Subsurface Consultants, Inc.

January 8, 2003
SCI 1039.008

Mr. Don Hwang
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Site Investigation and Groundwater Monitoring Program
Activities Conducted November 2001 to November 2002
StID # 3035
327-34th Street
Oakland, California

Dear Mr. Hwang:

This letter records the results of activities performed by Subsurface Consultants, Inc. (SCI) at the above-referenced property between November 2001 and November 2002. Activities conducted included the following:

- Semi-Annual Groundwater Monitoring Event – November 2001
- Free Product Removal Event – February 2002
- Semi-Annual Groundwater Monitoring Event – May 2002
- Well Survey – August 2002
- Develop Conceptual Site Model – 2002
- Data Review and Evaluation – 2001 through 2002
- Recommend Revision to Groundwater Monitoring Program - 2002

The location of the property, referred to herein as the Site, is shown on the Vicinity Map, Plate 1 and the Site Plan, Plate 2.

BACKGROUND

On March 4 and 5, 1993, one 1,000-gallon underground storage tank (UST) containing unleaded gasoline and one 1,000-gallon UST containing waste oil were removed by others under the direction of Alameda County Health Care Services Agency (ACHCSA). Results of chemical analyses on soil samples collected beneath the ends of the gasoline and waste oil USTs (depth of about 9 to 11 feet below the ground surface, bgs) indicated that previous releases from the gasoline UST had significantly impacted soil, and releases from the waste oil UST had not impacted soil.

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GeoPlexus, Inc. (GeoPlexus) conducted a soil and groundwater investigation in 1993 to assess petroleum hydrocarbon impacts to groundwater. GeoPlexus installed three groundwater monitoring wells (MW-1 through MW-3, see Plate 2) in the area immediately adjacent to the former UST area. Analytical test results identified that significant impact from gasoline-range hydrocarbons existed at two of the wells (MW-2 and MW-3). Approximately 1/4 inch of free product was observed floating on the water in well MW-3. The product was reportedly gasoline.

SCI was retained in September 1997 to continue the evaluation of impacts due to free floating and dissolved phase petroleum hydrocarbons in groundwater. SCI installed two additional wells, MW-4 and MW-5, in June 1998, further downgradient from the former UST area. Monitoring of the five onsite wells was performed periodically with results suggesting that the free product plume was localized to the former UST area and had not migrated significantly, given that free product had not been detected in well MW-4 situated within 70 feet of the former UST area. The dissolved product plume, however, was observed to have migrated as evidenced by tracking low level and degraded gasoline constituents to MW-5 located about 130 feet downgradient of the former UST area.

In November 1999, the ACHCSA requested that additional work be conducted at the Site to (1) further characterize the downgradient extent of the plume, and (2) evaluate the likelihood of contaminant plume migration via an existing concrete box culvert transecting the east side of the Site. SCI reviewed a City map indicating that the culvert was referred to as a 5-foot by 6-foot reinforced concrete box culvert, aligned from north to south coming into the Site, across 34th Street, and then angling eastward toward Broadway. SCI further learned that a cave-in occurred along the alignment of the culvert below the Site during the winter of 1983. Repair plans prepared by Jordan, Casper, Woodman, Dobson (JCWD) indicate that the cave-in was located in the parking lot area on the east side of the Site structure, about 35 feet south of an existing manhole and along the culvert alignment. The JCWD plans indicate that the culvert flow line in the area of the repair is located about 22.5 feet below the pavement surface. The depth to groundwater, as measured in the onsite wells, varied seasonally from 15 to 24 feet bgs, which suggested that the culvert could potentially be acting as a seasonal preferential pathway.

Although the cause of the cave-in was not described on the plans reviewed by SCI, it appears that an 11-foot long segment of the culvert was replaced, and a 5-foot diameter pipe liner was placed into the culvert. The pipe liner reportedly extends about 70 feet northward from the newly repaired area. It is unclear whether access to the culvert through the existing manhole, was obstructed by the pipe liner. Specifications regarding the material used to backfill the culvert trench were not available.

In July 2000, SCI installed two additional monitoring wells (MW-6 and MW-7) on the east side of the Site and conducted a semi-annual event. The new wells are approximately 30 feet west (MW-6) and 30 feet east (MW-7) of the culvert alignment. Low concentrations of MTBE and xylenes are the only fuel constituents detected in well MW-6 during the July 2000 and April 2001 events; no fuel constituents had been detected in well MW-7. Our evaluations further indicated that the flow line of the culvert is situated approximately 4 to 5 feet below the

groundwater level measured in well MW-6 and 5 to 7 feet below the groundwater level measured in well MW-7.

ACHCSA has been consulted on an ongoing basis regarding site findings. Their requirements included conducting ongoing groundwater monitoring and free product removal events, development of a site conceptual model for use in evaluation of site risks and preparation of reports. A reference list of Site reports is included as Appendix A.

GROUNDWATER MONITORING EVENT – NOVEMBER 2001

On November 20, 2001 a semi-annual monitoring event was conducted by SCI in accordance with ACHCSA requirements. Initially, the depth-to-water was measured and the presence of free product was checked in all wells. SCI observed no free product in any of the wells. Groundwater elevation data is summarized in Table 1[1].

In accordance with the ACHCSA approved monitoring plan, all site wells (MW-1 through MW-7) were purged of approximately 3 well casing volumes of water using new disposable bailers. Measurements of pH, temperature, conductivity and dissolved oxygen (DO) were made and were recorded on field forms, which are attached. Approximately 34 gallons of water was purged from the subject wells and placed into a labeled 55-gallon drum temporarily stored onsite.

Once groundwater levels recharged, the wells were sampled with new disposable bailers. Groundwater samples were decanted into pre-cleaned containers, placed in ice-filled coolers, and remained chilled until delivery to the analytical laboratory. Chain-of-custody documentation accompanied the samples to the laboratory.

Curtis & Tompkins, Ltd., a state-certified chemical testing laboratory, performed chemical analyses on groundwater samples. The testing program included the following:

- Total extractable hydrocarbons as diesel (TEHd) and motor oil (TEHo), using EPA Method 8015 with silica gel cleanup,
- Total Volatile Hydrocarbons as gasoline (TVHg), using EPA Method 8015m,
- Benzene, toluene, ethylbenzene, total xylenes (BTEX) and Methyl tertiary butyl ether (MTBE), using EPA method 8260,
- Ferrous iron (Fe[II]), manganese (Mn), and sulfate (SO_4), using standard methods, and
- Ammonia (NH_3), ortho-phosphate (o-PO_4), and carbon dioxide (CO_2), using standard methods.

Groundwater analytical test results are summarized in Table 2. Field and laboratory measurements of various bioparameters are summarized in Table 3. Copies of the Field Forms

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[1] Table 1 has been updated to reflect a recent survey of the groundwater monitoring wells.

are included in Appendix B. Analytical data reports and chain-of-custody documents are presented in Appendix C. In addition, the analytical data was obtained in an electronic format in compliance with current State of California Water Resource Control Board requirements for Underground Storage Tank Program sites.

FREE PRODUCT REMOVAL EVENT – FEBRUARY 2002

In accordance with ACHCSA requirements, SCI checked all onsite monitoring wells for free floating product and measured the depth to groundwater on February 19, 2002.

No free product was observed in any well. Groundwater elevation and historical free product measurements are presented in Table 1.

GROUNDWATER MONITORING EVENT – MAY 2002

In accordance with ACHCSA requirements SCI conducted a semi-annual monitoring event on May 21 and 22, 2002. Initially, the depth-to-water was measured and the presence of free product was checked in all wells. No free product was observed. Groundwater elevation data is summarized in Table 1.

Groundwater sampling and testing protocols described for the November 2001 semi-annual groundwater monitoring event were followed for this event. Approximately 40 gallons of water was purged from the subject wells and placed into a labeled 55-gallon drum temporarily stored onsite.

Once groundwater levels recharged, the wells were sampled with new disposable bailers. Groundwater samples were decanted into pre-cleaned containers, placed in ice-filled coolers, and remained chilled until delivery to the analytical laboratory. Chain-of-custody documentation accompanied the samples to the laboratory.

The groundwater samples were transported to Curtis & Tompkins, Ltd., a state-certified chemical testing laboratory for analyses. The identical testing program for the November 2001 event was followed.

Groundwater analytical test results are summarized in Table 2. Field and laboratory measurements of various bio-parameters are summarized in Table 3. Copies of the Field Forms are included in Appendix B. Analytical data reports and chain-of-custody documents are presented in Appendix C. In addition, the analytical data was obtained in an electronic format in compliance with current State of California Water Resource Control Board requirements for Underground Storage Tank Program sites.

WELL SURVEY – AUGUST 2002

In compliance with current State of California Water Resource Control Board requirements for Underground Storage Tank Program sites, a survey of the existing groundwater monitoring

wells was conducted. The new requirements include locating the wells with respect to a known survey point. The survey was performed by Virgil Chavez Land Surveying on August 8, 2002 and survey measurements were confirmed by a field visit conducted in September 2002[2]. A copy of the survey data is included in Appendix D.

DISCUSSION OF RESULTS

Groundwater Gradient and Flow Direction

Based on the groundwater elevation data[3], the groundwater gradient and flow directions for the November 2001, February 2002 and May 2002 events are consistent with previous monitoring events. The groundwater gradient remains relatively flat near the former UST area and becomes slightly steeper to the south. The groundwater flow directions for the respective events are shown on Plates 3, 4, and 5, respectively.

One factor potentially impacting groundwater flow at the site is the underground culvert. The groundwater elevation measured in well MW-6, located about 60 feet cross gradient from well MW-7, and on the west side of the culvert, is routinely several feet lower than the level measured in well MW-7 on the east side of the culvert. The depressed groundwater elevation in well MW-6 may suggest that flow of water in the culvert system, or the potential presence of permeable material in the culvert trench, is affecting the groundwater flow regime locally near well MW-6. Although, the extent of the culvert's influence is unknown, the culvert does not appear to be significantly affecting the main body of the plume, only the immediate area of well MW-6.

Chemical Results

Elevated concentrations of gasoline constituents (TVHg, BTEX and MTBE) were detected during the November 2001 and May 2002 events in wells MW-2 and MW-3, located in the immediate vicinity of the former UST. Wells MW-2 and MW-3 have previously contained free product, however no free product has been detected since December 1999 in well MW-3 and since October 2000 in well MW-2. Free product has not been detected in any other onsite well to date.

Well MW-4 continues to show the presence of dissolved gasoline constituents as would be expected for a well located downgradient of the suspected point of release.

Concentrations detected to date in wells MW-5 and MW-6 indicate that these wells exist at the front edge of the dissolved plume.

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2 The benchmark for the project was an "X" cut in the top of curb near the southwest return of the northwest corner of 34th and Broadway with a known elevation of 60.40' (NGVD 83).

3 Groundwater elevations presented in this report for the November 2001 and May 2002 events have been corrected based on the results of the recent groundwater survey.

Xylenes are the only gasoline constituent detected to date in well MW-7 (0.59 ug/L during the November 2001). This data point may represent an anomaly given the location of this well.

Bioparameter Results

Field and laboratory measurements indicate that Site groundwater conditions would promote both aerobic and anaerobic biodegradation. DO readings measured to date are generally higher outside the main contaminant plume limits (wells MW-1, MW-5 and MW-6) than within the plume (wells MW-2, MW-3 and MW-4), yet most events suggest that groundwater recharge is effectively replenishing the DO in the entire area.

Elevated Fe(II) and Mn, and lower NO_3 and SO_4 concentrations within the plume suggest that local anaerobic microbial activity is occurring.

CONCEPTUAL SITE MODEL

To assist in the evaluation of the site data and risks that may be posed by the contaminant plume, SCI developed the following Site Conceptual Model.

The Site is occupied by an automobile sales and repair facility which has been in operation since the early 1950's. The facility was constructed by cutting into the eastern flank of a hillside; the floor level inside the facility is tiered or stepped downward moving to the east.

The Site is bordered to the north by 34th Street and to the west by Broadway. A partially paved parking lot occupies the area west of the property and a driveway to a parking garage extends along the south side of the Site. Structures located downgradient of the Site are occupied by office and/or commercial businesses. None of the structures located to the south have basements, and there are no known drinking water wells in the Site vicinity.

According to a geologic map by Radbruch[4], the Site is underlain by the Temescal Formation. The Temescal Formation is an alluvial fan deposit comprised of interfingering lenses of clayey gravel, sandy silty clay, and sand-clay-silt mixtures. Additionally, the map shows that a former stream channel beneath the eastern portion of the Site, was a tributary to Glen Echo Creek. The former channel has been diverted to an underground culvert beneath the eastern portion of the Site.

Based on a review of the borehole logs, the Site is underlain by interbedded alluvial soils. The stratigraphy encountered in the wells located on the west side of the culvert is markedly different from that encountered in well MW-7. Well boring MW-7, located on the east side of the culvert alignment, encountered about 20 feet of permeable sandy gravel overlaying sandy lean clays to the depth explored. Groundwater flows within the upper 20-foot thick aquifer material. The well borings (well MW-1 through MW-6) from west of the culvert encountered relatively

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[4] Radbruch, Dorothy H., Areal and Engineering Geology of the Oakland West Quadrangle, California, USGS, 1957.

impermeable clayey materials from the surface to depths of 6 to 18 feet. The clayey material would act to impede or confine groundwater flow and vertical upward migration of vapors. The clayey material layer is in turn underlain by more permeable aquifer formational materials through which groundwater flows.

Seven monitoring wells have been installed to monitor conditions related to the Site and the contaminant plume. Periodic groundwater monitoring has indicated that the depth to groundwater varies across the Site as well as varying seasonally. The depth to groundwater in the former UST area (well MW-2) has varied from about 17 to 23 feet bgs. Seasonal variations have been measured to be 2 to 4 feet.

The groundwater gradient near wells MW-1, MW-2, MW-3 and MW-4 in the immediate former UST area is relatively flat with about 0.25 feet of difference in groundwater elevation between the four points. Wells MW-5 and MW-6 located approximately 130 feet southwest and about 200 feet south east of the former UST area respectively, have similar groundwater surface elevations which have varied up to approximately 2.5 feet lower than those wells located in the UST area, correlating to a slightly steeper gradient. Well MW-7 water elevations are not used in the calculation of the Site gradients, as the well is completed into a different aquifer material.

Well MW-1 is located in an area adjacent to the former waste oil UST area. No significant impacts to groundwater from either of the USTs have been detected by this well and as such the well has served as a background monitoring well since 1993.

Wells MW-2 and MW-3 are located immediately downgradient of the former gasoline UST and have both detected impacts due to the presence of free floating petroleum hydrocarbons since they were installed in 1993. These two wells are within the main body of the contaminant plume.

Well MW-4 is located within the portion of the plume, which is just outside the area where free floating product has been detected to date. Since 1998 this well has detected MTBE concentrations ranging from 1,100 to 1,800 ug/L, as well as moderate concentrations of TVHg and BTEX constituents.

Wells MW-5 and MW-6 are located along the front edge of the plume. Both of these wells have detected lower MTBE concentrations (average detected MTBE concentrations, 240 ug/L in well MW-6 and 9 ug/L in well MW-5) and sporadic and relatively low concentrations of gasoline constituents.

Well MW-7 appears to be located cross gradient and outside the influence of the plume.

CONCLUSIONS

The portion of the plume, which previously contained free product and where elevated concentrations of dissolved gasoline constituents still remain, appears relatively stabilized. The absence of free floating product within wells MW-2 and MW-3 is the only measured change to the condition of the plume since the wells were installed in 1993.

Contaminant concentrations detected to date in groundwater below the existing structure are not judged to present a risk to human health given the continued use of the structure as an automotive repair garage. Vertical upward migration of volatile gasoline constituents, which may be occurring, would be limited by the clayey aquitard which is greater than 5 feet in thickness and which underlays the concrete floor slab.

Dissolved contaminant concentrations at the front edge of the plume (wells MW-5 and MW-6) remain significantly less than those measured within the main body of the plume. The highest detected concentrations are below the respective RWQCB and City of Oakland potentially toxic chemical constituent screening levels[5] considering that the shallow groundwater level is situated deeper than 10 feet (3 meters) bgs and that the groundwater is not a current or potential source of drinking water. A comparison of various concentrations on site to the applicable screening levels is shown below:

	Highest Detected Conc. Center of Plume Below Bldg. ug/L	**Tier 2, Site Specific Target Level Clayey Silts Inhalation of Indoor Air in Commercial Bldg ug/L**		**Highest Detected Conc. Front Edge of Plume ug/L**	**RWQCB Risk Based Screening Levels Table D ug/L**
Benzene	10,000 (MW-2)	89,000		0.83 (MW-5)	46
Toluene	27,000 (MW-2)	Value would exceed solubility		12 (MW-5)	130
Ethylbenzene	5,300 (MW-3)	Value would exceed solubility		1.2 (MW-5)	290
Xylenes	33,000 (MW-3)	Value would exceed solubility		11 (MW-5)	13
MTBE	5,800 (MW-2)	Value would exceed solubility		450 (MW-6)	1,800

[5] Table D from RWQCB Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater - dated December 2001, Tier 2 from City of Oakland Urban Land Redevelopment Program Guidance Document - dated January 2000.

Conditions conducive to both aerobic and anerobic biodegradation appear to exist and are actively occurring at the Site. These natural processes coupled with free product removal have most likely been responsible for promoting the stability of the plume.

The natural processes, including the buffering capacity of the soil system do appear sufficient to reduce the plume mass over time, as is evidenced by the reduction in TVHg/MTBE concentrations when comparing concentrations measured near the center of the plume (well MW-4) to those measured at the front edge of the plume (well MW-5).

RECOMMENDATIONS

Based on our analysis of Site data, continued periodic monitoring of the chemical concentrations in groundwater is viewed as the most appropriate remedial response for the Site given the continued automotive facility use of the property. It is recommended however, that the monitoring and free product removal activities program be reduced from semi-annual events to an annual event conducted in the spring each year, as described herein. We believe this reduction is justified given the relative stability of the plume as observed over the past 9 years of study.

Annual monitoring would include checking all 7 onsite wells for the presence of free product and determining the depth to groundwater. Free floating product which is visibly observed in any well during the event, would be removed from the well by bailing until no visible presence of the product is visible on the surface of the water in the bailer. Samples should be obtained from all wells during the event, with the exception of any well containing free product. The well samples should be analyzed for TVHg, TEHd, TEHo, BTEX and MTBE.

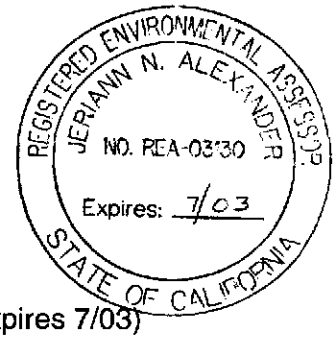
It is further recommended that bioparameter testing be continued during the annual event on samples obtained from wells MW-1, MW-3, MW-5 and MW-6. The scope of the bioparameter testing should include DO, pH, Fe, Mn, SO_4, and $N\text{-}NO_3$, as these parameters have consistently represented changes between portions of the plume, and have repeatedly provided insight into the aerobic and anerobic plume behavior.

Please provide written confirmation that this scope of monitoring is acceptable. The next event will be conducted In Spring 2003, when groundwater levels are anticipated to be at their highest.

If you have any questions, please call either of the undersigned.

Yours very truly,
Subsurface Consultants, Inc.

Emily Silverman
Staff Geologist



Jeriann N. Alexander, PE, REA
Civil Engineer 40469 (expires 3/31/03)
Registered Environmental Assessor 03130 (expires 7/03)

ES/JNA:kel
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Attachments: Table 1 - Groundwater and Free Product Elevation Data
Table 2 - Summary of Petroleum Hydrocarbon Concentrations in Groundwater
Table 3 - Summary of Bioparameter Data

Plate 1 - Vicinity Map
Plate 2 – Site Plan
Plate 3 – Groundwater Elevation Data – November 2001
Plate 4 – Groundwater Elevation Data – February 2002
Plate 5 – Groundwater Elevation Data – May 2002

Appendix A – List of Reports
Appendix B – Field Forms
Appendix C – Analytical Test Reports/Chain-of-Custody Documents
Appendix D - Monitoring Well Survey, letter dated September 4, 2002

cc: Mr. Don Strough
Strough Family Trust of 1983
327 34th Street
Oakland, California 94611

Mr. Greg Brandt, Esq.
Wendel, Rosen, Black & Dean, LLP
1111 Broadway, 24th Floor
Oakland, California 94612

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
MW-1	7/27/93	100.00 [1]	20.79 [3]	NA	79.21	NA	NA
	10/2/97		21.22	--	78.78	--	--
	6/30/98		18.21	--	81.79	--	--
	7/29/98		18.74	--	81.26	--	--
	8/26/98		19.28	--	80.72	--	--
	10/1/98		19.93	--	80.07	--	--
	10/30/98		20.22	--	79.78	--	--
	11/30/98		19.99	--	80.01	--	--
	12/28/98		19.81	--	80.19	--	--
	1/25/99		19.62	--	80.38	--	--
	2/26/99		17.18	--	82.82	--	--
	3/24/99		17.28	--	82.72	--	--
	5/12/99		17.91	--	82.09	--	--
	12/15/99		21.01	--	78.99	--	--
	3/20/00		16.25	--	83.75	--	--
	7/20/00		19.63	--	80.37	--	--
	10/11/00		20.80	--	79.20	--	--
	4/10/01		18.81	--	81.19	--	--
	7/10/01		20.51	--	79.49	--	--
	11/20/01	64.69 [2]	21.36	--	43.33	--	--
	2/19/02		18.95	--	45.74	--	--
	5/21/02		19.82	--	44.87	--	--
MW-2	7/27/93	101.27 [1]	22.10 [3]	NA	79.17	NA	NA
	10/2/97		22.91	0.43	78.36	78.79	7
	6/30/98		19.69	0.45	81.58	82.03	9
	7/29/98		20.11	0.29	81.16	81.45	--
	8/26/98		20.54	0.08	80.73	80.81	--
	10/1/98		21.52	0.42	79.75	80.17	6
	10/30/98		21.54	0.10	79.73	79.83	<0.001
	11/30/98		21.21	0.04	80.06	80.10	--
	12/28/98		21.10	0.02	80.17	80.19	1
	1/25/99		20.80	0.01	80.47	80.48	6
	2/26/99		18.00	sheen	83.27	83.27	1
	3/24/99		18.27	trace	83.00	83.50	1
	5/12/99		19.08	trace	82.19	82.19	1
	12/15/99		22.42	0.025	78.85	78.88	3

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
MW-2	3/20/00		17.09	0.026	84.18	84.21	5
(Con't.)	7/20/00		20.86	0.017	80.41	80.43	3
	10/11/00		22.10	--	79.17	--	1
	4/10/01		19.98	--	81.29	--	--
	7/10/01		21.85	--	79.42	--	--
	11/20/01	65.95 [2]	22.75	--	43.20	--	--
	2/19/02		20.12	--	45.83	--	1
	5/21/02		21.10	--	44.85	--	--
MW-3	7/27/93	101.29 [1]	22.28 [3]	0.02	79.01	79.03	--
	10/2/97		22.71	0.03	78.58	78.61	6
	6/30/98		19.47	--	81.82	--	--
	7/29/98		20.01	--	81.28	--	--
	8/26/98		20.62	--	80.67	--	--
	10/1/98		21.33	--	79.96	--	--
	10/30/98		21.62	--	79.67	--	--
	11/30/98		21.31	--	79.98	--	--
	12/28/98		21.15	0.06	80.14	80.20	1
	1/25/99		20.79	--	80.50	--	--
	2/26/99		18.02	--	83.27	--	--
	3/24/99		18.37	--	82.92	--	--
	5/12/99		19.22	--	82.07	--	--
	12/15/99		22.43	0.0083	78.86	78.87	3
	3/20/00		17.14	--	84.15	--	--
	7/20/00		20.98	--	80.31	--	--
	10/11/00		22.24	--	79.05	--	--
	4/10/01		20.70	--	80.59	--	--
	7/10/01		21.97	--	79.32	--	--
	11/20/01	65.99 [2]	22.80	--	43.19	--	--
	2/19/02		20.11	--	45.88	--	1.5
	5/21/02		21.20	--	44.79	--	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
MW-4	6/30/98	98.65 [1]	16.93	--	81.72	--	--
	7/29/98		17.48	--	81.17	--	--
	8/26/98		18.65	--	80.00	--	--
	10/1/98		18.74	--	79.91	--	--
	10/30/98		19.02	--	79.63	--	--
	11/30/98		18.74	--	79.91	--	--
	12/28/98		18.60	--	80.05	--	--
	1/25/99		18.32	--	80.33	--	--
	2/26/99		15.81	--	82.84	--	--
	3/24/99		16.01	--	82.64	--	--
	5/12/99		17.71	--	80.94	--	--
	12/15/99		19.83	--	78.82	--	--
	3/20/00		14.90	--	83.75	--	--
	7/20/00		18.38	--	80.27	--	--
	10/11/00		19.61	--	79.04	--	--
	4/10/01		17.55	--	81.10	--	--
	7/10/01		19.34	--	79.31	--	--
	11/20/01	63.35 [2]	20.16	--	43.19	--	--
	2/19/02		17.34	--	46.01	--	--
	5/21/02		18.57	--	44.78	--	--
MW-5	6/30/98	100.90 [1]	20.60	--	80.30	--	--
	7/29/98		21.52	--	79.38	--	--
	8/26/98		22.21	--	78.69	--	--
	10/1/98		22.95	--	77.95	--	--
	10/30/98		23.23	--	77.67	--	--
	11/30/98		23.13	--	77.77	--	--
	12/28/98		23.18	--	77.72	--	--
	1/25/99		22.61	--	78.29	--	--
	2/26/99		19.78	--	81.12	--	--
	3/24/99		20.25	--	80.65	--	--
	5/12/99		21.06	--	79.84	--	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
MW-5	12/15/99		24.19	--	76.71	--	--
(Con't.)	3/20/00		19.15	--	81.75	--	--
	7/20/00		21.84	--	79.06	--	--
	10/11/00		23.40	--	77.50	--	--
	4/10/01		22.30	--	78.60	--	--
	7/10/01		23.64	--	77.26	--	--
	11/20/01	65.59 [2]	24.65	--	40.94	--	--
	2/19/02		22.37	--	43.22	--	--
	5/21/02		23.10	--	42.49	--	--
MW-6	7/20/00	96.60 [1]	18.30	--	78.30	--	--
	10/11/00		18.69	--	77.91	--	--
	4/10/01		17.85	--	78.75	--	--
	7/10/01		18.43	--	78.75	--	--
	11/20/01	59.60 [2]	18.67	--	40.93	--	--
	2/19/02		17.40	--	42.20	--	--
	5/21/02		17.68	--	41.92	--	--
MW-7	7/20/00	96.75 [1]	15.93	--	80.82	--	--
	10/11/00		16.90	--	79.85	--	--
	4/10/01		15.80	--	80.95	--	--
	7/10/01		16.71	--	80.04	--	--
	11/20/01	59.47 [2]	16.17	--	43.30	--	--
	2/19/02		14.92	--	44.55	--	--
	5/21/02		15.18	--	44.29	--	--

[1] Elevations are referenced to the top of the well casing of monitoring well MW-1, with an assumed datum of 100.00 feet.

[2] Revised elevations are based on a survey conducted in August 2002 and referenced to a benchmark with a known elevation (NGVD 29) of 60.40 feet above mean sea level.

