CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 5301 • OAKLAND, CALIFORNIA 94612-2034

Public Works Agency
Environmental Services

FAX (510) 238-7286
TDD (510) 238-7644

#3978

ENVIRONMENTAL PROTECTION
00 JAN 17 AM 8:51

January 10, 2001

Mr. Barney Chan
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: **Site History and Characterization**
City of Oakland Municipal Service Center
7101 Edgewater Drive Oakland, California

Dear Mr. Chan:

Enclosed is a copy of the *Site History and Characterization Report, City of Oakland Municipal Service Center, 7101 Edgewater Drive, Oakland* prepared by our consultant, Baseline Environmental Consultants.

Please call me at 238-6259, if you have any questions or require additional information.

Sincerely,

Joseph A. Cotton
Environmental Program Specialist

cc: Andrew Clark-Clough, City of Oakland
Diane Heinz, Port of Oakland
Bob Clark-Riddell, Cambria Environmental Inc.

BASELINE

ENVIRONMENTAL CONSULTING

8 January 2001
98383-17

Mr. Joseph Cotton
City of Oakland, Public Works Agency
Environmental Services Division
250 Frank H. Ogawa Plaza, Suite 5301
Oakland, CA 94612

Subject: Site History and Characterization, City of Oakland Municipal Services Center, 7101 Edgewater Drive, Oakland

Dear Joseph:

BASELINE has been retained by the City of Oakland to review the existing environmental data for the City of Oakland's Municipal Services Center (MSC), to conduct additional subsurface investigation (focused on determining the extent of free product at various locations), and to develop an appropriate investigative/remedial approach for the site. The results of these activities are summarized in this report.

Should you have any questions or wish to discuss this report, please contact us at your convenience. Copies of this report should be submitted to the Alameda County Environmental Health Department (County) and the San Francisco Bay Regional Water Quality Control Board (RWQCB).

Sincerely,

Bruce Abelli-Amen
Senior Hydrogeologist
Cert. Hydrogeologist No. 96

Yane Nordhav
Principal

BAA:YN:km
Attachment

98383-17.fnl2.wpd-1/8/00

5900 Hollis Street, Suite D • Emeryville, CA 94608 • (510) 420-8686 • FAX: (510) 420-1707
Emeryville Petaluma San Francisco

SITE HISTORY AND CHARACTERIZATION

JANUARY 2001

OAKLAND MUNICIPAL SERVICES CENTER
7101 Edgewater Drive
Oakland, California

For:

City of Oakland
Oakland, California

98383-17

BASELINE Environmental Consulting
5900 Hollis Street, Suite D • Emeryville, California 94608
(510) 420-8686

TABLE OF CONTENTS

APPENDICES

FIGURES

Table of Contents - ***continued***

TABLES

SITE HISTORY AND CHARACTERIZATION

CITY OF OAKLAND MUNICIPAL SERVICES CENTER

7101 Edgewater Drive, Oakland

I. INTRODUCTION

The purpose of this report is to provide a comprehensive evaluation of the hydrogeology and contaminant distribution of the City of Oakland's Municipal Services Center (MSC) using available information (Figures 1 and 2), and to present recommendations for future actions. In addition, this report documents a subsurface investigation conducted by BASELINE in July 2000 to define the extent of free product plumes at four locations where product had been previously identified.

II. SITE LOCATION

The 17-acre site, located at 7101 Edgewater Drive in Oakland, is owned by the Port of Oakland, and the City of Oakland currently leases the property for use as a corporation yard. Bordering the MSC site to the west and the north is the Martin Luther King Regional Shoreline Park. This park land is leased from the Port by the East Bay Regional Parks District (EBRPD). Damon Slough is located to the north, and commercial developments are located to the east and south.

III. SITE HISTORY

The site was originally part of a waterfront tidal marsh complex, including tidal flat and tidal salt marsh (Goals Project, 1999). Soft silty clay (Bay Mud) of the surface marsh environment was underlain by older Bay deposits consisting of silty clay with thin layers and lenses of sand. Bedrock is estimated to be over 800 feet below the ground surface (Woodward-Clyde, 1992).

The fill history of the site is based on review of historic aerial photographs (Figures 3 through 8) and boring logs from previous subsurface investigations at the site. The U.S. Army Corps of Engineers does not have any documentation of filling activities at the site (Patrick, 2000) (Appendix A).

Human influence on the site is evident on the earliest available aerial photograph of the site (1947). **A dike had been constructed from near the mouth of Damon Slough in the north, through the current MSC site, to Elmhurst Channel in the south (Figure 3).** Substantial fill placement does not appear to have occurred landward of the dike within the current MSC site between 1950 and about 1968 (Figures 4, 5, and 6). A small area in the northwest corner of MSC was filled between 1950 and 1959 (Figures 4 and 5). Between 1959 and 1968, substantial filling occurred south and east of the site and extended just within the southwest corner of MSC (Figure 5 and 6). **The major filling activities within the site boundaries occurred between 1968 and 1971, which lead to the construction of the current MSC facilities (Figures 6, 7, and 8).** In about 1969, the rate of fill placement accelerated rapidly and the areas on both sides of the dike were filled to their current condition by 1971.

Based on review of the aerial photos (in which trucks can be observed on the dike and "fans" spread out from the dike into the fill areas), and review of the boring logs from site investigations (which do not indicate any substantial uniform fine-grained layers), **the MSC site does not appear to have been hydraulically filled (Bay dredging material); rather the fill sources appear to be miscellaneous construction/grading debris and soils.**

In the 1947 photograph, low-gradient channels meander through the site and its vicinity, particularly to the north near Damon Slough (Figure 3). Filling continued landward of the dike north of the MSC site, near the mouth of Damon Slough, and progressed substantially by 1959 (Figure 5). The distinctiveness of tidal marsh channels landward of the dike appears to fade in photos starting from about 1950, possibly because the channels dried out after being isolated from the Bay by the dike. By 1968, Edgewater Drive and a commercial facility to the east had been constructed (Figure 6). Fill placement landward (and Bayward) of the dike was completed by 1971. **Based on review of site boring logs, fill thicknesses landward of the dike generally range from about 6.0 to 15.0 feet.**

Most of the buildings on-site are located on the landward side of the dike, except the Storage Building, which appears to be built directly on top of the dike. Building No. 5 formerly straddled the dike and experienced substantial damage due to differential settlement. The western portion of Building No. 5 was removed to remedy the damage.

Filling Bayward of the original dike started between 1959 and 1968 (Figures 5 and 6). Since open water was Bayward of the dike, fill would have been placed directly into the water. Therefore, fill thicknesses Bayward of the dike are expected to be substantially greater than on the landward side. Boring logs indicate fill thicknesses on the Bayward side of the dike in excess of 20 feet. Fill materials Bayward of the dike generally have moderate to high permeability across the site (Figure 9).

IV. SITE HYDROGEOLOGY

In general, fill thicknesses and relative permeabilities appear to increase toward the Bay (Figures 10, 11, and 12). The uppermost water-bearing zone at the site is unconfined, meaning that the water table can move up and down without restriction.

Based on review of the aerial photos, it appears that much of the fill placed landward of the dike was placed on emergent lands. However, much of the fill landward of the dike is currently below the water table. This can be explained by two phenomena: 1) consolidation of the soft Bay Mud has lowered the Bay Mud/fill interface,[1] and 2) the water table has risen into the fill as a natural response to placement of fill near the edge of the Bay.[2]

Groundwater elevation contours in August 2000 are shown on Figure 13. Groundwater flow is toward the southwest to the nearest shoreline along San Leandro Bay across much of the site. In the northern portion of MSC, groundwater flows in a more northerly direction toward the curving shoreline and Damon Slough.

In 1995, groundwater levels were measured in the then existing seven monitoring wells (MW-1 through MW-7) at low and high tide on the same day to determine whether tides affected on-site groundwater levels (BASELINE, 1996). The measurements indicated substantial fluctuation in only one of the seven wells.[3]

Another tidal study was conducted at 16 observation points (temporary and permanent monitoring wells) over an eleven-day period in 1997 (Uribe, 1997). Measured water levels in temporary wells B36 and B43 (Figure 13) indicated a potential tidal influence with correlated high and low tide measurements demonstrating a range of 2.61 and 1.80 feet, respectively. Measurements from the remaining observation points (B35 [MW-8], B38, B39 [MW-9], B40, B41, B44, B46, MW-1, MW-2, MW-5, MW-6, and MW-7) showed a negative correlation with tide level (i.e., increased depth to water was measured during intermediate or high tide rather than during the low tide), indicating no tidal influence. Based on these observations, it appears that groundwater levels in only a few isolated near-Bay areas are subject to daily tidal influence.

---

[1] The southwest corner of Building No. 5 settled about 2.9 feet after precompression (surcharging) of the site (Woodward-Clyde, 1988), indicating that total settlements could have been substantially greater.

[2] The groundwater level would be expected to rise into the fill after placement, even if consolidation of the underlying material did not occur. Moving the discharge area (the area where the groundwater table intersects the Bay) Bayward by filling the site would be expected to raise the groundwater table in the area landward of the new discharge zone.

[3] MW-3 is located about 250 feet north of the MSC site on the other side of Edgewater Drive. The water level in MW-3 dropped 0.14 foot from the high tide measurement to the low tide measurement. The maximum fluctuation in the remaining wells was 0.05 foot. Based on review of the 1947 aerial photo, it appears that MW-3 is located near a tidal channel that may connect to Damon Slough. This may explain the slightly increased tidal fluctuation in MW-3 relative to the other wells.

V. CONTAMINANT SOURCES

The MSC site has been the subject of numerous environmental investigations starting in about 1989. The suspected sources of on-site contamination include releases from underground storage tanks (USTs), the gasoline and diesel fuel hydrant system, and the floor drain waste collection pits formerly located adjacent to Building No. 5 (Figure 14). In addition, some or all of the material used to fill the site may have been contaminated prior to placement at the site, since the fill sources are unknown. Contaminants of concern associated with these sources include total petroleum hydrocarbons (TPH g, d, mo), benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl-tert-butyl ether (MTBE), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals.

A. Underground Storage Tanks

Documentation from previous investigations indicates that at one time there were 14 USTs at the site (Woodward-Clyde, 1996). Details regarding the size, content, and status of each UST are described in Table 1 and the reported locations of the USTs are shown on Figure 14. Whether each tank contained the specified material, and only the specified material, through its operational life, is unknown.

only 11 USTs ever found.

<u>Potential Contaminants of Concern:</u> *TPH as gasoline, TPH as diesel, TPH as motor oil, BTEX, MTBE, VOCs, SVOCs, and metals.*

B. Fuel Hydrant System

A fuel dispensing system was installed at the site in the 1970s, shortly after development of the site (Cambria, 1999). The 2,650-foot piping system extended north of the Public Works Building to south of Building No. 5 (Figure 14). The system consisted of two parallel 2-inch diameter steel pipes, which distributed diesel and gasoline to numerous remote fueling stations across the site. The fuel source for the hydrant system was USTs 1, 2, and 3.

The fuel hydrant system was removed in 1998 (Cambria, 1999). The piping was reported to be in generally sound condition. However, many of the joints appeared to have been loose and hydrocarbon staining and odor were observed at some locations. Free product was identified in one location during pipeline removal (southwest of the Public Works Building). Well TBW-5 was installed for the purpose of future free product removal.[4]

Approximately 131 soil samples were collected from soils underlying the piping, at intervals of approximately 20 feet, and under each pipe joint and fueling station. Residual petroleum hydrocarbons were identified in soils throughout the entire former hydrant system. Thirteen soil samples contained over 1,000 mg/kg of TPH as gasoline and six samples contained over 1,000

---

[4] Another potential remediation well, TBW-6, was installed during hydrant line removal activities. Although free product was not observed in the vicinity of TBW-6, a strong petroleum hydrocarbon odor and soil staining were noted (Schultz, 2000).

mg/kg of TPH as diesel. Benzene at concentrations greater than 1.0 mg/kg were identified in 14 samples (some samples were reported as "ND" with elevated reporting limits). MTBE was identified in four samples at concentrations ranging from 0.34 to 17 mg/kg. Organic lead was detected in only one of the 39 samples analyzed at a concentration of 2.4 mg/kg.

<u>Potential Contaminants of Concern:</u> *TPH as gasoline, TPH as diesel, BTEX, MTBE, and lead.*

C. Building No. 5 Waste Collection Pits

Based on review of architectural drawings, dated 1970 (Appendix B), and subsequent environmental investigation documentation (Woodward-Clyde, 1992), it appears that Building No. 5 was constructed with two interior linear track drains that drained into four "waste collection pits" immediately outside the building (Figure 14). The track drains, which both appeared to be of similar design, were concrete-lined trenches fitted with metal grates that ran through the vehicle maintenance work areas. The architectural drawings indicate that the pits were constructed with no bottom other than a layer of gravel and allow liquids to freely drain to the subsurface. A recent site inspection by BASELINE confirmed that the pits were constructed in this fashion.

Associated with the hoist drainage system are 28-inch diameter concrete sumps fitted with a metal manhole cover adjacent to the former track drain inside the existing building (Figure 14). The eastern sump was observed to be approximately ten feet deep during BASELINE's June 2000 inspection. The water level in the sump was about seven feet below the surface and a layer of oil (approximately 0.5 inch) was floating on the water. The sump is fitted with a pump that formerly discharged to the track drain. A similar sump was found in the pavement to the west within the former building footprint, presumably the sump associated with the former western floor drain.[5]

Th[redacted] (one is currently outside the building since the west end of the building was removed) a[redacted]

<u>Potential Contaminants of Concern:</u> *TPH as gasoline, TPH as diesel, TPH as motor oil, BTEX, MTBE, VOCs, SVOCs, and metals.*

D. Imported Fill

The origin and chemical quality of the fill at the site are not known. Based on experience at other sites in the area, imported fill may contain one or more of the following contaminants: TPH as gasoline, as kerosene, as diesel, as motor oil, BTEX, MTBE, VOCs, SVOCs, and metals. In addition, it is likely that a fill project of this magnitude (estimated at over 300,000 cubic yards) would have received fill from various sources, and therefore would likely have been of variable chemical quality.

---

[5] The western portion of Building No. 5 was demolished in the mid-1990s because of damage from differential settlement.

In general, it is difficult to distinguish between contaminants that may have arrived at the site with the fill and those that entered the fill after it was placed at the site. However, soil sampling and analyses conducted at the site since the filling operations were completed provide information on the quality of the fill. For example, soil samples analyzed and found not to contain contaminants above laboratory reporting limits suggest that at least some of the imported fill was not contaminated. While elevated levels of lead are commonly found in fill along the Oakland and San Francisco waterfronts, lead contamination does not appear to be pervasive at the site based on the available data analytical results of several soil samples collected (Table 14). [redacted] the presence [redacted] knowledge [redacted] that the fill may have contained contaminants when it was placed at the site is further described in Section IX.D. of this report.

> <u>Potential Contaminants of Concern:</u> *TPH as gasoline, TPH as kerosene, TPH as diesel, TPH as motor oil, BTEX, VOCs, SVOCs, and metals.*

VI. MIGRATION PATHWAYS

Contaminants in the subsurface can migrate away from the point of release by various means, depending on the quantity of the release and the hydrogeology of the release area. Free phase petroleum hydrocarbons released above the groundwater table typically migrate downward through the soil column under gravity leaving a residual in the unsaturated zone (adsorbed to soil particles and held by capillary forces) until reaching the water table surface. Upon reaching the water table, the free phase hydrocarbons tend to spread out and "float" on the groundwater, while releasing dissolved constituents into the groundwater. Once in the groundwater, petroleum hydrocarbons move by advection (flow with groundwater), diffusion, and dispersion. The rate of contaminant transport in the groundwater regime depends largely on the rate of groundwater flow. In some subsurface environments, the rate of groundwater flow through "preferential pathways" (e.g., buried stream channels or utility trenches) is several orders of magnitude faster than flow through the interstitial pore spaces of the bulk of the aquifer and can, therefore, account for the bulk of contaminant migration away from the release point.

At the project site, the potential preferential pathways include: 1) buried tidal channels, 2) utility lines and trenches, 3) high permeability layers or linear features created during fill placement, and 4) the buried dike. Each of these potential preferential flow paths is discussed below to assess whether they are likely to affect contaminant migration at the site.

A. Buried Channels Where are they?

Buried channels have been identified by previous investigators as "...significant in that their associated sediments may be predominant factors with respect to site hydraulics and transport of affected groundwater" (Woodward-Clyde, 1996). Conditions necessary for buried channels to act as preferential pathways for free product and for contaminants dissolved in groundwater are different. These conditions are evaluated separately below.

A.1. Free Product Conditions

For buried channels to act as preferential pathways for free product migration, the groundwater table would need to be at the same elevation as the channels and the channels would need to have been filled with higher permeability materials than the surrounding areas. Based on the depth to the bottom of the fill (ranging from 6 to more than 15 feet landward of the dike, but averaging about 12 feet) and measured groundwater levels in wells and borings (ranging from 5 to 10 feet below the ground surface), it appears that the water table is, at a minimum, five feet above the pre-fill mud surface. Therefore, the water table is about 6 to 10 feet above the bottom of the buried channels.[6] Regardless of the permeability of the fill materials placed in the channels, it would be impossible for the buried channel to have any influence on free product movement since the free product floats on top of the groundwater table.

---

[6] A buried channel that can be observed on aerial photographs is shown on the eastern portion of Figure 11. The top of the channel is approximately 13 feet below the ground surface and 7 feet below the groundwater table.

A.2. Dissolved Contaminant Conditions

A specific set of conditions would be required for the buried tidal marsh channels to act as preferential flow paths for transport of contaminants dissolved in groundwater: 1) the fill materials placed in the channels would have to be substantially more permeable than the surrounding Bay Mud, and 2) the higher permeability fill must be continuous along the entire length of the meandering channels to the points where they discharge to surface water. Based on review of the available data, it appears that both of these conditions are unlikely.

Geologic cross-sections, constructed based on logs from on-site borings and wells, indicate that the interior portion of the site (the area landward of the dike) has been filled, for the most part, with relatively fine-grained, low permeability materials (i.e., clay, silt, silty sand, sandy clay, and gravelly clay) (Figures 10 and 11). A few of the boring logs indicate that some potentially high permeability fill was placed at isolated locations in portions of the site's interior. The method of filling was likely land-based dumping of materials from trucks. It would be unlikely that any continuous and meandering features, such as channels, would have been filled with consistently high permeability materials. More likely, the channels were filled with a heterogeneous mix of predominately low permeability materials. Examination of boring logs provided no evidence that coarse-grained materials were placed in the channels. Therefore, the contaminant transport rate in the fill within the buried channels would be expected to be similar to that of the surrounding fill.

not considered likely

B. Utility Lines and Trenches

Trench backfill associated with subsurface utilities could act as a preferential pathway for dissolved contaminant and free product migration, if the backfill were composed of high permeability material (relative to the surrounding fill) and located at or below the groundwater table. Any utility trench that is above the upper six feet would not act as a preferential flow path since it would be above the saturated zone. The only utility trenches that would be expected to be below six feet are associated with the storm drainage and sanitary sewer systems (Figure 15); most other utilities are located less than two feet below the surface (Krohn, 2000).

not true

do not agree

B.1. Storm Sewer

Two of the main storm drainage lines cross areas of known subsurface contamination, including the areas around TBW-1, TBW-5, and MW-6. In May 2000, Subsurface Consultants conducted a focused soil and groundwater investigation of the storm drain that conveys runoff from the areas around wells TBW-1 and TBW-5 to determine whether the trench backfill was contaminated and potentially acted as a preferential flow path for contaminant migration. Five borings/temporary wells and two permanent monitoring wells were installed and sampled as part of this investigation. Based on review of the boring logs, the trench backfill (utility bedding) is composed of potentially high permeability sand at depths ranging from five to ten feet below the surface. Groundwater occurs in the sand backfill. [redacted] detailed results from that investigation are discussed in the *Contaminants of Concern/Distribution* section of this report.

The potential for the storm drain and associated trench backfill in the vicinity of MW-6 to act as a preferential f[redacted] not been [redacted] for additional investigation [redacted] of this report.

B.2. Sanitary Sewer

The only identified sanitary sewer line that crosses a contaminated area is just north of Building No. 5 [redacted] ons for ad[redacted] report.

C. High Permeability Fill Features ← the fill (if permeable) itself can act as pref pathway

It is possible that high permeability fill could have been placed at the site in discrete layers or along linear features in a manner that could have created preferential pathways for groundwater flow and contaminant migration. For example, if a particular fill source was predominately coarse material (e.g., sand, gravel, rubble) and this material was placed at the site as a discrete and continuous unit, it could act as a preferential pathway.

