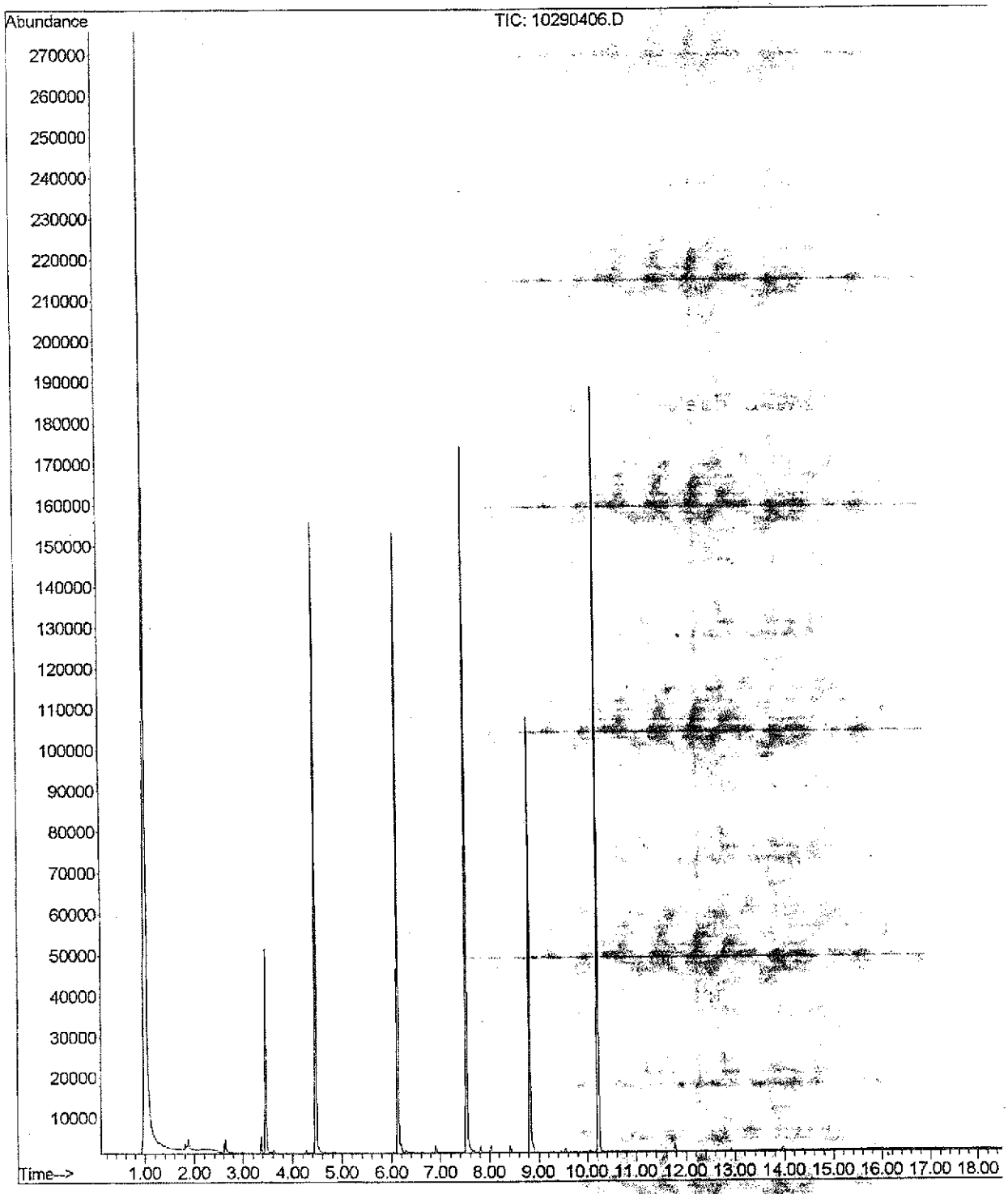
Field ID:	N/A	Lab ID:	LCS
Type:	QC	Dilution Factor:	1

Analyte	Result	% REC	%REC Limits	Analysis
1,2 DCA	22.0	110	70-130	8260B
EDB	22.0	105	70-130	8260B

Surrogate	% REC	%REC Limits
BromofluoroBenzenee	78	70-130
DiBromofluoromethane	80	70-130
Toluene-d8	83	70-130

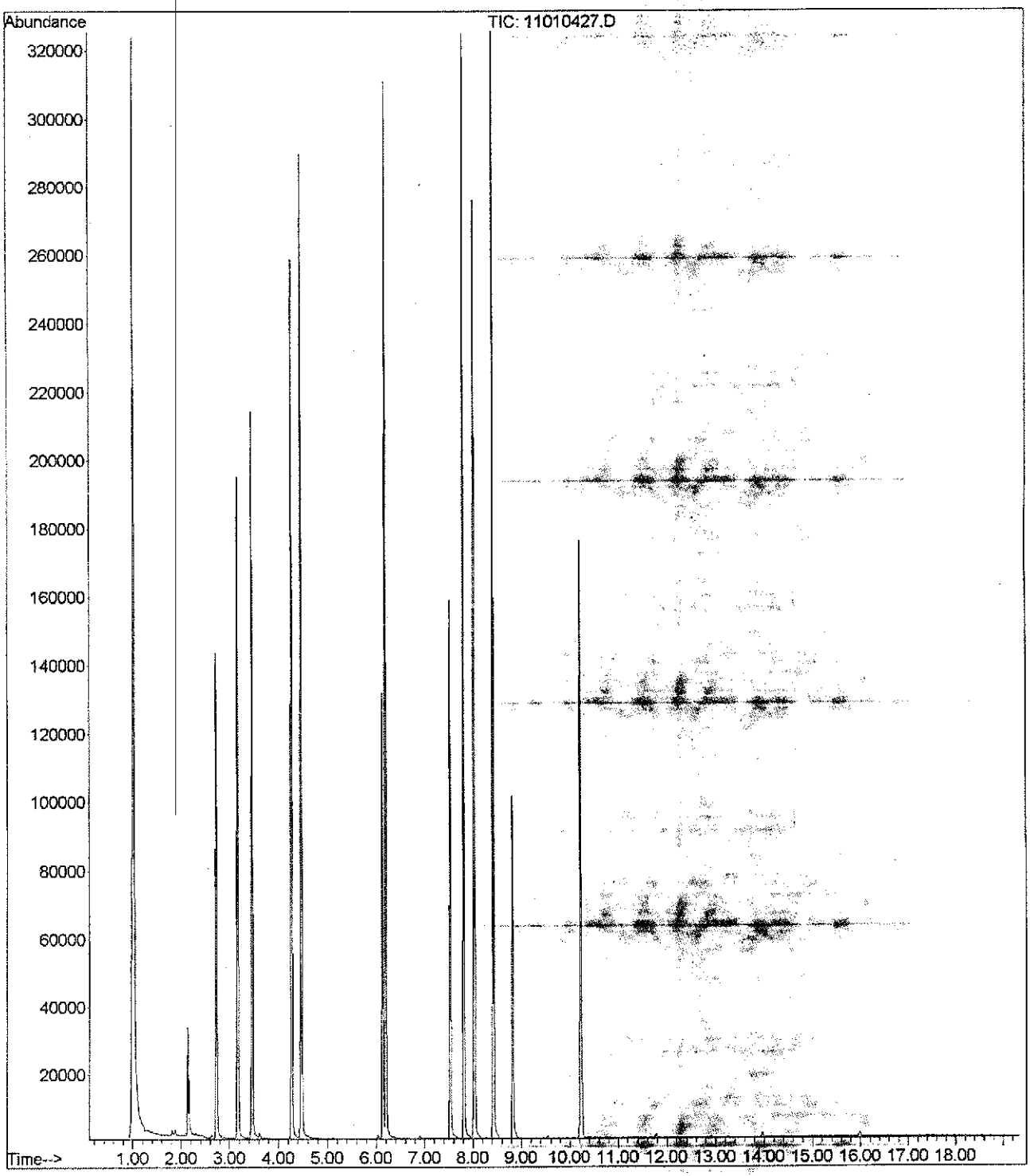
File : C:\MSDChem\1\DATA\2004-Oct-29-1608.b\10290406.D
Operator : THU
Acquired : 29 Oct 2004 5:32 pm using AcqMethod PALGRO
Instrument : PAL GCMS
Sample Name: BLKN
Misc Info :
Vial Number: 6

