PRELIMINARY SITE ASSESSMENT REPORT

BENNER AUTOMOTIVE
488-25TH STREET
OAKLAND, CALIFORNIA

Prepared for

BENNER AUTOMOTIVE
OAKLAND, CALIFORNIA

July 2003

★ Stellar Environmental Solutions

Geoscience & Engineering Consulting

STELLAR ENVIRONMENTAL SOLUTIONS
2198 SIXTH STREET, SUITE 201, BERKELEY, CA 94710
TEL: 510.644.3123 FAX: 510.644.3859

TRANSMITTAL MEMORANDUM

TO: ALAMEDA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
ENVIRONMENTAL PROTECTION
LOCAL OVERSIGHT PROGRAM
1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502-6577

DATE: JULY 23, 2003

ATTENTION: MR. DON HWANG

FILE: 2002-55

SUBJECT: 488-25TH STREET, OAKLAND, CA
ACEH CASE NO. RO0002518

WE ARE SENDING:
- [X] HEREWITH
- [ ] UNDER SEPARATE COVER
- [X] VIA MAIL
- [ ] VIA

THE FOLLOWING: "PRELIMINARY SITE ASSESSMENT REPORT" (DATED 7/21/03)

- [ ] AS REQUESTED
- [ ] FOR YOUR APPROVAL
- [ ] FOR REVIEW
- [X] FOR YOUR USE
- [ ] FOR SIGNATURE
- [ ] FOR YOUR FILES

COPIES TO: MR. MIKE BENNER
BENNER AUTOMOTIVE
(WITH INVOICE #3)

BY: Bruce Rucker BMR

★ **Stellar Environmental Solutions**

2198 Sixth Street, Suite 201, Berkeley, CA 94710
Tel: (510) 644-3123 • Fax: (510) 644-3859
Geoscience & Engineering Consulting

July 21, 2003

Mr. Mike Benner
Benner Automotive
488-25th Street
Oakland, California 94612-2409

Subject: Preliminary Site Assessment Report
Benner Automotive
488-25th Street, Oakland, California

Dear Mr. Benner:

This report documents the July 2003 Preliminary Site Assessment conducted by Stellar Environmental Solutions, Inc. (SES) at 488-25th Street, Oakland, California. The work was conducted in accordance with the lead regulatory agency-approved technical workplan, and included advancing, geologically logging and sampling (soil and groundwater) 5 exploratory boreholes in the immediate vicinity of a former gasoline UFST at the site. The data indicates that shallow groundwater contamination has been impacted by gasoline above regulatory agency screening level criteria, and that additional investigation (likely installation and sampling of groundwater monitoring wells) will likely be required by Alameda County Environmental Health Department (lead regulatory agency) before they will consider regulatory closure. As you requested, this report has been forwarded to Alameda County for their evaluation.

Please contact us at (510) 644-3123 if you have any questions.

Sincerely,

Bruce M. Rucker

Bruce Rucker, R.G., R.E.A.
Project Manager and Senior Geologist

Richard S. Makdisi, R.G., R.E.A.
Principal

cc: Mr. Don Hwang – Alameda County Environmental Health Department

PRELIMINARY SITE ASSESSMENT REPORT

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OAKLAND, CALIFORNIA

Prepared for:

BENNER AUTOMOTIVE
488 25TH STREET
OAKLAND, CALIFORNIA 94612

Prepared by:

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2198 SIXTH STREET
BERKELEY, CALIFORNIA 94710

July 21, 2003

Project No. 2002-55

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1.0 INTRODUCTION

PROJECT BACKGROUND

Stellar Environmental Solutions, Inc. (SES) was retained by Mr. Mike Benner of Benner Automotive (as property owner) to conduct a Preliminary Site Assessment (exploratory borehole drilling and sampling investigation) at 488-25th Street in Oakland, California. This work follows site underground fuel storage tank (UFST) removal activities conducted by SES (SES, 2002). Gasoline-range hydrocarbons were detected in soil samples beneath the removed UFST.

The UFST removal permitting agency (City of Oakland Fire Department) acknowledged full completion of UFST removal activities under its oversight (Oakland Fire Department, 2003). The case was then transferred to the Alameda County Health Care Services Agency, Environmental Health Services, Environmental Protection, Local Oversight Program (ACEH), and assigned as Fuel Leak Case No. RO0002518. Based on the SES report, the ACEH requested that a technical workplan be submitted to address residual soil contamination and potential groundwater contamination (ACEH, 2003a). On behalf of the property owner, SES submitted the requested technical workplan (Stellar Environmental Solutions, Inc., 2003b). The ACEH responded to the workplan with a request for workplan scope revisions (ACEH, 2003b). SES then responded with a workplan revision letter (SES, 2003c). The implemented scope of work was in accordance with the SES workplan and subsequent revisions.

SITE AND VICINITY DESCRIPTION

The project site is an active automobile service facility (Benner Automotive) at 488-25th Street, Oakland, Alameda County, California (site). The site is located in downtown Oakland on the north side of 25th Street approximately 500 feet east of Telegraph Avenue. Figure 1 is a site location map.

UFST DESCRIPTION AND USAGE HISTORY

Until its removal in January 2003, the site contained a gasoline UFST associated with a former limousine/hearse rental operation. According to a site plan provided by the property owner, the UFST was installed on or before 1937, and had not been utilized since approximately the mid 1960s when the building use changed to its current use. At that time, the dispenser (formerly located just inside the roll-up door within 8 feet of the UFST) was removed. In 2001, the cover for the fill port

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SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP

488 25th Street
Oakland, CA

By: MJC | JANUARY 2003

Figure 1

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2002-55-01

box in the sidewalk was disconnected and paved over with concrete. A metal tag on the underground portion of the UFST fill pipe was labeled "Chevron Supreme Gasoline."

The 1,000-gallon capacity UFST was cylindrical, single-walled steel with tar paper wrapping, and was installed in a sand-backfilled excavation measuring approximately 14 feet long by 5 feet wide by 9 feet deep. The top of the UFST was approximately 3 feet below the concrete sidewalk and approximately 2 feet above the top of native soil. The top of the UFST at its western end had three ports/pipes (all single-walled steel): a fill riser; a turbine connection; and a vent pipe. The vent pipe rose approximately 12 feet above ground surface on the building exterior immediately adjacent to the former UFST.

The UFST was not tied down to any concrete anchor slab (deadman), as is sometimes done when shallow groundwater is considered to present a buoyancy problem. The UFST was configured with the long axis of the UFST oriented east-west. Figure 2 (in Section 3.0) shows the layout of the UFST.

UFST REMOVAL FINDINGS

Gasoline-range hydrocarbons (2,500 mg/kg) were detected in one of the two base-of-excavation confirmation soil samples. Neither BTEX (benzene, toluene, ethylbenzene, and xylene) nor MTBE (methyl *tertiary*-butyl ether) were detected in that sample, although method reporting limits were elevated due to required dilution. No contamination was detected at the other end of the UFST excavation. Lead was detected at background concentrations, and was deemed to not be a site contaminant of concern. A total of 40 tons of backfill material—with visual and odiferous evidence of petroleum contamination—was offhauled for Class II landfill disposal. The excavation was then backfilled with clean imported fill and compacted to 95 percent relative compaction.

The base of the original UFST excavation, as evidenced by the interface between backfill material and native soils, was approximately 7 feet bgs, and was underlain by approximately 2 feet of sandy backfill material. Except for potholing with the backhoe bucket to obtain samples of native soil, no additional soil excavation was conducted (beyond that required to expose and remove the UFST). Native soils consisted of low permeability clay and silt. Groundwater was not encountered in the excavation.

OBJECTIVES AND SCOPE OF WORK

This investigation was conducted to evaluate the potential for soil and groundwater contamination associated with the former UFST. To accomplish this objective, SES advanced and sampled (soil and groundwater) exploratory boreholes in areas likely to intercept any residual contamination.

2.0 JULY 2003 SITE INVESTIGATION

This section summarizes exploratory borehole drilling and sampling investigation activities conducted by SES at the subject property in July 2003. Figure 2 (in Section 3.0) shows the area of the former UFST as well as recent investigation borehole locations. Appendix A contains the Alameda County Public Works Agency drilling permit. Appendix B contains photodocumentation of the investigation field activities. Appendix D contains the certified analytical laboratory report and chain-of-custody record. All current investigation soil and groundwater samples were analyzed by Curtis & Tompkins, Ltd. (Berkeley, California) which maintains current ELAP certifications for all the analytical methods utilized in this investigation.

DRILLING LOCATION RATIONALE AND SAMPLING METHODS

Exploratory borehole drilling and sampling was conducted on July 7, 2003. Drilling was conducted by EnProb (C-57 License No. 777007) under direct supervision of a SES California Registered Geologist. Prior to drilling, Underground Service Alert (USA) was contacted with regard to potential underground utilities.

The primary objective of the Preliminary Site Assessment was to collect sufficient lithologic and soil/groundwater analytical data to demonstrate the magnitude and general limits of contamination in the immediate vicinity of the UFST. Multiple boreholes were advanced and sampled on all accessible sides of the former UFST. This approach maximized the likelihood of encountering UFST-sourced groundwater contamination in light of the uncertain groundwater flow direction, and could also provide information on any offsite-sourced petroleum contamination migrating onto the subject property. The following five exploratory boreholes were drilled and sampled: one directly through the center of the former UFST; one within 5 feet of each of the east, west, and south sides of the former UFST excavation; and one approximately 5 feet to the northeast of the excavation (drilling directly north of the excavation was precluded by interior building constraints). All boreholes were within 10 feet of the former UFST excavation, as recommended in the Regional Water Quality Control Board's (RWQCB) Leaking Underground Fuel Tank (LUFT) Manual.

Following coring of overlying concrete (except for one borehole through asphalt in the street), the boreholes were drilled with a truck-mounted Geoprobe™ rig. Boreholes were drilled with 2.5-inch-diameter steel drive casing lined with acetate sampling sleeves. Continuous soil cores were collected

for geologic logging using the visual method of the Unified Soils Classification System (USCS). Borehole geologic logs are included in Appendix C. Soil samples were collected for laboratory analysis from the unsaturated zone at a minimum of every 5 feet (when no contamination was obvious during drilling), and collected at key depth intervals (at lithologic changes, just above first occurrence of groundwater, and/or at depths of obvious soil contamination). In each borehole, we collected one soil sample in the inferred aquitard unit beneath the upper water-bearing zone, to evaluate the vertical extent of contamination.

Soil samples were field-screened with a calibrated, portable photoionization detector (PID) for evidence of contamination, to assist in the selection of soil samples for laboratory analysis and to provide additional (qualitative) data on contaminant extent. The PID readings are shown on the borehole geologic logs in Appendix C. Soil samples selected for laboratory analysis were sealed within an approximately 6-inch length of the acetate sampling sleeve, capped with non-reactive plastic caps, labeled, chilled, and transported to the analytical laboratory under chain-of-custody documentation. Upon reaching groundwater, one "grab" groundwater sample was collected from each borehole by installing a 1-inch-diameter PVC temporary well casing, inserting new Tygon tubing through the casing into groundwater, and withdrawing water directly into the sampling containers with a vacuum pump. Following completion of drilling and sampling activities, the boreholes were tremie-grouted to surface with a slurry of neat Portland cement and potable water, followed by concrete or asphalt patch to match existing.

3.0 ANALYTICAL RESULTS AND FINDINGS

LITHOLOGY AND HYDROGEOLOGY

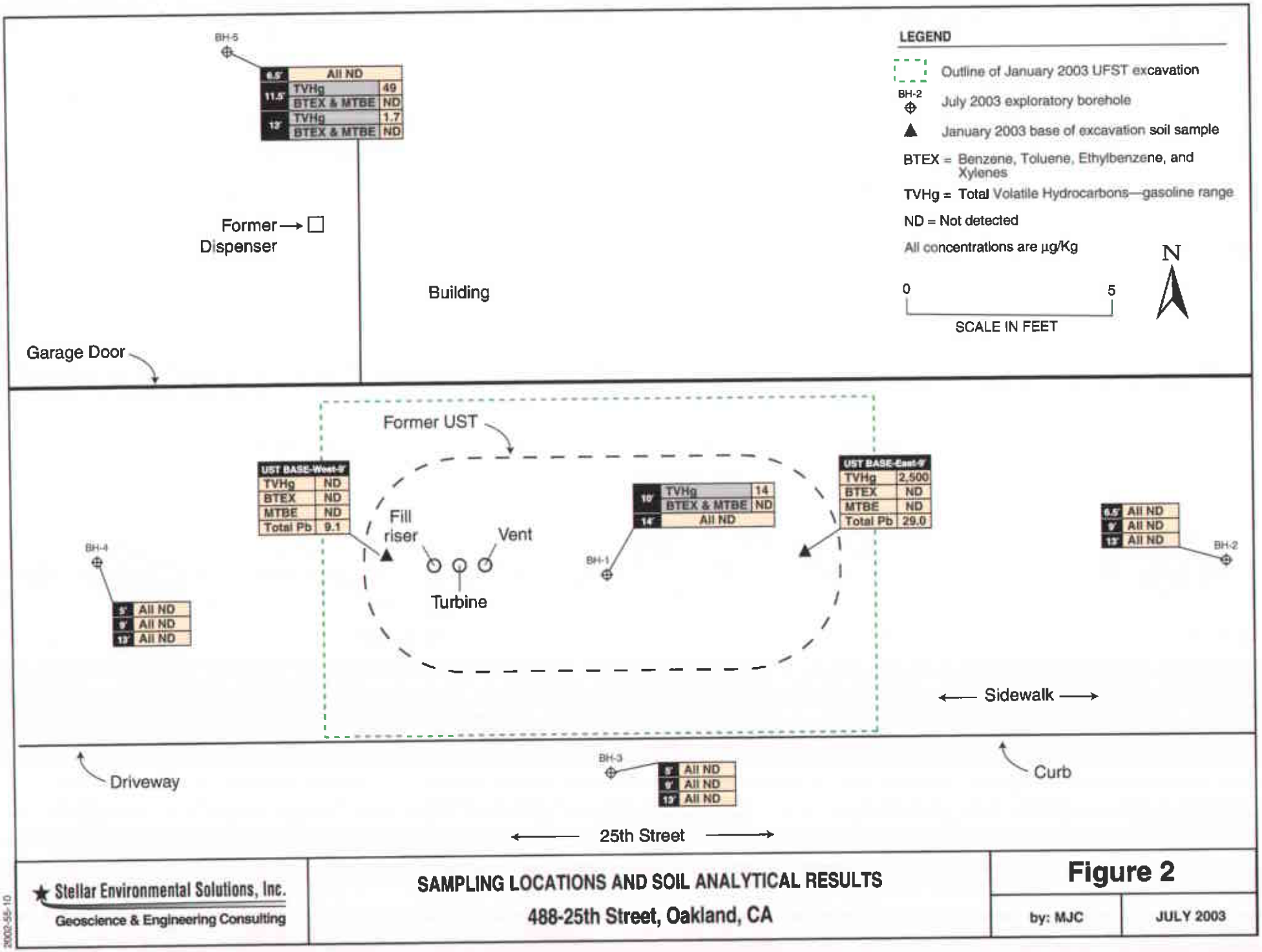
All boreholes in the current investigation were geologically logged onsite by a California Registered Geologist using the visual method of the Unified Soils Classification System. The deepest borehole was BH-01, advanced to 25 feet below grade. The upper 9 feet of BH-01 was through the former UFST excavation material (gravelly, clayey silt). Native soil (encountered beginning at 9 feet bgs) was stiff, cohesive clay. Friable and wet clayey sand was encountered between approximately 18.5 and 23 feet bgs. This was underlain by a wet and friable clayey gravel, from 23.5 to 25 feet bgs (borehole total depth). The lithology of the other four boreholes (advanced to 16 and 19 feet bgs) showed no significant differences (total borehole consisted of clay, with varying amounts of silt and gravel).