-- Product not observed

NA = Data not available

TABLE 2
SUMMARY OF PETROLEUM HYDROCARBON
CONCENTRATIONS IN GROUNDWATER
327 34TH STREET
OAKLAND, CALIFORNIA

Location	Date	Groundwater Elevation [1]	TVHg (µg/L)	TEHd (µg/L)	TEHo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-1	7/27/93	79.21	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--
	10/2/97	78.78	<50	--	--	<0.5	<0.5	<0.5	<0.5	<2
	6/30/98	81.79	84	--	--	<0.5	<0.5	2.1	0.55	2.1
	10/1/98	80.07	<50	--	--	<1.0	<1.0	<1.0	<1.0	<2.0
	1/25/99	80.38	<50	--	--	<1.0	<1.0	<1.0	<1.0	<2.0
	12/16/99	78.99	<50	--	--	<0.50	<0.50	<0.50	<0.50	<0.50
	7/20/00	80.37	<50	<50	<300	<0.50	<0.50	<0.50	<0.50	3.4
	4/11/01	81.19	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	1.2
	11/20/01	43.33	<50	<50	<300	<0.50	1.3	<0.5	0.81	<2.0
	5/21/02	44.87	<50	<50	<300	<0.50	<0.50	<0.50	<0.50	<2.0
MW-2	7/27/93	79.17	120,000	--	--	10,000	27,000	2,900	20,000	--
	10/2/97	78.36	*	--	--	*	*	*	*	*
	6/30/98	81.58	72,000	--	--	7,300	18,000	2,500	15,600	5,500
	10/1/98	79.75	84,000	--	--	6,400	17,000	2,600	17,000	2,000
	1/25/99	80.48	130,000	--	--	9,000	26,000	3,800	27,500	5,800
	12/16/99	78.85	*	*	*	*	*	*	*	*
	7/20/00	80.41	*	*	*	*	*	*	*	*
	4/11/01	81.29	150,000	1,500	<600	8,000	22,000	2,600	23,500	3,600
	11/20/01	43.20	83,000	5,700	<1,500	5,900	15,000	2,300	12,100	2,800
	5/21/02	44.85	150,000	31,000	<3,000	8,600	25,000	3,500	26,000	4,800
MW-3	7/27/93	79.01	330,000	--	--	9,100	24,000	5,300	33,000	--
	10/2/97	78.58	36,000	--	--	4,200	11,000	1,800	10,600	3,500
	6/30/98	81.82	51,000	--	--	4,800	11,000	1,200	7,100	3,900
	10/1/98	79.96	38,000	--	--	3,900	8,500	1,200	6,000	2,300
	1/25/99	80.50	51,000	--	--	4,000	10,000	1,200	6,700	2,900
	12/16/99	78.86	*	*	*	*	*	*	*	*
	7/20/00	80.31	69,000	2,900	<300	5,700	14,000	1,600	9,300	3,300
	4/11/01	80.59	110,000	4,700	<1,500	7,200	<0.001	2,300	12,900	4,300
	11/20/01	43.19	100,000	5,900	<900	6,300	16,000	2,400	14,900	4,000
	5/21/02	44.79	91,000	14,000	<3,000	6,500	17,000	2,200	12,700	2,200

TABLE 2
SUMMARY OF PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUNDWATER
327 34TH STREET
OAKLAND, CALIFORNIA

Location	Date	Groundwater Elevation [1]	TVHg (µg/L)	TEHd (µg/L)	TEHo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-4	06/30/98	81.72	10,000	--	--	2,200	930	850	2,100	1,800
	10/01/98	79.91	1,100	--	--	570	46	130	36	1,300
	01/26/99	80.33	290	--	--	230	<8.3	<8.3	<8.3	1,300
	12/16/99	78.82	<50	--	--	5.8	<0.50	<0.50	<0.50	1,400
	07/20/00	80.27	210	<50	<300	91	4.6	19	12.9	1,500
	04/11/01	81.10	350	<50	<300	110	<5.0	<5.0	<5.0	1,100
	11/20/01	43.19	96	<50	<300	<2.5	4.0	<2.5	3.7	2,500
	5/21/02	44.78	940	83	<300	340	5.7	70	<1.0	1,600
MW-5	6/30/98	80.30	<50	--	--	<0.5	<0.5	<0.5	<0.5	23
	10/1/98	77.95	<50	--	--	<1.0	<1.0	<1.0	<1.0	<2.0
	1/26/99	78.29	<50	--	--	<1.0	<1.0	<1.0	<1.0	<2.0
	12/16/99	76.71	<50	--	--	<0.50	<0.50	<0.50	<0.50	<0.50
	7/20/00	77.26	<50	<50	<300	<0.50	0.98	<0.50	<0.50	1.9
	4/11/01	78.60	<50	<50	<300	<0.5	2.6	<0.5	0.6	1.5
	11/20/01	40.94	140	860	2,500	0.83	12	1.2	11	10
	5/21/02	42.49	<50	2,200	<300	<0.50	<0.50	<0.50	<0.50	<2.0
MW-6	7/20/00	78.30	<50	<50	<300	<0.50	<0.50	<0.50	<0.50	160
	4/11/01	78.75	<50	<50	<300	<0.5	<0.5	<0.5	2.8	180
	11/20/01	40.93	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	450
	5/21/02	41.92	<50	<50	<300	<0.5	<0.5	<0.5	2.1	170
MW-7	7/20/00	80.82	<50	<50	<300	<0.50	<0.50	<0.50	<0.50	<0.50
	4/11/01	80.95	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5
	11/20/01	43.30	<50	<50	<300	<0.5	<0.5	<0.5	0.59	<2.0
	5/21/02	44.29	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5

NOTES:

TVHg = Total Volatile Hydrocarbons gasoline range

TEHd = Total Extractable Hydrocarbons diesel range

TEHo = Total Extractable Hydrocarbons motor oil range

MTBE= Methyl Tertiary Butyl Ether

-- = Not analyzed

mg/L = milligrams per liter

µg/L = micrograms per liter

<50 = not detected at or above listed analytical reporting limit

* = This sample contained free-product and was not analyzed.

†= Arbitrary datum (see Table 1)

NR = Not Reported

[1] Groundwater elevations beginning with the November 2001 event are based on a survey conducted in August 2002 and referenced to a benchmark with a known elevation (NGVD 29) of 60.40 feet above mean sea level. Elevations shown prior to November 2001 are refereced to the top of well casing for well MW-1, with an assumed datum of 100.00 feet.

TABLE 3
SUMMARY OF BIOPARAMETER DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Location	Date	GW Elevation [1]	TVHg (mg/L)	CO_2 Lab (mg/L)	DO Field (mg/L)	pH Field (mg/L)	Fe(II) (mg/L)	Mn (mg/L)	SO_4 (mg/L)	$N\text{-}NH_3$ (mg/L)	$N\text{-}NO_3$ (mg/L)	$o\text{-}PO_4$ (mg/L)
MW-1	6/30/98	81.79	84	204	5.0	6.16	0.15	0.046	55	<0.1	<0.1	2.0
	10/1/98	80.07	<50	192	3.6	6.49	--	--	--	--	--	--
	1/25/99	80.38	<50	389	3.4	6.72	--	--	--	--	--	--
	12/15/99	78.99	<50	--	3.31	6.52	--	--	--	--	--	--
	7/20/00	80.37	<50	120	7.37	6.66	0.13	<0.01	54	<0.1	3.4	<0.2
	4/10/01	81.19	<50	117	NR	NR	<0.10	0.045	57	<0.1	6.6	0.15
	11/20/01	43.33	<50	a	0.65	6.47	0.32	1.8	63	<0.1	--	<0.20
	5/21/02	44.87	<50	120	0.96	6.25	<0.1	0.5	58	<0.1	5.5	<0.20
MW-2	6/30/98	81.58	72,000	185	2.2	5.98	--	--	--	--	--	--
	10/1/98	79.75	84,000	--	2.7	6.47	--	--	--	--	--	--
	1/25/99	80.48	130,000	386	0.3	6.69	--		--	--	--	--
	12/15/99	78.85	*	--	*	*	--	--	--	--	--	--
	7/20/00	80.41	*	*	0.88	6.37	*	*	*	*	*	*
	4/10/01	81.29	150,000	168	NR	NR	3.1	2.5	16	0.14	0.19	<0.20
	11/20/01	43.20	83,000	120	NR	6.15	1.8	2.0	16	<0.1	--	<0.20
	5/21/02	44.85	150,000	160	0.88	5.99	3.9	1.7	13	<0.1	0.54	<0.20
MW-3	6/30/98	81.82	51,000	300	2	6.03	1.4	9.8	13	1.4	<0.1	2.4
	10/1/98	79.96	38,000	240	2	6.65	--	--	--	--	--	--
	1/25/99	80.50	51,000	238	1	7.01	--	--	--	--	--	--
	12/15/99	78.86	*	--	*	*	--	--	--	--	--	--
	7/20/00	80.31	69,000	128	2.05	6.73	3.9	6.6	20	<0.1	0.55	<0.2
	4/10/01	80.59	110,000	137	NR	NR	1.0	6.0	8.2	<0.1	0.13	<0.20
	11/20/01	43.19	100,000	120	2.93	6.67	0.84	12	31	<0.1	--	<0.20
	5/21/02	44.79	91,000	130	1.01	6.62	4.2	9.6	25	<0.1	0.77	<0.20
MW-4	6/30/98	81.82	10,000	222	2.6	6.18	0.14	4.3	14	0.8	0.8	1.5
	10/1/98	79.96	1,100	320	3.4	<0.001	--	--	--	--	--	--
	1/26/99	80.59	290	475	6.7	7.00	--	--	--	--	--	--
	12/15/99	78.86	<50	--	1.75	7.02	--	--	--	--	--	--
	7/20/00	80.31	210	126	3.88	6.67	9.5	5.3	11	<0.1	0.04	<0.2
	4/10/01	80.59	350	107	NR	NR	0.80	6.3	10	<0.1	<0.05	<0.20
	11/20/01	43.19	96	130	0.83	6.51	1.6	10	11	<0.1	--	<0.20
	5/21/02	44.79	940	150	1.65	6.32	3.1	8.4	9.0	<0.1	0.06	<0.20
MW-5	6/30/98	80.30	<50	220	4.3	6.1	--	--	--	--	--	--
	10/1/98	77.95	<50	256	4.8	6.71	--	--	--	--	--	--
	1/26/99	78.29	<50	305	9.7	7.04	--	--	--	--	--	--
	12/15/99	76.71	<50	--	2.72	7.19	--	--	--	--	--	--
	7/20/00	77.26	<50	134	5.58	6.35	0.11	0.017	49	<0.1	3.9	<0.2
	4/10/01	78.60	<50	183	66	NR	<0.10	0.042	45	<0.1	2.9	0.11
	11/20/01	40.94	140	a	66	6.01	0.20	2.5	42	<0.1	--	<0.20
	5/21/02	42.49	<50	140	66	6.3	<0.1	0.22	44	<0.1	3.0	<0.20

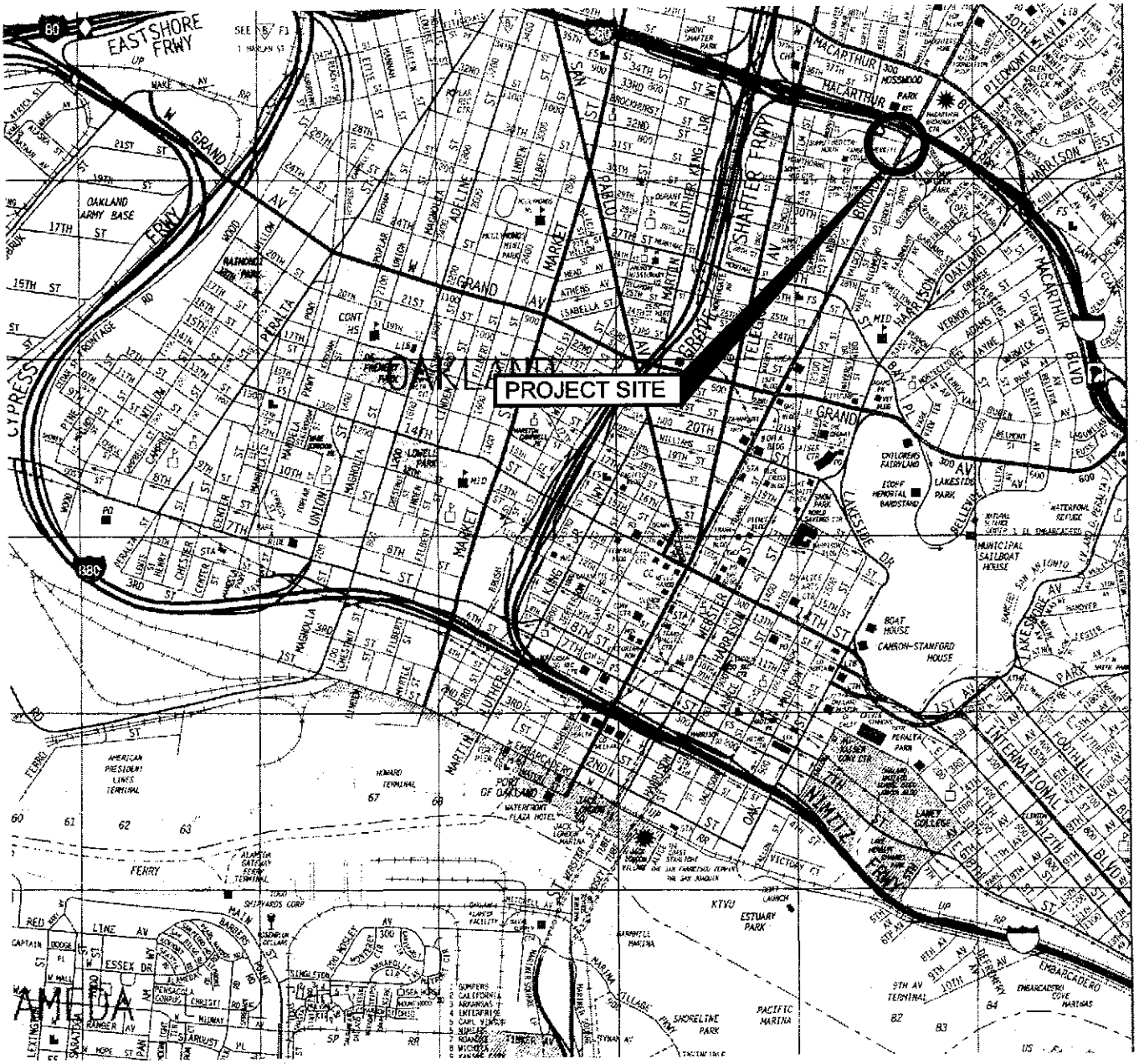
TABLE 3
SUMMARY OF BIOPARAMETER DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Location	Date	GW Elevation [1]	TVHg (mg/L)	CO_2 Lab (mg/L)	DO Field (mg/L)	pH Field (mg/L)	Fe(II) (mg/L)	Mn (mg/L)	SO_4 (mg/L)	$N\text{-}NH_3$ (mg/L)	$N\text{-}NO_3$ (mg/L)	$o\text{-}PO_4$ (mg/L)
MW-6	7/20/00	78.30	<50	122	2.72	6.66	120	1.9	53	6	0.05	<0.2
	4/10/01	78.75	<50	142	NR	NR	22	2.2	0.69	5.2	<0.05	<0.20
	11/20/01	40.93	<50	100	2.03	6.44	29	5.2	1.1	3.4	--	<0.20
	5/21/02	41.92	<50	100	0.76	6.60	11	3.4	1.4	8.9	0.65	<0.2
MW-7	7/20/00	80.82	<50	32.2	7.15	7.43	<0.1	0.002	7.5	<0.1	2.6	0.13
	4/10/01	80.95	<50	77.6	NR	NR	0.18	0.048	49	<0.1	2.7	0.31
	11/20/01	43.30	<50	62	0.96	7.11	0.16	1.8	63	<0.1	--	<0.20
	5/21/02	44.29	<50	68	1.03	7.57	0.11	0.35	51	<0.1	2.8	0.11

NOTES:

TVHg = Total Volatile Hydrocarbons as gasoline
CO_2 = Carbon Dioxide
DO = Dissolved Oxygen
Fe(II) = Ferrous iron
Mn = Manganese
SO_4 = Sulfate
$N\text{-}NH_3$ = Nitrate as Ammonia
$N\text{-}NO_3$ = Nitrogen as Nitrate
$o\text{-}PO_4$ = Phosphorous as Phosphate
µg/L = micrograms per liter
mg/L = milligrams per liter
-- = test not requested
* = This sample contained free-product and was not analyzed
Fe(II) = Ferrous iron
NR = Not Recorded due to possible instrument malfunction
a = Analysis not conducted due to broken sample containers

[1] Groundwater elevations beginning with the November 2001 event are based on a survey conducted in August 2002 and referenced to a benchmark with a known elevation (NGVD 29) of 60.40 feet above mean sea level.



NOTE:

THIS VICINITY MAP IS BASED ON A THOMAS GUIDE MAP FOR SAN FRANCISCO, ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA, MAP 649, YEAR 2000 YEAR 2000

VICINITY MAP

327 34TH STREET
OAKLAND, CALIFORNIA

DRAWN BY:	DATE	PLATE
CFY	5/2/01	1
JOB NUMBER	FILE NUMBER:	
1039.008	A1039.008.01	

Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

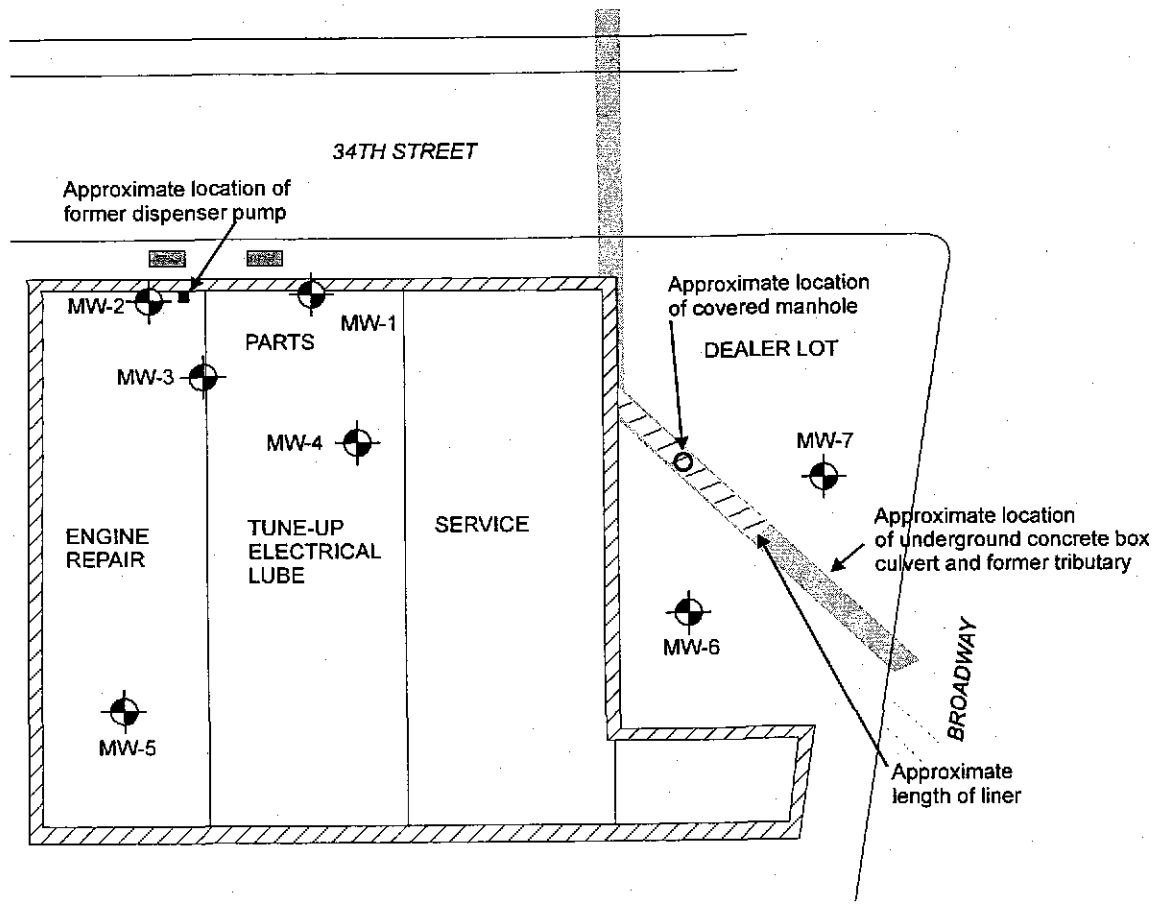
G:\jobdocs\1039\1039.008\Drawings\A1039.008.01.dwg 1-07-03 03:38:06 PM cyoung

LEGEND:

Limits of site structures

Monitoring well location

Approximate location of former underground storage tank



APPROXIMATE SCALE (feet)

0 60 120

SITE PLAN

Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

327 34TH STREET
OAKLAND, CALIFORNIA

JOB NUMBER 1039.008

DATE 10/1

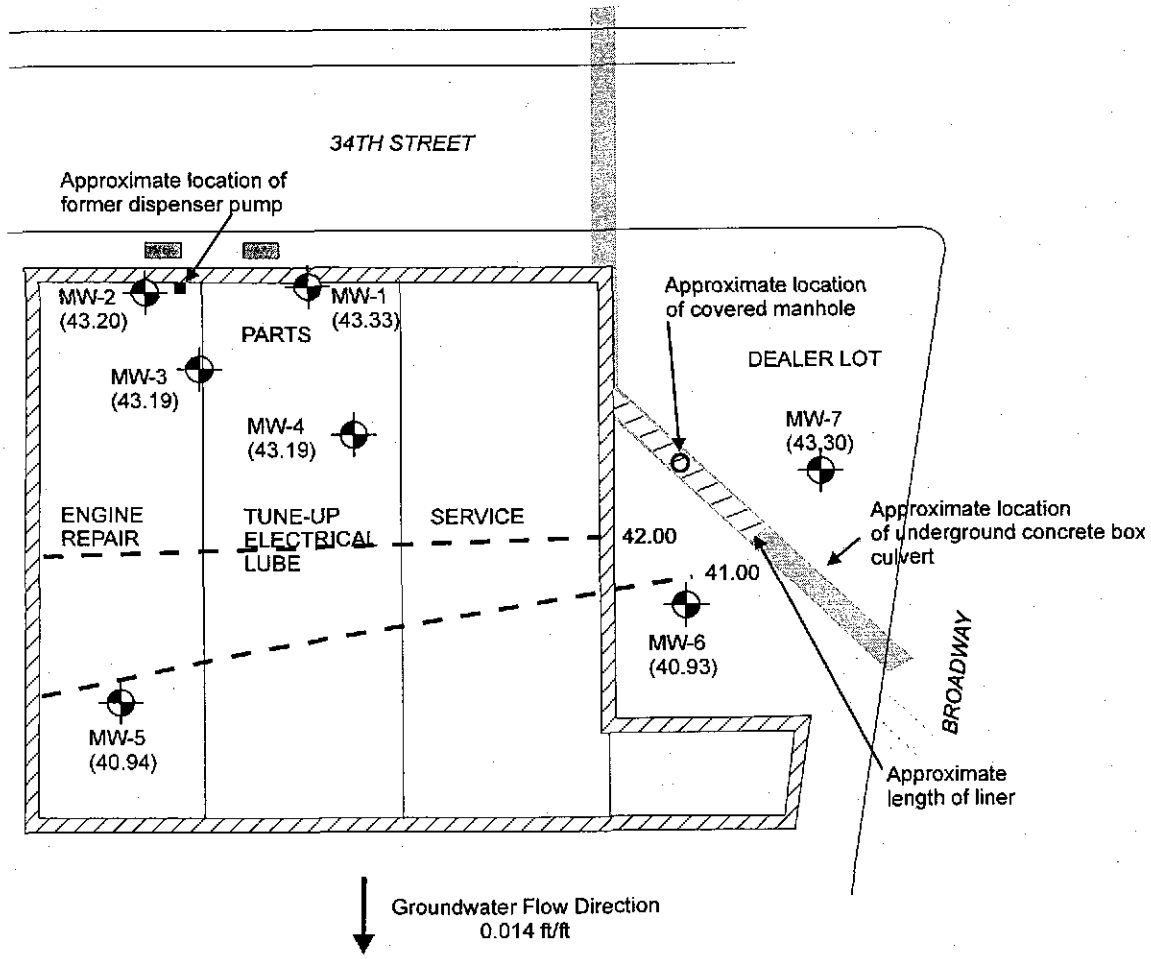
PLATE 2

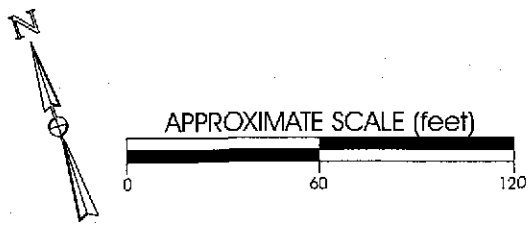
A1039.008.08.CDR

LEGEND

- Limits of site structures
- Monitoring well location
- (43.33) Groundwater elevation (November 2001)
- Approximate location of former underground storage tank
- Groundwater countour

Note:
1) Groundwater elevations from wells MW-2 and MW-3 were not used in determining the gradient, since they have historically contained free product. Well MW-7 was not used since it appears to be completed in a different aquifer material.
2) Wells were surveyed on August 8, 2002, to a bench mark with a known elevation (NGVD 83).





GROUNDWATER ELEVATION DATA NOVEMBER 2001

Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

327 34TH STREET
OAKLAND, CALIFORNIA

JOB NUMBER 1039.008

DATE 10/02

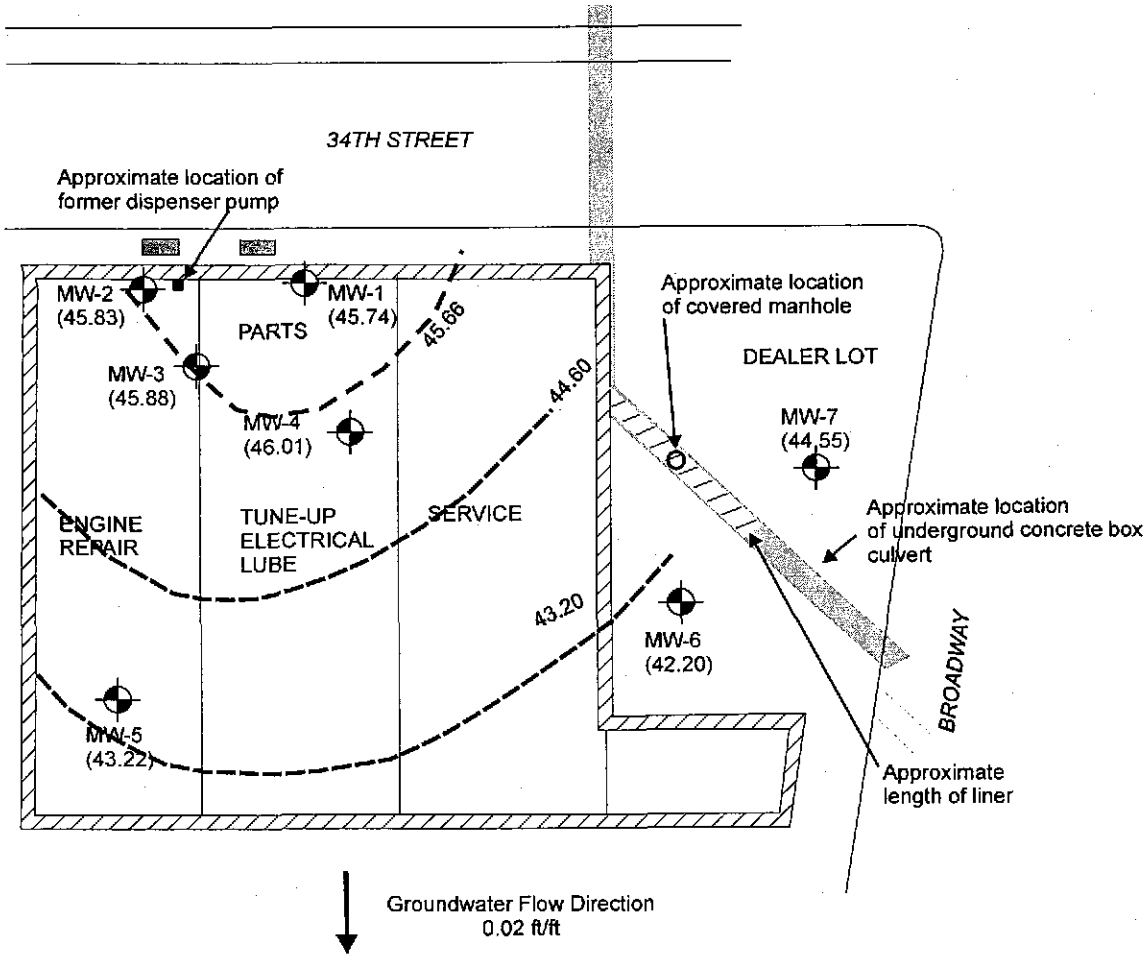
PLATE 3

A1039.008.12.CDR

LEGEND

- Limits of site structures
- Monitoring well location
- (45.74) Groundwater elevation (February 2002)
- Approximate location of former underground storage tank
- Groundwater contour

Note:
1) Groundwater elevations from wells MW-2 and MW-3 were not used in determining the gradient, since they have historically contained free product. Well MW-7 was not used since it appears to be completed in a different aquifer material.
2) Wells were surveyed on August 8, 2002, to a bench mark with a known elevation (NGVD 83).



N

APPROXIMATE SCALE (feet)

0 60 120

GROUNDWATER ELEVATION DATA FEBRUARY 2002

Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

327 34TH STREET
OAKLAND, CALIFORNIA

JOB NUMBER 1039.008

DATE 10/02

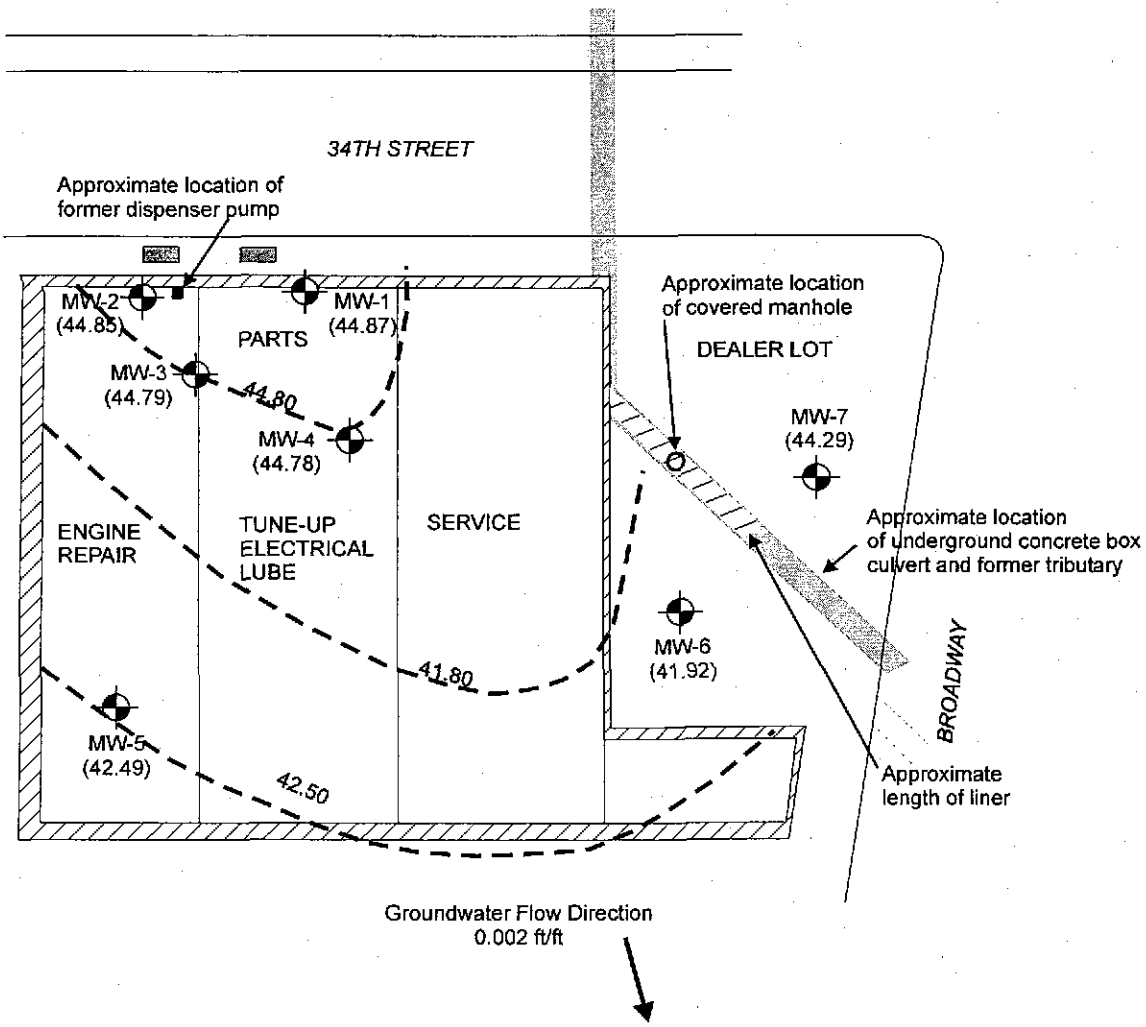
PLATE 4

A1039.008.16.CDR

LEGEND

- Limits of site structures
- Monitoring well location
- (44.87) Groundwater Elevation (May 2002)
- Approximate location of former underground storage tank
- Groundwater contour

Note:
1) Groundwater elevations from wells MW-2 and MW-3 were not used in determining the gradient, since they have historically contained free product. Well MW-7 was not used since it appears to be completed in a different aquifer material.
2) Wells were surveyed on August 8, 2002, to a bench mark with a known elevation (NGVD 83).