BTEX / MTBE



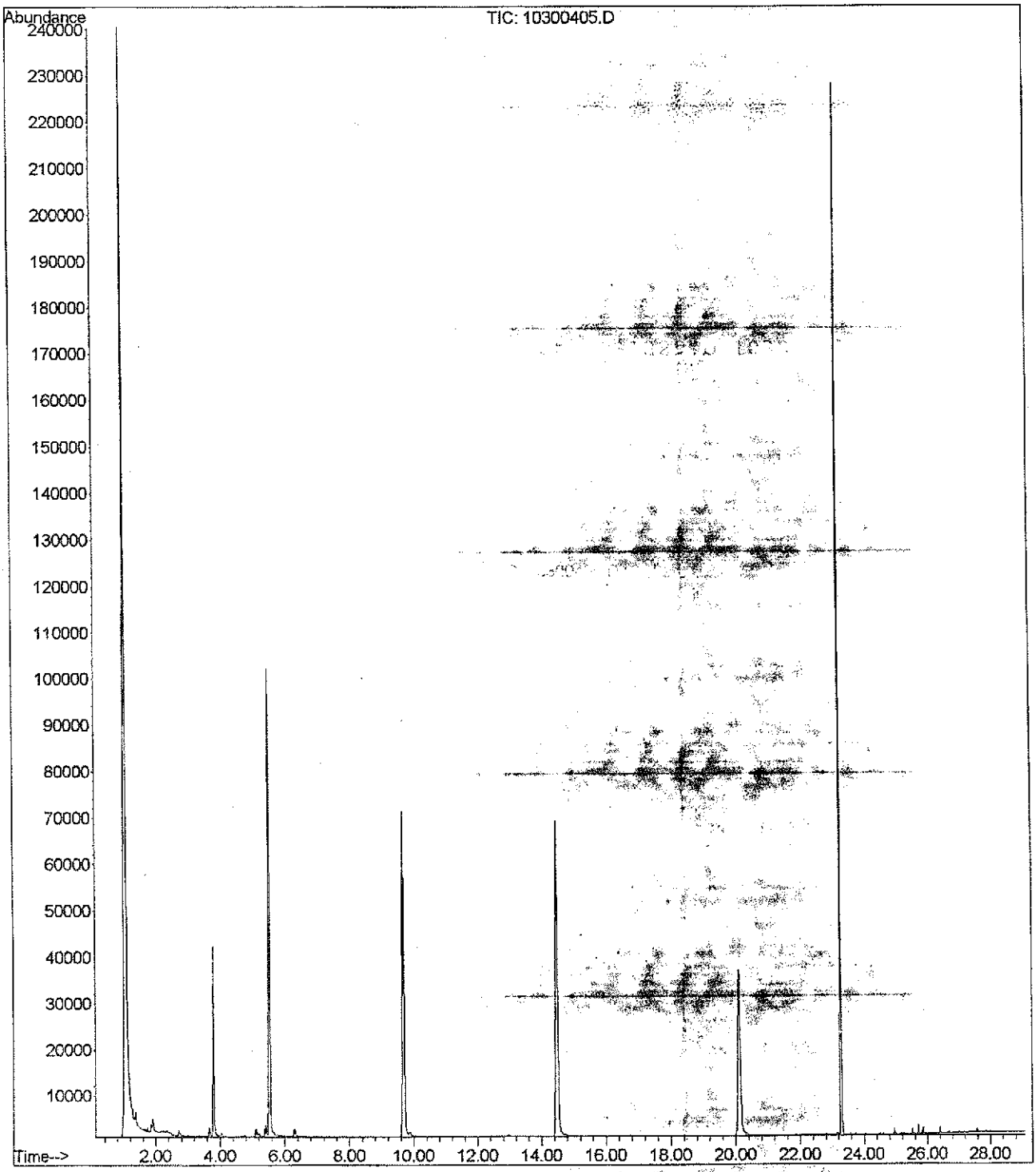
File : C:\MSDChem\1\DATA\2004-Nov-02-0920.b\11010427.D
Operator : THU
Acquired : 3 Nov 2004 9:39 am using AcqMethod PALGRO
Instrument : PAL GCMS
Sample Name: MSD btex+oxy 60ppb
Misc Info :
Vial Number: 28