Very moist to wet soil samples were encountered in site boreholes at depths of approximately 9.5 to 12 feet bgs, and this appears to be the upper water-bearing zone beneath the site. Equilibrated groundwater levels in boreholes were approximately 10 feet bgs. In all boreholes, the water-bearing zone was underlain by at least 4 feet of low permeability clay with no evidence of groundwater (i.e., an aquitard between the upper water-bearing zone and the lower water-bearing zone was encountered at depths of approximately 18.5 to 25 feet).

The direction of local groundwater flow had not yet been determined in the previous investigation (groundwater monitoring wells had not been installed). Information from an adjacent site (across 25th Street) with one 14-foot-deep monitoring well showed groundwater occurring at a depth of 9 feet (in 1994). In January 2003, with the property owner's permission, SES measured the water level in that well at 9 feet bgs. Groundwater flow is likely to the west (toward San Francisco Bay), to the southeast (toward Lake Merritt, located approximately 2,000 feet to the southeast), or somewhere in between.

ANALYTICAL RESULTS AND EXTENT AND MAGNITUDE OF RESIDUAL CONTAMINATION

Figures 2 and 3 show site soil and groundwater analytical results, respectively. All soil and groundwater samples were analyzed for the potential site contaminants of concern: Total volatile



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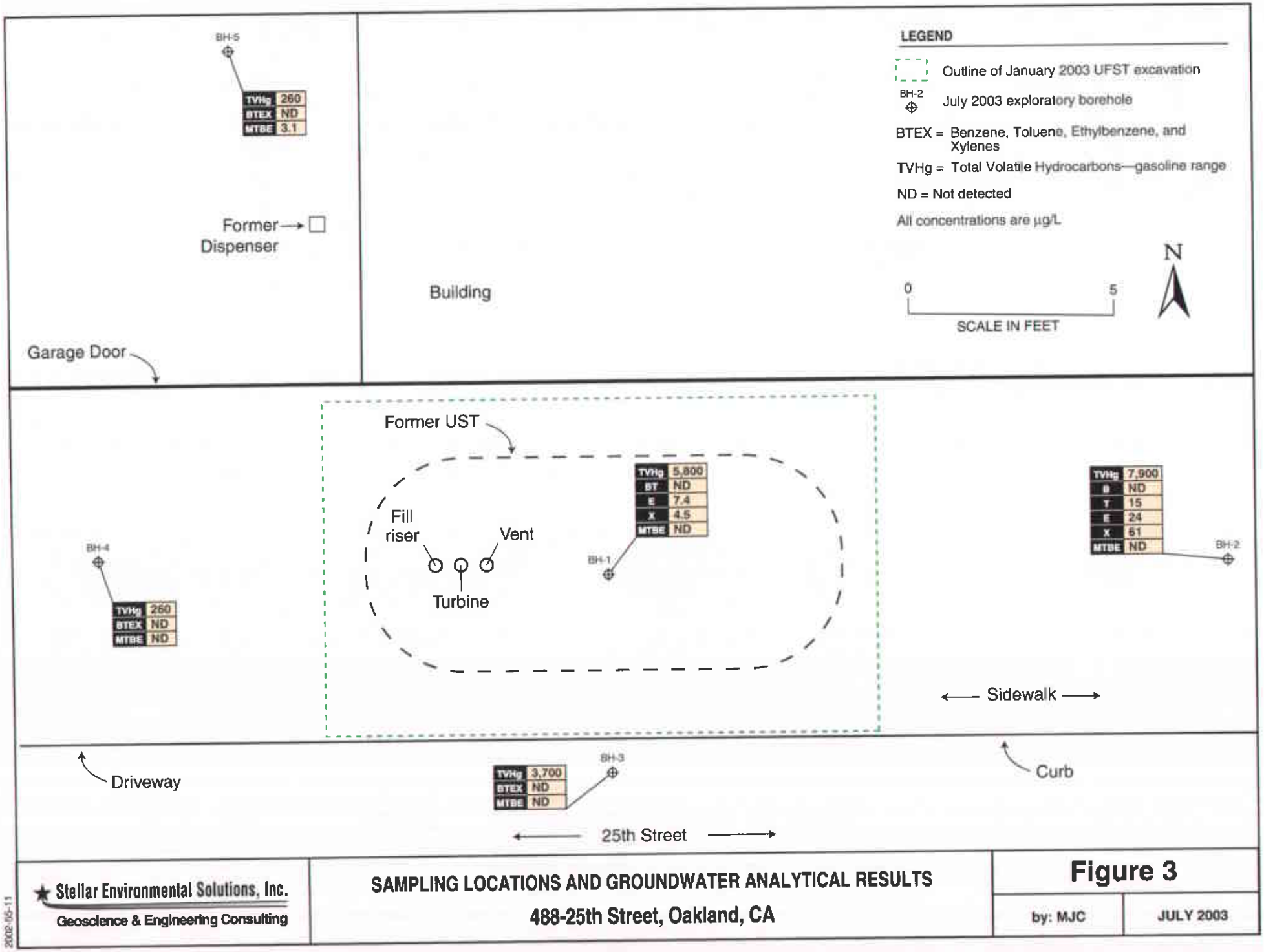
SAMPLING LOCATIONS AND SOIL ANALYTICAL RESULTS
488-25th Street, Oakland, CA

Figure 2

by: MJC | JULY 2003

2002-55-10



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SAMPLING LOCATIONS AND GROUNDWATER ANALYTICAL RESULTS
488-25th Street, Oakland, CA

Figure 3

by: MJC | JULY 2003

2002-05-11

hydrocarbons–gasoline range (TVHg); BTEX; and MTBE. Contamination in the groundwater media is more pronounced than in the soil, with three of the five samples showing significant concentrations from a regulatory perspective compared to one of the five soil samples.

As shown on the borehole geologic logs (Appendix C), soil samples were field-screened with a PID for evidence of contamination, to aid in the selection of soil samples for offsite laboratory analysis. In general, PID readings indicative of contamination were encountered at depths between the top of the capillary fringe (approximately 9 feet deep) and the bottom of the upper water-bearing zone (approximately 12 feet deep).

Soil Contamination

The only soil contaminant detected in the five June 2003 exploratory boreholes was gasoline, which was detected at a maximum of 49 mg/kg (Borehole BH-5 at 11.5 feet deep). Trace levels of gasoline were also detected at the 13-foot-deep soil sample in BH-5 (1.7 mg/kg) and in the 10-foot-deep sample collected in borehole BH-1. Neither BTEX nor MTBE compounds were detected in any of the borehole soil samples. No contamination was detected in any of the five borehole soil samples collected beneath the upper water-bearing zone. More significant gasoline was detected in the January 2003 base of excavation sample UST-BASE-East-9', which showed 2,500 mg/kg TVH. No BTEX, MTBE, nor other contaminants were detected in the west-end UFST excavation sample. These data suggest that: 1) residual soil contamination by gasoline is limited to the immediate vicinity of the former UFST; 2) there is no soil contamination beneath the upper water-bearing zone; and 3) the sole site contaminant in soil is gasoline. Table 1 presents the historical and current soil analytical results.

Groundwater Contamination

Gasoline was detected in all five exploratory borehole "grab" groundwater samples, ranging from 260 µg/L to a maximum of 7,900 µg/L. The maximum gasoline concentration was at BH-02 (to the east of the former UFST), with lower but elevated gasoline concentrations detected at BH-01 (5,800 µg/L) and BH-03 (3,700 µg/L). To the west and northwest (represented by boreholes BH-04 and BH-05), gasoline concentrations were 260 µg/L. Benzene was not detected in any of the groundwater samples. Maximum concentrations of MTBE, toluene, ethylbenzene, and xylene were 3.1 µg/L, 15 µg/L, 24 µg/L, and 61 µg/L, respectively. Elevated gasoline concentrations in the BH-02 groundwater sample resulted in elevated method reporting limits for benzene (13 µg/L) and MTBE (50 µg/L).

Table 1
Historical and Current Soil Analytical Results
488 25th Street, Oakland, California [a]

Sample I.D.	Sample Depth (feet)	TVHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
January 2003 Base of UFST Excavation Soil Samples							
UFST Base-East	9.0	2,500	*<1.7* [b]	*<1.7* [b]	*<1.7* [b]	*<1.7* [b]	*<1.7* [b]
UFST Base-West	9.0	*<1.1*	*<0.0053*	*<0.0053*	*<0.0053*	*<0.0053*	*<0.0053*
July 2003 Exploratory Borehole Soil Samples							
BH-1-10'	10.0	14	*<0.0054*	*<0.0054*	*<0.0054*	*<0.0054*	*<0.022*
BH-1-14'	14.0	*<1.1*	*<0.0053*	*<0.0053*	*<0.0053*	*<0.0053*	*<0.021*
BH-2-6.5'	6.5	*<1.1*	*<0.0054*	*<0.0054*	*<0.0054*	*<0.0054*	*<00022*
BH-2-9'	9.0	*<1.0*	*<0.0050*	*<0.0050*	*<0.0050*	*<0.0050*	*<0.020*
BH-2-15'	15.0	*<1.1*	*<0.0053*	*<0.0053*	*<0.0053*	*<0.0053*	*<0.021*
BH-3-5'	5.0	*<1.0*	*<0.0052*	*<0.0052*	*<0.0052*	*<0.0052*	*<0.021*
BH-3-9'	9.0	*<1.1*	*<0.0054*	*<0.0054*	*<0.0054*	*<0.0054*	*<0.022*
BH-3-13'	13.0	*<1.0*	*<0.0052*	*<0.0052*	*<0.0052*	*<0.0052*	*<0.021*
BH-4-5'	5.0	*<1.0*	*<0.0051*	*<0.0051*	*<0.0051*	*<0.0051*	*<0.020*
BH-4-9'	9.0	*<1.0*	*<0.0052*	*<0.0052*	*<0.0052*	*<0.0052*	*<0.021*
BH-4-13'	13.0	*<1.1*	*<0.0055*	*<0.0055*	*<0.0055*	*<0.0055*	*<0.022*
BH-5-6.5'	6.5	*<1.1*	*<0.0054*	*<0.0054*	*<0.0054*	*<0.0054*	*<0.022*
BH-5-11.5'	11.5	49	*<0.010*	*<0.010*	*<0.010*	*<0.010*	*<0.040*
BH-5-13'	13.0	1.7	*<0.0053*	*<0.0053*	*<0.0053*	*<0.0053*	*<0.021*
Soil RBSLs [c]		**100 / 400**	**0.045 / 0.39**	**2.6 / 8.4**	**2.5 / 24**	**1.0 / 1.0**	**0.028 / 1.0**

Notes:

[a] All concentrations in mg/kg.

[b] High concentrations of gasoline required sample dilution, resulting in the listed increased method reporting limit.

[c] First value is for sites where groundwater is a potential or current drinking water source; second value is for sites where it is not.

RBSL = RWQCB Risk-Based Screening Levels for commercial/industrial sites with coarse-grained soil.
TVHg = Total volatile hydrocarbons- gasoline range.

These data geometry suggest that: 1) shallow groundwater has been impacted by the former UFST; 2) groundwater contamination to the west and northwest of the former UFST is minimal to insignificant, while the concentrations of gasoline to the south and east are significantly above the regulatory RSBL of 100 µg/L; 3) the lateral extent of groundwater contamination to the east and to the south of the former UFST remains ill-defined; and 4) gasoline appears to be the sole groundwater contaminant of concern. Table 2 presents the groundwater analytical results from the July 2003 sampling event.

Table 2
July 2003 Groundwater Analytical Results
488 25th Street, Oakland, California [a]

Sample I.D.	Sample Depth (feet)	TVHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
BH-01-GW	~ 10-11	5,800	*<0.50*	*<0.50*	7.4	4.5	*<2.0*
BH-02-GW	~ 10-11	7,900	*<13*	15	24	61	*<50*
BH-03-GW	~ 10-11	3,700	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*
BH-04-GW	~ 10-11	260	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*
BH-05-GW	~ 10-11	260	*<0.50*	*<0.50*	*<0.50*	*<0.50*	3.1
Groundwater RBSLs		**100**	**1.0**	**40**	**30**	**13**	**5.0**
Drinking Water Standards [a]		**NLP**	**1.0**	**40**	**30**	**20**	**5.0 [b] / 13**

Notes:

[a] All concentrations in µg/L.

[b] Primary Maximum Contaminant Level (MCL), unless specified otherwise

[c] Secondary (nuisance) MCL.

NLP = No Level Published.
RBSL = RWQCB Risk-Based Screening Levels for commercial/industrial sites with coarsgrained soil.
TVHg = Total volatile hydrocarbons- gasoline range.

4.0 REGULATORY CONSIDERATIONS

REGULATORY STATUS

The lead regulatory agency for petroleum contamination cases in the City of Oakland is ACEH. ACEH is a Local Oversight Program (LOP) for the State Water Resources Control Board (covering Region 2 of the RWQCB). As such, the ACEH directly oversees soil and groundwater investigations/remediation on UFST sites (with or without RWQCB guidance) until determining that case closure is appropriate, at which time the ACEH recommends case closure to the RWQCB. The ACEH has designated the case as Fuel Leak Case No. RO0002518.

RESIDUAL CONTAMINATION REGULATORY CONSIDERATIONS

The most applicable published numerical criteria governing residual soil and groundwater contamination are the RWQCB's Risk-Based Screening Levels (RBSLs) (RWQCB, 2001). These are screening-level criteria used to evaluate if additional investigation and/or remediation is warranted. Criteria to be considered in using the RBSLs include: contamination limited to surface soil (less than 10 feet deep) or to subsurface soil; fine-grained vs. coarse-grained soil; residential or commercial/industrial land use; and whether groundwater is or is not a known or potential drinking water source. For the detected site contaminants, the RBSL values are the same for surface soil and subsurface soil.

