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

Re 265

January 13, 2003

Alameda County
JAN 16 2003
Environmental Health

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

Subject: **StID#3337**
Site Address: 3609 International Blvd., Oakland, California

Dear Mr. Gholami:

Enclosed for your review is a copy of SOMA's "Fourth Quarter 2002 Groundwater Monitoring and Remediation System Operation 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.,P.E.
Principal Hydrogeologist

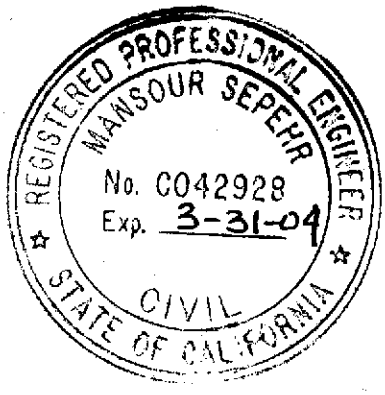
REGISTERED PROFESSIONAL ENGINEER
MANSOUR SEPEHR
No. C042928
Exp. 3-31-04
CIVIL
STATE OF CALIFORNIA

Enclosure

cc: Mr. Abolghassem Razi w/enclosure
Tony's Express Auto Service

Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Abolghassem Razi, the property owner of 3609 International Boulevard, Oakland, California, to comply with the Alameda County Department of Environmental Health Service's requirements for the Fourth Quarter 2002 groundwater monitoring event.



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

Table of Contents

List of Tables

List of Figures

List of Appendices

1.0 Introduction

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Abolghassem Razi, the owner of Tony's Express Auto Service. The property is located at 3609 International Boulevard at the intersection of 36th Avenue in Oakland, California (the "Site"), as shown in Figure 1.

The Site is located in an area where the surrounding properties are primarily commercial businesses and residential housing. The Site currently houses a gasoline service station and convenience store. During Third Quarter 2002, the station was remodeled and several hydraulic hoists were removed. The station no longer has an auto repair facility. Figure 2 shows the location of the main service station, dispenser islands, underground storage tanks (USTs), the on-site and off-site groundwater monitoring wells, and neighboring properties.

This report summarizes the results of the Fourth Quarter 2002 groundwater monitoring event conducted on October 30, 2002 at the Site. Included in this report are the bioattenuation parameters measured in the field for each groundwater sample. Also, included in this report are the results of the laboratory analysis of the groundwater samples, which were analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-g)
- Benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX)
- Methyl tertiary Butyl Ether (MtBE)

These activities were performed in accordance with the general guidelines of the Regional Water Quality Control Board (RWQCB) and the Alameda County Environmental Health Services (ACEHS).

This report also describes the operation of the groundwater extraction system installed by SOMA in December 1999, as well as the operation of the vapor extraction system, which was installed by SOMA in July 2000. The locations of the groundwater extraction system and the vapor extraction system are displayed in Figure 2.

1.1 Background

The environmental investigation at the subject property started in 1992, when Mr. Razi, the property owner, retained Soil Tech Engineering, Inc. (STE) of San Jose to conduct a limited subsurface investigation. The purpose of STE's investigation was to determine whether or not the soil near the product lines and USTs had been impacted with petroleum hydrocarbons.

In July 1993, STE removed one single-walled 10,000-gallon gasoline tank and one single-walled 6,000-gallon gasoline tank along with a 550-gallon waste oil tank from the Site. Three double-walled USTs replaced these tanks. Currently, there is one 10,000-gallon double-walled gasoline tank and two 6,000-gallon double-walled gasoline tanks beneath the Site. The locations of the USTs are shown in Figure 2.

In December 1997, Mr. Razi retained Western Geo-Engineers (WEGE) to conduct additional investigations and perform groundwater monitoring on a quarterly basis. The results of the WEGE groundwater monitoring events indicated elevated levels of petroleum hydrocarbons and MtBE in the groundwater.

In April 1999, Mr. Razi retained SOMA to conduct groundwater monitoring, risk-based corrective action (RBCA), a corrective action plan (CAP), as well as soil and groundwater remediation at the Site. The results of the RBCA study indicated that the Site is a high-risk groundwater site; therefore, the soil and

groundwater in on and off-site areas warranted remedial actions. The source of the petroleum hydrocarbons in the groundwater was believed to have been the former USTs, which were used to store gasoline at the Site. The results of the CAP study indicated that the installation of a French drain combined with a vapor extraction system would be the most cost effective alternative for the Site's remediation.

In late August 1999, SOMA installed a French drain and groundwater treatment system to prevent further migration of the chemically impacted groundwater. This treatment system has been in operation since early December 1999.

In July 2000, following approval from the ACEHS, SOMA installed a vapor extraction system as recommended in our CAP document, dated July 1, 1999.

In January 2002, Environmental Fabric removed old product dispensers and installed new ones in the fuel islands.

1.2 Site Hydrogeology

Previous investigations have shown that groundwater is encountered at depths of approximately 10 to 11 feet beneath the Site. Figure 2 shows the location of the on-site and off-site groundwater monitoring wells. Prior to the operation of the French drain, groundwater was found to flow from the north to the south with an average gradient of 0.014 feet/feet. When the groundwater extraction system is in operation, the groundwater flows towards the French drain. The capture zone of the drain has extended downgradient past well MW-10.

Based on the results of a pumping test conducted by SOMA, the hydraulic conductivity of the saturated sediments ranges from 1.5 to 18.3 feet per day. Assuming that the effective porosity of the saturated sediments is 0.35, the groundwater flow velocity ranges from 22 to 267 feet per year.

2.0 Field Activities

On October 30, 2002, SOMA's field crew conducted a groundwater monitoring event in accordance with the procedures and guidelines of the RWQCB, San Francisco Bay Region. During this groundwater monitoring event, a total of eight on-site (MW-1 to MW-8) monitoring wells, two off-site (MW-10 and MW-12) monitoring wells, and three French drain risers were measured for depth to groundwater.

The depth to groundwater at each monitoring well and riser 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 at each monitoring well and riser were used to calculate the groundwater elevation. Kier Wright Civil Engineers Surveyors, Inc. surveyed the wells and risers on August 9, 2002. With the exception of monitoring well MW-11, which could not be accessed due to obstacles preventing the proper use of surveying equipment, the top of casing elevations were based on the survey data measured at this time. The elevation data was based on an assumed datum of 14.20 NAVD88. Appendix A includes the survey data.

Prior to the collection of samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC). During the purging activities, in order to obtain accurate measurements of groundwater parameters and especially to avoid the intrusion of oxygen from ambient air into the groundwater samples, field measurements were conducted in-situ (i.e., down-hole inside each monitoring well). The pH, temperature, electric conductivity (EC), turbidity, and Oxygen Reduction Potential (ORP) were measured in-situ using a Horiba, Model U-22 multi-parameter instrument. The Horiba, Model U-22 was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

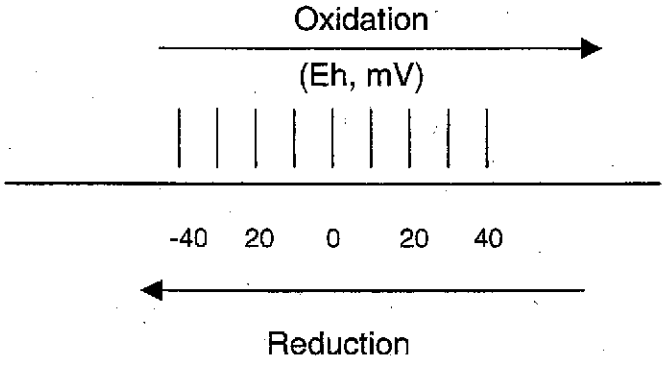
Dissolved oxygen (DO) was measured with a dissolved oxygen meter, YSI Model 50B. The instrument was calibrated at the Site according to a procedure provided by the manufacturer and prescribed by Taras *et.al.* (1975). Details of the calibration and measurement procedures can be found in the instrument's handbook. Detailed field measurements are shown in Appendix .

The Horiba U-22 portable microprocessor-based turbidity probe provides lab-grade accuracy, even in the field. The unit of measure adopted by the ISO Standard is the Formazine Turbidity Unit (FTU), which is identical to the Nephelometric Turbidity Unit (NTU). It has been found that there is a strong correlation between the turbidity level and the biological oxygen demand of natural water bodies. Turbidity is an indicator and, as such, does not reveal the presence or quantity of specific pollutants in the groundwater. It does, however, provide general information on the extent of the suspended solids in the groundwater.

The Horiba U-22's ORP electrode was used to measure the ORP of the groundwater samples. Oxidation is a process in which a molecule or ion loses one or several electrons. Reduction is a process by which a molecule or ion gains one or several electrons. The ORP, or Eh, is a measure of the potential for these processes to occur. The unit of Eh, which is commonly referred to as the redox potential, is the Volt or m-Volt. 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 O_2 in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and because the rate of O_2 replenishment in subsurface environments is limited, oxidation of only a small amount of petroleum hydrocarbons can result in the consumption of all the DO.

When all the DO in the groundwater is consumed, oxidation of petroleum hydrocarbons can still occur, but the oxidizing agents (i.e., the constituents that undergo reduction) are then Fe $(OH)_3$, SO_4^{2-} , NO^-_3, MnO_2, and others (Freeze

and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process proceeds far enough, the environment may become so strongly reduced that the petroleum hydrocarbons may 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:



The purging continued until the parameters for pH, temperature, EC, DO, turbidity, and redox stabilized, or three casing volumes were purged. The groundwater samples were also tested on-site for ferrous iron (Fe^{+2}), sulfate (SO_4^{-2}) and nitrate (NO_3^-) concentrations once stabilization occurred.

Ferrous iron, sulfate and nitrate were measured colorimetrically using the Hach Colorimeter Model 890. The Hach Model 890 Colorimeter is 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.

Ferrous iron was measured colorimetrically using Method 8146 (1,10-phenanthroline Method). The 1,10-phenathroline indicator in Ferrous Iron Reagent reacts with Fe^{+2} in the sample to form an orange color. The intensity of the orange color is proportional to the iron concentration.

Sulfate was measured colorimetrically using Method 8051 of Sulfa Ver 4 Method. Sulfate ions in the sample react with barium in the Sulfa Ver 4 Sulfate Reagent to form insoluble barium sulfate. The amount of turbidity formed is proportional to the sulfate concentration. The Sulfa Ver 4 also contains a stabilizing agent to hold the barium sulfate in suspension.

Nitrate was measured colorimetrically using Method 8039: the Cadmium Reduction Method. Cadmium metal in the Nitra Ver 5 Nitrate Reagent reduces nitrates present in the sample to nitrite; the nitrite ion reacts in an acidic medium with sulfanilic acid to form an intermediate diazonium salt, which couples with getistic acid to form an amber-colored product. The intensity of the color is proportional to nitrate-N concentration in the sample.

For sampling purposes, after purging, a disposable polyethylene bailer was used to collect sufficient samples from each monitoring well for laboratory analyses. The groundwater sample was transferred into three 40-mL VOA vials and preserved with hydrochloric acid. The vials were then sealed to prevent development of air bubbles within the headspace. After the groundwater samples were collected, they were placed on ice and maintained at 4°C in a cooler. A chain of custody (COC) form was written and placed along with the samples in the cooler. SOMA's field crew delivered the groundwater samples to Curtis & Tompkins, Ltd. Laboratory in Berkeley, California on October 30, 2002.

3.0 Laboratory Analysis

Curtis & Tompkins, Ltd., a state certified laboratory, analyzed the groundwater samples for TPH-g, BTEX and MtBE. TPH-g was prepared using EPA Method 5030B and measured using EPA Method 8015B(M). EPA Method 8021B was used to measure BTEX and MtBE concentrations. Detections of MtBE were confirmed using EPA Method 8260B.

4.0 Results

The following sections provide the results of field measurements and laboratory analyses for the October 30, 2002 groundwater monitoring event.

4.1 Field Measurements

Table 1 presents the calculated groundwater elevations at each groundwater monitoring well and riser. Free product was detected in monitoring wells MW-3, MW-6, and MW-8. The calculated groundwater elevation data was used to evaluate the impact of the French drain and determine the extent of the groundwater extraction capture zone. The groundwater elevation data presented in Table 1 is based on survey data measured by Kier Wright Civil Engineers Surveyors, Inc. on August 9, 2002. Due to obstacles around monitoring well MW-11, the surveying equipment could not be set-up; therefore, no survey was conducted for this well.

As shown in Table 1, depths to groundwater in the monitoring wells ranged from 12.54 feet in monitoring well MW-10 to 15.50 feet in monitoring well MW-1. The corresponding groundwater elevations ranged from 23.71 feet in monitoring well MW-12 to 26.65 feet in monitoring well MW-5. Depths to groundwater inside the risers were 13.74 feet for the center riser, 14.53 feet for the east riser, and 13.50 feet for the west riser. The corresponding groundwater elevations are 25.61, 25.53, and 25.66 for the center, east, and west risers, respectively.

Table 2 shows the historical groundwater elevations at different groundwater monitoring wells and the French drain risers. As previously mentioned the monitoring wells and French drain risers, with the exception of monitoring well MW-11, were resurveyed on August 9, 2002. The new survey was conducted to comply with an Electronically Deliverable Format (EDF) request made by the State Water Resources Control Board (SWRCB) Database. Due to the new

survey data, further monitoring events will be needed to better determine groundwater elevation trends.

Figure 3 displays the groundwater elevation contour map, depicted in feet, as measured on October 30, 2002. As shown in Figure 3, groundwater flows generally toward the southwest, at an average gradient of 0.013 feet/feet. MW-1 water level data was deleted from the groundwater elevation contour map because an anomaly in the water level elevation was observed. Also, due to the scheduling of a carbon change-out on the Granulated Active Carbon (GAC) system, the system was shut-down during this monitoring event.

Table 3 summarizes the field measurements of physical and chemical properties of groundwater samples collected from the groundwater monitoring wells at the time of sampling. The pH measurements ranged from 6.81 in monitoring well MW-3 to 7.01 in monitoring well MW-10. The temperature measurements ranged from 19.34 °C in monitoring well MW-4 to 21.47 °C in monitoring well MW-7. EC ranged from 541 µS/cm in monitoring well MW-7 to 1,240 µS/cm in monitoring well MW-3. No pH, temperature, and EC field measurements were taken for MW-6 due to the dryness of the well during this monitoring event. No pH, temperature, and EC field measurements were taken for MW-11 due to obstacles around the well, which prevented access to the well.

The groundwater biodegradation parameters for this monitoring event, as well as the previous monitoring events, are shown in Table 4. DO concentrations were detected in monitoring wells (MW-2, MW-4, MW-7, MW-10, and MW-12). The concentration contour map for DO during the Fourth Quarter 2002 is displayed in Figure 4. The lowest detectable DO concentration was 0.30 mg/L in monitoring well MW-12. The highest DO concentration was detected on-site in monitoring well MW-7 at 7.90 mg/L. DO underneath the Site is generally low, with the exception of MW-7. The low oxygen contents may suggest the presence of

anaerobic biodegradation processes in this groundwater system. Based on the low off-site DO readings, petroleum hydrocarbons may have undergone an anaerobic degradation in these off-site wells.

Turbidity of the groundwater samples ranged from 0 NTU in monitoring wells MW-4, MW-5, MW-10 and MW-12 to above the allowable tolerance of the equipment in MW-8. The maximum turbidity allowable in the Horiba U-22 is approximately 999 NTU. The redox potential in the groundwater samples ranged from –132 mV in monitoring well MW-8 to +85 mV in monitoring well MW-2. Monitoring wells MW-1, MW-3, MW-4, MW-5, MW-7, MW-8, MW-10, and MW-12 showed strongly reduced conditions. Oxygen-depleted environments with strongly reduced conditions depict anaerobic processes utilizing alternate electron acceptors for oxidation of petroleum hydrocarbons. Possible alternate electron acceptors include nitrate, iron (III) and sulfate (Lovley *et. al.*, 1994). Under strongly reduced conditions and a lack of other terminal electron acceptors, the occurrence of methanogenesis, which is production of methane gas, may be possible.

Ferrous iron was detected in all of the groundwater samples. Ferrous iron concentrations ranged from 0.66 mg/L in monitoring well MW-10 to 3.30 mg/L in monitoring wells MW- 1, MW-3 and MW-8. High concentrations of ferrous iron in groundwater are a good indication of biological activities. Figure 5 shows a contour map of ferrous iron concentrations in the groundwater as measured on October 30, 2002. As shown in Figure 5, high ferrous iron concentrations were detected in the vicinity of the USTs in monitoring well MW-3, and in the down-gradient wells MW-1 and MW-8. The presence of high ferrous iron concentrations in combination with low concentrations of other electron receptors, such as DO, sulfate, and nitrate is indicative of anaerobic biodegradation beneath the Site.

Sulfate concentrations were detected in monitoring wells MW-2, MW-4, MW-5, MW-8, MW-10. Sulfate concentrations ranged from 14 mg/L in monitoring well MW-10 to 40 mg/L in monitoring well MW-8. Sulfate concentrations decreased in monitoring wells MW-2, MW-4, MW-5, and MW-10 since the previous monitoring event. Sulfate-depleted subsurface contaminated environments may reveal a strong demand by microorganisms for a source of terminal electron acceptors for oxidizing contaminant hydrocarbons (Lovley *et. al.*, 1994). The contour map of sulfate concentrations in the groundwater as measured on October 30, 2002 is displayed in Figure 6. As shown in Figure 6, sulfate concentrations were below the measurable specifications of the equipment in monitoring wells MW-1, MW-3, MW-6, MW-7 and MW-12. Monitoring wells MW-1, MW-3, MW-7 and MW-8 are in the vicinity of the USTs.

During this monitoring event, nitrate was detected in all the wells sampled except for MW-3 and MW-12. Detectable levels of nitrate ranged from 0.7 mg/L in monitoring well MW-7 to 10.6 mg/L in monitoring well MW-2. The low levels of DO and consumption of nitrate in many of the wells may suggest that, under the observed anaerobic conditions, nitrate may have been consumed as a source of terminal electron acceptors by microorganisms (Lovley *et. al.*, 1994). A contour map of nitrate concentrations in the groundwater is displayed in Figure 7. As Figure 7 shows, nitrate concentrations were low or below the measurable specifications of the equipment in the vicinity of the USTs. The highest on-site sulfate concentration was detected in monitoring well MW-2.

As discussed before, in this contaminated groundwater system beneath the Site, most of the electron receptors have been consumed by microorganisms, as a result, methanogenesis may be the only remaining route of natural biodegradation. Therefore, to enhance the biodegradation processes we highly recommend the injection of concentrated solutions of terminal electron receptors into the groundwater in the vicinity of the contaminated wells.

No biodegradation parameters were taken from monitoring wells MW-6 and MW-11. The field notes for the physical, chemical and biodegradation parameters are shown in Appendix A.

4.2 Laboratory Analysis

Table 5 presents the results of the laboratory analyses on the groundwater samples collected on October 30, 2002. The results indicate that on-site monitoring wells MW-1 and MW-3 are the most impacted locations. These monitoring wells are in the vicinity of the USTs. No groundwater samples were collected from monitoring well MW-11.

As shown in Table 5, TPH-g was detected in all of the groundwater samples, except for MW-2. TPH-g levels ranged from 77 µg/L in monitoring well MW-5 to 70,000 µg/L in monitoring well MW-3. Figure 8 shows a contour map of TPH-g concentrations at the Site as analyzed on October 30, 2002. As shown in Figure 8, high TPH-g concentrations were detected in the vicinity of the USTs, in monitoring wells MW-1 and MW-3. A high TPH-g level was also detected in MW-6, near the soil vapor extraction system. TPH-g was also detected in all off-site monitoring wells, where the highest TPH-g concentration was detected in monitoring well MW-12 at 2,600 µg/L.

The analytical results of BTEX are also shown in Table 5. Benzene was below the laboratory reporting limit in monitoring wells MW-2, MW-5, and MW-7. Benzene levels ranged from 69 µg/L in MW-4 to 4,900 µg/L in MW-3. Toluene and ethylbenzene was below the laboratory reporting limit in monitoring wells MW-2, MW-5, and MW-12. Toluene concentrations ranged from 0.99 µg/L in MW-4 to 5,100 µg/L in MW-3. Ethylbenzene levels ranged from 8.80 µg/L in MW-4 to 2,100 µg/L in MW-3. Total xylenes were found in all the wells sampled, with

the exception of MW-5. Total xylenes levels ranged from 0.64 µg/L in MW-2 to 11,900 µg/L in MW-3. Figure 9 displays the contour map of benzene concentrations in the groundwater on October 30, 2002. As shown in Figure 9, the highest benzene concentrations were found in MW-1 and MW-3, in the vicinity of the USTs. High concentrations of benzene were also present in MW-6, near the soil vapor extraction system.

Table 5 shows the results of MtBE analysis using both EPA Methods 8260B and 8021B. MtBE was below the laboratory reporting limit in monitoring wells MW-2, MW-4, MW-5, and MW-6. The highest MtBE concentration was detected in monitoring well MW-1 at 34,000 µg/L and 43,000 µg/L for EPA Methods 8260B and 8021B, respectively. High MtBE concentrations were also detected in monitoring well MW-3.

EPA Method 8260B is a more accurate analytical method than EPA Method 8021B. Therefore, to properly determine the MtBE plume and on-site concentrations, the MtBE iso-concentration figure is contoured using EPA Method 8260B. Figure 10 displays the contour map of MtBE concentrations in the groundwater on October 30, 2002 as analyzed by EPA Method 8260B. The elevated level of MtBE found in MW-1 may be attributed to the proximity and down-gradient location of MW-1 to the USTs.

The laboratory report for the Fourth Quarter 2002 monitoring event is included in Appendix B.

Table 6 shows the historical groundwater analytical data. The following concentration trends have been observed since the previous monitoring event. TPH-g increased in monitoring wells MW-3, MW-7, MW-8, MW-10 and MW-12, but decreased in MW-1, MW-2, MW-4, MW-5 and MW-6.

As shown in Table 6, benzene levels increased in MW-4, MW-6, MW-8, MW-10 and MW-12, and decreased in MW-1, MW-2, MW-3 and MW-7, and remained non-detectable in MW-5. Toluene concentrations increased in MW-3, MW-6, MW-7 and MW-10, and decreased in MW-1, MW-2, MW-4 and MW-8, and remained non-detectable in MW-5 and MW-12. Ethylbenzene levels increased in MW-1, MW-3, MW-8 and MW-10, but decreased in MW-2, MW-4, MW-5, MW-6, MW-7 and MW-12. Total xylenes concentrations increased in MW-1, MW-3, MW-8, MW-10 and MW-12, and decreased in MW-2, MW-4, MW-6 and MW-7, and remained non-detectable in MW-5.

As shown in Table 6, MtBE levels were found to have significantly increased in MW-1 and MW-3, decreased in MW-8, and remained non-detectable in MW-2, MW-4, MW-5 and MW-6. The results from EPA Method 8260B indicated that MtBE levels decreased for MW-7, MW-10 and MW-12. However, the results from EPA Method 8021B indicated that concentrations in those wells increased since the previous monitoring event.

5.0 Groundwater Treatment System Operation

The treatment system began operation on December 9, 1999. Since that time, 1,661,590 gallons of groundwater has been treated and discharged into the East Bay Municipal Utility District (EBMUD) sewer system under the existing discharge permit (as of October 16, 2002).

As required by the discharge permit and the ACEHS, sampling of the groundwater treatment system has been performed on a routine basis. The effluent sampling and maintenance of the system was performed on a weekly basis from the start of the system's operation to the end of July 2000. In August 2000, maintenance of the system continued weekly, but sampling was performed on a monthly basis. The results from the first effluent testing were used to acquire a discharge permit from EBMUD.

A total of 7,990 gallons of chemically impacted groundwater has been treated since the Third Quarter 2002 monitoring event, (as of October 16, 2002, which was the last sampling date at the time of this Fourth Quarter 2002 monitoring event). The effluent passing both Granulated Active Carbon (GAC) units is regularly being sampled for chemical analysis. The schedule for refurbishing the GAC units is based on the analytical results of the samples. The first GAC unit was refurbished as soon as traces of chemicals broke through the unit. The second GAC unit is serving as a polishing unit and is always kept highly active. This procedure ensures that the effluent discharging into the EBMUD sewer system has non-detectable levels of contaminants. A schematic diagram of the groundwater remediation system is displayed in Figure 11.

Table 7 presents the total volume and chemical composition of GAC-1 and effluent treated at the Site. Table 7 shows that all the effluent samples have maintained compliance with the permit, with the exception of the October 2002 sampling event. The analytical data for the October 2002 sampling period was erroneous.

The high non-detectable concentration levels are due to a high dilution factor caused by the presence of 2-Butanone. During the laboratory testing 2-Butanone was detected at a high concentration of 200,000 µg/L in only the effluent sample. The influent sample concentration for 2-Butanone was only 20 µg/L. Based on the fact that 2-Butanone has never been detected since December 1999 in any of the effluent samples and the very low influent concentration, the sample results shown are erroneous and are only used to depict that sampling was conducted in October 2002.

The high TPH-g concentration may not be representative due to the sample exhibiting unknown peaks, and the sample also exhibiting a fuel pattern, which

did not resemble the standard. The laboratory designated these items by "Y" and "Z" flags, (see the "Y" and "Z" flags in the lab results). However, the system was turned off upon detection of these concentrations and a carbon change-out was performed. During this carbon change-out both the carbon in the 2,000-pound carbon vessel and the carbon in the 55-gallon vessel (GAC-2) were removed and replaced. In future carbon change-out cycles, both GAC-1 and GAC-2 will be replaced with fresh carbon. The laboratory reports for the treatment system are included as Appendix C of this report.

The cumulative weight of TPH-g and MtBE extracted from the groundwater since the installation of the treatment system is displayed in Figure 12. As Figure 12 shows, as of October 2002, an approximate total of 157 pounds of TPH-g and 62 pounds of MtBE have been removed during the operation of the treatment system, from start-up to date.

6.0 Vapor Extraction System Operation

The Vapor Extraction System (VES) consists of 6 vapor extraction wells, a de-moisturizing unit, a blower and four drums of GAC filters. The VES began operation on July 24, 2000. Since then, during its working days, the system has extracted and treated more than 3,000,000 liters per day of soil gas. When the system first began to operate, the influent had a concentration of 394 parts per million on volumetric basis (ppmv) of petroleum hydrocarbons. However, it gradually decreased to 68 ppmv after 31 days of operation. On January 4, 2001, due to extremely low influent concentrations (i.e., less than 10 ppm of hydrocarbons), the soil vapor extraction (SVE) system was turned off.

The following service was performed on the SVE system during 2001. On October 23, 2001, the system was inspected for operation and it was determined that all four GACs were not in good enough condition to re-start the system. On October 25, 2001, one of the four GACs was replaced with a new one, and on

October 29, 2001 the three remaining GAC units were replaced. The system was then under continuous operation and extracted over 80 cubic feet per minute (CFM) of contaminated air from the vadose zone. On November 21, 2001 due to the low concentration of contaminants in the influent (i.e., less than 10 ppmv of hydrocarbons) the system was turned off.

The following service was performed on the SVE system during 2002. In February 2002, the system was inspected for operation and it was determined that the blower was not functioning. The blower was repaired and installed on February 15, 2002. On the same day, the four old GACs were replaced with four new ones and the system was turned on. The system was shut down on March 7, 2002, due to low influent readings caused by the saturated soil conditions on-site. The system was turned back on June 12, 2002 and has been operational, with the exception of the time period from August 15 to August 23, 2002 due to low influent readings. The total mass of petroleum hydrocarbons removed by the VES is shown in Table 8. As of November 13, 2002, the SVE system has removed 408.49 pounds of petroleum hydrocarbons from the vadose zone beneath the Site.

On November 6, 2002, SOMA met a representative of the Bay Area Air Quality Management District (BAAQMD) on-site. During this time the 2002 yearly maintenance record was shown to BAAQMD. The SVE system was determined to be in compliance with the BAAQMD operating permit. At the request of BAAQMD, an air sample was collected from the influent and effluent of the system on November 7, 2002 and submitted to Curtis & Tompkins, Ltd. Laboratory in Berkeley, California the same day. The sample results are shown in Appendix D.

7.0 Conclusions and Recommendations

The findings of the Fourth Quarter 2002 groundwater monitoring event can be summarized as follows:

1. Groundwater generally flows toward the southwest, at an average gradient of 0.013 feet/feet.

2. The following groundwater biodegradation parameter trends were observed during the Fourth Quarter 2002 monitoring event. DO concentrations beneath the Site ranged from 0 mg/L to 7.9 mg/L. The lowest detectable DO level was 0.30 mg/L in monitoring well MW-12. The highest DO concentration was detected on-site in monitoring well MW-7. Low dissolved oxygen beneath the Site may suggest the presence of anaerobic biodegradation processes in this groundwater system. Based on the low DO readings in off-site monitoring wells, petroleum hydrocarbons may have undergone an anaerobic degradation in these off-site wells.

3. Relatively high ferrous iron concentrations were detected in the vicinity of the USTs in monitoring wells MW-1, MW-3, and MW-8. The presence of high ferrous iron concentrations in combination with low concentrations of other electron receptors, such as DO, is indicative of anaerobic biodegradation beneath the Site.

4. Sulfate concentrations ranged from 0 mg/L to 40 mg/L. Sulfate was not detected in MW-1, MW-3, MW-6, MW-7 and MW-12. The highest sulfate concentration was measured in monitoring well MW-8 at 40 mg/L, near the fuel islands.

concentration was detected in monitoring well MW-2.

6. In the contaminated groundwater system beneath the Site, microorganisms have consumed most of the electron receptors, such as sulfate and nitrate; as a result, methanogenesis may be the only remaining pathway of natural biodegradation. Therefore, to enhance the biodegradation processes, injection of concentrated solutions of terminal electron receptors into the groundwater in the vicinity of the contaminated wells is recommended.

7. The highest concentrations of TPH-g, BTEX, and MtBE were detected in the vicinity of the USTs and near the soil vapor extraction treatment system as shown in Figures 8, 9, and 10.

8. The treatment system began operation on December 9, 1999. Since that time, 1,661,590 gallons of groundwater has been treated and discharged into EBMUD's sewer system under the existing discharge permit, as of October 16, 2002, (which was the last treatment system sampling event prior to the Fourth Quarter 2002 monitoring event).

9. All effluent samples have maintained compliance with the permit, with all contaminant concentrations remaining below the allowable discharge requirements, with the exception of the October 2002, sampling event. However, the laboratory results for TPH-g were misrepresentative due to the "Y" and "Z" flags, see the lab report for these designations.