Large continuous layers of coarse-grained materials do not appear to be present, based on a thorough examination of the numerous boring logs from past investigations. In fact, most of the fill underlying the site is fine-grained. Consistent filling of linear features with coarse materials is also unlikely due to the method of fill placement. The likelihood of a linear feature developing as the fill activities progressed landward and Bayward seems remote. Review of aerial photographs indicates that filling occurred by dumping truckloads of material off a dike/haul road that was formerly oriented approximately parallel to the current shoreline. If there were to have been linear bands of coarse-grained materials running parallel to the shoreline, these bands would be perpendicular to the current groundwater flow direction, and unlikely to be preferential pathways.

Check boring log of wells/borings in fill area.

D. Buried Dike

The former dike has been identified by previous investigators as a potential barrier to groundwater flow (Woodward-Clyde, 1996). During removal of the fuel hydrant system in 1998, investigators observed riprap in an excavation at the current location of TBW-5 (confirming the location of the dike at that location, as shown on Figure 16) and speculated that the dike may act as a preferential groundwater flow path (Elias, 2000). It is unlikely that the former dike is acting as both a barrier to groundwater flow and a preferential pathway.

The likelihood that the former dike is acting as either a barrier to groundwater flow or a preferential pathway can be evaluated by examining the site hydrogeology and the contaminant distribution in the subsurface along the former dike. Groundwater flow at the site is mainly toward the Bay. If the dike were acting as a barrier, groundwater levels measured in wells would be expected to indicate a uniform "damming" effect of water behind the dike. This phenomenon is not indicated on the groundwater contour maps developed for the site (Figure 13). In addition, if the dike represented an effective barrier to groundwater flow, and the main sources of contaminants were from on-site operations, contaminant concentrations would be expected to be relatively higher on the landward side than the Bayward side. Based on review of the available data, no such trend is apparent. Therefore, it does not appear that the former dike is an effective barrier to groundwater flow.

The question of whether the former dike acts as a preferential pathway is significant because the dike passes through or near two areas (TBW-1 and TBW-5) where free product has been identified. Free product was observed around the riprap material of the dike during excavation activities associated with removal of the fuel hydrant system and, reportedly, product flowed into the excavation in the vicinity of TBW-5 (Schultz, 2000). The product plume in the vicinity of TBW-5 is elongated parallel to the dike, indicating that the dike may be providing a flow path for the product. However, the former fuel hydrant line (the source of the product) is also oriented parallel to the elongated axis of the plume.

If the dike were a preferential pathway, contaminants would be expected in the immediate vicinity of the dike as it extends away from identified source areas (i.e., free product areas near TBW-1 and TBW-5). Although there has been no focused investigation of the groundwater quality along the former dike, several soil and groundwater samples have been collected near the dike both north and south of the free product areas near TBW-1 and TBW-5. To the south, a grab water sample collected from boring HP-29 (Figure 16), which appears to be located directly in the dike, did not contain TPH as gasoline or BTEX above laboratory reporting limits. Boring HP-29 is located near the westernmost (downgradient) portion of the dike. If the dike were acting as a significant preferential pathway, contaminants would be expected to migrate to this area. To the north, borings HP-12 and HP-21 are located near the dike and were found to contain low to nondetectable concentrations of petroleum hydrocarbons. This indicates that the dike is either not a preferential pathway or, at most, is an insignificant preferential pathway. Product that occurs within the dike materials near TBW-5 does not appear to have migrated away from the release area.

In summary, although the effect of the buried dike on the hydrogeology of the site cannot be completely dismissed, the available data appear to indicate that the dike is neither a barrier nor a preferential pathway to groundwater flow.

Hard to believe that a dike - whose primary job is to keep ~~[illegible]~~ [illegible] ~~from~~ [illegible], would [illegible]
Depth [illegible]

VII. INTERIM REMEDIAL ACTIVITIES

Remedial activities completed at the site to date have focused on upgrading and/or removal of USTs and fuel hydrant system, excavation of contaminated soils, decommissioning of subsurface drains in Building No. 5, and free product recovery.

A. Upgrade and Removal of USTs and Fuel Hydrant Systems

A total of eight USTs and the fuel hydrant system have been removed from the site, as follows:

- Two USTs (USTs 10 and 11) sampling and reporting by Dove Engineering in 1995;
- Six USTs (USTs 1, 2, 3, 6, 12, and 13) sampling and reporting by MicroSearch in 1997;
- One fuel hydrant system (2,650 feet of pipe), sampling and reporting by Cambria in 1999.

Limited over-excavation of contaminated soils was conducted during some of the removal actions. Table 2 summarizes available information regarding the interim soil and groundwater removal action, if any, taken at each location. USTs 7, 8, and 9 are still in use and were upgraded to meet current regulatory requirements in 1999 (Krohn, 2000).

B. Decommissioning of Subsurface Drains

The two floor drains associated with Building No. 5 were decommission by filling them with concrete in about 1993 (Tower, 2000). The waste collection pits were not decommissioned, and based on a site inspection conducted by BASELINE in June 2000, remain unsealed. It appears that direct discharges to the waste collection pits ceased when the floor drains were sealed. ✓, Likely gw + FP

C. Free Product and Groundwater Recovery

Removal of free product and groundwater has occurred from ~~the~~ six wells using various methods. The activities completed at the site to date are summarized in Table 3. About 1,500 gallons of free product were removed from the TBW-3 area during tank removal (MicroSearch, 1997). A pneumatic product-only skimmer system was installed in TBW-5 during the second quarter of 2000. Through the third quarter of 2000, [redacted] A combination of passive skimmers and absorbent socks have been used to remove an unquantified volume of product from TBW-1, TBW-2, TBW-3, MW-6 and MW-16. Product removal from some of the wells has proven to be difficult due to the high viscosity of the material, particularly in the vicinity of TBW-5 and MW-16.

VIII. SITE INVESTIGATIONS

Past site investigations are summarized in Table 4. Environmental investigations have resulted in the installation of 26 wells (monitoring and remediation wells) both on- and off-site. Monitoring wells MW-3 and MW-4, both located off-site, were destroyed in November 1999, leaving 24 wells in-place. Numerous soil and water samples have been collected from wells, temporary wells, borings, and excavations. Free phase and residual concentrations of petroleum hydrocarbons have been identified in numerous locations across the site.

After reviewing all the available data from past investigations, BASELINE identified two areas where additional data were needed. The extent of free product plumes at four locations on the site needed to be defined. In addition, soil quality in the vicinity of identified potential contaminant sources around Building No. 5 required characterization. The additional investigation was conducted in accordance with a County-approved work plan (with amendments), dated 16 June 2000. The work was undertaken by BASELINE in July 2000. The following discussion documents this investigation.

In [redacted] soil[redacted] Using continuous-core direct push sampling technology, soil cores were extracted and examined at compass points around each of the suspected/confirmed free product locations. Cores were advanced to just below the soil/groundwater interface and examined for product/sheen. At each location where product was identified (by visual observation and PID readings), an additional core was advanced slightly farther from the source until the extent of product had been defined in all four directions (with the exception of the western limit of product west of MW-6).

Bo[redacted] co[redacted]. The rationale for the location of each boring and laboratory analyses performed is described in Tables 5 and 6, respectively.

Each sample submitted to the laboratory for analysis was collected in pre-cleaned sample sleeves, sealed with teflon film, plastic caps, and silicone tape, and stored in a cooler with blue ice. Except for three samples, samples from borings where free product was encountered were not submitted to the laboratory for analysis. Each boring was logged in accordance with the Unified Soil Classification System. Copies of the boring logs are included in Appendix C. The samples were transported to Curtis and Tompkins, Ltd. of Berkeley, a State-certified laboratory, under chain-of-custody procedures.

The extent of free product was defined in each of the areas investigated (Figure 16). All analytical results are summarized in Tables 7 through 9, and the laboratory reports are included in Appendix D. These results are discussed, below, in the *Contaminant Distribution* section of this report.

IX. CONTAMINANT DISTRIBUTION

Discussion of the contaminant distribution in the subsurface across the site is divided into the following three subareas:

- Southwest Subarea (MW-6 and MW-16 area)
- Building No. 5 Subarea
- Central Subarea (TBW-1 and TBW-5 area)

In addition, contamination dispersed in the fill not apparently associated with known on-site sources, and dissolved contaminants in the groundwater, are also discussed from a site-wide perspective.

A. Southwest Subarea

The Southwest Subarea is located between Building No. 5 and the shoreline. Two adjacent free product plumes have been delineated in the subarea (Figure 17). Identified potential sources of subsurface contamination in this subarea include: 1) former UST 6 (unleaded gasoline) and associated piping and fuel dispensers, and 2) the southern terminus of the former fuel hydrant system. Potential contaminants of concern in this subarea include TPH as gasoline, TPH as diesel, BTEX, MTBE, lead, and SVOCs. Petroleum hydrocarbon results for soil and groundwater samples collected within this subarea are summarized in Tables 9 and 10.

A.1. Former UST 6 (Unleaded Gasoline)

Approximately 1,500 gallons of free product and water (possibly "weathered diesel") were removed from the excavation for UST 6 when the tank was removed (MicroSearch, 1997; Cotton, 2000). Soil samples collected from the excavation immediately above the water table identified elevated levels of diesel-and gasoline-ranged hydrocarbons in the subsurface. Reportedly, UST 6 was an unleaded gasoline tank. The source of the diesel-ranged hydrocarbons in this area is not known. As described above, USTs 4 and 5, which were once mapped to be near UST 6 by previous investigators (Woodward-Clyde, 1996), were subsequently thought by others to have never been present at the site (Krohn, 2000). [redacted] Subsequent analysis in this report is based on our conclusion that both gasoline and mid-range hydrocarbon (i.e., diesel) releases occurred as a result of on-site activities in the vicinity of former UST 6 and/or the UST 6 dispenser.

releases in this area

Q: ... due to damaged ... vehicles fluid leakage?

Conclusion: Product identified in the vicinity of former UST 6 has been described as "minor sheen" (<0.02 foot) with "globules" and appears to be confined to the former UST 6 excavation. Based on review of chromatograms for soil samples collected at the perimeter of the former UST 6 excavation, the hydrocarbons appear to contain both diesel- and gasoline-ranged hydrocarbons. [redacted]*e 15). The storm sewer in the vicinity of former UST 6 (Figure 15) may be acting as preferential flow paths for contaminant migration.*

Source ?

Sewerline is unlikely

Recommendation: *During a non-storm event, a grab water sample should be collected from the storm drainage pipe downgradient of the former UST 6 location. In addition, soil samples should be collected from the trench backfill at the locations shown on Figure 15. All samples should be submitted to a State-certified laboratory for the analysis of TPH as gasoline, TPH as kerosene, TPH as diesel (with silica gel clean-up), TPH as motor oil (with silica gel clean-up), and BTEX. If analysis of these samples indicates that this utility is acting as preferential flow paths for contaminant migration, appropriate measures should be implemented to eliminate the flow paths (i.e., seal the pipe and/or install check dams in the trench backfill).*

? storm drain ... of former UST 6

? what about remediation of this area, FP must be removed ... could be migrating offsite.

A.2. Former UST 6 Dispenser (and Area West of Dispenser)

Product has been identified in the vicinity of the former UST 6 dispenser (the maximum thickness measured in MW-6 was 0.2 foot). Product has been identified in the off-site well MW-16 (the maximum thickness measured in MW-16 was 0.1 foot). The lateral extent of the free product has been defined by a combination of continuous core soil borings and monitoring well data. It is unclear whether the plume between MW-6 and MW-16 is laterally continuous. The hydrocarbon composition in the free product plume appears to be variable, suggesting multiple sources, either on-site or off-site downgradient of MW-6. A[redacted] (Zymax Forensics, 2000). However, the [redacted]) (Zymax Forensics, 2000). The types of contaminants identified in the plume are consistent with known sources (UST 6/UST 6 dispenser) and with the presence of diesel-ranged hydrocarbons in water pumped out of the UST 6 excavation. However, the sources of the heavy-ranged hydrocarbons in off-site well MW-16 are unknown.

? 11-N2

SVOCs were identified in each of the five samples (11E, MW-2, 11N-3, 11S, 11E-1) analyzed for these compounds in the vicinity of the plume. One of the ~~soil~~ samples from the eastern portion of the plume (11S) was found to contain elevated levels of SVOCs relative to the other samples (Table 15).

Based on review of the chromatograms for samples collected between MW-6 and MW-16, where detailed forensic analysis of product samples has been conducted, it appears that mid- and heavy-ranged hydrocarbons are present on-site, upgradient of MW-16. The presence of mid- and heavy-ranged hydrocarbons on- and off-site indicates that either these compounds were present in the fill when it was imported to the site or that subsequent on-site activities have resulted in release(s). Another possibility is co-mingling between off-site and on-site hydrocarbon sources.

Evidence that suggests on-site releases may have contributed to petroleum hydrocarbons in the subsurface off-site includes:

- The free product plume, which contains a mixture of fuel types, appears to be continuous from a known on-site release location (near MW-6) to an off-site location (near MW-16). Gasoline- and some mid-ranged hydrocarbons appear to be related to, at least in part, on-site releases near MW-6 and the MW-6 dispenser;

- Gasoline- and mid-ranged hydrocarbons were found in samples collected from on-site well MW-6 located upgradient of off-site well MW-16.

Evidence that suggests the source(s) of heavy-ranged hydrocarbons is from off-site sources detected at MW-16 includes:

- In locations where heavy-ranged hydrocarbons have been handled at the site or releases have occurred from known on-site sources (USTs 10, 11, 12, 13, and the waste collection pits), related impacts to the subsurface are localized and unlikely to have affected soil or groundwater quality in the vicinity of MW-6 or MW-16;

- Soil samples collected during the installation of monitoring wells MW-12 through MW-17, located along the shoreline, contained mid- to heavy-ranged hydrocarbons from 5.5 to 25 feet below the ground surface (Table 13). The vertical distribution of hydrocarbons in subsurface soil is not indicative of either surface spills or groundwater transport. **In three of the off-site well borings (MW-13, 14, and 15), TPH as motor oil concentrations increased substantially with depth, suggesting an off-site source of mid- to heavy-ranged hydrocarbons in fill.** In boring MW-13, the highest concentration of TPH as motor oil was identified in a soil sample collected approximately 15 feet below the groundwater table.[7]

what about motor oil

- Detailed forensic analysis of product samples collected from on- and off-site wells indicates that heavy-ranged hydrocarbons may have been originally heating oil and/or coal tar oil (Zymax Forensics, 2000). There is no evidence that these fuel types were ever used at the site.

---

[7] Data from soil samples collected from below the water table using a hollow-stem auger rig and split-spoon sampler may not be indicative of soil quality at that location. Retrieving the sampler requires that the samples be pulled through the water column, potentially exposing the soil samples to contaminated groundwater and suspended sediment. Cross-contamination would be of particular concern when retrieving coarse-grained highly permeable samples because water within the column could more readily penetrate the sample during retrieval. Since the increasing concentration of TPH as motor oil with depth was observed in both fine- and coarse-grained sediments, it is assumed that the edge effects are negligible.

Conclusion: The free product plume in the vicinity of MW-6 and MW-16 includes a mixture of fuel types, including gasoline-, mid-, and heavy-ranged hydrocarbons. The gasoline-ranged hydrocarbons are known to have been used on-site in substantial quantities and on-site releases have been documented. Sources of mid- and heavy-ranged hydrocarbons may have been unidentified on-site releases or imported with fill brought onto the site.

Recommendation: The extent of free product should be monitored for stability. At this time, free product has not been identified in MW-17 (located downgradient of the identified area of free product). Future observation of free product in MW-17 may indicate that the free product plume is expanding. Quarterly monitoring activities should include checking MW-17 for the presence of free product. If it appears that the free product plume is expanding, interim measures to control the expansion should be promptly developed and implemented. ~~Interim [illegible] from existing wells, dual-phase extraction from existing wells~~, and/or installation of additional extraction wells or trenches.

Should be done now, at a minimum

B. Building No. 5 Subarea

No sampling done in Bldg 5, along floor drains except 5W

The Building No. 5 subarea is shown on Figure 18. Identified potential sources of subsurface contamination in this subarea include: 1) existing USTs 7, 8, and 9 (gasoline and diesel), 2) former USTs 10 and 11 (lube oil and waste oil), 3) former USTs 12 and 13 (lube oil and waste oil), 4) interior floor drains discharging to the four waste collection pits, and 5) infiltration of contaminated surface water (storm water and/or washdown water) into non-watertight well and manhole cover). Potential contaminants of concern in this subarea include TPH as gasoline, TPH as diesel, TPH as motor oil, BTEX, MTBE, VOCs, SVOCs, and metals. Petroleum hydrocarbon results for all soil and groundwater samples collected within this subarea are tabulated in Tables 8, 9, and 11. Based on review of the data available (Table 14), it does not appear that soils in the vicinity of Building No. 5 have been adversely affected by metals.

B.1. Existing USTs 7, 8, and 9 (Gasoline and Diesel)

Samples have been collected at four locations (MW-5, HP-19, 8W, and 9W) within 30 feet of the existing UST excavation (three of the locations are in a downgradient position). Based on review of these four data points, it appears that a release of fuel hydrocarbons has occurred in this area. No free product was identified at any of the four locations; however, residual concentrations of TPH as gasoline, TPH as diesel, TPH as motor oil, and BTEX have been identified in soil and groundwater samples (Table 12). Review of the chromatograms for soil samples collected from borings 8W and 9W indicates that this area has been impacted by a release of gasoline-ranged hydrocarbons; the TPH as diesel quantified by the laboratory may be partially attributable to gasoline-ranged hydrocarbons. Low concentrations of TPH as motor oil were also reported by the laboratory in some samples.

Downgradient groundwater samples collected from HP-34 and MW-11 (approximately 70 and 130 feet downgradient, respectively) contained low to nondetectable concentrations of fuel hydrocarbons, indicating that impacts associated with operation of USTs 6, 7, 8, and 9 are localized.

Conclusion: The localized area around USTs 7, 8, and 9 has been impacted by moderate concentrations of gasoline-ranged hydrocarbons and low concentrations of heavy-ranged hydrocarbons.

OK *Recommendation: The sanitary sewer trench between Building No. 5 and the existing USTs 7, 8, and 9 (Figure 15) may be acting as a preferential flow path for contaminant migration. If it were determined that this utility trench intersects the groundwater table (by measuring the depth to the pipe invert in clean-outs or other access points), additional evaluation of the system should be conducted by testing the pipes for infiltration and/or sampling of soil and groundwater from the trench backfill. If it were further determined that this utility is acting as a preferential flow path for contaminant migration, appropriate measures should be implemented to eliminate the flow path (i.e., seal the pipe and/or install check dams in the trench backfill).* future

What about the rest of [illegible] GW - in RA.

B.2. Former USTs 10 and 11 (Lube Oil and Waste Oil)

Three soil samples were collected from the excavation for USTs 10 and 11. Only one sample was found to contain petroleum hydrocarbons above laboratory reporting limits at 1.1 mg/kg TPH as diesel (T10S-9.0). No evidence of a release was noted during UST removal activities (Dove Engineering, 1997). The samples were not analyzed for VOCs or metals to evaluate potential releases associated with the waste oil tank. However, since significant concentrations of petroleum hydrocarbons were not identified in the soil samples, it appears unlikely that a significant historic release occurred at this location.

Conclusion: The area around USTs 10 and 11 has not been significantly impacted by a release from the former USTs.

OK *Recommendation: No additional investigation or remedial action is recommended at this location.*

B.3. Former USTs 12 and 13 (Lube Oil and Waste Oil)

Three soil samples were collected from the excavation for USTs 12 and 13. Only one sample was found to contain petroleum hydrocarbons above laboratory reporting limits at 100 mg/kg TPH as motor oil (010597-3). No evidence of a release was noted during UST removal activities (MicroSearch, 1997). The samples were not analyzed for VOCs or metals to evaluate potential releases associated with the waste oil tank. However, since significant concentrations of petroleum hydrocarbons were not identified in the soil samples, it appears unlikely that a significant historic release occurred at this location.

Conclusion: The area around USTs 12 and 13 has not been significantly impacted by a release from the former USTs.

Recommendation: No additional investigation or remedial action is recommended at this location.

One compound [illegible] eg MW-[illegible] 8 metals.