BTEX / MTBE



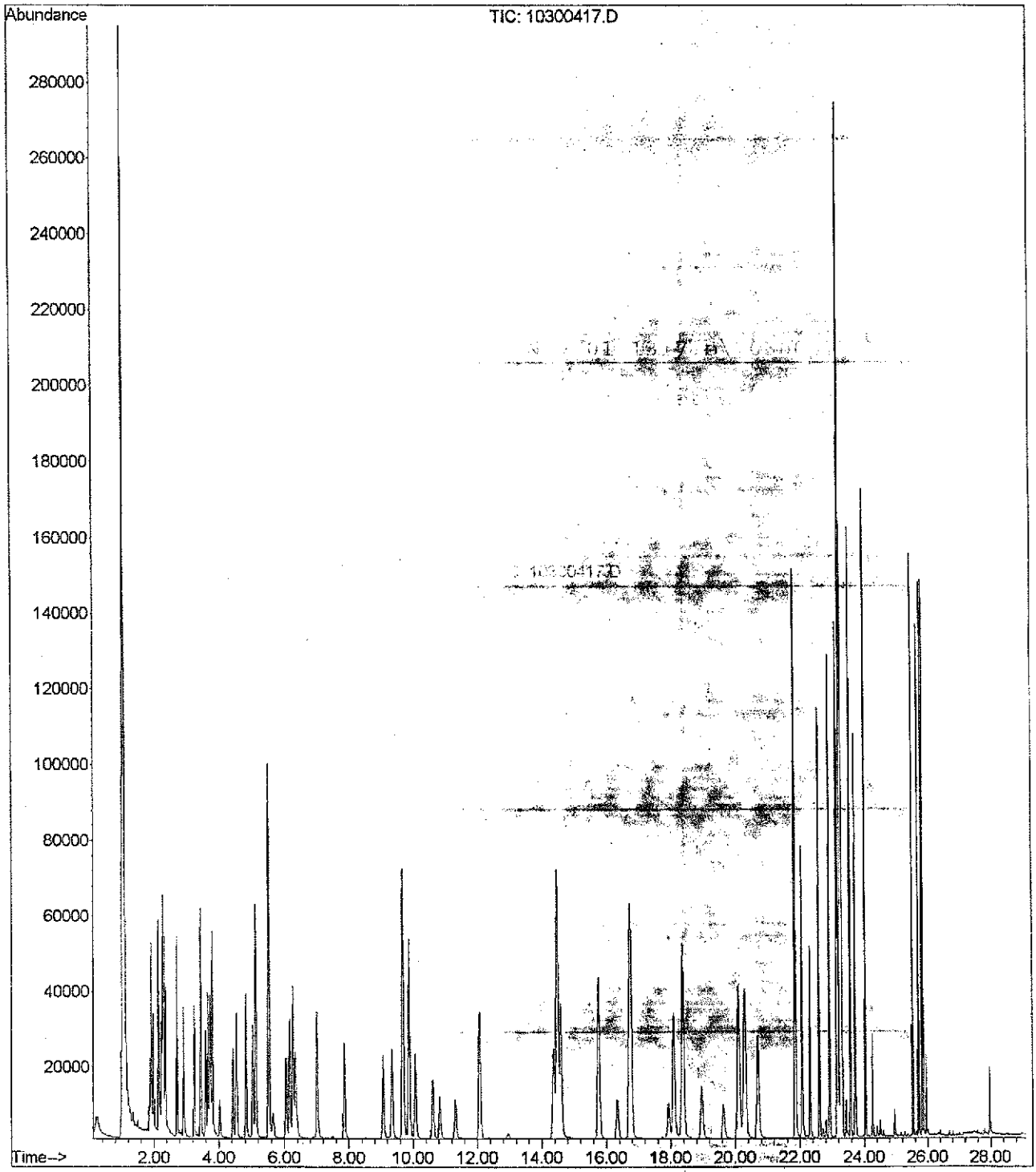
File :C:\MSDChem\1\DATA\2004-Oct-30-1229.b\10300405.D
Operator : THU
Acquired : 30 Oct 2004 3:09 pm using AcqMethod VOCOXY
Instrument : PAL GCMS
Sample Name: MB-103001
Misc Info :
Vial Number: 5

VOC



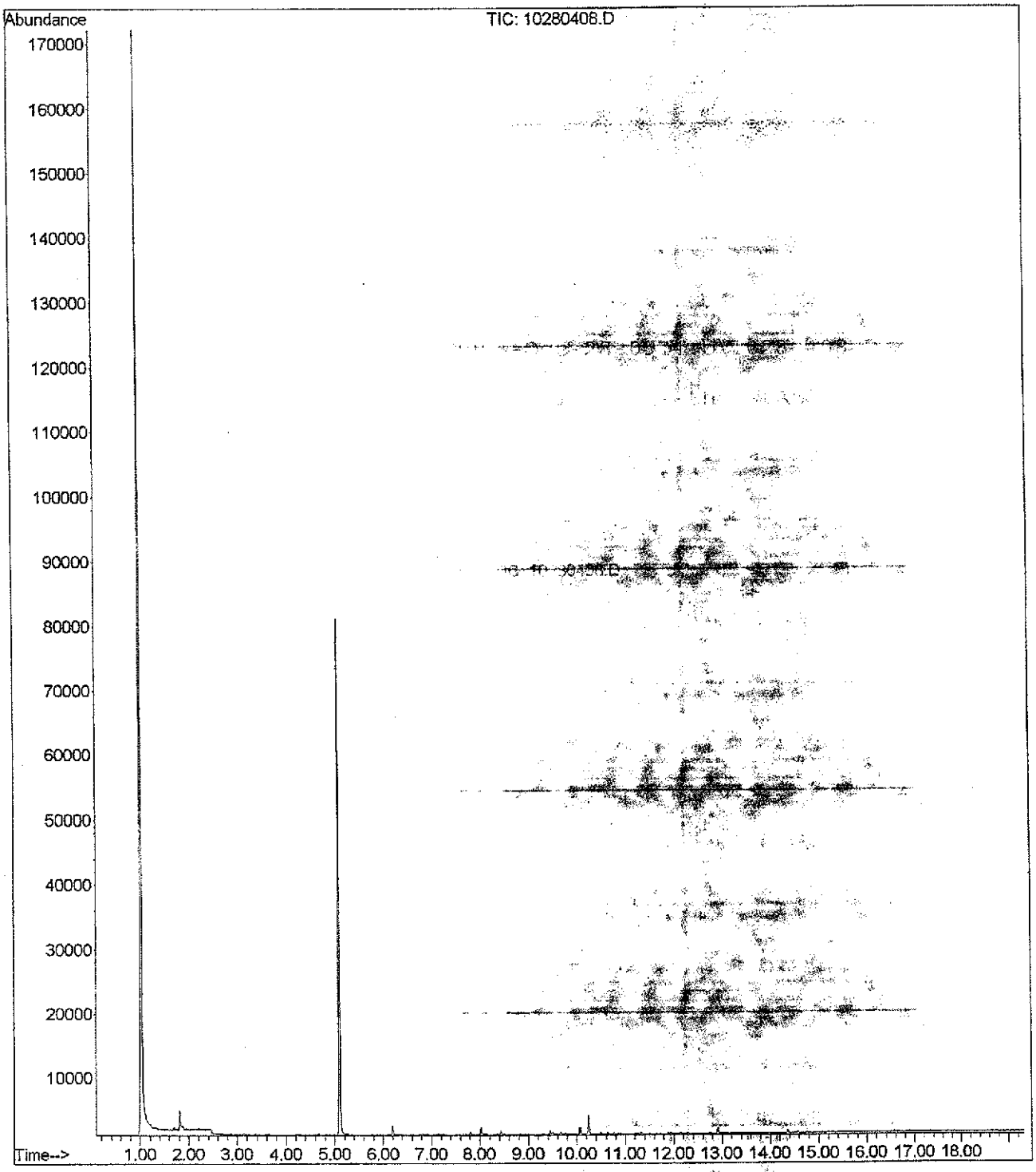
File :C:\MSDChem\1\DATA\2004-Nov-01-1317.b\10300417.D
Operator : THU
Acquired : 1 Nov 2004 1:24 pm using AcqMethod VOCOXY
Instrument : PAL GCMS
Sample Name: ICV/LCSD VOC 20PPB
Misc Info :
Vial Number: 17