10. Approximately 157 pounds of TPH-g and 62 pounds of MtBE have been removed during the operation of the treatment system, over its entire life to date, as of October 16, 2002, the last sampling date prior to this monitoring event.

11. The SVE system has removed 408.49 pounds of petroleum hydrocarbons from the vadose zone beneath the Site. On November 6, 2002, SOMA met a representative from BAAQMD on-site. At this time BAAQMD reviewed all maintenance records for the year 2002. At the request of BAAQMD an air sample was collected on November 7, 2002. The SVE system was determined to be in compliance with all permit conditions.

8.0 Report Limitations

This report is the summary of work done by SOMA including observations and descriptions of the Site's conditions. It includes the analytical results produced by Curtis & Tompkins Laboratories as well as the summaries of data produced by previous environmental consultants. 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.

9.0 References

Freeze R.A. and Cherry J.A. 1979. Groundwater. Prentice-Hall, Inc., Englewood Cliffs, N.J. PP.114-127.

Lovley, D.R.; Chapell, F.H.; Woodward, J.C. 1994. Use of Dissolved H_2 Concentration to Determine Distribution of Microbially Catalyzed Redox Reactions in Anoxic Groundwater. Environmental Science & Technology. Vol, 28, No. 7:1205-1210.

Soil Tech Engineering, Quarterly Groundwater Monitoring Reports, from 1995 to July 1997.

SOMA Environmental Engineering, Inc., June 9, 2000. "Semi-Annual Technical Report: Treatment System Discharge to EBMUD Sewer from November 15, 1999 to May 14, 2000".

SOMA Environmental Engineering, Inc., December 4, 2000. "Semi-Annual Technical Report: Treatment System Discharge to EBMUD Sewer from May 15, 2000 to November 14, 2000".

SOMA Environmental Engineering, Inc., March 7, 2001. "Semi-Annual Technical Report: Treatment System Discharge to EBMUD Sewer from November 15, 2000 to February 14, 2001".

SOMA Environmental Engineering, Inc., June 30, 1999. "Second Quarter 1999 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., September 14, 1999. "Third Quarter 1999 Groundwater Monitoring Report Tony's Express Auto Service Oakland,

California".

SOMA Environmental Engineering, Inc., November 30, 1999. "Fourth Quarter 1999 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., March 10, 2000. "First Quarter 2000 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., July 26, 2000. "Second Quarter 2000 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., August 24, 2000. "Installation of Soil Vapor Extraction and Air Sparging System and Initial Results Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., August 29, 2000. "Third Quarter 2000 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., December 4, 2000. "Fourth Quarter 2000 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., April 23, 2001. "First Quarter 2001 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., July 17, 2001. "Second Quarter 2001 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., September 20, 2001. "Third Quarter 2001 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., January 8, 2002. "Fourth Quarter 2001 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

Taras, M.J.; Greenberg, A.E.; Hoak, R.D.; and Rand, A.E. 1975. Standard Methods for the Examination of Water and Wastewater. American Public Health Association, Washington, D.C.

Western Geo-Engineers, Quarterly Groundwater Monitoring and Sampling Reports from Fourth Quarter 1997 to First Quarter 1999.

SOMA Environmental Engineering, Inc., April 8, 2002. "First Quarter 2002 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., June 18, 2002. "Second Quarter 2002 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

SOMA Environmental Engineering, Inc., September 11, 2002. "Third Quarter 2002 Groundwater Monitoring Report Tony's Express Auto Service Oakland, California".

TABLES

Table 1
Groundwater Elevation Data, October 30, 2002
3609 International Boulevard, Oakland, California

Monitoring Well	Top of Casing Elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Free Product
MW-1	40.11	15.50	24.61	ND
MW-2	40.71	14.23	26.48	ND
MW-3	40.91	14.98	25.93	Detected
MW-4	40.01	14.34	25.67	ND
MW-5	41.16	14.51	26.65	ND
MW-6	40.92	14.93	25.99	Detected
MW-7	39.94	13.74	26.20	ND
MW-8	39.38	13.80	25.58	Detected
MW-10	36.71	12.54	24.17	ND
MW-11	NM	NM	NM	NM
MW-12	36.84	13.13	23.71	ND
F.D. Center	39.35	13.74	25.61	ND
F.D. East	40.06	14.53	25.53	ND
F.D. West	39.16	13.50	25.66	ND

Notes:
ND: Not detected in monitoring well.
F.D. Center : French drain center riser.
F.D. East : French drain east riser.
F.D. West : French drain west riser.
1 Top of casing elevations were re-surveyed to comply with the EDF requirements for electronic reporting of data to the State Water Resources Control Board Database on
NM: Not Measured. MW-11 was not measured due to obstacles around this well which prevented access to the well.

Table 2
Historical Groundwater Elevation Data
3609 International Boulevard, Oakland, California

	Monitoring Wells											French Drain		
Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-10	MW-11	MW-12	FDC	FDE	FDW
Oct-02	**24.61**	**26.48**	**25.93**	**25.67**	**26.65**	**25.99**	**26.20**	**25.58**	**24.17**	**NM**	**23.71**	**25.61**	**25.53**	**25.66**
Jul-02 [1]	27.31	28.01	27.66	27.39	28.22	27.64	27.79	27.59	25.78	NM	25.91	27.42	27.25	27.37
May-02	87.13	87.99	86.50	87.04	88.35	87.44	87.70	86.93	85.05	84.95	84.58	86.74	86.72	86.76
Feb-02	87.88	89.59	87.77	87.88	90.00	88.85	88.92	87.37	86.26	86.25	86.06	80.36	84.72	84.12
Nov-01	83.98	85.15	83.46	84.17	85.32	NM	85.00	84.06	82.48	82.46	82.08	79.28	83.98	82.59
Aug-01	84.48	85.05	83.68	84.05	85.25	NM	84.81	84.28	82.90	82.90	82.60	83.80	84.21	83.82
May-01	86.49	87.58	85.97	86.35	87.92	86.95	87.23	86.10	84.74	84.79	84.32	81.25	84.85	83.40
Mar-01	89.03	90.03	88.35	88.61	90.37	89.28	89.79	88.50	86.47	86.33	85.80	87.71	88.76	86.78
Nov-00	84.79	85.98	84.38	84.80	85.49	85.37	85.88	84.70	83.19	83.39	82.79	80.25	85.15	81.40
Aug-00	84.63	85.55	84.05	84.5	85.82	84.99	85.2	84.38	83.02	81.07	82.77	81.40	NM	NM
May-00	86.50	87.70	86.10	86.39	88.01	87.07	87.31	86.10	85.09	82.14	84.36	84.69	84.68	84.70
Feb-00	86.79	88.73	86.83	86.60	89.19	87.82	88.33	86.40	85.29	82.34	84.64	81.70	NM	NM
Nov-99	83.54	84.48	83.08	83.75	84.74	84.02	84.58	83.60	82.04	82.09	81.64	NA	NA	NA
Aug.99	84.64	85.08	83.93	84.65	85.49	84.87	85.03	84.50	82.94	83.19	NA	NA	NA	NA
Jun.99	86.89	87.34	85.98	86.55	87.54	86.87	87.13	86.45	84.59	84.44	NA	NA	NA	NA
Mar.99	88.08	90.98	89.34	89.39	91.31	90.37	90.83	89.67	87.24	87.13	NA	NA	NA	NA
Dec.98	86.89	87.64	86.23	86.72	87.84	87.17	87.31	86.50	84.35	84.36	NA	NA	NA	NA
Sep.98	84.41	85.00	83.10	84.21	85.22	84.67	84.74	84.23	82.61	82.70	NA	NA	NA	NA
Dec.97	88.69	89.54	NM	88.42	89.89	89.47	89.18	88.30	85.76	85.54	NA	NA	NA	NA
Apr.97	86.85	87.18	86.05	86.62	87.69	87.01	84.88	84.30	84.47	84.47	NA	NA	NA	NA
Dec.96	86.32	86.91	85.76	86.27	87.56	86.73	86.86	86.12	84.10	83.95	NA	NA	NA	NA
Apr.96	89.70	90.45	89.02	89.50	90.80	90.01	90.08	89.27	NA	NA	NA	NA	NA	NA
Jan.96	87.92	88.65	87.23	87.74	89.01	88.22	88.26	87.46	NA	NA	NA	NA	NA	NA
Oct.95	84.70	85.16	84.87	NA	85.47	84.83	84.88	84.39	NA	NA	NA	NA	NA	NA
Jun.95	88.46	88.99	87.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar.95	89.92	90.90	89.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec.94	88.67	89.98	87.99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct.94	82.60	83.22	81.99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
[1]Top of casing elevations were re-surveyed to comply with the EDF requirements for electronic reporting of data to the State Water Resources Control Board Database on August 9, 2002.
NM: Not Measured
NA: Not Applicable, Well/Drain did not exist at time of sampling
FDC: French drain center riser.
FDE: French drain east riser.
FDW: French drain west riser.

Table 3
Field Measurements of Physical and Chemical Properties of Groundwater at Time of Sampling, October 30, 2002
3609 International Blvd., Oakland, CA

Monitoring Well	pH	Temp (°C)	EC (uS/cm)
MW-1	6.83	20.92	944
MW-2	6.93	20.33	578
MW-3	6.81	20.32	1240
MW-4	6.82	19.34	598
MW-5	6.93	21.15	638
MW-6	NM	NM	NM
MW-7	6.99	21.47	541
MW-8	6.93	19.88	793
MW-10	7.01	20.90	625
MW-11	NM	NM	NM
MW-12	7.00	19.88	644

NM:Not measured.
No pH, temperature, EC measurements were taken for MW-6 due to the dryness of the well.
No pH, temperature, EC measurements were taken for MW-11 due to obstacles surrounding the well.

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	Ferrous Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)
MW-1	**October 30, 2002**	**0.00**	**87.2**	**-97**	**3.30**	**0.9**	**0**
	July 30, 2002	2.37	24.8	-102	2.13	0.0	0
	May 7, 2002	0.00	287	-81	3.09	0.0	0
	February 21, 2002	0.00	153	-16	3.06	0.0	0
	November 19, 2001	0.36	17.2	-54	1.89	0.6	41
	August 8, 2001	1.71	200	-35	2.18	0.0	23
	May 22, 2001	1.36	40.9	32.5	0.34	0.0	21
	March 13, 2001	0.53	66	-4.7	0.50	4.4	80
	November 2, 2000	0.56	18	-39.4	1.14	0.0	33
	August 9, 2000	0.32	219	-40	1.70	0.0	0
	May 31, 2000	0.30	30	-37	0.57	2.8	0
	February 7, 2000	0.77	NM	-74	3.30	0.0	1
	November 9, 1999	0.20	NM	NM	5.10	0.0	26
	August 23, 1999	1.40	NM	NM	2.67	0.0	8
	June 10, 1999	0.14	NM	NM	3.17	0	1
	December 30, 1997	0.50	NM	NM	3.04	<0.1	<1
MW-2	**October 30, 2002**	**0.87**	**15.9**	**85**	**0.80**	**10.6**	**31.0**
	July 30, 2002	0.37	111.0	57	0.43	0.0	50.0
	May 7, 2002	0.00	65.1	-46	0.64	0.6	35.0
	February 21, 2002	1.46	41	131	0.36	0.8	45.0
	November 19, 2001	0.78	105	13	1.18	0.0	33.0
	August 8, 2001	2.03	0	160	0.09	7.4	51.0
	May 22, 2001	0.80	160	274	0.71	0.0	25.0
	March 13, 2001	0.89	24.15	117.9	0.10	6.8	80.0
	November 2, 2000	1.35	ND	111	0.69	0.0	7.9
	August 9, 2000	0.76	1,000	-74	0.72	5.4	0.0
	May 31, 2000	0.80	30.9	-55	0.18	2.5	54.0
	February 7, 2000	1.12	NM	-20	0.15	6.2	55.0
	November 9, 1999	0.80	NM	NM	1.00	0.9	55.0
	August 23, 1999	0.70	NM	NM	0.62	1.0	60.0
	June 10, 1999	0.44	NM	NM	0.55	0.7	40.0
	June 30, 1998	3.20	NM	NM	0.50	<0.1	14.0
	December 30, 1997	<0.1	NM	NM	3.35	<0.1	<1

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	Ferrous Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)
MW-3	**October 30, 2002**	**0.00**	**0.2**	**-116**	**3.30**	**0.0**	**0**
	July 30, 2002	0.31	40.1	-125	3.30	0.0	0
	May 7, 2002	0.00	218	-148	50	0	0
	February 21, 2002	0	0.3	-61	6.80	0	0
	November 19, 2001	NA	NA	NA	NA	NA	NA
	August 8, 2001	1.17	28	-54	7.00	0.7	11
	May 22, 2001	0.08	98	-32	6.72	0.2	16
	March 13, 2001	0.62	26.91	-60	2.66	0.0	0
	November 2, 2000	0.83	4,816	-94	4.10	0.0	28
	August 9, 2000	0.40	123	-72	6.10	0.0	0
	May 31, 2000	0.45	188	-117	7.80	0.0	4
	February 7, 2000	0.70	NM	-82	3.60	0.0	140
	November 9, 1999	0.61	NM	NM	3.50	0.0	0
	August 23, 1999	0.80	NM	NM	3.90	0.0	0
	June 10, 1999	0.42	NM	NM	3.10	0.0	0
	June 30, 1998	2.00	NM	NM	0.37	0.1	77
MW-4	**October 30, 2002**	**0.63**	**0.0**	**-43**	**1.15**	**4.3**	**19**
	July 30, 2002	4.47	6.3	-34	0.16	0.7	38
	May 7, 2002	0.00	9.7	-26	1.05	0.0	30
	February 21, 2002	1.12	707	-26	3.90	0.0	4
	November 19, 2001	0.56	58.7	-108	3.20	0.0	37
	August 8, 2001	1.54	320	320	0.09	6.0	30
	May 22, 2001	1.27	50	193.9	0.47	0.1	31
	March 13, 2001	0.72	190	9.4	0.51	3.2	48
	November 2, 2000	0.60	ND	-39	0.00	4.5	45
	August 9, 2000	0.46	83	-50	0.32	1.0	14
	May 31, 2000	0.50	26.8	-40	0.25	0.5	40
	February 7, 2000	1.30	NM	-31	1.56	0.0	1
	November 9, 1999	0.12	NM	NM	0.99	0.5	23
	August 23, 1999	0.15	NM	NM	0.67	0.5	28
	June 10, 1999	0.15	NM	NM	0.81	0.4	10
	June 30, 1998	1.30	NM	NM	0.93	0.9	7
	December 30, 1997	<0.1	NM	NM	0.39	4.5	42
MW-5	**October 30, 2002**	**0.00**	**0.0**	**-54**	**0.85**	**7.9**	**27**
	July 30, 2002	0.37	27.5	-43	0.28	0.8	38
	May 7, 2002	0.00	45	-23	0.64	7.2	54
	February 21, 2002	2.65	34.2	104	0.69	0.0	67
	November 19, 2001	1.10	8.5	-33	1.05	3.5	27
	August 8, 2001	1.35	300	103	0.73	0.2	37
	May 22, 2001	1.20	593	167	1.10	14.8	13
	March 13, 2001	1.01	35.36	34.2	0.33	1.0	45
	November 2, 2000	0.56	ND	49	1.02	6.5	31
	August 9, 2000	1.97	490	80	0.00	0.0	26
	May 31, 2000	0.48	27.2	-25	0.35	0.0	50
	February 7, 2000	0.90	NM	18	0.64	0.0	47
	November 9, 1999	0.27	NM	NM	0.72	2.0	32
	August 23, 1999	0.75	NM	NM	1.19	2.4	45
	June 10, 1999	0.25	NM	NM	0.34	2.5	33
	June 30, 1998	0.60	NM	NM	0.50	1.6	6
	December 30, 1997	<0.1	NM	NM	0.94	0.3	18

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	Ferrous Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)
MW-6	**October 30, 2002**	**NM**	**NM**	**NM**	**0.95**	**0.0**	**0**
	July 30, 2002	1.39	127.0	-58	3.30	11.0	36
	May 7, 2002	0.00	263	-110	2.25	0.0	23
	February 21, 2002	0.54	149	-40	6.20	0.0	41
	November 19, 2001	NA	NA	NA	NA	NA	NA
	August 8, 2001	NA	NA	NA	NA	NA	NA
	May 22, 2001	0.12	413	-9.5	1.30	0.0	17
	March 13, 2001	0.75	83	-42.1	2.63	1.3	79
	November 2, 2000	0.80	618	-34	2.65	0.0	16
	August 9, 2000	0.65	1,000	-33	4.10	2.5	0
	May 31, 2000	0.72	111	-62	3.27	0.0	0
	February 7, 2000	1.25	NM	-51	3.02	0.0	0
	November 9, 1999	0.22	NM	NM	7.00	0.0	0
	August 23, 1999	0.55	NM	NM	3.30	0.0	9
	June 10, 1999	0.61	NM	NM	2.52	0.0	23
	June 30, 1998	2.50	NM	NM	0.40	0.7	4
	December 30, 1997	<0.1	NM	NM	0.30	<0.1	5
MW-7	**October 30, 2002**	**7.90**	**23.5**	**-86**	**0.97**	**0.7**	**0**
	July 30, 2002	1.15	16.6	-64	0.68	0.0	28
	May 7, 2002	0.00	531	-62	1.79	0.0	20
	February 21, 2002	0.26	118	-6	1.77	0.0	0
	November 19, 2001	0.98	8.9	-14	1.14	0.0	21
	August 8, 2001	1.62	140	-18	0.51	0.0	13
	May 22, 2001	1.71	49.8	56	0.79	0.0	12
	March 13, 2001	0.79	110	-10.4	3.30	0.0	40
	November 2, 2000	0.58	ND	-11.6	0.27	3.5	30
	August 9, 2000	0.26	131	-33	0.95	0.0	17
	May 31, 2000	0.30	34.9	-52	0.72	0.0	28
	February 7, 2000	0.91	NM	-19	0.53	0.0	41
	November 9, 1999	0.14	NM	NM	0.99	0.0	25
	August 23, 1999	0.65	NM	NM	1.40	0.0	20
	June 10, 1999	0.15	NM	NM	0.19	0.0	22
	June 30, 1998	1.00	NM	NM	0.78	0.5	4
	December 30, 1997	1.20	NM	NM	0.23	0.2	32
MW-8	**October 30, 2002**	**0.00**	**<999**	**-132**	**3.30**	**2.6**	**40**
	July 30, 2002	0.18	157.0	-124	1.38	0.0	1
	May 7, 2002	0.00	308	-113	0.80	0.0	2
	February 21, 2002	0.00	567	-64	3.08	0.0	0
	November 19, 2001	0.46	53.5	-142	>3.3	0.0	1
	August 8, 2001	1.24	990	-62	1.50	0.8	25
	May 22, 2001	1.16	179	-8.8	3.30	0.0	5
	March 13, 2001	0.48	110	-76	3.30	2.1	12
	November 2, 2000	-	350	-104.9	7.33	-	16
	August 9, 2000	0.50	94	-91	3.30	0.0	7
	May 31, 2000	0.45	13	-95	3.30	0.0	0
	February 7, 2000	0.65	NM	-90	3.46	0.0	0
	November 9, 1999	0.38	NM	NM	8.90	0.0	0
	August 23, 1999	0.20	NM	NM	8.20	0.0	13
	June 10, 1999	0.10	NM	NM	4.70	0.0	0
	June 30, 1998	1.30	NM	NM	2.82	<0.1	3
	December 30, 1997	2.50	NM	NM	3.35	0.1	<1

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Redox Potential (mV)	Ferrous Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)
MW-10	**October 30, 2002**	**0.47**	**0.0**	**-19**	**0.66**	**3.7**	**14**
	July 30, 2002	0.09	12.7	34	0.18	0.0	25
	May 7, 2002	0.00	123	19	0.00	0.0	18
	February 21, 2002	0.15	12.6	85	0.49	0.0	4
	November 19, 2001	0.89	3	45	0.99	2.7	12
	August 8, 2001	1.56	19.6	52	0.00	0.0	11
	May 22, 2001	1.76	19.56	105	0.10	1.7	13
	March 13, 2001	0.65	32.11	28	0.23	0.0	0
	November 2, 2000	0.53	ND	26.7	0.42	1.3	13
	August 9, 2000	0.45	116	19	0.40	0.0	0
	May 31, 2000	0.40	22.4	17	0.29	0.0	0
	February 7, 2000	0.82	NM	55	0.00	0.0	0
	November 9, 1999	0.44	NM	NM	0.37	0.0	12
	August 23, 1999	0.50	NM	NM	0.52	0.0	9
	June 10, 1999	0.20	NM	NM	0.25	0.0	0
	June 30, 1998	0.90	NM	NM	0.38	<0.1	<1
	December 30, 1997	<0.1	NM	NM	2.21	0.3	<1
MW-11	**October 30, 2002**	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**
	July 30, 2002	0.21	6.8	-22	0.18	6.7	31
	May 7, 2002	0.00	155	-29	0.49	4.6	28
	February 21, 2002	2.52	168	31	0.00	0.0	40
	November 19, 2001	0.72	8.4	-18	2.30	1.0	30
	August 8, 2001	NA	NA	NA	NA	NA	NA
	May 22, 2001	2.13	32.3	40.5	0.53	0.0	20
	March 13, 2001	0.79	111	114.7	0.34	0.0	78
	November 2, 2000	0.60	ND	17	0.44	1.5	21
	August 9, 2000	0.48	42	10	0.80	1.5	0
	May 31, 2000	0.50	12	-15	0.69	5.2	10
	February 7, 2000	1.10	NM	-14	0.75	0.0	24
	November 9, 1999	0.22	NM	NM	0.06	0.0	21
	August 23, 1999	0.60	NM	NM	0.92	0.0	52
	June 10, 1999	0.19	NM	NM	0.28	0.0	0
	June 30, 1998	2.20	NM	NM	0.15	1.2	6
	December 30, 1997	<0.1	NM	NM	0.32	3.5	35
MW-12	**October 30, 2002**	**0.30**	**0.0**	**-84**	**2.24**	**0.0**	**0**
	July 30, 2002	0.29	1.7	-60	2.37	3.3	0
	May 7, 2002	0.00	53.1	-67	2.00	0.0	13
	February 21, 2002	0.56	4.9	-6	1.43	0.0	0
	November 19, 2001	0.92	20	-72	2.29	0.0	2
	August 8, 2001	1.66	72	3	2.46	0.0	0
	May 22, 2001	1.76	6.28	-18.9	2.38	1.9	0
	March 13, 2001	0.64	8.42	-5.6	1.44	0.0	0
	November 2, 2000	0.60	19	12	1.93	0.0	6
	August 9, 2000	0.31	56	-48	2.84	0.0	0
	May 31, 2000	0.29	7.7	-54	2.11	0.0	0
	February 7, 2000	0.62	NM	-42	1.53	0.0	0
	November 9, 1999	0.34	NM	NM	2.21	3.1	9

Notes:
NA: Not analyzed, MW-3 not analyzed on November 19, 2001 due to free product.
ND: Not Detected
NM: Not Measured
The turbidity reading for MW-8 was above the allowable equipment tolerance of the equipment
MW-6 not analyzed on November 19, 2001, well was inaccessible due to property obstacles.

Table 5
Groundwater Analytical Data, October 30, 2002
3609 International Boulevard, Oakland, California

Monitoring Well	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE [1] (µg/L) 8260B/8021B
MW-1	27,000	2,200	2,400	950	4,500	34,000 / 43,000
MW-2	<50	<0.5	<0.5	<0.5	0.64	<2.0
MW-3	70,000	4,900	5,100	2,100	11,900	21,000 / 26,000
MW-4	320	69	0.99	8.80	5.49	<2.0
MW-5	77	<0.5	<0.5	<0.5	<0.5	<2.0
MW-6	22,000	1,200	620	1,300	2,800	<20
MW-7	350	<0.5	2.1 C	<0.5	3.1 C	43 / 51
MW-8	18,000	950	75	1,400	1,269	700/ 1,300
MW-10	550	130	3	31	2.7	70 / 110
MW-11	NM	NM	NM	NM	NM	NM
MW-12	2,600	71	<0.5	<0.5	10.3	84 / 200

Notes:
< : Not detected above laboratory reporting limits.
C : Presence confirmed, but confirmation concentration differed by more than a factor of two.
NM: Not Measured. MW-11 was not measured due to obstacles around this well which prevented access to the well.
[1] MtBE was analyzed using the EPA Method 8021B and confirmed using 8260B.

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Monitoring Well	Date	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE [1] (µg/L) 8260B/8021B
MW-1	**10/30/02**	**27,000**	**2,200**	**2,400**	**950**	**4,500**	**34,000 / 43,000**
	7/30/02	29,000	2,400	2,500	920	4,400	13,000/15,000
	5/7/02	53,000	4,400	5,100	1300	7,000	32,000
	2/21/02	260,000	3,700	12,000	3,700	19,200	23,000
	11/19/01	41,000	2,700	5,100	1,000	4,570	74,000
	8/8/01	14,820	852	342	568	1,606	2,000
	5/22/01	4,900	310	81	82	388	150
	3/13/01	14,570	1,005	440	108	2,030	16
	11/2/00	7,050	435	52	ND	689	10
	8/9/00	11,000	638	<5	<5	<5	17.1
	5/31/00	15,610	610	350	310	1,400	<5
	2/7/00	40,000	2,280	1,380	8	6,130	47
	11/9/99	10,000	693	15	<5	3,471	50
	8/23/99	19,750	678	463	893	2,938	38
	6/10/99	25,000	1,110	1,460	1,330	5,265	77
	3/16/99	17,000	480	860	850	3,000	190
	12/16/98	65,000	2,500	2,400	2,300	9,500	160
	12/30/97	27,000	2,300	2,100	1,400	5,100	NA
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	31,000	98	120	63	170	NA
	1/3/96	30,000	71	73	50	120	NA
	10/2/95	59,000	140	130	140	390	NA
	6/5/95	21,000	950	650	570	150	NA
	3/6/95	32,000	190	160	150	490	NA
	12/2/94	80,000	3,800	6,600	2,300	11,000	NA
	10/5/94	320,000	24,000	21,000	2,600	15,000	NA
MW-2	**10/30/02**	**<50**	**<0.5**	**<0.5**	**<0.5**	**0.64**	**<2.0**
	7/30/02	180	11	6.3	9.4	27	<2.0
	5/7/02	1,800	31	140	110	348	<2
	2/21/02	1,700	26	160	95	360	<2
	11/19/01	470	13	64	22	83	14
	8/8/01	125	4	4	3	11	ND
	5/22/01	870	37	75	55	179	2.7
	3/13/01	932	18	34	1.3	225	ND
	11/2/00	ND	ND	ND	ND	ND	ND
	8/9/00	<50	<5	<5	<5	<5	<5
	5/31/00	2,930	130	330	130	570	<5
	2/7/00	6,400	372	639	46	134	8
	11/9/99	<50	<5	<5	<5	<5	<5
	8/23/99	60	6	9	4	11	ND
	6/10/99	3,500	290	428	211	744	ND
	3/16/99	7,600	730	830	610	1,900	55
	12/16/98	26,000	1,400	1,600	880	9,500	<5
	9/29/98	29,000	290	180	160	360	<0.5
	6/30/98	25,000	2,000	2,000	1,300	4,300	NA
	12/30/97	35,000	4,900	4,900	1,600	7,000	NA
	4/10/97	53,000	150	110	37	0	ND
	12/9/96	6,200	11	7	2	14	ND
	4/3/96	27,000	0	92	44	13	NA
	1/3/96	46,000	160	130	93	240	NA
	10/2/95	46,000	160	130	93	240	NA
	6/5/95	8,000	220	330	350	660	NA
	3/6/95	490	3	3	3	1	NA
	12/2/94	42,000	1,700	2,200	1,200	3,600	NA

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Monitoring Well	Date	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE [1] (µg/L) 8260B/8021B
MW-3	**10/30/02**	**70,000**	**4,900**	**5,100**	**2,100**	**11,900**	**21,000 / 26,000**
	7/30/02	45,000	8,900	1,700	1,600	5,600	2,600/3,200
	5/7/02	54,000	6,700	3,200	1,800	7,100	9,100
	2/21/02	62,000	6,000	7,600	1,900	9,200	12,000
	11/19/01	NA	NA	NA	NA	NA	NA
	8/8/01	41,750	3,485	2,670	1,255	5,420	52
	5/22/01	44,000	5,400	3,100	1,400	6,400	200
	3/13/01	14,754	2,250	140	ND	1,284	110
	11/2/00	48,000	6,789	4,816	676	7,258	83
	8/9/00	76,000	8,900	5,636	883	7,356	176
	5/31/00	68,000	15,000	8,900	1,500	7,400	<5
	2/7/00	44,000	6,090	3,360	<5	5,780	276
	11/9/99	26,000	3,218	1,319	<5	6,697	126
	8/23/99	64,000	7,484	8,052	1,744	9,749	141
	6/10/99	46,000	8,245	6,425	1,015	7,173	274
	3/16/99	45,000	4,100	6,400	1,000	6,100	470
	12/16/98	51,000	5,700	3,900	1,200	6,300	410
	1/3/96	150,000	510	410	210	650	NA
	10/2/95	150,000	510	410	210	65	NA
	6/5/95	350,000	20,000	42,000	5,800	36,000	NA
	3/6/95	350,000	20,000	42,000	5,800	36,000	NA
	12/2/94	250,000	19,000	22,000	4,400	28,000	NA
	10/5/94	3,000,000	190,000	740,000	310,000	130,000	NA
MW-4	**10/30/02**	**320**	**69**	**0.99**	**8.8**	**5.49**	**<2.0**
	7/30/02	450	20	24	19	74	<2.0
	5/7/02	570	72	29	27	74	<2
	2/21/02	450	63	4.1	22	28.7	<2
	11/19/01	670	180	5	17	53	ND
	8/8/01	133	12	2.2	3.9	9	ND
	5/22/01	80	12	1.9	4.1	9.8	ND
	3/13/01	62	ND	ND	3.2	8.7	ND
	11/2/00	ND	5.30	ND	ND	8	ND
	8/9/00	370	5.08	<5	<5	<5	<5
	5/31/00	552	42	19	16	67	<5
	2/7/00	7,800	1,200	61	<5	781	<5
	11/9/99	<50	<5	<5	<5	<5	<5
	8/23/99	680	497	41	54	145	6
	6/10/99	1,000	298	44	19	64	13
	3/16/99	600	200	35	19	56	11
	12/16/98	1,400	590	33	28	94	24
	9/29/98	6,200	910	77	68	200	18
	6/30/98	1,700	780	160	54	200	NA
	12/30/97	2,300	410	270	100	1,500	NA
	4/10/97	ND	ND	ND	ND	ND	ND
	12/9/96	4,000	14	6	4	12	ND
	4/3/96	1,900	12	8	5	14	NA
	1/3/96	9,300	230	110	10	29	NA
	10/2/95	9,300	23	11	10	29	NA