B.4. Interior Floor Drains and Waste Collection Pits

Soil and groundwater samples have been collected at six locations (3W, 4W, 5W, 6W, 7W, 010597-3) in the vicinity of the drains and waste collection pits. No free product was identified at any of the six sampling locations; however residual concentrations of TPH as gasoline, TPH as diesel, TPH as motor oil, BTEX, and VOCs (Table 8) have been identified in soil and groundwater (Table 11). Based on review of these data, releases of petroleum hydrocarbons may have occurred at the waste collection pits near boring locations 3W and 6W and at the sump near boring location 5W; significant levels of contamination were not identified at waste collection pits near 4W or 7W. SVOCs were not identified above laboratory reporting limits in soil samples collected adjacent to the eastern waste collection pits.

Conclusion: The areas in the vicinity of waste collection pits near soil boring locations 3W and 6W have been impacted by releases of gasoline-ranged hydrocarbons and VOCs. Soils near boring location 5W have been affected by low levels of heavy-ranged hydrocarbons. The areas in the vicinity of waste collection pits boring locations 4W and 7W have not been significantly impacted by chemical releases. The drains [illegible]

Recommendation: The next quarterly monitoring event should include analysis of the sample collected from MW-5 for VOCs (EPA 8260) to determine whether these compounds have migrated away from the waste collection pit near boring 6W. ?

? [illegible] VOCs (8260), except acetone [illegible] VOCs in gasoline.

B.5. Infiltration of Contaminated Surface Water

The areas where surface water could preferentially flow to the subsurface include the seven tank backfill wells around the existing USTs, which do not have surface seals, and through the manhole covers over the waste collection pits. It is possible that infiltration of poor quality surface water has contributed to the identified contamination at boring locations 3W, 6W, and 8W; however this contribution has not been confirmed.

Conclusion: Infiltration of surface water to the subsurface could contribute to soil and groundwater contamination in the vicinity of Building No. 5.

ok

Recommendation: The four waste collection pits (pits) and seven tank backfill wells (without surface seals) in the vicinity of USTs 7, 8, and 9 should be properly decommissioned. The pits should be filled with concrete and the tank backfill well casings pulled and the surface sealed with concrete or asphalt, as appropriate.

C. Central Subarea

The central subarea is shown on Figure 19 and petroleum hydrocarbon concentrations for soil and groundwater samples collected in this subarea are summarized in Table 12. Identified potential sources of subsurface contamination in this subarea include: 1) former USTs 1, 2, and 3 (diesel and gasoline), and 2) the central portion of the fuel hydrant system. Potential contaminants of concern in this subarea include TPH as gasoline, TPH as diesel, BTEX, MTBE, lead, and SVOCs.

C.1. Former USTs 1, 2, and 3 (Diesel and Gasoline)

Samples collected from the UST excavation (S-1 through S-6) and from subsequent investigations indicate that gasoline- and mid-ranged (diesel) hydrocarbons have been released in this area. Free product has been identified in TBW-1 (up to 0.18 foot thick). The estimated extent of free product around these former USTs is shown on Figure 19.

Conclusion: Soil and groundwater quality has been impacted by releases of gasoline- and diesel-ranged hydrocarbons.

Recommendation: The extent of free product should be monitored for stability. At this time, free product has not been identified in MW-14 (located downgradient of the identified area of free product). Future observation of free product in MW-14 may indicate that the free product plume is expanding. Quarterly monitoring activities should include checking MW-14 for the presence of free product. If it appears that the free product plume is expanding, interim measures to control the expansion should be promptly developed and implemented. Interim measures may include product skimming from existing wells, dual-phase extraction from existing wells, and/or installation of additional extraction wells or trenches. now.

not wait

C.2. Central Portion of the Fuel Hydrant System

Based on soil sampling conducted after removal of the fuel hydrant system, numerous releases of gasoline- and mid-ranged hydrocarbons occurred along the hydrant lines. Free product has been measured in the vicinity of TBW-5 at a thickness up to 1.45 feet. The extent of the free product has been defined and is shown on Figures 12 and 19. Detailed forensic analysis of the product indicates that the product is composed of mainly gasoline with some mid-ranged hydrocarbons (e.g., jet fuel and kerosene) (Zymax Forensics, 2000).

Releases from the hydrant system may have also occurred upgradient of TBW-5 based on observations made during hydrant line removal. The coarse-grained nature of the near-surface materials in this area may have allowed the product to be transmitted to the water table with only residuals left in the unsaturated zone (Schultz, 2000). Five composite soil samples collected from under the former hydrant line in the upgradient portion of the plume were found to contain TPH as gasoline with concentrations ranging from 760 to 1,500 mg/kg (including one sample that contained 110 mg/kg benzene); these compounds may have contributed to the plume.

A storm sewer line extends in a north-south direction just downgradient of the plume. Based on the line's position relative to the plume, it may be acting as an effective collector trench, thus limiting the downgradient migration of the free product. Free product has been observed in catch basins along this sewer line. Recent investigation of the storm sewer system at a nearby location found the trench backfill material to be a permeable sand, which has been contaminated with separate-phased petroleum hydrocarbons (Subsurface Consultants, 2000).

Conclusion: Soil and groundwater quality has been impacted by releases of gasoline- and diesel-ranged hydrocarbons. The storm drainage system in the central portion of the site is acting as a preferential pathway for contamination migration. It is possible that storm and sanitary sewers in other portions of the site are also acting as preferential flow paths.

Recommendation: The extent of free product should be monitored for stability. At this time, free product has not been identified in RW-1 or MW-13 (wells located downgradient of the identified area of free product). Future observation of free product in RW-1 or MW-13 may indicate that the free product plume is expanding. Quarterly monitoring activities should include checking RW-1 and MW-13 for the presence of free product. If it appears that the free product plume is expanding, interim measures to control the expansion should be promptly developed and implemented. Interim measures may include additional product skimming from existing wells, dual-phase extraction from existing wells, and/or installation of additional extraction wells or trenches.

The storm sewer line in the vicinity west of TBW-5 should be modified so that it no longer acts as a preferential flow path for contaminant migration by sealing or replacing the storm sewer pipe and installing one or more check dams within the trench backfill. Recommended segments of the storm sewer pipe that should be sealed and the proposed locations of check dams are shown on Figure ~~19~~. 15

How do you modify [illegible]

D. Site-Wide Fill Quality

As discussed in the *Site History* section of this report, the fill materials placed on the MSC site were likely heterogeneous in both physical and chemical qualities. The original chemical qualities of the materials are not known. Potential contaminants associated with the fill include petroleum hydrocarbons, SVOCs, and metals.

not being seen in MW's

Heavy-ranged hydrocarbons (quantified as TPH as motor oil) in both on- and off-site soils and groundwater have been identified in numerous locations, including along the entire shoreline area outside the MSC boundary. Since heavy-ranged hydrocarbon releases from on-site activities cannot account for the prevalence of heavy-ranged hydrocarbons across the site, the fill may have contained heavy-ranged hydrocarbons when first imported to the site. The evidence supporting this conclusion is as follows:

- The identified potential on-site sources of heavy-ranged hydrocarbons (USTs 10, 11, 12, 13 and the waste collection pits) appeared to have had limited effect on subsurface soil and/or groundwater quality (as discussed above). Where releases appeared to have occurred from known on-site sources, petroleum impacts to the subsurface are localized and unlikely to have affected site-wide subsurface quality.

- Soil samples collected during the installation of monitoring wells MW-12 through MW-17, located along the shoreline, contained heavy-ranged hydrocarbons from 5.5 to 25 feet below the ground surface (Table 13). The vertical distributions are not indicative of either surface spills or groundwater transport. In three of the well borings (MW-13, 14, and 15), TPH as motor oil concentrations increased substantially with depth. In boring MW-13, the highest concentration of TPH as motor oil was identified in a soil sample collected approximately 15 feet below the groundwater table.

- Detailed forensic analysis of product samples collected from on- and off-site wells indicated that the heavy-ranged hydrocarbons may have been originally heating oil and/or coal tar oil (Zymax Forensics, 2000). There is no evidence that these fuel types were ever used at the site.

Conclusion: The fill may have contained elevated levels of heavy-ranged hydrocarbons when imported to the site.

Recommendation: No additional investigative or remedial action is recommended at this time. unless the [illegible] start detecting the samples at [illegible] [illegible]

E. Site-Wide Dissolved-Phase Contaminants in Groundwater

Petroleum hydrocarbons have been detected in samples collected from every monitored on-site well at the project site (Appendix E).[8] Groundwater quality in the identified free product areas would be expected to be impacted by both separate-phase and dissolved-phase petroleum hydrocarbons. Quantification of the concentrations of dissolved-phase hydrocarbons in groundwater underlying the free product plumes has not been conducted, but would be expected to be at the maximum solubility near the separate-phase hydrocarbon plumes. In general, dissolved-phase petroleum hydrocarbon concentrations in wells not located within free product areas appear to be stable or decreasing (Appendix E).

Gasoline-ranged hydrocarbons have recently been identified at only one location (MW-5) above 0.5 mg/L (the Risk-Based Screening Level for TPH as gasoline). [redacted] that is likely to result in migration to the Bay. Mid- and heavy-ranged hydrocarbons (extractable hydrocarbons) have been identified in the near-shore monitoring wells at levels of concern.

Groundwater samples previously collected from the site and analyzed for extractable petroleum hydrocarbons may have contained sediment and/or free-phased petroleum emulsions. This would have prevented the accurate quantification of TPH concentrations actually dissolved in the groundwater. Since petroleum hydrocarbons readily adsorb on soil particles, analysis of groundwater samples with sediment or emulsions would result in the quantification of petroleum hydrocarbons adsorbed on the soil particles in the separate-phased emulsions and dissolved in the groundwater. Examination of gas chromatograms from TPH analysis of groundwater samples collected at the site suggests that sediment and/or emulsions were likely present in at least some of the samples. [redacted] Some of the chromatograms from groundwater samples collected at the site show broad "humps," indicating that sediment and/or emulsions may have been entrained in the water phase.

not true

The highest concentrations of extractable petroleum hydrocarbons identified in monitoring wells associated with this site investigation have been reported for samples collected from the near-shore wells (MW-9, MW-12, MW-13, MW-14, MW-15, and MW-17) (Figure 19). In general, groundwater samples collected from the wells located on-site and at greater distances from the shore (MW-1, MW-2, MW-5, MW-7 and MW-11) contain low to nondetectable concentrations of extractable petroleum hydrocarbons.

---

[8] Two of the wells (MW-7 and MW-8) have been reported to contain petroleum hydrocarbons intermittently and in low concentrations.

It is unlikely that the elevated levels of extractable petroleum hydrocarbons in near-shore monitoring wells originated from on-site releases, for the following reasons:

- There are no identified on-site sources that could reasonably account for the observed off-site contaminant distribution;

- In general, samples from near-shore wells consistently contain elevated levels of extractable petroleum hydrocarbons. Heavy petroleum hydrocarbons (i.e., motor oil) were not uniformly conveyed in pipelines throughout the site (as diesel was in the fuel hydrant system). It is possible that an unidentified on-site source (e.g., a spill or a leak from a UST) might ~~be~~ or surface spills reflected in one or two perimeter wells. However, six of the seven near-shore perimeter wells indicate elevated levels of extractable petroleum hydrocarbons;

- The vertical distribution of extractable petroleum hydrocarbons in soil samples collected from the near-shore wells indicates mid- and heavy-ranged petroleum hydrocarbons were placed with the imported fill (as described in IX.D of this report).

Conclusion: Gasoline- and mid-ranged hydrocarbons in the groundwater can be attributable to on-site releases. However, mid-ranged hydrocarbons also appear to be attributable to the fill, particularly along the shoreline. Heavy-ranged hydrocarbons identified in the groundwater along the shoreline do not appear to be associated with historic on-site releases. The source(s) of the mid- and heavy-ranged hydrocarbons along the shoreline is unknown.

The RWQCB recently published a document with risk-based screening levels (RBSLs) that may be applicable to the site. Alternatively, ***the City may choose to perform a site-specific ecological risk assessment for the site. Regardless, groundwater quality data used for screening against RBSLs should represent dissolved-phase concentrations.*** *The next groundwater monitoring effort should endeavor to collect representative dissolve-phased samples (a methodology is recommended below).* OK

Since the source of mid- and heavy-ranged hydrocarbons in the groundwater along the shoreline does not appear to be associated with on-site historical releases, the City may request Alameda County's consent to discontinue monitoring of the shoreline wells with the exception of MW-16 and MW-17. These latter two wells are downgradient of the MW-6 area where there are known on-site releases, and therefore should remain in the MSC monitoring program. If monitoring of some of the shoreline wells is discontinued, alternative monitoring locations (either new or existing wells) should be established so that a monitoring network capable of providing data on groundwater quality migrating off-site is maintained. No!

Recommendations: All future groundwater monitoring activities should be conducted to minimize the entrainment of sediment and separate-phased emulsions in the groundwater samples. The turbidity of all groundwater samples collected should be quantified. As part of the next sampling event, any samples with turbidity greater than 10 NTUs should be analyzed for extractable TPH with and without filtering through a glass-membrane filter (in addition to silica gel cleanup). Redevelopment of wells from which groundwater samples have turbidities greater than 10 NTUs should be considered. NO,

Rather all samples b/e filtered & silica gel treated prior to analysis.

X. REFERENCES

BASELINE Environmental Consulting, 1996, Groundwater Monitoring Event at City of Oakland Municipal Service Center, correspondence with Woodward-Clyde, November.

Cambria, 1998, Historical Data Summary, Municipal Service Center, 7101 Edgewater Drive, Oakland, California, 2 December.

Cambria, 1999, Fuel Pipeline Removal Sampling Report, City of Oakland Municipal Services Center, 7101 Edgewater Drive, Oakland, California, 23 July.

Cambria, 1999a, Soil Boring Analytical Report - August 1998, 13 September.

Cambria, 2000, Third Quarter 2000 Monitoring Report, 26 September.

Cambria, 2000a, Well Installation and Destruction Report, City of Oakland Municipal Services Center, 7101 Edgewater Drive, Oakland, California, 1 March.

Cotton, Joseph, 2000, personal communication with Bruce Abelli-Amen of BASELINE, November.

Dove Engineering, 1997, The Removal of Two Underground Storage Tanks at the City of Oakland Municipal Service Center, 14 October.

Elias, David, 2000, Senior Geologist, Cambria, personal communication with Bruce Abelli-Amen of BASELINE, May.

Goals Project, 1999, Baylands Ecosystem Habitat Goals, A report of habitat recommendations prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project, U.S. EPA, SFRWQCB.

Krohn, Jeff, 2000, City of Oakland, personal communication with Bruce Abelli-Amen of BASELINE, June to September.

MicroSearch, 1997, Underground Storage Tank Closure Report, Municipal Service Center, 7101 Edgewater Drive, Oakland, California, 29 August.

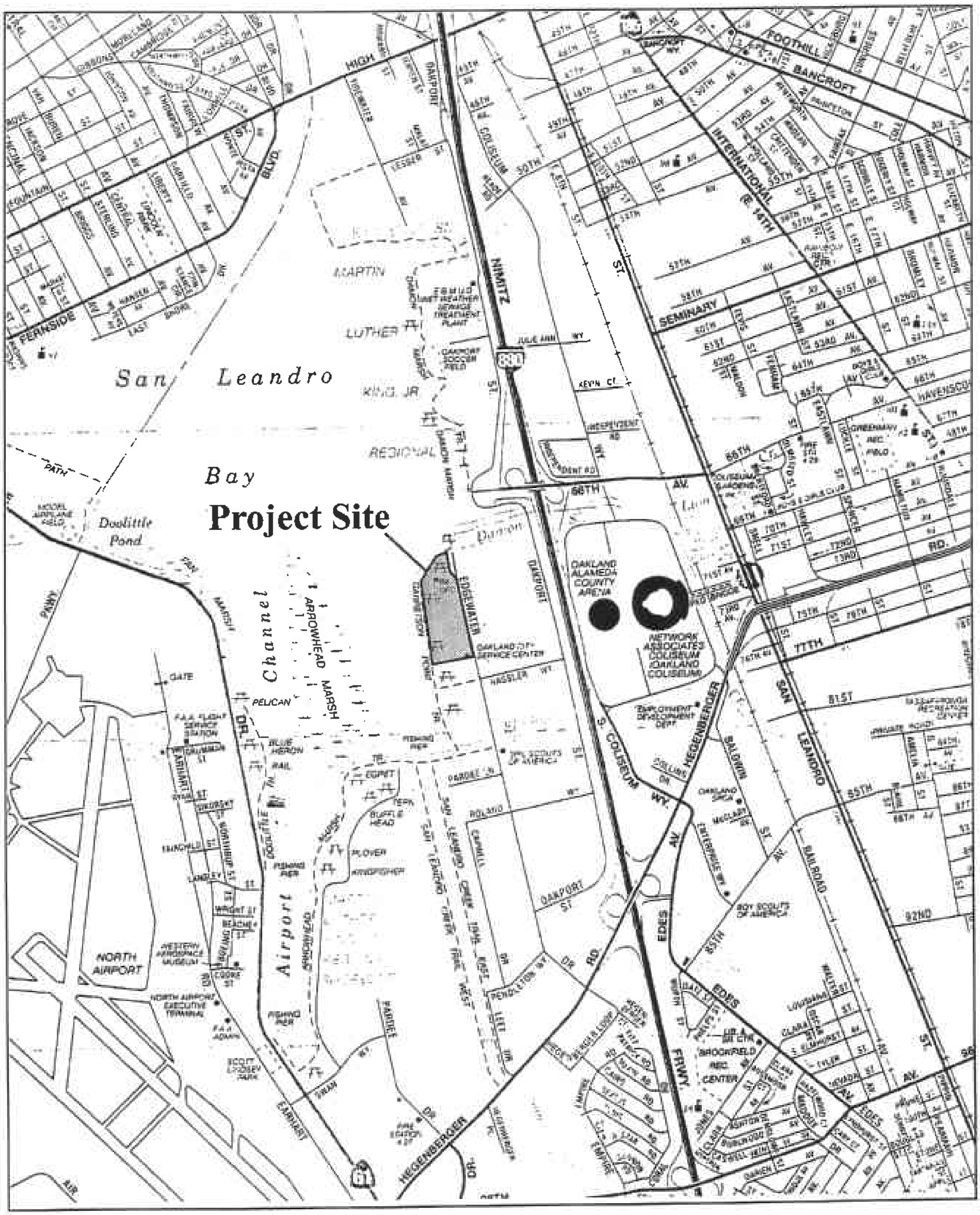
Schultz, Bob, 2000, Geologist, Cambria Environmental Technology, personal communication with Bruce Abelli-Amen of BASELINE, August to September.

Subsurface Consultants, 2000, Soil and Groundwater Investigation, Storm Drain Rehabilitation Project, Municipal Services Center, Oakland, California, 24 August.

Towers, Gary, 2000, Equipment Supervisor, City of Oakland Metropolitan Service Center, personal communication with Bruce Abelli-Amen of BASELINE, August to September.