VOC



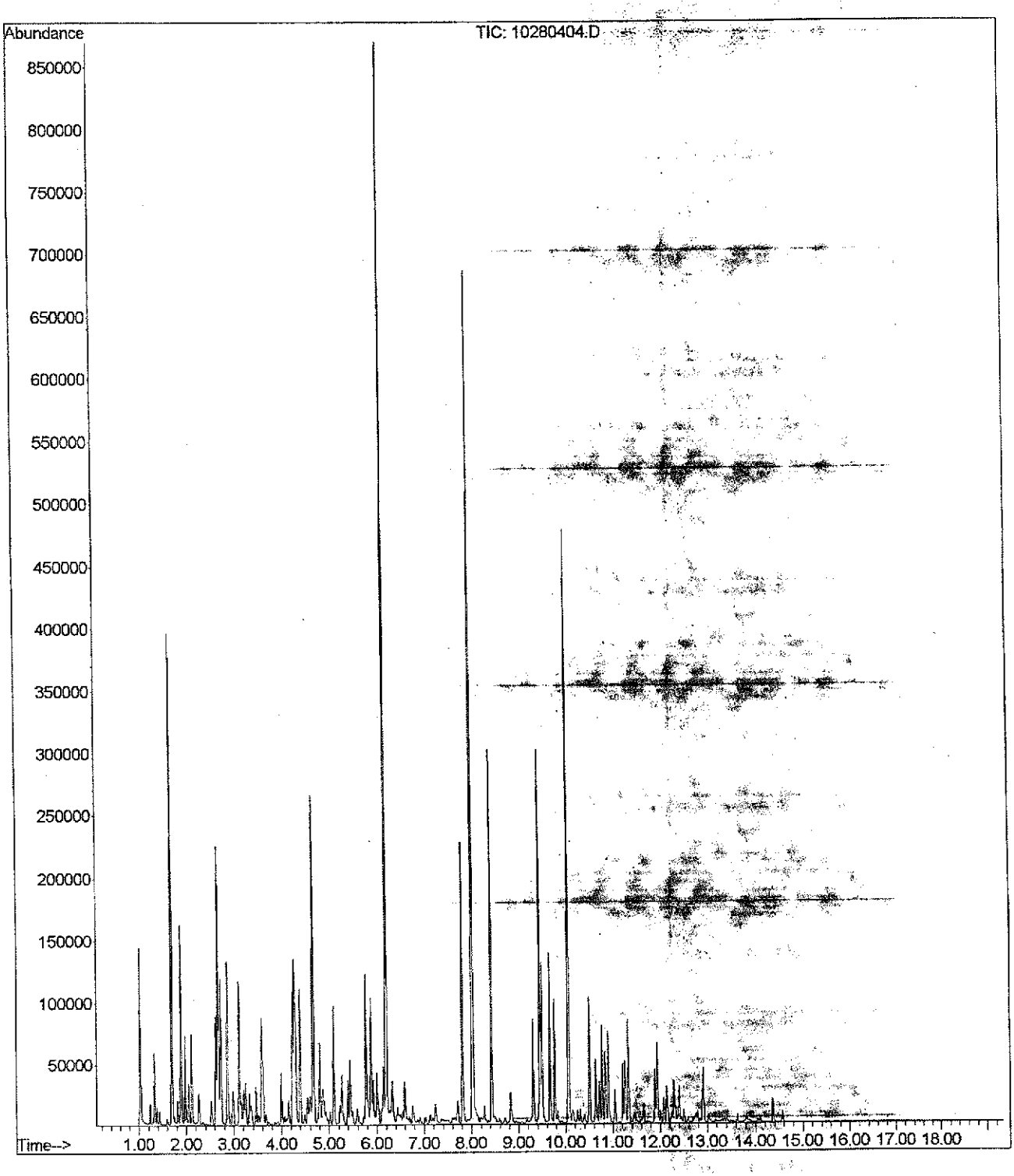
File :C:\MSDChem\1\DATA\2004-Oct-28-0914.b\10280408.D
Operator : THU
Acquired : 28 Oct 2004 12:44 pm using AcqMethod PALGRO
Instrument : PAL GCMS
Sample Name: MB-102801
Misc Info :
Vial Number: 8

GAS



File : C:\MSDChem\1\DATA\2004-Oct-28-0914.b\10280404.D
Operator : THU
Acquired : 28 Oct 2004 10:59 am using AcqMethod PALGRO
Instrument : PAL GCMS
Sample Name: ICV GAS 2000PPB
Misc Info :
Vial Number: 4

GAS



PAL Pacific Analytical Laboratory
851 West Midway Ave. Suite 201
Alameda, CA 94501
Phone (510) 864-0364