Table 6

Historical Groundwater Analytical Data

3609 International Boulevard, Oakland, California

Monitoring Well	Date	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE [1] (µg/L) 8260B/8021B
MW-5	**10/30/02**	**77**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2.0**
	7/30/02	110	<0.5	<0.5	0.77	<0.5	<0.5/4.1
	5/7/02	160	<0.5	0.76C	2.0	2.15	2.3
	2/21/02	290	3.5	2	6.2	6.2	< 0.5
	11/19/01	920	17	160	26	135	40
	8/8/01	258	1	1.1	3.4	7.3	1.4
	5/22/01	180	ND	ND	2.1	0.57	4.4
	3/13/01	382	6.1	1.9	6.6	5.9	ND
	11/2/00	ND	ND	ND	ND	ND	ND
	8/9/00	<50	<5	<5	<5	<5	<5
	5/31/00	627.4	7.4	24	12	32.4	<5
	2/7/00	70	<5	<5	<5	7	<5
	11/9/99	<50	<5	<5	<5	<5	<5
	8/23/99	120	ND	4	ND	4	ND
	6/10/99	270	4	3	6	4	ND
	3/16/99	650	3	1	16	2	10
	12/16/98	1,400	1	1	ND	2	ND
	9/29/98	270	2	1	3	3	<.5
	6/30/98	400	<5	<5	15	<10	NA
	12/30/97	790	82	66	59	160	NA
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	780	1	1	5	4	NA
	1/3/96	1,500	1	1	4	5	NA
	10/2/95	1,500	1	1	4	5	NA
MW-6	**10/30/02**	**22,000**	**1,200**	**620**	**1,300**	**2,800**	**<20**
	7/30/02	24,000	1,000	410	1,400	3,770	<20
	5/7/02	10,000	400	160	470	970	<2
	2/21/02	14,000	440	180	750	1,020	<10
	11/19/01	NA	NA	NA	NA	NA	NA
	8/8/01	NA	NA	NA	NA	NA	NA
	5/22/01	27,000	760	450	1,600	4,270	ND
	3/13/01	15,637	713	459	238	2,363	ND
	11/2/00	19,000	1,387	618	ND	5,250	ND
	8/9/00	24,000	1,306	870	<5	5,162	<5
	5/31/00	21,700	1,700	1,200	17	3,600	<5
	2/7/00	17,000	1,360	521	<5	4,150	6
	11/9/99	40,000	1,084	130	<5	10,940	<5
	8/23/99	42,000	3,806	3,649	1,554	7,996	10
	6/10/99	18,500	2,060	1,650	735	3,170	ND
	3/16/99	37,000	3,900	4,300	1,600	7,000	180
	1/3/96	120,000	350	310	200	610	NA
	10/2/95	120,000	350	310	200	610	NA

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Monitoring Well	Date	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE [1] (µg/L) 8260B/8021B
MW-7	**10/30/02**	**350**	**<0.5**	**2.1 C**	**<0.5**	**3.1 C**	**43 / 51**
	7/30/02	270	5.3	1.3 C	2.3	8.1	46 / 35
	5/7/02	560	15	28.0	9.2	44.0	37
	2/21/02	380	<0.5	2.5	2	3.8	78
	11/19/01	1,700	24	220	41	205	69
	8/8/01	610	3.7	3	6.2	18.9	10
	5/22/01	370	ND	9.1	1.3	2.3	28
	3/13/01	82	0.97	ND	0.76	ND	78
	11/2/00	50	ND	ND	ND	ND	9.1
	8/9/00	80	<5	<5	<5	<5	11.7
	5/31/00	494.9	4.9	22	4.2	21.9	29
	2/7/00	80	<5	<5	<5	<5	23
	11/9/99	290	<5	9	<5	<5	12
	8/23/99	570	5	10	ND	ND	ND
	6/10/99	320	3	7	4	3	26
	3/16/99	300	3	1	1	1	62
	12/16/98	990	5	10	5	20	160
	9/29/98	1,600	1	1	1	2	68
	6/30/98	620	4	<5	9	<10	NA
	12/30/97	1,400	130	98	75	200	NA
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	1,900	2	3	5	7	NA
	1/3/96	3,300	9	12	17	45	NA
	10/2/95	NA	10	12	17	NA	3,300
MW-8	**10/30/02**	**18,000**	**950**	**75**	**1,400**	**1,269**	**700/ 1,300**
	7/30/02	8,400	340	78	530	517	1,200/1,400
	5/7/02	9,000	360	56	560	622	2,100
	2/21/02	240,000	1,400	<25	4,200	6,560	<100
	11/19/01	13,000	600	270	750	1,200	400
	8/8/01	5,620	153	46	373	345	174
	5/22/01	3,100	110	28	140	194	410
	3/13/01	2,360	81	16	71	270	221
	11/2/00	3,000	278	350	209	980	21
	8/9/00	22,000	632	5.38	<5	2,686	37.3
	5/31/00	25,940	940	130	1,600	3,960	75
	2/7/00	44,200	1,080	617	<5	4,160	240
	11/9/99	10,500	92	<5	<5	3,414	769
	8/23/99	58,000	5,379	2,438	3,001	6,960	639
	6/10/99	39,500	3,610	1,635	2,175	5,913	988
	3/16/99	22,000	1,800	470	2,000	2,000	820
	12/16/98	61,000	6,300	1,700	2,200	4,400	1,300
	6/30/98	54,000	4,600	2,800	3,500	7,300	NA
	12/30/97	28,000	6,000	1,600	2,100	4,700	NA
	4/10/97	24,000	86	55	50	100	ND
	12/9/96	27,000	88	43	44	80	ND
	4/3/96	58,000	250	170	140	330	NA
	1/3/96	94,000	310	250	180	480	NA
	10/2/95	94,000	310	250	180	480	NA

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Monitoring Well	Date	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE [1] (µg/L) 8260B/8021B
MW-10	**10/30/02**	**550**	**130**	**3.00**	**31.0**	**2.7**	**70 / 110**
	7/30/02	160	26	0.55	8.1	1.0	72 / 63
	5/7/02	3,400	660	13	260	48.0	270
	2/21/02	4,700	1,100	20	370	63.7	500
	11/19/01	3,500	900	260	310	258	410
	8/8/01	242	35	1	11	2	64
	5/22/01	2,900	630	11	200	31	270
	3/13/01	4,935	969	18	41	72	630
	11/2/00	ND	ND	ND	ND	ND	145
	8/9/00	6,800	1,055	26	54	53.8	1,283
	5/31/00	4,400	1,500	25	390	107.1	580
	2/7/00	<50	<5	<5	<5	<5	448
	11/9/99	2,950	1,134	20	<5	70	652
	8/23/99	3,250	2,135	97	600	248	1,800
	6/10/99	4,200	1,168	34	264	154	1,195
	3/16/99	4,100	15	28	420	250	2,800
	12/16/98	8,700	3,800	51	790	420	1,800
	9/29/98	9,900	5,400	66	970	620	2,600
	12/30/97	10,000	5,300	76	1,100	780	NA
	4/10/97	1,000	21	9	3	3	ND
MW-11	**10/30/02**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
	7/30/02	120	5.6	<0.5	0.61	0.53	<2.0
	5/7/02	280	16	3	7.6	7.6	<2
	2/21/02	560	34	20	32	37.3	< 0.5
	11/19/01	300	7.9	26	5.1	28.9	ND
	8/8/01	NS	NS	NS	NS	NS	NS
	5/22/01	280	12	8.3	3.3	9.8	12
	3/13/01	273	8.6	2.1	10	14	ND
	11/2/00	60	ND	ND	ND	ND	ND
	8/9/00	590	10.5	5.94	<5	7.75	<5
	5/31/00	477	27	13	9.5	29.0	<5
	2/7/00	700	20	15	<5	35	<5
	11/9/99	<50	<5	<5	<5	<5	<5
	8/23/99	170	4	4	ND	6	ND
	6/10/99	4,600	1,240	35	290	159	1,291
	3/16/99	710	30	6	53	84	8
	12/16/98	650	27	4	25	33	>0.5
	9/29/98	170	7	1	4	9	22
	6/30/98	1,100	45	24	71	100	NA
	12/30/97	710	66	97	59	190	NA
	4/10/97	ND	ND	ND	ND	ND	ND
MW-12	**10/30/02**	**2,600**	**71**	**<0.5**	**<0.5**	**10.3**	**84 / 200**
	7/30/02	2,200	57	<0.5	11.0	2.6	100 / 110
	5/7/02	2,700	74	<0.5	20.0	5.1	94
	2/21/02	2,500	77	<0.5	5.7	7.4	95
	11/19/01	3,000	81	69	13	73	120
	8/8/01	2,090	71	1.8	3	4	142
	5/22/01	31,000	1,200	ND	95	165	1,900
	3/13/01	1,517	13	5.6	5.5	11	214
	11/2/00	1,010	9.3	19.0	ND	7.40	215
	8/9/00	1,730	15.4	12.4	<5	<5	185
	5/31/00	3,930	230	10	34	12	200
	2/7/00	4,000	351	37	<5	24	513
	11/9/99	80	<5	<5	<5	<5	229

Notes:

[1] MtBE was analyzed using the EPA Method 8021B and confirmed using 8260B.

ND, < : Not Detected above laboratory reporting limits.

NA: Not Analyzed

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

NS: Not Sampled

Table 7
Total Volume of Water Treated and Effluent and GAC-1 Chemistry
3609 International Boulevard, Oakland, California

		Meter	Lab Results For Effluent [1] and GAC-1					
		Reading	(concentrations in ug/L)					
Month	Date	(gallons)	MtBE [2]	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
				2002				
October	10/16/02 [3]	1,661,590	< 310	2,000 Y Z	< 310	< 310	< 310	< 310
			< 0.5	< 50	< 0.5	< 0.5	< 0.5	< 0.5
September	9/19/2002	1,653,600	< 5	< 50	< 5	< 5	< 5	< 5
			< 5	< 50	< 5	< 5	< 5	< 5
August	8/23/2002	1,641,650	1	< 50	< 0.5	< 0.5	< 0.5	< 0.5
			< 0.5	< 50	< 0.5	< 0.5	< 0.5	< 0.5
July	7/23/2002	1,632,834	<5.0	< 50	<5.0	<5.0	<5.0	<5.0
			< 5.0	< 50	< 5.0	< 5.0	< 5.0	< 5.0
June	6/24/2002	1,610,050	1.7	< 50	< 0.5	< 0.5	< 0.5	< 0.5
			< 0.5	**< 50**	**< 0.5**	**< 0.5**	**< 0.5**	**< 0.5**
May	5/30/2002	1,571,630	< 0.5	< 50	< 0.5	< 0.5	< 0.5	< 0.5
			< 0.5	**< 50**	**< 0.5**	**< 0.5**	**< 0.5**	**< 0.5**
	5/20/2002	1,548,000	removed newly installed compressor, installed another compressor					
	5/8/2002	1,538,850	installed new compressor					
	5/1/2002	1,529,650	installed new 55 gallon GAC Vessel					
April	4/24/2002	1,528,740	< 0.5	< 50	< 0.5	< 0.5	< 0.5	< 0.5
			< 0.5	< 50	< 0.5	< 0.5	< 0.5	< 0.5
	4/1/2002	1,478,500	repaired valve plate assembly on compressor					
March	3/25/2002	1,478,420	performed carbon change-out on treatment system					
	3/18/2002	NR	replaced piston on compressor					
	3/14/2002	1,478,330	compressor not building up pressure					
February	2/27/2002	1,449,830	< 0.5	< 50	< 0.5	< 0.5	< 0.5	< 0.5
			1.1	< 50	< 0.5	< 0.5	< 0.5	< 0.5
January	1/22/2002	1,381,370	< 2.0	< 50	< 0.5	< 0.5	< 0.5	< 0.5
			< 2.0	< 50	< 0.5	< 0.5	< 0.5	< 0.5

Table 7
Total Volume of Water Treated and Effluent and GAC-1 Chemistry
3609 International Boulevard, Oakland, California

		Meter	Lab Results For Effluent [1] and GAC-1					
		Reading	(concentrations in ug/L)					
Month	Date	(gallons)	MtBE [2]	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
				2001				
December	12/12/2001	1,311,340	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
November	11/2/2001	1,272,660	ND	ND	ND	ND	ND	ND
			0.6	ND	ND	ND	ND	ND
September	9/28/2001	NA	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
August	8/22/2001	1,243,100	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
July	7/26/2001	1,227,270	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
	7/11/2001	1,226,730	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
June	6/29/2001	1,224,600	NA	NA	NA	NA	NA	NA
			ND	ND	ND	ND	ND	ND
	6/26/2001	NR	installed new compressor					
	6/16/2001	1,216,580	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
			compressor not working, repaired compressor					
	6/7/2001	1,216,580	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
May	5/30/2001	1,205,198	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	5/23/2001	1,194,390	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	5/17/2001	1,182,360	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
	5/10/2001	1,166,850	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	5/5/2001	1,151,600	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
April	4/28/2001	1,135,690	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	4/21/2001	1,113,570	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	4/11/2001	1,082,700	NA	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
	4/6/2001	1,065,540	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA

Table 7
Total Volume of Water Treated and Effluent and GAC-1 Chemistry
3609 International Boulevard, Oakland, California

		Meter	Lab Results For Effluent [1] and GAC-1					
		Reading	(concentrations in ug/L)					
Month	Date	(gallons)	MtBE [2]	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
March	3/29/2001	1,036,330	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
			system was re-started					
	3/21/2001	1,036,070	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
			belt replaced on compressor					
	3/17/2001	1,035,100	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	3/13/2001	1,032,500	ND	ND	ND	ND	ND	ND
			NA	NA	NA	NA	NA	NA
	3/2/2001	996,520	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	3/1/2002	NR	system re-started after carbon change-out					
February	2/28/2002	NR	Carbon Change-out was performed on GAC-1, washed algae from holding tank					
			cleaned 2000 lb GAC, re-started system					
	2/10/2001	975,490	System shut down for maintenance and cleaning.					
January	1/29/2001	957,880	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
			2000					
December	12/5/2000	883,000	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
November	11/24/2000	NR	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
	11/1/2000	842,000	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
October	10/1/2000	809,000	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
August	8/27/2000	781,000	ND	ND	ND	ND	ND	ND
	8/24/2000	778,000	Totalizer meter replaced at 775,000 gallons					
July	7/26/2000	726,000	ND	ND	ND	ND	ND	ND
	7/19/2000	718,000	ND	ND	ND	ND	ND	ND
	7/13/2000	712,000	ND	ND	ND	ND	ND	ND
	7/7/2000	706,000	ND	ND	ND	ND	ND	ND
June	6/29/2000	700,000	ND	ND	ND	ND	ND	ND
	6/21/2000	682,220	ND	ND	ND	ND	ND	ND
	6/16/2000	669,720	ND	ND	ND	ND	ND	ND
	6/10/2000	651,200	ND	ND	ND	ND	ND	ND

Table 7
Total Volume of Water Treated and Effluent and GAC-1 Chemistry
3609 International Boulevard, Oakland, California

		Meter	Lab Results For Effluent [1] and GAC-1					
		Reading	(concentrations in ug/L)					
Month	Date	(gallons)	MtBE [2]	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
May	5/31/2000	629,000	ND	ND	ND	ND	ND	ND
	5/23/2000	603,700	ND	ND	ND	ND	ND	ND
	5/18/2000	570,000	ND	ND	ND	ND	ND	ND
	5/10/2000	530,400	ND	ND	ND	ND	ND	ND
April	4/30/2000	488,300	ND	ND	ND	ND	ND	ND
	4/18/2000	485,300	ND	ND	ND	ND	ND	0.51
			compressor stopped, system shut down until April 29, 2000					
	4/10/2000	440,200	ND	ND	ND	ND	ND	ND
	4/4/2000	390,100	ND	ND	ND	ND	ND	ND
	4/2/2000	NR	performed a carbon change-out on GAC-1					
March	3/31/2000	NR	replaced GAC-2 with a special GAC designed for removal of MtBE					
	3/24/2000	388,000	ND	ND	ND	ND	ND	ND
	3/17/2000	357,100	ND	ND	ND	ND	ND	ND
	3/10/2000	329,000	ND	ND	ND	ND	ND	ND
	3/3/2000	300,000	transfer overheated, repaired pump, restarted system 3/6/00					
February	2/25/2000	274,000	ND	ND	ND	ND	ND	ND
	2/18/2000	233,000	ND	ND	ND	ND	ND	ND
	2/11/2000	190,000	ND	ND	ND	ND	ND	ND
	2/4/2000	160,800	ND	ND	ND	ND	ND	ND
January	1/28/2000	130,600	ND	ND	ND	ND	ND	ND
	1/21/2000	103,435	ND	ND	ND	ND	ND	ND
	1/17/2000	NR	GAC-1 was replaced with 2,000 lb GAC unit					
			second polishing GAC was replaced with 55 gallon GAC unit					
	1/14/2000	83,500	185	ND	ND	ND	ND	ND
			1999					
December	12/23/1999	51,680	1486	NA	ND	ND	ND	ND
			ND	NA	ND	ND	ND	ND
	12/16/1999	30,450	963	NA	ND	ND	ND	ND
			ND	NA	ND	ND	ND	ND
	12/9/1999	9,000	230	ND	ND	ND	ND	ND
Pumping began on December 6, 1999								

Notes:
1 Effluent is equivalent to PSP#1
2 MTBE was detected using EPA Method 8260B
3 Lab data as shown for Oct. 2002 is erroneous data. During lab analysis a high detection of 2-Butanone was detected in only the effluent sample. The influent sample for 2-Butanone was at only 20 ppb. This caused a high dilution factor causing a high non-detectable value. The high TPH-g value was misrepresentative due to the Y and Z flags.
ND, < : Not Detected above laboratory reporting limits
NA: Not Analyzed
NR: Not recorded. Totalizer reading not recorded.
Y: Sample exhibits fuel pattern which does not resemble standard
Z: Sample exhibits unknown single peak or peaks

Table 8

Total Mass of Petroleum Hydrocarbons Removed by Vapor Extraction System

3609 International Boulevard, Oakland, California

Date	Time	PID (ppmv)		Flow Rate	Time Elapsed	Air Flow	Mass Removed [1]
		Influent	Effluent	(ft^3/min)	(Hours)	(Liters)	(Pounds)
7/24/00	5:00	394	0	85	0	0	0.00
7/25/00	5:15	38	2	95	24	3,914,096	1.01
7/26/00	5:05	207	1	80	48	3,228,121	4.52
7/27/00	9:00	160	5	92	64	2,500,944	2.71
7/28/00	4:30	141	7	87	96	4,656,139	4.44
7/29/00	1:30	225	8	85	117	3,032,734	4.62
7/30/00	9:00	226	12	85	136	2,816,110	4.31
7/31/00	3:00	141	5	85	166	4,332,478	4.13
8/1/00	5:00	135	4	80	192	3,533,942	3.23
8/2/00	4:00	80	4	80	215	3,126,180	1.69
8/3/00	5:00	60	5	85	240	3,610,398	1.47
8/4/00	3:00	57	4	85	262	3,177,150	1.23
8/5/00	2:00	97	8	87	285	3,399,721	2.23
8/6/00	12:00	114	8	80	307	2,990,259	2.31
8/7/00	12:00	93	9	85	331	3,465,982	2.18
8/8/00	4:30	152	10	85	360	4,115,854	4.23
8/10/00	10:00	173	1	85	377	2,527,279	2.96
8/11/00	7:00	78	4	70	410	3,924,715	2.07
8/12/00	9:00	100	6	70	424	1,665,031	1.13
8/13/00	5:00	107	9	70	456	3,805,784	2.75
8/14/00	12:30	122	5	70	476	2,319,150	1.91
8/15/00	6:00	103	12	70	505	3,508,457	2.44
8/16/00	12:30	112	0	70	524	2,200,219	1.67
8/18/00	9:00	90	0	75	568	5,670,449	3.45
8/21/00	12:00	74	5	80	643	10,194,065	5.10
8/24/00	12:00	68	13	80	712	9,378,540	4.31
8/27/00	12:30	68.5	2	80	785	9,854,263	4.57
8/31/00	1:30	52	6	80	882	13,184,324	4.64
9/4/00	12:30	54	5	80	977	12,912,482	4.72
9/7/00	12:00	55	3	80	1,048	9,718,342	3.62
9/11/00	4:30[2]	141	0	80	1,149	13,660,047	13.03
9/14/00	9:30	56	5	80	1,214	8,834,856	3.35
9/18/00	2:00	46	9.5	80	1,314	13,660,047	4.25

Table 8

Total Mass of Petroleum Hydrocarbons Removed by Vapor Extraction System

3609 International Boulevard, Oakland, California

Date	Time	PID (ppmv)		Flow Rate	Time Elapsed	Air Flow	Mass Removed [1]
		Influent	Effluent	(ft^3/min)	(Hours)	(Liters)	(Pounds)
9/18/00	4:30[3]	34	0	80	1,317	339,802	0.08
9/21/00	4:30	43	1	80	1,389	9,786,302	2.85
9/25/00	5:30	55	6	80	1,486	13,184,324	4.91
9/28/00	9:00	47.5	7.5	80	1,550	8,766,896	2.82
10/1/00	1:00	38.5	6	80	1,626	10,329,986	2.69
10/5/00	3:00[4]	28.5	3	80	1,724	13,320,245	2.57
10/5/00	5:00	36	0	80	1,726	271,842	0.07
10/8/00	3:00	28.5	3	80	1,796	9,514,460	1.83
10/14/00	3:00	24.5	2.5	80	1,940	19,572,604	3.24
10/17/00	2:00	36.5	3.5	80	2,011	9,650,381	2.38
10/20/00	8:30	18.5	3.5	80	2,078	9,038,737	1.13
10/25/00	2:00	38	3.7	80	2,203	17,058,068	4.39
10/29/00	10:00	35	4	80	2,295	12,504,719	2.96
11/2/00	4:00	30.5	4	80	2,397	13,863,928	2.86
11/7/00	4:00	30	6	80	2,517	16,310,504	3.31
11/19/00	12:00	92.7	5.5	80	2,801	38,601,525	24.20
11/24/00	13:30	25	6.5	80	2,923	16,514,385	2.79
11/29/00	15:00	14.5	3.5	80	3,044	16,514,385	1.62
12/4/00	16:30	10.7	1	80	3,190	19,776,486	1.43
12/13/00	15:30	24	3	80	3,405	29,222,986	4.74
12/28/00	14:30	10	6	85	3,764	51,845,314	3.51
1/4/2001[5]	14:00	8.7	3.7	85	3,907	20,723,684	1.22
8/8/01	15:00	217	0	85	3,907	0	0
9/6/01	12:00	85	0	85	4,048	20,362,644	11.71
9/13/01	16:00	186	8	85	4,220	24,839,538	31.26
9/18/01	15:00	184	9	85	4,344	17,907,574	22.29
9/21/2001 [6]		--	--	--	4,344	0	0
10/12/01 [7]		--	--	--	4,344	0	0
10/23/01	17:00	114	58	87	4,344	0	0
10/25/01 [4]	15:00	133	0	85	4,390	6,643,132	5.98
10/29/2001 [8]	13:20	569	0	85	4,485	13,647,304	52.53
11/7/01	15:30	177	0	87	4,679	28,675,904	34.34
11/16/01	15:00	117	0	87	4,894	31,853,904	25.21
11/21/01 [9]	12:00	85	72	87	5,011	17,294,231	9.94
2/15/02 [10]	16:30	49	0	80	5,011.5	67,960	0.02

Table 8

Total Mass of Petroleum Hydrocarbons Removed by Vapor Extraction System

3609 International Boulevard, Oakland, California

Date	Time	PID (ppmv)		Flow Rate (ft^3/min)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed [1] (Pounds)
		Influent	Effluent				
2/16/02	15:45	50	0	80	5,035	3,160,160	1.07
2/21/02	16:00	37	4	80	5,155	16,344,484	4.09
2/27/02	10:30	11	0	83	5,294	19,530,979	1.45
3/7/02 [11]	12:20	10		80	5,488	26,429,812	1.79
6/12/2002 [12]	16:15	53	2	75	NA	NA	NA
6/17/02	11:00	28	2	80	114.75	15,593,148	0.96
6/24/02	11:20	24	3.1	80	168.33	22,866,400	1.21
7/5/02	13:25	20	5	80	264.09	35,873,552	1.58
7/11/02	15:30	26	8.0	80	144.09	19,572,752	1.12
7/23/02	10:10	28	7.5	83	287.78	40,557,673	2.50
8/9/02	12:20	7.5	0	80	408.09	55,434,983	0.91
8/15/2002 [11]	15:00	7.0	1	80	144.11	19,575,902	0.30
8/23/2002 [13]	15:20	NA	NA	NA	NA	NA	NA
8/26/02	11:15	14.0	2.0	80	71.83	9,757,387	0.30
9/11/02	10:10	34.4	0	80	383.95	52,156,428	3.95
9/19/02	10:55	8.8	1.1	80	192.75	26,183,160	0.51
9/25/02	10:30	18.8	1.8	80	144.75	19,662,840	0.81
10/2/02	8:10	17.1	2.5	80	168.75	22,923,000	0.86
10/9/02		PID malfunction		80	168.75	22,923,000	NA
10/16/02	13:45	17.0	4.0	80	168.75	22,923,000	0.86
10/24/02		16.5	6.4	80	192.75	26,183,160	0.95
11/1/02		21.1	0.0	85	192.75	27,819,608	1.29
11/6/02	10:12	PID malfunction		87	120.75	17,837,915	NA
11/7/02		17.5	0.0	85	24.75	3,572,168	0.14
11/13/02	11:30	15.0	0.0	85	144.75	20,891,768	0.69
					Total Mass of Petroleum Hydrocarbons Removed =		**408.49**
					Average Daily Removal Rate (pounds / day)=		**0.49**

Notes:

[1] The representative molecular weight of hydrocarbons was assumed to be 78 gram/mole and used the measured temperature of Vapor (36 °C) in converting ppm-v to ppm on mass basis.

[2] System accidentally shut down from main box, readings taken 30 minutes after startup.

[3] GAC Replaced

[4] GAC-1 removed, new GAC installed at effluent end

[5] SVE System turned off for rainy season due to low influent concentrations

[6] system down, hoses disconnected and GAC moved for replacement

[7] system down for electrical repair

[8] Carbon change-out of three drums, moved new effluent drum on 10/25/01 to GAC-1

[9] system shut-down due to high effluent value

[10] System re-started (since November 21, 2001), installed new 4-55 gallon vapor phase carbon vessels repaired blower

[11] System was shut-down due to low influent reading

[12] System was restarted on 6/12/02

[13] System was re-started but no readings were taken

FIGURES

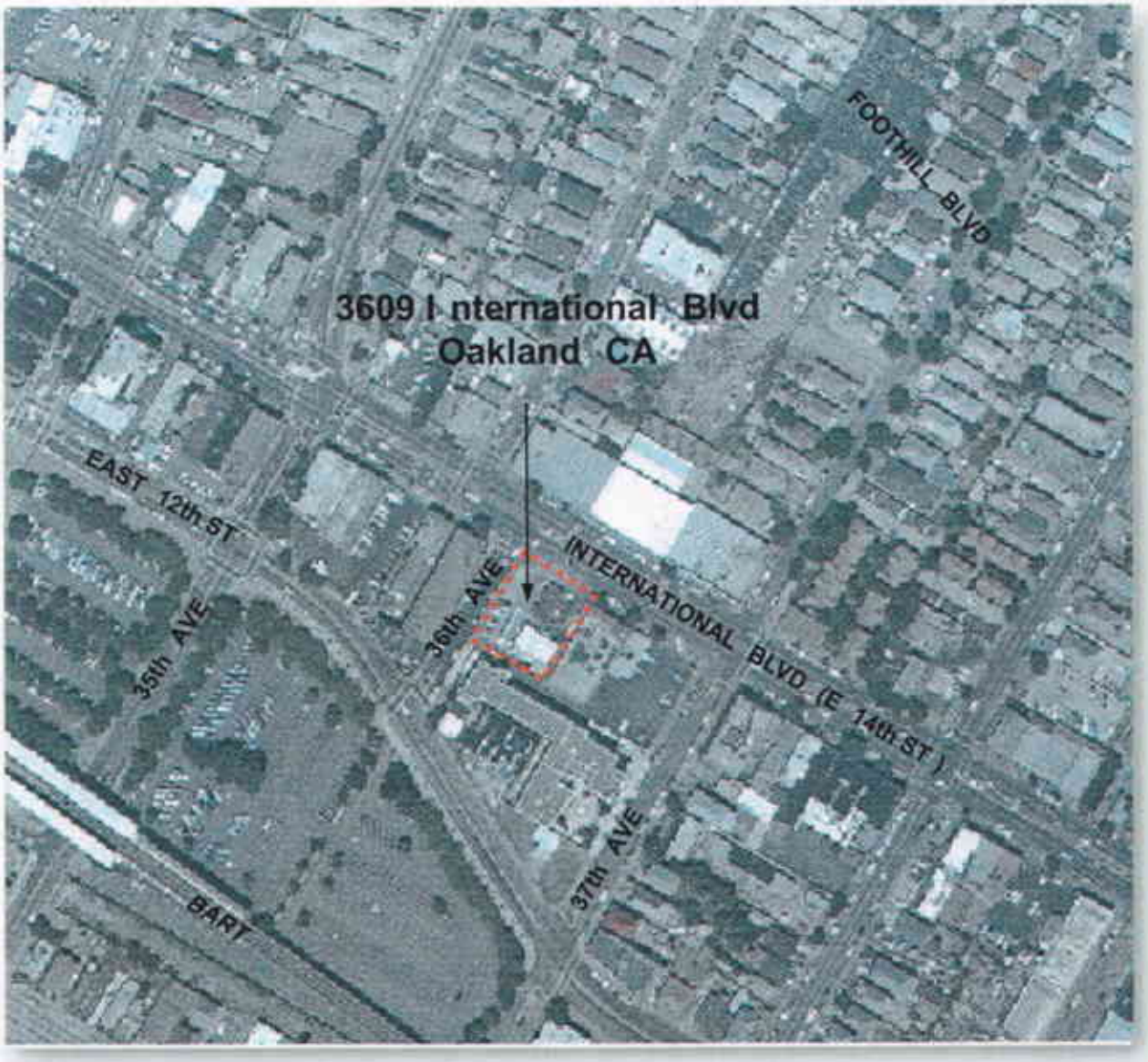


Figure 1: Site vicinity map.