REGIONAL LOCATION

Figure 1



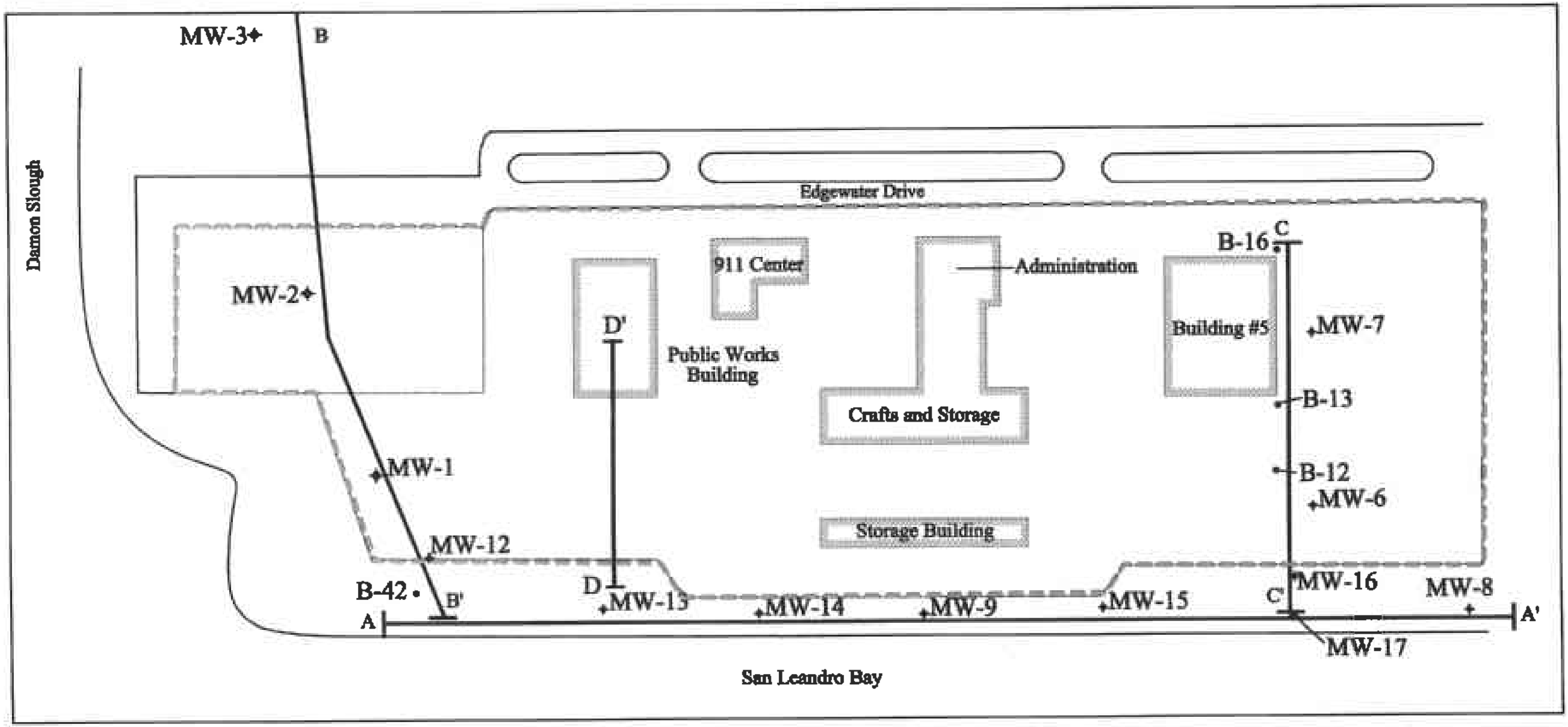
Municipal Service Center
7101 Edgewater Drive
Oakland, California

0 — 2000 Feet

D:\Graphics\98379-17\Regional Location.cdr 10\17\00

SITE PLAN

Figure 2



Note: Only those borings and monitoring wells used to construct the cross-sections are shown on this figure.
Cross-section B-B' extends off this figure to the east. MW-4, which is used in the cross-section, is located approximately 250 feet east of MW-3.

Legend

A ——— A' Geologic Cross-section Location (shown on Figures 9 through 11)

- - - - - - Site Boundary

Municipal Service Center
7101 Edgewater Drive
Oakland, California

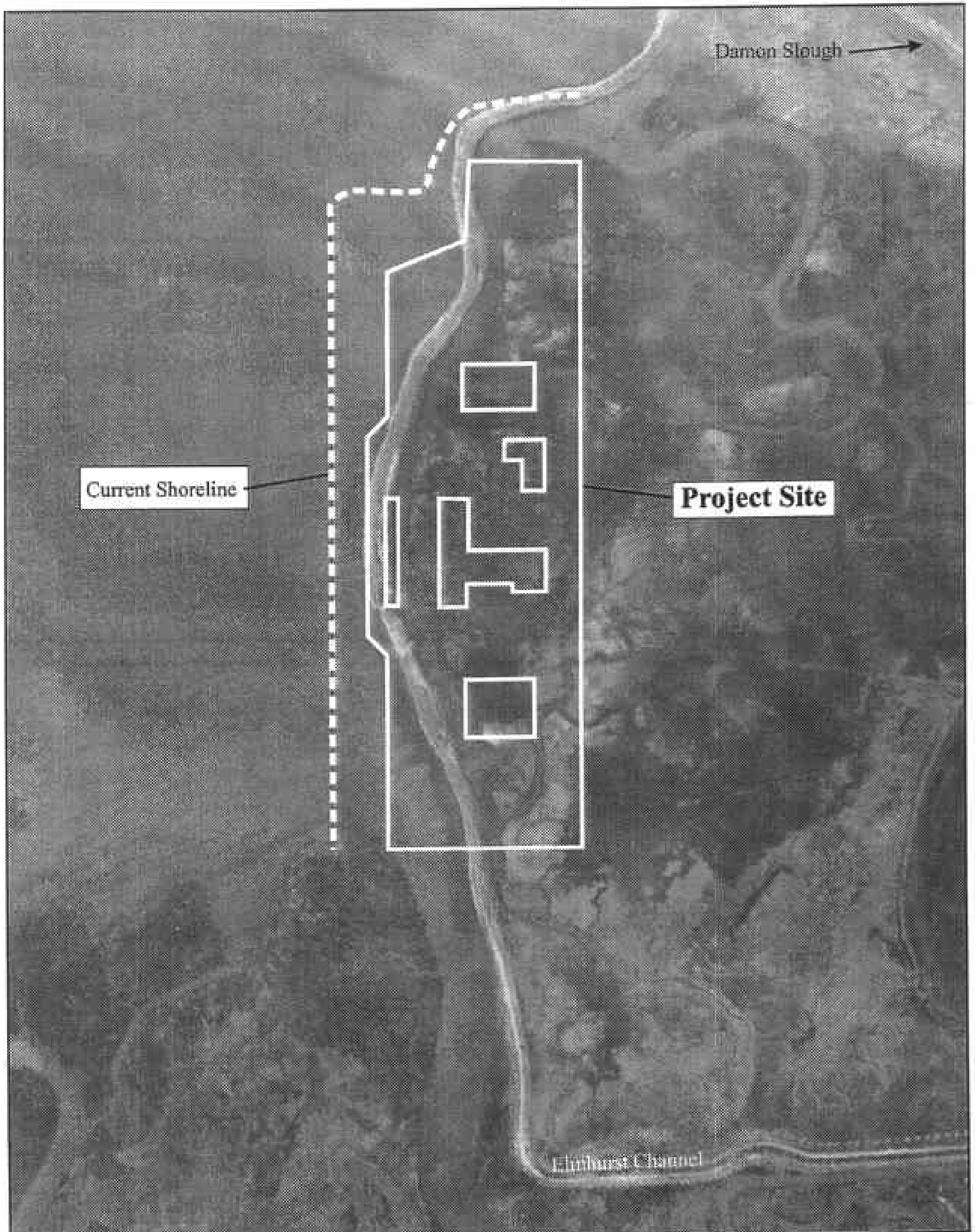
0 250 Feet

BASELINE

D:\Graphics\98383-17\Site Plan A.Dwg 12/11/00

AERIAL PHOTOGRAPH - 1947

Figure 3



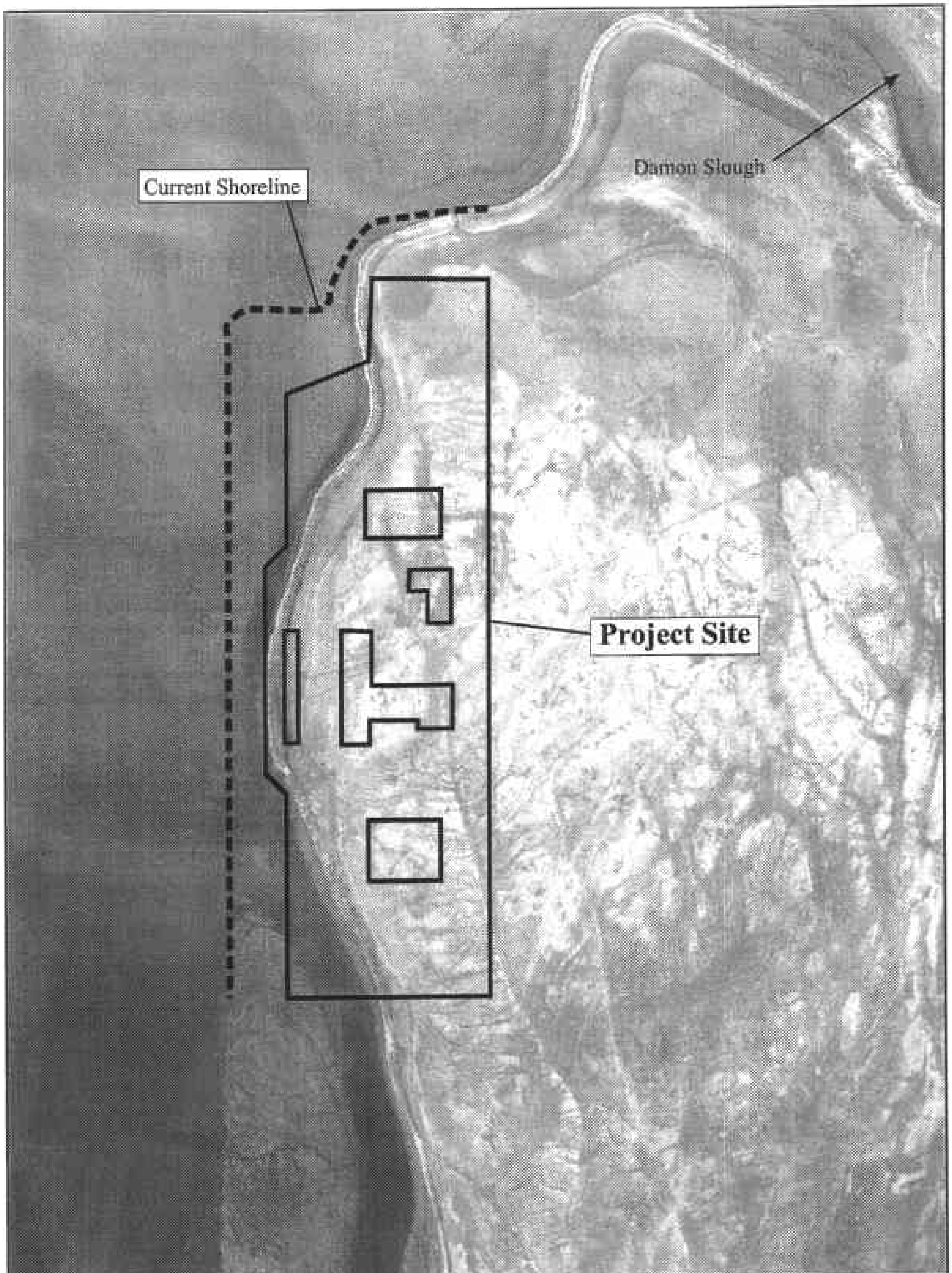
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\Aerial 1947 cdr 10/9/00