LABORATORY REPORT

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

Attention: Joyce Bobek

Date: 12/2/2004

Project ID: 2831

Location: Oakland-Thornhill

Lab Job Number: 1004

This Laboratory report has been reviewed for technical Correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Reviewed by: _____

Laboratory Director

CHAIN OF CUSTODY FORM

PAL Pacific Analytical Laboratory
851 West Midway Ave., Suite 201B
Alameda, CA 94501
510-864-0364 Telephone
510-864-0365 Fax

PAL
Login# 1004

Project No: 2831	Sampler: Tony Perini / John Lohman	Analyses/Method
Project Name: Oakland - Thornhill	Report To: Joyce Bobek	
Project P.O.: ----	Company: SOMA Environmental Engineering, Inc.	
Turnaround Time: Standard	Tel: 925-244-6600 Fax: 925-244-6601	

Lab No.	Sample ID	Sampling Date/Time: Date	Time	Matrix: Soil	Water	Waste	# of Containers	Preservatives: HCL	H_2SO_4	HNO_3	ICE	none	Field Notes	TPHg 8015	~~BTEX/MTBE~~ BTEX	Gasoline Oxygenates Lead Scavengers	Ethanol	TPHd 8015	TPHmo 8015		
004	SOMA-1	10/28/04	~~1022~~ 1022 AM		✓		2L Amber 5-VOAs	✓			✓	✓	Grab Sample	✓	✓	✓	✓	✓	✓		
005	SOMA-2	↓	1112 AM		✓		↓	↓			↓	✓	↓	↓	↓	↓	↓	↓	↓		
006	SOMA-3	↓	1052 AM		✓		↓	↓			↓	✓	↓	↓	↓	↓	↓	↓	↓		

Sampler Remarks:	Relinquished by:	Date/Time:	Received by:	Date/Time:
EDF output required Gas ox - DIPE, ETBE, TAME, TBA, MTBE Lead Scavengers EDB, 1,2-DCA	Tony Perini Tony Perini	10/28/04 1PM	[illegible signature]	10.28.04

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

A N A L Y T I C A L R E P O R T

Prepared for:

Pacific Analytical Laboratory
851 West Midway Ave.
Suite 201B
Alameda, CA 94501

Date: 15-NOV-04
Lab Job Number: 175636
Project ID: 104
Location: Oakland

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

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

PAL Pacific Analytical Laboratory
851 West Midway Ave., Suite 201B
Alameda, CA 94501
510-864-0364 Telephone
510-864-0365 Fax

PAL
Login# 1004 175636

Project No: 104
Sampler:
Project Name: oakland
Report To: Majid Akhavan
Project P.O.: ---
Company: Pacific Analytical Laboratory
Turnaround Time: Standard
Tel: 510-864-0364
Fax: 510-864-0365

		Sampling Date/Time		Matrix			# of Containers	Preservatives					Analyses/Method							
Lab No.	Sample ID	Date	Time	Soil	Water	Waste		HCL	H_2So4	HNO_3	ICE	Field Notes	TPHD 8015	TPH MO 8015	Ethanol					
-1	102804-004	10.28.04	10:22AM		✓						✓		✓	✓	✓					
-2	102804-005	10.28.04	11:12AM		✓						✓		✓	✓	✓					
-3	102804-006	10.28.04	10.52AM		✓						✓		✓	✓	✓					

Sampler Remarks:

EDF Output Required

Relinquished by:	Date/Time:	Received by:	Date/Time:
MAJID AKHAVAN	10.29.04 1130		10/29/04 1130

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	175636
Client:	Pacific Analytical Laboratory
Project:	104
Location:	Oakland
Request Date:	10/29/04
Samples Received:	10/29/04

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 10/29/04. The samples were received cold and intact.

TPH-Extractables by GC (EPA 8015B and EPA 8015B):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	175636	Location:	Oakland
Client:	Pacific Analytical Laboratory	Prep:	EPA 3520C
Project#:	104	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	10/28/04
Units:	ug/L	Received:	10/29/04
Dil'n Fac:	1.000	Prepared:	11/08/04
Batch#:	96252	Analyzed:	11/10/04

Field ID: 102804-004 Lab ID: 175636-001
Type: SAMPLE

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

Surrogate	%REC	Limits
Hexacosane	122	53-143

Field ID: 102804-005 Lab ID: 175636-002
Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	790 L Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	96	53-143

Field ID: 102804-006 Lab ID: 175636-003
Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	280 Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	133	53-143