N

APPROXIMATE SCALE (feet)

0 60 120

GROUNDWATER ELEVATION DATA MAY 2002

Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

327 34TH STREET
OAKLAND, CALIFORNIA

JOB NUMBER 1039.008

DATE 10/02

PLATE 5

A1039.008.17.CDR

List of Reports for
327 34th Street
Oakland, California

Reports Prepared by GeoPlexus:

8/19/1993 ***Preliminary Site Characterization Investigation Report***

Site characterization includes the installation of monitoring wells MW-1 through MW-3

Reports Prepared by Subsurface Consultants, Inc.

1/16/1998 ***Work Plan for Investigation of Down Gradient Extent of Groundwater Contamination***

Three soil borings, two of which were completed as MWs (MW-4 and -5)

1/16/1998 ***Groundwater Monitoring and Free Product Removal Report for October 1997 Event***

11/17/1998 ***Report of Groundwater Monitoring Activities and Additional Subsurface Investigation***

Documents the June, July and August 1998 monitoring and FP removal events and the installation of wells MW-4 and MW-5

12/23/1998 ***Groundwater Monitoring for October 1998 Quarterly Event and Free Product Removal Events***

Documents September, October, and November 1998 monitoring and FP removal events

3/31/1999 ***Groundwater Monitoring January 1999 Quarterly Event and Monthly Free Product Removal***

Documents the December 1998, January and February 1999 monitoring and FP removal events

2/7/2000 ***Groundwater Monitoring & Scope for Additional Plume Characterization Report***

Documents the December 1999 event and provides a Work Plan for Additional Site Characterization

1/9/2001 ***Supplemental Site Characterization and Groundwater Monitoring Report - March to October 2000***

Documents the installation of wells MW-6 and MW-7, monitoring and FP removal events conducted in June and October 2000 and the results of bioparameter testing

11/7/2001 ***April 2001 Sampling Event and April and July 2001 Free Product Removal Events report***

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 387 34th ST.
JOB NO. 1039.008
SAMPLED BY: WSB
DATE: 11/20/01
WEATHER: PT. CLOUDY

WELL NO.: MW-1
WELL CASING DIAMETER: 2"
WELL MATERIAL: PVC
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 30.68 FEET
DEPTH TO GROUNDWATER (BTOC) 21.36 FEET
FEET OF WATER IN WELL 9.32 FEET

CALCULATED PURGE VOLUME 5.0 gal
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD BAILER

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITY	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	16:10	6.30	18.77	1.26	.933	-72.2	.65	Slight odor
1	16:13	6.37	18.78	1.26	.931	-71.8	.48	" "
3	16:17	6.31	18.78	1.25	.923	-71.6	.32	" "
5	16:21	6.47	18.77	1.39	.917	-71.7	.32	" "

DEPTH TO GROUNDWATER WHEN 80% RECOVERED
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE

3 / None
40 ML

2 / None
LITER (Amber)

3 / HCL
OTHER

2 / Unpreserved
OTHER poly

ANALYSES:
250 mL poly w/ HCL
250 mL poly w/ H_2SO_4
TEHd $ mo
TVHg, BTEX, MTBE
Fe(II), SO_4, Mn, NO_3
NH_3, O-PO_4 & CO_2

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th St.
JOB NO. 1039.008
SAMPLED BY: WILLIAM BARNETTE
DATE: # 11/20/01
WEATHER: PT. CLOUDY

WELL NO.: MW-2
WELL CASING DIAMETER: 2"
WELL MATERIAL: PVC
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 32.46 FEET
DEPTH TO GROUNDWATER (BTOC) 22.75 FEET
FEET OF WATER IN WELL 9.71 FEET

CALCULATED PURGE VOLUME 5.00 gal
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD BAILER

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITY	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	11:10	5.76	18.52	.475		-73.3	-1.73	Strong gas odor/No color
1	11:13	5.87	18.50	.470		-73.1	0.00	" "
3	11:16	6.11	18.50	.530		-72.6	-0.92	" "
5	11:20	6.15	18.5	.528		-69.8	26.23	" "

DEPTH TO GROUNDWATER WHEN 80% RECOVERED
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE
3 / HCL — 40 ML
2 / NONE — LITER (AMBERS)
3 / HCL — OTHER
2 / UNPRESERVED — OTHER (POLYS)

ANALYSES:
TEH$_d$, MO
TVH$_g$, BTEX, MTBE
Fe [II], SO_4, Mn, NO_3
NH_3, O-PO$_4$, CO_2

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 397 34TH ST.
JOB NO. 1039.008
SAMPLED BY: WILLIAM BURNETTE
DATE: 4/20/01
WEATHER: PT. CLOUDY

WELL NO.: MW-3
WELL CASING DIAMETER: 2"
WELL MATERIAL: PVC
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 30.98 FEET
DEPTH TO GROUNDWATER (BTOC) 22.80 FEET
FEET OF WATER IN WELL 8.18 FEET

CALCULATED PURGE VOLUME 4.0 gal
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD BAILER

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITY	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	12:30	6.05	18.39	.676		-68.1	2.93	HEAVY odor / c
1	12:33	6.42	18.50	.667		-68.4	0.62	" "
2	12:36	6.55	18.50	.704	.525	-68.2	3.98	" "
4	12:40	6.67	18.40	.723	.538	-68.6	3.88	" "

DEPTH TO GROUNDWATER WHEN 80% RECOVERED
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE
3 / HCL — 40 ML
2 / NONE — LITER (AMBERS)
3 / HCL — OTHER
2 / UNPRESERVED — OTHER (POLY)

ANALYSES:
TPHd, MO
TVHg, BTEX, MTBE
Fe[II], SO4, Mn, NO3
NH3, O-PO4, CO2

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th St.
JOB NO. 1039.008
SAMPLED BY: WSB
DATE: 11/20/01
WEATHER: PT. CLOUDY

WELL NO.: MW-4
WELL CASING DIAMETER: 2"
WELL MATERIAL: PVC
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 27.42 ~~28.37~~ FEET

DEPTH TO GROUNDWATER (BTOC) 20.16 FEET

FEET OF WATER IN WELL 7.26 FEET

CALCULATED PURGE VOLUME 4.0 ga
(feet of water * casing dia^2 * .0408 * # of Volumes)

FREE PRODUCT

PURGE METHOD BAILER

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITY	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	14:55	6.22	19.14	.749	.549	-72.2	.83	Light odor
1	14:59	6.39	19.13	.756	.553	-72.0	.53	" "
2	15:02	6.41	19.11	.754	.552	-71.8	.49	" "
4	15:07	6.51	19.10	.757	.554	-71.7	.34	" "

DEPTH TO GROUNDWATER WHEN 80% RECOVERED

ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)

SAMPLING METHOD

CONTAINERS / PRESERVATIVE

3 / HCL — 40 ML
3 / HCL — OTHER
2 / NONE — LITER (AMBERS)
2 / UNPRESERVED — OTHER (POLYS)

ANALYSES:

TEHd, MO
TUHs, BTEX, MTBE
Fe, T, SO4, Mn, NO3
NH3, O-PO4, CO2

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th ST.
JOB NO. 1039.008
SAMPLED BY: WSR
DATE: 11/20/01
WEATHER: PT. CLOUDY

WELL NO.: MW-5
WELL CASING DIAMETER: 2"
WELL MATERIAL: PVC
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 28.56 FEET
DEPTH TO GROUNDWATER (BTOC) 24.65 FEET
FEET OF WATER IN WELL 3.91 FEET

CALCULATED PURGE VOLUME 2.0 gal
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD BAILER

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITY	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	13:30	6.92	18.08	0.00	0.00	-70.4	8.19	ODOR /
1	13:32	6.34	18.40	.458	.342	-70.4	1.14	" "
2	13:35	6.01	18.38	.463	.345	-70.4	1.04	" "

DEPTH TO GROUNDWATER WHEN 80% RECOVERED
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE
3 / HCL — 40 ML
3 / HCL — OTHER
2 / NONE — LITER (AMBERS)
2 / UNPRESERVED — OTHER (VOA'S)

ANALYSES:
TEHd, MO
IVHs, BTEX, MTBE
Fe [illegible], SO4, Mn, NO3
NH3, O-PO4, CO2

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th ST.
JOB NO. 1039.008
SAMPLED BY: WSB
DATE: 11/21/01
WEATHER: RAINY

WELL NO.: MW-6
WELL CASING DIAMETER: 2"
WELL MATERIAL: PVC
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 28.55 FEET
DEPTH TO GROUNDWATER (BTOC) 18.67 FEET
FEET OF WATER IN WELL 9.88 FEET

CALCULATED PURGE VOLUME 5.0 ga
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD BAILER

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITY	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	10:00	6.30	18.87	.668	.492	-72.5	2.03	no odor
1	10:03	6.42	18.81	.709	.517	-70.8	3.17	" "
3	10:07	6.45	18.82	.718	.528	-69.8	3.00	" "
5	10:11	6.44	18.70	.735	.527	-68.7	3.24	" "

DEPTH TO GROUNDWATER WHEN 80% RECOVERED
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE
3 / HCL — 40 ML
3 / HCL — OTHER
2 / NONE — LITER (AMBERS)
2 / UNPRESERVED — OTHER (POLYS)

ANALYSES:
TEH, MO
TVHg, BTEX, MTBE
Fe [II], SO4, Mn, NO3
NH3, O-PO4, CO2

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th ST.
JOB NO. 1039.008
SAMPLED BY: WSB
DATE: 11/21/01
WEATHER: RAIN

WELL NO.: MW-7
WELL CASING DIAMETER: 2"
WELL MATERIAL: PVC
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 34.98 FEET
DEPTH TO GROUNDWATER (BTOC) 16.17 FEET
FEET OF WATER IN WELL 18.81 FEET

CALCULATED PURGE VOLUME 9.0 gal
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD BAILER

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITY	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	0900	6.42	19.3	.756	.538	-73.2	.96	No odor
1	0903	6.74	19.4	.741	.541	-72.9	.45	" "
3	0907	6.77	19.3	.770	.562	-73.0	.31	" "
6	0911	6.90	19.2	.762	.561	-73.0	.27	" "
9	0915	7.11	19.1	.769	.563	-73.1	.36	" "

DEPTH TO GROUNDWATER WHEN 80% RECOVERED
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE
3 / HCL — 40 ML
3 / HCL — OTHER
2 / NONE — LITER (AMBERS)
2 / UNPRESERVED — OTHER (POLY)

ANALYSES:
TEH-d, MO
TVH, BTEX, MTBE
Fe [T], SO4, Mn, NO3
NH3, O-PO4, COD

MISC FIELD OBSERVATION:

GROUNDWATER DEPTHS

Project Name: 327/34th STREET

Job No.: 1039.008

Measured by: WSB

Well	Date	Time	Groundwater Depth (feet)	Comments
MW-6	2/19/02	10:20	17.4	water level taken, no odor, no free product.
MW- 7	2/19/02	10:37	14.92	water level taken, no odor, no free product.
MW-2	2/19/02	10:45	20.12	WATER LEVEL TAKEN, HEAVY GAS ODOR + LIGHT SHEEN NO FREE PRODUCT, PURGED 1.0 GALLONS.
MW-3	2/19/02	11:05	20.11	WATER LEVEL TAKEN, HEAVY GAS ODOR, LT SHEEN NO FREE PRODUCT, PURGED 1.5 GALLONS
MW-5	2/19/02	11:25	22.37	WATER LEVEL TAKEN, NO ODOR, NO FREE PRODUCT
MW-4	2/19/02	12:00	17.34	water level taken, no odor, no free product.
MW-1	2/19/02	12:20	18.95	water level taken, no odor, no free product.

Subsurface Consultants

FIELD REPORT

Sheet 1 of 1

REPORT NO. [ ]

PROJECT: 327 / 34th STREET JOB NO: 1039.008

PERSONNEL PRESENT: ——

DATE: 2/19/2002

HOURS - From: — To: — From: To: — TOTAL HRS: 5.0

EQUIPMENT IN USE:

TYPE OF SERVICES PROVIDED: ☐ Exploration ☐ Field Density Testing

☐ Site Meeting ☐ Construction Observation ☒ WATER LEVELS

- MW-6 water level measured @ 10:20, no odor, no free product.

- MW-7 Water level measured @ 10:37, No odor, No free product.

- MW-2 Water level measured @ 10:45, Heavy Gas odor + Light sheen, No free product, Purged 1.0 Gallons.
- MW-3 Water level measured @ 11:05, Heavy Gas odor + Light sheen, No free product, Purged 1.5 Gallons.
- MW-5 Water level measured @ 11:25, no odor, no free product

- MW-4 Water level measured @ 12:00, No odor, No free product.

- MW-1 Water level measured @ 12:20, No odor, No free product

Prepared by: [signature] Reviewed by:

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GROUNDWATER DEPTHS

Project Name:	1137 34th Street, Oakland
Job No.:	1039.008
Measured by:	E Silverman

Well	Date	Time	Groundwater Depth (feet)	Comments
MW-1	5/21/02		19.82	
MW-2	5/21/02		21.10	
MW-3	5/21/02		21.20	
MW-4	5/21/02		18.57	
MW-5	5/21/02		23.10	
MW-6	5/21/02		17.68	
MW-7	5/21/02		15.18	

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th Street, Oakland
JOB NO. 1039.008
SAMPLED BY: E Silverman
DATE: 5/21/02 and 5/22/02
WEATHER:

WELL NO.: mw-1
WELL CASING DIAMETER:
WELL MATERIAL:
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 30.40 FEET
DEPTH TO GROUNDWATER (BTOC) 19.82 FEET
FEET OF WATER IN WELL 10.58 FEET

CALCULATED PURGE VOLUME 5.17 gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0 (dh)	0920	6.25	18.48	1.172	0.878	300.5	10.96	grey/tan
3	0930	6.48	18.20	10450	0.774	236.0	4.18	tan
5.5								

DEPTH TO GROUNDWATER WHEN 80% RECOVERED 25.94
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC) 19.82 (1000)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE

/ 40 ML	/ LITER
/ OTHER	/ OTHER

ANALYSES:
TEHd, TEHmo (8015m with silica gel cleanup)
TVHg, BTEX, MTBE (8020)
CO2, FE2, Mn, SO2-
N-NH3, N-NO3, O-PO4

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th Street, Oakland
JOB NO. 1039.008
SAMPLED BY: E Silverman
DATE: 5/21/02 and 5/22/02
WEATHER:

WELL NO.: mw-2
WELL CASING DIAMETER:
WELL MATERIAL:
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 32.74 FEET

DEPTH TO GROUNDWATER (BTOC) 21.10 FEET

FEET OF WATER IN WELL _____ FEET

CALCULATED PURGE VOLUME _____ gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)

FREE PRODUCT

PURGE METHOD

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0	1245	[illegible]	18.12	392	0.147	96.1	0.88	463.0
1	1251	6.38	18.02	483	0.362	-2.5	3.36	557
3	1255	6.40	18.06	516	0.387	-18.3	3.45	595.0
5.5	1305	6.43	18.04	539	0.464	-27.2	3.11	621.0

DEPTH TO GROUNDWATER WHEN 80% RECOVERED

ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)

SAMPLING METHOD

CONTAINERS / PRESERVATIVE

_____ / _____ **40 ML**

_____ / _____ **LITER**

_____ / _____ **OTHER**

_____ / _____ **OTHER**

ANALYSES:

TEHd, TEHmo (8015m with silica gel cleanup)
TVHg, BTEX, MTBE (8020)
CO2, FE2, Mn, SO2-
N-NH3, N-NO3, O-PO4

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th Street, Oakland
JOB NO. 1039.008
SAMPLED BY: E Silverman
DATE: 5/21/02 and 5/22/02
WEATHER:

WELL NO.: MW-3
WELL CASING DIAMETER:
WELL MATERIAL:
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 31.95 FEET
DEPTH TO GROUNDWATER (BTOC) 21.20 FEET
FEET OF WATER IN WELL 10.75 FEET

CALCULATED PURGE VOLUME 5.26 gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT None
PURGE METHOD

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l)	SAL	COMMENTS (odor, color, ...)
~~0 (dry)~~	~~1044~~	~~6.30~~	~~18.20~~	~~644.0~~	~~0.330~~	~~-54.8~~	~~3.06~~	~~509~~	
0 dry	1150	6.62	17.95	677.0	0.364	68.2	1.61	785	
2	1154	6.69	17.99	693.0	0.520	30.2	3.95	820	strong odor
5.5	1159	6.64	18.05	730.0	0.547	25.3	2.92	841.0	

DEPTH TO GROUNDWATER WHEN 80% RECOVERED 23.35
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC) 22.99 (1215)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE

3 / 40 ML	/ LITER
/ OTHER	/ OTHER

ANALYSES:
TEHd, TEHmo (8015m with silica gel cleanup)
TVHg, BTEX, MTBE (8020)
CO2, FE2, Mn, SO2-
N-NH3, N-NO3, O-PO4

MISC FIELD OBSERVATION: Strong HC odor Sheen.

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th Street, Oakland
JOB NO. 1039.008
SAMPLED BY: E Silverman
DATE: 5/21/02 and 5/22/02
WEATHER:

WELL NO.: MW-4
WELL CASING DIAMETER:
WELL MATERIAL:
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 27.42 FEET

DEPTH TO GROUNDWATER (BTOC) 18.57 FEET

FEET OF WATER IN WELL 8.85 FEET

CALCULATED PURGE VOLUME 4.33 gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)

FREE PRODUCT

PURGE METHOD

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l)	SPC	COMMENTS (odor, color, ...)
0 (dtb)	1345	6.32	18.67	761.0	0.562	111.1	1.65	864.0	
1	1349	6.34	18.92	755.0	0.569	58.2	1.79	861.0	
3	1352	6.44	18.78	750.0	0.572	50.4	2.34	855.0	
5	1357	6.54	18.62	747.0	0.553	47.2	2.68	851.0	

DEPTH TO GROUNDWATER WHEN 80% RECOVERED 20.34

ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC) 21.20 (1430)

SAMPLING METHOD

CONTAINERS / PRESERVATIVE

/ 40 ML

/ LITER

/ OTHER

/ OTHER

ANALYSES:

TEHd, TEHmo (8015m with silica gel cleanup)
TVHg, BTEX, MTBE (8020)
CO2, FE2, Mn, SO2-
N-NH3, N-NO3, O-PO4

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th Street, Oakland
JOB NO. 1039.008
SAMPLED BY: E Silverman
DATE: 5/21/02 and 5/22/02
WEATHER:

WELL NO.: MW-5
WELL CASING DIAMETER:
WELL MATERIAL:
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 26.45 FEET

DEPTH TO GROUNDWATER (BTOC) 23.10 FEET

FEET OF WATER IN WELL 3.35 FEET

CALCULATED PURGE VOLUME 1.64 gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)

FREE PRODUCT

PURGE METHOD

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l)	SpC	COMMENTS (odor, color, ...)
0 dg	1644	6.30	18.20	441.0	0.336	354.4	3.06	50?	

DEPTH TO GROUNDWATER WHEN 80% RECOVERED 23.77

ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC) 26.24 1600

SAMPLING METHOD

CONTAINERS / PRESERVATIVE

/ 40 ML   / LITER

/ OTHER   / OTHER

ANALYSES:
TEHd, TEHmo (8015m with silica gel cleanup)
TVHg, BTEX, MTBE (8020)
CO2, FE2, Mn, SO2-
N-NH3, N-NO3, O-PO4

MISC FIELD OBSERVATION: recharge very slowly, purged dry @ 2 gals.

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th Street, Oakland
JOB NO. 1039.008
SAMPLED BY: E Silverman
DATE: 5/21/02 and 5/22/02 5/23/02
WEATHER: Sunny

WELL NO.: MW-6
WELL CASING DIAMETER:
WELL MATERIAL:
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 28.50 FEET
DEPTH TO GROUNDWATER (BTOC) 17.68 FEET
FEET OF WATER IN WELL 10.82 FEET

CALCULATED PURGE VOLUME 5.29 gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)
FREE PRODUCT
PURGE METHOD

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l) SPC	COMMENTS (odor, color, ...)
0 (dtw)	1008	6.46	17.90	637.0	0.480	-123.9	0.76	784
2	1013	6.46	18.40	657.	0.494	-3.15	0.[illegible]	784
4	1015	6.65	18.0	671.0	0.504	-117.7	0.[illegible]	784
6	1020	6.64	18.02	681.0	0.510	-118.2	1.45	784

DEPTH TO GROUNDWATER WHEN 80% RECOVERED 19.84
ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC)
SAMPLING METHOD

CONTAINERS / PRESERVATIVE
/ 40 ML
/ LITER
/ OTHER
/ OTHER

ANALYSES:
TEHd, TEHmo (8015m with silica gel cleanup)
TVHg, BTEX, MTBE (8020)
CO2, FE2, Mn, SO2-
N-NH3, N-NO3, O-PO4

MISC FIELD OBSERVATION:

Subsurface Consultants, Inc.

WELL SAMPLING FORM

PROJECT NAME: 327 34th Street, Oakland
JOB NO. 1039.008
SAMPLED BY: E Silverman
DATE: 5/21/02 and 5/22/02
WEATHER:

WELL NO.: MW-7
WELL CASING DIAMETER:
WELL MATERIAL:
TOC ELEVATION:

TOTAL DEPTH OF CASING (BTOC) 34.65 FEET

DEPTH TO GROUNDWATER (BTOC) 15.18 FEET

FEET OF WATER IN WELL 19.47 FEET

CALCULATED PURGE VOLUME 9.53 gallons
(feet of water * casing dia^2 * .0408 * # of Volumes)

FREE PRODUCT

PURGE METHOD

MEASUREMENT METHOD TAPE & PASTE ELECTRONIC SOUNDER OTHER

FIELD MEASUREMENTS

GALLONS REMOVED	TIME	pH	TEMP	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	ORP (mV)	DO (mg/l)	COMMENTS (odor, color, ...)
0 (dtw)	830	7.57	18.63	729.0	0.538	108.4	1.03	Sp C 828.0
4	843	7.02	18.52	728	0.540	134	1.59	830
8	845	7.02	18.76	742	0.727	142	1.86	842
10	849	6.94	18.8	749	0.794	149	2.02	900

DEPTH TO GROUNDWATER WHEN 80% RECOVERED 19.07

ACTUAL DEPTH TO GROUNDWATER BEFORE SAMPLING (BTOC) Dtw 18.44 (920)

SAMPLING METHOD

CONTAINERS / PRESERVATIVE

3 / 40 ML	2 / LITER
/ OTHER	/ OTHER

ANALYSES:

TEHd, TEHmo (8015m with silica gel cleanup)
TVHg, BTEX, MTBE (8020)
CO2, FE2, Mn, SO2-
N-NH3, N-NO3, O-PO4

MISC FIELD OBSERVATION:

APPENDIX C

Analytical Test Reports/Chain-of-Custody Documents

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:

Subsurface Consultants
1000 Broadway
Suite 200
Oakland, CA 94607

Date: 17-DEC-01
Lab Job Number: 155589
Project ID: 1309.008
Location: 327 34th St.

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: **155589** Receipt Date: **11/21/01**
Client: **Subsurface Consultants, Inc.**
Project Name: **327 34th St.**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for seven water samples received from the above referenced project. The samples were received cold and intact.

Total Volatile Hydrocarbons/BTXE: No analytical problems were encountered.

Total Extractable Hydrocarbons: No analytical problems were encountered.

Metals: No analytical problems were encountered.

General Chemistry: No analytical problems were encountered.

RSK-175: Microseeps in Pittsburgh, Pennsylvania performed the analysis. Please see the Microseeps case narrative.

155589

CHAIN OF CUSTODY

PAGE 1 **OF** 1

PROJECT NAME: 397 34th ST.

JOB NUMBER: 1309.008 LAB: C.T.

PROJECT CONTACT: E. SILVERMAN TURNAROUND: ST.