The appropriate RBSLs for this site are for coarse-grained soil (a conservative assumption since grain-size analysis has not been conducted) and commercial/industrial land use (because the owner has no plans to redevelop the property with residential land use). Qualifying for the usually higher RBSL values for sites where groundwater is not a current or potential drinking water source requires obtaining a site-specific variance from the RWQCB. The RWQCB completed an East Bay Beneficial Use Study (RWQCB, 1999) that covers the Richmond to Hayward East Bay Basin Area and, based on multiple technical criteria, divided the Basin into Zone A (Significant Drinking Water Resource Potential), Zone B (Groundwater Unlikely to be used as Drinking Water Source) and Zone C (Shallow Groundwater Unusable). The subject site falls within Zone A.

RESIDUAL SOIL CONTAMINATION

Gasoline is the only potential site contaminant detected in soil in excess of its RBSL—at 2,500 mg/kg—in only 1 of the 16 total samples collected during the January and July 2003 sampling. The 2,500-mg/kg value is associated with a sample collected from the base of the excavation in January 2003. All 14 of the soil samples collected in July 2003 were below 100 mg/kg. Due to elevated analytical method reporting limits in the base-of-UFST-excavation soil sample with elevated gasoline concentration, it is possible that benzene and/or MTBE may also be present above their respective RBSL values at that location.

GROUNDWATER CONTAMINATION

Site contaminants detected in groundwater in excess of their respective RBSLs include gasoline and xylene. The maximum residual gasoline detected is 7,900 µg/L, which is significantly higher that the 100 µg/L RBSL value. The five "grab" groundwater samples showed a range of 260 to 7,900 µg/L, with three of the five showing relatively significant concentrations (7,900, 5,800, and 3,700 µg/L) (generally considered an environmental impact by the regulators). The only potential groundwater site contaminant detected in excess of its drinking water standard is xylene, at 61 µg/L compared with its RSBL of 13 µg/L (or drinking water standard of 20 µg/L). Due to elevated analytical method reporting limits in the groundwater samples with elevated gasoline concentrations, it is possible that benzene and/or MTBE may also be present in groundwater above their RBSLs.

SITE CLOSURE CRITERIA

The ACEH and RWQCB generally require that the following criteria be met before issuing regulatory closure of petroleum release cases:

1. The contaminant source has been removed (i.e., the UFST and obviously-contaminated backfill material). This criterion has been met.
2. The groundwater contaminant plume is stable or reducing (i.e., groundwater contamination is not increasing in concentration or lateral extent). This criterion has not yet been met, and will likely require installation and sampling of groundwater monitoring wells.
3. If residual contamination (soil or groundwater) exists, there is no reasonable risk to sensitive receptors (i.e., contaminant discharge to surface water or water supply wells) or to site occupants. This criterion is generally met by conducting a Risk-Based Corrective Action (RBCA) assessment that models the fate and transport of residual contamination in the context of potential impacts to sensitive receptors. This task is generally conducted after the previous two criteria have been met. Based on the apparent absence of benzene (the "risk driver" compound for this site) and the likely absence of sensitive receptors, it is probable that the site would pass the RBCA assessment.

5.0 SUMMARY, CONCLUSIONS, OPINION AND RECOMMENDATIONS

SUMMARY AND CONCLUSIONS

The available data support the following findings and conclusions:

- One site 1,000-gallon gasoline UFST was removed in January 2003 under regulatory oversight, along with 40 tons of obviously-contaminated backfill material. Gasoline was detected at 2,500 mg/kg in native soil 2 feet beneath the UFST (at a depth of 9 feet); BTEX and MTBE concentrations were less than approximately 2 mg/kg each. Groundwater was not encountered (excavation depth of 9 feet).
- The lead agency for UFST-related petroleum contamination sites is the ACEH, which has provided oversight of this case since the UFST removal report was submitted in January 2003. The most recent phase of site work is the July 2003 Preliminary Site Assessment. This report has been submitted to ACEH.
- The subject property is located within the RWQCB Zone A (Significant Drinking Water Source Potential) designation as described in the 1999 East Bay Plain Beneficial Use Study.
- Five exploratory boreholes were advanced to depths of 16 to 25 feet on three sides of the former UFST excavation (all within 10 feet of the former excavation), and one was advanced through the approximate center of the former excavation. A total of 10 soil samples were collected for laboratory analysis from the unsaturated zone, at depths between 6.5 and 11.5 feet. An additional five soil samples (one from each borehole) were collected at depths below the upper water-bearing zone. One "grab" groundwater sample was collected from each borehole. The boreholes were geologically logged from continuous soil cores.
- Site lithology consists predominantly of low permeability clays (in some cases silty or gravelly). Groundwater was first encountered (as evidenced by saturated soil cuttings and measurable water in the borehole) at a depth of approximately 10 feet, and occurs in an approximately 2-foot thick zone between approximately 10 and 12 feet bgs. A lower water-bearing zone was encountered at a depth of approximately 18.5 feet bgs and extended down to at least 25 feet (deepest borehole drilled).

- The lateral and vertical extent of soil contamination above regulatory agency screening levels is well defined by available data, and appears to be constrained to an approximately 2-foot-thick zone above groundwater, in the immediate vicinity of the former UFST excavation.
- Shallow groundwater in the immediate vicinity of the former UFST has been impacted by gasoline above the RBSL, with no apparent contamination above RBSL values by BTEX or MTBE. The area of maximum gasoline contamination appears to be beneath the UFST and to the east and south, with minor to insignificant gasoline contamination to the west and northwest.
- Exploratory borehole PID readings and soil sample analytical results suggest no soil or groundwater contamination beneath the upper water-bearing zone.
- Part or all of the costs incurred by the property owner may be eligible for reimbursement under the State of California Underground Storage Tank Cleanup Fund (Fund). The likely deductible applied would be $5,000 to $10,000. The process requires submitting an application, receiving a Letter of Commitment, and submitting Reimbursement Requests. Work conducted by SES to date has been compliant with Fund requirements/guidelines, including documentation on procurement and costs incurred. Pre-approval of project costs (formerly recommended by the Fund) was not conducted, specifically in response to the Fund's previous discontinuation of this policy.

OPINION AND RECOMMENDATIONS

Based on the elevated gasoline contamination in groundwater, it is unlikely that ACEH (or the RWQCB, from which the ACEH would request concurrence) would grant regulatory closure at this time. The ACEH will likely require that groundwater monitoring wells be installed and sampled on a quarterly basis (likely for a minimum of 1 year) to evaluate the stability of the groundwater contaminant plume. Should contaminant concentrations in wells be shown to be stable and reducing and the site passes a RBCA assessment, regulatory closure would likely be granted.

Based on the available data, we recommend the installation of three groundwater monitoring wells: one through the center of the former excavation; one to the east (as maximum groundwater contamination was detected in that direction); and one to the south (based on potential groundwater flow direction to the east and the presence of gasoline contamination in that direction). Three groundwater wells is the minimum amount that the regulators will accept to determine local groundwater flow direction. The wells should be monitored and sampled on a quarterly basis for at least 1 year. We further recommend that any additional investigation activities be approved by ACEH before implementation, to ensure compliance with the Fund and maximize the potential for reimbursement.

6.0 REFERENCES

Alameda County Environmental Health (ACEH), 2003a. Letter requesting technical workplan for 488 25th Street, Oakland, California. April 2.

ACEH, 2003b. Letter requesting scope of work revisions to technical workplan for 488 25th Street, Oakland, California. June 26.

Oakland, City of, Fire Department, 2003. Letter regarding review of underground storage tank closure report for 488 25th Street, Oakland, California. March 4.

Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), 2001. Application of Risk-Based Screening Levels and Decision Making to Sites With Impacted Soil and Groundwater – Interim Final. December.

RWQCB, 1999. East Bay Plain Groundwater Basin Beneficial Use Evaluation Report. June.

Stellar Environmental Solutions, Inc. (SES), 2003a. Gasoline Underground Storage Tank Removal Report, Benner Automotive, 488 25th Street, Oakland, California. January 24.

SES, 2003b. Workplan for Site Investigation – Benner Auto Repair, Inc. Facility, 488 25th Street, Oakland, California. April 21.

SES, 2003c. Revisions to Workplan for Site Investigation – Benner Auto Repair, Inc. Facility, 488 25th Street, Oakland, California. July 2.

7.0 LIMITATIONS

This report has been prepared for the exclusive use of Mr. Mike Benner, Benner Automotive, their authorized representatives, and the regulatory agencies. No reliance on this report shall be made by anyone other than those for whom it was prepared.

The findings and conclusions presented in this report are based on the review of previous investigators' findings at the site. This report provides neither a certification nor guarantee that the property is free of hazardous substance contamination. This report has been prepared in accordance with generally accepted methodologies and standards of practice. The SES personnel who performed this limited remedial investigation are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

The findings of this report are valid as of the present. Site conditions may change with the passage of time, natural processes, or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the activities completed.

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 488 35th Street, Oakland, CA

CLIENT
Name Benner Auto Repair
Address 488 35th St. Phone 832-1914
City Oakland Zip 94609

APPLICANT
Name Stellar Environmental Solutions
Fax 510-644-3859
Address 2198 Sixth St #201 Phone 510-644-3123
City Berkeley Zip 94710

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	•	General	•
Water Supply	•	Contamination	(C)
Monitoring	•	Well Destruction	•

PROPOSED WATER SUPPLY WELL USE

New Domestic	•	Replacement Domestic	•
Municipal	•	Irrigation	•
Industrial	•	Other	•

DRILLING METHOD:

Mud Rotary	•	Air Rotary	•	Auger	•
Cable	•	Other	•	(Direct Push)	

DRILLER'S NAME En Prob

DRILLER'S LICENSE NO. 777007

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Owner's Well Number ____

GEOTECHNICAL PROJECTS
Number of Borings 5 Maximum
Hole Diameter 2 in. Depth 15 ft.

STARTING DATE mid-May 2003 (Act yr1 Scheduled)

COMPLETION DATE mid-May 2003

FOR OFFICE USE
PERMIT NUMBER WO3-0336
WELL NUMBER ____
APN ____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/Contamination
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compatible native material.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

7 Please notify this office of the start & completion dates by fax before starting.

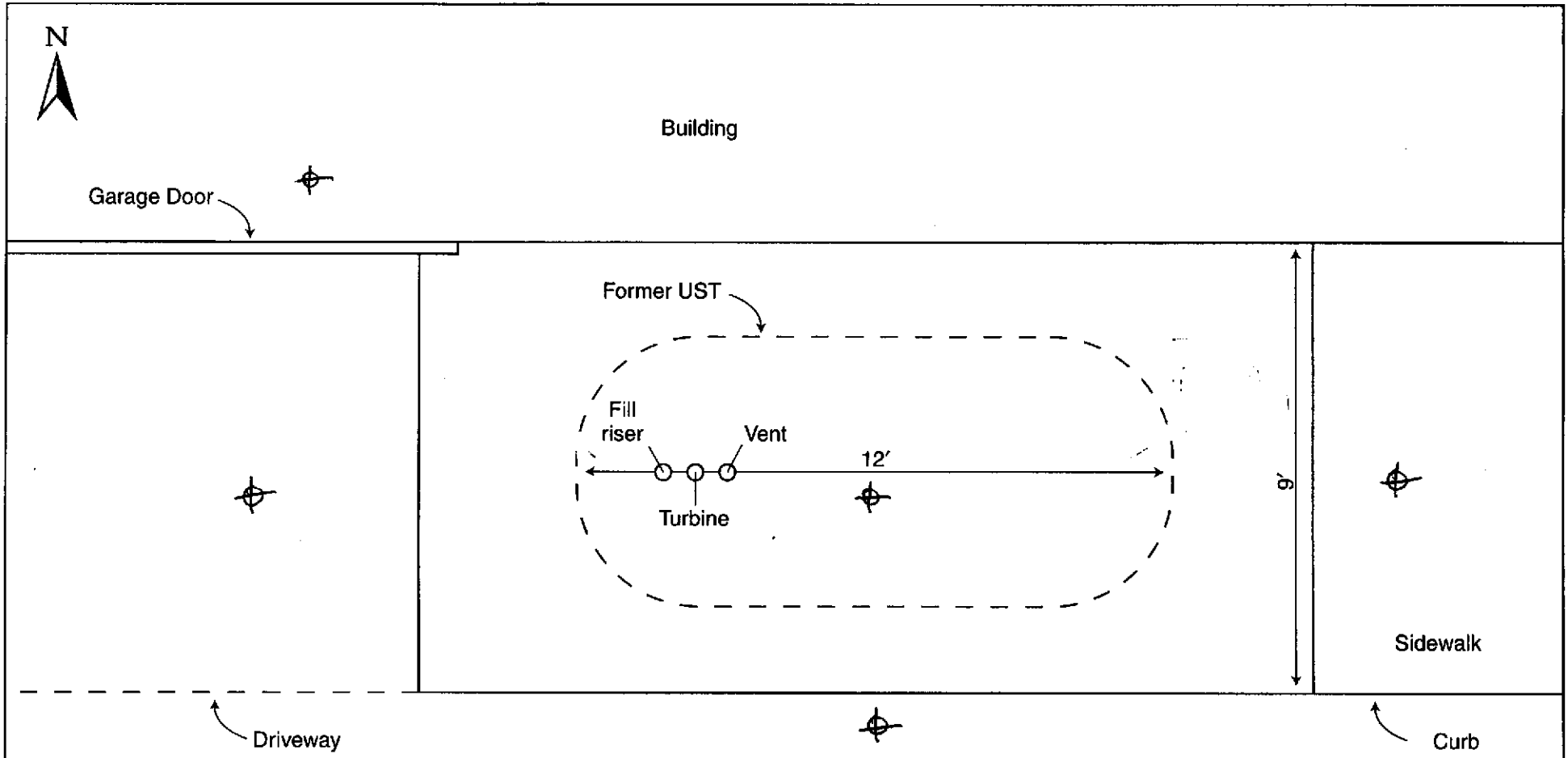
APPROVED ____ DATE 4-22-03

hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Bruce M. Rucker DATE 4/21/03

PLEASE PRINT NAME Bruce M. Rucker

Rev.9-18-02



PROPOSED

Stellar Environmental Solutions

Geoscience & Engineering Consulting

SITE PLAN AND SAMPLING LOCATIONS—BENNER AUTOMOTIVE

488 25th Street, Oakland, CA

Figure 2

by: MJC

JANUARY 2003

2-55-02

STELLAR ENVIRONMENTAL SOLUTIONS
2198 Sixth Street
Berkeley, CA 94710
Telephone: (510) 644-3123
Fax (510) 644-3859

fax

Sent 7/2/03

To: James – Alameda County Public Works – Water Resources Section

Fax #: 510-782-1939

From: Bruce Rucker – Stellar Environmental Solutions

Date: July 2, 2003

Subject: Drilling Permit Application no. W03-0339 for 488 25th Street, Oakland, CA

Pages 1 (including this cover sheet)

NOTES:

James –

We have re-scheduled the above drilling project, for which your office has already issued a drilling pemit. There will be one day of drilling on July 7, 2003. Please call if you have any questions.