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC271325

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

Surrogate	%REC	Limits
Hexacosane	86	53-143

L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

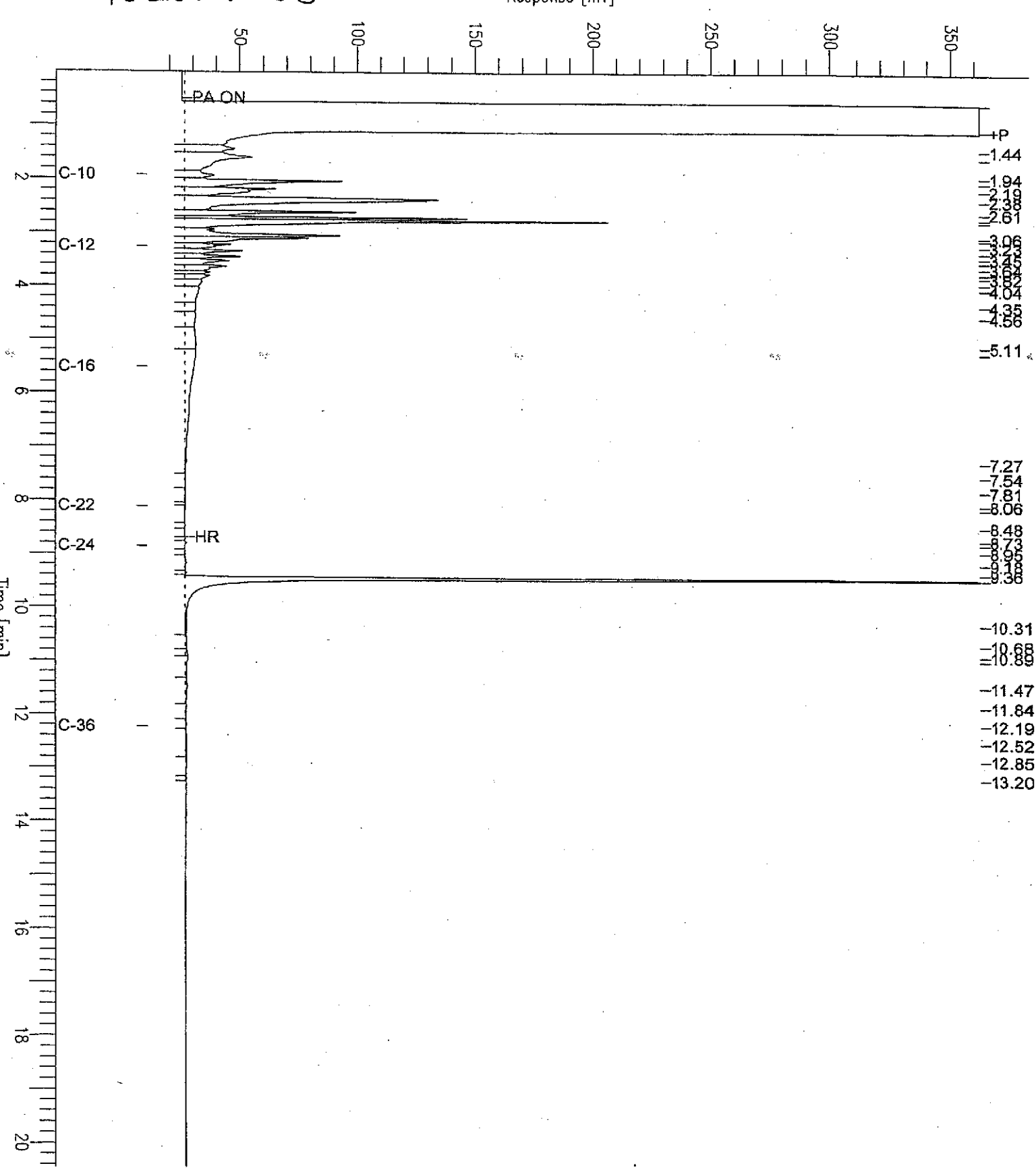
5.0

Chromatogram

Sample Name : 175636-002,96252
FileName : G:\GC11\CHA\314A065.RAW
Method : ATEH309S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 11 mV

Sample #: 96252 Page 1 of 1
Date : 11/11/04 08:16 AM
Time of Injection: 11/10/04 09:54 PM
Low Point : 10.52 mV High Point : 362.17 mV
Plot Scale: 351.7 mV

102804-005

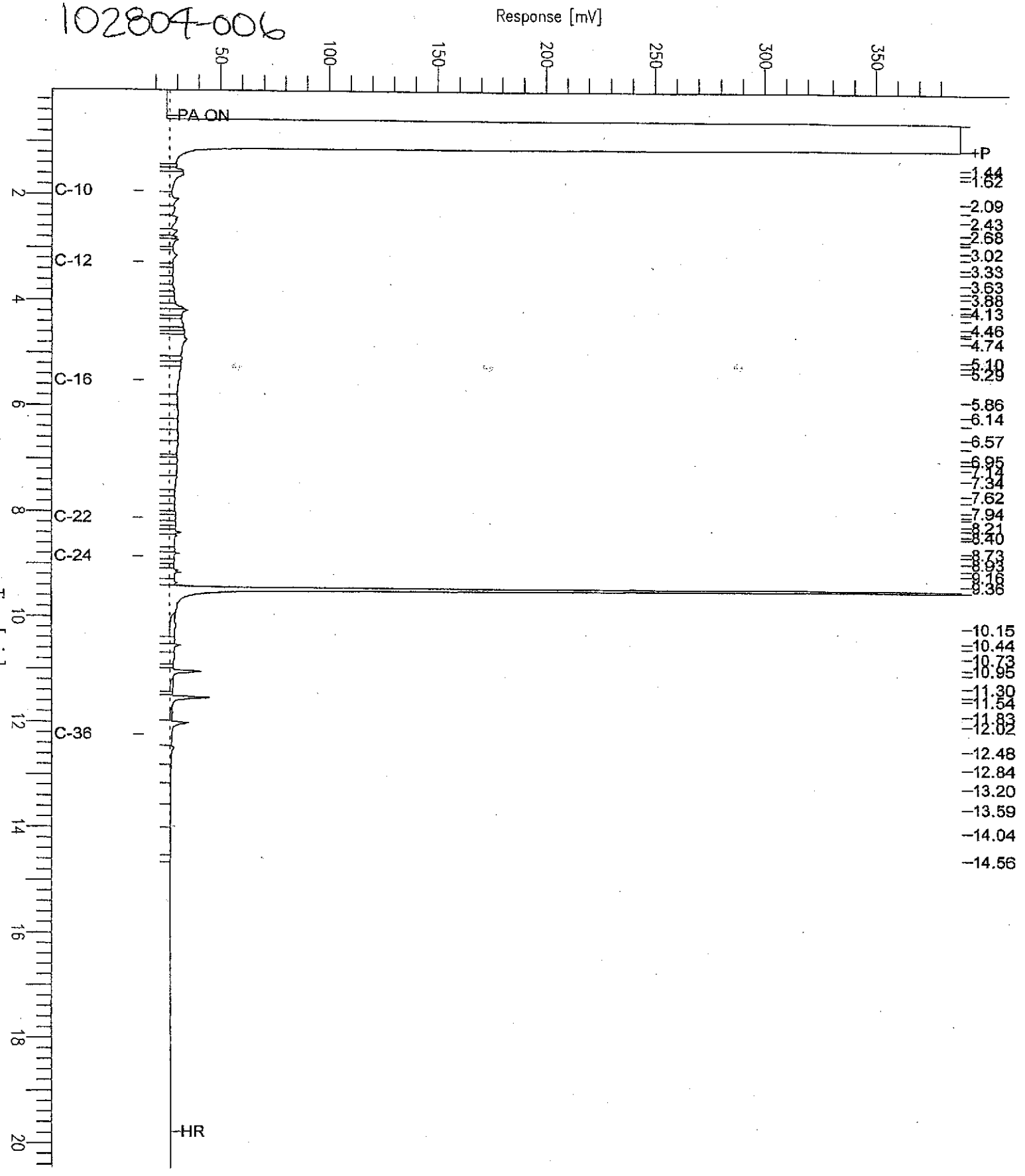


Chromatogram

Sample Name : 175636-003,96252
FileName : G:\GC11\CHA\314A066.RAW
Method : ATEH309S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 14 mV