SOMA
ENVIRONMENTAL ENGINEERING, INC.

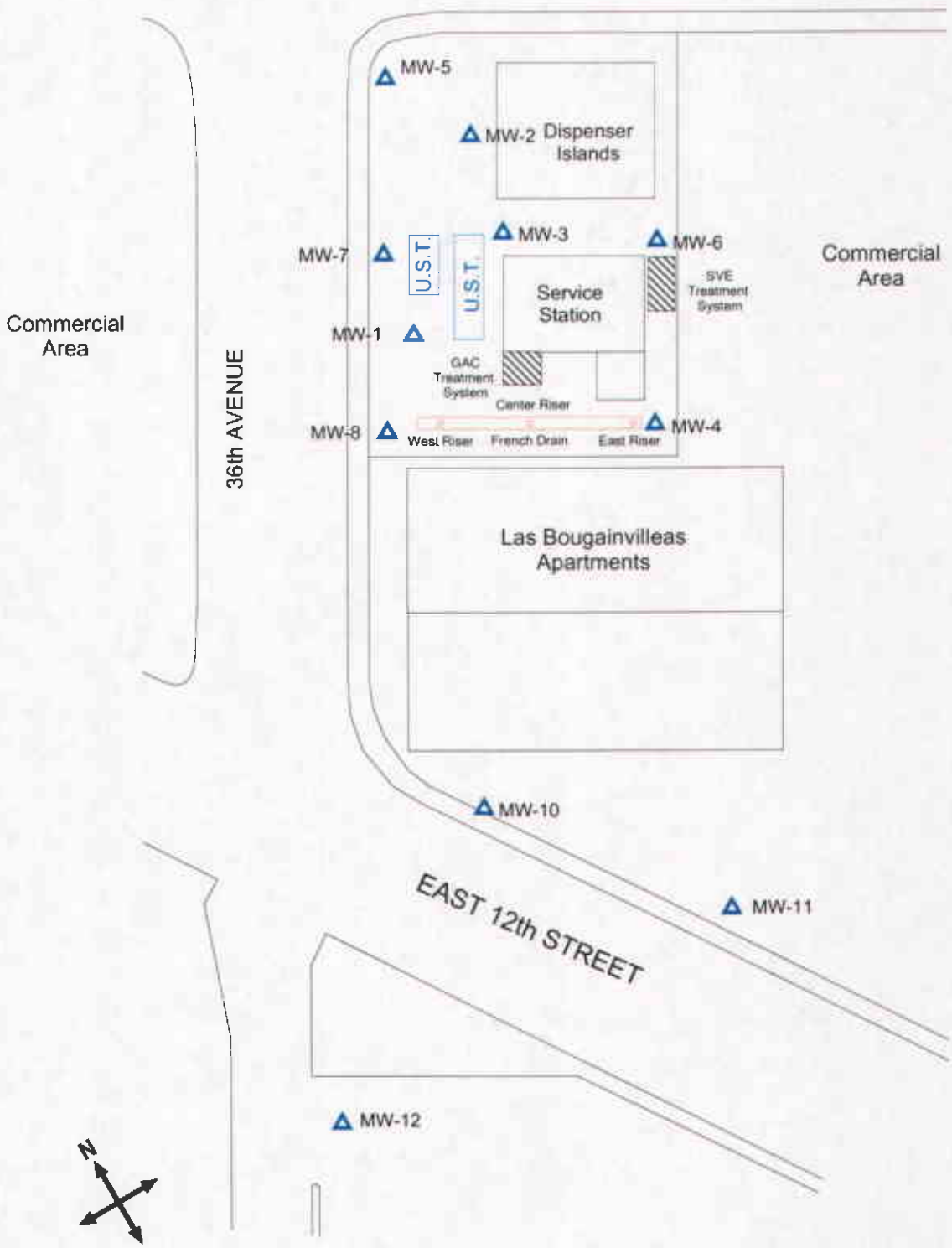
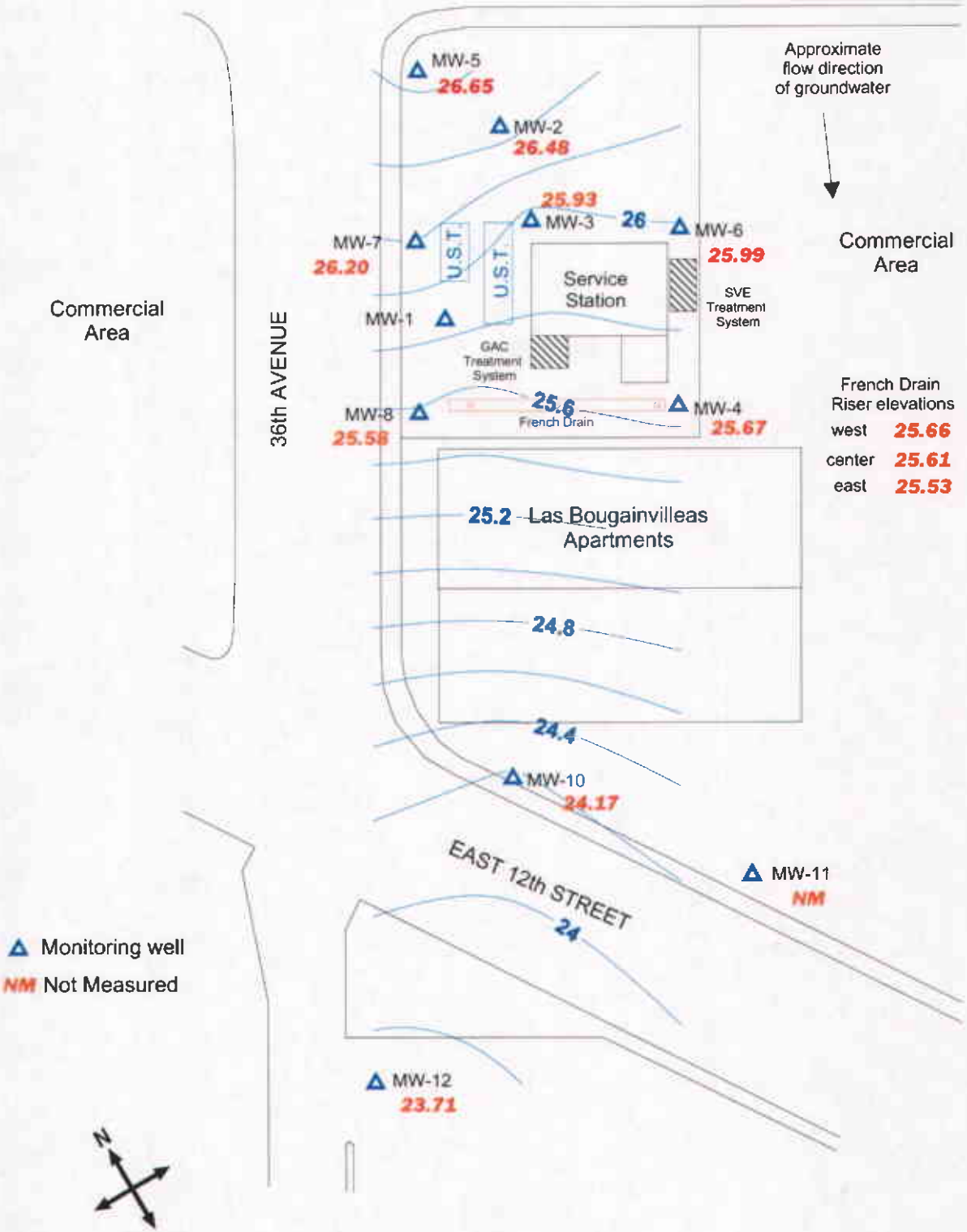


Figure 2: Site map showing location of groundwater monitoring wells and french drain.

ENVIRONMENTAL ENGINEERING, INC.



NOTES:
MW-11 was not surveyed due to obstacles that prevented access to the well casing.
MW-1 elevation data was omitted from the contour as an anomaly.

Figure 3: Groundwater elevation contour map in feet, October 30, 2002.

ENVIRONMENTAL ENGINEERING, INC.

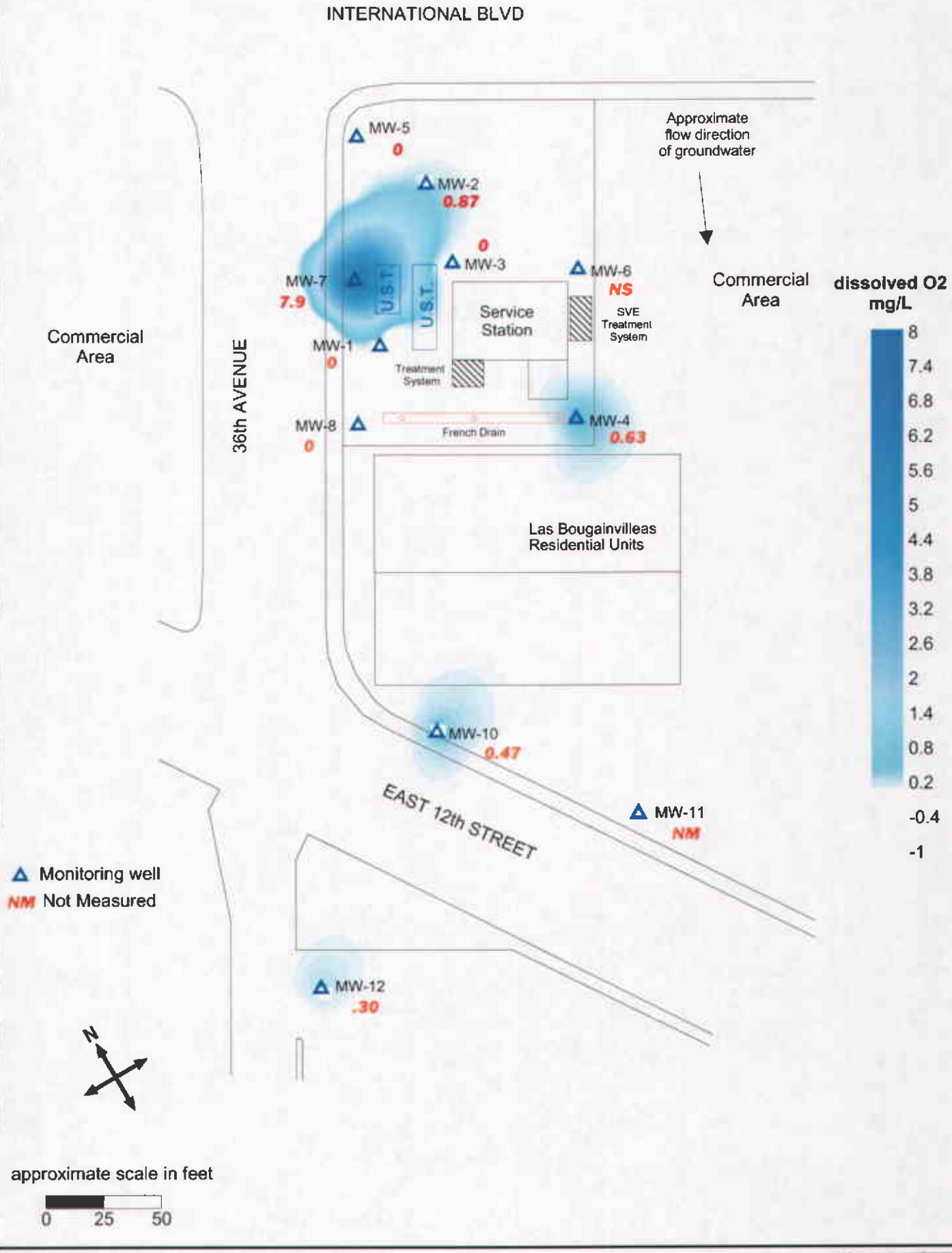


Figure 4: Contour map of dissolved Oxygen concentrations in groundwater. October 30, 2002.

SOMA ENVIRONMENTAL ENGINEERING, INC.

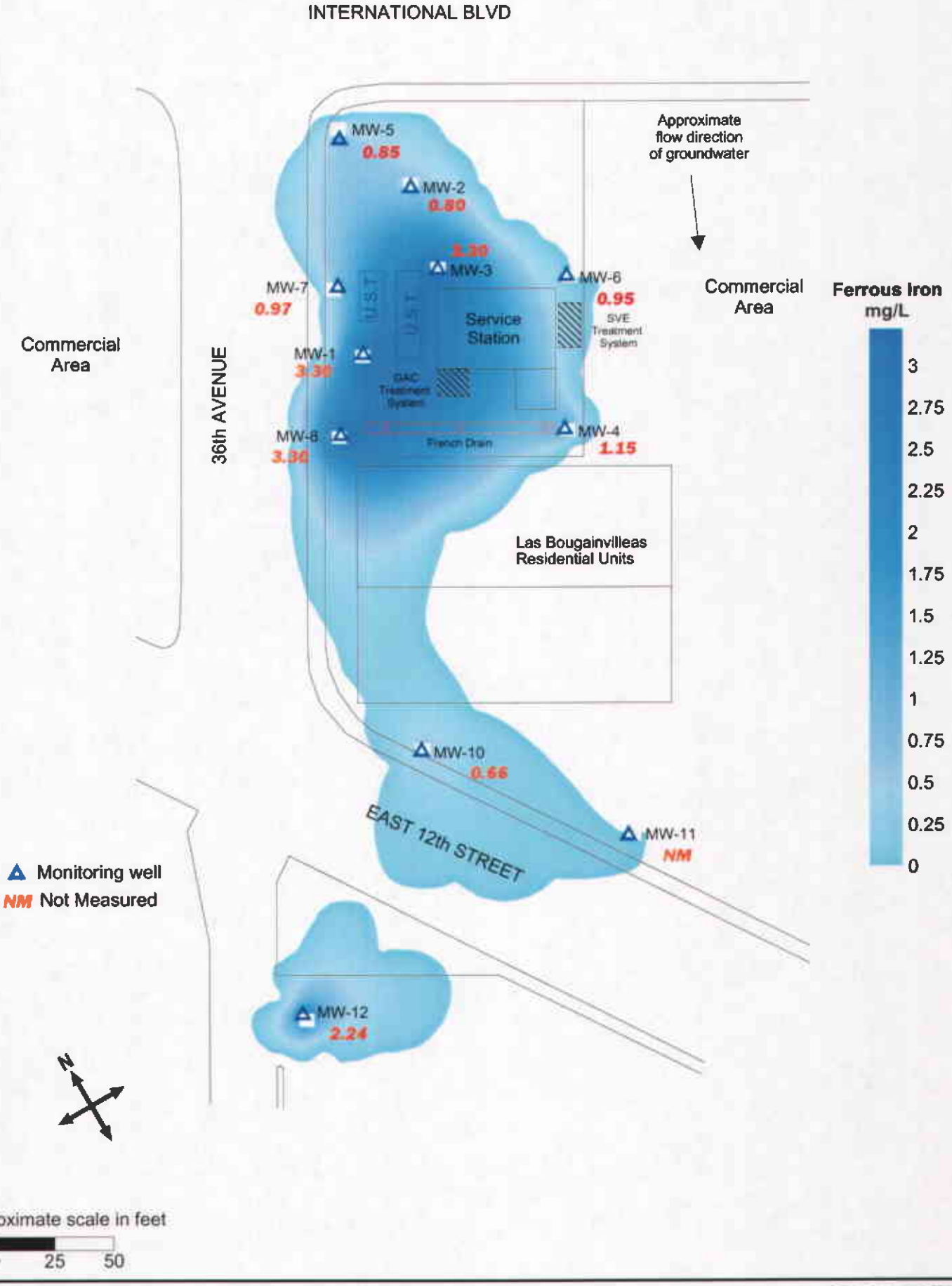


Figure 5: Contour map of Ferrous Iron concentrations in groundwater.
October 30, 2002.

SOMA ENVIRONMENTAL ENGINEERING, INC.

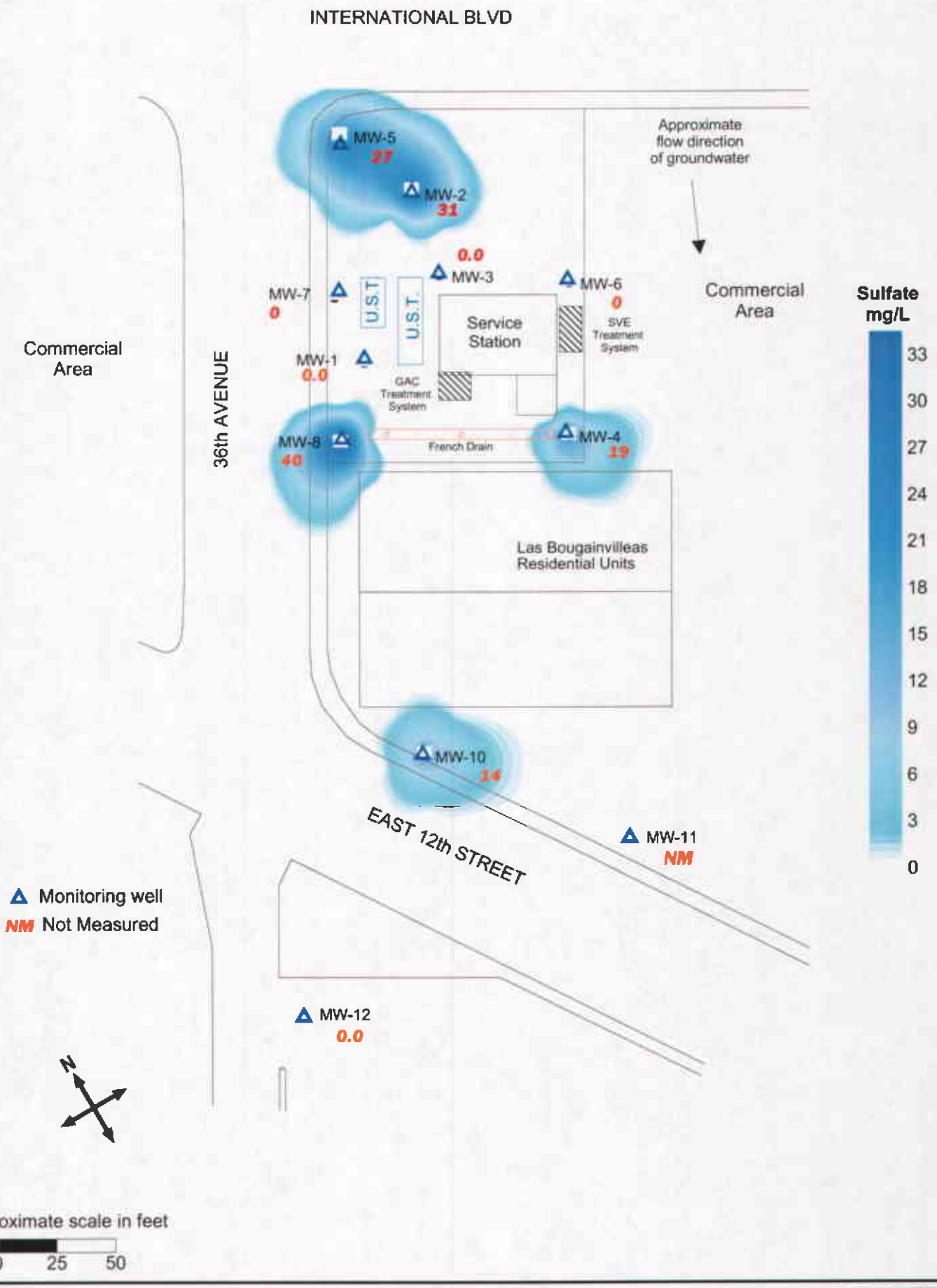


Figure 6: Contour map of Sulfate concentrations in groundwater.
October 30, 2002.

SOMA ENVIRONMENTAL ENGINEERING, INC.

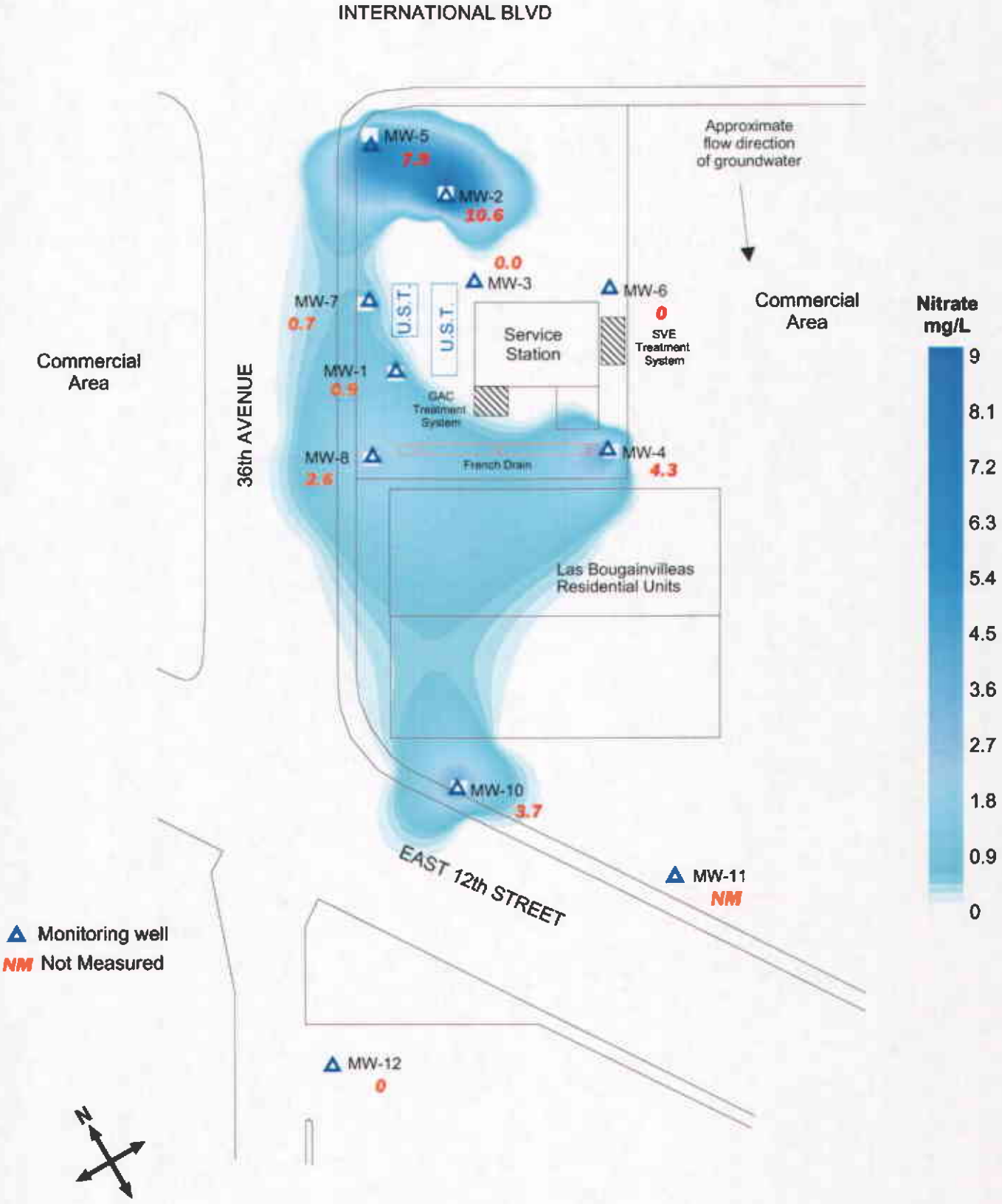


Figure 7: Contour map of Nitrate concentrations in groundwater.
October 30, 2002.

ENVIRONMENTAL ENGINEERING, INC.

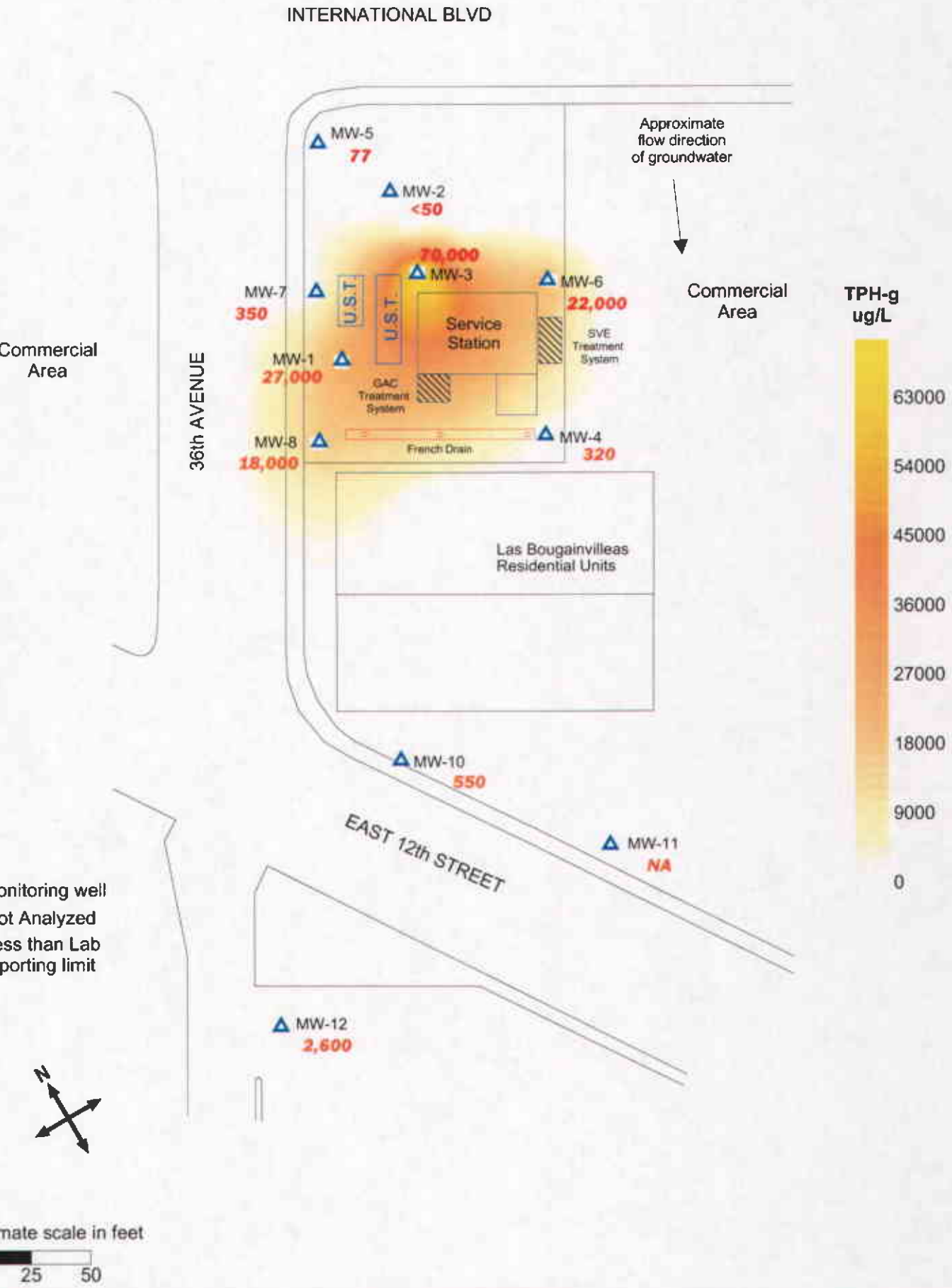


Figure 8: Contour map of TPH-g concentrations in groundwater.
October 30, 2002.

ENVIRONMENTAL ENGINEERING, INC.

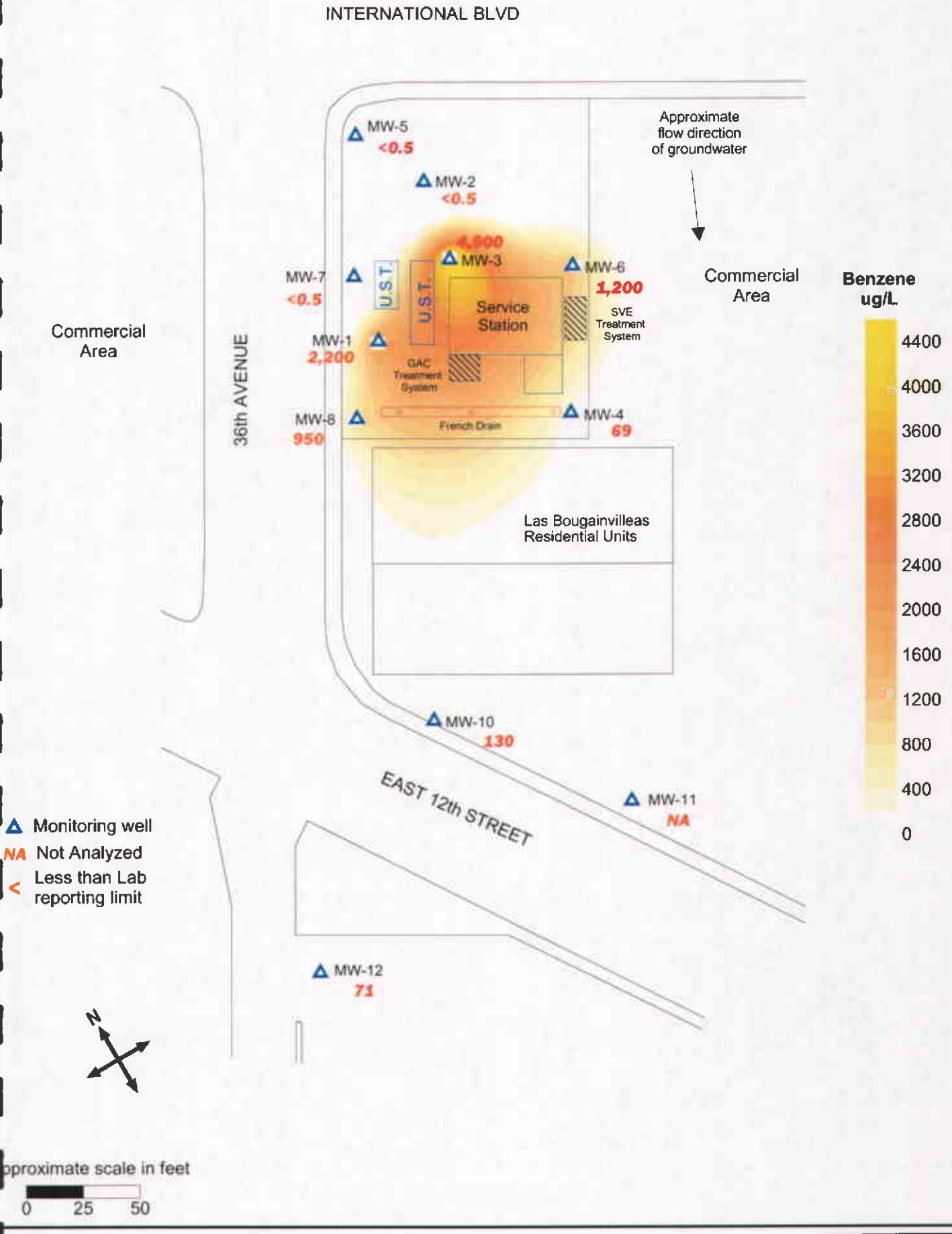


Figure 9: Contour map of Benzene concentrations in groundwater.
October 30, 2002.