Subject: Concrete coring at borehole BH-01 (center of former UFST excavation), looking west.	
Site: Benner Automotive, 488 25th Street, Oakland, California	
Date Taken: July 7, 2003	Project No.: SES 2002-55
Photographer: Bruce Rucker	Photo No.: 01

Subject: Geoprobe rig at borehole BH-01, looking west.	
Site: Benner Automotive, 488 25th Street, Oakland, California	
Date Taken: July 7, 2003	Project No.: SES 2002-55
Photographer: Bruce Rucker	Photo No.: 02

Subject: Borehole locations (orange cones), BH-05 at left, BH-04 in foreground, BH-01 and BH-02 in background.	
Site: Benner Automotive, 488 25th Street, Oakland, California	
Date Taken: July 7, 2003	Project No.: SES 2002-55
Photographer: Bruce Rucker	Photo No.: 03

Subject: Geoprobe rig at borehole BH-05 (near former dispenser), looking south.	
Site: Benner Automotive, 488 25th Street, Oakland, California	
Date Taken: July 7, 2003	Project No.: SES 2002-55
Photographer: Bruce Rucker	Photo No.: 04

Subject: Borehole locations, looking to northeast (BH-03 located in street).	
Site: Benner Automotive, 488 25th Street, Oakland, California	
Date Taken: July 7, 2003	Project No.: SES 2002-55
Photographer: Bruce Rucker	Photo No.: 05

STELLAR ENVIRONMENTAL SOLUTIONS, INC.

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring Log

BORING NUMBER BH-1 Page 1 of 2

PROJECT Benner Automotive
OWNER Benner Automotive
LOCATION 488 25th St., Oakland
PROJECT NUMBER 2002-55
TOTAL DEPTH 25 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~11 feet
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER Jeff Edmond
GEOLOGIST Bruce Rucker
DATE DRILLED 7/7/03

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0					Concrete sidewalk	Continuous core soil sampling
2				<1	Tank excavation backfill: gravelly, clayey silt, dry, friable, not cohesive	"Instrument" is a photoionization detector (PID); readings are in ppmv
4				<1		
6				<1		Sample recovery is 100% unless indicated otherwise
8				<1		
10		BH-1-10'		<1	Dark grey clay (CL), sl. stiff, v. cohesive, not friable, sl. moist	Water level = 10.2' deep after advancing to 12'
12				<1		
14		BH-1-14'		<1		
16				<1	15.5': Becomes silty	Collect BH-1-GW (840 am) after advancing to 12'
18				<1	18.5': Color change to brown	
20				<1	Brown clayey sand (SC), sl. friable, mod. cohesive, soft, wet	

2002-55-04

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring Log

BORING NUMBER BH-1 Page 2 of 2

PROJECT Benner Automotive
OWNER Benner Automotive
LOCATION 488 25th St., Oakland
PROJECT NUMBER 2002-55
TOTAL DEPTH 25 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~11 feet
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER Jeff Edmond
GEOLOGIST Bruce Rucker
DATE DRILLED 7/7/03

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
20						2" sample recovery from 20.5'-22.5'
22				<1		
					— ? — ? — ? — ? —	
24				<1	Grey and brown clayey gravel (GC), fully friable, wet. Gravel is small and subangular	8" sample recovery from 23'-25'
					Bottom of borehole = 25'	
26						
28						
30						
32						
34						
36						
38						
40						

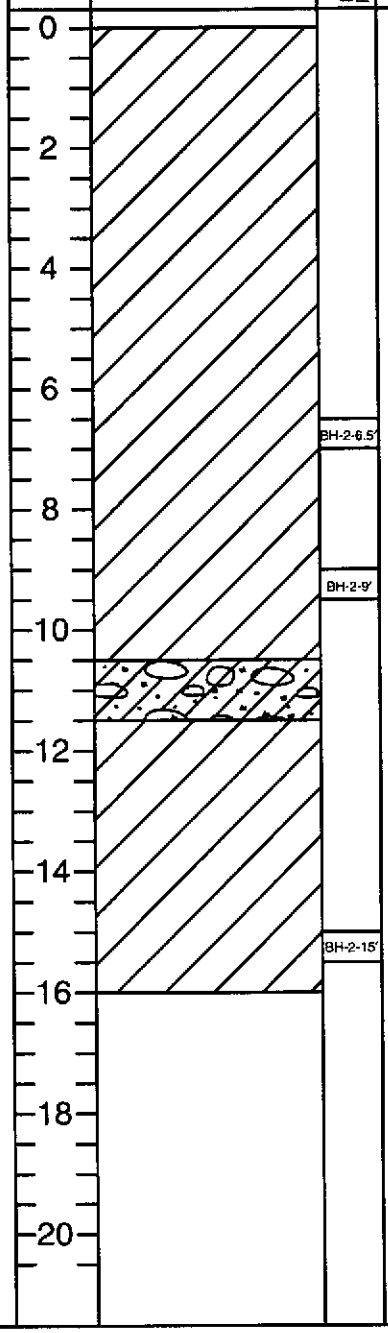
2002-55-05

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring Log

BORING NUMBER BH-2 Page 1 of 1

PROJECT Benner Automotive
OWNER Benner Automotive
LOCATION 488 25th St., Oakland
PROJECT NUMBER 2002-55
TOTAL DEPTH 16 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~11 feet
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER Jeff Edmond
GEOLOGIST Bruce Rucker
DATE DRILLED 7/7/03



INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
	Concrete sidewalk	Continuous core soil sampling
<1	Black silty clay (CL), mod. stiff, cohesive, sl. friable, sl. moist	"Instrument" is a photoionization detector (PID); readings are in ppmv
<1		
<1	~6': Gradational color change to grey, silt absent, becomes stiff	Sample recovery is 100% unless indicated otherwise
<1	8.5': Becomes silty, sl. stiff	
8.5	9.5': Becomes v. moist and sandy (fine-grained), soft, cohesive	
105		Water level = 10.2' deep after driving to 11'
140	Grey gravelly clay (GC), soft, wet, cohesive, gravel is small, ~20% and subrounded	
100		Collect BH-2-GW (950 am)
70	Blue-grey clay (CL), mod. stiff, cohesive, not friable, sl. moist	
25		
<1		
<1	Bottom of borehole: 16'	

2002-55-06

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring Log

BORING NUMBER BH-3 Page 1 of 1

PROJECT Benner Automotive
OWNER Benner Automotive
LOCATION 488 25th St., Oakland
PROJECT NUMBER 2002-55
TOTAL DEPTH 16 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~11 feet
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER Jeff Edmond
GEOLOGIST Bruce Rucker
DATE DRILLED 7/7/03

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0					Asphalt, base rock & underlying concrete	Continuous core soil sampling
2				<1	Black silty clay (CL), mod. stiff, cohesive, sl. friable, sl. moist	"Instrument" is a photoionization detector (PID); readings are in ppmv
4				<1	4.5′: Color change to dark brown	
6		BH-3-5′		<1		Sample recovery is 100% unless indicated otherwise
8				<1	8′: Color change to grey	
				4	9′–9.5′: Gravelly lens (gravel is small-medium)	
10		BH-3-9′		18	9.5′: Becomes soft and moist	
				80	10.5′: Sl. stiff, cohesive, not friable, sl. moist	Water level = 10.3′ deep after advancing to 11′
12				8	11′: Becomes stiff	Collect sample BH-3-GW (1200)
		BH-3-13′		<1		
14				<1	14.5′:Becomes sl.-mod. stiff	
				<1		
16					Bottom of borehole: 16′	
18						
20						

2002-55-07

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring Log

BORING NUMBER BH-4 Page 1 of 1

PROJECT Benner Automotive
OWNER Benner Automotive
LOCATION 488 25th St., Oakland
PROJECT NUMBER 2002-55
TOTAL DEPTH 16 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~11 feet
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER Jeff Edmond
GEOLOGIST Bruce Rucker
DATE DRILLED 7/7/03

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0					Concrete	Continuous core soil sampling
					Black silty clay (CL), mod. stiff, cohesive, sl. friable, sl. moist	
2				<1		"Instrument" is a photoionization detector (PID); readings are in ppmv
4				<1	4.5′: Color change to dark brown, stiff, cohesive, not friable, sl. moist	
		BH-4-5′				Sample recovery is 100% unless indicated otherwise
6				<1		
8				<1	8.5′: Blue grey silty, gravelly clay, Gravel is ~10% and small, stiff, cohesive, sl. friable, sl. moist	
		BH-4-9′		4		
10				7	9′: Gravel absent	Water level = 10′ deep after advancing to 15′
				80	9.5′: Becomes moist to wet, soft to sl. stiff, cohesive	
12				110	10.5′:Mod. stiff, v. cohesive, not friable, sl. moist	Collect sample BH-4-GW (1100)
		BH-4-13′		7		
14				3		
				<1		
16					Bottom of borehole: 16′	
18						
20						

2002-55-08

Stellar Environmental Solutions, Inc.
2198 Sixth Street, Berkeley, CA 94710
Geoscience & Engineering Consulting

Soil Boring Log

BORING NUMBER BH-5 Page 1 of 1

PROJECT Benner Automotive
OWNER Benner Automotive
LOCATION 488 25th St., Oakland
PROJECT NUMBER 2002-55
TOTAL DEPTH 19 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~12 feet
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER Jeff Edmond
GEOLOGIST Bruce Rucker
DATE DRILLED 7/7/03

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/ RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0					Concrete	
					Black silty clay (CL), mod. stiff, cohesive, sl. friable, sl. moist	Continuous core soil sampling
2				<1		
						"Instrument" is a photoionization detector (PID); readings are in ppmv
4				<1	4.5′: Color change to dark brown, stiff, cohesive, not friable, sl. moist	
6				<1		Sample recovery is 100% unless indicated otherwise
		BH-5-6.5′				
8				<1		Borehole dry after advancing to 11′
				10	9′: Color change to grey, sl. stiff, cohesive, not friable, sl. moist	
10				3		Water level = 10.6′ deep after advancing to 15′
				1,230	12′: Becomes soft to sl. stiff, minor free water in sample	
12		BH-5-11.5′		780		Collect sample BH-5-GW (1240)
		BH-5-13′		9		
14				26		
				25	15′: Becomes mod. stiff	
16				<1		
				<1	18′: Color change to red brown	
18				<1	18.5′: Becomes sandy clay, sand is fine-grained, sl. moist, sl. cohesive, friable	
					Bottom of borehole: 19′	
20						

2002-55-09

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

ANALYTICAL REPORT

Prepared for:

Stellar Environmental Solutions
2198 6th Street
Suite 201
Berkeley, CA 94710

Date: 14-JUL-03
Lab Job Number: 166199
Project ID: 2002-55
Location: Benner Automotive

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 Numbers: **166199**
Client: **Stellar Environmental Solutions**
Project #: **2002-55**
Location: **Benner Automotive**

Sampled Date: **07/07/03**
Received Date: **07/07/03**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for fourteen soil samples and five water samples, which were received from the site referenced above on July 07, 2003. The samples were received cold and intact.

TVH by (EPA 8015B): High surrogate recoveries were observed for samples BH-1-10' (CT# 166199-002) and sample BH-5-11.5' (CT# 166199-017) as a result of hydrocarbons coeluting with the surrogate. No other analytical problems were encountered.

TEH by (EPA 8015B): No analytical problems were encountered.

Chain of Custody Record

166199

Date 7/7/03

Page 1 of 2

Laboratory Curtis & Tompkins Ltd.
Address 2323 Fifth Street
Berkeley CA 94710
510/486-0900

Method of Shipment hand delivery
Shipment No. —
Airbill No. —
Cooler No. —

Project Owner Benner Automotive
Site Address 488 - 25th Street
Oakland CA 94612

Project Manager Bruce Rueker
Telephone No. (510) 644-3123
Fax No. (510) 644-3859

Project Name Benner Automotive
Project Number 2000-55

Samplers: (Signature) B.M. Rueker

	Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	Analysis Required: TVH-gas + BTEX + MTBE (Mod 8015/8020)		Remarks
1	BH-1-GW	~10.5'	7/7/03	845	H_2O	40 ml VOA vials	✓	HCl	No	3	X	X	
2	BH-1-10'	10'		820	Soil	acetate sleeve				1			
3	BH-1-14'	14'		930	"	"				1			
4	BH-2-6.5	6.5'		935	"	"				1			
5	BH-2-9'	9'		940	"	~~10 ml~~ "				1			
6	BH-2-15	~~11~~ 15'		945	"	"				1			
7	BH-2-GW	~~750~~ ~11'		950	H_2O	40 ml VOA vials		HCl		3			
8	BH-4-5'	5'		1030	Soil	acetate sleeve				1			
9	BH-4-9'	9'		1040	"	"				1			
10	BH-4-13'	13'		1050	"	"				1			
11	BH-4-GW	~ 11'		1100	H_2O	40 ml VOA vials	✓	HCl		3	✓	✓	

Received ☒ On Ice ☐ Intact
☒ Cold ☐ Ambient

Preservation Correct?
☒ Yes ☐ No ☐ N/A

Relinquished by:	Date	Received by:	Date
Signature B.M. Rueker	7/7/03	Signature	7/7/03
Printed Bruce Rueker	Time 1605	Printed	Time 1705
Company Stellar Environmental Solutions		Company Curtis & Tompkins Ltd.	