Sample #: 96252 Page 1 of 1
Date : 11/11/04 08:17 AM
Time of Injection: 11/10/04 10:23 PM
Low Point : 14.26 mV High Point : 388.61 mV
Plot Scale: 374.3 mV

102804-006



Chromatogram

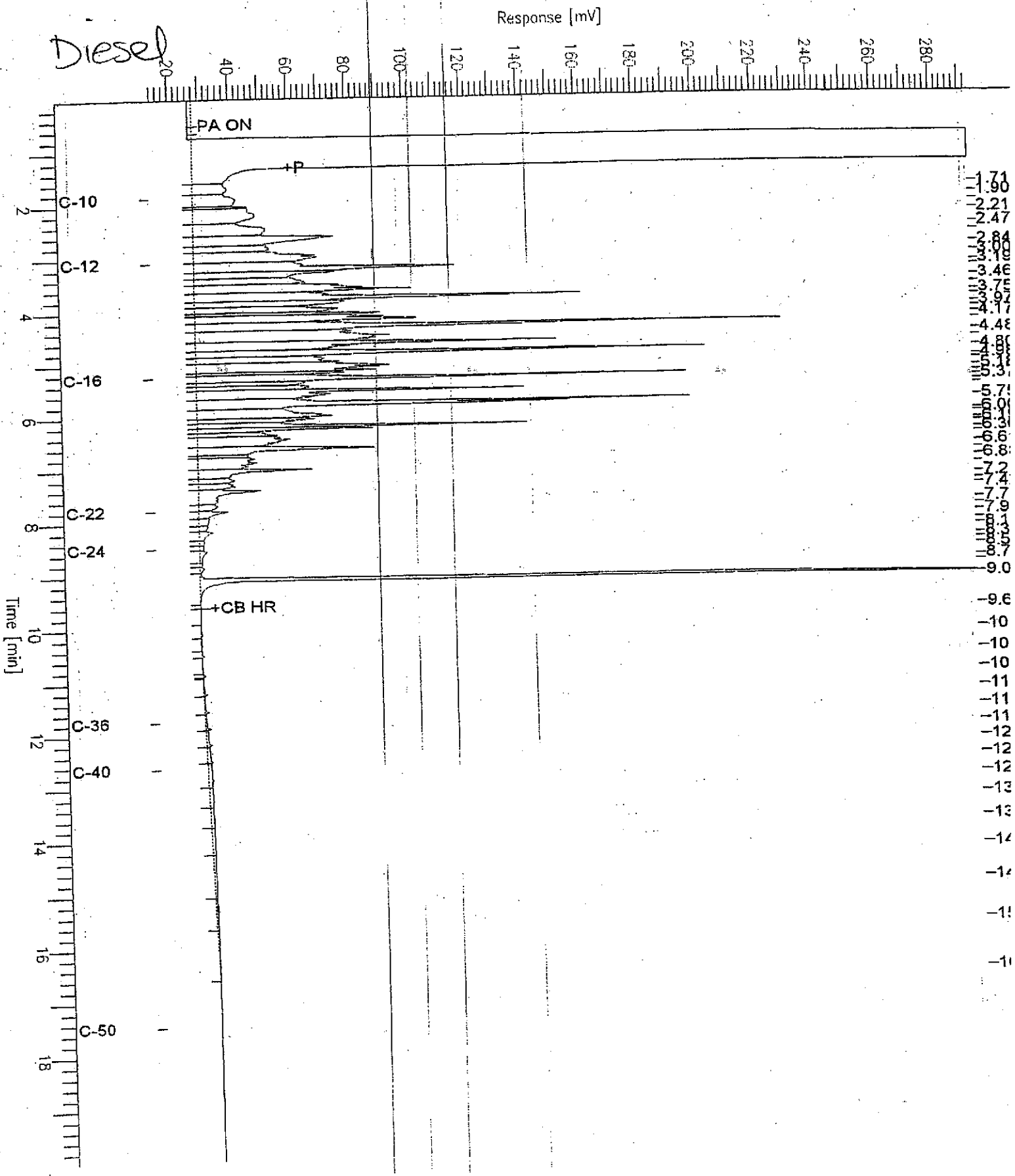
Sample Name : ccv,~~dsl~~1975,dsl
FileName : G:\GC17\CHA\314A004.RAW
Method : ATEH309.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 19.99 min
Plot Offset: 13 mV

Sample #: 500mg/L
Date : 11/9/04 03:04 PM
Time of Injection: 11/9/04 02:15 PM
Low Point : 13.36 mV
Plot Scale: 279.3 mV