SAMPLED BY: WILLIAM BURNETTE REQUESTED BY: E. SILVERMAN

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	AIR		CONTAINERS: VOA	LITER	PINT	TUBE	Poly		PRESERVATIVE: HCL	H_2SO_4	HNO_3	ICE	OTHER	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	TPH-g, BTEX, MTBE (8015 and 8020)	TPH as Diesel - using silica gel clean up (8015)	VOCs (8260)	CAM 17 Title 22 Metals (6010/7000)	Lead (6010)	TPH-mo (8015) w/ SG	Mn	SO_4 & PO_4	EDF Format	Chromatograms
1	mw-1	X				6	2			2		X			X			11	20	01	1640		X	X				X	X	X	X	X
2	mw-2	X				6	2			2		X			X			11	20	01	1130		X	X				X	X	X	X	X
3	mw-3	X				6	2			2		X			X			11	20	01	1250		X	X				X	X	X	X	X
4	mw-4	X				6	2			2		X			X			11	20	01	1520		X	X				X	X	X	X	X
5	mw-5	X				6	2			2		X			X			11	20	01	1350		X	X				X	X	X	X	X
6	mw-6	X				6	2			2		X			X			11	21	01	1030		X	X				X	X	X	X	X
7	mw-7	X				6	2			2		X			X			11	21	01	0935		X	X				X	X	X	X	X

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
William B. Burnette	11/21/01 16:55	[signature]	11/21/01 1655

COMMENTS & NOTES:

SCI
Subsurface Consultants, Inc.
1000 Broadway, Suite 200 Oakland, CA 94607
510-268-0461 FAX: 510-268-0137
2011 Soscol Ave., Suite 5, Napa, CA 94559
707-257-6993 FAX: 707-257-6995

PAGE 1 OF 1

CHAIN OF CUSTODY

PROJECT NAME: 327 34th Street
JOB NUMBER: 1309.008
PROJECT CONTACT: E. Silverman
SAMPLED BY: W. Burnett
LAB: Curtis & Tompkins
TURNAROUND: Standard
REQUESTED BY: E. Silverman

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	CONTAINERS: VOA	CONTAINERS: LITER	CONTAINERS: PINT	CONTAINERS: TUBE	CONTAINERS: Poly	PRESERVATIVE: HCL	PRESERVATIVE: H_2SO_4	PRESERVATIVE: HNO_3	PRESERVATIVE: ICE	PRESERVATIVE: OTHER	PRESERVATIVE: NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES
	mw-1	X			2				3	X	X				X	11	21	01	1150	
	mw-2	X			3				3	X	X				X	11	21	01	1330	
	mw-3	X			2				3	X	X				X	11	21	01	1350	
	mw-4	X			2				3	X	X				X	11	21	01	1445	
	mw-5	X			2				3	X	X				X	11	21	01	1520	
	mw-6	X			2				3	X	X				X	11	21	01	1620	
	mw-7	X			2				3	X	X				X	11	21	01	1540	

ANALYSIS REQUESTED

TPH-g, ~~BTEX, MTBE~~ (8015 and 8020)	TPH as Diesel - using silica gel clean up (8015)	VOCs (8260)	CAM 17 Title 22 Metals (6010/7000)	Lead (6010)	Fe 2+	CO_2	Hrdlg	EDF Format	Chromatograms
					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	

CHAIN OF CUSTODY RECORD

RELINQUESHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
William B. Burnett	11/21/01 1655	[signature]	11/21/01 1655
RELINQUESHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUESHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUESHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

COMMENTS & NOTES:
BTEX, MTBE (8260)

Subsurface Consultants, Inc.
1000 Broadway, Suite 200 Oakland, CA 94607
510-268-0461 FAX: 510-268-0137
2011 Soscol Ave., Suite 5, Napa, CA 94559
707-257-6993 FAX: 707-257-6995

Excel

g:/server migration/data/template/chain of custody

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-1	Batch#:	68234
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-001	Analyzed:	11/26/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	117	60-140

Field ID:	MW-2	Batch#:	68296
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-002	Analyzed:	11/28/01
Diln Fac:	50.00		

Analyte	Result	RL
Gasoline C7-C12	83,000	2,500

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	88	60-140

Field ID:	MW-3	Batch#:	68296
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-003	Analyzed:	11/28/01
Diln Fac:	100.0		

Analyte	Result	RL
Gasoline C7-C12	100,000	5,000

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	91	60-140

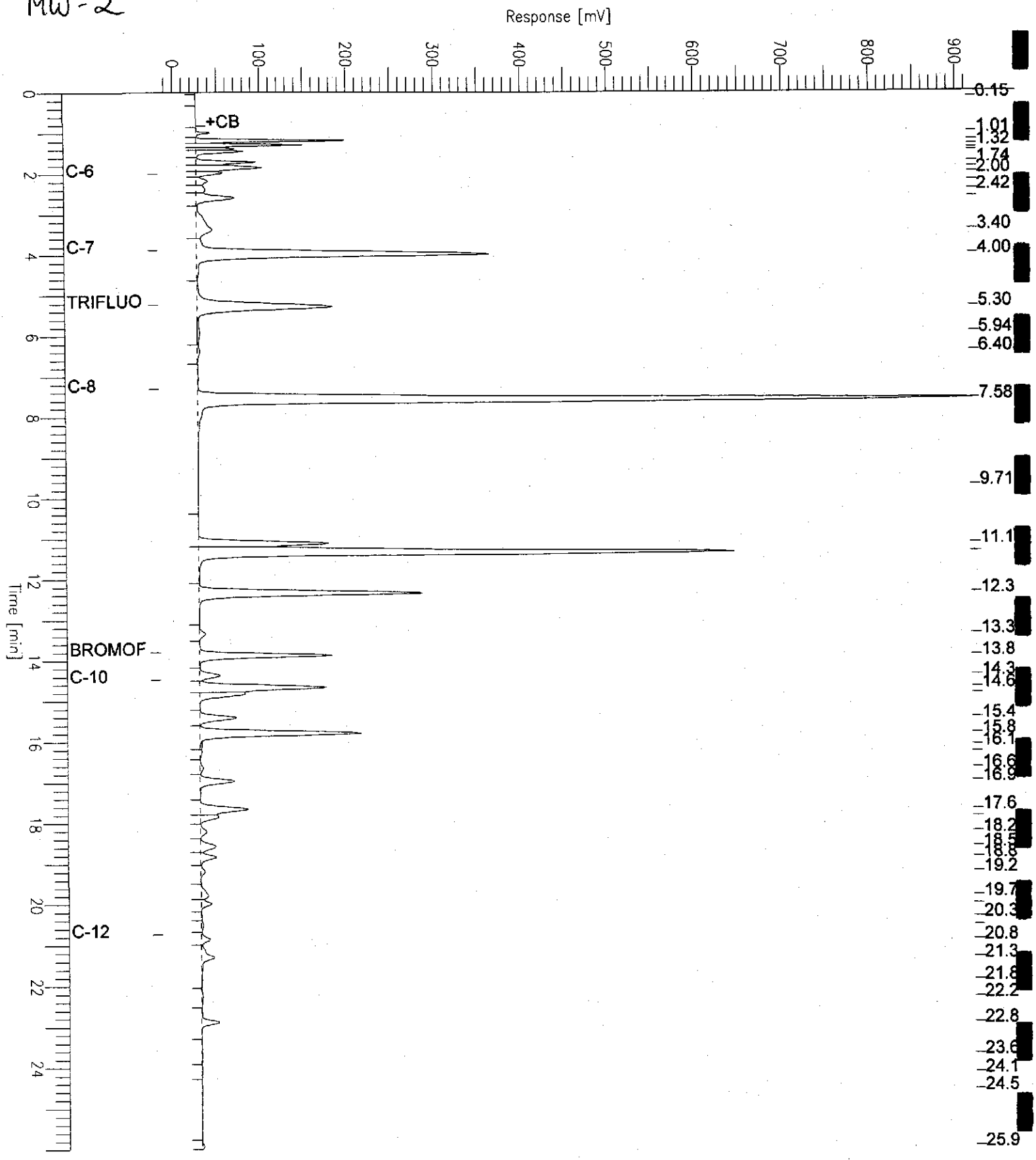
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 155589-002,68296,MBTXE ONLY
FileName : G:\GC07\DATA\331A023.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -18 mV

Sample #: C1 Page 1 of 1
Date : 11/29/01 12:23 PM
Time of Injection: 11/28/01 07:36 AM
Low Point : -18.18 mV High Point : 912.01 mV
Plot Scale: 930.2 mV

MW-2

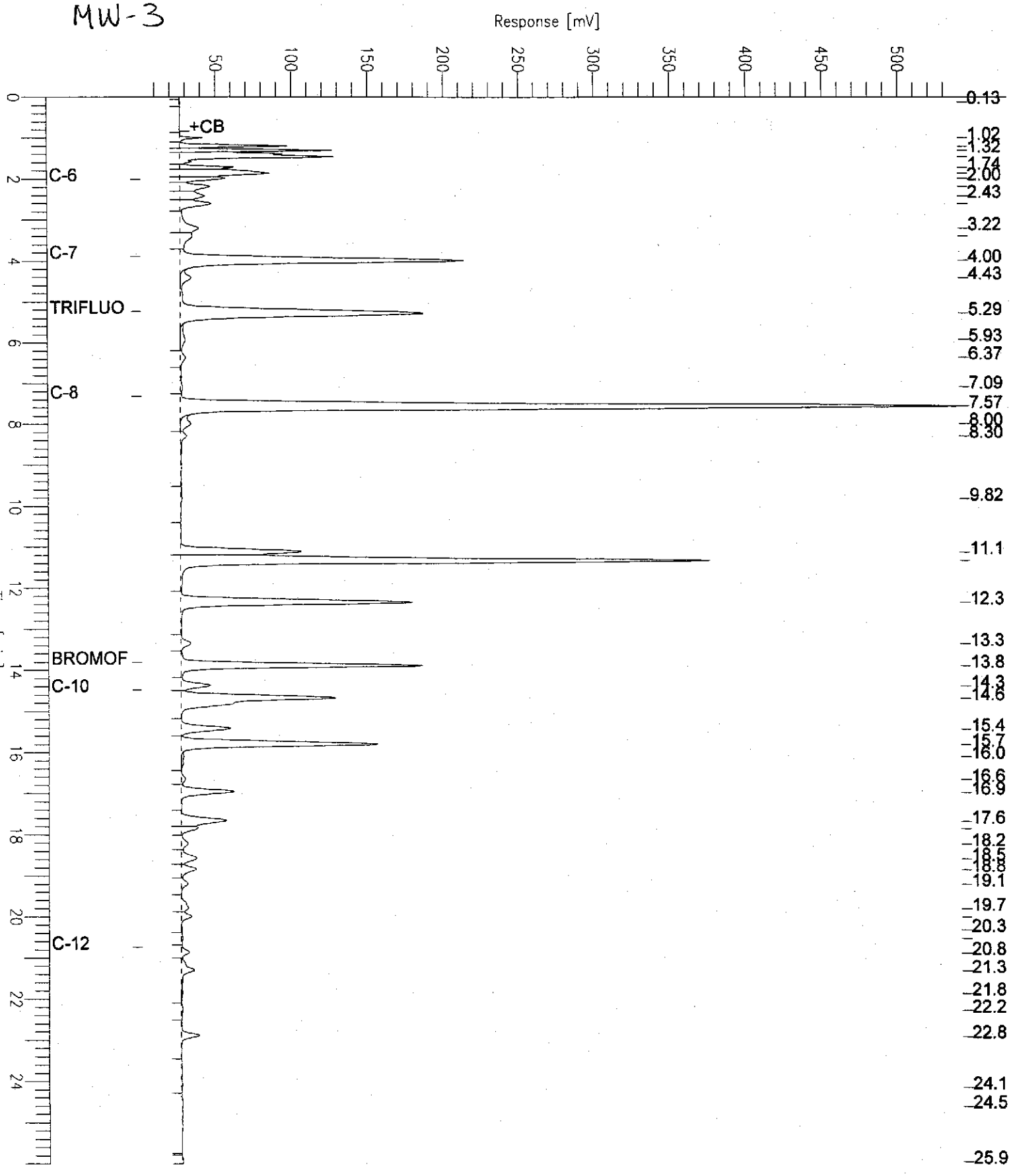


GC07 TVH 'A' Data File RTX 502

Sample Name : 155589-003,68296,MBTXE ONLY
FileName : G:\GC07\DATA\331A022.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 1 mV

Sample #: C1 Page 1 of 1
Date : 11/29/01 12:24 PM
Time of Injection: 11/28/01 07:03 AM
Low Point : 0.65 mV High Point : 539.29 mV
Plot Scale: 538.6 mV

MW-3



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-4	Batch#:	68234
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-004	Analyzed:	11/26/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	96	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	105	60-140

Field ID:	MW-5	Batch#:	68234
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-005	Analyzed:	11/26/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	140	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	59-135
Bromofluorobenzene (FID)	105	60-140

Field ID:	MW-6	Batch#:	68234
Type:	SAMPLE	Sampled:	11/21/01
Lab ID:	155589-006	Analyzed:	11/26/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	112	60-140

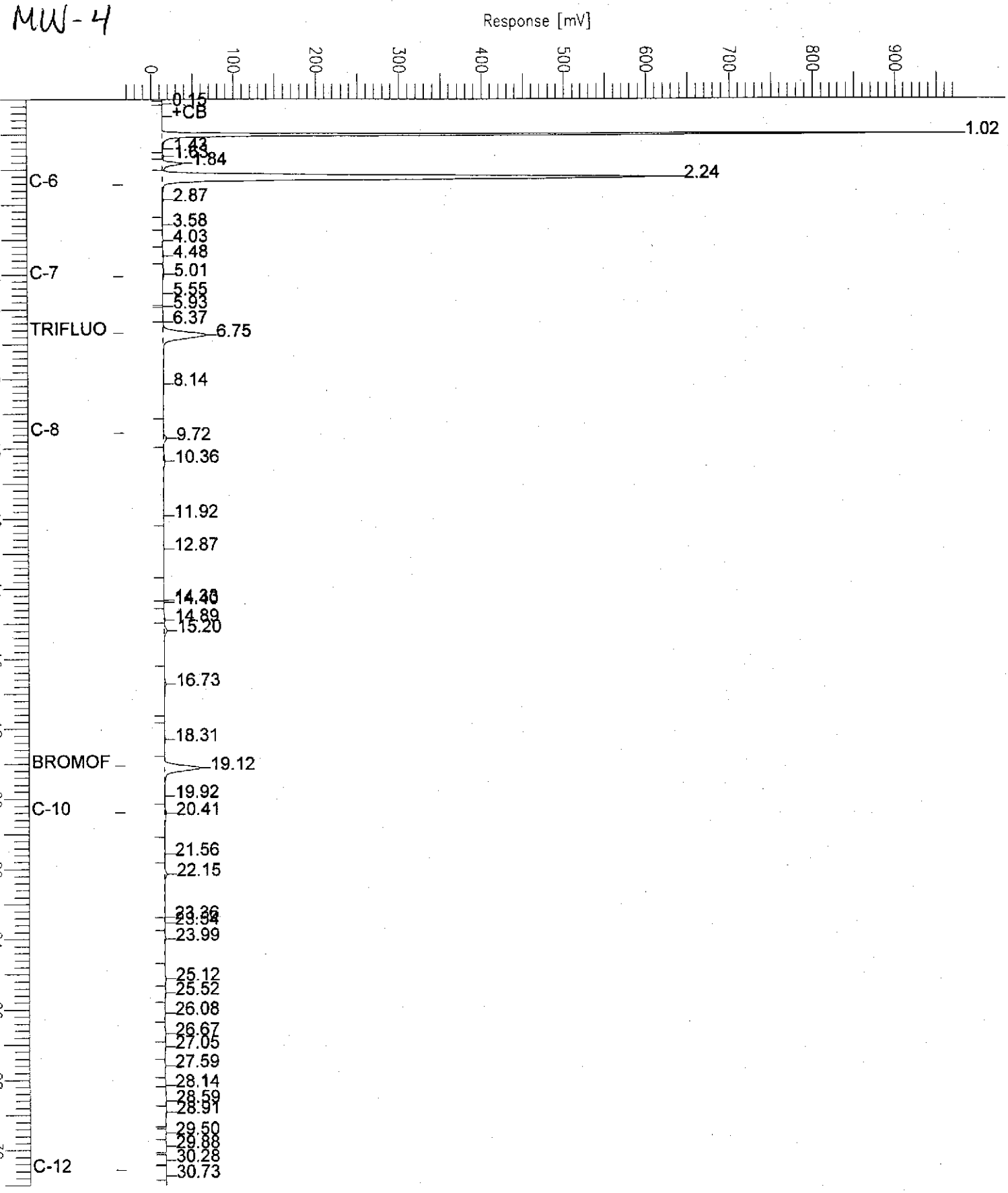
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 155589-004,68234
FileName : G:\GC05\DATA\330G011.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: -35 mV

Sample #: a1
Date : 11/26/01 06:31 PM
Time of Injection: 11/26/01 06:00 PM
Low Point : -34.65 mV High Point : 972.23 mV
Plot Scale: 1006.9 mV

MW-4

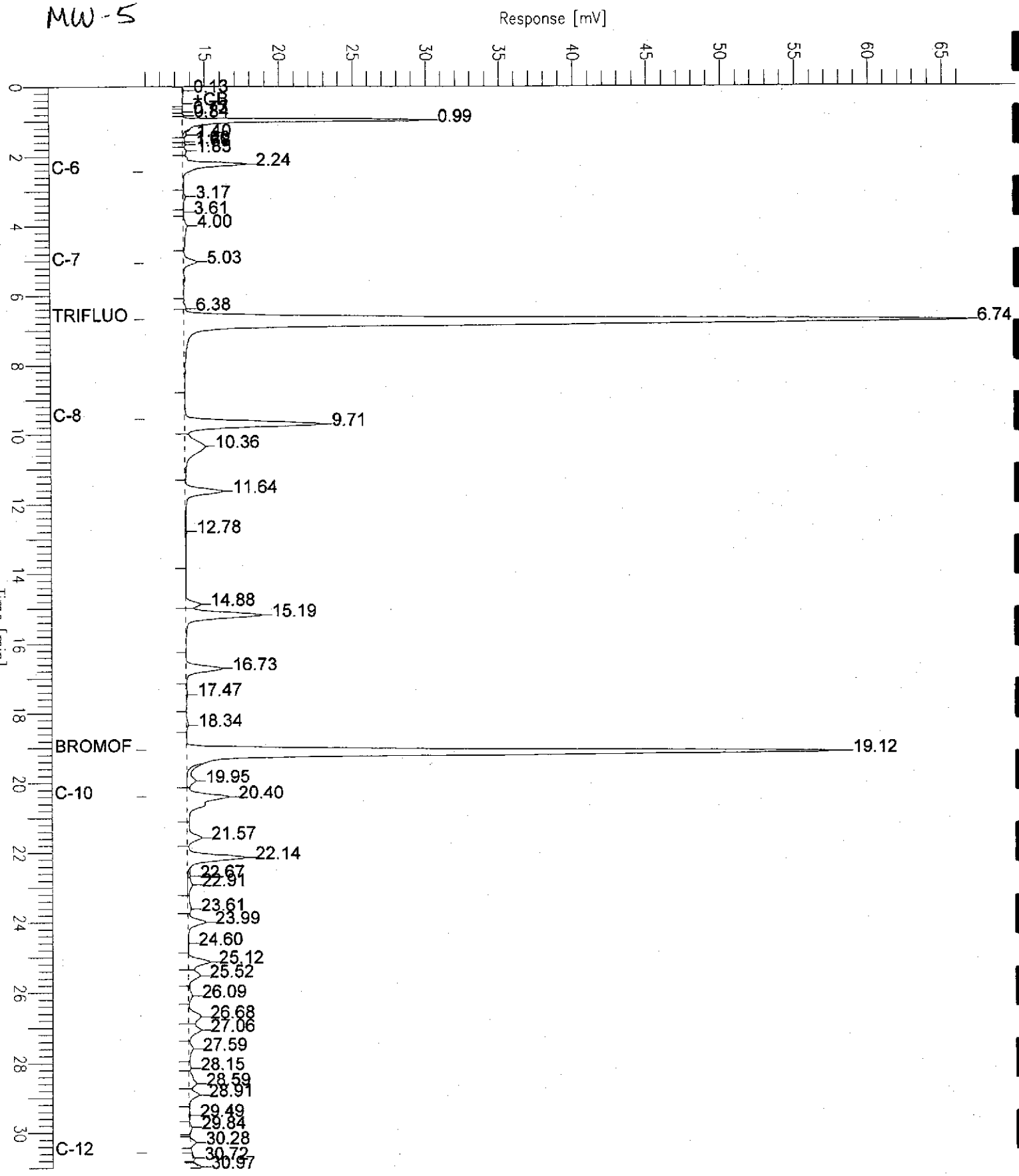


Chromatogram

Sample Name : 155589-005,68234
FileName : G:\GC05\DATA\330G012.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 11 mV

Sample #: a1
Date : 11/26/01 07:15 PM
Time of Injection: 11/26/01 06:43 PM
Low Point : 10.85 mV High Point : 66.65 mV
Plot Scale: 55.8 mV

MW-5



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-7	Batch#:	68234
Type:	SAMPLE	Sampled:	11/21/01
Lab ID:	155589-007	Analyzed:	11/26/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	109	60-140

Type:	BLANK	Batch#:	68234
Lab ID:	QC163186	Analyzed:	11/26/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	59-135
Bromofluorobenzene (FID)	100	60-140

Type:	BLANK	Batch#:	68296
Lab ID:	QC163416	Analyzed:	11/28/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	59-135
Bromofluorobenzene (FID)	87	60-140

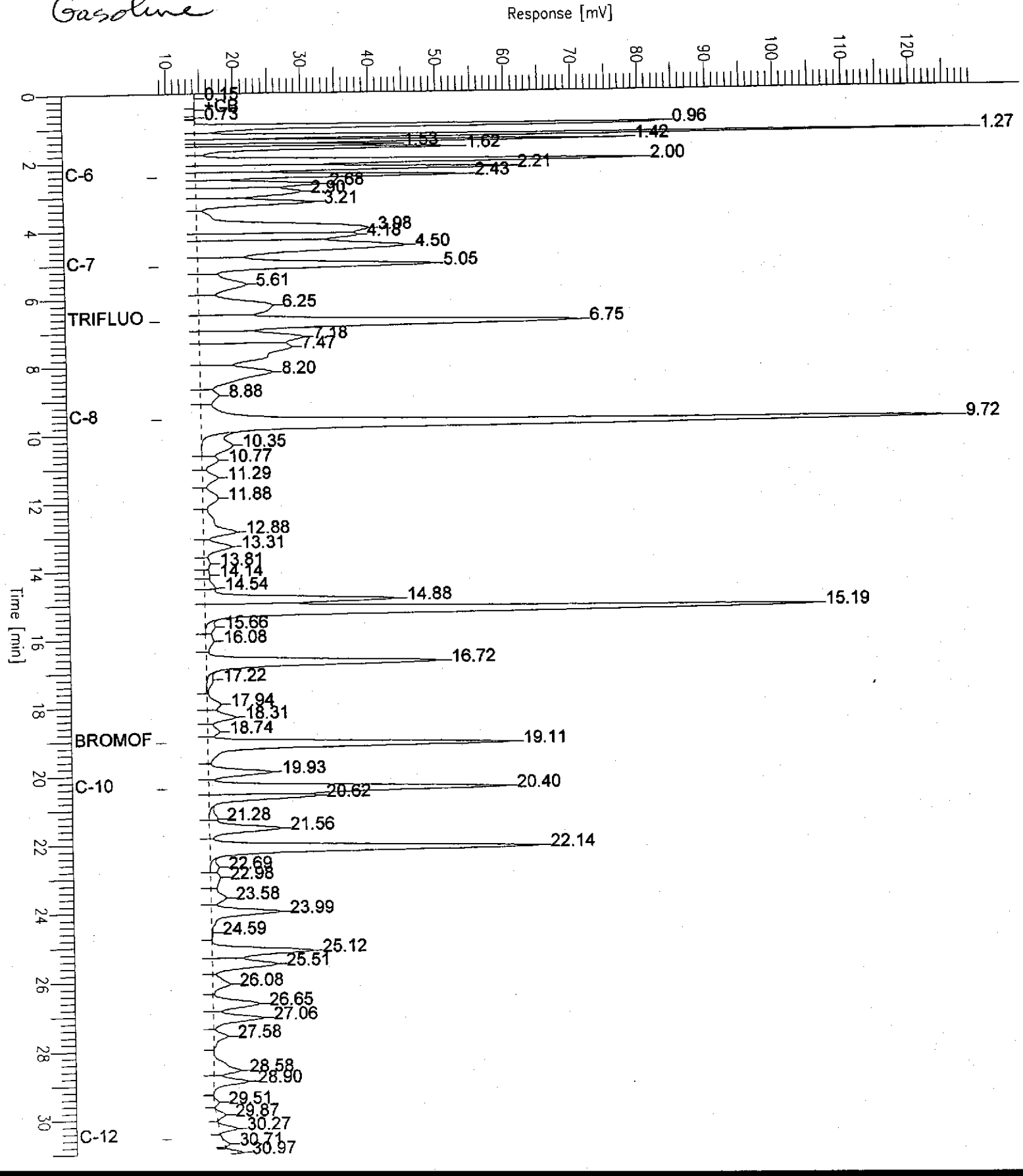
ND= Not Detected
RL= Reporting Limit

Chromatogram

ample Name : CCV/LCS,QC163187,68234,01WS2177,5/5000
ileName : G:\GC05\DATA\330G003.raw
ethod : TVHBTXE
tart Time : 0.00 min End Time : 31.00 min
cale Factor: 1.0 Plot Offset: 9 mV

Sample #:
Date : 11/26/01 10:12 AM
Time of Injection: 11/26/01 09:41 AM
Low Point : 8.51 mV High Point : 129.20 mV
Plot Scale: 120.7 mV

Gasoline



Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-1	Batch#:	68234
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-001	Analyzed:	11/26/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	1.3	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	1.7	0.50
o-Xylene	0.81	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	56-142
Bromofluorobenzene (PID)	119	55-149

Field ID:	MW-2	Batch#:	68323
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-002	Analyzed:	11/29/01
Diln Fac:	100.0		

Analyte	Result	RL
MTBE	2,800	200
Benzene	5,900	50
Toluene	15,000	50
Ethylbenzene	2,300	50
m,p-Xylenes	9,700	50
o-Xylene	4,400	50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	93	55-149

Field ID:	MW-3	Batch#:	68296
Type:	SAMPLE	Sampled:	11/20/01
Lab ID:	155589-003	Analyzed:	11/28/01
Diln Fac:	100.0		

Analyte	Result	RL
MTBE	4,000	200
Benzene	6,300	50
Toluene	16,000	50
Ethylbenzene	2,400	50
m,p-Xylenes	10,000	50
o-Xylene	4,900	50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	89	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID: MW-4
Type: SAMPLE
Lab ID: 155589-004
Diln Fac: 5.000

Batch#: 68323
Sampled: 11/20/01
Analyzed: 11/29/01

Analyte	Result	RL
MTBE	2,500	10
Benzene	ND	2.5
Toluene	4.0	2.5
Ethylbenzene	ND	2.5
m,p-Xylenes	3.7	2.5
o-Xylene	ND	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	92	56-142
Bromofluorobenzene (PID)	88	55-149

Field ID: MW-5
Type: SAMPLE
Lab ID: 155589-005
Diln Fac: 1.000

Batch#: 68234
Sampled: 11/20/01
Analyzed: 11/26/01

Analyte	Result	RL
MTBE	10	2.0
Benzene	0.83	0.50
Toluene	12	0.50
Ethylbenzene	1.2	0.50
m,p-Xylenes	7.2	0.50
o-Xylene	3.4	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	97	56-142
Bromofluorobenzene (PID)	108	55-149

Field ID: MW-6
Type: SAMPLE
Lab ID: 155589-006
Diln Fac: 1.000

Batch#: 68296
Sampled: 11/21/01
Analyzed: 11/28/01

Analyte	Result	RL
MTBE	450	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	94	56-142
Bromofluorobenzene (PID)	90	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-7	Batch#:	68323
Type:	SAMPLE	Sampled:	11/21/01
Lab ID:	155589-007	Analyzed:	11/29/01
Dil Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	0.59	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	90	56-142
Bromofluorobenzene (PID)	86	55-149

Type:	BLANK	Batch#:	68234
Lab ID:	QC163186	Analyzed:	11/26/01
Dil Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	99	56-142
Bromofluorobenzene (PID)	102	55-149

Type:	BLANK	Batch#:	68296
Lab ID:	QC163416	Analyzed:	11/28/01
Dil Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	89	56-142
Bromofluorobenzene (PID)	80	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Type:	BLANK	Batch#:	68323
Lab ID:	QC163524	Analyzed:	11/29/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	85	56-142
Bromofluorobenzene (PID)	75	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC163187	Batch#:	68234
Matrix:	Water	Analyzed:	11/26/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,050	103	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	59-135
Bromofluorobenzene (FID)	109	60-140

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC163413	Batch#:	68296
Matrix:	Water	Analyzed:	11/28/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,803	90	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	118	59-135
Bromofluorobenzene (FID)	88	60-140

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC163523	Batch#:	68323
Matrix:	Water	Analyzed:	11/29/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.42	102	51-125
Benzene	20.00	16.61	83	67-117
Toluene	20.00	16.85	84	69-117
Ethylbenzene	20.00	16.99	85	68-124
m,p-Xylenes	40.00	34.60	86	70-125
o-Xylene	20.00	17.89	89	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	86	56-142
Bromofluorobenzene (PID)	76	55-149

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68234
Units:	ug/L	Analyzed:	11/26/01
Diln Fac:	1.000		

Type: BS Lab ID: QC163188

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.86	104	51-125
Benzene	20.00	17.19	86	67-117
Toluene	20.00	17.65	88	69-117
Ethylbenzene	20.00	18.08	90	68-124
m,p-Xylenes	40.00	37.92	95	70-125
o-Xylene	20.00	18.68	93	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	102	56-142
Bromofluorobenzene (PID)	109	55-149

Type: BSD Lab ID: QC163189

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.77	99	51-125	5	20
Benzene	20.00	17.50	87	67-117	2	20
Toluene	20.00	17.72	89	69-117	0	20
Ethylbenzene	20.00	18.18	91	68-124	1	20
m,p-Xylenes	40.00	37.68	94	70-125	1	20
o-Xylene	20.00	18.69	93	65-129	0	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	100	56-142
Bromofluorobenzene (PID)	105	55-149

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68296
Units:	ug/L	Analyzed:	11/28/01
Diln Fac:	1.000		

Type: BS Lab ID: QC163414

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.52	93	51-125
Benzene	20.00	17.50	87	67-117
Toluene	20.00	17.77	89	69-117
Ethylbenzene	20.00	17.29	86	68-124
m,p-Xylenes	40.00	35.23	88	70-125
o-Xylene	20.00	18.56	93	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	90	56-142
Bromofluorobenzene (PID)	81	55-149

Type: BSD Lab ID: QC163415

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	17.97	90	51-125	3	20
Benzene	20.00	17.25	86	67-117	1	20
Toluene	20.00	17.26	86	69-117	3	20
Ethylbenzene	20.00	16.81	84	68-124	3	20
m,p-Xylenes	40.00	34.71	87	70-125	1	20
o-Xylene	20.00	18.25	91	65-129	2	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	90	56-142
Bromofluorobenzene (PID)	81	55-149

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Field ID:	MW-1	Batch#:	68234
MSS Lab ID:	155589-001	Sampled:	11/20/01
Matrix:	Water	Received:	11/21/01
Units:	ug/L	Analyzed:	11/26/01
Diln Fac:	1.000		

Type: MS Lab ID: QC163279

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	49.16	2,000	2,115	103	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	114	59-135
Bromofluorobenzene (FID)	115	60-140

Type: MSD Lab ID: QC163280

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,158	105	65-131	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	117	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68296
MSS Lab ID:	155591-002	Sampled:	11/21/01
Matrix:	Water	Received:	11/21/01
Units:	ug/L	Analyzed:	11/28/01
Diln Fac:	1.000		

Type: MS Lab ID: QC163417

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<20.00	2,000	1,701	85	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	123	59-135
Bromofluorobenzene (FID)	97	60-140

Type: MSD Lab ID: QC163418

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,762	88	65-131	4	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	59-135
Bromofluorobenzene (FID)	101	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Batch#:	68323
MSS Lab ID:	155650-001	Sampled:	11/27/01
Matrix:	Water	Received:	11/27/01
Units:	ug/L	Analyzed:	11/29/01
Diln Fac:	1.000		

Type: MS Lab ID: QC163527

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.2100	20.00	23.03	115	33-131
Benzene	<0.04000	20.00	18.84	94	65-123
Toluene	<0.05100	20.00	18.73	94	73-122
Ethylbenzene	<0.04200	20.00	18.32	92	59-137
m,p-Xylenes	<0.04700	40.00	37.17	93	68-132
o-Xylene	<0.04600	20.00	20.15	101	61-140

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	95	55-149

Type: MSD Lab ID: QC163528

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	23.65	118	33-131	3	20
Benzene	20.00	18.46	92	65-123	2	20
Toluene	20.00	18.24	91	73-122	3	20
Ethylbenzene	20.00	17.63	88	59-137	4	20
m,p-Xylenes	40.00	36.35	91	68-132	2	20
o-Xylene	20.00	19.66	98	61-140	2	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	99	55-149

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-1	Sampled:	11/20/01
Type:	SAMPLE	Prepared:	11/26/01
Lab ID:	155589-001	Analyzed:	11/28/01
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	68270		

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

Surrogate	%REC	Limits
Hexacosane	74	44-121

Field ID:	MW-2	Sampled:	11/20/01
Type:	SAMPLE	Prepared:	11/26/01
Lab ID:	155589-002	Analyzed:	11/29/01
Diln Fac:	5.000	Cleanup Method:	EPA 3630C
Batch#:	68270		

Analyte	Result	RL
Diesel C10-C24	5,700 L Y	250
Motor Oil C24-C36	ND	1,500

Surrogate	%REC	Limits
Hexacosane	102	44-121

Field ID:	MW-3	Sampled:	11/20/01
Type:	SAMPLE	Prepared:	11/26/01
Lab ID:	155589-003	Analyzed:	11/29/01
Diln Fac:	3.000	Cleanup Method:	EPA 3630C
Batch#:	68270		