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

Turnaround Time: 1 week

Comments:

2000-DU-01

★ Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

Chain of Custody Record

166199

Lab Job no. ____
Date 7/7/03
Page 2 of 2

Laboratory: Curtis & Tompkins Ltd.
Address: 3323 Fifth Street, Berkeley CA 94710, 510/486-0900
Project Owner: Benner Automotive
Site Address: 488 - 25th Street, Oakland CA 94612
Project Name: Benner Automotive
Project Number: 2000-55

Method of Shipment: hand delivery
Shipment No.: —
Airbill No.: —
Cooler No.: —
Project Manager: Bruce Rueker
Telephone No.: (510) 644-3123
Fax No.: (510) 644-3859
Samplers: (Signature) B.M. Rueker

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	Analysis Required: TVH-gas + BTEX + MTBE (Mod 8015/8020)	Remarks
12 BH-3-GW	~11'	7/7/03	1200	H_2O	40 ml VOA vials	✓	HCl	No	3	X	
13 BH-3-5'	5'		1115	Soil	acetate sleeve				1		
14 BH-3-9'	9'		1130	"	" "				1		
15 BH-3-13'	13'		1140	"	8 oz glass jar				1		
16 BH-5-6.5'	6.5'		1210	"	acetate sleeve				1		
17 BH-5-11.5'	11.5'		1220	"	"				1		
18 BH-5-13'	13'		1230	"	"				1		
19 BH-5-GW	~12'		1240	H_2O	40 ml VOA vials		HCl		3		

Relinquished by:	Date	Received by:	Date
Signature: B.M. Rueker	7/7/03	Signature: [illegible]	7/7/03
Printed: Bruce Rueker	Time: 1605	Printed: [illegible]	Time: 4:05
Company: Stellar Env. Solutions		Company: Curtis & Tompkins Ltd	

Relinquished by:	Date	Received by:	Date
Signature:		Signature:	
Printed:	Time:	Printed:	Time:
Company:		Company:	

Relinquished by:	Date	Received by:	Date
Signature:		Signature:	
Printed:	Time:	Printed:	Time:
Company:		Company:	

Turnaround Time: 1 week

Comments:

1-01-0003

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Water	Sampled:	07/07/03
Units:	ug/L	Received:	07/07/03
Batch#:	82728		

Field ID:	BH-1-GW	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/09/03
Lab ID:	166199-001		

Analyte	Result	RL	Analysis
Gasoline C7-C12	5,800 Y	50	8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	7.4 C	0.50	EPA 8021B
m,p-Xylenes	4.5 C	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	182 *	57-150	8015B
Bromofluorobenzene (FID)	140	65-144	8015B
Trifluorotoluene (PID)	126	54-149	EPA 8021B
Bromofluorobenzene (PID)	104	58-143	EPA 8021B

Field ID:	BH-2-GW	Diln Fac:	25.00
Type:	SAMPLE	Analyzed:	07/08/03
Lab ID:	166199-007		

Analyte	Result	RL	Analysis
Gasoline C7-C12	7,900 Y	1,300	8015B
MTBE	ND	50	EPA 8021B
Benzene	ND	13	EPA 8021B
Toluene	15 C	13	EPA 8021B
Ethylbenzene	24 C	13	EPA 8021B
m,p-Xylenes	24 C	13	EPA 8021B
o-Xylene	37	13	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	104	57-150	8015B
Bromofluorobenzene (FID)	101	65-144	8015B
Trifluorotoluene (PID)	105	54-149	EPA 8021B
Bromofluorobenzene (PID)	104	58-143	EPA 8021B

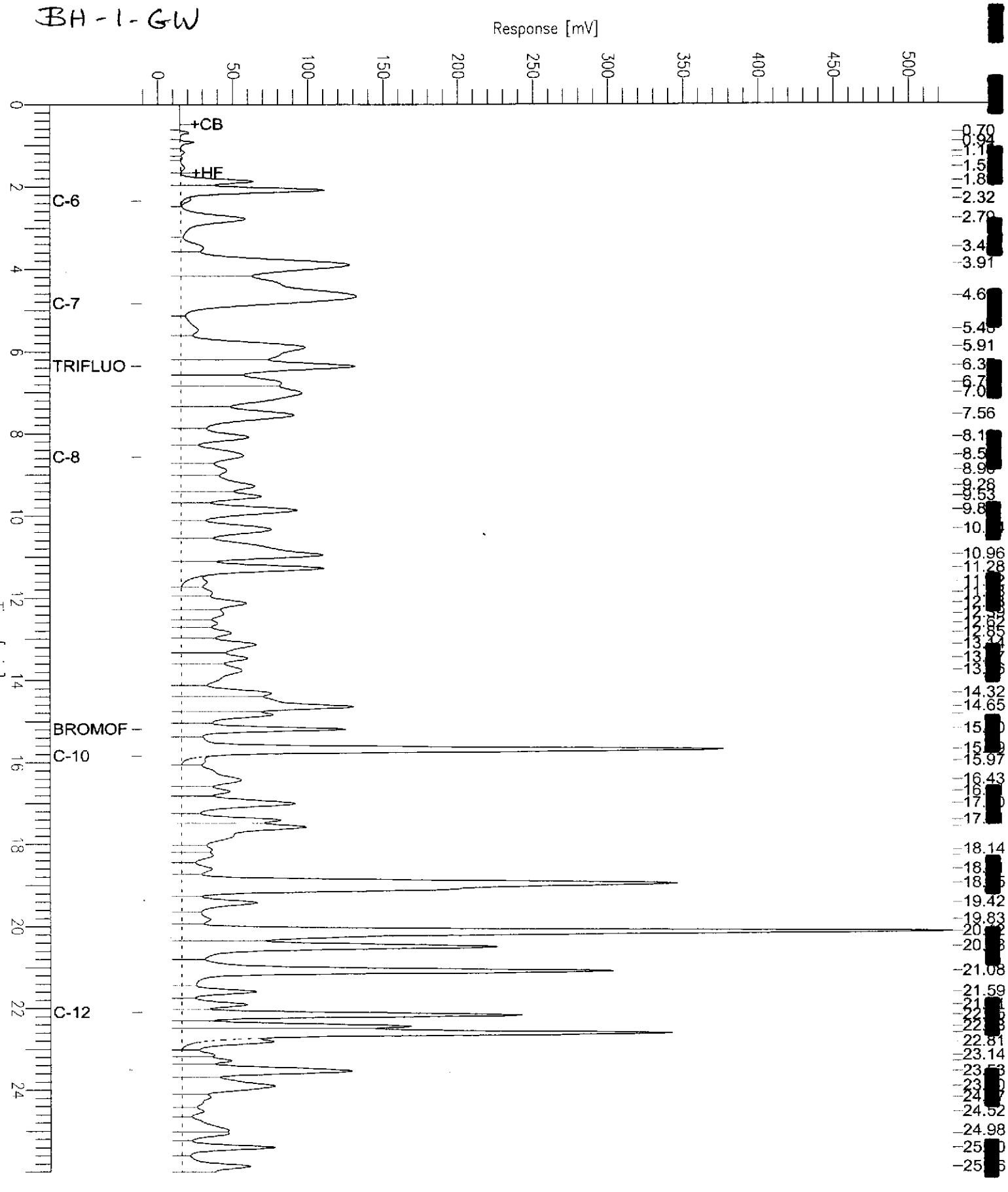
*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 166199-001,82728
FileName : G:\GC07\DATA\189A023.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 : 7/9/03 10:17 AM
Time of Injection: 7/9/03 12:12 AM
Low Point : -10.95 mV High Point : 529.20 mV
Plot Scale: 540.2 mV

BH-1-GW

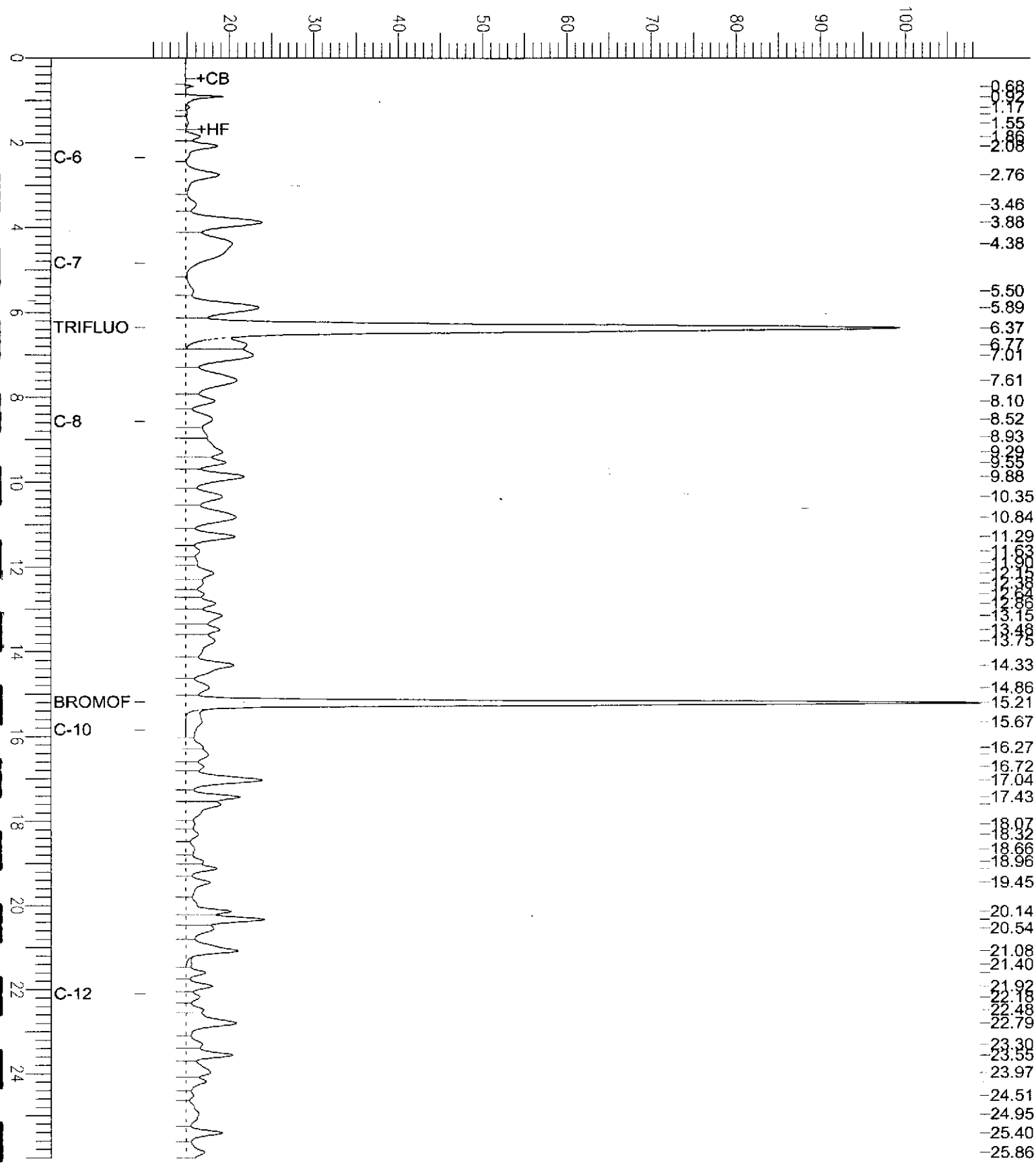


GC07 TVH 'A' Data File RTX 502

Sample Name : 166199-007,82728
FileName : G:\GC07\DATA\189A006.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 10 mV

Sample #: a1 Page 1 of 1
Date : 7/9/03 10:17 AM
Time of Injection: 7/8/03 01:39 PM
Low Point : 10.03 mV High Point : 108.90 mV
Plot Scale: 98.9 mV

BH-2-GW



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Water	Sampled:	07/07/03
Units:	ug/L	Received:	07/07/03
Batch#:	82728		

Field ID:	BH-4-GW	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/09/03
Lab ID:	166199-011		

Analyte	Result	RL	Analysis
Gasoline C7-C12	260 Y	50	8015B
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)	102	57-150	8015B
Bromofluorobenzene (FID)	100	65-144	8015B
Trifluorotoluene (PID)	92	54-149	EPA 8021B
Bromofluorobenzene (PID)	100	58-143	EPA 8021B

Field ID:	BH-3-GW	Diln Fac:	2.000
Type:	SAMPLE	Analyzed:	07/08/03
Lab ID:	166199-012		

Analyte	Result	RL	Analysis
Gasoline C7-C12	3,700 Y	100	8015B
MTBE	ND	4.0	EPA 8021B
Benzene	ND	1.0	EPA 8021B
Toluene	ND	1.0	EPA 8021B
Ethylbenzene	ND	1.0	EPA 8021B
m,p-Xylenes	ND	1.0	EPA 8021B
o-Xylene	ND	1.0	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	131	57-150	8015B
Bromofluorobenzene (FID)	112	65-144	8015B
Trifluorotoluene (PID)	115	54-149	EPA 8021B
Bromofluorobenzene (PID)	106	58-143	EPA 8021B

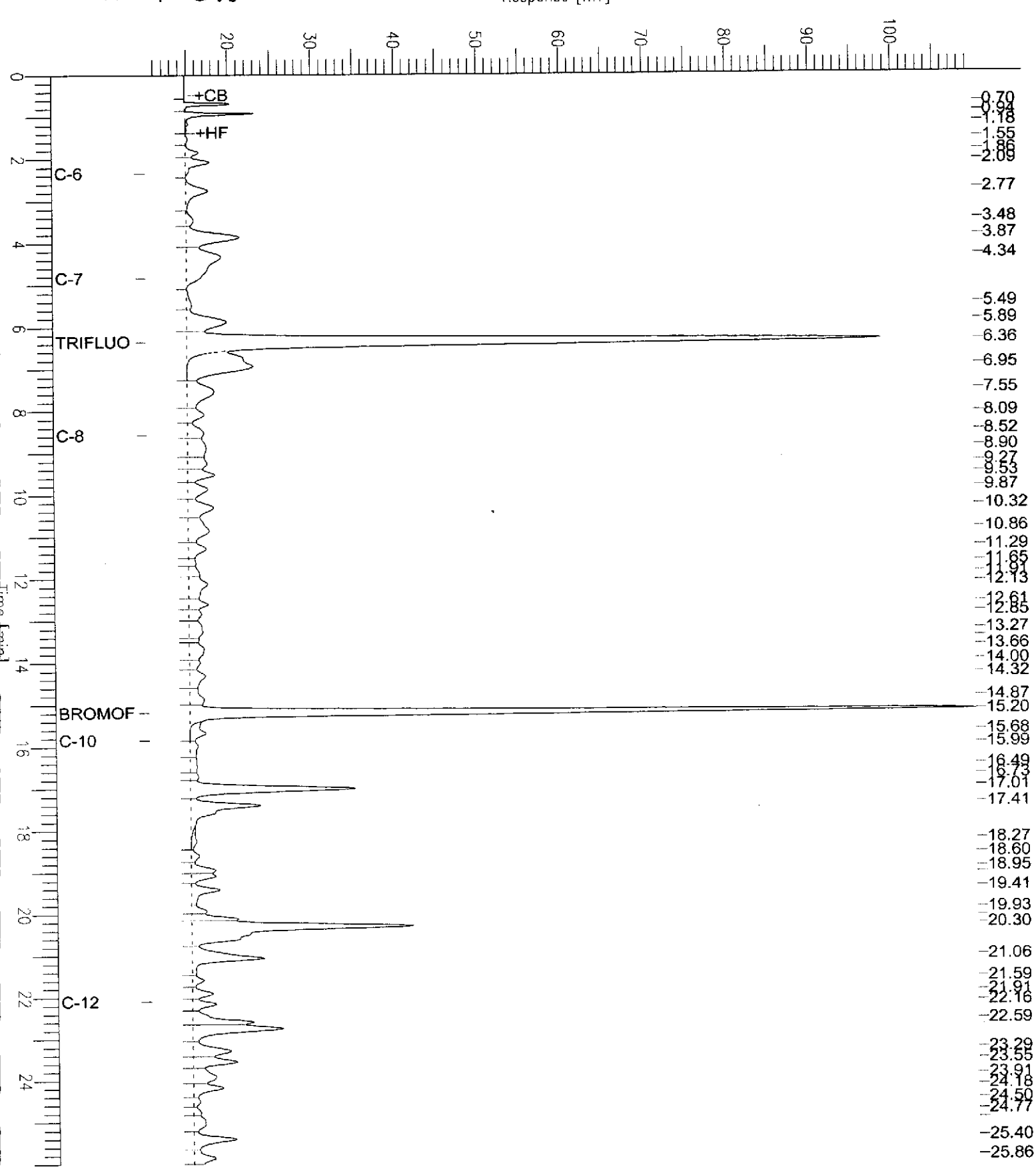
*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 166199-011,82728
FileName : G:\GC07\DATA\189A024.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 10 mV