AERIAL PHOTOGRAPH - 1950

Figure 4



Municipal Service Center
7101 Edgewater Drive
Oakland, California

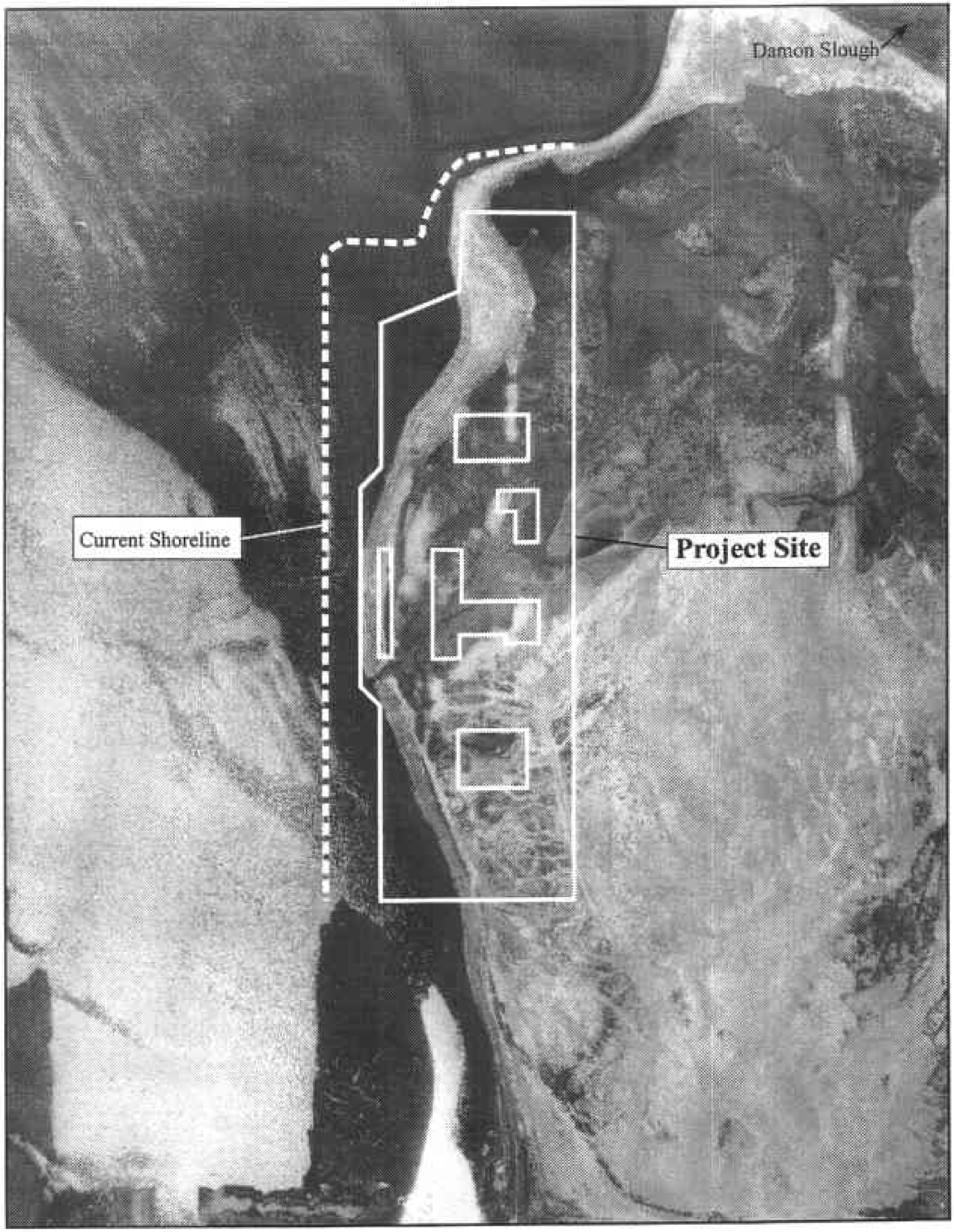
0 400 Feet

BASELINE

D:\Graphics\98383-17\Aerial 1950 cdr 10/24/00

AERIAL PHOTOGRAPH - 1959

Figure 5

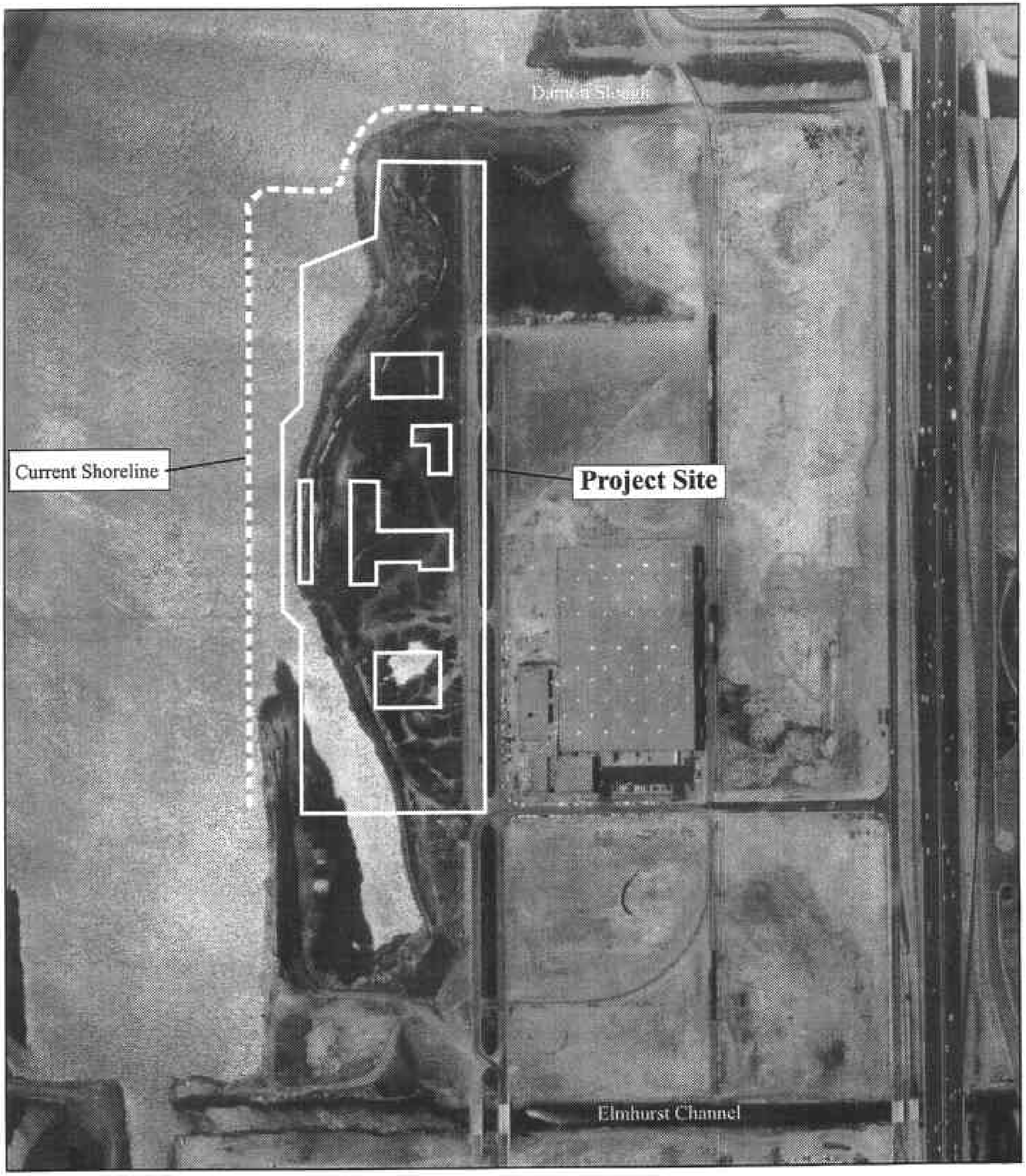


Municipal Service Center
7101 Edgewater Drive
Oakland, California

D:\Graphics\98383-17\Aerial 1959 cdr 10/24/00

AERIAL PHOTOGRAPH - 1968

Figure 6



Municipal Service Center
7101 Edgewater Drive
Oakland, California

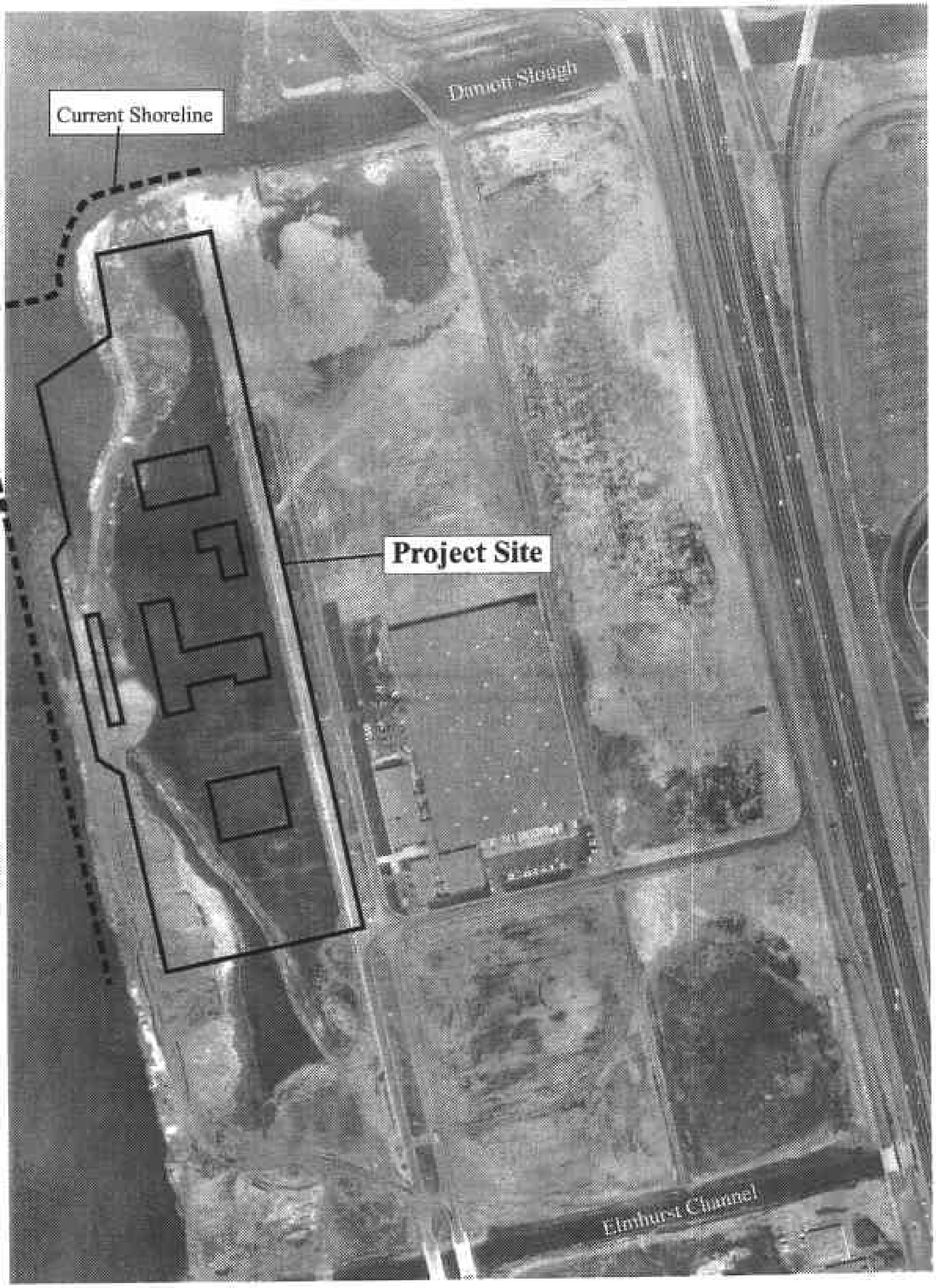
0 400 Feet

BASELINE

D:\Graphics\98383-17\Aerial 1968 cdr 10/24/00

AERIAL PHOTOGRAPH - 1969

Figure 7



Municipal Service Center
7101 Edgewater Drive
Oakland, California

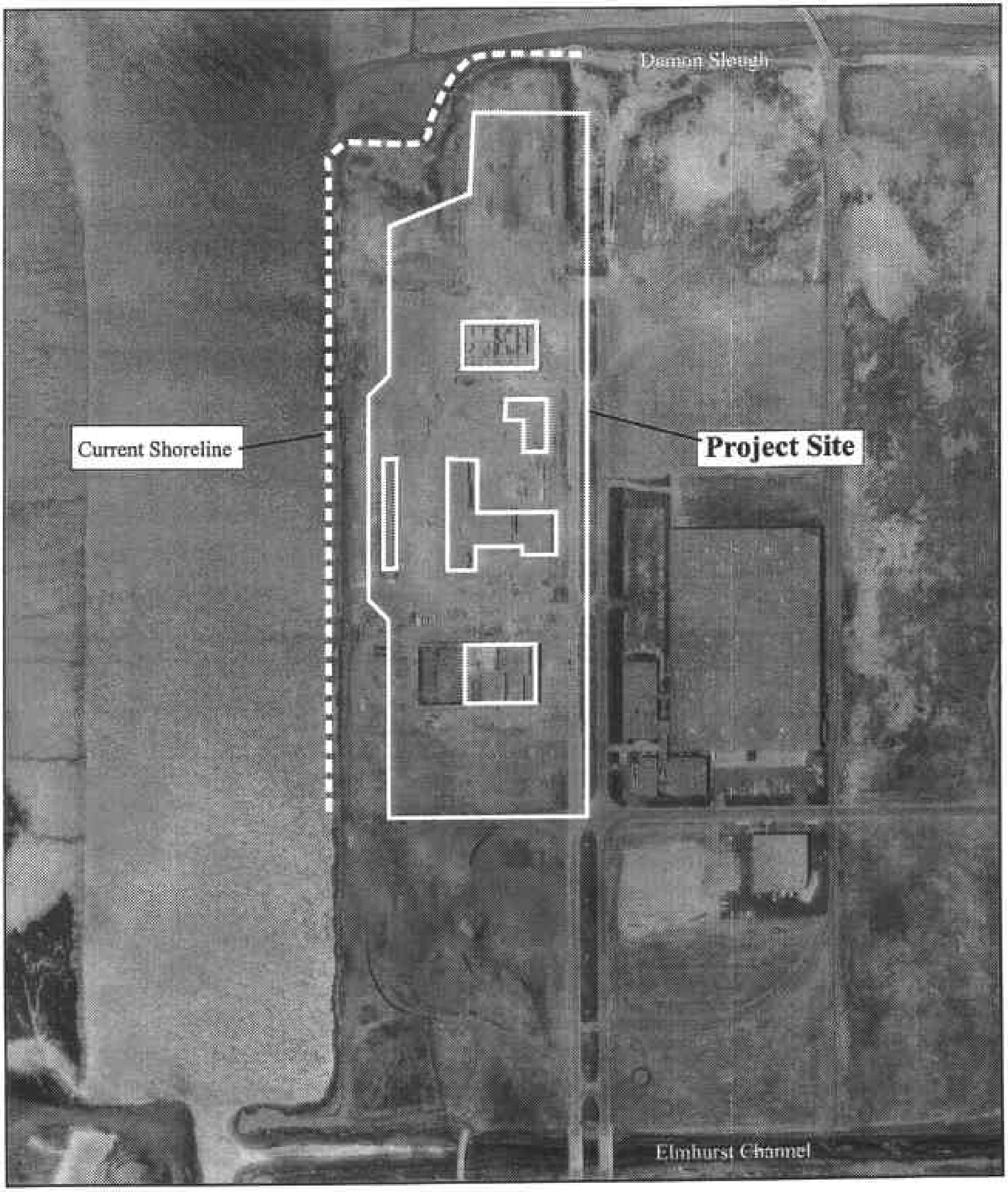
0 400 Feet

BASELINE

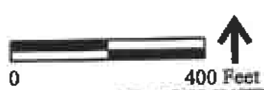
D:\Graphics\98383-17\Aerial 1969 cdr 10/24/00

AERIAL PHOTOGRAPH - 1971

Figure 8



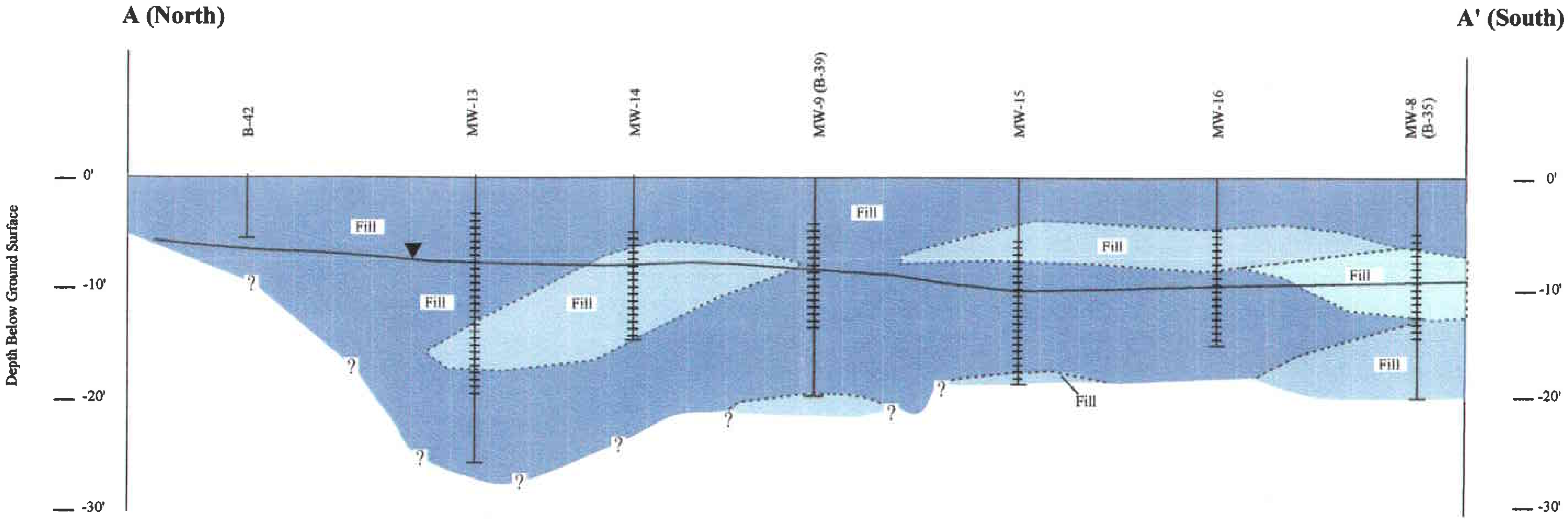
Municipal Service Center
7101 Edgewater Drive
Oakland, California



BASELINE

D:\Graphics\98383-17\Aerial 1971 cdr 10/24/00

GEOLOGIC CROSS-SECTION A-A' **Figure 9**



Notes: Ground surface assumed flat.

Depths to groundwater represent average levels measured on various dates.

Cross-Section location shown on Figure 2

Sources: Cambria, 2000, and Uribe, 1997.

Soil Type	Relative Permeability
ML, GC	Low
GW-GC, SM	Intermediate
GW, GM, SP	High

Vertical Scale 0 10 Feet

Horizontal Scale 0 150 Feet

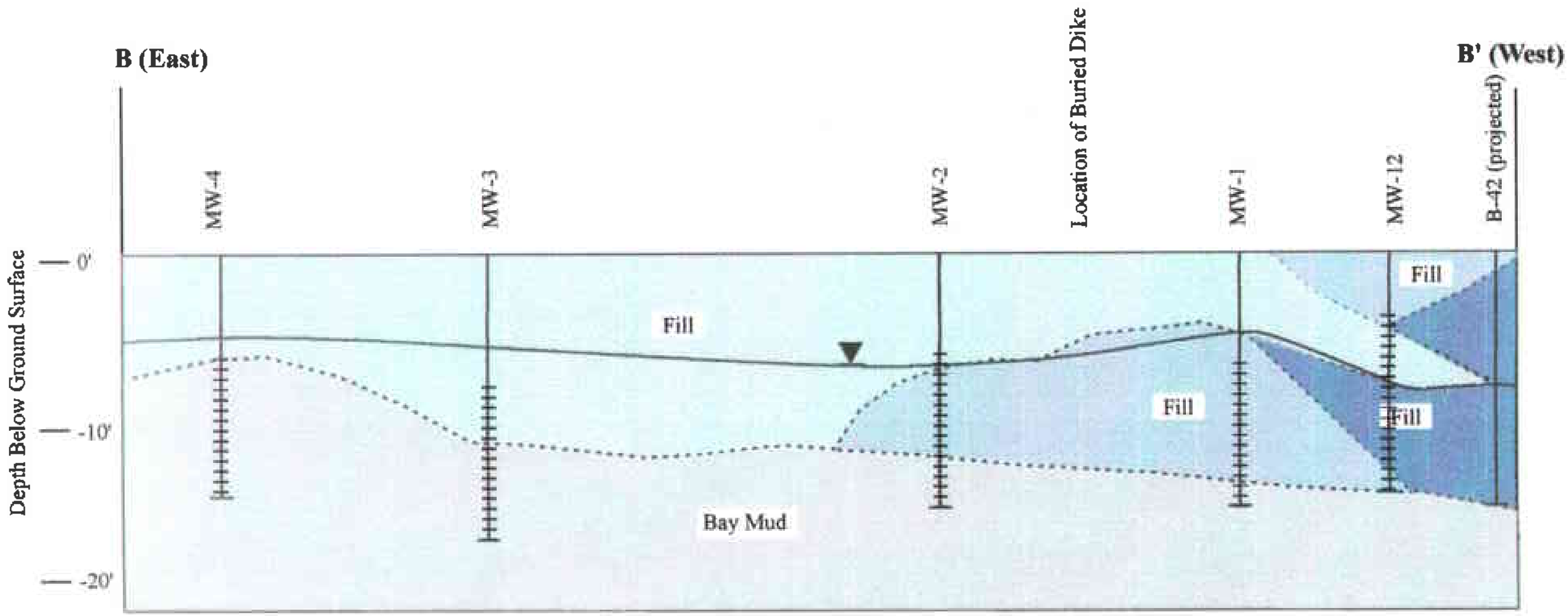
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\Cross Section A'-A Cdr 10/24/00

GEOLOGIC CROSS-SECTION B-B'

Figure 10



Notes: Ground surface assumed flat.

Depths to groundwater represent average levels measured on various dates.

Cross-Section location shown on Figure 2

Sources: Woodward Clyde, 1989; Uribe, 1997; Cambria, 2000.

Soil Type	Relative Permeability
Bay Mud	Very Low
CL-SM, CL, ML	Low
SC, GC	Intermediate
SP	High

Vertical Scale
0 10 Feet

Horizontal Scale
0 150 Feet

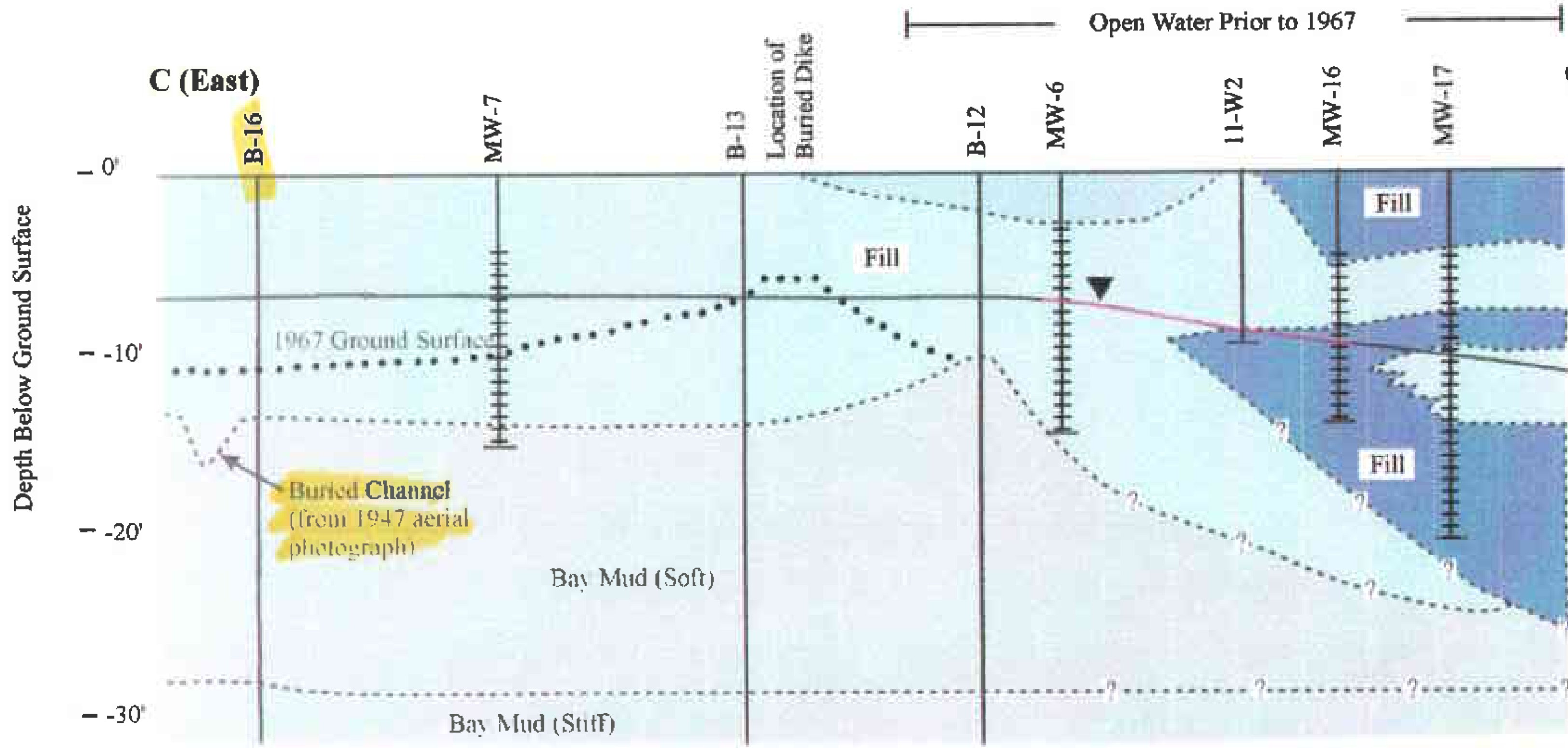
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\Cross-Section B'-B Cdr 12/14/00

GEOLOGIC CROSS-SECTION C-C'

Figure 11



Soil Type		Relative Permeability
Bay Mud		Very Low
GC-CL, CL-CH, CL, ML		Low
SM-SC, SM		Intermediate
SP		High

Free product identified in this area (current thickness ranging from 0.01 to 0.2 feet)

Vertical Scale 0 10 Feet

Horizontal Scale 0 75 Feet

Notes: Ground surface assumed flat.

Depths to groundwater represent average levels measured on various dates.

Cross-Section location shown on Figure 9.

Sources: Woodward Clyde, 1988, 1992; Cambria, 2000; 1967 Ground Surface Elevation: Woodward Clyde, 1996, Figure 9.

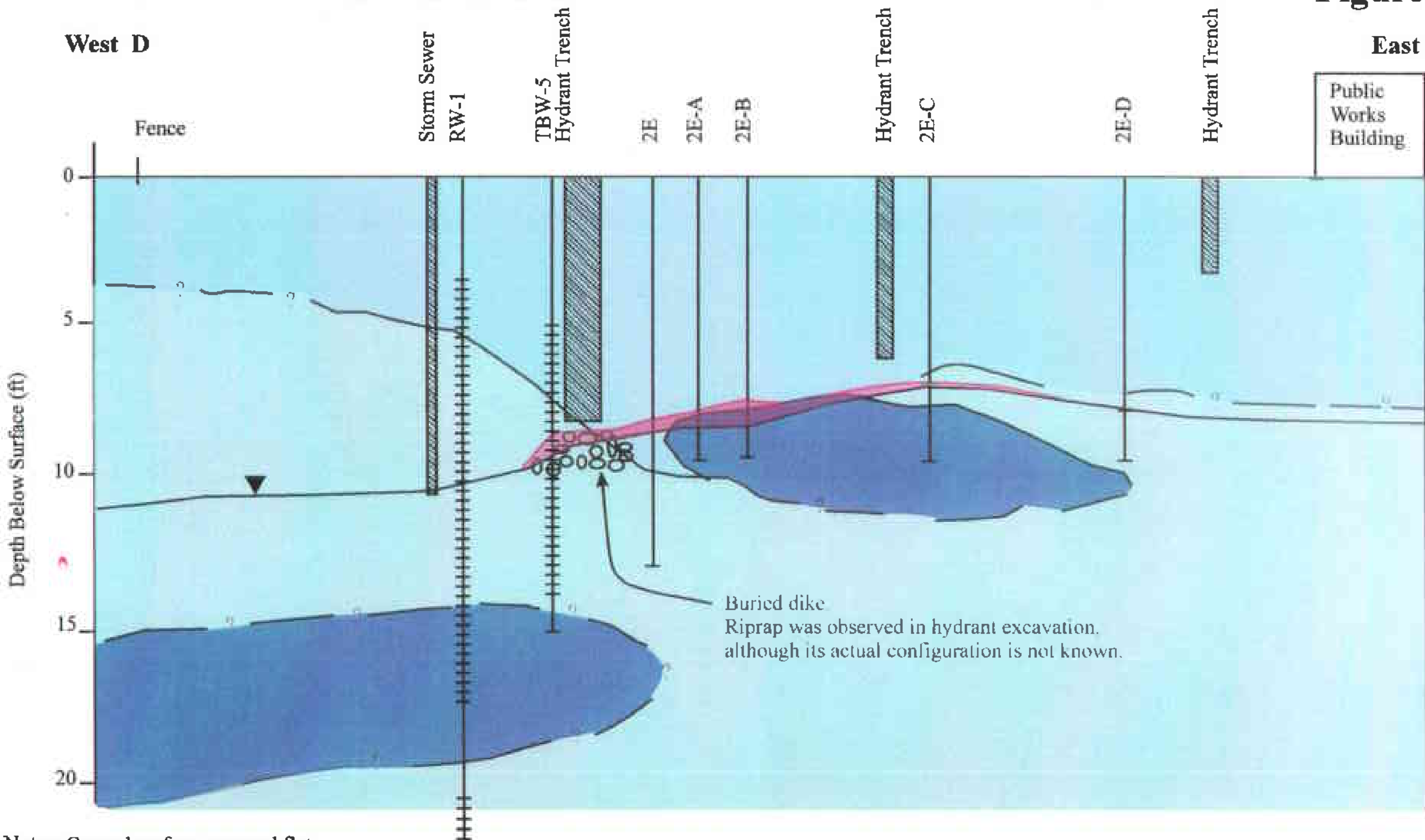
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\Cross-Section CC (revised) Cdr 11/20/00

GEOLOGIC CROSS-SECTION D-D'

Figure 12



Notes: Ground surface assumed flat.