ENVIRONMENTAL ENGINEERING, INC.

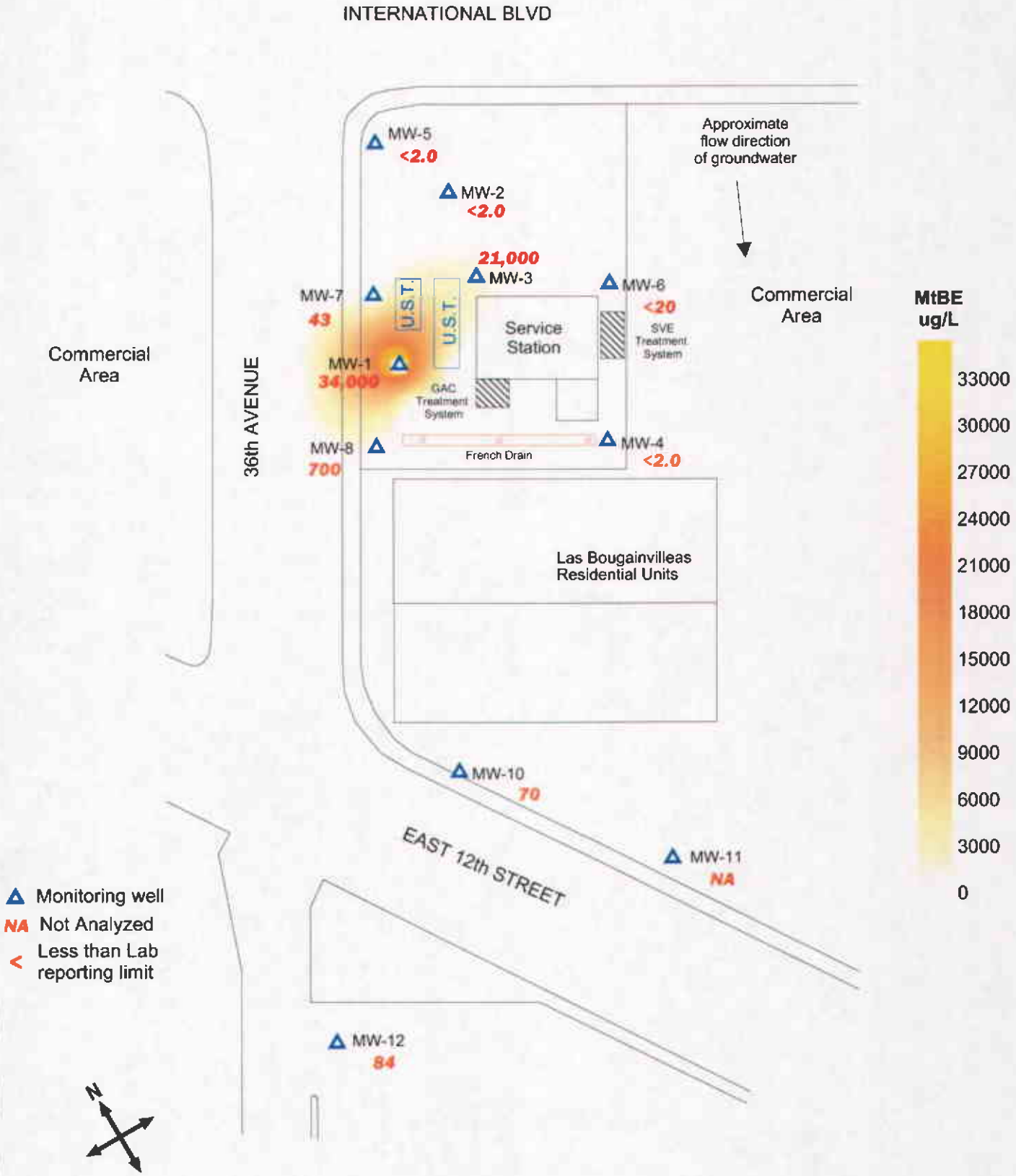


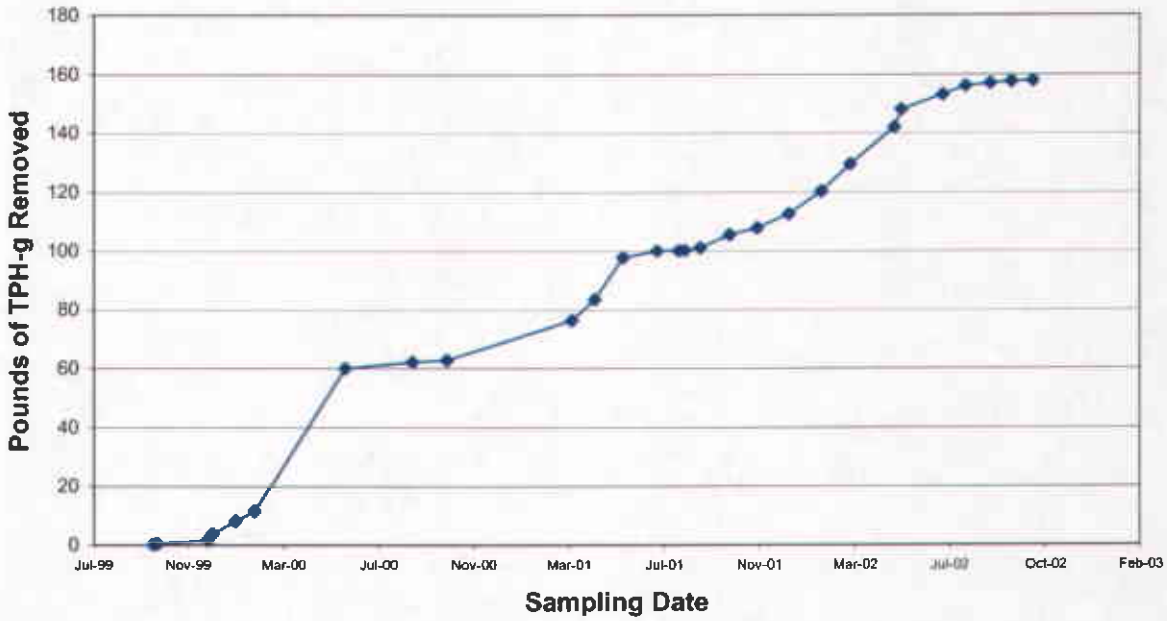
Figure 10: Contour map of MtBE concentrations in groundwater (EPA Method 8260B). October 30, 2002.

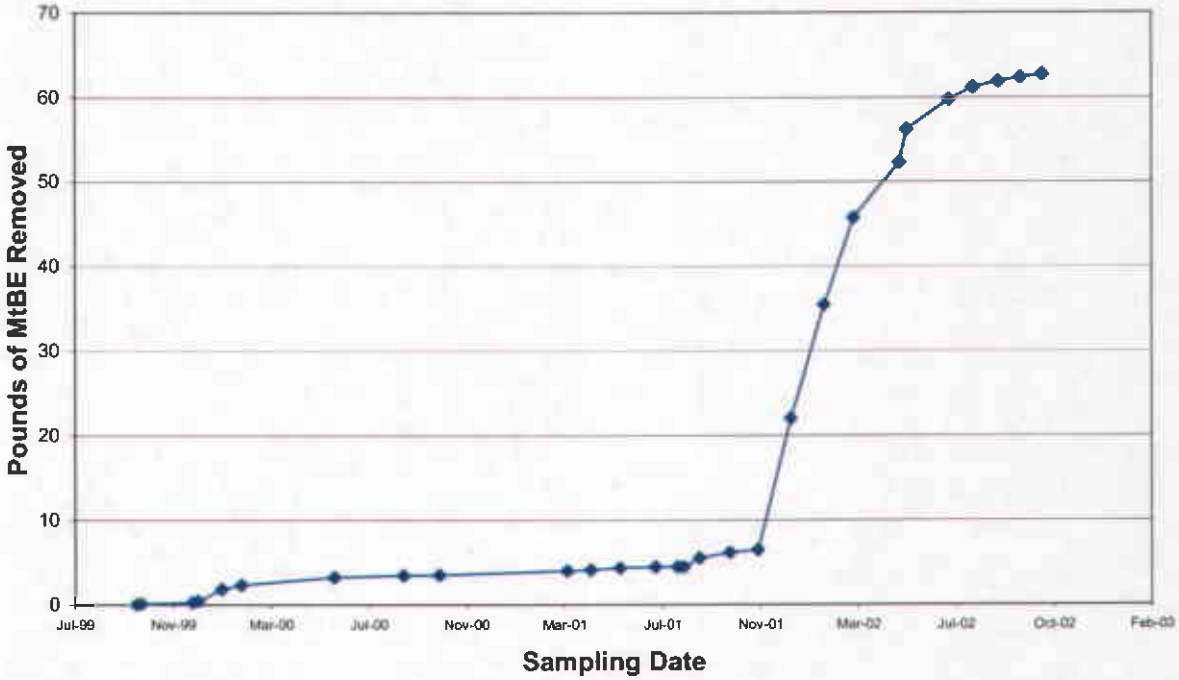
SOMA ENVIRONMENTAL ENGINEERING, INC.

Figure 12

Cumulative Weight of TPH-g and MtBE Extracted from Groundwater Since Installation of the Treatment System

3609 International Boulevard, Oakland, California





APPENDIX A

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

DATE: 08/27/02
JOB# A02576

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL
Oakland-E. 14 the St. "International Blvd"

WELL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
FD-C	2109299.85	6064039.85	39.35	Notch on north side of PVC
			40.25	Punch north rim of box
FD-E	2109281.13	6064067.87	40.06	Notch on north side of PVC
			40.55	Punch north rim of box
FD-W	2109314.99	6064017.59	39.16	Notch on north side of PVC
			39.95	Punch north rim of box
MW-1	2109338.74	6064025.97	40.11	Notch on north side of PVC
			40.76	Punch north rim of box
MW-2	2109383.20	6064073.06	40.71	Notch on north side of PVC
			41.61	Punch north rim of box
MW-3	2109351.11	6064064.63	40.91	Notch on north side of PVC
			41.68	Punch north rim of box
MW-4	2109278.18	6064076.40	40.01	Notch on north side of PVC
			40.67	Punch north rim of box
MW-5	2109410.84	6064058.46	41.16	Notch on south side of PVC
			41.60	Punch south rim of box
MW-6	2109320.46	6064105.06	40.92	Notch on north side of PVC
			41.52	Punch north rim of box
MW-7	2109368.19	6064025.54	39.94	Notch on north side of PVC
			40.54	Punch north rim of box
MW-8	2109321.68	6064000.46	39.38	Notch on north side of PVC
			39.72	Punch north rim of box

Kier Wright Civil Engineers Surveyors, Inc.
1233 Quarry Lane, Suite 145, Pleasanton, CA 94566
(925) 249-6555 (925) 249-6563

DATE: 08/27/02
JOB# A02576

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL
Oakland-E. 14 the St. "International Blvd"

WELL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
MW-10	2109193.97	6063957.39	36.71	Notch on north side of PVC
			37.70	Punch north rim of box
MW-11	2109125.26	6064007.52	**XXXX**	**NO ELEVATION , BOAT ON TOP**
MW-12	2109121.85	6063865.00	36.84	Notch on north side of PVC
			36.87	

Bench mark: NGS Bench mark No.M 554. To reach the station from the intersection of Interstate Highway 880 and Hegenberger Rd in South Oakland go northeast on Hegenberger Rd for 0.5 MI to a side road right Baldwin St. Turn right and go south on Baldwin St for 0.35 MI to a T-intersection, 85th Ave. for 0.1 MI to a side road right, Railroad Ave. Turn right and go south on Railroad Ave. for 0.1 MI to the station on the left, east, side of the road in a large concrete headwall for a culvert.

Elevation = 14.20 NAVD88 Datum

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.

Kier Wright Civil Engineers Surveyors, Inc.
1233 Quarry Lane, Suite 145, Pleasanton, CA 94566
(925) 249-6555 (925) 249-6563

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-1	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	30.50 feet		Oakland, CA
Top of Casing Elevation:	40.11 feet		
Depth to Groundwater:	15.50 feet	**Date:**	10/30/02
Groundwater Elevation:	24.61 feet	**Sampler:**	AMA Ku
Water Column Height:	15.00 feet		Tony Perini
Purged Volume:	2.0 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☑ No ☐ **Describe:** Blackish

Sheen: Yes ☑ No ☐ **Describe:**

Odor: Yes ☑ No ☐ **Describe:** strong petro

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)	
2:06 PM	0.5	3.43	6.82	20.22	0.960	36.3	-78				
2:08 PM	1.0	0.66	6.80	20.47	0.965	44	-85				
2:11 PM	2.0	0.0	6.83	20.92	0.944	87.2	-97	3.30	0	0.9	DRH
2:15 PM	Sampled	—									

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-2	**Project No.:**	2331
Casing Diameter:	4 inches	**Address:**	3609 International Blvd.
Depth of Well:	31.50 feet		Oakland, CA
Top of Casing Elevation:	40.71 feet		
Depth to Groundwater:	14.23 feet	**Date:**	10/30/02
Groundwater Elevation:	26.48 feet	**Sampler:**	Anna Ku
Water Column Height:	17.27 feet		Tony Perini
Purged Volume:	6 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☐ No ☑ **Describe:** _____

Sheen: Yes ☐ No ☑ **Describe:** _____

Odor: Yes ☐ No ☑ **Describe:** _____

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
11:23 Am	1	1.81	7.18	20.04	0.584	501	84			
11:25 Am	2	1.48	6.99	20.28	0.580	104	79			
11:29 Am	4.5	0.96	6.92	20.25	0.579	58.3	82			
11:31 Am	6	0.87	6.93	20.33	0.578	15.9	85	0.80	31	10.6
11:35 Am	sampled									

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-3	**Project No.:**	2331
Casing Diameter:	4 inches	**Address:**	3609 International Blvd.
Depth of Well:	32.00 feet		Oakland, CA
Top of Casing Elevation:	40.91 feet		
Depth to Groundwater:	14.98 feet	**Date:**	10/30/02
Groundwater Elevation:	25.93 feet	**Sampler:**	Anna Ku
Water Column Height:	17.02 feet		Tony Perini
Purged Volume:	3 gallons		notes: Heavy sheen FP present

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☒ No ☐ **Describe:** a little murky gray

Sheen: Yes ☒ No ☐ **Describe:** rainbow

Odor: Yes ☒ No ☐ **Describe:** strong petro

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
2:46 pm	1	1.09	6.68	20.17	1.24	0.7	-90			
2:48 pm	2	0.19	6.75	20.31	1.25	0	-104			
2:49 pm	3	0	6.81	20.32	1.24	0.2	-116			
2:52 pm	—	Sampled						3.30	0.0	0.0

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-4	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	26.50 feet		Oakland, CA
Top of Casing Elevation:	40.01 feet		
Depth to Groundwater:	14.34 feet	**Date:**	10/30/02
Groundwater Elevation:	25.67 feet	**Sampler:**	Anna Ku
Water Column Height:	12.16 feet		Tony Perini
Purged Volume:	4 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☐ No ☑ **Describe:** _____

Sheen: Yes ☐ No ☑ **Describe:** _____

Odor: Yes ☐ No ☑ **Describe:** _____

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
1:13 PM	0.5	4.80	7.10	19.18	0.652	49.4	-43			
1:15 PM	1.0	0.0	6.81	19.28	0.620	9.7	-26			
1:17 PM	2.0	0.0	6.81	19.34	0.597	0.5	-27			
1:19 PM	~~3~~ 4	0.0	6.82	19.34	0.598	0	-43			
1:23 PM	Sampled							1.15	19	4.30
1:27 pm		0.63								

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-5	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	26.50 feet		Oakland, CA
Top of Casing Elevation:	41.16 feet		
Depth to Groundwater:	14.51 feet	**Date:**	10/30/02
Groundwater Elevation:	26.65 feet	**Sampler:**	Anna Ku
Water Column Height:	11.99 feet		Tony Perini
Purged Volume:	4.5 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color:	Yes	No ☒	Describe: Brownish clear
Sheen:	Yes ☐	No ☒	Describe:
Odor:	Yes	No ☒	Describe:

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
10:55AM	1	0.20	7.03	21.09	0.640	80.8	3			
10:57 AM	3	0	6.95	21.33	0.638	16.8	-33			
10:59 AM	4.5	0	6.93	21.15	0.638	0	-54			
Sampled 11:05AM		Sampled						0.85	27	7.90

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-6	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	25.00 feet		Oakland, CA
Top of Casing Elevation:	40.92 feet		
Depth to Groundwater:	14.93 feet	**Date:**	10/30/02
Groundwater Elevation:	25.99 feet	**Sampler:**	Anna Ku
Water Column Height:	10.07 feet		Tony Perini
Purged Volume:	1/4 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☒ No ☐ **Describe:** Black

Sheen: Yes ☒ No ☐ **Describe:** Heavy sheen

Odor: Yes ☒ No ☐ **Describe:** Strong petro

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
3:26 pm	Sampled							0.95	0	0.00

Notes: LNAPL present
was only able to pump 1/4 gallon from well due to sedimentation in well

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-7	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	26.10 feet		Oakland, CA
Top of Casing Elevation:	39.94 feet		
Depth to Groundwater:	13.74 feet	**Date:**	10/30/02
Groundwater Elevation:	26.20 feet	**Sampler:**	Anna Ku
Water Column Height:	12.36 feet		Tony Perini
Purged Volume:	1.5 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☒ No ☐ **Describe:** cloudy grayish

Sheen: Yes ☐ No ☒ **Describe:**

Odor: Yes ☐ No ☒ **Describe:**

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
12:03 pm	1	0.34	7.00	21.37	0.541	41.5	-64			
12:07 pm	1.5	0	6.99	21.47	0.541	23.5	-86			
12:10 pm		7.90								
12:12 pm	— Sampled							0.97	0	0.70

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-8	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	27.00 feet		Oakland, CA
Top of Casing Elevation:	39.38 feet		
Depth to Groundwater:	13.80 feet	**Date:**	10/30/02
Groundwater Elevation:	25.58 feet	**Sampler:**	Anna Ku
Water Column Height:	13.2 feet		Tony Perini
Purged Volume:	1.5 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☒ No ☐ **Describe:** black

Sheen: Yes ☒ No ☐ **Describe:** green

Odor: Yes ☒ No ☐ **Describe:** strong petro

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
1:49 pm	1	0	6.90	19.84	0.793	OR	-127			
1:51 pm	1.5	0	6.93	19.88	0.793	OR	-132			
1:57 pm — Sampled.								3.30	40	2.60

DR

Notes: well dried after 1.5 gallon.
FP present
Turbidity was above the allowable equipment tolerance

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-10	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	23.5 feet		Oakland, CA
Top of Casing Elevation:	36.71 feet		
Depth to Groundwater:	12.54 feet	**Date:**	10/30/02
Groundwater Elevation:	24.17 feet	**Sampler:**	Anna Ku
Water Column Height:	10.96 feet		Tony Perini
Purged Volume:	4 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☐ No ☒ **Describe:** clear

Sheen: Yes ☐ No ☒ **Describe:**

Odor: Yes ☐ No ☒ **Describe:**

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. (µS/cm)	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
10:19 Am	1	0.46	7.15	20.46	0.639	33.9	-83			
10:21 Am	2	0	7.07	20.72	0.628	29.4	-46			
10:23 Am	3.5	0	7.01	20.90	0.625	0	-19			
10:30 Am		0.47	sampled					0.66	14	3.70

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-12	**Project No.:**	2331
Casing Diameter:	4 inches	**Address:**	3609 International Blvd.
Depth of Well:	31 feet		Oakland, CA
Top of Casing Elevation:	36.84 feet		
Depth to Groundwater:	13.13 feet	**Date:**	10/30/02
Groundwater Elevation:	23.71 feet	**Sampler:**	Anna Ku
Water Column Height:	17.87 feet		Tony Perini
Purged Volume:	14 gallons		

Purging Method: Bailer ☐ Pump ☒

Sampling Method: Bailer ☒ Pump ☐

Color: Yes ☐ No ☒ **Describe:** Clear

Sheen: Yes ☐ No ☒ **Describe:**

Odor: Yes ☐ No ☒ **Describe:**

Field Measurements:

Time	Vol (gallons)	D.O. (mg/L)	pH	Temp (°C)	E.C. mS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	SO_4^{-2} (mg/L)	NO_3^{-1} (mg/L)
9:18 AM	1	0	6.54	19.64	0.653	0.6	-47			
9:20 AM	4	0	6.63	19.84	0.652	0	-57			
9:24 AM	7	0	6.98	19.97	0.645	0	-70			
9:26 AM	10	0	6.98	20.09	0.648	0	-82			
9:30 AM	14	0	7.00	19.88	0.644	0	-84			
9:41 AM		0.30								
9:47 AM	Sampled							2.24		0.00

Appendix B

Chain of Custody Form and Laboratory Report of Fourth Quarter 2002 Monitoring Event

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

ANALYTICAL REPORT

Prepared for:

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

Date: 21-NOV-02
Lab Job Number: 161571
Project ID: 2331
Location: 3609 Int'l Blvd., 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

Curtis & Tompkins, Ltd.

Laboratory Number:	**161571**
Client:	**SOMA Environmental Engineering Inc.**
Project Name:	**3609 International Blvd., Oakland**
Project #:	**2331**
Receipt Date:	**10/30/02**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for ten water samples received from the above referenced project on October 30th, 2002. The samples were received cold and intact.

Total Volatile Hydrocarbons/BTXE/MTBE (EPA 8015B(M)/EPA 8021B):

A high recovery of the surrogate trifluorotoluene was observed for sample MW-12 due to coelution with this sample's matrix.

No other analytical problems were encountered.

Purgeable Aromatics by GC/MS (EPA 8260B):

No 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 # 161571

Sampler: ~~Ramin Bet Yonan~~ Anna Ku / Tony Perini

Project No: 2331

Report To: Tony Perini/Mansour Sepehr

Project Name: 3609 International Blvd, Oakland

Company : SOMA Environmental

Turnaround Time: Standard

Telephone: 925-244-6600

Fax: 925-244-6601

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE
	MW-1	10/30/02 2:15pm		X		3 VOA	X			X
	MW-2	11:35 Am		X		vials	X			X
	MW-3	2:52 pm		X			X			X
	MW-4	1:27 pm		X			X			X
	MW-5	11:05 Am		X			X			X
	MW-6	3:26 pm		X			X			X
	MW-7	12:12 pm		X			X			X
	MW-8	1:57 pm		X			X			X
	~~MW-9~~									
	MW-10	10:30 Am		X		3 VOA	X			X
	~~MW-11~~									
	MW-12	9:47 Am		X		3 VOA	X			X

Analyses

TPHg 8015	BTEX + MtBE 8021 GC	MTBE Confirmation 8260 GCMS
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X

Received: ☒ Cold ☐ Ambient ☐ On Ice ☒ Intact

Preservation Correct? ☒ Yes ☐ No ☐ N/A

Notes:

RELINQUISHED BY:

Anna Ku 10/30/02 4:47 pm
DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY:

10/30/02 1640
DATE/TIME

DATE/TIME

DATE/TIME

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331		
Matrix:	Water	Sampled:	10/30/02
Units:	ug/L	Received:	10/30/02

Field ID:	MW-1	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	76671
Lab ID:	161571-001	Analyzed:	11/08/02

Analyte	Result	RL	Analysis
Gasoline C7-C12	27,000	2,500	8015B(M)
MTBE	43,000	100	EPA 8021B
Benzene	2,200	25	EPA 8021B
Toluene	2,400	25	EPA 8021B
Ethylbenzene	950	25	EPA 8021B
m,p-Xylenes	3,100	25	EPA 8021B
o-Xylene	1,400	25	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	108	68-145	8015B(M)
Bromofluorobenzene (FID)	97	66-143	8015B(M)
Trifluorotoluene (PID)	115	53-143	EPA 8021B
Bromofluorobenzene (PID)	113	52-142	EPA 8021B

Field ID:	MW-2	Lab ID:	161571-002
Type:	SAMPLE	Diln Fac:	1.000

Analyte	Result	RL	Batch#	Analyzed	Analysis
Gasoline C7-C12	ND	50	76588	11/06/02	8015B(M)
MTBE	ND	2.0	76671	11/07/02	EPA 8021B
Benzene	ND	0.50	76671	11/07/02	EPA 8021B
Toluene	ND	0.50	76671	11/07/02	EPA 8021B
Ethylbenzene	ND	0.50	76671	11/07/02	EPA 8021B
m,p-Xylenes	0.64	0.50	76671	11/07/02	EPA 8021B
o-Xylene	ND	0.50	76671	11/07/02	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	105	68-145	76588	11/06/02	8015B(M)
Bromofluorobenzene (FID)	101	66-143	76588	11/06/02	8015B(M)
Trifluorotoluene (PID)	110	53-143	76671	11/07/02	EPA 8021B
Bromofluorobenzene (PID)	114	52-142	76671	11/07/02	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

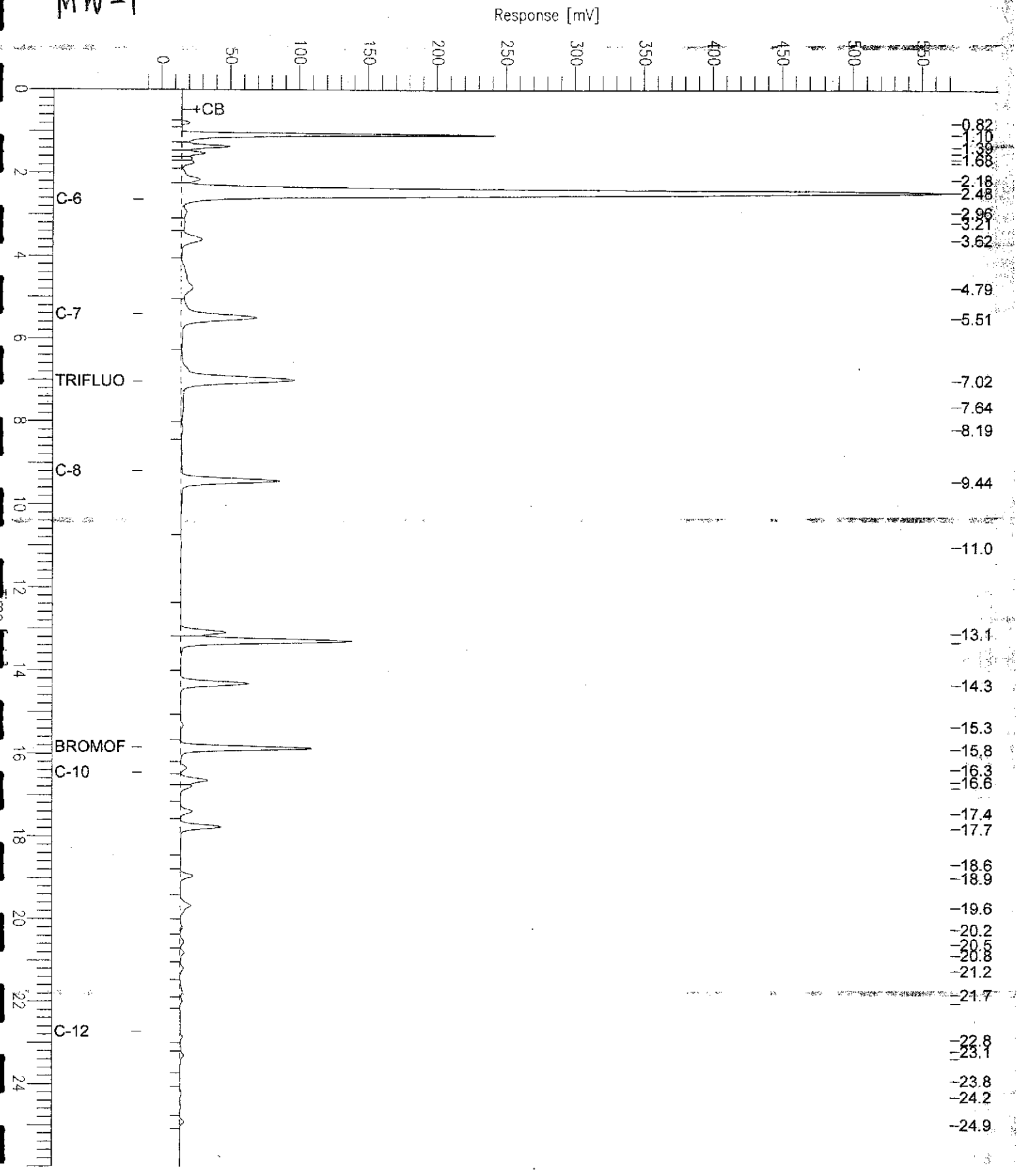
1.1

GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-001,76671
FileName : G:\GC07\DATA\311A017.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -13 mV

Sample #: bl Page 1 of 1
Date : 11/8/02 03:37 AM
Time of Injection: 11/8/02 03:11 AM
Low Point : -13.30 mV High Point : 571.28 mV
Plot Scale: 584.6 mV

MW-1



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331		
Matrix:	Water	Sampled:	10/30/02
Units:	ug/L	Received:	10/30/02