Sample #: a1 Page 1 of 1
Date : 7/9/03 10:17 AM
Time of Injection: 7/9/03 12:47 AM
Low Point : 10.01 mV High Point : 109.86 mV
Plot Scale: 99.9 mV

BH-4-GW

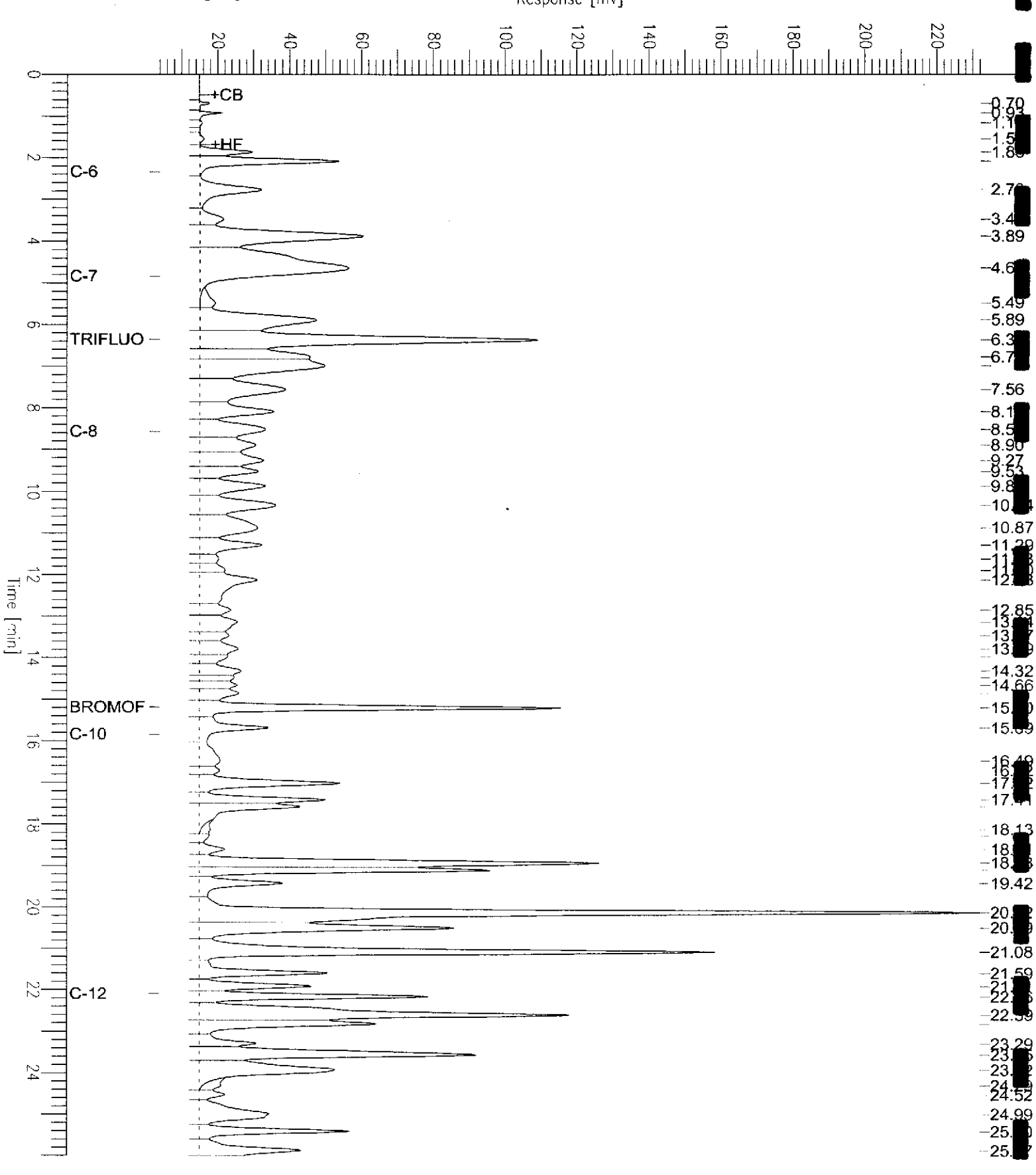


GC07 TVH 'A' Data File RTX 502

Sample Name : 166199-012,82728
FileName : G:\GC07\DATA\189A009.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 4 mV

Sample #: a1 Page 1 of 1
Date : 7/9/03 10:17 AM
Time of Injection: 7/8/03 03:59 PM
Low Point : 3.97 mV High Point : 232.24 mV
Plot Scale: 228.3 mV

BH-3-GW



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Water	Sampled:	07/07/03
Units:	ug/L	Received:	07/07/03
Batch#:	82728		

Field ID:	BH-5-GW	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/09/03
Lab ID:	166199-019		

Analyte	Result	RL	Analysis
Gasoline C7-C12	260 Y	50	8015B
MTBE	3.1	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)	107	57-150	8015B
Bromofluorobenzene (FID)	112	65-144	8015B
Trifluorotoluene (PID)	101	54-149	EPA 8021B
Bromofluorobenzene (PID)	110	58-143	EPA 8021B

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC218652	Analyzed:	07/08/03

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	8015B
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)	93	57-150	8015B
Bromofluorobenzene (FID)	94	65-144	8015B
Trifluorotoluene (PID)	97	54-149	EPA 8021B
Bromofluorobenzene (PID)	97	58-143	EPA 8021B

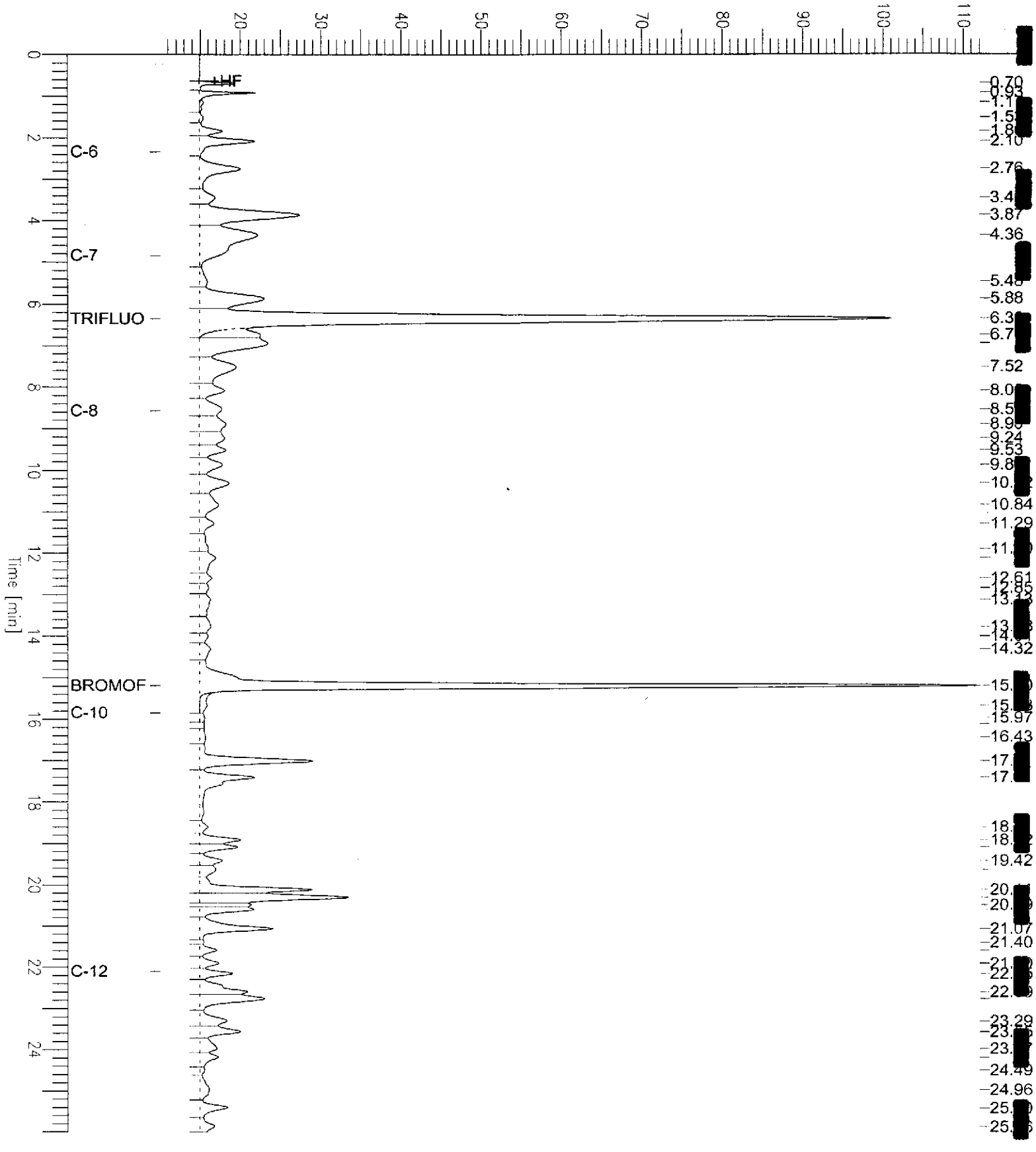
*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 166199-019,82728
FileName : G:\GC07\DATA\189A025.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 10 mV

Sample #: a1 Page 1 of 1
Date : 7/9/03 10:17 AM
Time of Injection: 7/9/03 01:22 AM
Low Point : 10.01 mV High Point : 112.08 mV
Plot Scale: 102.1 mV

BH-5-GW

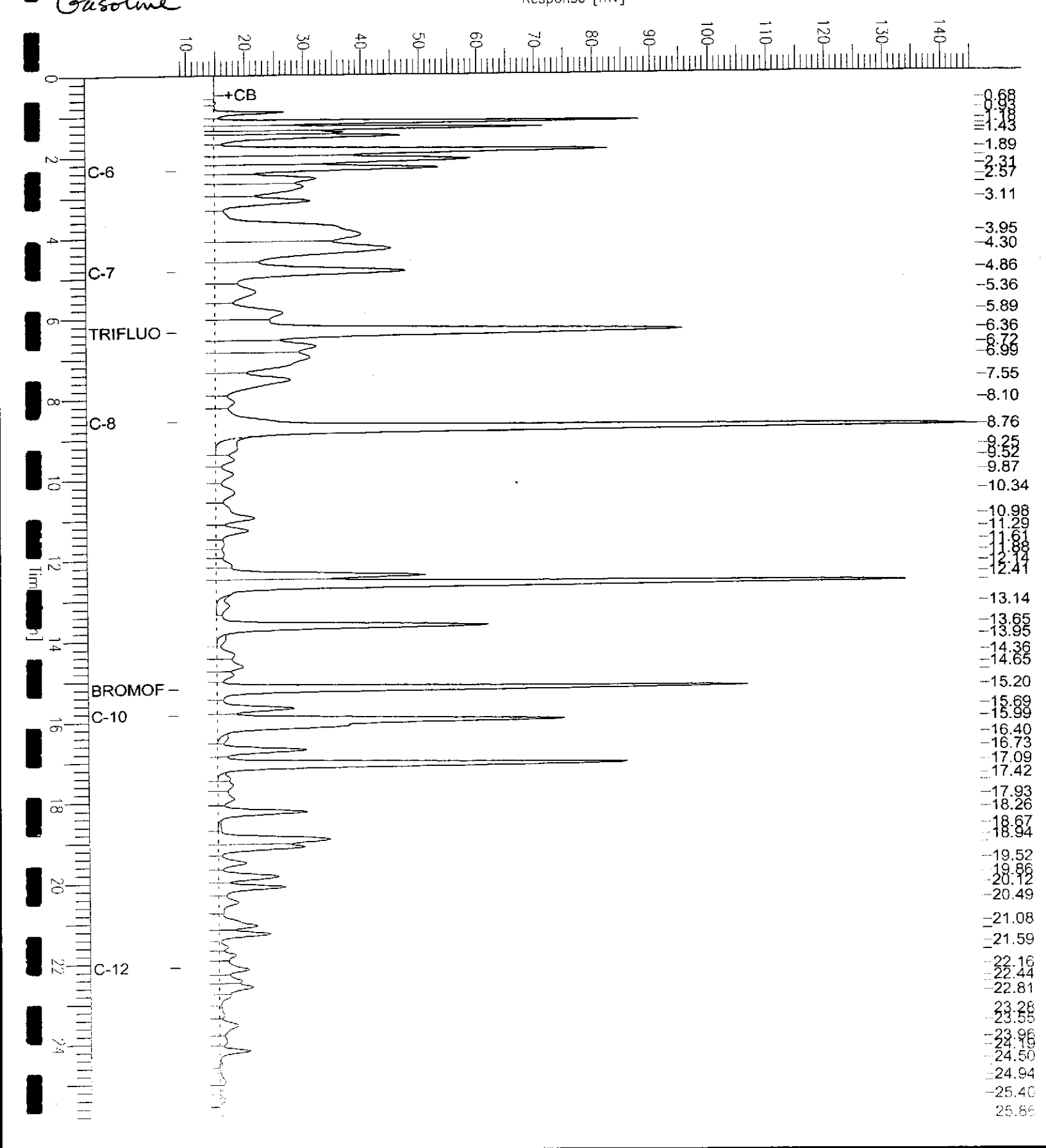


GC07 TVH 'A' Data File RTX 502

mple Name : ccv/lcs,qc218654,82728,03ws1106,2.5/5000
leName : G:\GC07\DATA\189A003.raw
thod : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 8 mV

Sample #:
Date : 7/8/03 10:40 AM
Time of Injection: 7/8/03 10:14 AM
Low Point : 8.24 mV High Point : 145.86 mV
Plot Scale: 137.6 mV

Gasoline



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Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC218653	Batch#:	82728
Matrix:	Water	Analyzed:	07/08/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
MTBE	10.00	11.53	115	63-133
Benzene	10.00	10.53	105	78-123
Toluene	10.00	10.08	101	79-120
Ethylbenzene	10.00	10.01	100	80-120
m,p-Xylenes	20.00	20.77	104	76-120
o-Xylene	10.00	10.24	102	80-121