Analyte	Result	RL
Diesel C10-C24	5,900 L Y	150
Motor Oil C24-C36	ND	900

Surrogate	%REC	Limits
Hexacosane	90	44-121

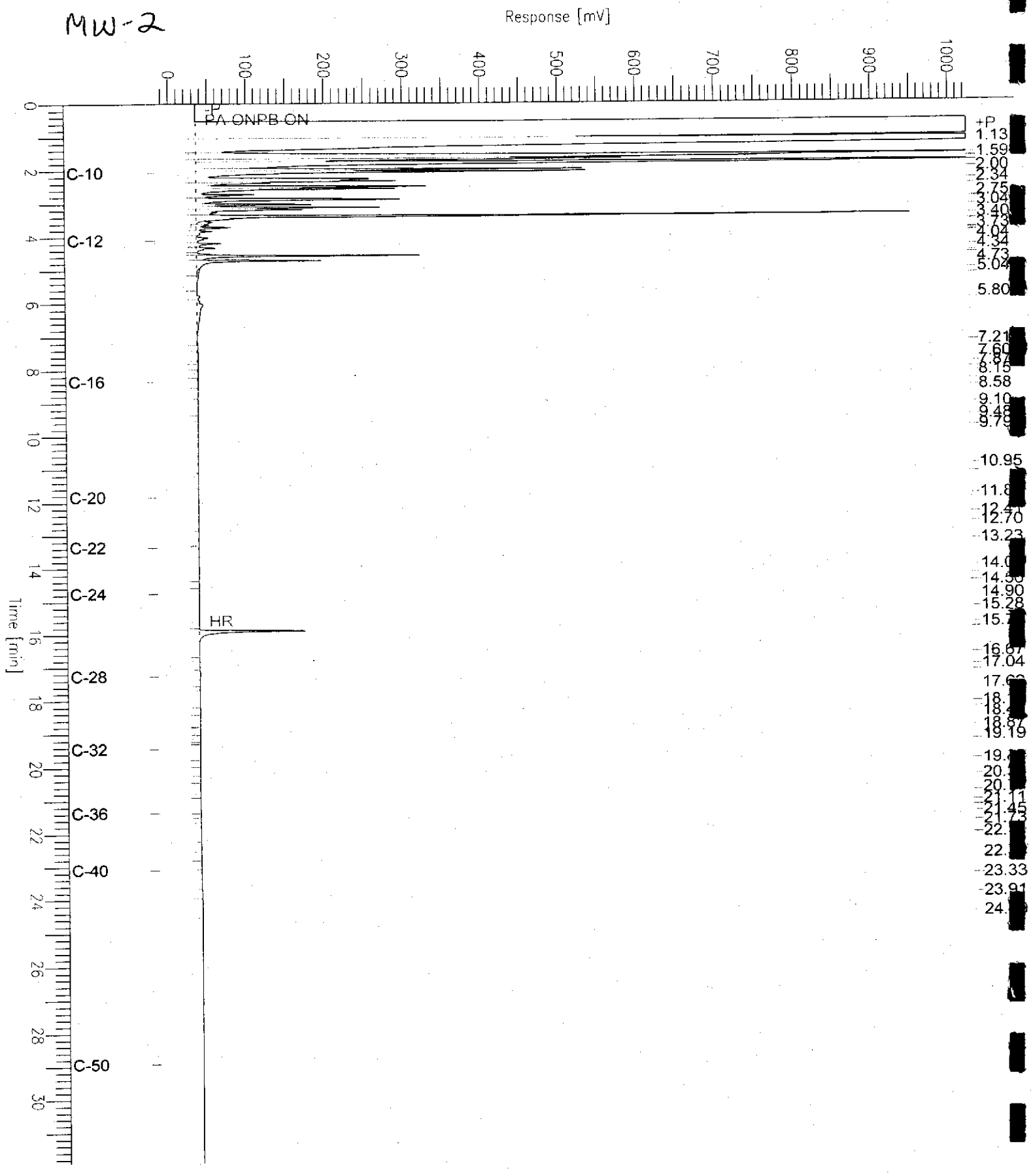
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 155589-002sg,68270
FileName : G:\GC13\CHB\333B011.RAW
Method : BTEH321.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -17 mV

Sample #: 68270 Page 1 of 1
Date : 11/30/2001 08:16 AM
Time of Injection: 11/29/2001 08:19 PM
Low Point : -17.23 mV High Point : 1024.00 mV
Plot Scale: 1041.2 mV

MW-2

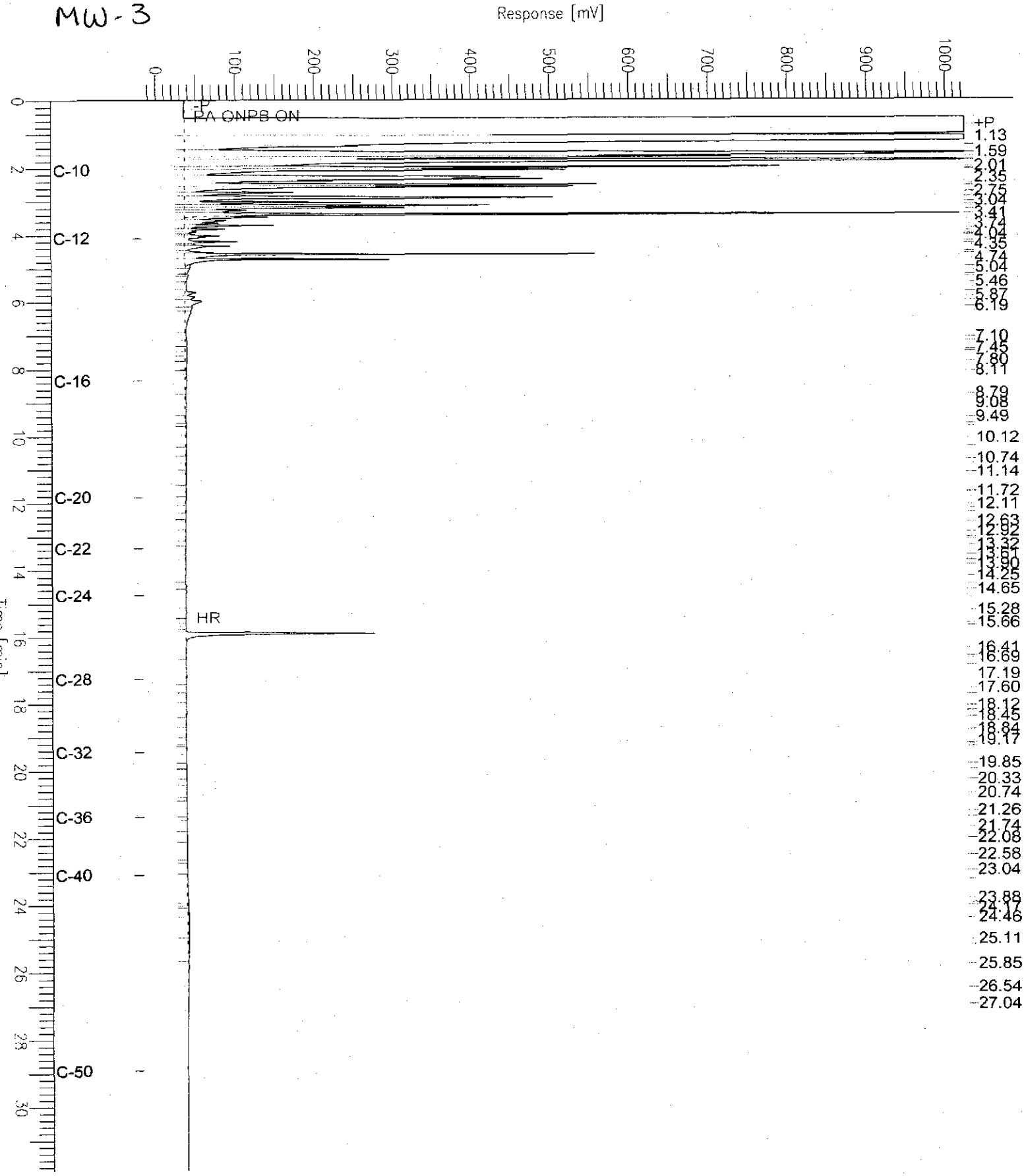


Chromatogram

Sample Name : 155589-003sg,68270
FileName : G:\GC13\CHB\333B009.RAW
Method : BTEH321.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -17 mV

Sample #: 68270 Page 1 of 1
Date : 11/30/2001 08:14 AM
Time of Injection: 11/29/2001 07:00 PM
Low Point : -16.82 mV High Point : 1024.00 mV
Plot Scale: 1040.8 mV

MW-3



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-4	Sampled:	11/20/01
Type:	SAMPLE	Prepared:	11/26/01
Lab ID:	155589-004	Analyzed:	11/28/01
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	68270		

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

Surrogate	%REC	Limits
Hexacosane	93	44-121

Field ID:	MW-5	Sampled:	11/20/01
Type:	SAMPLE	Prepared:	11/26/01
Lab ID:	155589-005	Analyzed:	11/28/01
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	68270		

Analyte	Result	RL
Diesel C10-C24	860 H Y	50
Motor Oil C24-C36	2,500	300

Surrogate	%REC	Limits
Hexacosane	107	44-121

Field ID:	MW-6	Sampled:	11/21/01
Type:	SAMPLE	Prepared:	11/29/01
Lab ID:	155589-006	Analyzed:	12/01/01
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	68353		

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

Surrogate	%REC	Limits
Hexacosane	92	44-121

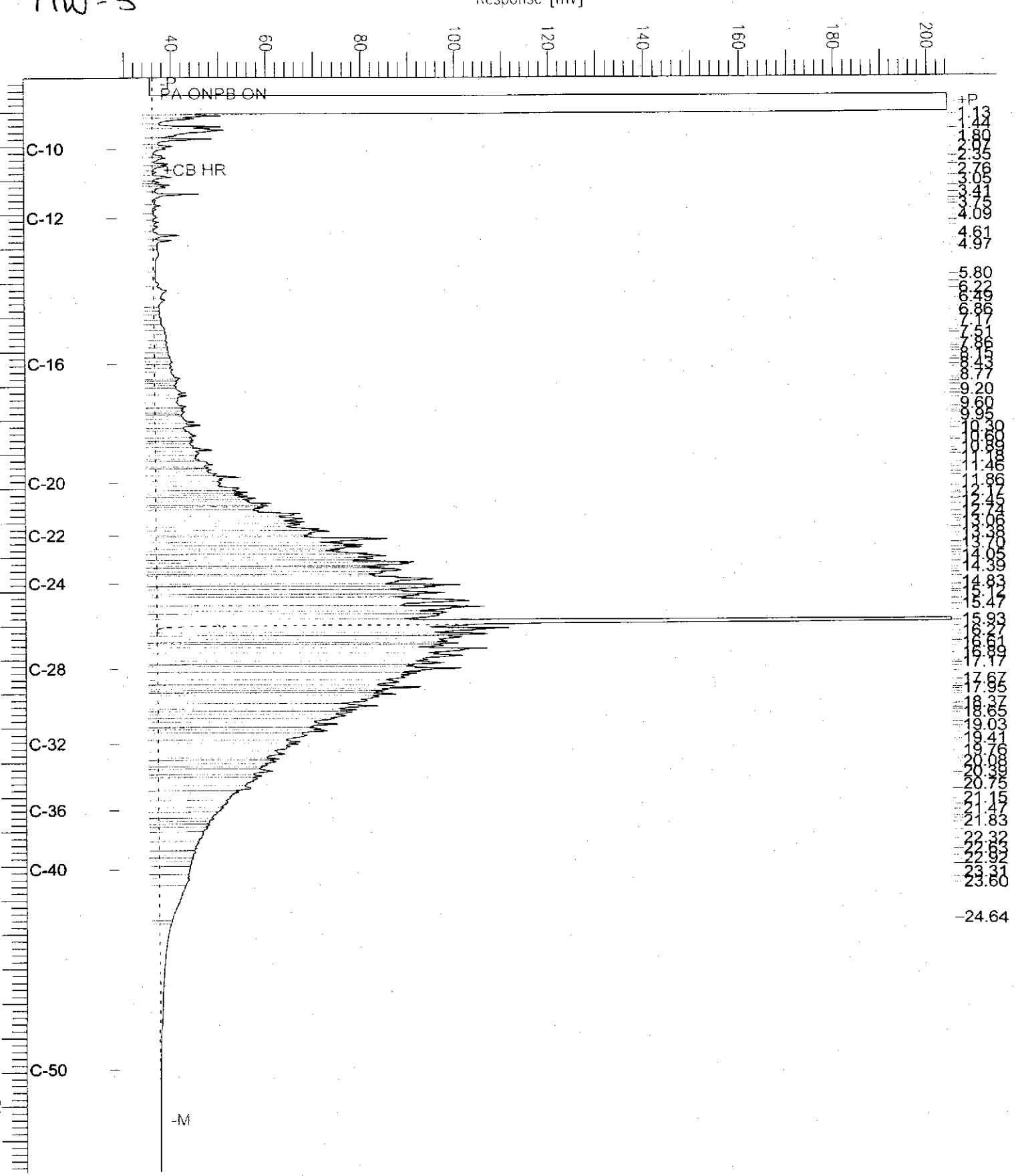
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 155589-005sg,68270
FileName : G:\GC13\CHB\330B076.RAW
Method : BTEH321.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 28 mV

Sample #: 68270 Page 1 of 1
Date : 11/28/2001 05:32 PM
Time of Injection: 11/28/2001 01:01 PM
Low Point : 28.37 mV High Point : 204.35 mV
Plot Scale: 176.0 mV

MW-5



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Received:	11/21/01
Units:	ug/L		

Field ID:	MW-7	Sampled:	11/21/01
Type:	SAMPLE	Prepared:	11/29/01
Lab ID:	155589-007	Analyzed:	12/01/01
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	68353		

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

Surrogate	%REC	Limits
Hexacosane	111	44-121

Type:	BLANK	Prepared:	11/26/01
Lab ID:	QC163316	Analyzed:	11/27/01
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	68270		

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

Surrogate	%REC	Limits
Hexacosane	104	44-121

Type:	BLANK	Prepared:	11/29/01
Lab ID:	QC163657	Analyzed:	12/01/01
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	68353		

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

Surrogate	%REC	Limits
Hexacosane	93	44-121

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

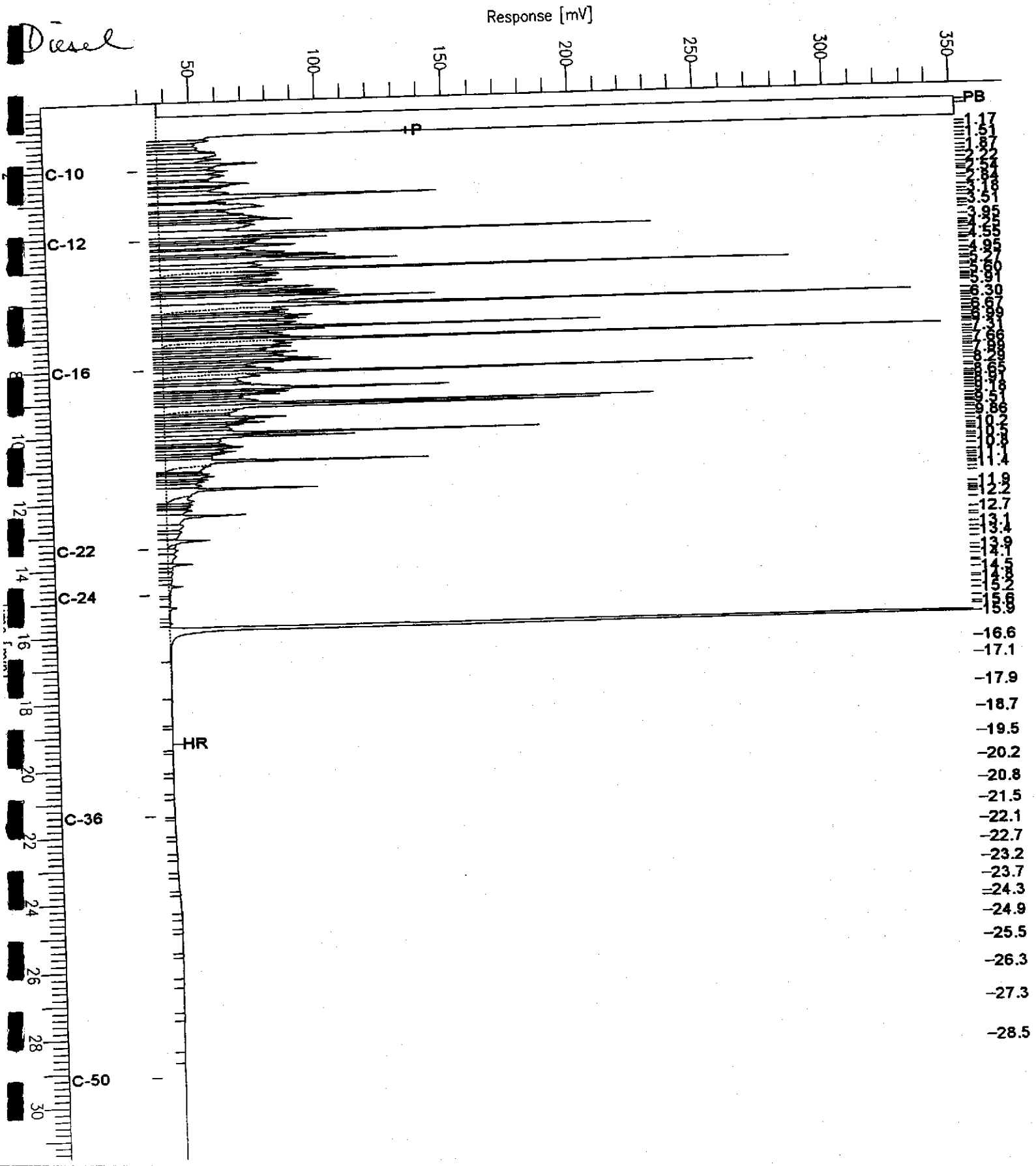
Chromatogram

le Name : ccv,01ws2062,dsl
Name : G:\GC15\CHB\330B004.RAW
od : BTEH309.MTH
Time : 0.01 min
Factor: 0.0

End Time : 31.91 min
Plot Offset: 29 mV

Sample #: 500mg/L
Date : 11/26/2001 10:06 AM
Time of Injection: 11/26/2001 09:22 AM
Low Point : 29.27 mV
High Point : 351.86 mV
Plot Scale: 322.6 mV

Diesel



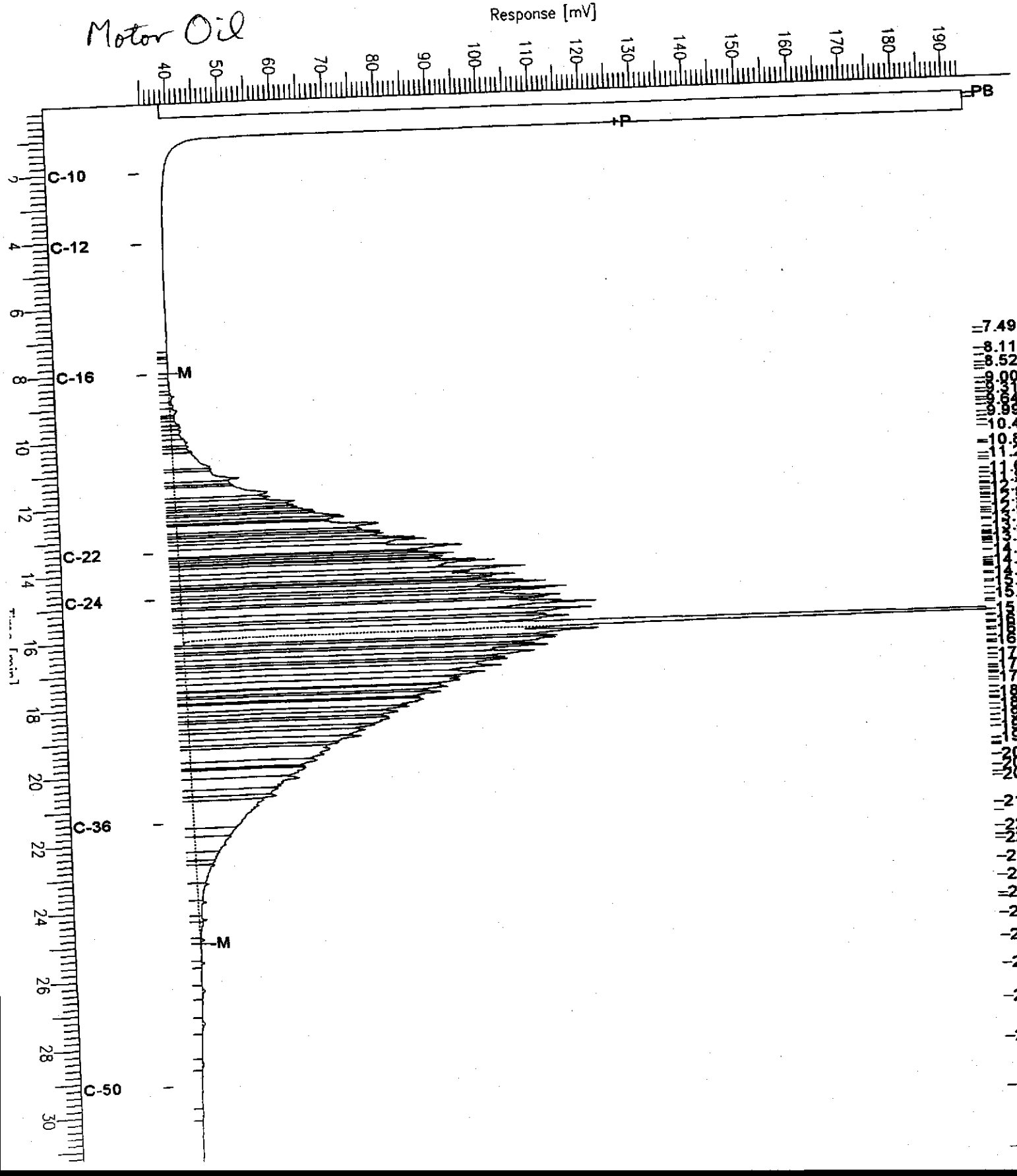
Chromatogram

e Name : ccv,01ws2115,mo
ame : G:\GC15\CHB\330B003.RAW
d : BTEH309.MTH
Time : 0.01 min
Factor: 0.0

End Time : 31.91 min
Plot Offset: 34 mV

Sample #: 500mg/L
Date : 11/26/2001 09:15 AM
Time of Injection: 11/26/2001 08:42 AM
Low Point : 34.23 mV
High Point : 193.89 mV
Plot Scale: 159.7 mV

Motor Oil



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Batch#:	68270
Units:	ug/L	Prepared:	11/26/01
Diln Fac:	1.000	Analyzed:	11/27/01

Type: BS
Lab ID: QC163317
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,260	90	45-110

Surrogate	%REC	Limits
Hexacosane	104	44-121

Type: BSD
Lab ID: QC163318
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,447	98	45-110	8	22

Surrogate	%REC	Limits
Hexacosane	107	44-121

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1309.008	Analysis:	8015B(M)
Matrix:	Water	Batch#:	68353
Units:	ug/L	Prepared:	11/29/01
Diln Fac:	1.000	Analyzed:	12/01/01

Type: BS
Lab ID: QC163658
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,022	81	45-110

Surrogate	%REC	Limits
Hexacosane	87	44-121

Type: BSD
Lab ID: QC163659
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,342	94	45-110	15	22

Surrogate	%REC	Limits
Hexacosane	103	44-121

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Manganese

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1309.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	68245
Matrix:	Water	Received:	11/21/01
Units:	ug/L	Prepared:	11/26/01
Diln Fac:	1.000	Analyzed:	11/29/01

Field ID	Type	Lab ID	Result	RL	Sampled
MW-1	SAMPLE	155589-001	1,800	10	11/20/01
MW-2	SAMPLE	155589-002	2,000	10	11/20/01
MW-3	SAMPLE	155589-003	12,000	10	11/20/01
MW-4	SAMPLE	155589-004	10,000	10	11/20/01
MW-5	SAMPLE	155589-005	2,500	10	11/20/01
MW-6	SAMPLE	155589-006	5,200	10	11/21/01
MW-7	SAMPLE	155589-007	1,800	10	11/21/01
	BLANK	QC163230	ND	10	

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Manganese

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1309.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	68245
Matrix:	Water	Prepared:	11/26/01
Units:	ug/L	Analyzed:	11/29/01
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC163231	50.00	48.01	96	80-113		
BSD	QC163232	50.00	48.00	96	80-113	0	25

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Manganese

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1309.008	Analysis:	EPA 6010B
Analyte:	Manganese	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	68245
Type:	SDUP	Sampled:	11/20/01
MSS Lab ID:	155586-004	Received:	11/21/01
Lab ID:	QC163233	Prepared:	11/26/01
Matrix:	Water	Analyzed:	11/29/01
Units:	ug/L		

MSS Result	Result	RL	RPD	Lim
53.55	50.76	10	5	20

RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Manganese

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1309.008	Analysis:	EPA 6010B
Analyte:	Manganese	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	68245
Type:	SSPIKE	Sampled:	11/20/01
MSS Lab ID:	155586-004	Received:	11/21/01
Lab ID:	QC163234	Prepared:	11/26/01
Matrix:	Water	Analyzed:	11/29/01
Units:	ug/L		

MSS Result	Spiked	Result	%REC	Limits
53.55	50.00	102.1	97	64-128

Curtis & Tompkins, Ltd.