High Point : 292.67 mV

Diesel



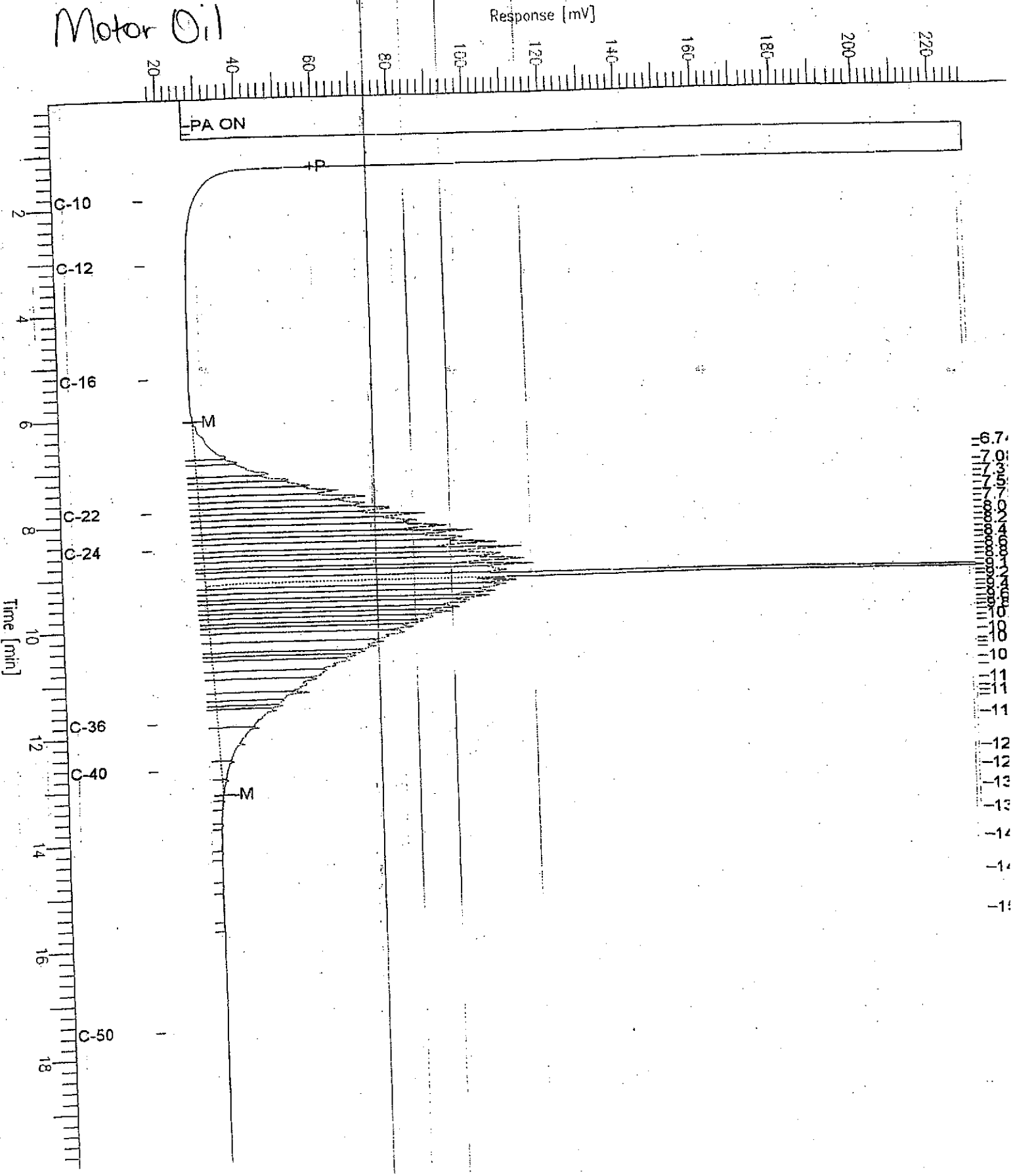
Chromatogram

Sample Name : ccv,04ws2074,mo
FileName : G:\GC17\CHA\314A005.RAW
Method : ATEH314.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 19.99 min
Plot Offset: 16 mV

Sample #: 500mg/L
Date : 11/9/04 03:45 PM
Time of Injection: 11/9/04 02:54 PM
Low Point : 16.27 mV
High Point : 228.33 mV
Plot Scale: 212.1 mV

Motor Oil



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Batch QC Report

Total Extractable Hydrocarbons

Lab #:	175636	Location:	Oakland
Client:	Pacific Analytical Laboratory	Prep:	EPA 3520C
Project#:	104	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	96252
Units:	ug/L	Prepared:	11/08/04
Diln Fac:	1.000	Analyzed:	11/11/04

Type: BS
Lab ID: QC271326
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,242	90	51-131

Surrogate	%REC	Limits
Hexacosane	102	53-143

Type: BSD
Lab ID: QC271327
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,576	103	51-131	14	42

Surrogate	%REC	Limits
Hexacosane	114	53-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Alcohols by GC-FID

Lab #:	175636	Location:	Oakland
Client:	Pacific Analytical Laboratory	Prep:	METHOD
Project#:	104	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	10/28/04
Units:	mg/L	Received:	10/29/04
Diln Fac:	1.000	Analyzed:	11/01/04
Batch#:	96001		

Field ID: 102804-004 Lab ID: 175636-001
Type: SAMPLE

Analyte	Result	RL
Methanol	ND	1.0
Ethanol	ND	1.0

Surrogate	%REC	Limits
1-Pentanol	72	60-120

Field ID: 102804-005 Lab ID: 175636-002
Type: SAMPLE

Analyte	Result	RL
Methanol	ND	1.0
Ethanol	ND	1.0

Surrogate	%REC	Limits
1-Pentanol	77	60-120

Field ID: 102804-006 Lab ID: 175636-003
Type: SAMPLE

Analyte	Result	RL
Methanol	ND	1.0
Ethanol	ND	1.0

Surrogate	%REC	Limits
1-Pentanol	83	60-120

Type: BLANK Lab ID: QC270312

Analyte	Result	RL
Methanol	ND	1.0
Ethanol	ND	1.0

Surrogate	%REC	Limits
1-Pentanol	90	60-120

ND= Not Detected
RL= Reporting Limit

2.0

Curtis & Tompkins, Ltd.

Batch QC Report

Alcohols by GC-FID

Lab #:	175636	Location:	Oakland
Client:	Pacific Analytical Laboratory	Prep:	METHOD
Project#:	104	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC270313	Batch#:	96001
Matrix:	Water	Analyzed:	11/01/04
Units:	mg/L		

Analyte	Spiked	Result	%REC	Limits
Methanol	50.00	44.85	90	65-120
Ethanol	50.00	46.19	92	67-120

Surrogate	%REC	Limits
1-Pentanol	100	60-120

Curtis & Tompkins, Ltd.

Batch QC Report

Alcohols by GC-FID

Lab #:	175636	Location:	Oakland
Client:	Pacific Analytical Laboratory	Prep:	METHOD
Project#:	104	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	96001
MSS Lab ID:	175638-008	Sampled:	10/27/04
Matrix:	Water	Received:	10/29/04
Units:	mg/L	Analyzed:	11/01/04
Diln Fac:	1.000		

Type: MS Lab ID: QC270314

Analyte	MSS Result	Spiked	Result	%REC	Limits
Methanol	0.1814	50.00	40.40	80	55-130
Ethanol	<0.1800	50.00	45.29	91	57-130

Surrogate	%REC	Limits
1-Pentanol	82	60-120

Type: MSD Lab ID: QC270315

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Methanol	50.00	42.06	84	55-130	4	30
Ethanol	50.00	46.87	94	57-130	3	30

Surrogate	%REC	Limits
1-Pentanol	84	60-120

RPD= Relative Percent Difference

4.0

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

December 6, 2004

Mr. Don Hwang
Alameda County
Department of Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Fuel Leak Case No. RO0000317-5725 Thornhill Drive, Oakland, CA

Dear Don:

Enclosed for your review is a copy of SOMA's "Fourth Quarter 2004 Groundwater Monitoring Report" for the subject property.

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

Sincerely,

Mansour Sepehr, Ph.D.,PE
Principal Hydrogeologist

Enclosure

cc: Mr. Mo Mashhoon