Depths to groundwater represent average levels measured on various dates.

Cross-Section location shown on Figure 2.

Sources: Cambria, 1999; Cambria, 2000a.

Soil Type		Relative Permeability
CL-SM, CL, ML		Low
GC,GC-CH, SM, SC		Intermediate
SW, SP		High

Free product identified in this area (current thickness ranging from 0.01 to 0.2 feet)

Vertical Scale
0 5 Feet

Horizontal Scale
0 30 Feet

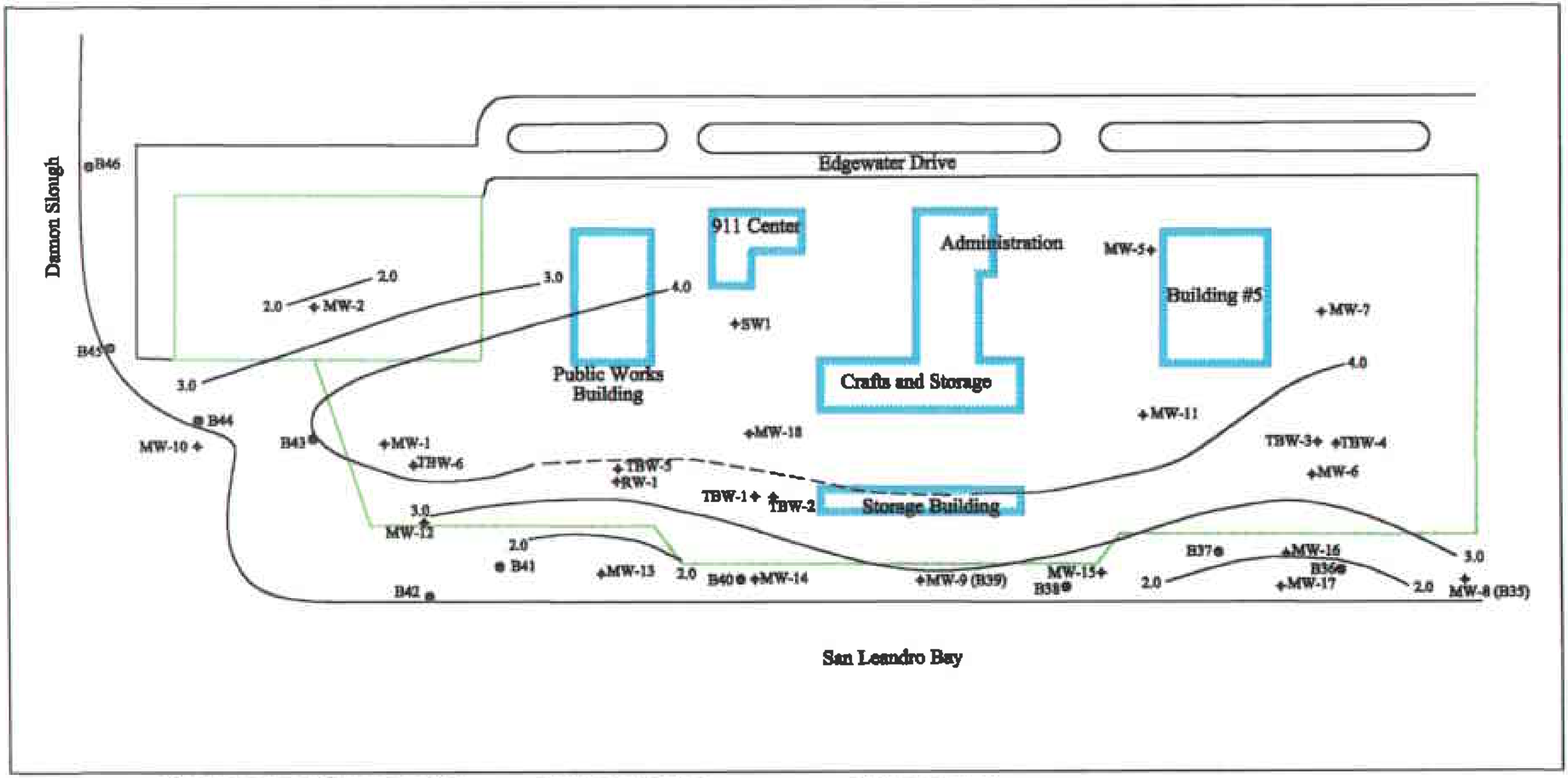
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\Cross-Section D-D' Cdr 12/17/00

GROUNDWATER CONTOUR MAP
August 2000

Figure 13



Note: Boring B35 through B46 were used in a tidal study conducted in 1997. See Hydrogeology Section of this report for addition discussion.

Legend

2.0 ——— 2.0 Groundwater Elevation Contour (feet msl)

⌖ Permnant Well Location

• Soil Boring/Temporary Well Location

0 250 Feet

BASELINE

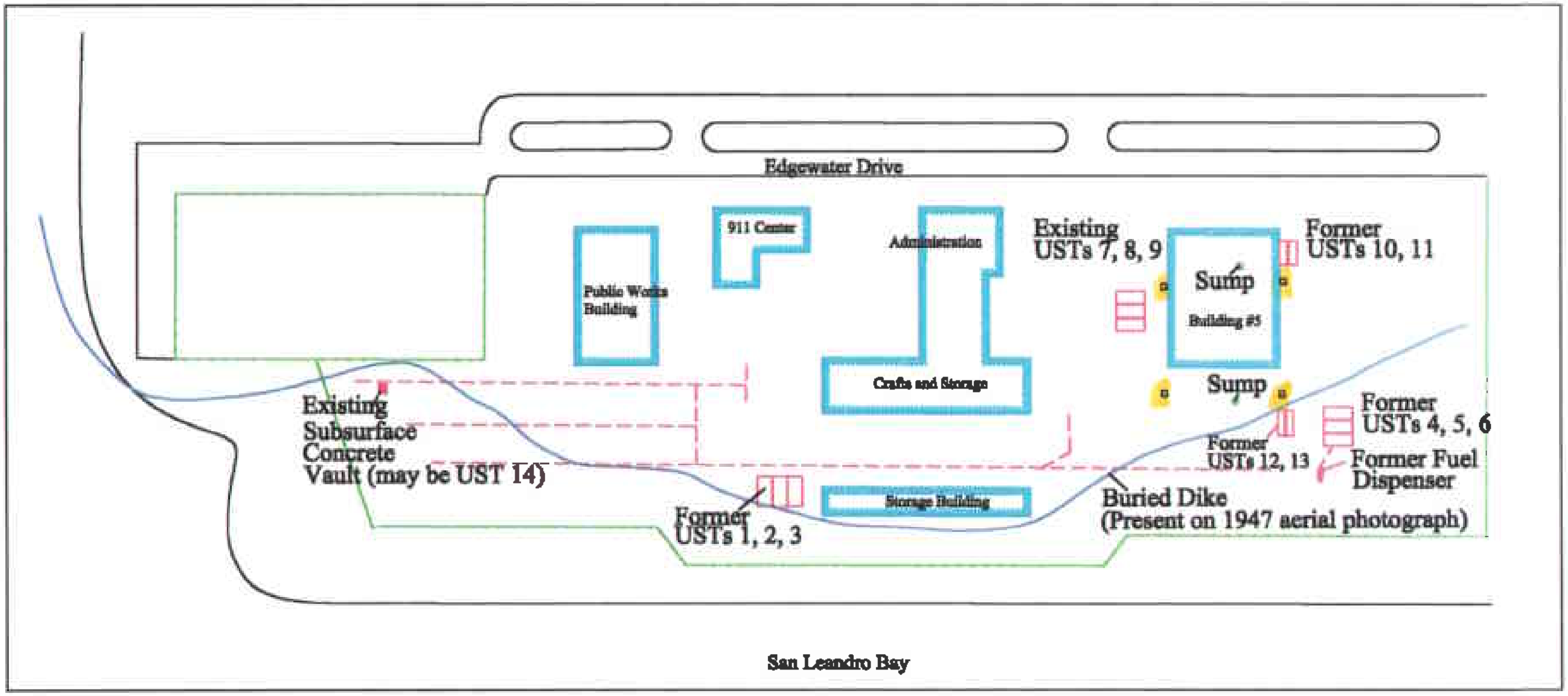
Municipal Service Center
7101 Edgewater Drive
Oakland, California

Source: Cambria, 2000

D:\Graphics\98383-17\Groundwater Contour Map.Dwg 12/6/00

POTENTIAL CONTAMINANT SOURCES

Figure 14



Legend

Former Fuel Hydrant Line

Waste Collection Pits

0 250 Feet

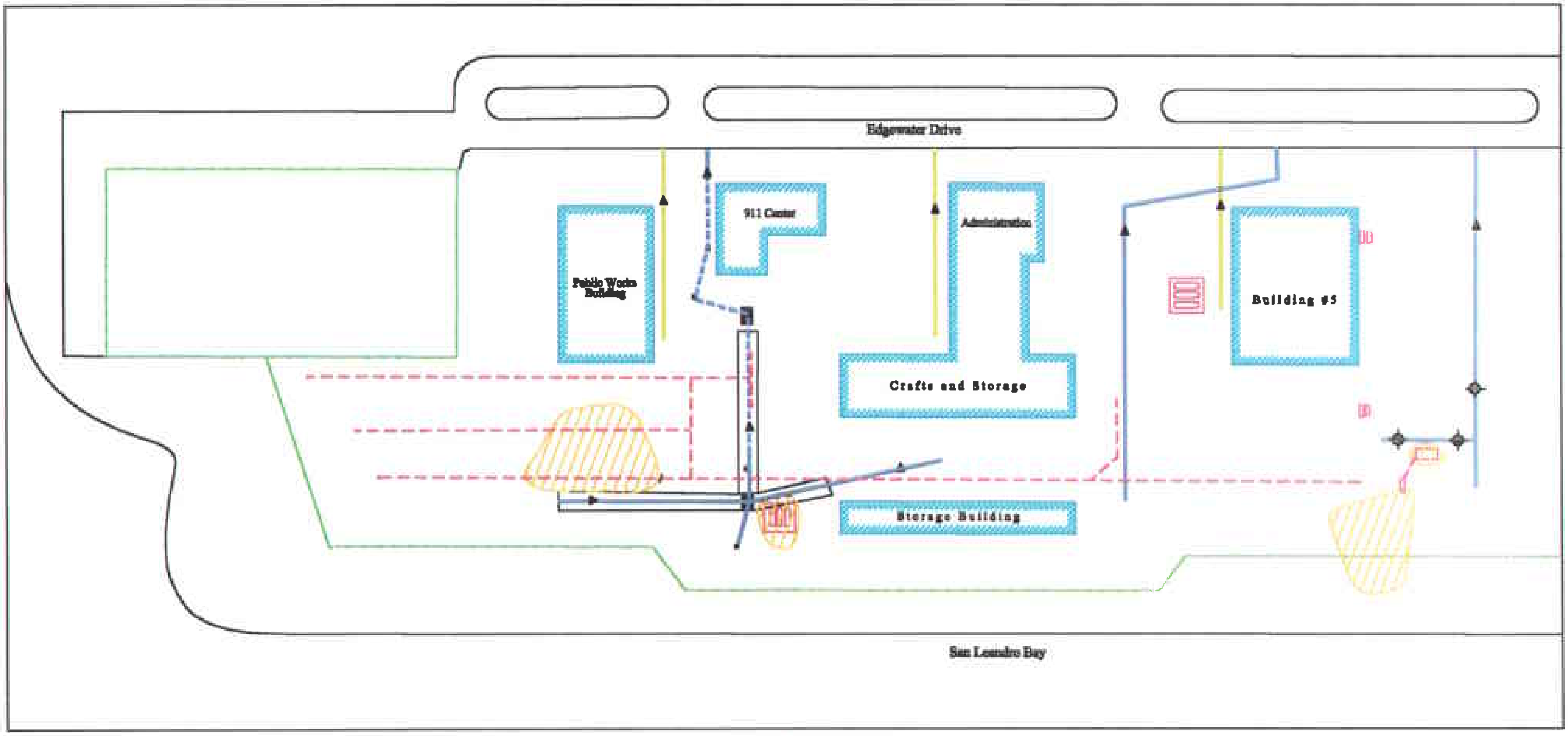
BASELINE

Municipal Service Center
7101 Edgewater Drive
Oakland, California

D:\Graphics\98383-17\Potential Contaminant Sources.Dwg 12/6/00

STORM AND SANITARY SEWER SYSTEM

Figure 15



Legend

- Sanitary Sewer
- Storm Sewer
- Former Fuel Hydrant Line
- Proposed Trench Backfill Sampling Location
- Portion of Storm Sewer Investigation by Subsurface Consultants (2000)
- Recommended Segment of Storm Sewer Line to be Sealed
- Recommended Location of Check Dam
- Areas of Free Product on Groundwater
- Underground Storage Tanks

0 200 Feet

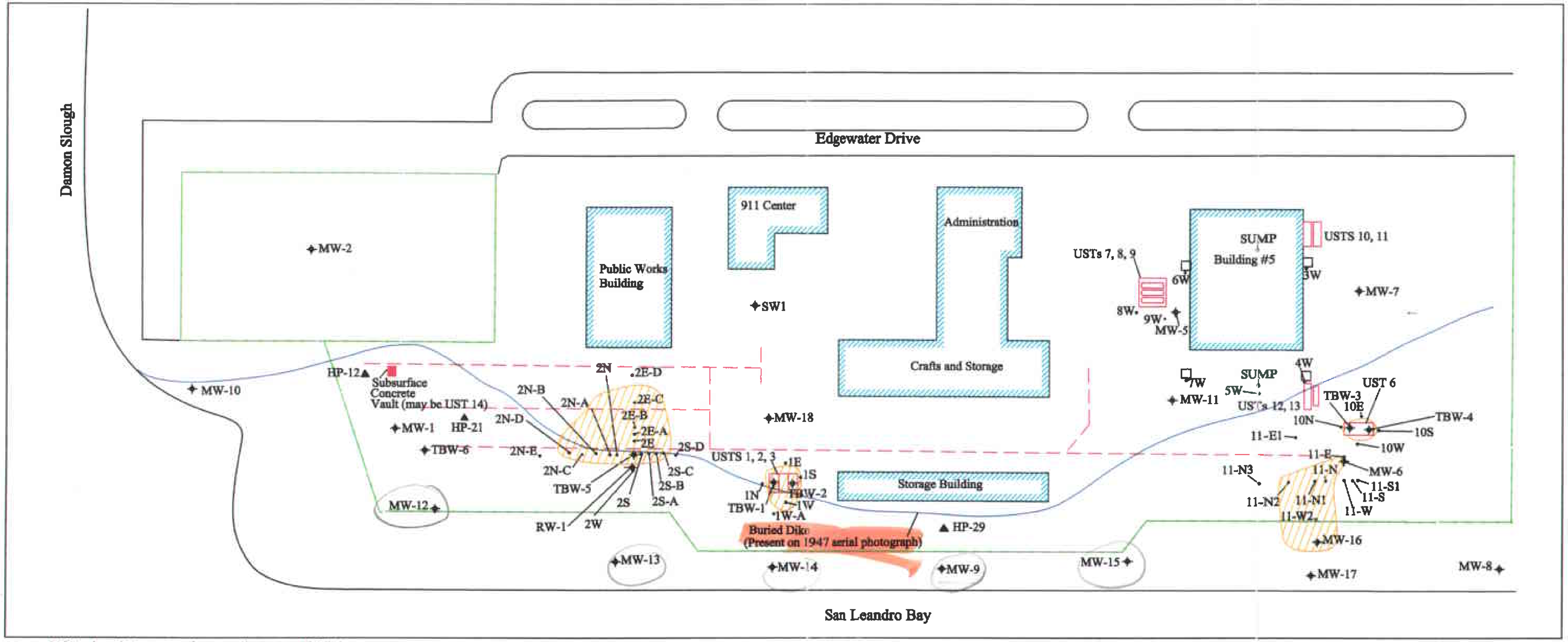
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\SSSS.Dwg 12/6/00

JULY 2000 BORING LOCATIONS AND EXTENT OF FREE PRODUCT

Figure 16



Note: USTs 4 and 5 are not shown adjacent to UST 6 (as they are shown on Figure 13) because it is unclear whether they ever existed at the site.

Legend

- • Boring Location (Installed in July 2000 by BASELINE)
- ⊕ Groundwater Well Location (Installed by others)
- – – – Former Fuel Hydrant Line
- Area of Free Product on Groundwater
- □ Waste Collection Pit
- Underground Storage Tanks
- ▲ Temporary Well Point

0 150 Feet

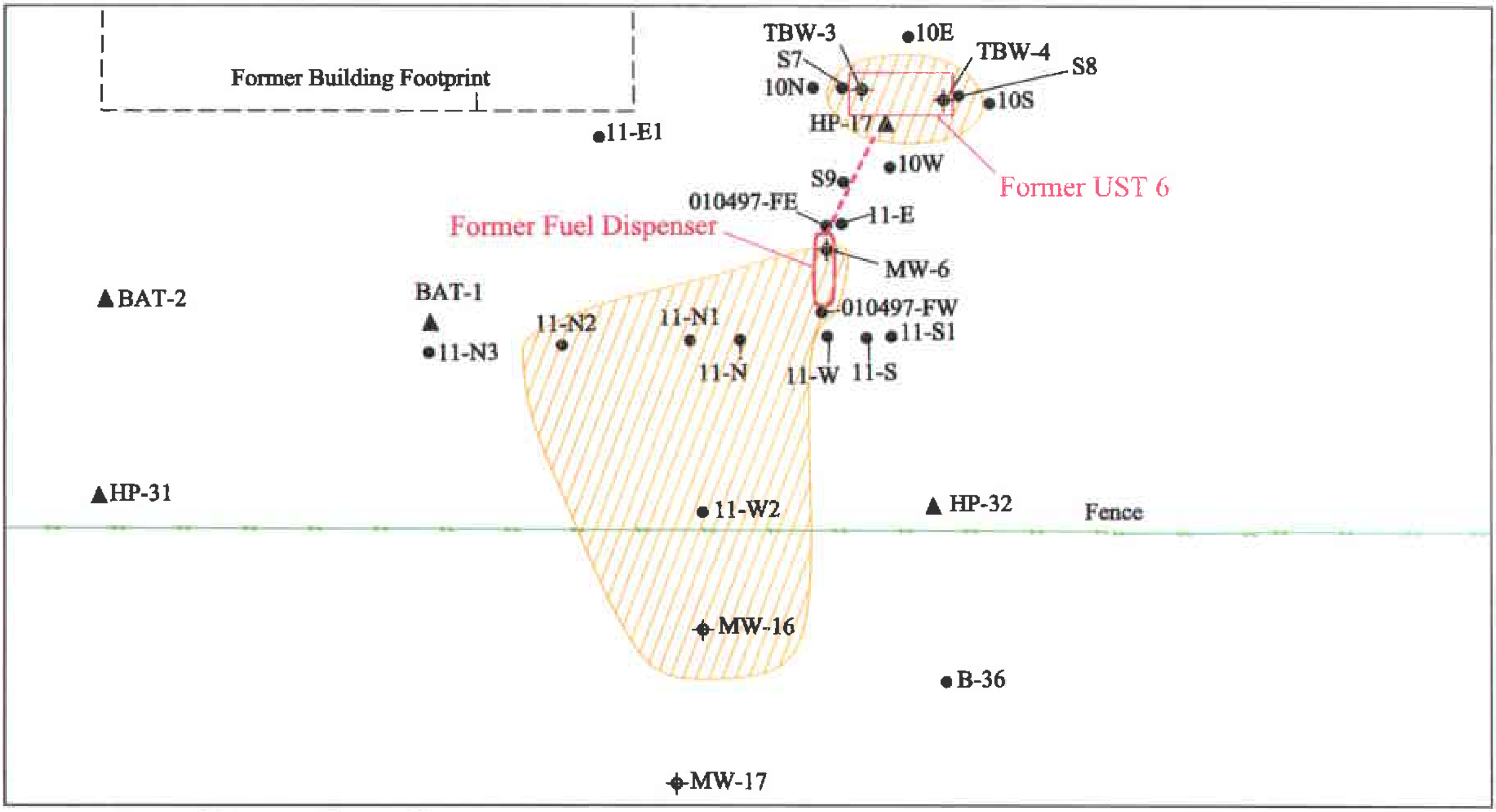
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\July 2000.Dwg 12/6/00

SOUTHWEST SUBAREA

Figure 17



Note: USTs 4 and 5 are not shown adjacent to UST 6 (as they are shown on Figure 13) because it is unclear whether they ever existed at the site.