Ferrous Iron (Fe+2)

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Analysis:	FE+2
Project#:	1309.008		
Analyte:	Ferrous Iron (Fe+2)	Batch#:	68228
Matrix:	Water	Received:	11/21/01
Units:	mg/L	Analyzed:	11/21/01

Field ID	Type	Lab ID	Result	RL	Dilu Fac	Sampled
MW-1	SAMPLE	155589-001	0.32	0.10	1.000	11/20/01
MW-2	SAMPLE	155589-002	1.8	0.10	1.000	11/20/01
MW-3	SAMPLE	155589-003	0.84	0.10	1.000	11/20/01
MW-4	SAMPLE	155589-004	1.6	0.10	1.000	11/20/01
MW-5	SAMPLE	155589-005	0.20	0.10	1.000	11/20/01
MW-6	SAMPLE	155589-006	29	5.0	50.00	11/21/01
MW-7	SAMPLE	155589-007	0.16	0.10	1.000	11/21/01
	BLANK	QC163164	ND	0.10	1.000	

ND= Not Detected
RL= Reporting Limit

Ferrous Iron (Fe+2)

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Analysis:	FE+2
Project#:	1309.008		
Analyte:	Ferrous Iron (Fe+2)	Diln Fac:	1.000
Field ID:	MW-7	Batch#:	68228
MSS Lab ID:	155589-007	Sampled:	11/21/01
Matrix:	Water	Received:	11/21/01
Units:	mg/L	Analyzed:	11/21/01

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC163165		0.8000	0.8450	106	80-110		
MS	QC163166	0.1631	0.8000	0.9962	104	47-136		
MSD	QC163167		0.8000	0.9983	104	47-136	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Ammonia Nitrogen

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Batch#:	68357
Matrix:	Water	Received:	11/21/01
Units:	mg/L	Analyzed:	11/29/01
Diln Fac:	1.000		

Field ID	Type	Lab ID	Result	RL	Sampled
MW-1	SAMPLE	155589-001	ND	0.10	11/20/01
MW-2	SAMPLE	155589-002	ND	0.10	11/20/01
MW-3	SAMPLE	155589-003	ND	0.10	11/20/01
MW-4	SAMPLE	155589-004	ND	0.10	11/20/01
MW-5	SAMPLE	155589-005	ND	0.10	11/20/01
MW-6	SAMPLE	155589-006	3.4	0.10	11/21/01
MW-7	SAMPLE	155589-007	ND	0.10	11/21/01
	BLANK	QC163673	ND	0.10	

ND= Not Detected
RL= Reporting Limit

Ammonia Nitrogen

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	68357
MSS Lab ID:	155382-001	Sampled:	11/12/01
Matrix:	Water	Received:	11/13/01
Units:	mg/L	Analyzed:	11/29/01

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC163674		5.000	5.200	104	80-115		
MS	QC163675	<0.1000	5.000	4.830	97	69-140		
MSD	QC163676		5.000	5.080	102	69-140	5	38

RPD= Relative Percent Difference

Orthosphosphate Phosphorous

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 300.0
Analyte:	Orthophosphate (as P)	Diln Fac:	1.000
Matrix:	Water	Received:	11/21/01
Units:	mg/L	Prepared:	11/21/01

Field ID	Type	Lab ID	Result	RL	Batch#	Sampled	Analyzed
MW-1	SAMPLE	155589-001	ND	0.20	68183	11/20/01	11/21/01
MW-2	SAMPLE	155589-002	ND	0.20	68183	11/20/01	11/22/01
MW-3	SAMPLE	155589-003	ND	0.20	68183	11/20/01	11/22/01
MW-4	SAMPLE	155589-004	ND	0.20	68183	11/20/01	11/22/01
MW-5	SAMPLE	155589-005	ND	0.20	68183	11/20/01	11/22/01
MW-6	SAMPLE	155589-006	ND	0.20	68183	11/21/01	11/22/01
MW-7	SAMPLE	155589-007	ND	0.20	68211	11/21/01	11/22/01
	BLANK	QC162982	ND	0.20	68183		11/21/01
	BLANK	QC163104	ND	0.20	68211		11/22/01

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Orthosphosphate Phosphorous

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 300.0
Analyte:	Orthophosphate (as P)	Units:	mg/L
Matrix:	Water	Prepared:	11/21/01

Field ID	Type	MSS Lab ID	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Dil'n Fac	Batch#	Sampled	Received	Analyzed
	BS		QC162983		10.00	9.815	98	80-110			1.000	68183			11/21/01
	BSD		QC162984		10.00	9.856	99	80-110	0	20	1.000	68183			11/21/01
ZZZZZZZZZZ	MS	155555-001	QC162985	<0.2000	500.0	472.5	95	78-138			100.0	68183	11/19/01	11/20/01	11/21/01
ZZZZZZZZZZ	MSD	155555-001	QC162986		500.0	480.4	96	78-138	2	20	100.0	68183	11/19/01	11/20/01	11/21/01
	BS		QC163105		10.00	10.02	100	80-110			1.000	68211			11/22/01
	BSD		QC163106		10.00	10.04	100	80-110	0	20	1.000	68211			11/22/01
MW-7	MS	155589-007	QC163107	<0.2000	50.00	50.06	100	78-138			10.00	68211	11/21/01	11/21/01	11/22/01
MW-7	MSD	155589-007	QC163108		50.00	51.66	103	78-138	3	20	10.00	68211	11/21/01	11/21/01	11/22/01

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Sulfate

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 300.0
Analyte:	Sulfate	Received:	11/21/01
Matrix:	Water	Prepared:	11/21/01
Units:	mg/L		

Field ID	Type	Lab ID	Result	RL	Diln Fac	Batch#	Sampled	Analyzed
MW-1	SAMPLE	155589-001	63	5.0	10.00	68183	11/20/01	11/21/01
MW-2	SAMPLE	155589-002	16	0.50	1.000	68183	11/20/01	11/22/01
MW-3	SAMPLE	155589-003	31	0.50	1.000	68183	11/20/01	11/22/01
MW-4	SAMPLE	155589-004	11	0.50	1.000	68183	11/20/01	11/22/01
MW-5	SAMPLE	155589-005	42	0.50	1.000	68183	11/20/01	11/22/01
MW-6	SAMPLE	155589-006	1.1	0.50	1.000	68183	11/21/01	11/22/01
MW-7	SAMPLE	155589-007	63	5.0	10.00	68211	11/21/01	11/22/01
	BLANK	QC162982	ND	0.50	1.000	68183		11/21/01
	BLANK	QC163104	ND	0.50	1.000	68211		11/22/01

ND= Not Detected
RL= Reporting Limit

Sulfate

Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 300.0
Analyte:	Sulfate	Units:	mg/L
Matrix:	Water	Prepared:	11/21/01

Field ID	Type	MS# Lab ID	Lab ID	MS Result	Spiked	Result	%REC	Limits	RPD	Lim	Dil'n Fac	Batch#	Sampled	Received	Analyzed
	BS		QC162983		20.00	19.54	98	80-110			1.000	68183			11/21/01
	BSD		QC162984		20.00	19.29	96	80-110	1	20	1.000	68183			11/21/01
ZZZZZZZZZZ	MS	155555-001	QC162985	1,403	1,000	2,305	90	71-128			100.0	68183	11/19/01	11/20/01	11/21/01
ZZZZZZZZZZ	MSD	155555-001	QC162986		1,000	2,324	92	71-128	1	20	100.0	68183	11/19/01	11/20/01	11/21/01
	BS		QC163105		20.00	19.57	98	80-110			1.000	68211			11/22/01
	BSD		QC163106		20.00	19.62	98	80-110	0	20	1.000	68211			11/22/01
MW-7	MS	155589-007	QC163107	62.70	100.0	160.6	98	71-128			10.00	68211	11/21/01	11/21/01	11/22/01
MW-7	MSD	155589-007	QC163108		100.0	160.3	98	71-128	0	20	10.00	68211	11/21/01	11/21/01	11/22/01

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

MICROSEEPS

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue

Berkeley, CA 94710

Order #: P0111395
Report Date: 12/07/01
Client Proj Name: 155589
Client Proj #: 155589

Sample Identification

Lab Sample #	Client Sample ID
P0111395-01	MW-2
P0111395-02	MW-3
P0111395-03	MW-4
P0111395-04	MW-6
P0111395-05	MW-7

Approved By: Debbie Hallo

NOTES:SAMPLES REC'D 11/27/01, BUT NOT LOGGED IN UNTIL 11/28/01 BECAUSE OF NON CONFORMANCE. RP

Order #: P0111395
Report Date: 12/07/01
Client Proj Name: 155589
Client Proj #: 155589

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue
Berkeley, CA 94710

Lab Sample #: P0111395-01

Sample Description	Matrix	Sampled Date/Time	Received
MW-2	Water	20 Nov. 01	28 Nov. 01

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	120	0.60	mg/L	AM20GAX	mm	12/6/01

Order #: P0111395
Report Date: 12/07/01
Client Proj Name: 155589
Client Proj #: 155589

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue
Berkeley, CA 94710

Lab Sample #: P0111395-02

Sample Description	Matrix	Sampled Date/Time	Received
MW-3	Water	20 Nov. 01	28 Nov. 01

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	120	0.60	mg/L	AM20GAX	mm	12/6/01

Order #: P0111395
Report Date: 12/07/01
Client Proj Name: 155589
Client Proj #: 155589

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue
Berkeley, CA 94710

Lab Sample #: P0111395-03

Sample Description	Matrix	Sampled Date/Time	Received
MW-4	Water	20 Nov. 01	28 Nov. 01

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	130	0.60	mg/L	AM20GAX	mm	12/6/01

Order #: P0111395
Report Date: 12/07/01
Client Proj Name: 155589
Client Proj #: 155589

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue
Berkeley, CA 94710

Lab Sample #: P0111395-04

Sample Description	Matrix	Sampled Date/Time	Received
MW-6	Water	21 Nov. 01	28 Nov. 01

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	100	0.60	mg/L	AM20GAX	mm	12/6/01

Order #: P0111395
Report Date: 12/07/01
Client Proj Name: 155589
Client Proj #: 155589

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue
Berkeley, CA 94710

Lab Sample #: P0111395-05

Sample Description	Matrix	Sampled Date/Time	Received
MW-7	Water	21 Nov. 01	28 Nov. 01

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	62	0.60	mg/L	AM20GAX	mm	12/6/01

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

Project Number: 155589

Subcontract Lab:

Microseeps, Inc.
220 William Pitt Way
Pittsburgh, PA 15238
(412) 826-5245

Please send report to: Steve Stanley

Turnaround Time: STD

Report Level: II

Sample ID	Date Sampled	Matrix	Analysis	C&T Lab #
MW-1	20-NOV-01	Water	RSK-175	155589-001
MW-2	20-NOV-01	Water	RSK-175	155589-002
MW-3	20-NOV-01	Water	RSK-175	155589-003
MW-4	20-NOV-01	Water	RSK-175	155589-004
MW-5	20-NOV-01	Water	RSK-175	155589-005
MW-6	21-NOV-01	Water	RSK-175	155589-006
MW-7	21-NOV-01	Water	RSK-175	155589-007

01 02 03 04 05

***Please report using Sample ID instead of C&T Lab #.

Notes: CO2

RELINQUISHED BY:	RECEIVED BY:
Ben Makanner 11/26/01	Date/Time 2:00
Date/Time	Date/Time
	11/27/01 1145
	Date/Time

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

NON-CONFORMANCE FORM

Date: 11/27/01 Receiver: [signature] Time of Receipt: 1140

Client: Watts & Tompkins Number Samples out of Conformance: ______

Reason for Non-Conformance:

__ Samples rcvd. past holding time → Parameters ______

X Broken Bottles → Description COOLER POORLY PACKED!

__ Incorrect containers → Description ______

SEE ATTACH.

__ Incorrect preservative → Description ______

__ Sample ID different from COC → Description ______

__ Labels missing or unreadable → Description ______

__ Analysis not written on COC → Description ______

__ Sample received not on COC → Description ______

__ Sample on COC not received → Description ______

__ Hold time not observed internally → Description ______

Remarks ______

Asst. Lab. Dir. Initials: [initials] Date: 11/28/01 (See other side for resolution)

	SAMPLE ID #	BROKEN	LEFT
MW-1	155589-001	2	0
MW-2	-002	1	1
MW-3	-003	1	1
MW-4	-004	1	1
MW-5	-005	2	0
MW-7	-007	1	1
MW-1	155578-005	1	1

MICROSEEPS

University of Pittsburgh Applied Research Center
220 William Pitt Way, Pittsburgh, PA 15238
(412) 826-5245
FAX (412) 826-3433

FAX COVER SHEET

DATE 11-27-01

NUMBER OF PAGES (including cover sheet) 4

FAX NO.: 510-486-0532

TO: Steve Stanley / Tracy Babyar

LOCATION: Curtis & Tompkins

FROM: Becky Hans

FACSIMILE NO: (412) 826-3433

TELEPHONE NO: (412) 826-5245

IF YOU HAVE ANY PROBLEMS RECEIVING THIS MESSAGE, PLEASE NOTIFY LAURA AT THE ABOVE TELEPHONE NUMBER. THANK YOU.

We received samples today that were broken. Please see attached sheet. There are 2 samples that we cannot analyze. The others we can log in the one remaining vial.

Becky Hans

From: Steve Stanley [steve@ctberk.com]
Sent: Tuesday, November 27, 2001 2:32 PM
To: Becky Hans
Subject: Broken vials

I received your fax about the broken vials. It looks like only one of the jobs was affected. I just spoke with my client about it and at this point it appears to be okay. Go ahead and proceed with the samples that you can perform on and just document that the ones you can't do were received broken.

Thanks for the heads up!
Steve

Curtis & Tompkins, Ltd.

Laboratory Number: **158723**
Client: **Subsurface Consultants, Inc.**
Project Name: **327 34th Street, Oakland**

Receipt Date: **05/22/02**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for five water samples received from the above referenced project. The samples were received cold and intact.

Total Volatile Hydrocarbons: No analytical problems were encountered.

Total Extractable Hydrocarbons: No analytical problems were encountered.

Metals: No analytical problems were encountered.

General Chemistry: No analytical problems were encountered.

RSK-175: Microseeps in Pittsburgh, Pennsylvania performed the analysis. Please see the Microseeps case narrative.

158723

CHAIN OF CUSTODY

PROJECT NAME: 327 34th Street, Oakland

JOB NUMBER: 1039.008 — LAB: Curtis and Tompkins

PROJECT CONTACT: Emily Silverman — TURNAROUND: Standard

SAMPLED BY: E Silverman — REQUESTED BY: E Silverman

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	CONTAINERS: VOA	CONTAINERS: LITER	CONTAINERS: PINT	CONTAINERS: TUBE	PRESERVATIVE: HCL	PRESERVATIVE: H_2SO_4	PRESERVATIVE: HNO_3	PRESERVATIVE: ICE	PRESERVATIVE: OTHER	PRESERVATIVE: NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES
	MW-1	X			3	2			X		X	X			05	22	02	1000	
	MW-2 *	X			3	2			X		X	X			05	22	02	1320	
	MW-3	X			3	2			X		X	X			05	22	02	1215	
	MW-4	X			3	2			X		X	X			05	22	02	1430	
	MW5	X			3	1			X		X	X			05	22	02	1100	

Preservation Correct? ☐ Yes ☐ No ☐ N/A

Received ☒ On Ice ☐ Cold ☐ Ambient ☐ Intact

ANALYSIS REQUESTED										
TPH-g, BTEX, MTBE (8015 and 8020)	TPHd and TPHmo- using silica gel clean up	Disolved CO2	Fe(II), Mn	SO4	N-NH3, N-NO3, O-PO4			EDF Format	Chromatograms
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			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~~

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
[signature]	5/22/02 1524	[signature]	5/22/02 1524
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

COMMENTS & NOTES:

* one of the liter ambers was not labelled.

JGW 5-22-02

Fugro West, Inc./Subsurface Consultants, Inc.
1000 Broadway, Suite 200 Oakland, CA 94607
510-268-0461 FAX: 510-268-0137
2011 Soscol Ave., Suite 5, Napa, CA 94559
707-257-6993 FAX: 707-257-6995

Excel

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02

Field ID: MW-1
Type: SAMPLE
Lab ID: 158723-001
Diln Fac: 1.000
Batch#: 72515
Analyzed: 05/25/02

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	86	68-145
Bromofluorobenzene (FID)	89	66-143

Field ID: MW-2
Type: SAMPLE
Lab ID: 158723-002
Diln Fac: 50.00
Batch#: 72515
Analyzed: 05/24/02

Analyte	Result	RL
Gasoline C7-C12	150,000	2,500

Surrogate	%REC	Limits
Trifluorotoluene (FID)	87	68-145
Bromofluorobenzene (FID)	93	66-143

Field ID: MW-3
Type: SAMPLE
Lab ID: 158723-003
Diln Fac: 50.00
Batch#: 72542
Analyzed: 05/26/02

Analyte	Result	RL
Gasoline C7-C12	91,000	2,500

Surrogate	%REC	Limits
Trifluorotoluene (FID)	84	68-145
Bromofluorobenzene (FID)	92	66-143

Field ID: MW-4
Type: SAMPLE
Lab ID: 158723-004
Diln Fac: 1.000
Batch#: 72515
Analyzed: 05/25/02

Analyte	Result	RL
Gasoline C7-C12	940	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	84	68-145
Bromofluorobenzene (FID)	92	66-143

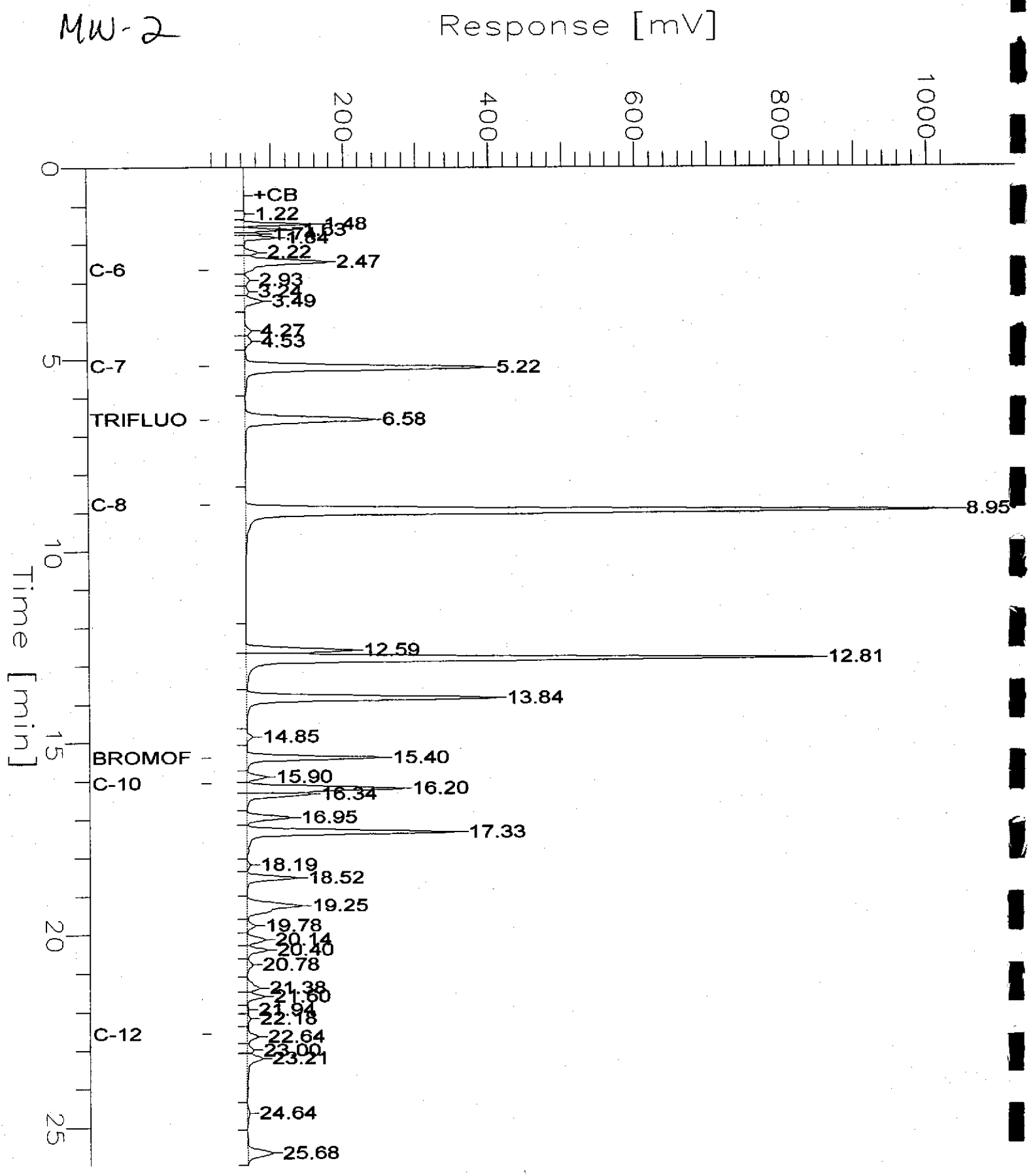
ND= Not Detected
RL= Reporting Limit

GC04 TVH 'J' Data File FID

Sample Name : 158723-002,72515
FileName : G:\GC04\DATA\144J011.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 15 mV

Sample #: b1
Date : 5/24/02 05:40 PM
Time of Injection: 5/24/02 05:14 PM
Low Point : 14.59 mV High Point : 1037.84 mV
Plot Scale: 1023.2 mV

MW-2

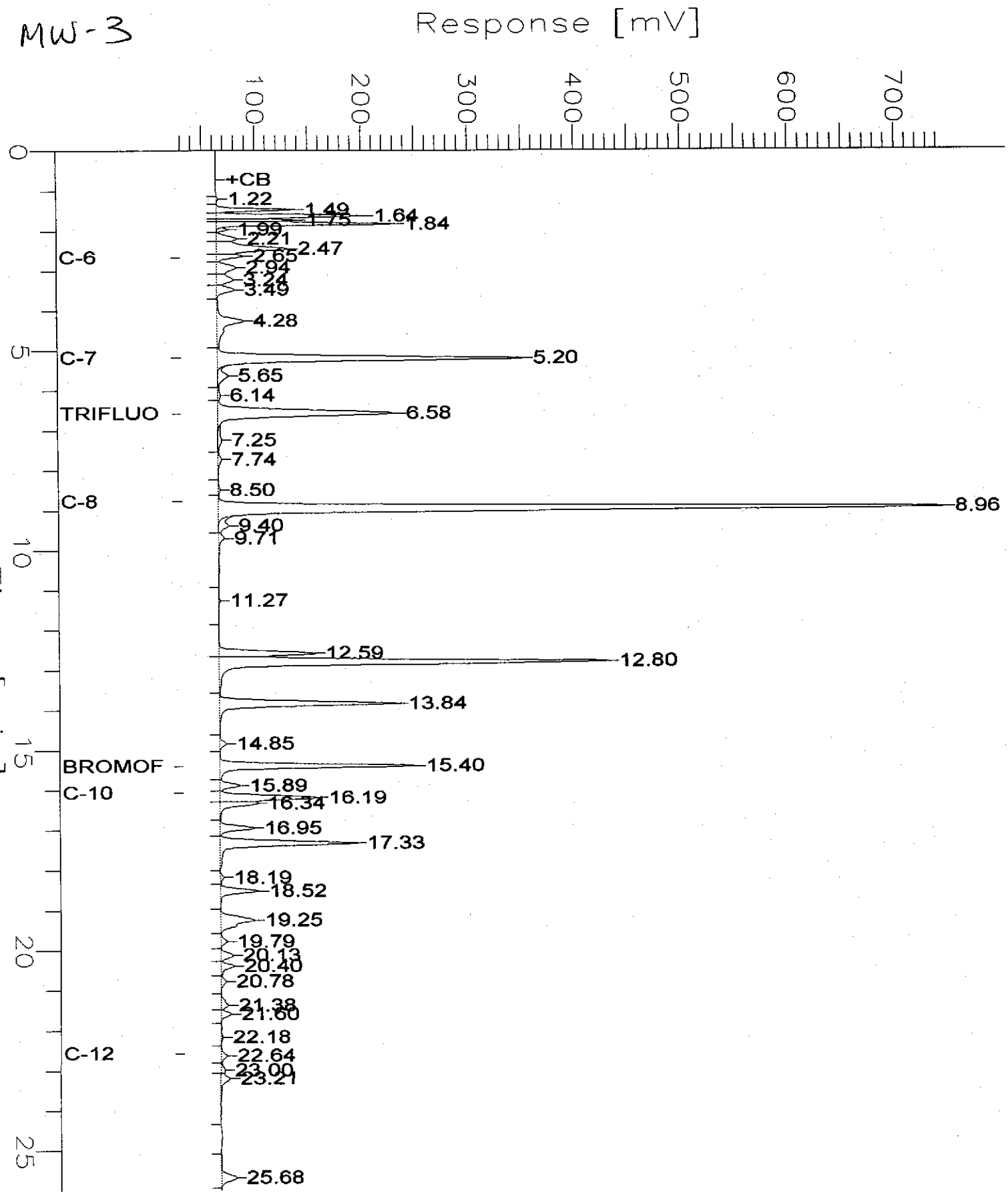


GC04 TVH 'J' Data File FID

Sample Name : 158723-003,72542
FileName : G:\GC04\DATA\145J033.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 30 mV

Sample #: e7 Page 1 of 1
Date : 5/28/02 07:00 AM
Time of Injection: 5/26/02 05:38 AM
Low Point : 29.63 mV High Point : 745.99 mV
Plot Scale: 716.4 mV

MW-3

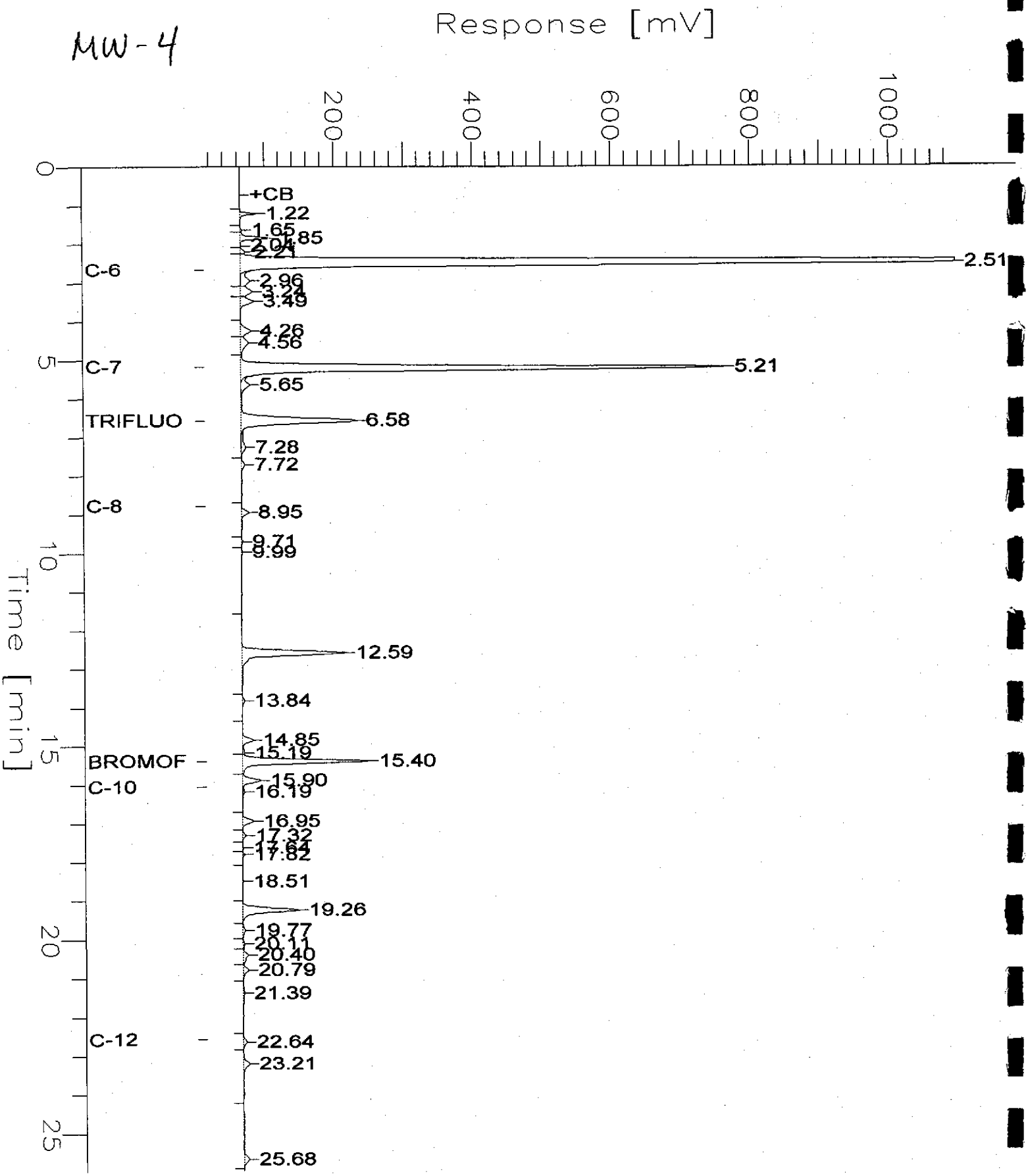


GC04 TVH 'J' Data File FID

Sample Name : 158723-004,72515
FileName : G:\GC04\DATA\144J025.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 13 mV

Sample #: b1
Date : 5/25/02 01:59 AM
Time of Injection: 5/25/02 01:33 AM
Low Point : 13.13 mV High Point : 1094.42 mV
Plot Scale: 1081.3 mV

MW-4



Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02

Field ID:	MW-5	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	72515
Lab ID:	158723-005	Analyzed:	05/25/02

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	82	68-145
Bromofluorobenzene (FID)	89	66-143

Type:	BLANK	Batch#:	72515
Lab ID:	QC179236	Analyzed:	05/24/02
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	86	68-145
Bromofluorobenzene (FID)	87	66-143

Type:	BLANK	Batch#:	72542
Lab ID:	QC179342	Analyzed:	05/25/02
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

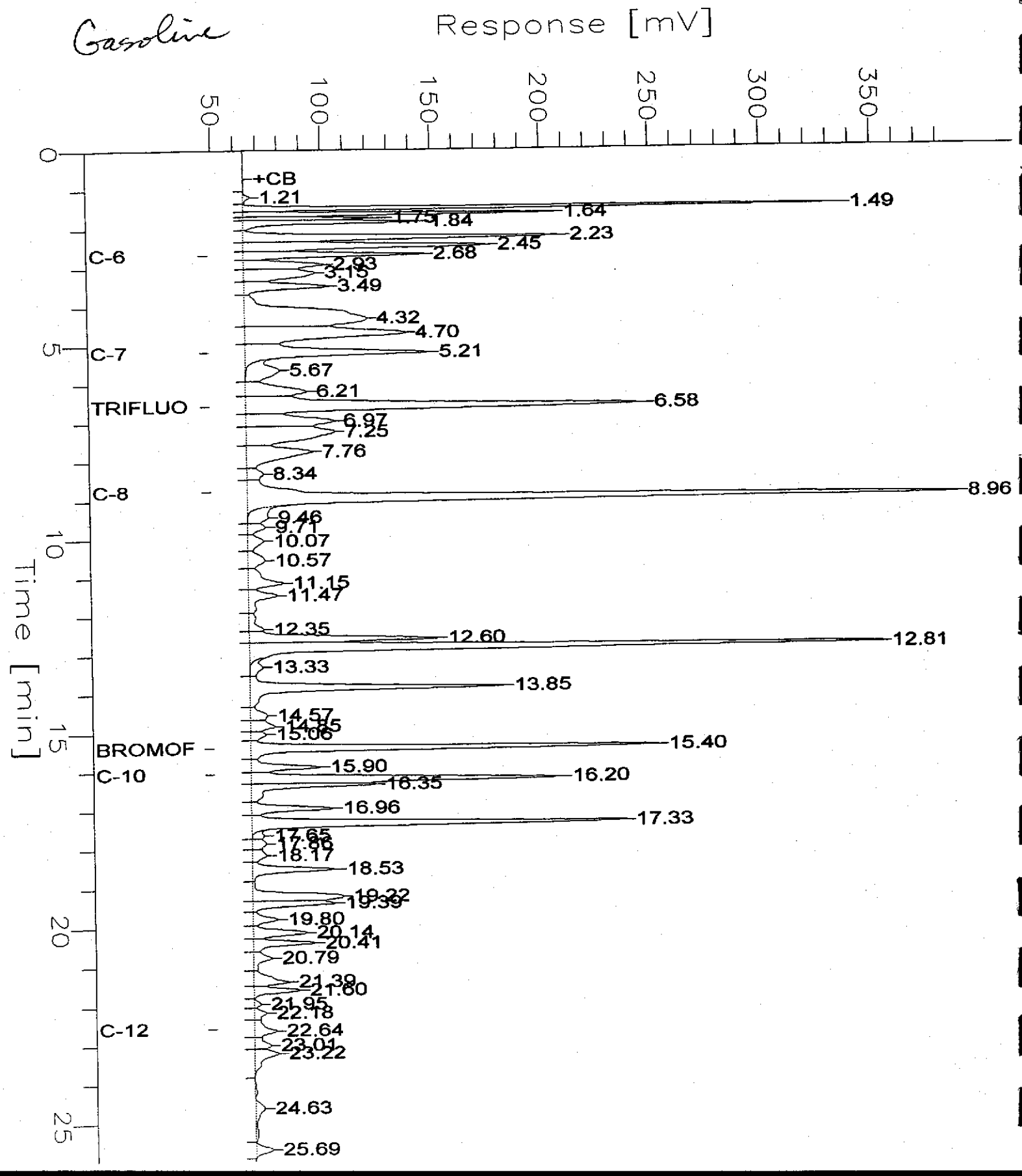
ND= Not Detected
RL= Reporting Limit

GC04 TVH 'J' Data File FID

ample Name : ccv/lcs,qc179237,72515,02ws0791,5/5000
ileName : G:\GC04\DATA\144J003.raw
ethod : TVHBTXE
tart Time : 0.00 min End Time : 26.00 min
cale Factor: 1.0 Plot Offset: 48 mV