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		98	54-149
Bromofluorobenzene (PID)		101	58-143

NA= Not Analyzed

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Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55	Analysis:	8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC218654	Batch#:	82728
Matrix:	Water	Analyzed:	07/08/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	999.8	100	80-120
MTBE		NA		
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		107	57-150
Bromofluorobenzene (FID)		96	65-144
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed

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Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Batch#:	82728
MSS Lab ID:	166191-001	Sampled:	07/07/03
Matrix:	Water	Received:	07/07/03
Units:	ug/L	Analyzed:	07/08/03
Diln Fac:	1.000		

Type: MS Lab ID: QC218739

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12			NA		
MTBE	<0.3700	20.00	26.79	134	38-14
Benzene	<0.06500	20.00	21.74	109	75-128
Toluene	<0.06000	20.00	20.47	102	79-127
Ethylbenzene	<0.03800	20.00	19.93	100	78-12
m,p-Xylenes	<0.03400	40.00	43.09	108	67-12
o-Xylene	<0.03600	20.00	21.15	106	77-131

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		100	54-149
Bromofluorobenzene (PID)		105	58-143

Type: MSD Lab ID: QC218740

Analyte	Spiked	Result	%REC	Limits	RPD	Li
Gasoline C7-C12		NA				
MTBE	20.00	26.08	130	38-149	3	38
Benzene	20.00	20.90	104	75-128	4	20
Toluene	20.00	20.51	103	79-127	0	20
Ethylbenzene	20.00	20.03	100	78-124	1	20
m,p-Xylenes	40.00	43.15	108	67-121	0	20
o-Xylene	20.00	21.20	106	77-131	0	20

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		100	54-149
Bromofluorobenzene (PID)		105	58-143

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Field ID: BH-1-10' Lab ID: 166199-002
Type: SAMPLE Analyzed: 07/09/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	14 Y	1.1	mg/Kg	8015B
MTBE	ND	22	ug/Kg	EPA 8021B
Benzene	ND	5.4	ug/Kg	EPA 8021B
Toluene	ND	5.4	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.4	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.4	ug/Kg	EPA 8021B
o-Xylene	ND	5.4	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	139	56-144	8015B
Bromofluorobenzene (FID)	154 *	51-142	8015B
Trifluorotoluene (PID)	123	45-150	EPA 8021B
Bromofluorobenzene (PID)	118	42-138	EPA 8021B

Field ID: BH-1-14' Lab ID: 166199-003
Type: SAMPLE Analyzed: 07/09/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	8015B
MTBE	ND	21	ug/Kg	EPA 8021B
Benzene	ND	5.3	ug/Kg	EPA 8021B
Toluene	ND	5.3	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.3	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.3	ug/Kg	EPA 8021B
o-Xylene	ND	5.3	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	103	56-144	8015B
Bromofluorobenzene (FID)	103	51-142	8015B
Trifluorotoluene (PID)	111	45-150	EPA 8021B
Bromofluorobenzene (PID)	112	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

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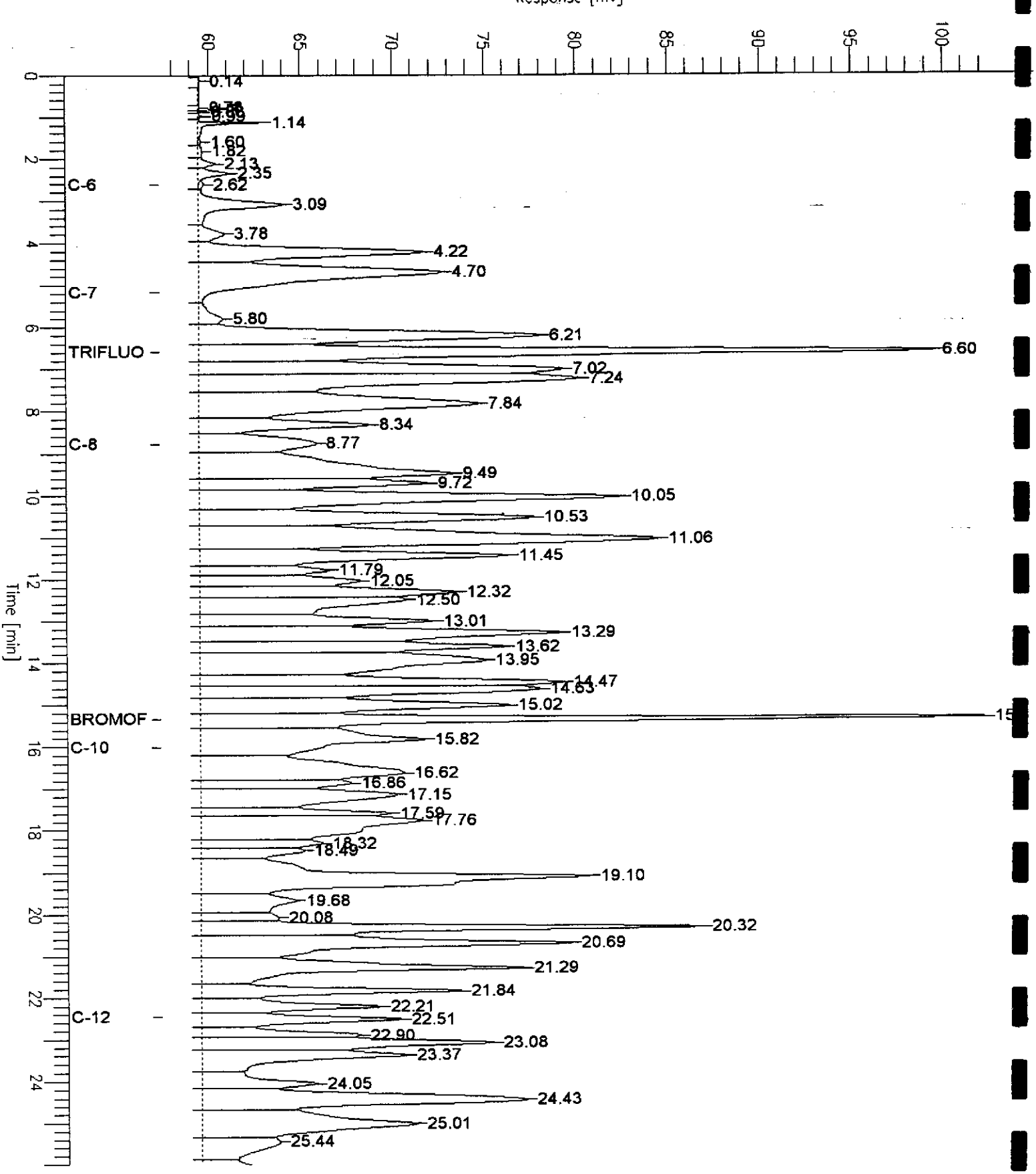
GC04 TVH 'J' Data File FID

Sample Name : 166199-002,82768
FileName : G:\GC04\DATA\190J008.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 57 mV

Sample #: a
Date : 7/10/03 10:38 AM
Time of Injection: 7/9/03 05:23 PM
Low Point : 57.30 mV High Point : 102.24 mV
Plot Scale: 44.9 mV

BH-1-10'



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Field ID:	BH-2-6.5	Lab ID:	166199-004
Type:	SAMPLE	Analyzed:	07/09/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	8015B
MTBE	ND	22	ug/Kg	EPA 8021B
Benzene	ND	5.4	ug/Kg	EPA 8021B
Toluene	ND	5.4	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.4	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.4	ug/Kg	EPA 8021B
o-Xylene	ND	5.4	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	56-144	8015B
Bromofluorobenzene (FID)	103	51-142	8015B
Trifluorotoluene (PID)	112	45-150	EPA 8021B
Bromofluorobenzene (PID)	112	42-138	EPA 8021B

Field ID:	BH-2-9'	Lab ID:	166199-005
Type:	SAMPLE	Analyzed:	07/09/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B
MTBE	ND	20	ug/Kg	EPA 8021B
Benzene	ND	5.0	ug/Kg	EPA 8021B
Toluene	ND	5.0	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.0	ug/Kg	EPA 8021B
o-Xylene	ND	5.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	105	56-144	8015B
Bromofluorobenzene (FID)	115	51-142	8015B
Trifluorotoluene (PID)	111	45-150	EPA 8021B
Bromofluorobenzene (PID)	115	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Field ID: BH-2-15 Lab ID: 166199-006
Type: SAMPLE Analyzed: 07/09/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	8015B
MTBE	ND	21	ug/Kg	EPA 8021B
Benzene	ND	5.3	ug/Kg	EPA 8021B
Toluene	ND	5.3	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.3	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.3	ug/Kg	EPA 8021B
o-Xylene	ND	5.3	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	100	56-144	8015B
Bromofluorobenzene (FID)	102	51-142	8015B
Trifluorotoluene (PID)	104	45-150	EPA 8021B
Bromofluorobenzene (PID)	109	42-138	EPA 8021B

Field ID: BH-4-5' Lab ID: 166199-008
Type: SAMPLE Analyzed: 07/09/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B
MTBE	ND	20	ug/Kg	EPA 8021B
Benzene	ND	5.1	ug/Kg	EPA 8021B
Toluene	ND	5.1	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.1	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.1	ug/Kg	EPA 8021B
o-Xylene	ND	5.1	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	56-144	8015B
Bromofluorobenzene (FID)	105	51-142	8015B
Trifluorotoluene (PID)	107	45-150	EPA 8021B
Bromofluorobenzene (PID)	111	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

5.1

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Field ID:	BH-4-9'	Lab ID:	166199-009
Type:	SAMPLE	Analyzed:	07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B
MTBE	ND	21	ug/Kg	EPA 8021B
Benzene	ND	5.2	ug/Kg	EPA 8021B
Toluene	ND	5.2	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.2	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.2	ug/Kg	EPA 8021B
o-Xylene	ND	5.2	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	56-144	8015B
Bromofluorobenzene (FID)	104	51-142	8015B
Trifluorotoluene (PID)	104	45-150	EPA 8021B
Bromofluorobenzene (PID)	111	42-138	EPA 8021B

Field ID:	BH-4-13'	Lab ID:	166199-010
Type:	SAMPLE	Analyzed:	07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	8015B
MTBE	ND	22	ug/Kg	EPA 8021B
Benzene	ND	5.5	ug/Kg	EPA 8021B
Toluene	ND	5.5	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.5	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.5	ug/Kg	EPA 8021B
o-Xylene	ND	5.5	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	104	56-144	8015B
Bromofluorobenzene (FID)	109	51-142	8015B
Trifluorotoluene (PID)	107	45-150	EPA 8021B
Bromofluorobenzene (PID)	114	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Field ID: BH-3-5' Lab ID: 166199-013
Type: SAMPLE Analyzed: 07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B
MTBE	ND	21	ug/Kg	EPA 8021B
Benzene	ND	5.2	ug/Kg	EPA 8021B
Toluene	ND	5.2	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.2	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.2	ug/Kg	EPA 8021B
o-Xylene	ND	5.2	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	100	56-144	8015B
Bromofluorobenzene (FID)	98	51-142	8015B
Trifluorotoluene (PID)	104	45-150	EPA 8021B
Bromofluorobenzene (PID)	103	42-138	EPA 8021B

Field ID: BH-3-9' Lab ID: 166199-014
Type: SAMPLE Analyzed: 07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	8015B
MTBE	ND	22	ug/Kg	EPA 8021B
Benzene	ND	5.4	ug/Kg	EPA 8021B
Toluene	ND	5.4	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.4	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.4	ug/Kg	EPA 8021B
o-Xylene	ND	5.4	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	100	56-144	8015B
Bromofluorobenzene (FID)	100	51-142	8015B
Trifluorotoluene (PID)	105	45-150	EPA 8021B
Bromofluorobenzene (PID)	107	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Field ID:	BH-3-13'	Lab ID:	166199-015
Type:	SAMPLE	Analyzed:	07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B
MTBE	ND	21	ug/Kg	EPA 8021B
Benzene	ND	5.2	ug/Kg	EPA 8021B
Toluene	ND	5.2	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.2	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.2	ug/Kg	EPA 8021B
o-Xylene	ND	5.2	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	103	56-144	8015B
Bromofluorobenzene (FID)	105	51-142	8015B
Trifluorotoluene (PID)	105	45-150	EPA 8021B
Bromofluorobenzene (PID)	110	42-138	EPA 8021B

Field ID:	BH-5-6.5'	Lab ID:	166199-016
Type:	SAMPLE	Analyzed:	07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	8015B
MTBE	ND	22	ug/Kg	EPA 8021B
Benzene	ND	5.4	ug/Kg	EPA 8021B
Toluene	ND	5.4	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.4	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.4	ug/Kg	EPA 8021B
o-Xylene	ND	5.4	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	100	56-144	8015B
Bromofluorobenzene (FID)	97	51-142	8015B
Trifluorotoluene (PID)	103	45-150	EPA 8021B
Bromofluorobenzene (PID)	103	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Field ID: BH-5-11.5' Lab ID: 166199-017
Type: SAMPLE Analyzed: 07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	49 Y	2.0	mg/Kg	8015B
MTBE	ND	40	ug/Kg	EPA 8021B
Benzene	ND	10	ug/Kg	EPA 8021B
Toluene	ND	10	ug/Kg	EPA 8021B
Ethylbenzene	ND	10	ug/Kg	EPA 8021B
m,p-Xylenes	ND	10	ug/Kg	EPA 8021B
o-Xylene	ND	10	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	226 *	>LR b 56-144	8015B
Bromofluorobenzene (FID)	153 *	51-142	8015B
Trifluorotoluene (PID)	155 *	45-150	EPA 8021B
Bromofluorobenzene (PID)	116	42-138	EPA 8021B

Field ID: BH-5-13' Lab ID: 166199-018
Type: SAMPLE Analyzed: 07/10/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	1.7 Y	1.1	mg/Kg	8015B
MTBE	ND	21	ug/Kg	EPA 8021B
Benzene	ND	5.3	ug/Kg	EPA 8021B
Toluene	ND	5.3	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.3	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.3	ug/Kg	EPA 8021B
o-Xylene	ND	5.3	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	107	56-144	8015B
Bromofluorobenzene (FID)	109	51-142	8015B
Trifluorotoluene (PID)	110	45-150	EPA 8021B
Bromofluorobenzene (PID)	112	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