Legend

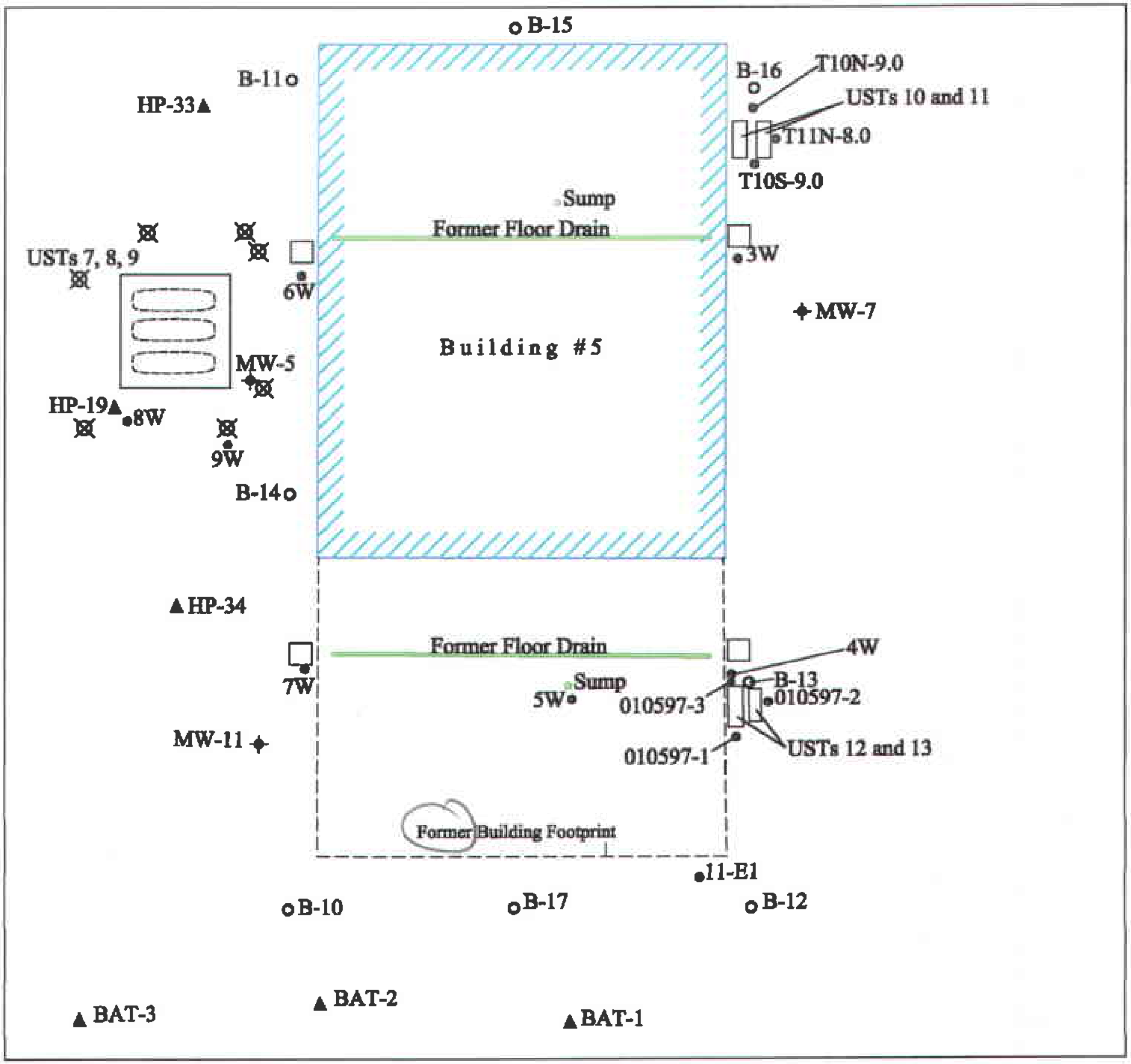
- Soil Sample Location
- Temporary Well Point
- Permanent Well
- Area of Free Product on Groundwater

0 50 Feet

BASELINE

Municipal Service Center
7101 Edgewater Drive
Oakland, California

D:\Graphics\98383-17\SSD.Dwg 12/6/00



Legend

- Soil Sample Location
- Temporary Well Point
- Geotechnical Boring (no analytical data available)
- Permanent Well
- Tank Backfill Well (no surface seal)
- Waste Collection Pit

0 60 Feet

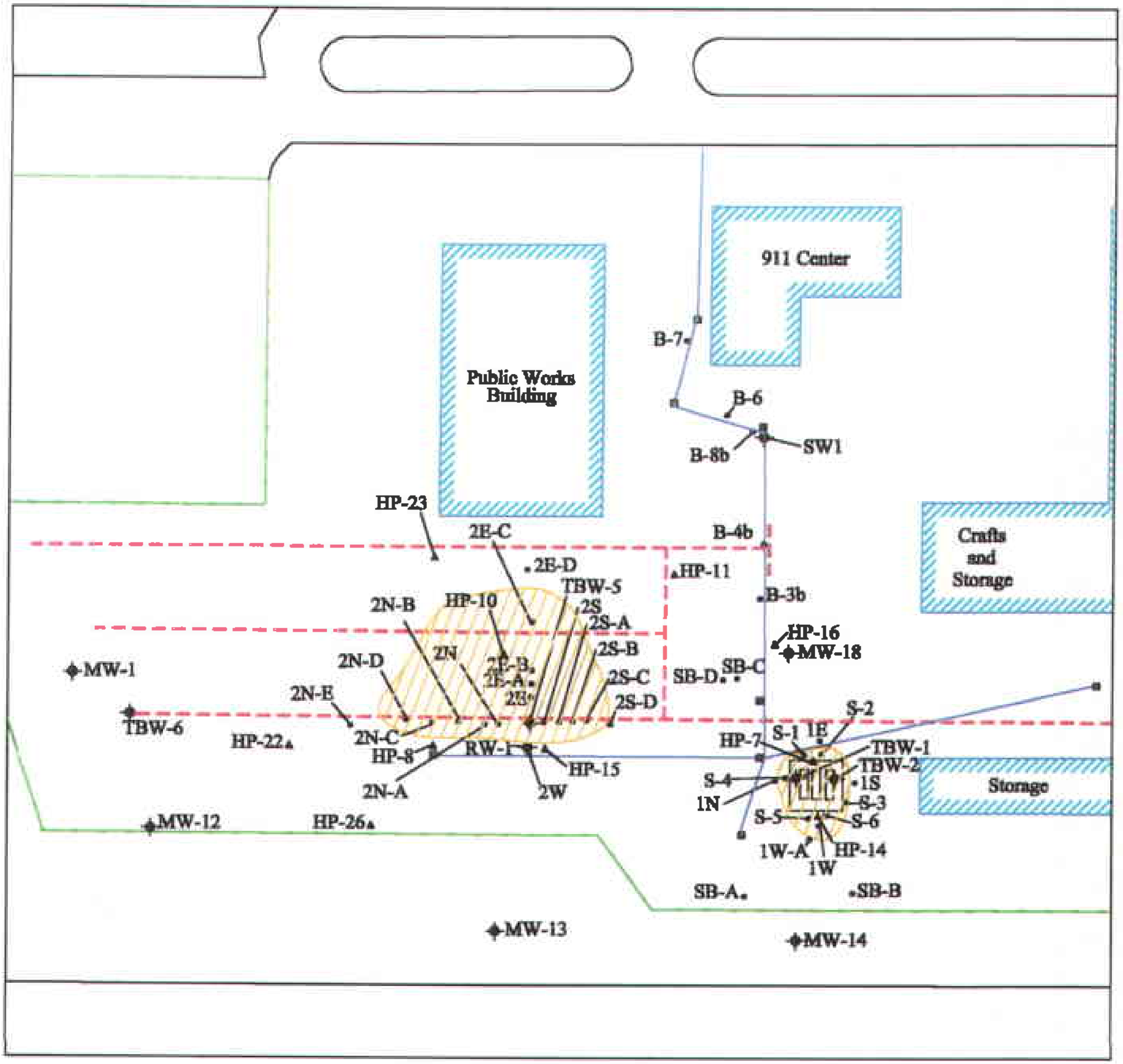
Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

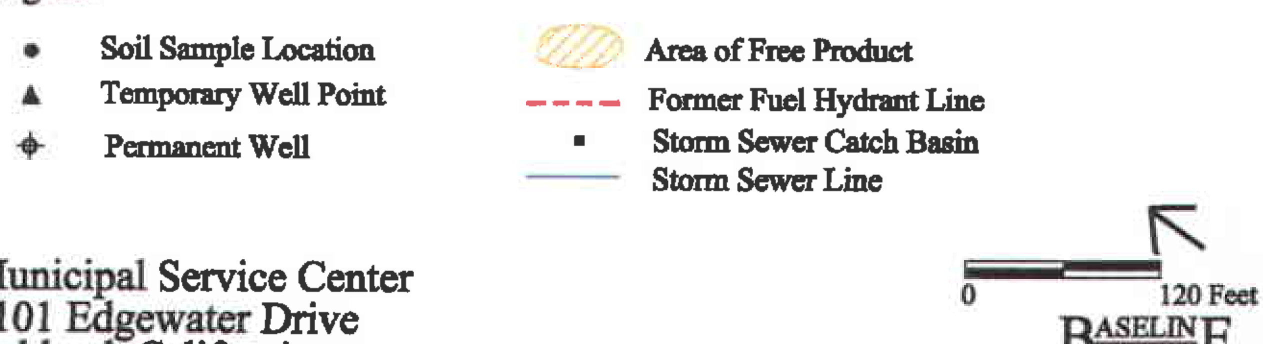
D:\Graphics\98383-17\BUILDING NO. 5.Dwg 12/6/00

CENTRAL SUBAREA DETAIL

Figure 19



Legend



Municipal Service Center
7101 Edgewater Drive
Oakland, California

BASELINE

D:\Graphics\98383-17\CSD.Dwg 12/6/00

TABLE 1
UNDERGROUND STORAGE TANK DETAILS
Municipal Services Center, Oakland, California

Tank ID[1]	Volume[1] (gallons)	Contents[1]	Status	Comments
UST 1	5,000	diesel	Removed by in 1997 (MicroSearch, 1997)	
UST 2	5,000	leaded gasoline	Removed by in 1997 (MicroSearch, 1997)	
UST 3	5,000	unleaded gasoline	Removed by in 1997 (MicroSearch, 1997)	
~~UST 4~~	8,000	unknown	Not present	Reportedly, this tank never existed at the site. When UST 6 was removed, no other tanks were found (Krohn, 2000)
~~UST 5~~	unknown	unknown	Not present	Reportedly, this tank never existed at the site. When UST 6 was removed, no other tanks were found (Krohn, 2000)
UST 6	12,000	unleaded gasoline	Removed by in 1997 (MicroSearch, 1997)	Contamination was identified at the tank location and under the pump island
UST 7	12,000	leaded gasoline	In-use	Upgrade to system completed by February 1999 (Krohn, 2000).
UST 8	20,000	unleaded gasoline	In-use	Upgrade to system completed by February 1999 (Krohn, 2000).
UST 9	20,000	diesel	In-use	Upgrade to system completed by February 1999 (Krohn, 2000).
UST 10	1,000	lube oil	Removed in 1995 (Dove Engineering, 1997)	
UST 11	500	waste oil	Removed in 1995 (Dove Engineering, 1997)	
UST 12	1,000	lube oil	Removed by in 1997 (MicroSearch, 1997)	MicroSearch indicated 1,000-gallon tank contained waste oil
UST 13	500	waste oil	Removed by in 1997 (MicroSearch, 1997)	MicroSearch indicated 500-gallon tank contained lube oil

Table 1 - *continued*

Tank ID[1]	Volume[1] (gallons)	Contents[1]	Status	Comments
UST 14	500	waste latex and joint sealer	Uncertain. May have been observed during excavation of the fuel hydrant system (Figure 13). Described as a 5x5x6-foot concrete vault containing an asphalt-like material (may have been excess asphalt from road work). It was never removed (Krohn, 2000)	

Note: UST = Underground storage tank.
UST locations are shown on Figure 13.

[1] Source: Woodward-Clyde, 1996.

TABLE 2
SUMMARY OF OBSERVATIONS/INTERIM REMOVAL ACTIONS
Municipal Services Center, Oakland, California

Identification	Contamination Observed in Excavation?	Interim Soil and Groundwater Remedial Action
UST 1, 2, 3	Not indicated in report	Over-excavated 150 cubic yards of contaminated soil from tank excavation (MicroSearch, 1997)
UST 6	Free product observed	Vacuum truck removed "approximately 1,500 gallons of floating petroleum product." (MicroSearch, 1997)
UST 7, 8, 9	N/A (tanks are in use)	N/A
UST 10, 11	None observed	None
UST 12,13	None observed	None
UST 14	None observed. Vault appeared to be filled with waste asphalt	None
Fuel Hydrant System	Petroleum hydrocarbons observed in many locations	Where contamination was observed in fine-grained soils (i.e., Bay Mud), contaminated material was excavated. Reportedly, most of the contamination in these areas was successfully removed. Where contamination was observed in high permeability soils, limited overexcavation was not considered an effective means of removing the contamination, and was therefore not conducted (Cambria, 1999).

Notes: UST = Underground storage tank.
N/A = Not applicable.
UST and hydrant system locations are shown on Figure 13.

TABLE 3
SUMMARY OF INTERIM FREE PRODUCT REMOVAL ACTIVITIES
Municipal Services Center, Oakland, California

Well	Current Product Thickness (feet)	Product Removal Method(s)	Dates Operated	Total Product Removed (as of Sept. 2000) (gallons)	Current Status (as of Sept. 2000)	Comments
TBW-1	0.10	Over-excavation following removal of USTs 1, 2, and 3; passive skimmer; absorbent sock	1997 to present	Not quantified (a few gallons)	Absorbent socks replaced monthly and as necessary	Approximately 150 cubic yards of saturated soil removed from excavation in 5/97. Groundwater extraction system operated from 3/98 through 10/98; 62,225 gallons of contaminated groundwater removed from excavation area. Approximately 31 pounds of hydrocarbons removed during operational period.
TBW-2	NM	Absorbent socks	7/31/00 to present	Not quantified (a few gallons)	Absorbent socks replaced monthly and as necessary	Multiple large socks installed in 12-inch diameter backfill well.
TBW-3	Sheen (<0.02)	Passive skimmer; vacuum truck pumped out product following UST 6 removal	1/27/00 to present; 5/21/97	Not quantified (a few gallons); 1,500 gallons pumped by vacuum truck (MicroSearch, 1997)	Backfill well inspected quarterly for product	No recoverable free product present in well - sheen only.
TBW-5	0.26	Passive and active skimmer; hand bailing	9/1/99 to present	About 66 gallons	Active skimmer in operation, biweekly O&M site visits	
MW-6	0.06	Passive skimmer	4/18/00 to present	Not quantified (a few gallons)	Passive skimmer emptied bi-weekly	
MW-16	0.01	Absorbent sock	4/18/00 to present	Not quantified (a few gallons)	Absorbent socks replaced monthly	Passive skimming unsuccessful due to high viscosity of product

Notes: Well locations are shown on Figure 12.
NM = Not measured.

TABLE 4
SUMMARY OF PAST INVESTIGATIONS
Municipal Services Center, Oakland, California

Investigation	Scope/Purpose	Sample/Boring/Well IDs	Reference
Geotechnical Engineering Study, Equipment Building	Installation of nine geotechnical borings in the vicinity of Building No. 5	B-10 through B-18 (not analyzed for chemical quality)	Woodward-Clyde, 1988
Environmental Site Assessment, Oakland Building No. 7	Installation and sampling of four monitoring wells	MW-1 through MW-4	Woodward-Clyde, 1989
Preliminary Geotechnical Evaluation and Environmental Site Assessment	Installation and sampling of three monitoring wells	MW-5, MW-6, MW-7	Woodward-Clyde, 1992
Progress Report	Installation and sampling of about 30 well-points across the site	BAT-1 through BAT-6, HP-7 through HP-34 (not continuously numbered)	Woodward-Clyde, 1996
Underground Storage Tank Closure Report	Removal of USTs 1, 2, 3, 6, 12, and 13; sampling of soil from excavations	S1 through S9, W1, 010597-1, 010597-2, 010597-3, 010497-FE, 010497-FW, TBW-1, TBW-2, TBW-3, TBW-4	MicroSearch, 1997
Removal of Two Underground Storage Tanks	Removal of USTs 10 and 11; sampling of soil from excavations	T10N-9.0, T11N-8.0, T10S-9.0	Dove Engineering Group, 1997
Soil and Groundwater Investigation	Installation and sampling of 12 temporary wells; water level survey	B35 through B46	Uribe and Associates, 1997
Historical Data Summary	Compilation of all existing soil and groundwater quality data collected at the site to date	No new data, but summary data associated with: MW-1 through MW-10, S-1 through S-9, T10N-9.0, T11N-8.0, T10S-9.0, 010597-1, 010597-2, 010597-3, 010497-FE, 010497-FW, B-36 through B-46, BAT-1 through BAT-6, HP-7 through HP-34 (not continuously numbered), TBW-3, W1, B-39-2	Cambria, 1998
Fuel Pipeline Removal Summary Report	Removal of 2,650-foot hydrant system; soil sampling every 20 feet and under all pipe joints and hydrants	FDP-1 through FDP-140 (not continuously numbered), TBW-5, TBW-6	Cambria, 1999

Table 4 - *continued*

Investigation	Scope/Purpose	Sample/Boring/Well IDs	Reference
Soil Boring Analytic Results	Installation and sampling of four borings in the vicinity of former USTs 1, 2, and 3.	SB-A, SB-B, SB-C, SB-D	Cambria, 1999a
Well Installation and Destruction Report	Installation of monitoring wells along the western portion of the site (both on- and off-site); destroyed MW-3 and MW-4	MW-11 through MW-17, RW-1	Cambria, 2000a
Soil and Groundwater Investigation, Storm Drain Rehabilitation Project (north of 911 Center)	Evaluation of whether storm drain backfill is contaminated and potentially acting as preferential flow path	B-3b, B-4b, B-6, B-7, B-8b, SW-1, MW-18	Subsurface Consultants, 2000
Third Quarter 2000 Monitoring and Recommendations	Sampling of monitoring wells MW-1 through MW-17.	Includes cumulative summary of petroleum hydrocarbon concentrations in groundwater samples for all permanent wells	Cambria, 2000

Note: Quarterly monitoring reports are excluded from this list. A cumulative summary of well monitoring data is included in the Cambria, 2000 report.

TABLE 5
RATIONALE FOR SITING SOIL BORINGS
JULY 2000 SOIL QUALITY INVESTIGATION
Municipal Services Center, Oakland, California

Boring Identification	Rationale
11N, 11N-1, 11N-2, 11N-3, 11E, 11E-1, 11S, 11S-1, 11W, 11W-2	Define the extent of free product in the vicinity of MW-6
10N, 10E, 10S, 10W	Define the extent of free product in the vicinity of TBW-3
1N, 1E, 1S, 1W, 1W-A	Define the extent of free product in the vicinity of TBW-1
2N, 2N-A, 2N-B, 2N-C, 2N-D, 2N-E, 2E, 2E-A, 2E-B, 2E-C, 2E-D, 2S, 2S-A, 2S-B, 2S-C, 2S-D, 2W	Define the extent of free product in the vicinity of TBW-5
3W, 4W, 5W, 6W, 7W	Characterize chemical quality of soils near waste collection pits and sumps; check for free product.
8W, 9W	Characterize chemical quality of soils near existing USTs 7, 8, and 9; check for free product.

Note: Boring locations are shown on Figures 15 through 18.