Sample #:
Date : 5/24/02 09:58 AM
Time of Injection: 5/24/02 09:32 AM
Low Point : 48.30 mV High Point : 387.70 mV
Plot Scale: 339.4 mV

Gasoline



Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02

Field ID: MW-1 | Diln Fac: 1.000
Type: SAMPLE | Batch#: 72515
Lab ID: 158723-001 | Analyzed: 05/25/02

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	53-143
Bromofluorobenzene (PID)	114	52-142

Field ID: MW-2 | Diln Fac: 100.0
Type: SAMPLE | Batch#: 72542
Lab ID: 158723-002 | Analyzed: 05/26/02

Analyte	Result	RL
MTBE	4,800	200
Benzene	8,600	50
Toluene	25,000	50
Ethylbenzene	3,500	50
m,p-Xylenes	18,000	50
o-Xylene	8,000	50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	116	53-143
Bromofluorobenzene (PID)	118	52-142

Field ID: MW-3 | Diln Fac: 50.00
Type: SAMPLE | Batch#: 72542
Lab ID: 158723-003 | Analyzed: 05/26/02

Analyte	Result	RL
MTBE	2,200	100
Benzene	6,500	25
Toluene	17,000	25
Ethylbenzene	2,200	25
m,p-Xylenes	8,600	25
o-Xylene	4,100	25

Surrogate	%REC	Limits
Trifluorotoluene (PID)	121	53-143
Bromofluorobenzene (PID)	118	52-142

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02

Field ID: MW-4
Type: SAMPLE
Lab ID: 158723-004

Diln Fac: 2.000
Batch#: 72542
Analyzed: 05/26/02

Analyte	Result	RL
MTBE	1,600	4.0
Benzene	340	1.0
Toluene	5.7	1.0
Ethylbenzene	70	1.0
m,p-Xylenes	ND	1.0
o-Xylene	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	117	53-143
Bromofluorobenzene (PID)	117	52-142

Field ID: MW-5
Type: SAMPLE
Lab ID: 158723-005

Diln Fac: 1.000
Batch#: 72515
Analyzed: 05/25/02

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	53-143
Bromofluorobenzene (PID)	114	52-142

Type: BLANK
Lab ID: QC179236
Diln Fac: 1.000

Batch#: 72515
Analyzed: 05/24/02

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02

Type:	BLANK	Batch#:	72542
Lab ID:	QC179342	Analyzed:	05/25/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	53-143
Bromofluorobenzene (PID)	113	52-142

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC179237	Batch#:	72515
Matrix:	Water	Analyzed:	05/24/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,956	98	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	68-145
Bromofluorobenzene (FID)	94	66-143

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC179343	Batch#:	72542
Matrix:	Water	Analyzed:	05/25/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,876	94	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	68-145
Bromofluorobenzene (FID)	93	66-143

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Type:	BS	Diln Fac:	1.000
Lab ID:	QC179238	Batch#:	72515
Matrix:	Water	Analyzed:	05/24/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.72	94	51-125
Benzene	20.00	19.96	100	65-122
Toluene	20.00	20.99	105	67-121
Ethylbenzene	20.00	21.14	106	70-121
m,p-Xylenes	20.00	22.02	110	72-125
o-Xylene	20.00	21.05	105	73-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	53-143
Bromofluorobenzene (PID)	115	52-142

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Type:	BSD	Diln Fac:	1.000
Lab ID:	QC179310	Batch#:	72515
Matrix:	Water	Analyzed:	05/25/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.02	95	51-125	2	20
Benzene	20.00	19.53	98	65-122	2	20
Toluene	20.00	20.89	104	67-121	0	20
Ethylbenzene	20.00	20.13	101	70-121	5	20
m,p-Xylenes	20.00	20.64	103	72-125	6	20
o-Xylene	20.00	20.43	102	73-122	3	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	53-143
Bromofluorobenzene (PID)	114	52-142

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	72542
Units:	ug/L	Analyzed:	05/25/02
Diln Fac:	1.000		

Type: BS Lab ID: QC179344

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	19.31	97	51-125
Benzene	20.00	19.61	98	65-122
Toluene	20.00	18.93	95	67-121
Ethylbenzene	20.00	21.25	106	70-121
m,p-Xylenes	20.00	21.74	109	72-125
o-Xylene	20.00	21.15	106	73-122

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

Type: BSD Lab ID: QC179345

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.40	97	51-125	0	20
Benzene	20.00	19.90	100	65-122	1	20
Toluene	20.00	21.30	107	67-121	12	20
Ethylbenzene	20.00	21.07	105	70-121	1	20
m,p-Xylenes	20.00	21.65	108	72-125	0	20
o-Xylene	20.00	21.19	106	73-122	0	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	113	53-143
Bromofluorobenzene (PID)	115	52-142

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	72515
MSS Lab ID:	158766-006	Sampled:	05/22/02
Matrix:	Water	Received:	05/23/02
Units:	ug/L	Analyzed:	05/24/02
Diln Fac:	1.000		

Type: MS Lab ID: QC179308

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	348.3	2,000	2,285	97	67-120

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

Type: MSD Lab ID: QC179309

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,261	96	67-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	90	68-145
Bromofluorobenzene (FID)	97	66-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	72542
MSS Lab ID:	158775-001	Sampled:	05/22/02
Matrix:	Water	Received:	05/23/02
Units:	ug/L	Analyzed:	05/25/02
Diln Fac:	1.000		

Type: MS Lab ID: QC179346

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,797	90	67-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	68-145
Bromofluorobenzene (FID)	95	66-143

Type: MSD Lab ID: QC179347

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,787	89	67-120	1	20

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

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1039.008	Analysis:	EPA 8015B(M)
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02
Batch#:	72485	Prepared:	05/23/02

Field ID: MW-1 | Diln Fac: 1.000
Type: SAMPLE | Analyzed: 05/24/02
Lab ID: 158723-001 | Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	97	39-137

Field ID: MW-2 | Diln Fac: 10.00
Type: SAMPLE | Analyzed: 05/28/02
Lab ID: 158723-002 | Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	31,000 L Y	500
Motor Oil C24-C36	ND	3,000

Surrogate	%REC	Limits
Hexacosane	DO	39-137

Field ID: MW-3 | Diln Fac: 10.00
Type: SAMPLE | Analyzed: 05/28/02
Lab ID: 158723-003 | Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	14,000 L Y	500
Motor Oil C24-C36	ND	3,000

Surrogate	%REC	Limits
Hexacosane	DO	39-137

Field ID: MW-4 | Diln Fac: 1.000
Type: SAMPLE | Analyzed: 05/25/02
Lab ID: 158723-004 | Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	83 L Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	95	39-137

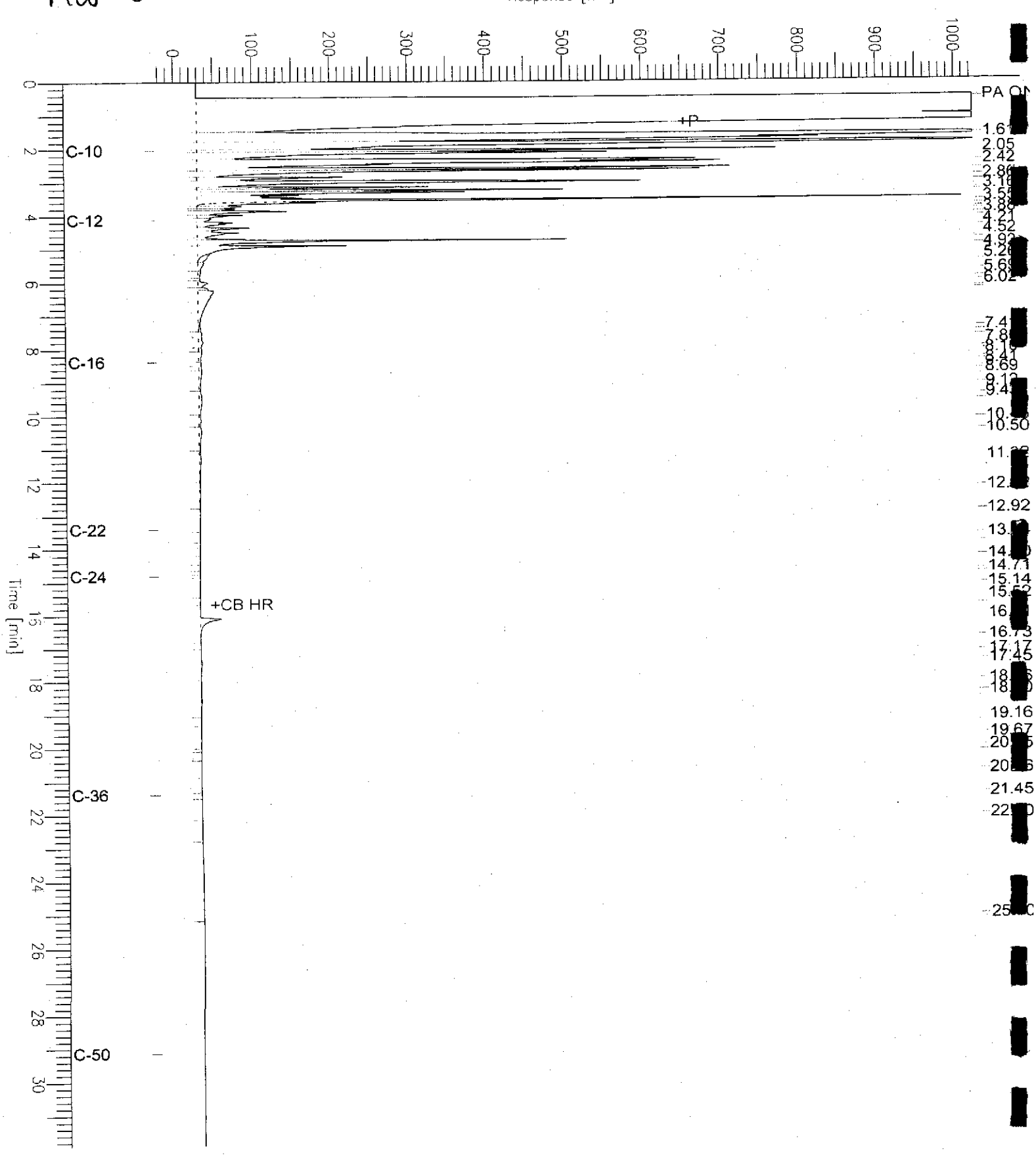
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
D= Diluted Out
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 158723-002sg,72485
FileName : G:\GC11\CHA\148A006.RAW
Method : ATEH144.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -23 mV

Sample #: 72485
Date : 5/28/02 03:01 PM
Time of Injection: 5/28/02 02:06 PM
Low Point : -22.91 mV High Point : 1024.00 mV
Plot Scale: 1046.9 mV

MW-2

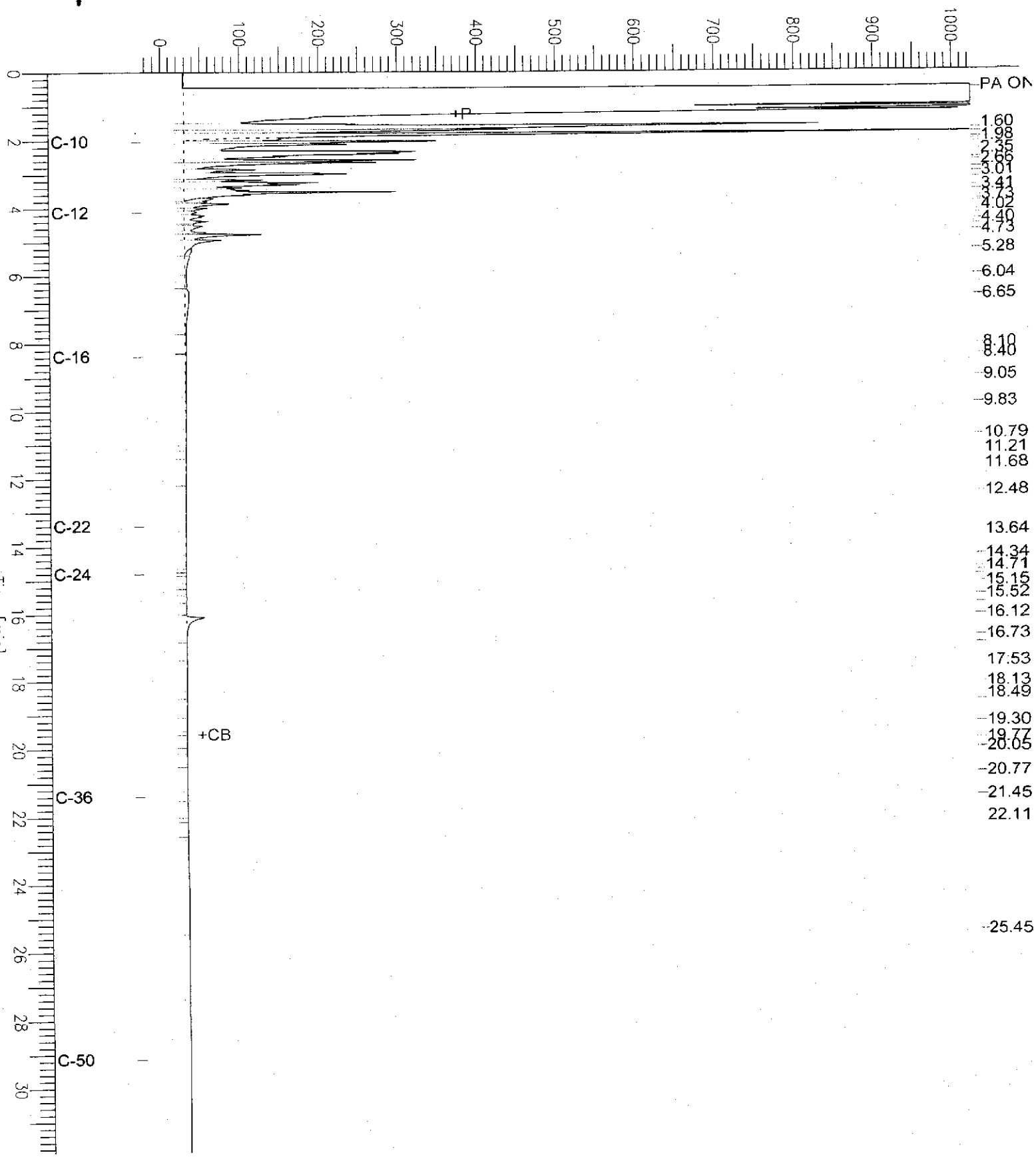


Chromatogram

Sample Name : 158723-003sg,72485
FileName : G:\GC11\CHA\148A008.RAW
Method : ATEH144.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -23 mV

Sample #: 72485
Date : 5/28/02 04:09 PM
Time of Injection: 5/28/02 03:27 PM
Low Point : -23.21 mV High Point : 1024.00 mV
Plot Scale: 1047.2 mV

MW-3

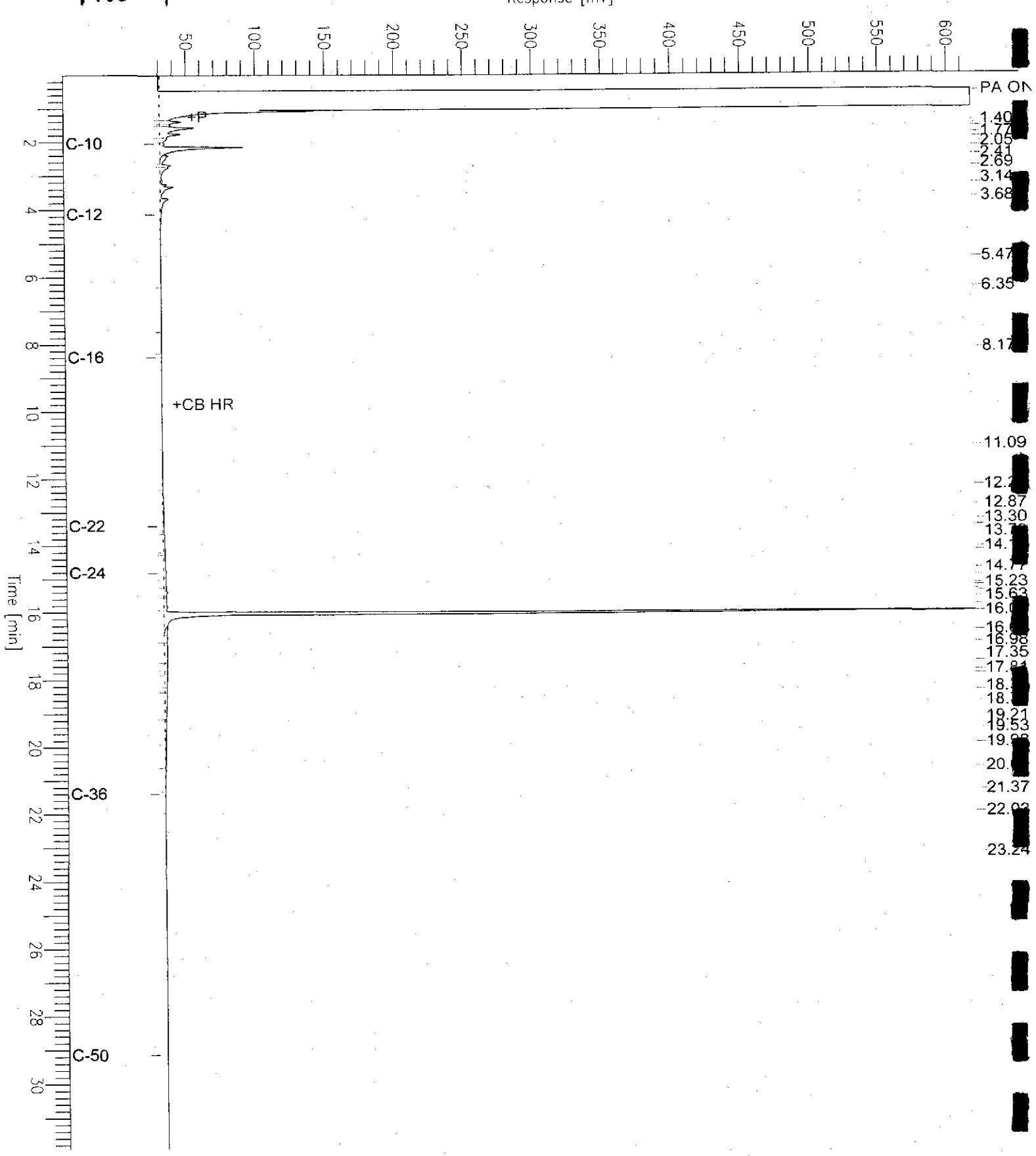


Chromatogram

Sample Name : 158723-004sg,72485
FileName : G:\GC11\CHA\143A058.RAW
Method : ATEH144.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 27 mV

Sample #: 72485
Date : 5/28/02 11:28 AM
Time of Injection: 5/25/02 01:07 AM
Low Point : 27.23 mV High Point : 617.68 mV
Plot Scale: 590.5 mV

MW-4



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1039.008	Analysis:	EPA 8015B(M)
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02
Batch#:	72485	Prepared:	05/23/02

Field ID:	MW-5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	05/25/02
Lab ID:	158723-005	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	2,200 H L Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	101	39-137

Type:	BLANK	Analyzed:	05/24/02
Lab ID:	QC179112	Cleanup Method:	EPA 3630C
Diln Fac:	1.000		

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

Surrogate	%REC	Limits
Hexacosane	93	39-137

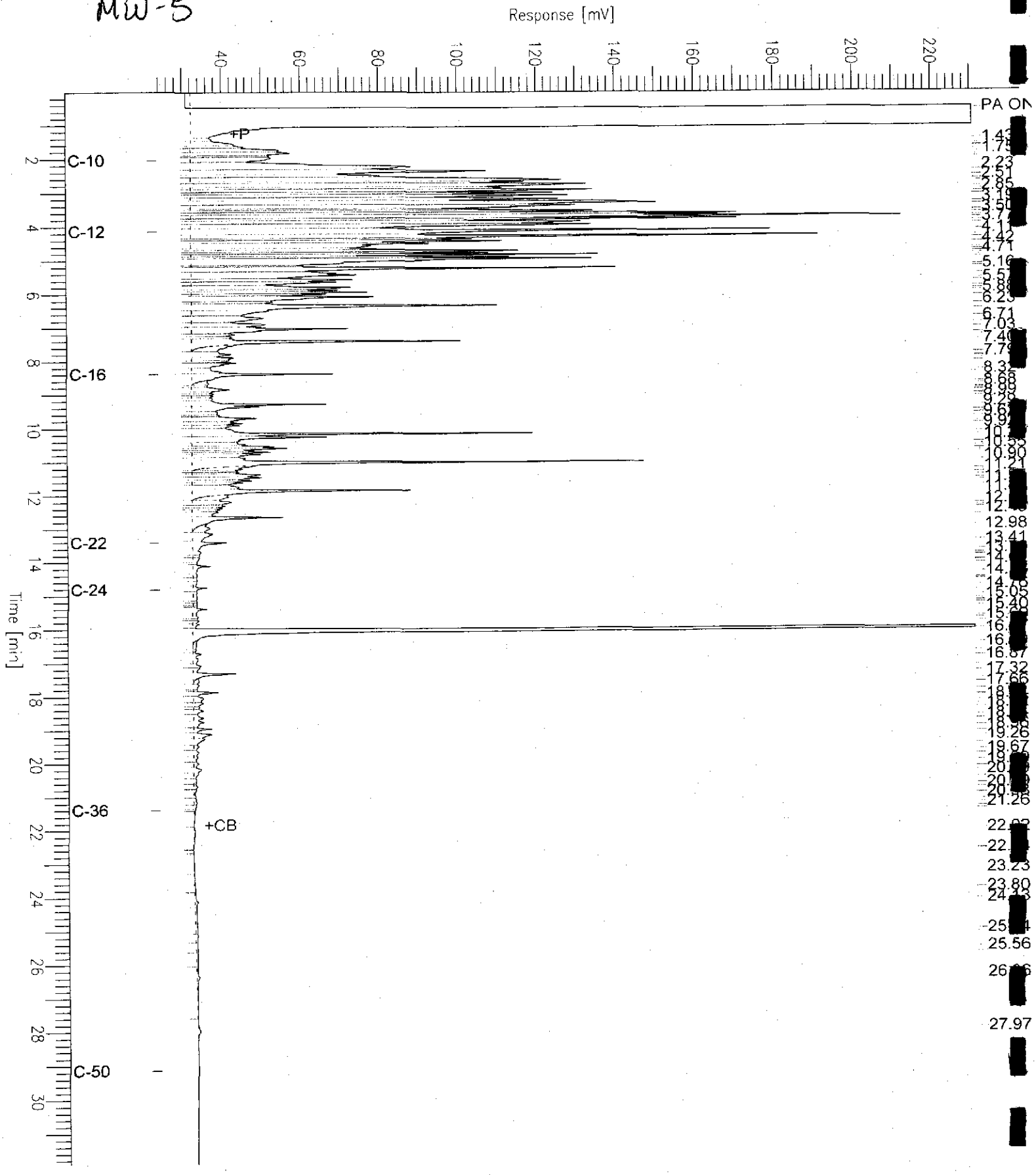
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
D= Diluted Out
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 158723-005sg,72485
FileName : G:\GC11\CHA\143A059.RAW
Method : ATEH144.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 24 mV

Sample #: 72485 Page 1 of 1
Date : 5/28/02 11:29 AM
Time of Injection: 5/25/02 01:48 AM
Low Point : 23.77 mV High Point : 230.61 mV
Plot Scale: 206.8 mV

MW-5



Chromatogram

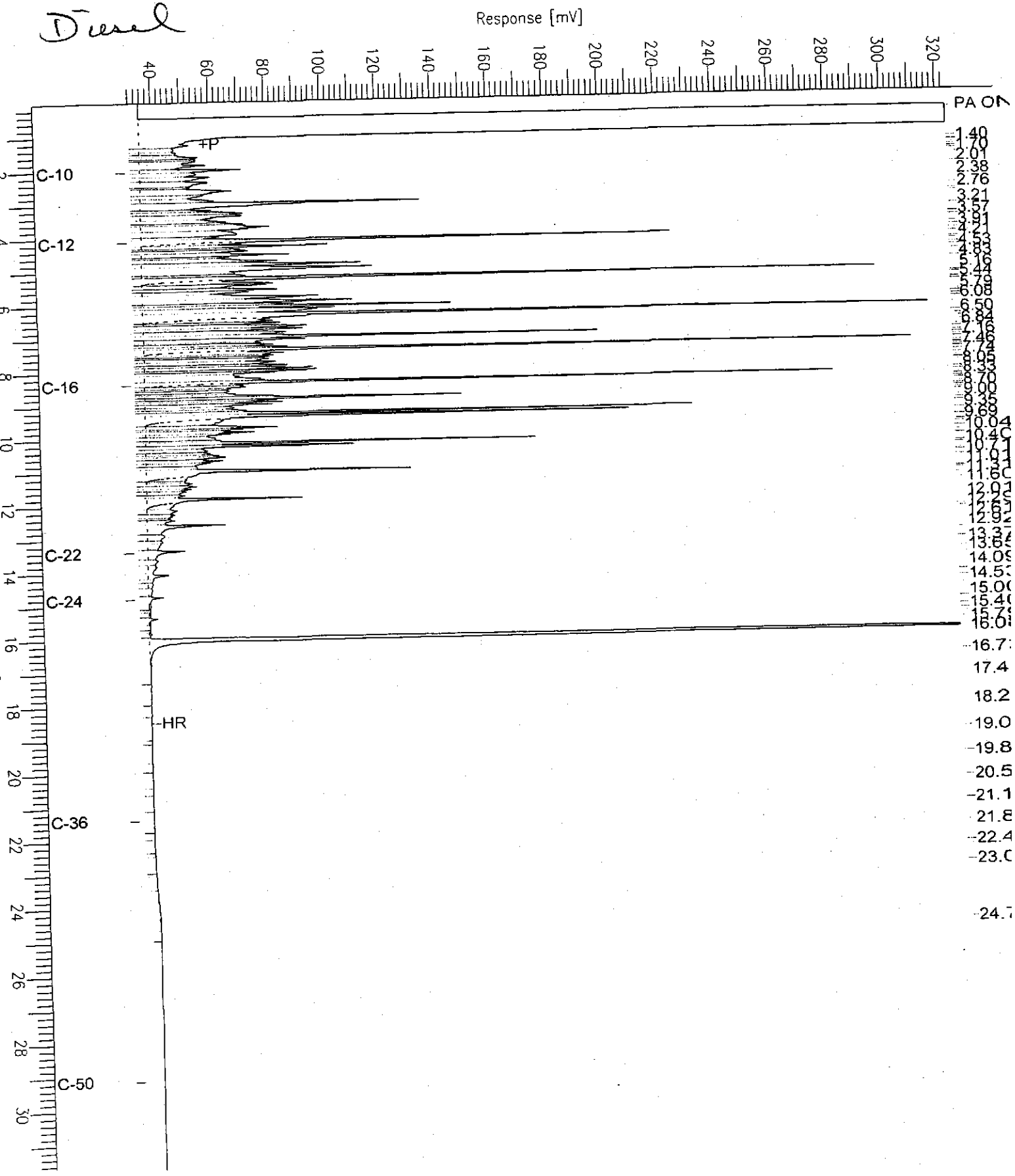
Sample Name : ccv,02ws0556,dsl
FileName : G:\GC11\CHA\143A002.RAW
Method : ATEH119.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 31 mV

Sample #: 500mg/L
Date : 5/23/02 09:46 AM
Time of Injection: 5/23/02 08:31 AM
Low Point : 30.82 mV
Plot Scale: 292.6 mV

High Point : 323.43 mV

Diesel



Chromatogram

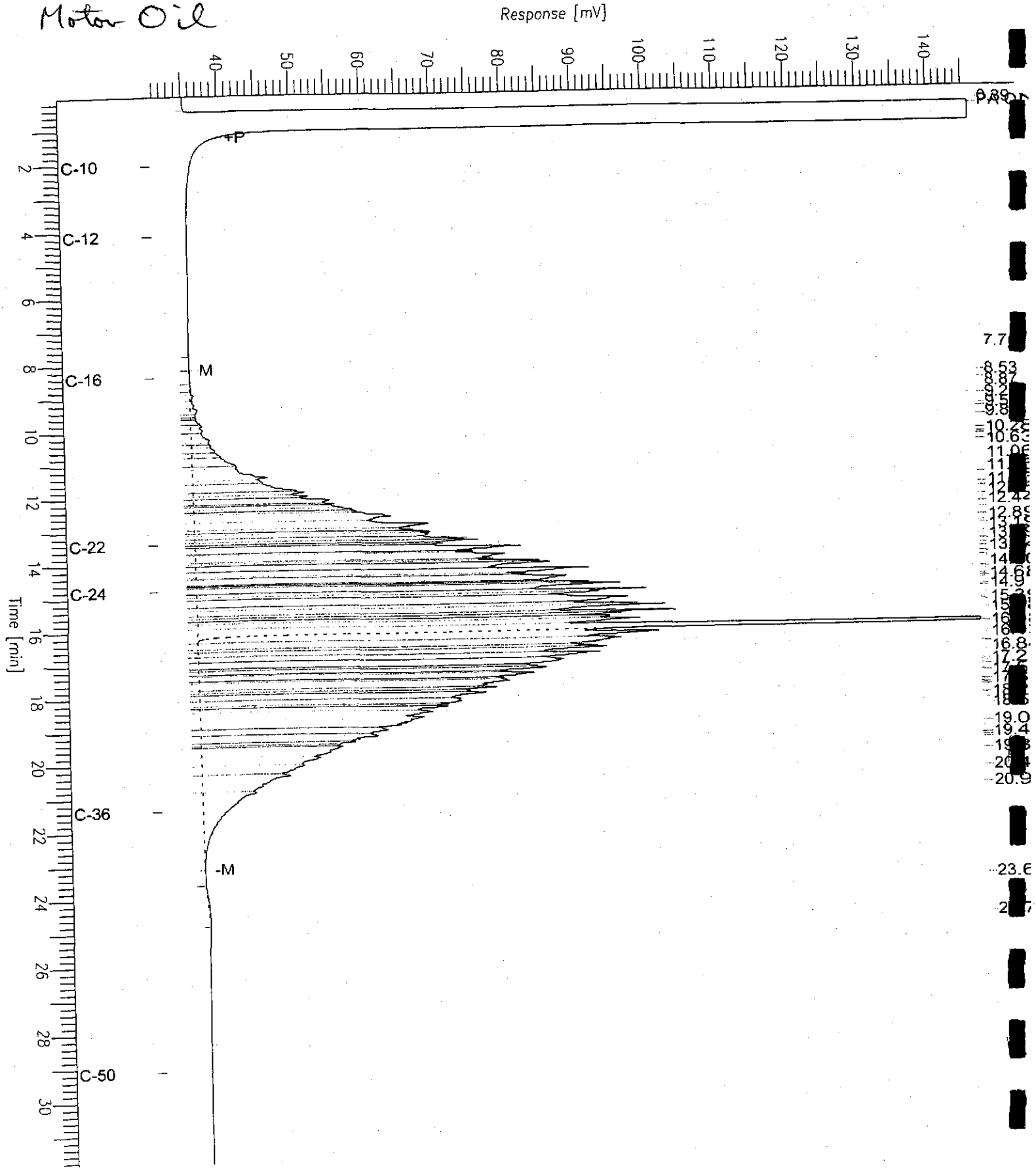
Sample Name : ccv,02ws0679,mo
FileName : G:\GC11\CHA\143A003.RAW
Method : ATEH119.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 31 mV