Field ID: MW-3 Lab ID: 161571-003
Type: SAMPLE

Analyte	Result	RL	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	70,000	1,000	20.00	76640	11/07/02	8015B(M)
MTBE	26,000	100	50.00	76671	11/08/02	EPA 8021B
Benzene	4,900	25	50.00	76671	11/08/02	EPA 8021B
Toluene	5,100	25	50.00	76671	11/08/02	EPA 8021B
Ethylbenzene	2,100	25	50.00	76671	11/08/02	EPA 8021B
m,p-Xylenes	8,000	25	50.00	76671	11/08/02	EPA 8021B
o-Xylene	3,900	25	50.00	76671	11/08/02	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	129	68-145	20.00	76640	11/07/02	8015B(M)
Bromofluorobenzene (FID)	101	66-143	20.00	76640	11/07/02	8015B(M)
Trifluorotoluene (PID)	116	53-143	50.00	76671	11/08/02	EPA 8021B
Bromofluorobenzene (PID)	111	52-142	50.00	76671	11/08/02	EPA 8021B

Field ID: MW-4 Diln Fac: 1.000
Type: SAMPLE Batch#: 76640
Lab ID: 161571-004 Analyzed: 11/07/02

Analyte	Result	RL	Analysis
Gasoline C7-C12	320	50	8015B(M)
MTBE	ND	2.0	EPA 8021B
Benzene	69	0.50	EPA 8021B
Toluene	0.99	0.50	EPA 8021B
Ethylbenzene	8.8	0.50	EPA 8021B
m,p-Xylenes	4.8	0.50	EPA 8021B
o-Xylene	0.69	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	109	68-145	8015B(M)
Bromofluorobenzene (FID)	99	66-143	8015B(M)
Trifluorotoluene (PID)	112	53-143	EPA 8021B
Bromofluorobenzene (PID)	107	52-142	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

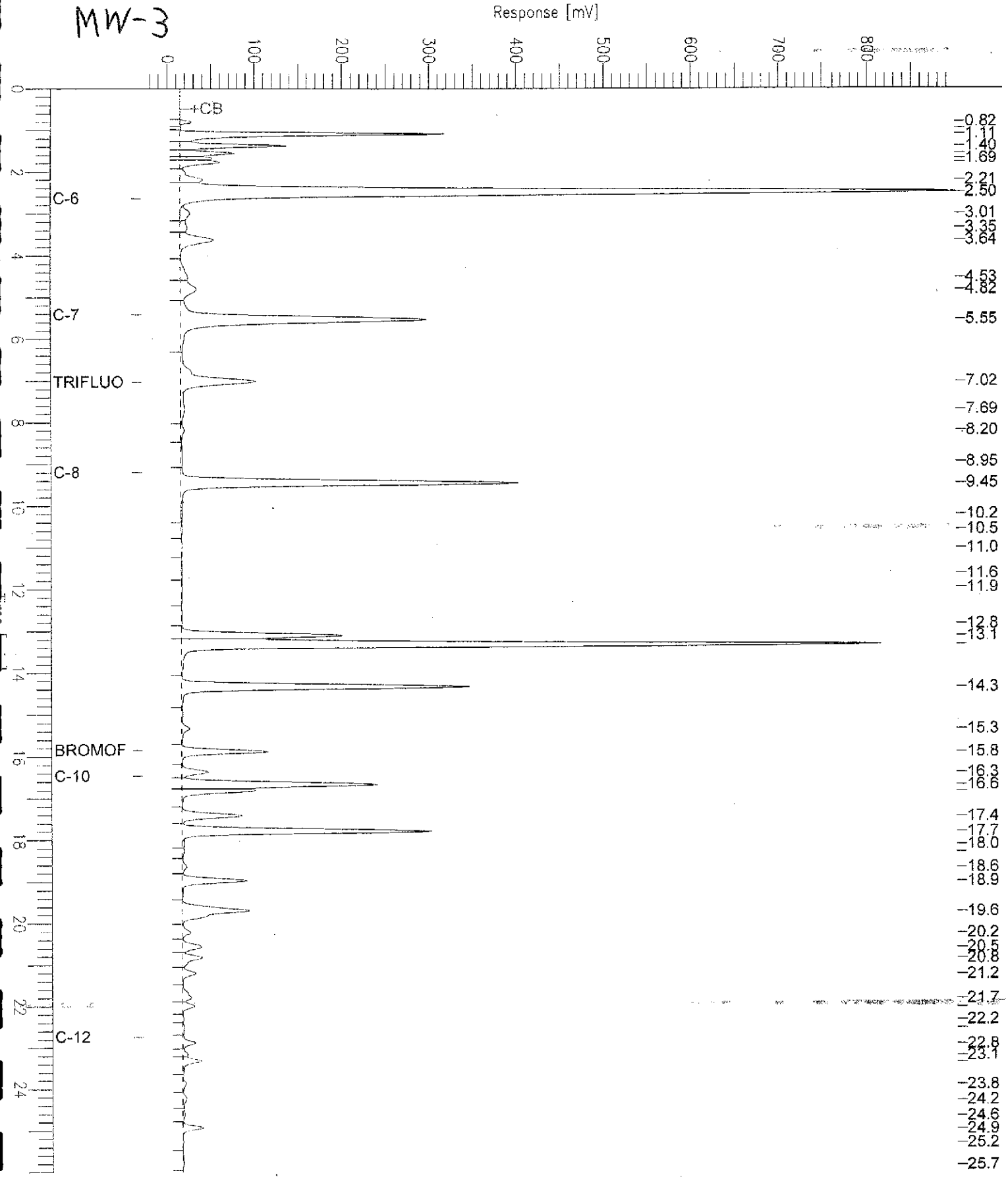
1.1

GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-003,76640
FileName : G:\GC07\DATA\310A043.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -30 mV

Sample #: b1 Page 1 of 1
Date : 11/7/02 03:48 PM
Time of Injection: 11/7/02 03:22 PM
Low Point : -29.67 mV High Point : 899.81 mV
Plot Scale: 929.5 mV

MW-3

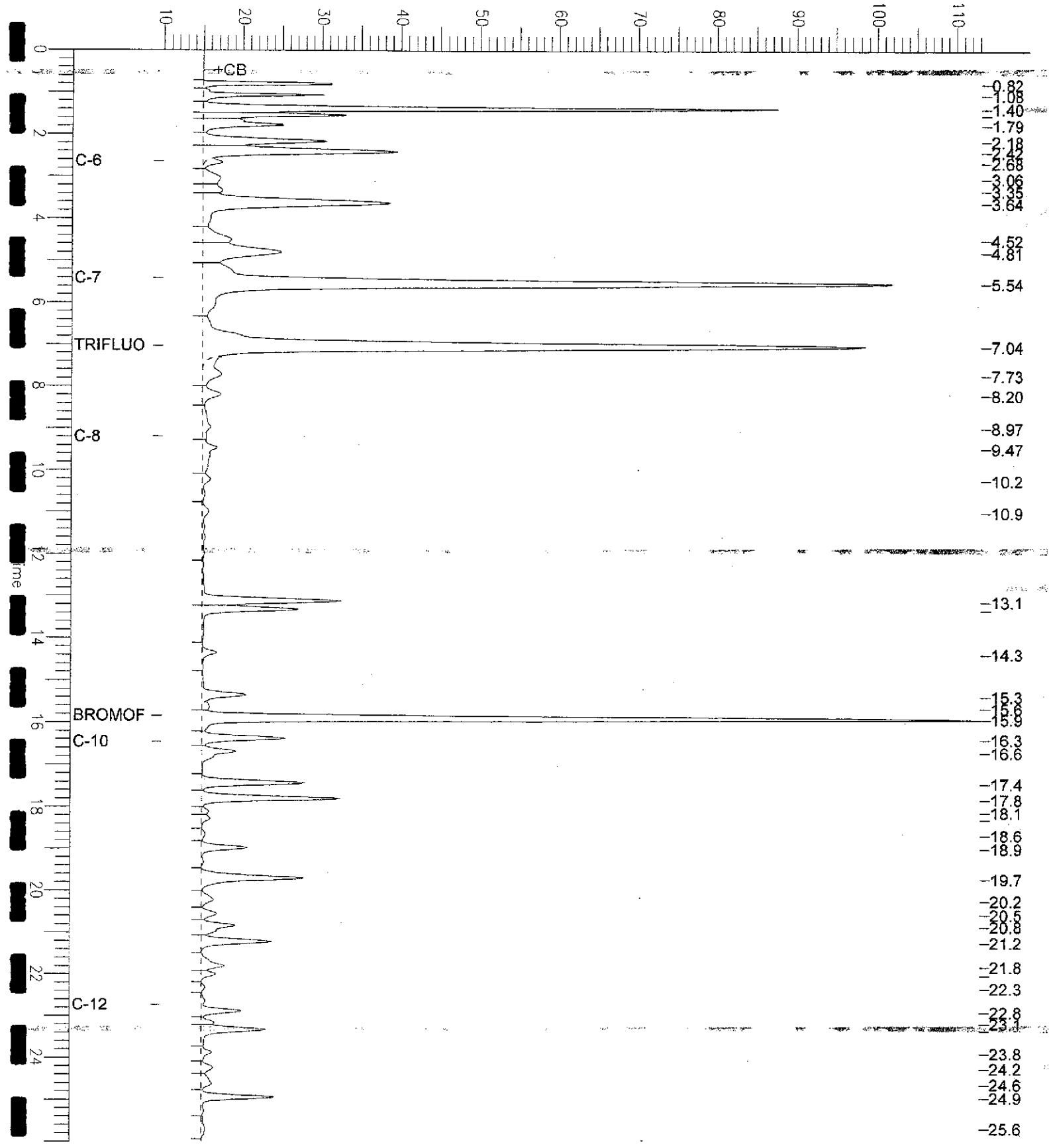


GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-004,76640
FileName : G:\GC07\DATA\310A031.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 10 mV

Sample #: bl Page 1 of 1
Date : 11/7/02 08:49 AM
Time of Injection: 11/7/02 08:23 AM
Low Point : 9.95 mV High Point : 113.11 mV
Plot Scale: 103.2 mV

MW-4



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331		
Matrix:	Water	Sampled:	10/30/02
Units:	ug/L	Received:	10/30/02

Field ID:	MW-5	Lab ID:	161571-005
Type:	SAMPLE	Diln Fac:	1.000

Analyte	Result	RL	Batch#	Analyzed	Analysis
Gasoline C7-C12	77	50	76588	11/06/02	8015B(M)
MTBE	ND	2.0	76671	11/07/02	EPA 8021B
Benzene	ND	0.50	76671	11/07/02	EPA 8021B
Toluene	ND	0.50	76671	11/07/02	EPA 8021B
Ethylbenzene	ND	0.50	76671	11/07/02	EPA 8021B
m,p-Xylenes	ND	0.50	76671	11/07/02	EPA 8021B
o-Xylene	ND	0.50	76671	11/07/02	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	102	68-145	76588	11/06/02	8015B(M)
Bromofluorobenzene (FID)	99	66-143	76588	11/06/02	8015B(M)
Trifluorotoluene (PID)	109	53-143	76671	11/07/02	EPA 8021B
Bromofluorobenzene (PID)	113	52-142	76671	11/07/02	EPA 8021B

Field ID:	MW-6	Lab ID:	161571-006
Type:	SAMPLE	Diln Fac:	10.00

Analyte	Result	RL	Batch#	Analyzed	Analysis
Gasoline C7-C12	22,000	500	76588	11/06/02	8015B(M)
MTBE	ND	20	76640	11/07/02	EPA 8021B
Benzene	1,200	5.0	76640	11/07/02	EPA 8021B
Toluene	620	5.0	76640	11/07/02	EPA 8021B
Ethylbenzene	1,300	5.0	76640	11/07/02	EPA 8021B
m,p-Xylenes	2,100	5.0	76640	11/07/02	EPA 8021B
o-Xylene	700	5.0	76640	11/07/02	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	119	68-145	76588	11/06/02	8015B(M)
Bromofluorobenzene (FID)	96	66-143	76588	11/06/02	8015B(M)
Trifluorotoluene (PID)	135	53-143	76640	11/07/02	EPA 8021B
Bromofluorobenzene (PID)	116	52-142	76640	11/07/02	EPA 8021B

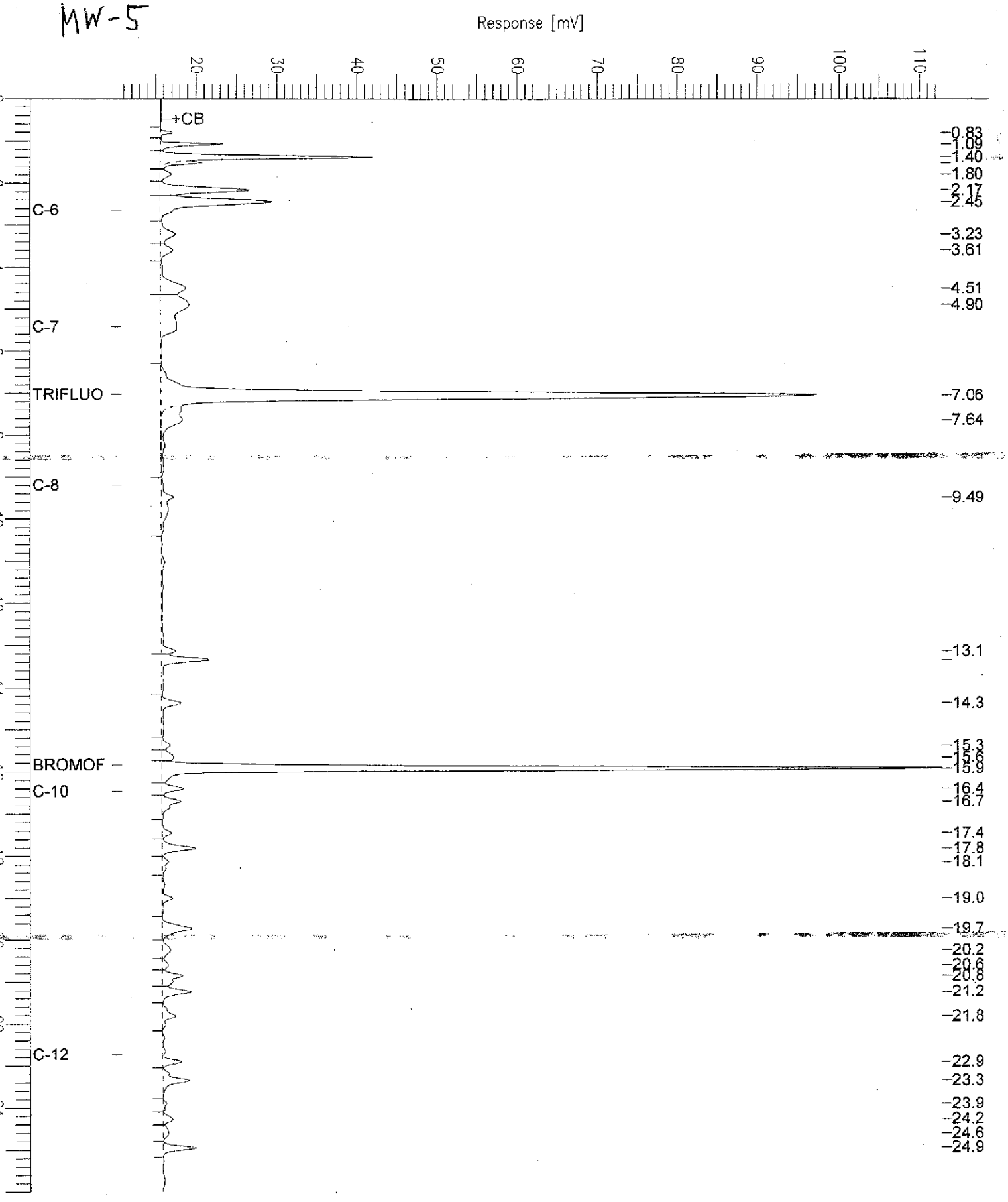
*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-005,76588
FileName : g:\gc07\data\309a034.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 11 mV

Sample #: a1 Page 1 of 1
Date : 11/6/02 01:07 PM
Time of Injection: 11/6/02 06:04 AM
Low Point : 10.73 mV High Point : 112.72 mV
Plot Scale: 102.0 mV

MW-5

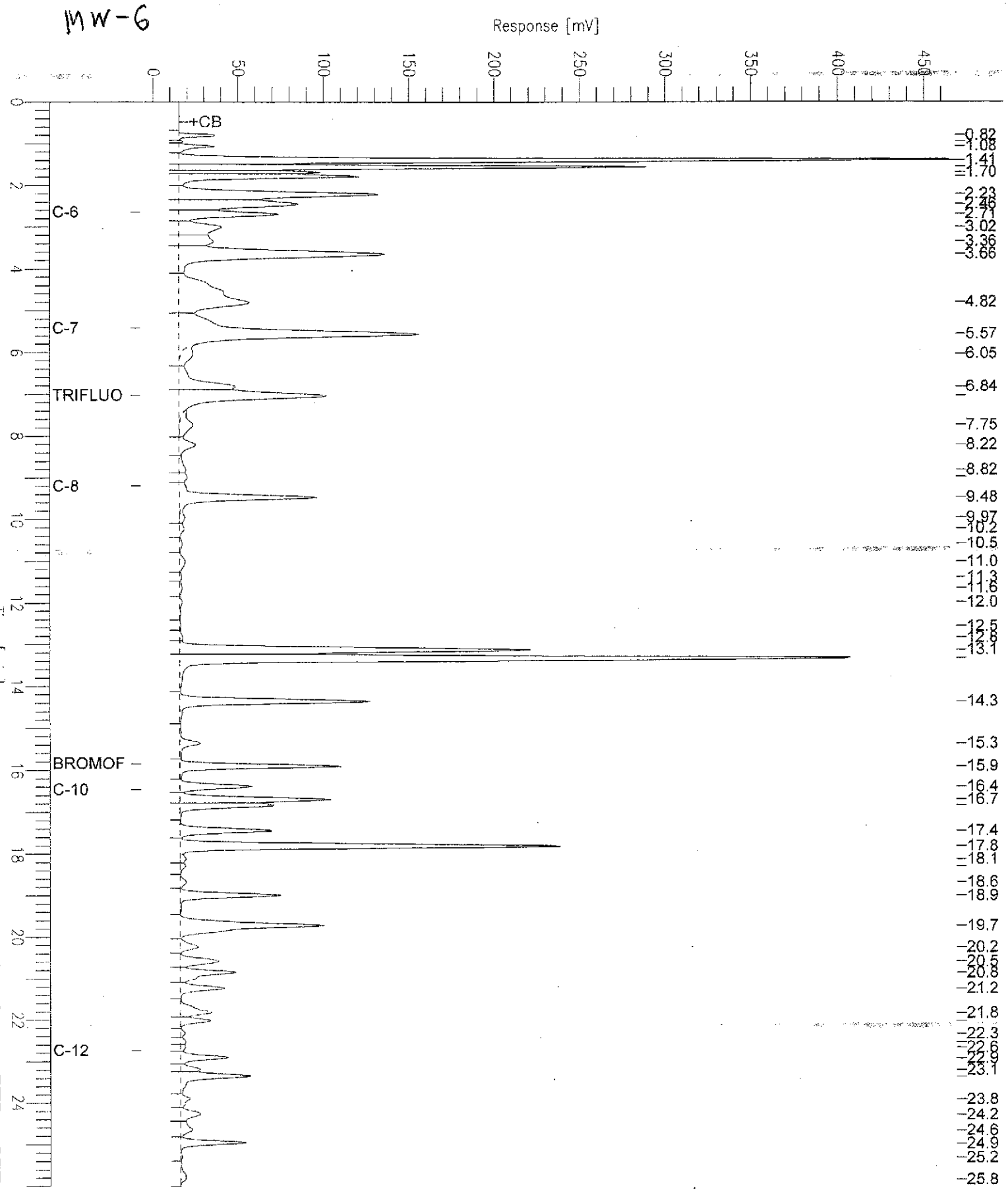


GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-006,76588
FileName : g:\gc07\data\309a046.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -7 mV

Sample #: a1 Page 1 of 1
Date : 11/6/02 03:13 PM
Time of Injection: 11/6/02 12:53 PM
Low Point : -7.22 mV High Point : 468.21 mV
Plot Scale: 475.4 mV

MW-6



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331		
Matrix:	Water	Sampled:	10/30/02
Units:	ug/L	Received:	10/30/02

ield ID:	MW-7	Lab ID:	161571-007
ype:	SAMPLE	Diln Fac:	1.000

Analyte	Result	RL	Batch#	Analyzed	Analysis
Gasoline C7-C12	350	50	76588	11/06/02	8015B(M)
MTBE	51	2.0	76671	11/07/02	EPA 8021B
Benzene	ND	0.50	76671	11/07/02	EPA 8021B
Toluene	2.1 C	0.50	76671	11/07/02	EPA 8021B
Ethylbenzene	ND	0.50	76671	11/07/02	EPA 8021B
m,p-Xylenes	1.7	0.50	76671	11/07/02	EPA 8021B
o-Xylene	1.4 C	0.50	76671	11/07/02	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	105	68-145	76588	11/06/02	8015B(M)
Bromofluorobenzene (FID)	100	66-143	76588	11/06/02	8015B(M)
Trifluorotoluene (PID)	124	53-143	76671	11/07/02	EPA 8021B
Bromofluorobenzene (PID)	117	52-142	76671	11/07/02	EPA 8021B

ield ID:	MW-8	Diln Fac:	25.00
Type:	SAMPLE	Batch#:	76671
ab ID:	161571-008	Analyzed:	11/07/02

Analyte	Result	RL	Analysis
Gasoline C7-C12	18,000	1,300	8015B(M)
MTBE	1,300	50	EPA 8021B
Benzene	950	13	EPA 8021B
Toluene	75	13	EPA 8021B
Ethylbenzene	1,400	13	EPA 8021B
m,p-Xylenes	1,200	13	EPA 8021B
o-Xylene	69	13	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	128	68-145	8015B(M)
Bromofluorobenzene (FID)	102	66-143	8015B(M)
Trifluorotoluene (PID)	121	53-143	EPA 8021B
Bromofluorobenzene (PID)	116	52-142	EPA 8021B

= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
= Reporting Limit

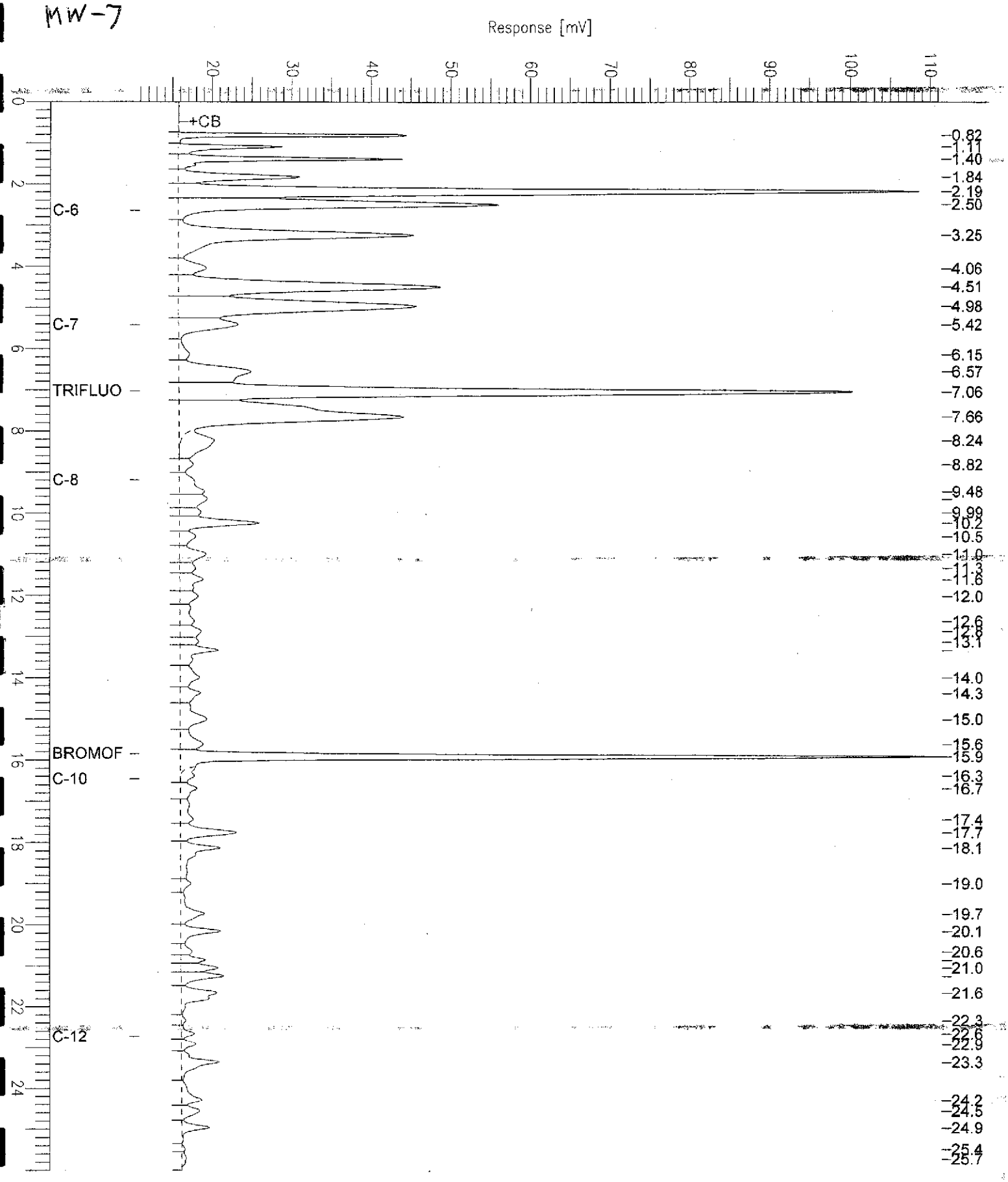
1.1

GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-007,76588
FileName : g:\gc07\data\309a035.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 11 mV

Sample #: a1 Page 1 of 1
Date : 11/6/02 01:07 PM
Time of Injection: 11/6/02 06:38 AM
Low Point : 10.91 mV High Point : 111.44 mV
Plot Scale: 100.5 mV

MW-7

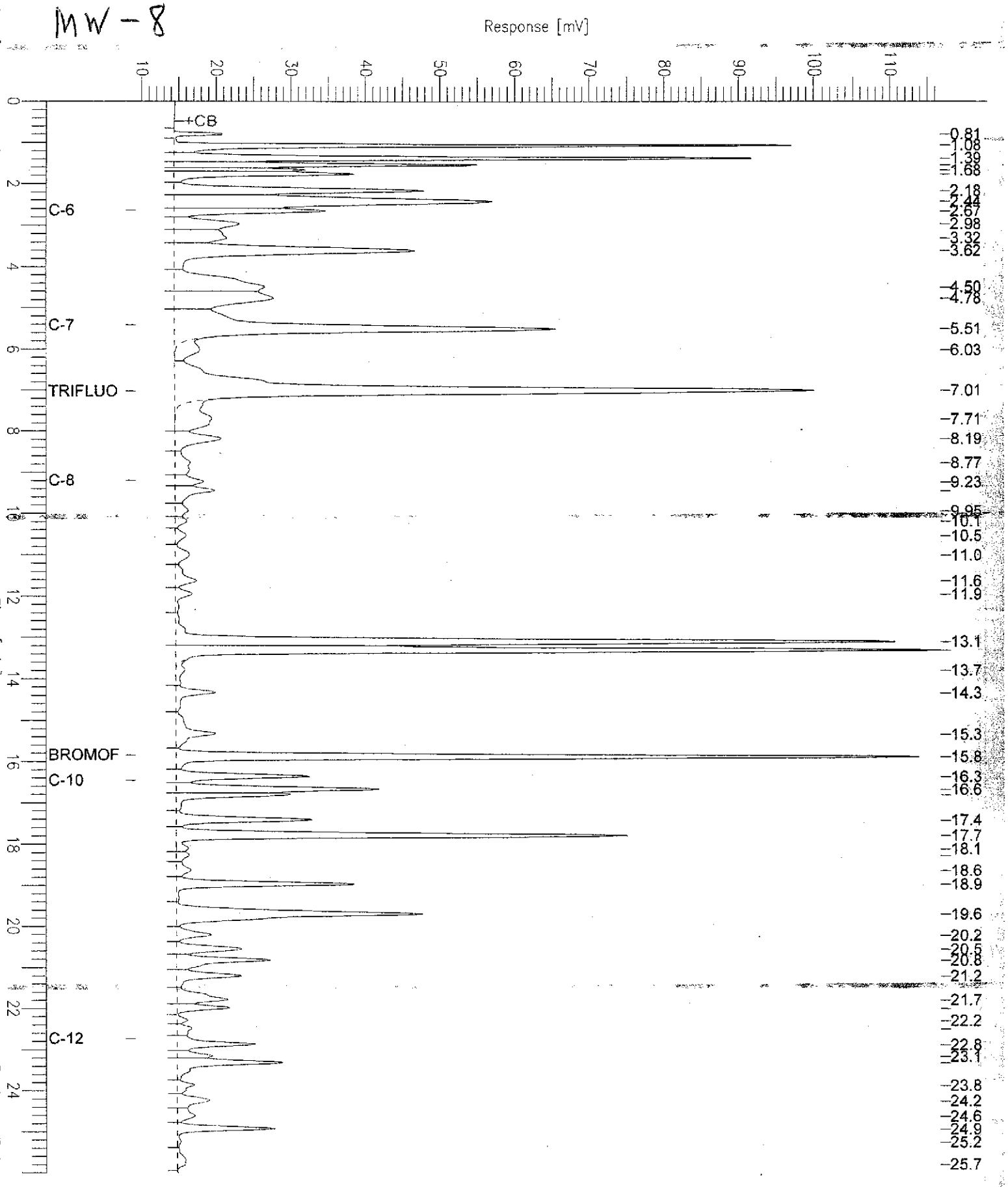


GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-008,76671,mbtxe only
FileName : g:\gc07\data\311a010.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 9 mV

Sample #: b1 Page 1 of 1
Date : 11/8/02 12:10 PM
Time of Injection: 11/7/02 11:13 PM
Low Point : 9.23 mV High Point : 116.72 mV
Plot Scale: 107.5 mV

MW-8



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331		
Matrix:	Water	Sampled:	10/30/02
Units:	ug/L	Received:	10/30/02