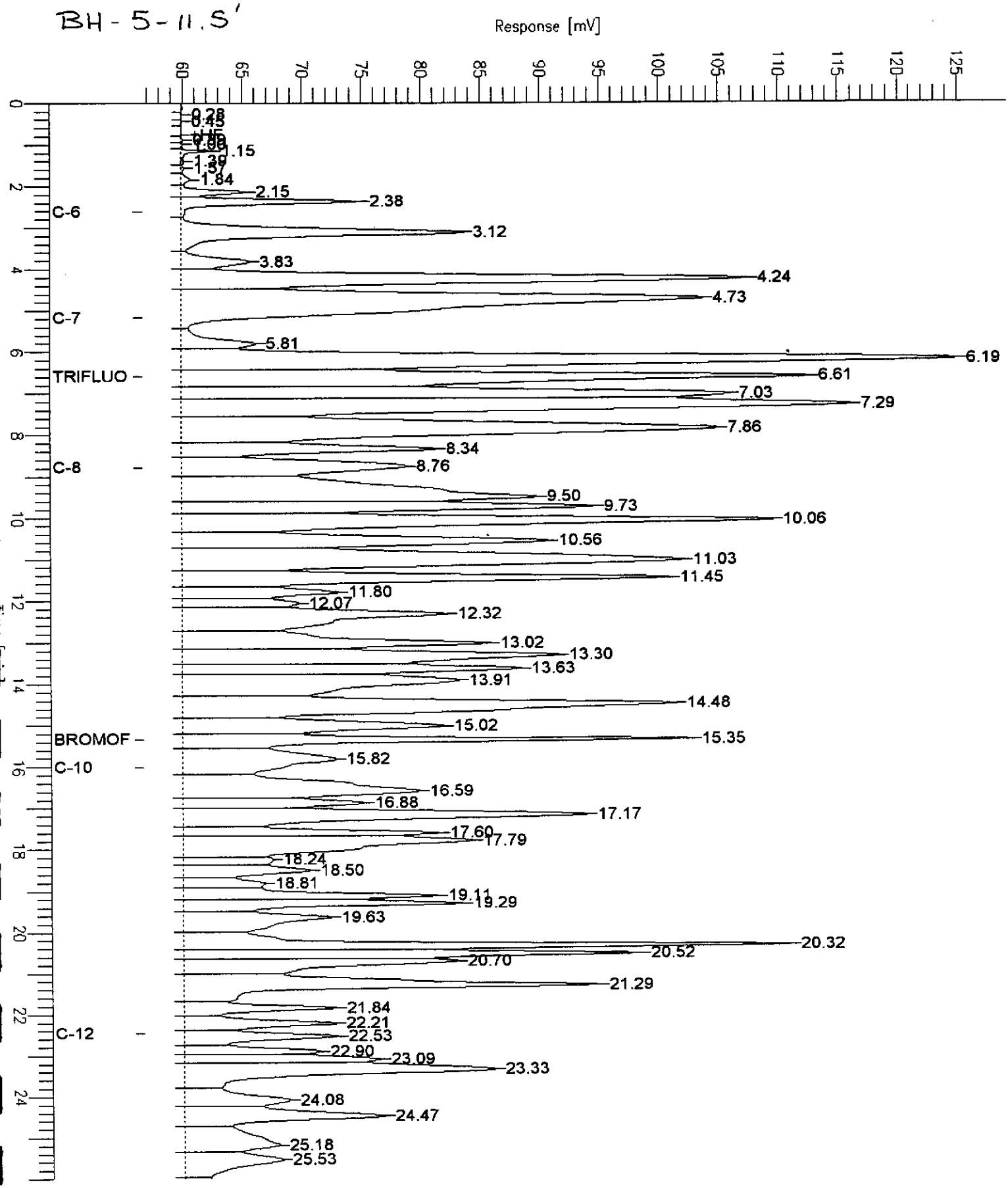
5.1

GC04 TVH 'J' Data File FID

Sample Name : 166199-017,82768
FileName : G:\GC04\DATA\190J036.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 57 mV

Sample #: a
Date : 7/10/03 10:39 AM
Time of Injection: 7/10/03 10:10 AM
Low Point : 56.60 mV High Point : 125.01 mV
Plot Scale: 68.4 mV

BH-5-11.5'

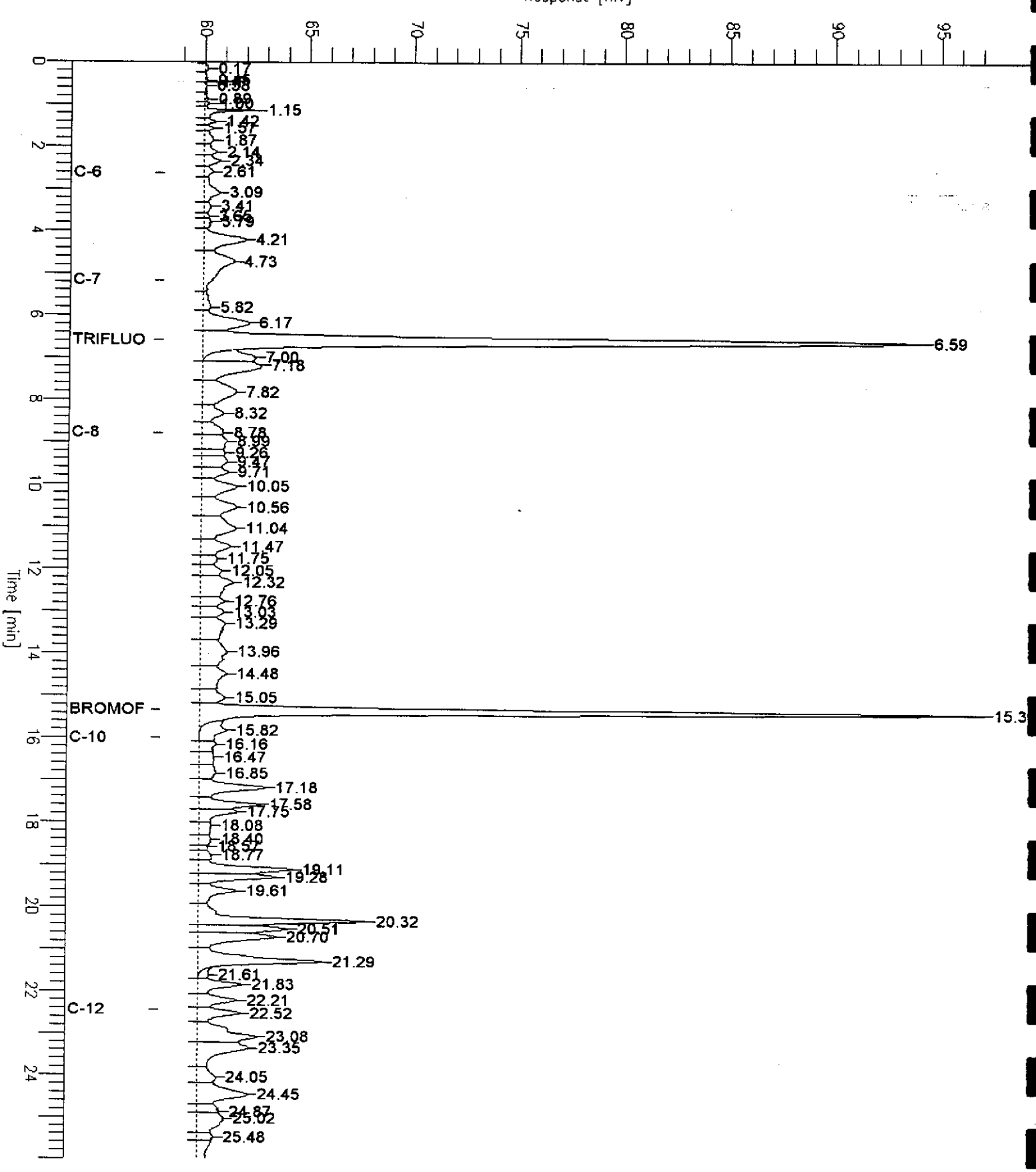


GC04 TVH 'J' Data File FID

Sample Name : 166199-018,82768
FileName : G:\GC04\DATA\190J033.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 58 mV

Sample #: a Page 1 of 1
Date : 7/10/03 10:39 AM
Time of Injection: 7/10/03 08:22 AM
Low Point : 58.11 mV High Point : 97.24 mV
Plot Scale: 39.1 mV

BH-5-13'



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Matrix:	Soil	Batch#:	82768
Basis:	as received	Sampled:	07/07/03
Diln Fac:	1.000	Received:	07/07/03

Type: BLANK
Lab ID: QC218804
Analyzed: 07/09/03

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B
MTBE	ND	20	ug/Kg	EPA 8021B
Benzene	ND	5.0	ug/Kg	EPA 8021B
Toluene	ND	5.0	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.0	ug/Kg	EPA 8021B
o-Xylene	ND	5.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	89	56-144	8015B
Bromofluorobenzene (FID)	79	51-142	8015B
Trifluorotoluene (PID)	94	45-150	EPA 8021B
Bromofluorobenzene (PID)	83	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

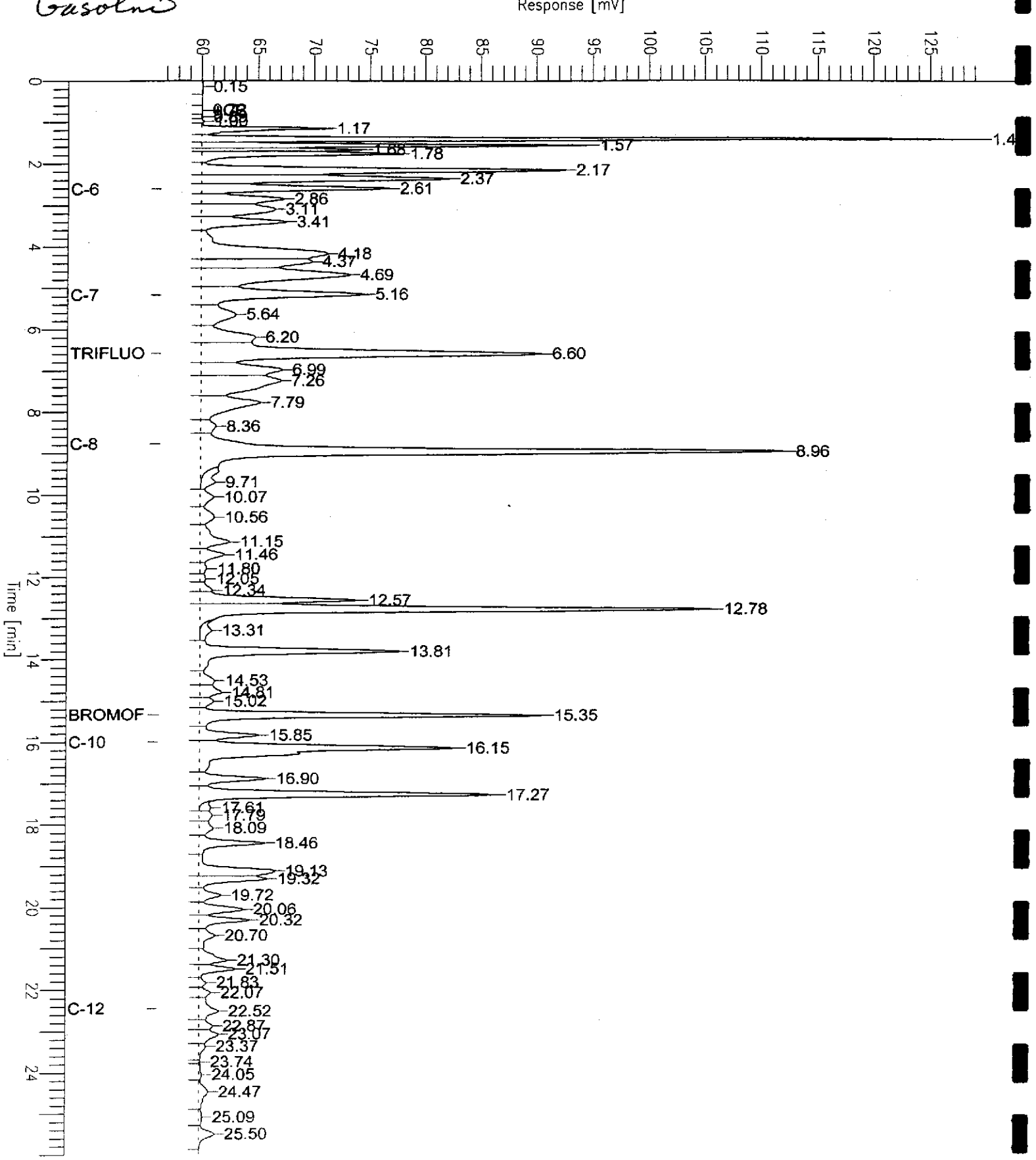
5.1

GC04 TVH 'J' Data File FID

Sample Name : CCV/LCS,QC218806,82768,03WS1106,2.5/5000
FileName : G:\GC04\DATA\190J003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 57 mV

Sample #: Page 1 of 1
Date : 7/9/03 01:20 PM
Time of Injection: 7/9/03 12:54 PM
Low Point : 56.52 mV High Point : 129.58 mV
Plot Scale: 73.1 mV

Gasoline



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Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55		
Type:	LCS	Basis:	as received
Lab ID:	QC218805	Diln Fac:	1.000
Matrix:	Soil	Batch#:	82768
Units:	ug/Kg	Analyzed:	07/09/03

Analyte	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12		NA			
MTBE	50.00	45.07	90	74-121	EPA 8021B
Benzene	50.00	52.94	106	80-121	EPA 8021B
Toluene	50.00	51.14	102	80-120	EPA 8021B
Ethylbenzene	50.00	49.20	98	79-120	EPA 8021B
m,p-Xylenes	100.0	98.60	99	76-120	EPA 8021B
o-Xylene	50.00	50.28	101	80-120	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	88	56-144	8015B
Bromofluorobenzene (FID)	83	51-142	8015B
Trifluorotoluene (PID)	94	45-150	EPA 8021B
Bromofluorobenzene (PID)	87	42-138	EPA 8021B

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55	Analysis:	8015B
Type:	LCS	Basis:	as received
Lab ID:	QC218806	Diln Fac:	1.000
Matrix:	Soil	Batch#:	82768
Units:	mg/Kg	Analyzed:	07/09/03

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	5.000	4.306	86	80-120
MTBE		NA		
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		105	56-144
Bromofluorobenzene (FID)		87	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed

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Curtis & Tompkins Laboratories Analytical Report

Lab #:	166199	Location:	Benner Automotive
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2002-55	Analysis:	8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	166229-004	Batch#:	82768
Matrix:	Soil	Sampled:	07/08/03
Units:	mg/Kg	Received:	07/08/03
Basis:	as received	Analyzed:	07/09/03

Type: MS Lab ID: QC218827

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.191	10.75	10.31	85	24-134
MTBE			NA		
Benzene			NA		
Toluene			NA		
Ethylbenzene			NA		
m,p-Xylenes			NA		
o-Xylene			NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		128	56-144
Bromofluorobenzene (FID)		111	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: MSD Lab ID: QC218828

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.53	10.57	89	24-134	4	32
MTBE		NA				
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		119	56-144
Bromofluorobenzene (FID)		103	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed
RPD= Relative Percent Difference

8.0