Sample #: 500mg/L
Date : 5/23/02 09:46 AM
Time of Injection: 5/23/02 09:11 AM
Low Point : 30.69 mV
Plot Scale: 115.2 mV

High Point : 145.87 mV

Motor Oil



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1039.008	Analysis:	EPA 8015B(M)
Matrix:	Water	Batch#:	72485
Units:	ug/L	Prepared:	05/23/02
Diln Fac:	1.000	Analyzed:	05/24/02

Type: BS
Lab ID: QC179113

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,990	120	37-120

Surrogate	%REC	Limits
Hexacosane	118	39-137

Type: BSD
Lab ID: QC179114

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,516	101	37-120	17	26

Surrogate	%REC	Limits
Hexacosane	104	39-137

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Manganese

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	72511
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02
Diln Fac:	1.000	Prepared:	05/23/02

Field ID	Type	Lab ID	Result	RL	Analyzed
MW-1	SAMPLE	158723-001	500	10	05/29/02
MW-2	SAMPLE	158723-002	1,700	10	05/29/02
MW-3	SAMPLE	158723-003	9,600	10	05/29/02
MW-4	SAMPLE	158723-004	8,400	10	05/29/02
MW-5	SAMPLE	158723-005	220	10	05/29/02
	BLANK	QC179224	ND	10	05/28/02

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Manganese

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	72511
Matrix:	Water	Prepared:	05/23/02
Units:	ug/L	Analyzed:	05/28/02
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC179225	50.00	43.90	88	77-120		
BSD	QC179226	50.00	43.40	87	77-120	1	20

RPD= Relative Percent Difference

Manganese

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	72511
Field ID:	ZZZZZZZZZZ	Sampled:	05/20/02
MSS Lab ID:	158686-003	Received:	05/20/02
Matrix:	Water	Prepared:	05/23/02
Units:	ug/L	Analyzed:	05/28/02
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC179227	65.50	50.00	110.0	89	46-136		
MSD	QC179228		50.00	111.0	91	46-136	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Ferrous Iron (Fe+2)

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Analysis:	SM3500-FE
Project#:	1039.008		
Analyte:	Ferrous Iron (Fe+2)	Sampled:	05/22/02
Matrix:	Water	Received:	05/22/02
Units:	mg/L	Analyzed:	05/23/02
Batch#:	72481		

Field ID	Type	Lab ID	Result	RL	Dil'n Fac
MW-1	SAMPLE	158723-001	ND	0.10	1.000
MW-2	SAMPLE	158723-002	3.9	0.20	2.000
MW-3	SAMPLE	158723-003	4.2	0.20	2.000
MW-4	SAMPLE	158723-004	3.1	0.20	2.000
MW-5	SAMPLE	158723-005	ND	0.10	1.000
	BLANK	QC179099	ND	0.10	1.000

ND= Not Detected
RL= Reporting Limit

Ferrous Iron (Fe+2)

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Analysis:	SM3500-FE
Project#:	1039.008		
Analyte:	Ferrous Iron (Fe+2)	Diln Fac:	1.000
Field ID:	MW-5	Batch#:	72481
MSS Lab ID:	158723-005	Sampled:	05/22/02
Matrix:	Water	Received:	05/22/02
Units:	mg/L	Analyzed:	05/23/02

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC179100	<0.1000	0.8000	0.7760	97	51-146		
MSD	QC179101		0.8000	0.7840	98	51-146	1	20
LCS	QC179102		0.9600	0.9480	99	80-120		

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Ammonia Nitrogen

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Batch#:	72496
Matrix:	Water	Sampled:	05/22/02
Units:	mg/L	Received:	05/22/02
Diln Fac:	1.000	Analyzed:	05/23/02

Field ID	Type	Lab ID	Result	RL
MW-1	SAMPLE	158723-001	ND	0.10
MW-2	SAMPLE	158723-002	ND	0.10
MW-3	SAMPLE	158723-003	ND	0.10
MW-4	SAMPLE	158723-004	ND	0.10
MW-5	SAMPLE	158723-005	ND	0.10
	BLANK	QC179166	ND	0.10

ND= Not Detected
RL= Reporting Limit

Ammonia Nitrogen

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	72496
MSS Lab ID:	158616-002	Sampled:	05/15/02
Matrix:	Water	Received:	05/15/02
Units:	mg/L	Analyzed:	05/23/02

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC179167		5.000	5.410	108	80-120		
MS	QC179168	<0.1000	5.000	5.910	118	64-148		
MSD	QC179169		5.000	5.800	116	64-148	2	39

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Nitrate Nitrogen

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Nitrogen, Nitrate	Sampled:	05/22/02
Matrix:	Water	Received:	05/22/02
Units:	mg/L	Analyzed:	05/23/02
Batch#:	72484		

Field ID	Type	Lab ID	Result	RL	Dil'n Fac
MW-1	SAMPLE	158723-001	5.5	1.3	25.00
MW-2	SAMPLE	158723-002	0.54	0.05	1.000
MW-3	SAMPLE	158723-003	0.77	0.05	1.000
MW-4	SAMPLE	158723-004	0.06	0.05	1.000
MW-5	SAMPLE	158723-005	3.0	0.05	1.000
	BLANK	QC179107	ND	0.05	1.000

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Nitrate Nitrogen

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Nitrogen, Nitrate	Batch#:	72484
Field ID:	MW-1	Sampled:	05/22/02
MSS Lab ID:	158723-001	Received:	05/22/02
Matrix:	Water	Analyzed:	05/23/02
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Dil'n Fac
BS	QC179108		2.000	2.077	104	90-110			1.000
BSD	QC179109		2.000	2.066	103	90-110	1	20	1.000
MS	QC179110	5.470	25.00	31.02	102	80-120			25.00
MSD	QC179111		25.00	32.07	106	80-120	3	20	25.00

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Orthosphosphate Phosphorous

ab #:	158723	Location:	327 34th Street, Oakland
lient:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
nalyte:	Orthophosphate (as P)	Batch#:	72484
atrix:	Water	Sampled:	05/22/02
Units:	mg/L	Received:	05/22/02
Diln Fac:	1.000	Analyzed:	05/23/02

Field ID	Type	Lab ID	Result	RL
MW-1	SAMPLE	158723-001	ND	0.20
W-2	SAMPLE	158723-002	ND	0.20
W-3	SAMPLE	158723-003	ND	0.20
MW-4	SAMPLE	158723-004	ND	0.20
W-5	SAMPLE	158723-005	ND	0.20
	BLANK	QC179107	ND	0.20

D= Not Detected
RL= Reporting Limit

Orthosphosphate Phosphorous

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Orthophosphate (as P)	Batch#:	72484
Field ID:	MW-1	Sampled:	05/22/02
MSS Lab ID:	158723-001	Received:	05/22/02
Matrix:	Water	Analyzed:	05/23/02
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Dlln Fac
BS	QC179108		10.00	10.32	103	90-110			1.000
BSD	QC179109		10.00	10.17	102	90-110	1	20	1.000
MS	QC179110	<0.2000	125.0	124.7	100	73-147			25.00
MSD	QC179111		125.0	127.1	102	73-147	2	30	25.00

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Sulfate

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Sulfate	Sampled:	05/22/02
Matrix:	Water	Received:	05/22/02
Units:	mg/L	Analyzed:	05/23/02
Batch#:	72484		

Field ID	Type	Lab ID	Result	RL	Dil Fac
MW-1	SAMPLE	158723-001	58	13	25.00
MW-2	SAMPLE	158723-002	13	0.50	1.000
MW-3	SAMPLE	158723-003	25	0.50	1.000
MW-4	SAMPLE	158723-004	9.0	0.50	1.000
MW-5	SAMPLE	158723-005	44	0.50	1.000
	BLANK	QC179107	ND	0.50	1.000

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Sulfate

Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Sulfate	Batch#:	72484
Field ID:	MW-1	Sampled:	05/22/02
MSS Lab ID:	158723-001	Received:	05/22/02
Matrix:	Water	Analyzed:	05/23/02
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Dln Fac
BS	QC179108		20.00	20.33	102	90-110			1.000
BSD	QC179109		20.00	20.17	101	90-110	1	20	1.000
MS	QC179110	57.84	250.0	308.3	100	72-125			25.00
MSD	QC179111		250.0	305.3	99	72-125	1	20	25.00

RPD= Relative Percent Difference

MICROSEEPS

Client Name: Curtis & Tompkins, Ltd.
Contact: Paul Prendergast
Address: 2323 Fifth Street

Berkeley, CA 94710

Order #: P0205506
Report Date: 05/30/02
Client Proj Name: 158723
Client Proj #: 158723

Sample Identification

Lab Sample #	Client Sample ID
P0205506-01	MW-1
P0205506-02	MW-2
P0205506-03	MW-3
P0205506-04	MW-4
P0205506-05	MW-5

Approved By: Debbie Hallo

220 William Pitt Way, Pittsburgh, PA 15238 • Phone (412) 826-5245, Fax (412) 826-3433

Order #: P0205506
Report Date: 05/30/02
Client Proj Name: 158723
Client Proj #: 158723

Client Name: Curtis & Tompkins, Ltd.
Contact: Paul Prendergast
Address: 2323 Fifth Street
Berkeley, CA 94710

Lab Sample #: P0205506-01

Sample Description	Matrix	Sampled Date/Time	Received
MW-1	Water	22 May. 02	24 May. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	120	0.60	mg/L	AM20GAX	pd	5/28/02

Order #: P0205506
Report Date: 05/30/02
Client Proj Name: 158723
Client Proj #: 158723

Client Name: Curtis & Tompkins, Ltd.
Contact: Paul Prendergast
Address: 2323 Fifth Street
Berkeley, CA 94710

Lab Sample #: P0205506-02

Sample Description	Matrix	Sampled Date/Time	Received
MW-2	Water	22 May. 02	24 May. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	160	0.60	mg/L	AM20GAX	pd	5/28/02

Order #: P0205506
Report Date: 05/30/02
Client Proj Name: 158723
Client Proj #: 158723

Client Name: Curtis & Tompkins, Ltd.
Contact: Paul Prendergast
Address: 2323 Fifth Street
Berkeley, CA 94710

Lab Sample #: P0205506-03

Sample Description	Matrix	Sampled Date/Time	Received
MW-3	Water	22 May. 02	24 May. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	130	0.60	mg/L	AM20GAX	pd	5/28/02

Order #: P0205506
Report Date: 05/30/02
Client Proj Name: 158723
Client Proj #: 158723

Client Name: Curtis & Tompkins, Ltd.
Contact: Paul Prendergast
Address: 2323 Fifth Street
Berkeley, CA 94710

Lab Sample #: P0205506-04

Sample Description	Matrix	Sampled Date/Time	Received
MW-4	Water	22 May. 02	24 May. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	150	0.60	mg/L	AM20GAX	pd	5/28/02

Order #: P0205506
Report Date: 05/30/02
Client Proj Name: 158723
Client Proj #: 158723

Client Name: Curtis & Tompkins, Ltd.
Contact: Paul Prendergast
Address: 2323 Fifth Street
Berkeley, CA 94710

Lab Sample #: P0205506-05

Sample Description	Matrix	Sampled Date/Time	Received
MW-5	Water	22 May. 02	24 May. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	140	0.60	mg/L	AM20GAX	pd	5/28/02

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

Project Number: 158723

Subcontract Laboratory:
Microseeps, Inc.
220 William Pitt Way
Pittsburgh, PA 15238
(412) 826-5245
ATTN: Becky Hans

Turnaround Time: Standard Report Level: II

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

Sample ID		Sampled	Matrix	Analysis	C&T Lab #	Comments
MW-1	01	05/22	Water	RSK-175	158723-001	CO2 **
MW-2	02	05/22	Water	RSK-175	158723-002	CO2 **
MW-3	03	05/22	Water	RSK-175	158723-003	CO2 **
MW-4	04	05/22	Water	RSK-175	158723-004	CO2 **
MW-5	05	05/22	Water	RSK-175	158723-005	CO2 **

Notes:	Relinquished By:	Received By:
	Ben Mahonen	[illegible]
	Date/Time: 5-23-02 1:05	Date/Time: 5/24/02 1303

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

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

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
1000 Broadway
Suite 200
Oakland, CA 94607

Date: 18-JUN-02
Lab Job Number: 158761
Project ID: 1039.008
Location: 327 34th Street

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: **158761**
Client: **Subsurface Consultants, Inc.**
Project Name: **327 34th Street**

Receipt Date: **05/23/02**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for two water samples received from the above referenced project. The samples were received cold and intact.

Total Volatile Hydrocarbons/BTXE: No analytical problems were encountered.

Total Extractable Hydrocarbons: No analytical problems were encountered.

Metals: The matrix spike recoveries for manganese were not meaningful. The concentration of analyte in the spiked sample rendered the spike amount insignificant. The associated blank spike recoveries were acceptable, therefore, there is no affect on the quality of the sample results. No other analytical problems were encountered.

General Chemistry: No analytical problems were encountered.

RSK-175: Microseeps in Pittsburgh, Pennsylvania performed the analysis. Please see the Microseeps case narrative.

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 # 158761

Project No: 1039.008
Project Name: 327 34th St.
Project P.O.:
Turnaround Time: Standard

Sampler: E. Silverman
Report To: E. Silverman
Company: SCI
Telephone: 510.267.4417
Fax: 510.268.0137

Analyses: TPH-g, BTEX, MTBE (8015); TPH-d, -mo (8015 w/ sg); Dissolved CO2; Fe(II), Mn; N-NH3, N-NO3; O-PO4, SO4

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H2SO	Preservative: HNO3	Preservative: ICE	Field Notes
-001	MW-6	5/23		X		10	X		X	X	
-002	MW-7	5/23 920		X		10	X		X	X	MW-7 ARRIVED @ LAB WITH ONLY 9 CONTAINERS PP 5-23-02

Laboratory Use

Notes:
EDF Format,
rec'd intact and cold

RELINQUISHED BY:		RECEIVED BY:	
[signature]	DATE/TIME 5/23/02/1230	[signature]	DATE/TIME 5/23/02/1230
[signature]	DATE/TIME 5/23/02/1240	[signature]	DATE/TIME 5/23/02 1230
	DATE/TIME		DATE/TIME

Signature

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Matrix:	Water	Sampled:	05/23/02
Units:	ug/L	Received:	05/23/02
Diln Fac:	1.000	Analyzed:	05/24/02
Batch#:	72515		

Field ID: MW-6 Lab ID: 158761-001
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	85	68-145
Bromofluorobenzene (FID)	99	66-143

Field ID: MW-7 Lab ID: 158761-002
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	86	68-145
Bromofluorobenzene (FID)	91	66-143

Type: BLANK Lab ID: QC179236

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	86	68-145
Bromofluorobenzene (FID)	87	66-143

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	05/23/02
Units:	ug/L	Received:	05/23/02
Diln Fac:	1.000	Analyzed:	05/24/02
Batch#:	72515		

Field ID: MW-6 Lab ID: 158761-001
Type: SAMPLE

Analyte	Result	RL
MTBE	170	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	1.1	0.50
o-Xylene	1.0	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	118	53-143
Bromofluorobenzene (PID)	120	52-142

Field ID: MW-7 Lab ID: 158761-002
Type: SAMPLE

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	53-143
Bromofluorobenzene (PID)	116	52-142

Type: BLANK Lab ID: QC179236

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC179237	Batch#:	72515
Matrix:	Water	Analyzed:	05/24/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,956	98	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	68-145
Bromofluorobenzene (FID)	94	66-143

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Type:	BS	Diln Fac:	1.000
Lab ID:	QC179238	Batch#:	72515
Matrix:	Water	Analyzed:	05/24/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.72	94	51-125
Benzene	20.00	19.96	100	65-122
Toluene	20.00	20.99	105	67-121
Ethylbenzene	20.00	21.14	106	70-121
m,p-Xylenes	20.00	22.02	110	72-125
o-Xylene	20.00	21.05	105	73-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	53-143
Bromofluorobenzene (PID)	115	52-142

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Type:	BSD	Diln Fac:	1.000
Lab ID:	QC179310	Batch#:	72515
Matrix:	Water	Analyzed:	05/25/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.02	95	51-125	2	20
Benzene	20.00	19.53	98	65-122	2	20
Toluene	20.00	20.89	104	67-121	0	20
Ethylbenzene	20.00	20.13	101	70-121	5	20
m,p-Xylenes	20.00	20.64	103	72-125	6	20
o-Xylene	20.00	20.43	102	73-122	3	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	53-143
Bromofluorobenzene (PID)	114	52-142

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	72515
MSS Lab ID:	158766-006	Sampled:	05/22/02
Matrix:	Water	Received:	05/23/02
Units:	ug/L	Analyzed:	05/24/02
Diln Fac:	1.000		

Type: MS Lab ID: QC179308

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	348.3	2,000	2,285	97	67-120

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

Type: MSD Lab ID: QC179309

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,261	96	67-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	90	68-145
Bromofluorobenzene (FID)	97	66-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1039.008	Analysis:	EPA 8015B(M)
Matrix:	Water	Sampled:	05/23/02
Units:	ug/L	Received:	05/23/02
Diln Fac:	1.000	Prepared:	05/28/02
Batch#:	72557		

Field ID:	MW-6	Analyzed:	05/29/02
Type:	SAMPLE	Cleanup Method:	EPA 3630C
Lab ID:	158761-001		

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

Surrogate	%REC	Limits
Hexacosane (SGCU)	55	39-137

Field ID:	MW-7	Analyzed:	05/29/02
Type:	SAMPLE	Cleanup Method:	EPA 3630C
Lab ID:	158761-002		

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

Surrogate	%REC	Limits
Hexacosane (SGCU)	55	39-137

Type:	BLANK	Analyzed:	05/30/02
Lab ID:	QC179397	Cleanup Method:	EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane (SGCU)	52	39-137

ND= Not Detected
RL= Reporting Limit
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 3520C
Project#:	1039.008	Analysis:	EPA 8015B(M)
Matrix:	Water	Batch#:	72557
Units:	ug/L	Prepared:	05/28/02
Diln Fac:	1.000	Analyzed:	05/29/02

Type: BS
Lab ID: QC179398
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24 (SGCU)	2,500	1,349	54	37-120

Surrogate	%REC	Limits
Hexacosane (SGCU)	64	39-137

Type: BSD
Lab ID: QC179399
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24 (SGCU)	2,500	1,603	64	37-120	17	26

Surrogate	%REC	Limits
Hexacosane (SGCU)	70	39-137

RPD= Relative Percent Difference
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

Manganese

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Sampled:	05/23/02
Matrix:	Water	Received:	05/23/02
Units:	ug/L	Prepared:	05/28/02
Diln Fac:	1.000	Analyzed:	05/29/02
Batch#:	72575		

Field ID	Type	Lab ID	Result	RL
MW-6	SAMPLE	158761-001	3,400	10
MW-7	SAMPLE	158761-002	350	10
	BLANK	QC179472	ND	10

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Manganese

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	72575
Matrix:	Water	Prepared:	05/28/02
Units:	ug/L	Analyzed:	05/29/02
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC179473	50.00	47.49	95	77-120		
BSD	QC179474	50.00	47.49	95	77-120	0	20

RPD= Relative Percent Difference

Manganese

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	72575
Field ID:	MW-7	Sampled:	05/23/02
MSS Lab ID:	158761-002	Received:	05/23/02
Matrix:	Water	Prepared:	05/28/02
Units:	ug/L	Analyzed:	05/29/02
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC179475	352.7	50.00	395.4	85 NM	46-136		
MSD	QC179476		50.00	423.8	142 NM	46-136	7	20

NM= Not Meaningful
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Ferrous Iron (Fe+2)

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Analysis:	SM3500-FE
Project#:	1039.008		
Analyte:	Ferrous Iron (Fe+2)	Sampled:	05/23/02
Matrix:	Water	Received:	05/23/02
Units:	mg/L	Analyzed:	05/24/02
Batch#:	72517		

Field ID	Type	Lab ID	Result	RL	Dil'n Fac
MW-6	SAMPLE	158761-001	11	0.50	5.000
MW-7	SAMPLE	158761-002	0.11	0.10	1.000
	BLANK	QC179243	ND	0.10	1.000

ND= Not Detected
RL= Reporting Limit

Ferrous Iron (Fe+2)

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Analysis:	SM3500-FE
Project#:	1039.008		
Analyte:	Ferrous Iron (Fe+2)	Diln Fac:	1.000
Field ID:	MW-7	Batch#:	72517
MSS Lab ID:	158761-002	Sampled:	05/23/02
Matrix:	Water	Received:	05/23/02
Units:	mg/L	Analyzed:	05/24/02

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC179244	0.1100	0.8000	0.9200	101	51-146		
MSD	QC179245		0.8000	0.9340	103	51-146	2	20
LCS	QC179246		0.8000	0.8160	102	80-120		

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Ammonia Nitrogen

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Batch#:	72599
Matrix:	Water	Sampled:	05/23/02
Units:	mg/L	Received:	05/23/02
Diln Fac:	1.000	Analyzed:	05/29/02

Field ID	Type	Lab ID	Result	RL
MW-6	SAMPLE	158761-001	8.9	0.10
MW-7	SAMPLE	158761-002	ND	0.10
	BLANK	QC179563	ND	0.10

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Ammonia Nitrogen

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Batch#:	72599
Field ID:	ZZZZZZZZZZ	Sampled:	05/21/02
MSS Lab ID:	158700-002	Received:	05/21/02
Matrix:	Water	Analyzed:	05/29/02
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Dil'n Fac
LCS	QC179564		5.000	5.070	101	80-120			1.000
MS	QC179565	269.5	500.0	814.0	109	64-148			100.0
MSD	QC179566		500.0	804.0	107	64-148	1	39	100.0

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Matrix:	Water	Sampled:	05/23/02
Units:	mg/L	Received:	05/23/02
Batch#:	72484	Analyzed:	05/23/02

Field ID: MW-6 Lab ID: 158761-001
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Nitrogen, Nitrate	0.65	0.05
Orthophosphate (as P)	ND	0.20
Sulfate	1.4	0.50

Field ID: MW-7 Lab ID: 158761-002
Type: SAMPLE

Analyte	Result	RL	Diln Fac
Nitrogen, Nitrate	2.8	0.05	1.000
Orthophosphate (as P)	0.11 J	0.20	1.000
Sulfate	51	5.0	10.00

Type: BLANK Diln Fac: 1.000
Lab ID: QC179107

Analyte	Result	RL
Nitrogen, Nitrate	ND	0.05
Orthophosphate (as P)	ND	0.20
Sulfate	ND	0.50

J= Estimated value
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Matrix:	Water	Batch#:	72484
Units:	mg/L	Analyzed:	05/23/02
Diln Fac:	1.000		

Type: BS Lab ID: QC179108

Analyte	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	2.000	2.077	104	90-110
Orthophosphate (as P)	10.00	10.32	103	90-110
Sulfate	20.00	20.33	102	90-110

Type: BSD Lab ID: QC179109

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	2.000	2.066	103	90-110	1	20
Orthophosphate (as P)	10.00	10.17	102	90-110	1	20
Sulfate	20.00	20.17	101	90-110	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Field ID:	MW-1	Batch#:	72484
MSS Lab ID:	158723-001	Sampled:	05/22/02
Matrix:	Water	Received:	05/22/02
Units:	mg/L	Analyzed:	05/23/02
Dil'n Fac:	25.00		

Type: MS Lab ID: QC179110

Analyte	MSS Result	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	5.470	25.00	31.02	102	80-120
Orthophosphate (as P)	<0.2000	125.0	124.7	100	73-147
Sulfate	57.84	250.0	308.3	100	72-125

Type: MSD Lab ID: QC179111

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	25.00	32.07	106	80-120	3	20
Orthophosphate (as P)	125.0	127.1	102	73-147	2	30
Sulfate	250.0	305.3	99	72-125	1	20

RPD= Relative Percent Difference

MICROSEEPS

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue

Berkeley, CA 94710

Order #: P0205535
Report Date: 06/10/02
Client Proj Name: 158761
Client Proj #: 158761

Sample Identification

Lab Sample #	Client Sample ID
P0205535-01	MW-6
P0205535-02	MW-7

Approved By: Debbie Hallo

Order #: P0205535
Report Date: 06/10/02
Client Proj Name: 158761
Client Proj #: 158761

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue
Berkeley, CA 94710

Lab Sample #: P0205535-01

Sample Description	Matrix	Sampled Date/Time	Received
MW-6	Water	23 May. 02	29 May. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	100	0.60	mg/L	AM20GAX	pd	6/6/02

Order #: P0205535
Report Date: 06/10/02
Client Proj Name: 158761
Client Proj #: 158761

Client Name: Curtis & Tompkins, Ltd.
Contact: Steve Stanley
Address: 2323 Fifth Avenue
Berkeley, CA 94710

Lab Sample #: P0205535-02

Sample Description	Matrix	Sampled Date/Time	Received
MW-7	Water	23 May. 02	29 May. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Carbon dioxide	68	0.60	mg/L	AM20GAX	pd	6/6/02

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

PO205535

Project Number: 158761

Subcontract Laboratory:
Microseeps, Inc.
220 William Pitt Way
Pittsburgh, PA 15238
(412) 826-5245
ATTN: Becky Hans

Turnaround Time: DVE 5/30 Report Level: II

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

Sample ID	Sampled	Matrix	Analysis	C&T Lab #	Comments
MW-6	05/23	Water	RSK-175	158761-001	Dissolved CO2
MW-7	05/23	Water	RSK-175	158761-002	Dissolved CO2

Notes:	Relinquished By:	Received By:
	Ken Makinen	[signature]
	Date/Time: May 28th 2002 1:30	Date/Time: 5/29/02 10:51

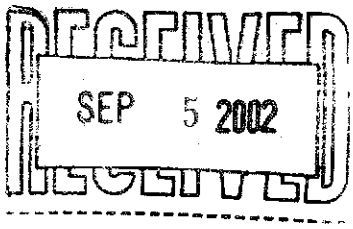
Signature on this form constitutes a firm Purchase Order for the services requested above.

APPENDIX D

Monitoring Well Survey, letter dated September 4, 2002

Virgil Chavez Land Surveying
312 Georgia Street, Suite 225
Vallejo, California 94590-5907
(707) 553-2476 • Fax (707) 553-8698

September 4, 2002
Project No.: 2043-03



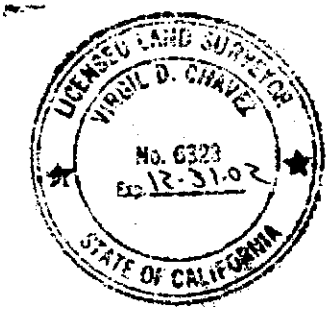
Emily Silverman
Subsurface Consultants, Inc.
1000 Broadway, Suite 200
Oakland, CA 94607

Subject: Monitoring Well Survey
327 34th Street
Oakland, CA

Dear Emily:

This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was completed on August 8, 2002. The benchmark for this survey was a cut "X" in the top of curb near the southwest return of the northwest corner of 34th and Broadway. The latitude, longitude and coordinates are for top of casings and are based on the California State Coordinate System, Zone III (NAD83).
Benchmark Elevation = 60.40 feet (NGVD 29).

Latitude	Longitude	Northing	Easting	Elev.	Desc.
				65.04	RIM MW-1
37.8218055	-122.2611707	2126486.31	6053001.38	64.69	TOC MW-1
				66.25	RIM MW-2
37.8218325	-122.2613612	2126497.16	6052946.53	65.95	TOC MW-2
				66.21	RIM MW-3
37.8217655	-122.2613226	2126472.57	6052957.24	65.99	TOC MW-3
				63.74	RIM MW-4
37.8216761	-122.2611751	2126439.22	6052999.22	63.35	TOC MW-4
				66.21	RIM MW-5
37.8215003	-122.2614902	2126376.91	6052907.01	65.59	TOC MW-5
				59.93	RIM MW-6
37.8213998	-122.2608926	2126337.09	6053078.90	59.60	TOC MW-6
				59.81	RIM MW-7
37.8215368	-122.2607147	2126385.97	6053131.20	59.47	TOC MW-7



Sincerely,

Virgil D. Chavez, PLS 6323