Field ID:	MW-10	Lab ID:	161571-009
Type:	SAMPLE	Diln Fac:	1.000

Analyte	Result	RL	Batch#	Analyzed	Analysis
Gasoline C7-C12	550	50	76588	11/06/02	8015B(M)
MTBE	110	2.0	76640	11/07/02	EPA 8021B
Benzene	130	0.50	76640	11/07/02	EPA 8021B
Toluene	3.0	0.50	76640	11/07/02	EPA 8021B
Ethylbenzene	31	0.50	76640	11/07/02	EPA 8021B
m,p-Xylenes	2.7	0.50	76640	11/07/02	EPA 8021B
o-Xylene	ND	0.50	76640	11/07/02	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	131	68-145	76588	11/06/02	8015B(M)
Bromofluorobenzene (FID)	100	66-143	76588	11/06/02	8015B(M)
Trifluorotoluene (PID)	118	53-143	76640	11/07/02	EPA 8021B
Bromofluorobenzene (PID)	111	52-142	76640	11/07/02	EPA 8021B

Field ID:	MW-12	Lab ID:	161571-010
Type:	SAMPLE	Diln Fac:	1.000

Analyte	Result	RL	Batch#	Analyzed	Analysis
Gasoline C7-C12	2,600	50	76588	11/06/02	8015B(M)
MTBE	200	2.0	76640	11/07/02	EPA 8021B
Benzene	71	0.50	76640	11/07/02	EPA 8021B
Toluene	ND	0.50	76640	11/07/02	EPA 8021B
Ethylbenzene	ND	0.50	76640	11/07/02	EPA 8021B
m,p-Xylenes	4.9	0.50	76640	11/07/02	EPA 8021B
o-Xylene	5.4	0.50	76640	11/07/02	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	174 *	68-145	76588	11/06/02	8015B(M)
Bromofluorobenzene (FID)	110	66-143	76588	11/06/02	8015B(M)
Trifluorotoluene (PID)	136	53-143	76640	11/07/02	EPA 8021B
Bromofluorobenzene (PID)	125	52-142	76640	11/07/02	EPA 8021B

Type:	BLANK	Batch#:	76588
Lab ID:	QC194842	Analyzed:	11/05/02
Diln Fac:	1.000	Analysis:	8015B(M)

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	68-145
Bromofluorobenzene (FID)	91	66-143

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

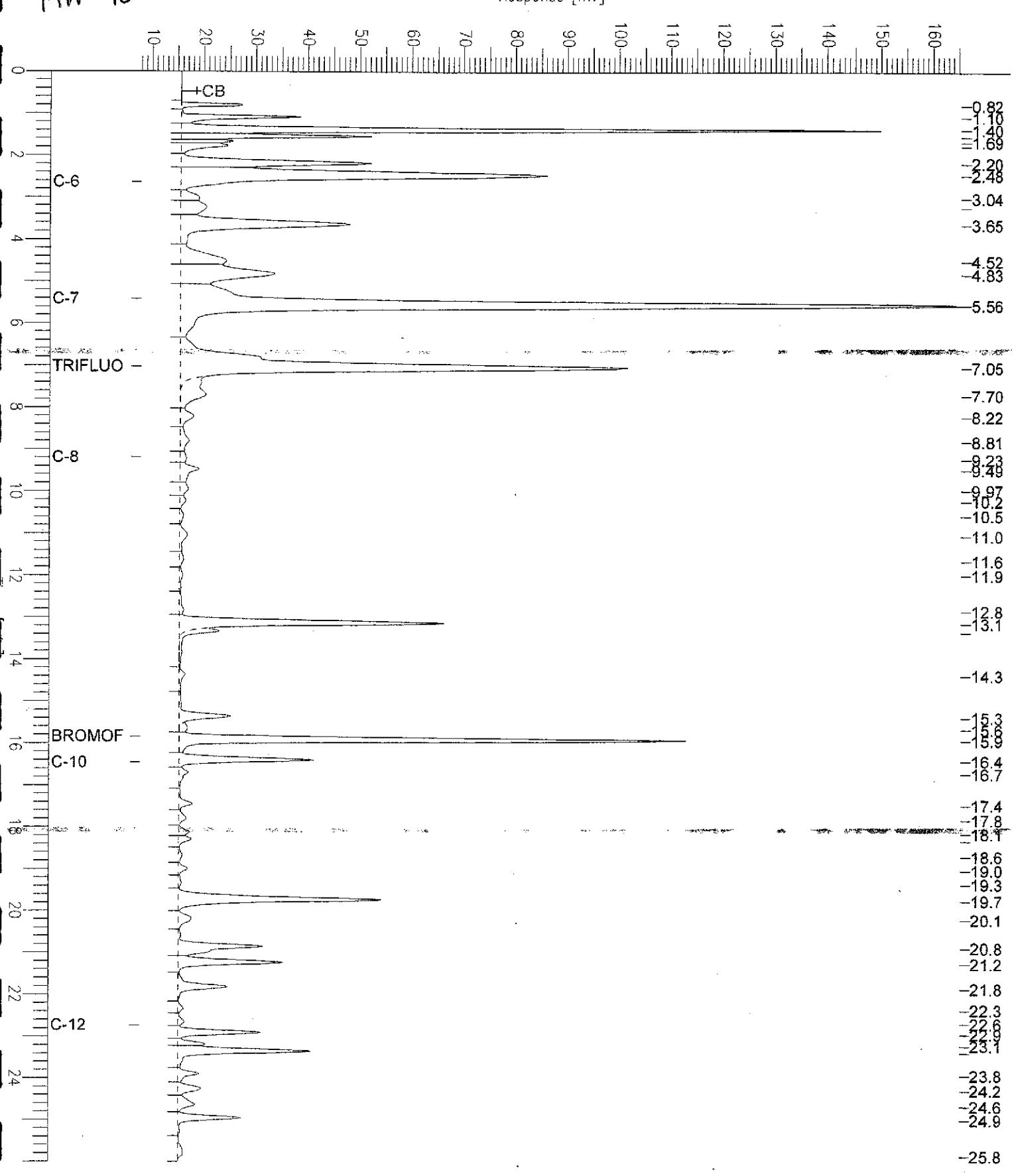
1.1

GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-009,76588
FileName : g:\gc07\data\309a043.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 8 mV

Sample #: a1 Page 1 of 1
Date : 11/6/02 01:08 PM
Time of Injection: 11/6/02 11:11 AM
Low Point : 7.95 mV High Point : 165.45 mV
Plot Scale: 157.5 mV

MW-10

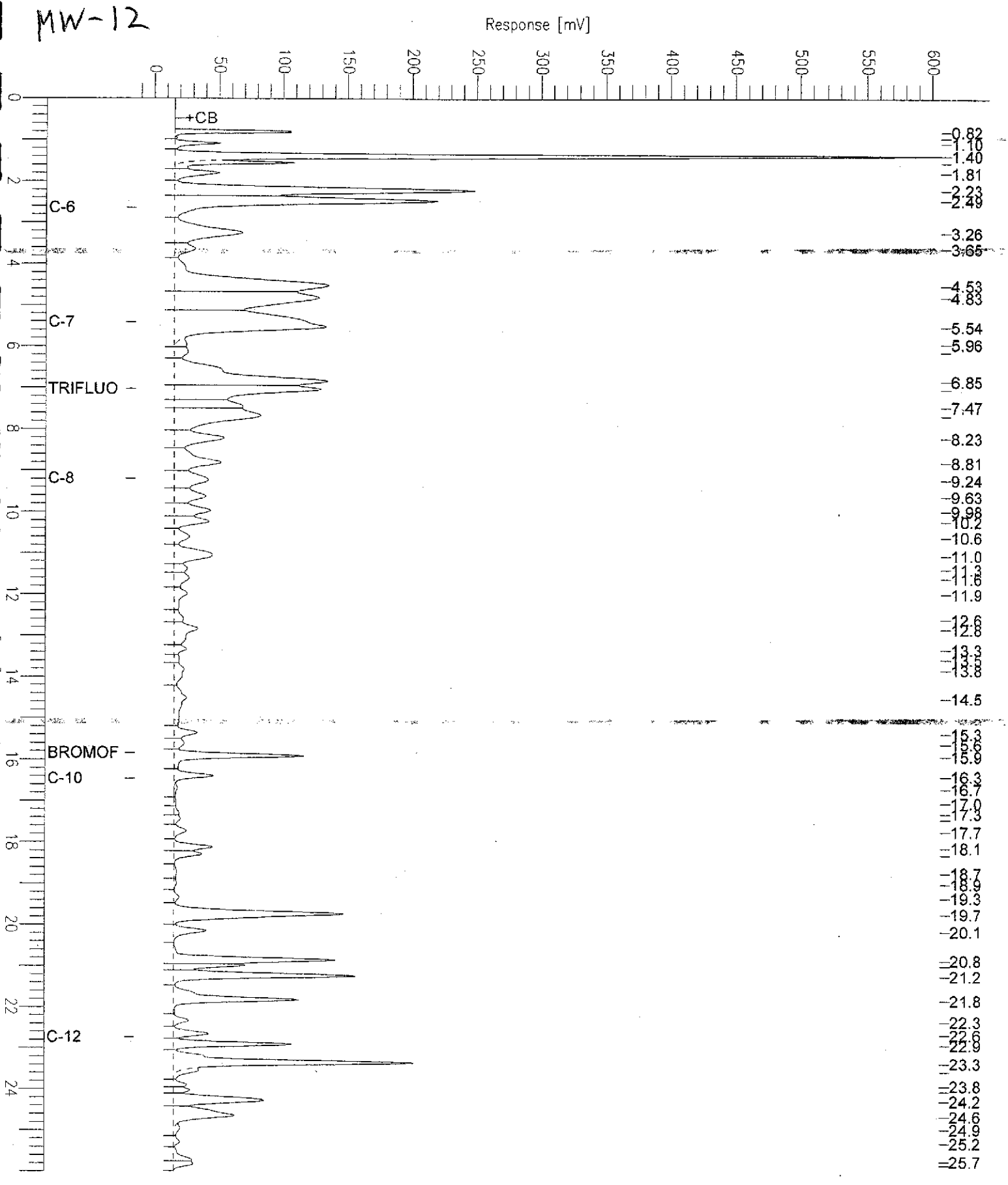


GC07 TVH 'A' Data File RTX 502

Sample Name : 161571-010,76588
FileName : g:\gc07\data\309a044.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -14 mV

Sample #: a1 Page 1 of 1
Date : 11/6/02 01:08 PM
Time of Injection: 11/6/02 11:45 AM
Low Point : -14.15 mV High Point : 606.99 mV
Plot Scale: 621.1 mV

MW-12

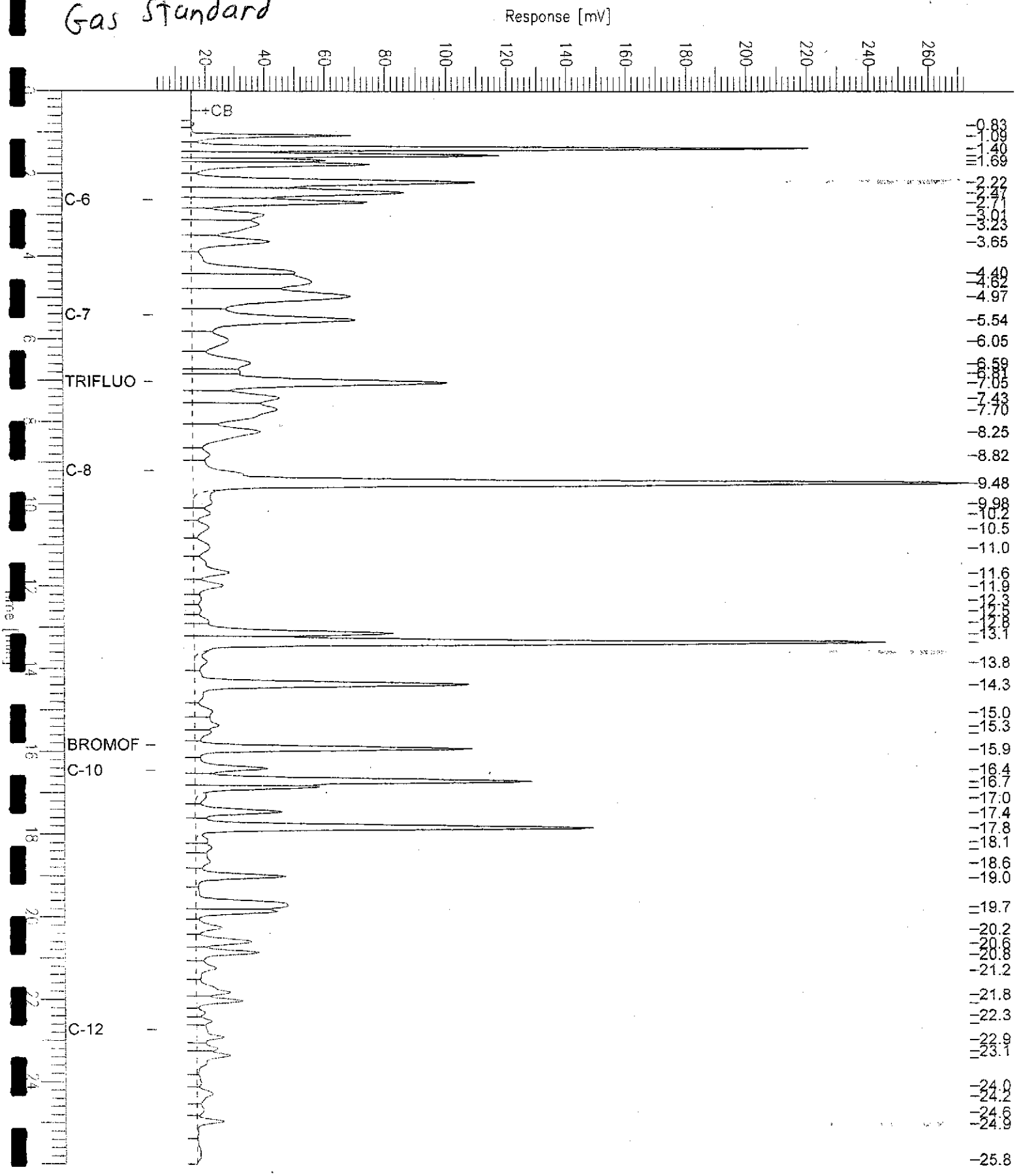


GC07 TVH 'A' Data File RTX 502

Sample Name : ccv/lcs,qc194843,76588,02ws1751,5/5000
FileName : g:\gc07\data\309a015.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 2 mV

Sample #: Page 1 of 1
Date : 11/6/02 01:04 PM
Time of Injection: 11/5/02 07:17 PM
Low Point : 2.31 mV High Point : 272.85 mV
Plot Scale: 270.5 mV

Gas Standard



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331		
Matrix:	Water	Sampled:	10/30/02
Units:	ug/L	Received:	10/30/02

Type:	BLANK	Batch#:	76640
Lab ID:	QC195069	Analyzed:	11/07/02
Dil'n Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	8015B(M)
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	96	68-145	8015B(M)
Bromofluorobenzene (FID)	93	66-143	8015B(M)
Trifluorotoluene (PID)	100	53-143	EPA 8021B
Bromofluorobenzene (PID)	98	52-142	EPA 8021B

Type:	BLANK	Batch#:	76671
Lab ID:	QC195200	Analyzed:	11/07/02
Dil'n Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	8015B(M)
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	99	68-145	8015B(M)
Bromofluorobenzene (FID)	100	66-143	8015B(M)
Trifluorotoluene (PID)	110	53-143	EPA 8021B
Bromofluorobenzene (PID)	111	52-142	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

1.1

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC194843	Batch#:	76588
Matrix:	Water	Analyzed:	11/05/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,005	100	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	68-145
Bromofluorobenzene (FID)	96	66-143

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC195072	Batch#:	76640
Matrix:	Water	Analyzed:	11/07/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,946	97	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	68-145
Bromofluorobenzene (FID)	94	66-143

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	76640
Units:	ug/L	Analyzed:	11/07/02
Diln Fac:	1.000		

Type: BS Lab ID: QC195070

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.00	100	59-135
Benzene	20.00	18.94	95	65-122
Toluene	20.00	19.65	98	67-121
Ethylbenzene	20.00	19.36	97	70-121
m,p-Xylenes	40.00	36.34	91	72-125
o-Xylene	20.00	20.31	102	73-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	53-143
Bromofluorobenzene (PID)	102	52-142

Type: BSD Lab ID: QC195071

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.82	99	59-135	1	20
Benzene	20.00	18.67	93	65-122	1	20
Toluene	20.00	19.39	97	67-121	1	20
Ethylbenzene	20.00	19.54	98	70-121	1	20
m,p-Xylenes	40.00	36.51	91	72-125	0	20
o-Xylene	20.00	20.44	102	73-122	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	103	53-143
Bromofluorobenzene (PID)	104	52-142

PD= Relative Percent Difference

11.0

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC195201	Batch#:	76671
Matrix:	Water	Analyzed:	11/07/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,079	104	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	68-145
Bromofluorobenzene (FID)	99	66-143

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC195202	Batch#:	76671
Matrix:	Water	Analyzed:	11/07/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.24	91	59-135
Benzene	20.00	19.90	99	65-122
Toluene	20.00	21.59	108	67-121
Ethylbenzene	20.00	21.60	108	70-121
m,p-Xylenes	40.00	39.53	99	72-125
o-Xylene	20.00	22.63	113	73-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	107	53-143
Bromofluorobenzene (PID)	109	52-142

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	76640
MSS Lab ID:	161562-002	Sampled:	10/30/02
Matrix:	Water	Received:	10/31/02
Units:	ug/L	Analyzed:	11/07/02
Diln Fac:	1.000		

Type: MS Lab ID: QC195073

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	26.21	2,000	1,933	95	67-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	126	68-145
Bromofluorobenzene (FID)	104	66-143

Type: MSD Lab ID: QC195074

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,954	96	67-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	68-145
Bromofluorobenzene (FID)	104	66-143

RPD= Relative Percent Difference

7.0

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Batch#:	76671
MSS Lab ID:	161562-003	Sampled:	10/30/02
Matrix:	Water	Received:	10/31/02
Units:	ug/L	Analyzed:	11/07/02
Diln Fac:	1.000		

Type: MS Lab ID: QC195204

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.2800	20.00	20.84	104	56-146
Benzene	<0.04100	20.00	20.28	101	52-149
Toluene	<0.03400	20.00	22.05	110	69-130
Ethylbenzene	<0.04800	20.00	22.16	111	70-131
m,p-Xylenes	<0.04800	40.00	39.42	99	68-137
o-Xylene	<0.02100	20.00	23.20	116	73-133

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	53-143
Bromofluorobenzene (PID)	116	52-142

Type: MSD Lab ID: QC195205

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	21.55	108	56-146	3	30
Benzene	20.00	20.12	101	52-149	1	30
Toluene	20.00	21.67	108	69-130	2	30
Ethylbenzene	20.00	21.73	109	70-131	2	30
m,p-Xylenes	40.00	39.04	98	68-137	1	30
o-Xylene	20.00	23.00	115	73-133	1	30

Surrogate	%REC	Limits
Trifluorotoluene (PID)	115	53-143
Bromofluorobenzene (PID)	118	52-142

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	76718
Lab ID:	161571-001	Sampled:	10/30/02
Matrix:	Water	Received:	10/30/02
Units:	ug/L	Analyzed:	11/11/02
Diln Fac:	333.3		

Analyte	Result	RL
MTBE	34,000	170

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	103	80-120

RL= Reporting Limit

17.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-3	Batch#:	76718
Lab ID:	161571-003	Sampled:	10/30/02
Matrix:	Water	Received:	10/30/02
Units:	ug/L	Analyzed:	11/11/02
Diln Fac:	200.0		

Analyte	Result	RL
MTBE	21,000	100

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	88	77-130
Toluene-d8	98	80-120
Bromofluorobenzene	101	80-120

RL = Reporting Limit

18.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-7	Batch#:	76718
Lab ID:	161571-007	Sampled:	10/30/02
Matrix:	Water	Received:	10/30/02
Units:	ug/L	Analyzed:	11/11/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	43	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	88	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	101	80-120

RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-8	Batch#:	76718
Lab ID:	161571-008	Sampled:	10/30/02
Matrix:	Water	Received:	10/30/02
Units:	ug/L	Analyzed:	11/11/02
Diln Fac:	10.00		

Analyte	Result	RL
MTBE	700	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	84	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	96	80-120

RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-10	Batch#:	76718
Lab ID:	161571-009	Sampled:	10/30/02
Matrix:	Water	Received:	10/30/02
Units:	ug/L	Analyzed:	11/12/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	70	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	85	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	99	80-120

RL = Reporting Limit

21.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-12	Batch#:	76718
Lab ID:	161571-010	Sampled:	10/30/02
Matrix:	Water	Received:	10/30/02
Units:	ug/L	Analyzed:	11/12/02
Diln Fac:	1.429		

Analyte	Result	RL
MTBE	84	0.7

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	84	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

= Reporting Limit

22.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC195376	Batch#:	76718
Matrix:	Water	Analyzed:	11/11/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	77-130
Toluene-d8	95	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected
RL= Reporting Limit
Page 1 of 1

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC195377	Batch#:	76718
Matrix:	Water	Analyzed:	11/11/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC195375	Batch#:	76718
Matrix:	Water	Analyzed:	11/11/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	40.72	81	54-131

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	96	80-120

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161571	Location:	3609 Int'l Blvd., Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	76718
MSS Lab ID:	161724-001	Sampled:	11/05/02
Matrix:	Water	Received:	11/06/02
Units:	ug/L	Analyzed:	11/11/02
Diln Fac:	1.000		

Type: MS Lab ID: QC195386

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.2200	50.00	45.29	91	55-132

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	91	77-130
Toluene-d8	95	80-120
Bromofluorobenzene	98	80-120

Type: MSD Lab ID: QC195387

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	46.10	92	55-132	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	86	77-130
Toluene-d8	95	80-120
Bromofluorobenzene	95	80-120

RPD= Relative Percent Difference

Appendix C

Laboratory Reports and Chain of Custody Forms for
Groundwater Extraction Treatment System

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

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

Prepared for:

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

Date: 23-OCT-02
Lab Job Number: 161303
Project ID: 2333
Location: Tony's Auto Express-Oak

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

Curtis & Tompkins, Ltd.

Laboratory Number:	**161303**
Client:	**SOMA Environmental Engineering Inc.**
Project #:	**2333**
Project name:	**Tony's Auto Express-Oak**
Receipt Date:	**10/16/02**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for three water samples received from the above referenced project on October 16th, 2002. The samples were received cold and intact.

Total Volatile Hydrocarbons (EPA 8015(M)):

A high recovery was observed for the surrogate trifluorotoluene for the influent sample due to coelution with the sample matrix.

No other analytical problems were encountered.

Purgeable Aromatics by GC/MS (EPA 8260B):

The sample PSP-1 was diluted due to high concentrations on non-target compounds.

No other analytical problems were encountered.

CHAIN OF CUSTODY FORM

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

C&T LOGIN # 161393

Sampler: Tony Perini / Ramin Bet-Yonan
Project No: 2333
Report To: Tony Perini
Project Name: Oakland Tony's
Company: SOMA
Project P.O.:
Telephone: (925) 244-6600
Turnaround Time: Standard
Fax: (925) 244-6601

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO	Preservative: HNO_3	Preservative: ICE	Field Notes	Analyses: TPH-g	Analyses: BTEX, MTBE EPA 8260B
-1	PSP-7	10/16/02 3:20 PM		X		3 cont.	X			X		X	X
	"	"				6 RB.							
-2	GAC-1	3:25 PM		X		3	X			X		X	X
-3	Influent	3:30 PM		X		3 *	X			X		X	X

For Laboratory Use

Preservation Correct? ☑ Yes ☐ No ☐ N/A

Received: ☐ On Ice ☑ Cold ☐ Ambient ☐ Intact

Notes:
* One VOA arrived cracked w/ a large air bubble ⇒ it was disposed of JGW 10-17-02

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
RAMIN BET-YONAN	10/16/02 4:20 p.m.	10-16-02	4:20 p.m.
	DATE/TIME		DATE/TIME
	DATE/TIME		DATE/TIME

Signature

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Matrix:	Water	Sampled:	10/16/02
Units:	ug/L	Received:	10/16/02

Field ID:	PSP-1	Diln Fac:	20.00
Type:	SAMPLE	Batch#:	76187
Lab ID:	161303-001	Analyzed:	10/19/02

Analyte	Result	RL
Gasoline C7-C12	2,000 Y Z	1,000

Surrogate	%REC	Limits
Trifluorotoluene (FID)	89	68-145
Bromofluorobenzene (FID)	96	66-143

Field ID:	GAC-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	76171
Lab ID:	161303-002	Analyzed:	10/19/02

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	87	68-145
Bromofluorobenzene (FID)	96	66-143

Field ID:	INFLUENT	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	76136
Lab ID:	161303-003	Analyzed:	10/18/02

Analyte	Result	RL
Gasoline C7-C12	3,200	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	156 *	68-145
Bromofluorobenzene (FID)	96	66-143

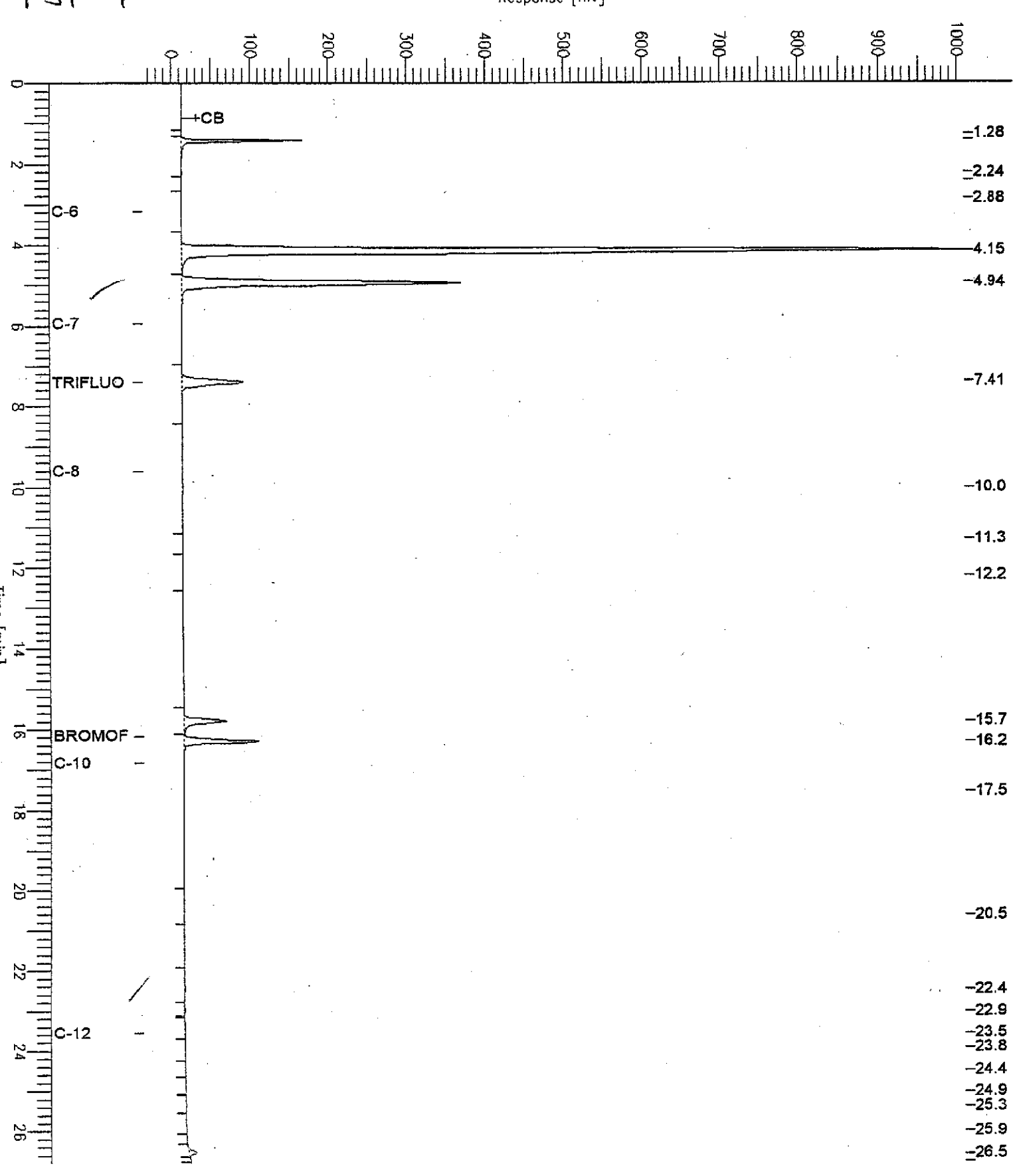
*= Value outside of QC limits; see narrative
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 161303-001,76187,TVH ONLY
FileName : G:\GC19\DATA\292X008.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: -37 mV

Sample #: C1
Date : 10/21/02 07:43 AM
Time of Injection: 10/19/02 05:19 PM
Low Point : -37.08 mV High Point : 1008.95 mV
Plot Scale: 1046.0 mV

PSP-1

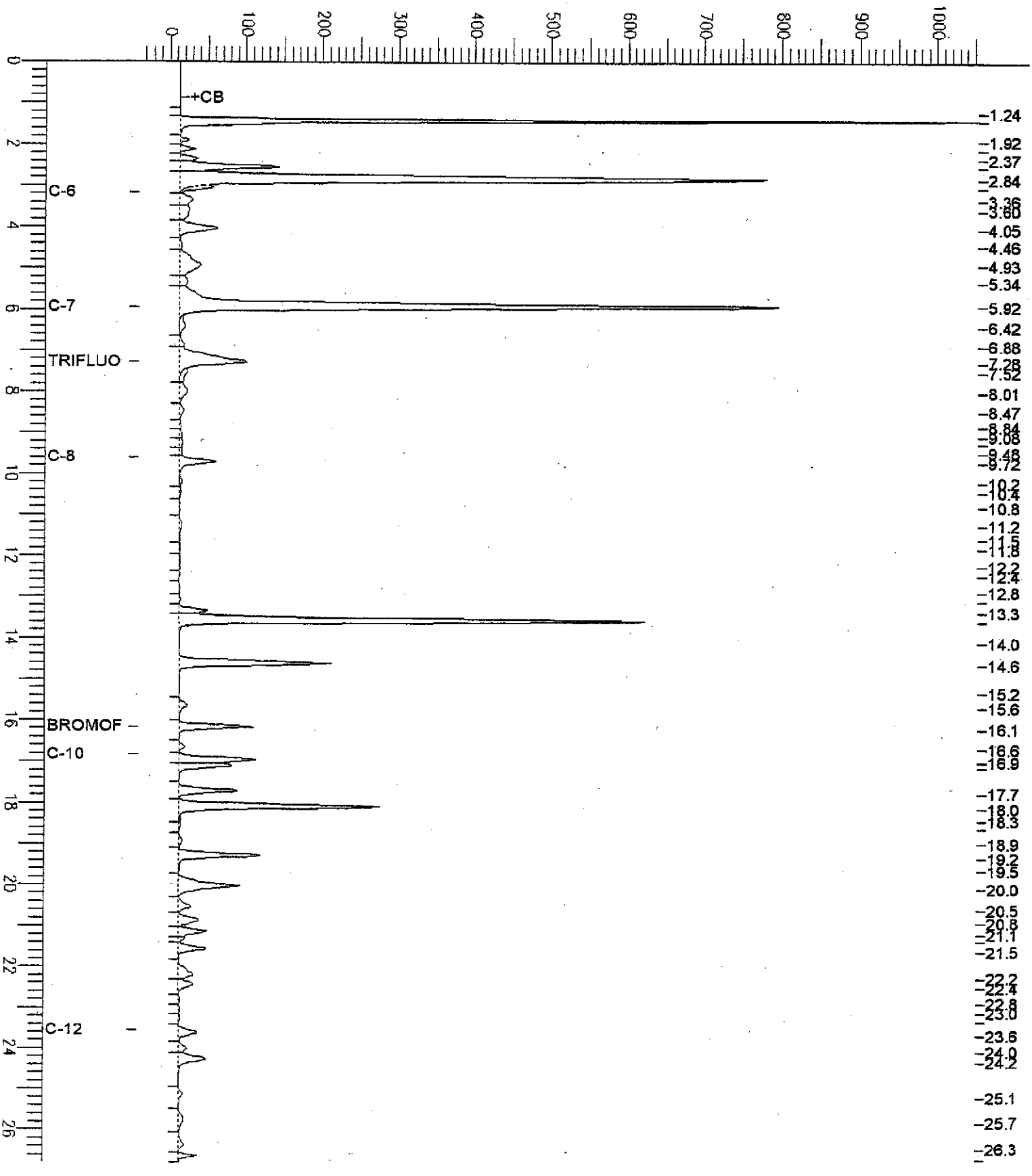


GC19 TVH 'X' Data File (FID)

Sample Name : 161303-003,76136,tvh only
FileName : G:\GC19\DATA\290X031.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: -39 mV

Sample #: c1 Page 1 of 1
Date : 10/18/02 08:41 AM
Time of Injection: 10/18/02 08:14 AM
Low Point : -39.37 mV High Point : 1053.94 mV
Plot Scale: 1093.3 mV

INFLUENT

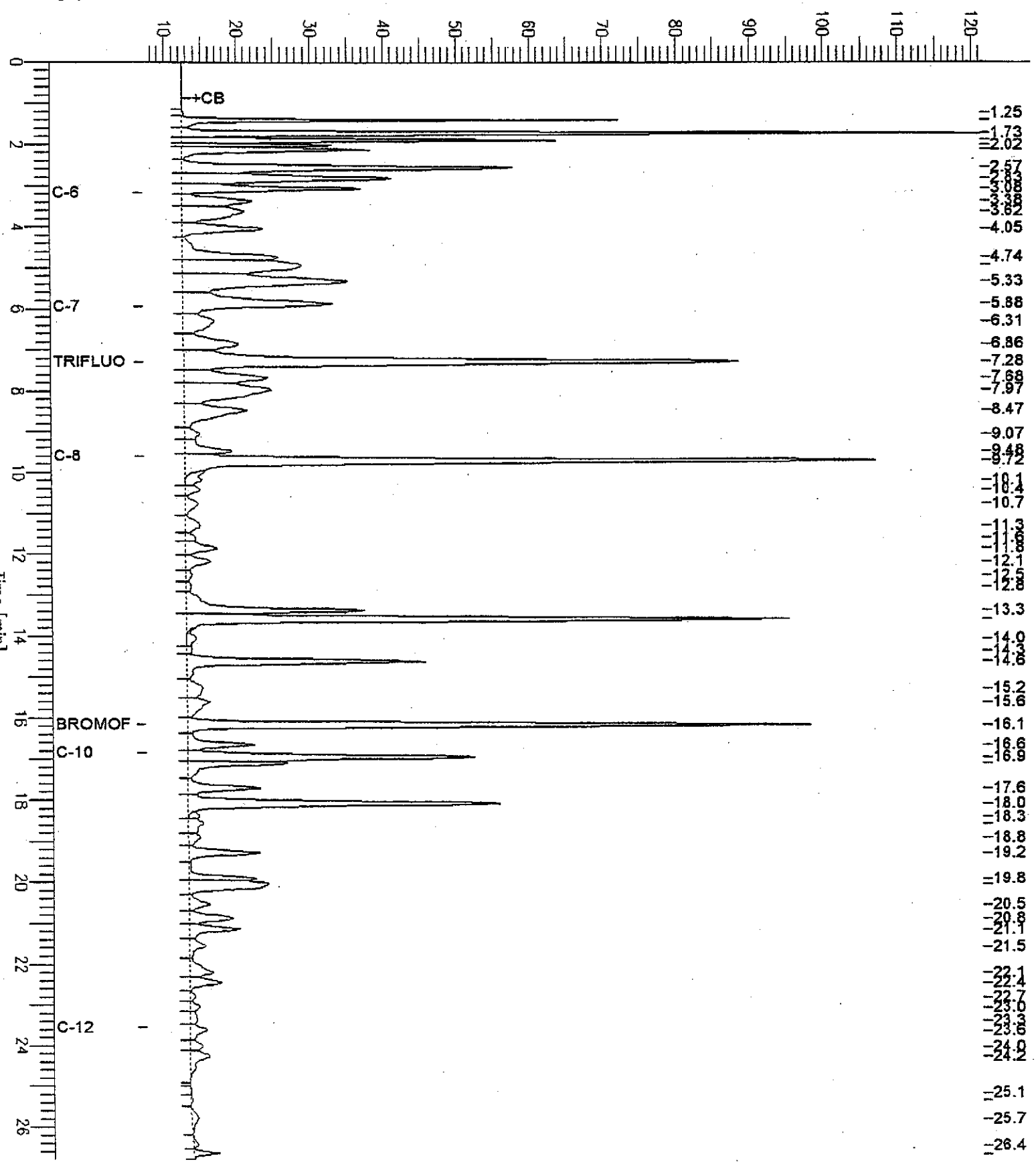


GC19 TVH 'X' Data File (FID)

Sample Name : CCV/LCS,QC193214,76136,02WS1664,2.5/5000
FileName : G:\GC19\DATA\290X002.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 7 mV

Sample #: Page 1 of 1
Date : 10/17/02 02:46 PM
Time of Injection: 10/17/02 02:19 PM
Low Point : 7.01 mV High Point : 121.32 mV
Plot Scale: 114.3 mV

Gasoline



Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Matrix:	Water	Sampled:	10/16/02
Units:	ug/L	Received:	10/16/02

Type:	BLANK	Batch#:	76136
Lab ID:	QC193213	Analyzed:	10/17/02
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	96	68-145
Bromofluorobenzene (FID)	96	66-143

Type:	BLANK	Batch#:	76171
Lab ID:	QC193316	Analyzed:	10/18/02
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	91	68-145
Bromofluorobenzene (FID)	93	66-143

Type:	BLANK	Batch#:	76187
Lab ID:	QC193389	Analyzed:	10/19/02
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	86	68-145
Bromofluorobenzene (FID)	88	66-143

*= Value outside of QC limits; see narrative
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

8.0

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC193214	Batch#:	76136
Matrix:	Water	Analyzed:	10/17/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,009	101	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	68-145
Bromofluorobenzene (FID)	85	66-143

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	BS	Diln Fac:	1.000
Lab ID:	QC193317	Batch#:	76171
Matrix:	Water	Analyzed:	10/18/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,001	100	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	68-145
Bromofluorobenzene (FID)	93	66-143

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	BSD	Diln Fac:	1.000
Lab ID:	QC193345	Batch#:	76171
Matrix:	Water	Analyzed:	10/18/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,901	95	79-120	5	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	93	68-145
Bromofluorobenzene (FID)	83	66-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	BS	Diln Fac:	1.000
Lab ID:	QC193390	Batch#:	76187
Matrix:	Water	Analyzed:	10/19/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,947	97	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	68-145
Bromofluorobenzene (FID)	90	66-143

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	BSD	Diln Fac:	1.000
Lab ID:	QC193415	Batch#:	76187
Matrix:	Water	Analyzed:	10/19/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,076	104	79-120	6	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	68-145
Bromofluorobenzene (FID)	91	66-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	76136
MSS Lab ID:	161122-001	Sampled:	10/05/02
Matrix:	Water	Received:	10/07/02
Units:	ug/L	Analyzed:	10/17/02
Diln Fac:	1.000		

Type: MS Lab ID: QC193223

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<20.00	2,000	1,864	93	67-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	68-145
Bromofluorobenzene (FID)	95	66-143

Type: MSD Lab ID: QC193224

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,835	92	67-120	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	68-145
Bromofluorobenzene (FID)	96	66-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	PSP-1	Batch#:	76126
Lab ID:	161303-001	Sampled:	10/16/02
Matrix:	Water	Received:	10/16/02
Units:	ug/L	Analyzed:	10/17/02
Diln Fac:	62.50		

Analyte	Result	RL
MTBE	ND	310
Benzene	ND	310
Toluene	ND	310
Ethylbenzene	ND	310
m,p-Xylenes	ND	310
o-Xylene	ND	310

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	77-130
Toluene-d8	98	80-120
Bromofluorobenzene	114	80-120

D= Not Detected
L= Reporting Limit

1.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	GAC-1	Batch#:	76126
Lab ID:	161303-002	Sampled:	10/16/02
Matrix:	Water	Received:	10/16/02
Units:	ug/L	Analyzed:	10/17/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	110	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	110	80-120

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	INFLUENT	Batch#:	76126
Lab ID:	161303-003	Sampled:	10/16/02
Matrix:	Water	Received:	10/16/02
Units:	ug/L	Analyzed:	10/17/02
Diln Fac:	33.33		

Analyte	Result	RL
MTBE	5,300	170
Benzene	720	170
Toluene	ND	170
Ethylbenzene	ND	170
m,p-Xylenes	570	170
o-Xylene	ND	170

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	108	80-120

ND= Not Detected
RL= Reporting Limit

3.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC193176	Batch#:	76126
Matrix:	Water	Analyzed:	10/17/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	107	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC193237	Batch#:	76126
Matrix:	Water	Analyzed:	10/17/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	109	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC193177	Batch#:	76126
Matrix:	Water	Analyzed:	10/17/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	47.19	94	76-120
Toluene	50.00	48.27	97	79-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	77-130
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-120

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	161303	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	76126
MSS Lab ID:	161277-007	Sampled:	10/14/02
Matrix:	Water	Received:	10/15/02
Units:	ug/L	Analyzed:	10/18/02
Diln Fac:	1.000		

Type: MS Lab ID: QC193178

Analyte	MSS Result	Spiked	Result	%REC	Limits
Benzene	<0.1500	50.00	47.22	94	79-120
Toluene	<0.1300	50.00	48.51	97	75-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	77-130
Toluene-d8	102	80-120
Bromofluorobenzene	100	80-120

Type: MSD Lab ID: QC193179

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	49.34	99	79-120	4	20
Toluene	50.00	48.85	98	75-120	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	77-130
Toluene-d8	95	80-120
Bromofluorobenzene	99	80-120

RPD= Relative Percent Difference

7.0

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

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

Prepared for:

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

Date: 30-SEP-02
Lab Job Number: 160842
Project ID: 2333
Location: Tony's Auto Express-Oak

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

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

CHAIN OF CUSTODY FORM

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

C&T LOGIN # 160842

Sampler: Ramin Bet-Yonan

Project No: 2333

Report To: TONY PERINI

Project Name: Oakland - TONYS

Company: SOMA

Project P.O.:

Telephone: 925-244-6600

Turnaround Time: STANDARD

Fax: 925-244-6601

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO	Preservative: HNO_3	Preservative: ICE	Field Notes	Analyses: TPH as Diesel 8015	Analyses: BTEX/MTBE EPA 8260B
-1	PSP-1	9/19/02 1144		✓		3	✓			✓	GRAB Samples	✓	✓
-2	GAC-1	9/19/02 1150		✓		3	✓			✓	↓	✓	✓
-3	INFLUENT	9/19/02 1155		✓		3	✓			✓	↓	✓	✓

For Laboratory Use

Received ☑ On Ice ☑ Cold ☐ Ambient ☐ Intact

Preservation Correct? ☑ Yes ☐ No ☐ N/A

Notes:

RELINQUISHED BY:	RECEIVED BY:
9/19/02 3:15pm DATE/TIME	9-19-02 3:15pm DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Matrix:	Water	Sampled:	09/19/02
Units:	ug/L	Received:	09/19/02
Batch#:	75432	Analyzed:	09/25/02

Field ID: PSP-1 Lab ID: 160842-001
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	68-145
Bromofluorobenzene (FID)	111	66-143

Field ID: GAC-1 Lab ID: 160842-002
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	68-145
Bromofluorobenzene (FID)	115	66-143

Field ID: INFLUENT Lab ID: 160842-003
Type: SAMPLE Diln Fac: 10.00

Analyte	Result	RL
Gasoline C7-C12	6,700	500

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	68-145
Bromofluorobenzene (FID)	111	66-143

Type: BLANK Diln Fac: 1.000
Lab ID: QC190544

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	92	68-145
Bromofluorobenzene (FID)	102	66-143

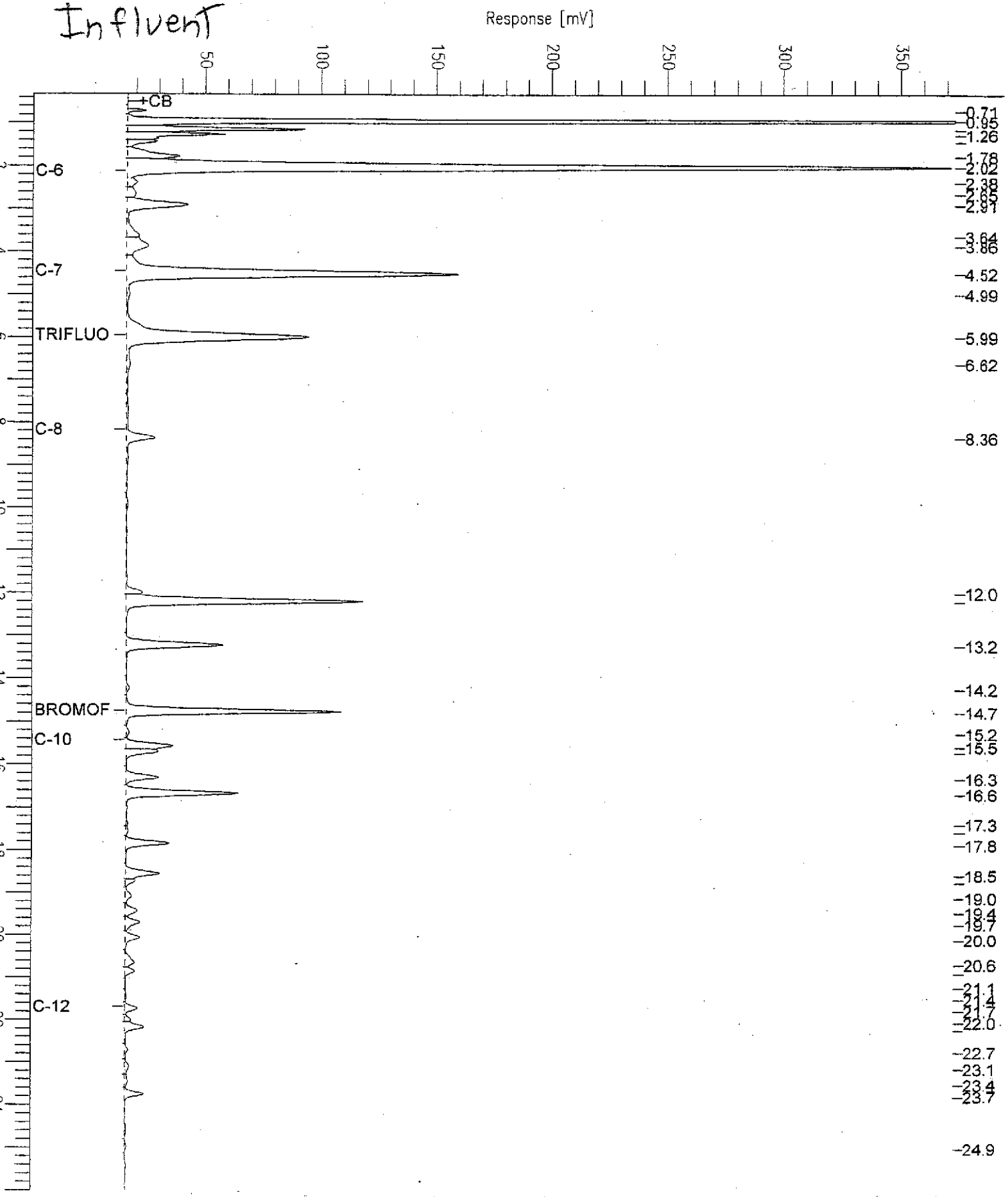
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 160842-003,75432
FileName : G:\GC07\DATA\267A043.RAW
Method :
Start Time : 0.32 min End Time : 26.00 min
Scale Factor: 0.0 Plot Offset: 15 mV

Sample #: c1 Page 1 of 1
Date : 9/25/02 03:03 PM
Time of Injection: 9/25/02 09:47 AM
Low Point : 15.43 mV High Point : 373.20 mV
Plot Scale: 357.8 mV

Influent

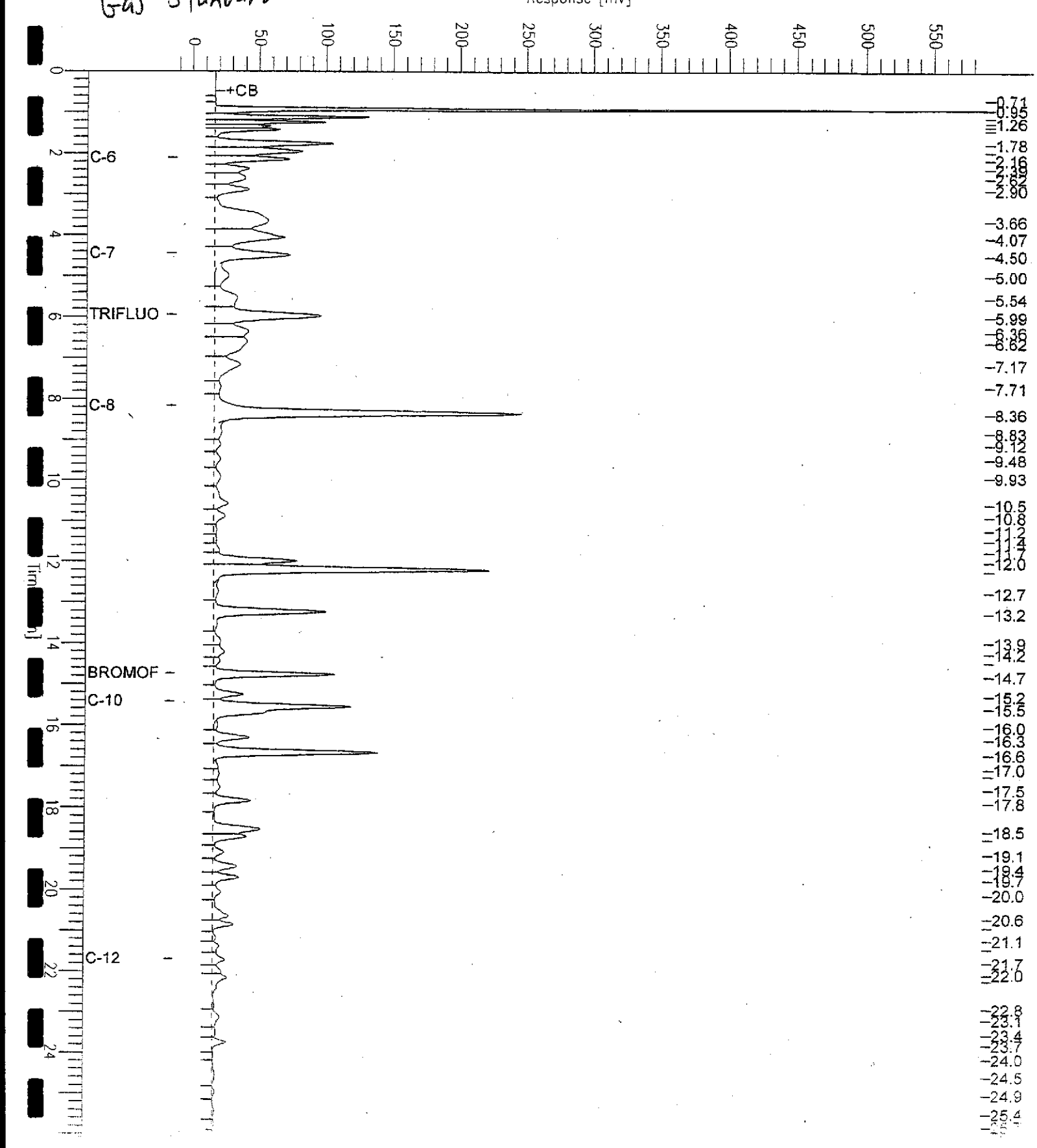


GC07 TVH 'A' Data File RTX 502

mple Name : lcs,qc190545,75432,02ws1468,5/5000
leName : G:\GC07\DATA\267A033.raw
thod : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -12 mV

Sample #: Page 1 of 1
Date : 9/25/02 04:32 AM
Time of Injection: 9/25/02 04:06 AM
Low Point : -11.95 mV High Point : 588.08 mV
Plot Scale: 600.0 mV

Gas Standard



Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC190545	Batch#:	75432
Matrix:	Water	Analyzed:	09/25/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,047	102	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	68-145
Bromofluorobenzene (FID)	110	66-143

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	75432
MSS Lab ID:	160827-010	Sampled:	09/18/02
Matrix:	Water	Received:	09/19/02
Units:	ug/L	Analyzed:	09/25/02
Diln Fac:	1.000		

Type: MS Lab ID: QC190547

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<17.00	2,000	2,015	101	67-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	68-145
Bromofluorobenzene (FID)	115	66-143

Type: MSD Lab ID: QC190548

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,063	103	67-120	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	68-145
Bromofluorobenzene (FID)	117	66-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	PSP-1	Batch#:	75559
Lab ID:	160842-001	Sampled:	09/19/02
Matrix:	Water	Received:	09/19/02
Units:	ug/L	Analyzed:	09/26/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	77-130
Toluene-d8	102	80-120
Bromofluorobenzene	97	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	GAC-1	Batch#:	75559
Lab ID:	160842-002	Sampled:	09/19/02
Matrix:	Water	Received:	09/19/02
Units:	ug/L	Analyzed:	09/26/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	99	77-130
Toluene-d8	100	80-120
Bromofluorobenzene	95	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	INFLUENT	Batch#:	75559
Lab ID:	160842-003	Sampled:	09/19/02
Matrix:	Water	Received:	09/19/02
Units:	ug/L	Analyzed:	09/26/02
Diln Fac:	50.00		

Analyte	Result	RL
MTBE	5,000	250
Benzene	930	250
Toluene	ND	250
Ethylbenzene	ND	250
m,p-Xylenes	560	250
o-Xylene	ND	250

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	97	77-130
Toluene-d8	100	80-120
Bromofluorobenzene	93	80-120

D= Not Detected
L= Reporting Limit

7.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC191039	Batch#:	75559
Matrix:	Water	Analyzed:	09/26/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	77-130
Toluene-d8	102	80-120
Bromofluorobenzene	96	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	160842	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	75559
Units:	ug/L	Analyzed:	09/26/02
Diln Fac:	1.000		

Type: BS Lab ID: QC191021

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	52.15	104	76-120
Toluene	50.00	50.79	102	79-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	77-130
Toluene-d8	100	80-120
Bromofluorobenzene	94	80-120

Type: BSD Lab ID: QC191022

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	51.02	102	76-120	2	20
Toluene	50.00	49.88	100	79-120	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	77-130
Toluene-d8	102	80-120
Bromofluorobenzene	93	80-120

RPD= Relative Percent Difference

Appendix D

Laboratory Report and Chain of Custody Form for

Soil Vapor Extraction Treatment System

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

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

Prepared for:

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

Date: 22-NOV-02
Lab Job Number: 161749
Project ID: 2334
Location: Oakland-Tony's

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

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

CHAIN OF CUSTODY FORM

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

C&T LOGIN # 161749

Sampler: Tony Perini

Project No: 2334 **Report To:** Tony Perini/Mansour Sepehr

Project Name: Oakland-Tony's **Company:** SOMA

Project P.O.: **Telephone:** 925-244-6600

Turnaround Time: **Fax:** 925-244-6601

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE	Preservative: None	Field Notes	Analyses: TPH-g	Analyses: BTEX
	INFLUENT	11/7/02 2:45pm				1- Tedlar bag					✓	AIR SAMPLE FROM SVE	✓	✓
	EFFLUENT	11/7/02 2:40pm				1- Tedlar bag					✓	AIR SAMPLE FROM SVE	✓	✓
For Laboratory Use												Received ☐ On Ice ☒ Cold ☐ Ambient ☒ Intact		
												Preservation Correct? ☐ Yes ☐ No ☒ N/A		

Notes:
PLEASE PROVIDE EDF FILES OF RESULTS

RELINQUISHED BY:	RECEIVED BY:
Tony Perini 11/7/02	11-7-02 3:22pm
Tony Perini 3:22 PM DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature

AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Air Toxics Ltd. Introduces the Electronic Report

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 8:00 A.M to 6:00 P.M. Pacific
E-mail to:samplereceiving@airtoxics.com

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0211188

Work Order Summary

CLIENT:	Mr. James Brownfield Curtis & Thompkins, Ltd. 2323 Fifth Street Berkeley, CA 94710	**BILL TO:**	Mr. James Brownfield Curtis & Thompkins, Ltd. 2323 Fifth Street Berkeley, CA 94710
PHONE:		**P.O. #**	
FAX:		**PROJECT #**	161749
DATE RECEIVED:	11/8/2002	**CONTACT:**	Karen Burden
DATE COMPLETED:	11/12/2002		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	INFLUENT	Modified TO-3	Tedlar Bag
02A	EFFLUENT	Modified TO-3	Tedlar Bag
03A	Lab Blank	Modified TO-3	NA
04A	LCS	Modified TO-3	NA

CERTIFIED BY: Linda J. Truman DATE: 11/15/02

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, NY NELAP - 11291, UT NELAP - 9166389892,
LA NELAP/LELAP- AI 30763, AR DEQ
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/02, Expiration date: 06/30/03
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-3
Curtis & Thompkins, Ltd.
Workorder# 0211188

Two 1 Liter Tedlar Bag samples were received on November 08, 2002. The laboratory performed analysis via modified EPA Method TO-3 for Benzene, Toluene, Ethylbenzene, Xylenes and Total Petroleum Hydrocarbons (TPH). BTEX was analyzed via GC/PID and TPH via GC/FID. The TPH results are calculated using the response of Gasoline. A molecular weight of 100 is used to convert the TPH ppmv result to ug/L. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. See the data sheets for the reporting limits for each compound.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

System peaks were subtracted from the TPH results of sample EFFLUENT prior to reporting.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: INFLUENT

ID#: 0211188-01A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d110908	Date of Collection:	11/7/02
Dil. Factor:	13.8	Date of Analysis:	11/9/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.013	0.043	0.95	3.1
Toluene	0.013	0.051	0.24	0.92
Ethyl Benzene	0.013	0.059	0.060	0.26
Total Xylenes	0.013	0.059	0.41	1.8
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.33	1.4	45	190
C2-C4 Hydrocarbons ref. to Gasoline	0.33	1.4	1.8	7.3

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	119	75-125
Fluorobenzene (PID)	110	75-125

AIR TOXICS LTD.

SAMPLE NAME: EFFLUENT

ID#: 0211188-02A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d110909	Date of Collection:	11/7/02
Dil. Factor:	1.00	Date of Analysis:	11/9/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	0.0034	0.013
Ethyl Benzene	0.0010	0.0044	Not Detected	Not Detected
Total Xylenes	0.0010	0.0044	0.0024	0.011
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.025	0.10	0.34	1.4
C2-C4 Hydrocarbons ref. to Gasoline	0.025	0.10	0.088	0.37

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	104	75-125
Fluorobenzene (PID)	99	75-125

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0211188-03A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d110905	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis:	11/9/02

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0044	Not Detected	Not Detected
Total Xylenes	0.0010	0.0044	Not Detected	Not Detected
TPH (C5+ Hydrocarbons) ref. to Gasoline	0.025	0.10	Not Detected	Not Detected
C2-C4 Hydrocarbons ref. to Gasoline	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	102	75-125
Fluorobenzene (PID)	97	75-125

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0211188-04A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d110914b	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 11/9/02	

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	%Recovery
Benzene	0.0010	0.0032	90
Toluene	0.0010	0.0038	91
Ethyl Benzene	0.0010	0.0044	90
Total Xylenes	0.0010	0.0044	89

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	98	75-125

0211188

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

Project Number: 161749

Subcontract Laboratory:
Air Toxics
180 Blue Ravine Road
Suite B
Folsom, CA 95630
(800) 985-5955
ATTN: Debbie Pierce

*)1/13 11/7

Results due: ~~11/14/02~~ 1 week TAT Report Level: II

Please send report to: James Brownfield
*** Please report using Sample ID rather than C&T Lab #.

Sample ID	Sampled	Matrix	Analysis	C&T Lab #	Comments
INFLUENT	11/07	Air	BTXE	161749-001	
INFLUENT	11/07	Air	TVH	161749-001	
EFFLUENT	11/07	Air	BTXE	161749-002	
EFFLUENT	11/07	Air	TVH	161749-002	

Test for Gasoline & BTXE

CUSTODY SEAL INTACT? Y N NONE TEMP

Notes:	Relinquished By:	Received By:
	Date/Time: 11-07-02 2:30 PM	Date/Time: 11/8/02 900

Signature on this form constitutes a firm Purchase Order for the services requested above.
Page 1 of 1