TABLE 6

SUMMARY OF ANALYSES PERFORMED ON SOIL SAMPLES

JULY 2000 SOIL QUALITY INVESTIGATION

Municipal Services Center, Oakland, California

Sample ID	Sample Depth (ft bgs)	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	BTEX[3]	MTBE[3]	MTBE Confirm-ation[4]	Volatile Organics[4]	Semi-volatile Organics[5]	Total Organic Carbon
1W-A	6.5-7.0	x	x	x	x	x				
1E	7.0-7.5	x	x	x	x	x				
1S	7.0-7.5	x	x	x	x	x				
1N	6.5-7.0	x	x	x	x	x				
2S-D	7.5-8.0	x	x	x	x	x	x			
2E-D	1.0-1.5									x
2E-D	4.0-4.5									x
2E-D	7.0-7.5	x	x	x	x	x	x			
2W	7.0-7.5	x	x	x	x	x				
2N-E	8.0-8.5	x	x	x	x	x				
3W	7.5-8.0	x	x	x	x	x		x	x	
4W	7.0-7.5	x	x	x	x	x		x		
5W	1.0-1.5									x
5W	4.0-4.5									x
5W	7.5-8.0	x	x	x	x	x		x		
6W	7.5-8.0	x	x	x	x	x		x	x	
7W	7.5-8.0	x	x	x	x	x		x		
8W	7.5-8.0	x	x	x	x	x	x			
9W	7.5-8.0	x	x	x	x	x	x			
10N	4.5-5.0	x	x	x	x	x			x	
10S	4.0-4.5	x	x	x	x	x	x		x	
10E	3.5-4.0	x	x	x	x	x			x	
10W	3.5-4.0	x	x	x	x	x			x	
11E	4.0-4.5	x	x	x	x	x			x	
11E-1	7.5-8.0	x	x	x	x	x			x	
11W	6.0-6.5		x	x						
11W-2	8.0-8.5	x	x	x	x	x			x	
11N	5.5-6.0		x	x						
11N-1	6.5-7.0		x	x						
11N-3	9.0-9.5	x	x	x	x	x	x		x	
11S	9.0-9.5	x	x	x	x	x			x	

Notes: TPH = Total petroleum hydrocarbons.
BTEX = Benzene, toluene, ethylbenzene, and xylenes.
MTBE = Methyl-tert butyl ether.
x = Sample analyzed for constituent(s).
Boring locations shown in Figure 15 through 18.
Samples from borings not shown on this table were not analyzed by the laboratory.

1 Analyzed by EPA Method 8015M.
2 Analyzed by EPA Method 8015M (with silica gel clean-up).
3 Analyzed by EPA Method 8021B.
4 Analyzed by EPA Method 8260B.
5 Analyzed by EPA Method 8270C.

TABLE 7
SUMMARY OF PETROLEUM AND AROMATIC HYDROCARBON ANALYSES, SOIL
JULY 2000 SOIL QUALITY INVESTIGATION
Municipal Services Center, Oakland, California
(mg/kg)

Sample ID	Sample Depth (ft. bgs)	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	MTBE[3]	MTBE Conf.[4]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]
1W-A	6.5-7.0	**420**	**570[L]**	**190[L]**	<0.8	--	**1.9**	**0.81**	**2**	**0.48**
1E	7.0-7.5	**1,800**	**34[HLY]**	**52[Y]**	<2.0	--	**1.8**	**5.2**	**10**	**21.8**
1S	7.0-7.5	**4,000**	**88[L]**	**45**	<2.0	--	**13**	**49**	**46**	**268**
1N	6.5-7.0	**5.2**	**720[HLY]**	**220**	<0.019	--	**0.12**	**0.07**	**0.053**	**0.27**
2S-D	7.5-8.0	**810**	**730[HLY]**	**2000**	**8.7**	<0.31	**5.6**	**2.3**	**10**	**17.1**
2E-D	7.0-7.5	**19[LY]**	**4.4[LY]**	<5.0	**0.49**	<0.025	**0.37**	**0.16**	**0.57**	**1.41**
2W	7.0-7.5	**1,600**	**2,000[H]**	**1500**	<0.4	--	**2.3**	**1.4**	**8.1**	**3.71**
2N-E	8.0-8.5	**60**	**84[HLY]**	**57**	<0.1	--	**0.21**	**0.16**	**0.59**	**2.53**
3W	7.5-8.0	**2,100[HY]**	**220[HY]**	**250**	<2.0	--	<0.5	<0.5	<0.5	<0.5
4W	7.0-7.5	<0.93	**4**	<5.0	<0.019	--	<0.0046	<0.0046	<0.0046	<0.0046
5W	7.5-8.0	<0.96	**180[HY]**	**160**	<0.02	--	<0.005	<0.005	<0.005	<0.005
6W	7.5-8.0	**170[H]**	**39[HLY]**	**18[L]**	<0.1	--	<0.025	**0.51**	**1.3**	**8.6**
7W	7.5-8.0	<0.99	**6.6**	**18**	<0.018	--	<0.0046	<0.0046	<0.0046	<0.0046
8W	7.5-8.0	**370**	**230[HLY]**	**90**	**0.75**	<0.025	<0.050	**1.1**	**1.2**	**1.23**
9W	7.5-8.0	**1,400**	**160[LY]**	**26**	**5.2**	<0.2	**1.3**	**2.8**	**11**	**21.6**
10N	4.5-5.0	**1,600[H]**	**3,300[L]**	<50	<1.0	--	**0.62[C]**	**1.0**	**1[C]**	**8.7[C]**
10S	4.0-4.5	**5.7**	**3,500**	<200	**0.034**	<0.005	**0.074**	**0.0068**	**0.02**	**0.0082**
10E	3.5-4.0	**1,700[H]**	**1,500[L]**	<99	<4.0	--	<1.0	**1**	<1.0	**2.2**
10W	3.5-4.0	**910**	**970[L]**	**71[L]**	<1.0	--	**2.6**	**1.4**	**2.9**	**1.27**
11E	4.0-4.5	**3,100**	**1,800[L]**	<120	<2.0	--	**3.4**	**2.9**	**12**	**2.34[C]**
11-E1	7.5-8.0	**120**	**34[LY]**	**68**	<0.1	--	**0.088**	**0.15**	**0.5**	**0.184**
11-W[5]	6.0-6.5	--	**120[HLY]**	**220**	--	--	--	--	--	--
11-W2	8.0-8.5	**30,000**	**490[LY]**	**320[H]**	<20	--	**110**	**73**	**400**	**992**
11-N[5]	5.5-6.0	--	**980[HLY]**	**1900**	--	--	--	--	--	--
11-N1[5]	6.5-7.0	--	**3,600[HLY]**	**260**	--	--	--	--	--	--
11-N3	9.0-9.5	**2,300**	**630[LY]**	**750**	**6.8**	<0.13	**4.4**	**5.5**	**31**	**34.9**
11-S	9.0-9.5	**<0.91**	**370[HLY]**	**680[L]**	<0.018	--	<0.0045	<0.0045	<0.0045	<0.0045

Table 7 - *continued*

Source: BASELINE, 2000 (this document).

Notes: <x.x = Compound not detected above laboratory reporting limit (i.e., <0.05 indicates that constituent was not present in sample above 0.05 mg/kg).
x.x = Compound detected at indicated concentration.
-- = Not analyzed.
ft. bgs = feet below ground surface.
Boring locations are shown on Figures 15 through 18.
Laboratory reports for July 2000 sampling event are included in Appendix D.
Only compounds identified above laboratory reporting limits in at least one of the samples are listed in this table.

[C] Presence of the compound confirmed by second column, however, concentration differed from the reported result by more than a factor of two.
[H] Heavier hydrocarbons contributed to quantitation.
[L] Lighter hydrocarbons contributed to quantitation.
[Y] Sample exhibited fuel pattern which does not resemble standard.

[1] Analyzed by EPA Method 8015M.
[2] Analyzed by EPA Method 8015M (with silica gel clean-up).
[3] Analyzed by EPA Method 8021B.
[4] Analyzed by EPA Method 8260B.
[5] This sample was collected from within the free product plume. It was analyzed for TPH as diesel and TPH as motor oil to provide additional information on hydrocarbon distribution.

TABLE 8
SUMMARY OF VOLATILE ORGANIC COMPOUND ANALYSIS, SOIL
JULY 2000 SOIL QUALITY INVESTIGATION
Municipal Services Center, Oakland, California (8260)
(mg/kg)

Sample ID	Sample Depth (ft. bgs)	Propyl-benzene	Sec-butyl-benzene	Acetone	Toluene	Ethyl-benzene	Xylenes	Isopropyl-benzene	1,3,5-tri-methylbenzene	1,2,4-tert-butylbenzene	n-butyl-benzene	Naphthalene
3W	7.5-8.0	**0.44**	**0.26**	<1.0	<0.25	<0.25	<0.25	<0.25	<0.25	NA	<0.25	<0.25
4W	7.0-7.5	<0.0048	<0.0048	<0.019	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	NA	<0.0048	<0.0048
5W	7.5-8.0	<0.0048	<0.0048	<0.019	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	NA	<0.0048	<0.0048
6W	7.5-8.0	**1.2**	**0.21**	**1.7**	**0.55**	**1.3**	**8.1**	**0.21**	**3**	**11**	**1.8**	**2.5**
7W	7.5-8.0	<0.0052	<0.0052	<0.021	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	NA	<0.0052	**0.0082**

Source: BASELINE, 2000 (this document).

✓ all constituents [illegible]

Notes: Laboratory reports are included in Appendix D.
Boring locations are shown on Figure 17.
Analyzed by EPA Method 8260B.
Only compounds identified above laboratory reporting limits in at least one of the samples is listed in this table.
ft. bgs = feet below ground surface.

TABLE 9

SUMMARY OF SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS, SOIL

JULY 2000 SOIL QUALITY INVESTIGATION

Municipal Services Center, Oakland, California

(mg/kg)

Sample ID	Sample Depth (ft. bgs)	Fluorene	Phenanthrene	Naphthalene	2-Methylnaphthalene	Dibenzofuran	Pyrene	Fluoranthene	Benzo(a)anthacene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Ideno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Bis(2-ethylhexyl)phthalate
3W	7.5-8.0	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
6W	7.5-8.0	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
10N	4.5-5.0	**1.1**	**2.1**	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
10S	4.5-5.0	<1.7	**1.3**	**2**	**7.2**	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
10E	3.5-4.0	**1.3**	**2**	<1.6	**8.1**	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
10W	3.5-4.0	**0.53**	**1.3**	**3**	**5.6**	**0.21**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
11E	4.0-4.5	**0.4**	**0.65**	**4.4**	**6.4**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
11-W2	8.0-8.5	<1.7	<1.7	**8.6**	**8.6**	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
11-N3	9.0-9.5	<1.6	<1.6	**3.1**	**2.6**	<1.6	**0.84**	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
11-S	9.0-9.5	<0.34	**0.71**	**0.18**	**0.35**	<0.34	**2.9**	**2.1**	**2.5**	**4.1**	**2.9**	**2**	**3.5**	**1.6**	**0.87**	**1.7**	<0.34
11-E1	7.5-8.0	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	**0.94**

Source: BASELINE, 200 (this document).

Notes: Laboratory reports are contained in Appendix D.
Boring locations are shown on Figure 17 and 18.
Analyzed by EPA Method 8270.
Only compounds identified above laboratory reporting limits in at least one of the samples are listed in this table.
ft. bgs = feet below ground surface.

TABLE 10

SOUTHWEST SUBAREA, SUMMARY OF ANALYTICAL RESULTS

Municipal Services Center, Oakland, California

Sample ID	Sample Depth (ft. bgs)	Date Collected	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	MTBE[3]	MTBE Conf.[4]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]	Product Thickness (ft.)
Soil (mg/kg)												
S7[6]	8.0	05/21/97	<1.0	<1.0	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	--
S8[6]	8.0	05/21/97	<1.0	<26	--	<0.5	--	<0.10	0.12	<0.10	**0.13**	--
S9[6]	3.0	05/22/97	<31	**220**	--	<0.5	--	<0.12	**0.34**	**0.70**	**0.83**	--
010487-FE[6]	2.0	06/23/99	<1.0	**36**	--	**0.016**	--	**0.0094**	**0.012**	**0.032**	**0.074**	--
010497-FW[6]	2.0	06/23/99	**1,800**	**2**	--	<5.0	--	**8.9**	**2.2**	<1.1	**65**	--
MW-16[7]	15.0	12/01/99	**830**	<40	**1,900**	<50		**1.3**	<1.0	**13**	**7.0**	N/A
MW-17[7]	11.0	12/01/99	<0.1	**140**	**2,900**	<0.05		<0.001	<0.001	<0.001	<0.001	None
MW-17[7]	10.0	12/01/99	<0.1	**170**	**1,900**	<0.05		<0.001	<0.001	<0.001	<0.001	None
10N[8]	4.5-5.0	07/21/00	**1,600[H]**	**3,300[L]**	<50	<1.0	--	**0.62[C]**	**1**	**1[C]**	**8.7[C]**	None[5]
10S[8,8]	4.0-4.5	07/21/00	**5.7**	**3,500**	<200	**0.034**	<0.005	**0.074**	**0.0068**	**0.02**	**0.0082**	None[5]
108	3.5-4.0	07/21/00	**1,700[H]**	**1,500[L]**	<99	<4.0	--	<1.0	**1**	<1.0	**2.2**	None[5]
10W[8]	3.5-4.0	07/24/00	**910**	**970[L]**	**71[L]**	<1.0	--	**2.6**	**1.4**	**2.9**	**1.27**	None[5]
118	4.0-4.5	07/24/00	**3,100**	**1,800[L]**	<120	<2.0	--	**3.4**	**2.9**	**12**	**2.34[C]**	None[5]
11E-1[8]	7.5-8.0	07/24/00	**120**	**34[LY]**	**68**	<0.1	--	**0.088**	**0.15**	**0.5**	**0.184**	None[5]
11S[8]	9.0-9.5	07/24/00	<0.91	**370[HLY]**	**680[L]**	<0.018	--	<0.0045	<0.0045	<0.0045	<0.0045	None[5]
11S-1[8]	N/A	--	--	--	--	--	--	--	--	--	--	None
11W[8]	6.0-6.5	07/24/00	--	**120[HLY]**	**220**	--	--	--	--	--	--	None[5]
11N[8]	5.5-6.0	07/24/00	--	**980[HLY]**	**1,900**	--	--	--	--	--	--	**Heavy sheen[5]**
11N-1[8]	6.5-7.0	07/24/00	--	**3,600[HLY]**	**260**	--	--	--	--	--	--	**Heavy sheen[5]**
11N-2[8]	N/A	07/24/00	--	--	--	--	--	--	--	--	--	**0.3[5]**
11N-3[8]	9.0-9.5	07/24/00	**2,300**	**630[LY]**	**750**	**6.8**	<0.13	**4.4**	**5.5**	**31**	**34.9**	**Heavy sheen[5]**
11W-2[8]	8.0-8.5	07/24/00	**30,000**	**490[LY]**	**320[H]**	<20	--	**110**	**73**	**400**	**992**	0.20[5]
Groundwater (µg/L)												
BAT-1[9]	N/A	04/22/93	<1,000	--	--	--	--	**<1**	**<1**	**2**	**<1**	None
BAT-2[9]	N/A	04/22/93	<5,000	--	--	--	--	**<1**	**<1**	**<1**	**<1**	None
HP-17[9]	N/A	04/27/93	**3,000**	--	--	--	--	**600**	<0.5	**5**	**20**	None
HP-32[9]	N/A	06/29/93	**1,300**	--	--	--	--	**180**	**8**	<0.3	**8**	None
HP-31[9]	N/A	06/29/93	**7,900**	--	--	--	--	**8,500**	**250**	**180**	**380**	None
B-36[10]	N/A	11/07/96	50	**200**	--	--	--	<0.5	<0.5	<0.5	<0.5	None
TBW-3[11]	N/A	08/24/99	--	--	--	--	--	--	--	--	--	Globules
TBW-3[11]	N/A	01/18/00	--	--	--	--	--	--	--	--	--	Globules
TBW-3[11]	N/A	07/21/00	--	--	--	--	--	--	--	--	--	Sheen
TBW-4[11]	N/A	--	--	--	--	--	--	--	--	--	--	N/A
MW-6[11]	N/A	08/19/98	--	--	--	--	--	--	--	--	--	0.125
MW-6[11]	N/A	11/11/98	--	--	--	--	--	--	--	--	--	0.05

Table 10 - *continued*

Sample ID	Sample Depth (ft. bgs)	Date Collected	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	MTBE[3]	MTBE Conf.[4]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]	Product Thickness (ft.)
MW-6[11]	N/A	05/27/99	--	--	--	--	--	--	--	--	--	0.20
MW-6[11]	N/A	08/24/99	--	--	--	--	--	--	--	--	--	0.03
MW-6[11]	N/A	11/22/99	--	--	--	--	--	--	--	--	--	0.16
MW-6[11]	N/A	01/18/00	--	--	--	--	--	--	--	--	--	0.019
MW-6[11]	N/A	07/21/00	--	--	--	--	--	--	--	--	--	Sheen
MW-16[11]	N/A	01/18/00	--	--	--	--	--	--	--	--	--	0.1
MW-16[11]	N/A	07/20/00	--	--	--	--	--	--	--	--	--	Sheen
MW-17[11]	N/A	05/11/00	<50	**150[H]**	**2,900**	<5.0	--	<0.5	<0.5	<0.5	<0.5	None
MW-17[11]	N/A	08/25/00	<50	**190**	**610**	<5.0	--	**0.58**	<0.5	<0.5	<0.5	None

Notes: <x.x = Compound not detected above laboratory reporting limit (i.e., <0.05 indicates that constituent was not present in sample above 0.05 mg/L).
x.x = Compound detected at indicated concentration.
-- = Not analyzed.
ft. bgs = feet below ground surface.
N/A = Not applicable/not available.
Boring locations are shown on Figure16.
Laboratory reports for July 2000 sampling event are included in Appendix D.
All analytical data, except July 2000 Soil Quality Investigation data, are compiled from summary tables included in previous reports; original laboratory reports were not reviewed.

C Presence of compound confirmed by second column, however, concentration differed from the reported result by more than a factor of two.
H Heavier hydrocarbons contributed to quantitation.
L Lighter hydrocarbons contributed to quantitation.
Y Sample exhibited fuel pattern which does not resemble standard.

1 Analyzed by EPA Method 8015M.
2 Analyzed by EPA Method 8015M (with silica gel clean-up).
3 Analyzed by EPA Method 8021B.
4 Analyzed by EPA Method 8260B.
5 Product thickness obtained by measuring accumulated product in the boring after completion. Measured using a dual interface probe.
6 MicroSearch, 1997.
7 Cambria, 2000a.
8 BASELINE, 2000 (this document).
9 Woodward-Clyde, 1996.
10 Uribe, 1997.
11 Cambria, 2000.

TABLE 11
BUILDING NO. 5 SUBAREA
SUMMARY OF ANALYTICAL RESULTS
Municipal Services Center, Oakland, California

Sample ID	Sample Depth (ft. bgs)	Date Collected	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	MTBE[3]	MTBE Conf.[4]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]	Product Thickness (ft.)
Soil (mg/kg)												
T10N-9.0[5]	9.0	09/05/95	ND	ND	ND	–	–	ND	ND	ND	ND	None
T10S-9.0[5]	9.0	09/05/95	ND	**1.1**	ND	–	–	ND	ND	ND	ND	None
T11N-8.0[5]	8.0	09/05/95	ND	ND	ND	--	–	ND	ND	ND	ND	None
010597-1[6]	5.0	06/23/97	NA	<1.0	<50	–	–	NA	NA	NA	NA	None
010597-2[6]	4.0	06/23/97	<1.0	<1.0	NA	--	--	<0.0050	<0.0050	<0.0050	<0.0050	None
010597-3[6]	7.0	06/23/97	NA	<2.0	**100**	--	–	NA	NA	NA	NA	None
3W[7]	7.5-8.0	07/21/00	**2,100**[HY]	**220**[HY]	**250**	<2.0	--	<0.5	<0.5	<0.5	<0.5	None
4W[7]	7.0-7.5	07/21/00	<0.93	**4**	<5.0	**<0.019**	--	<0.0046	<0.0046	<0.0046	<0.0046	None
5W[7]	7.5-8.0	07/21/00	<0.96	**180**[HY]	**160**	<0.02	--	<0.005	<0.005	<0.005	<0.005	None
6W[7]	7.5-8.0	07/21/00	**170**[H]	**39**[HLY]	**18**[L]	<0.1	--	<0.025	**0.51**	**1.3**	**8.6**	None
7W[7]	7.5-8.0	07/21/00	<0.99	**7**	**18**	<0.018	–	<0.0046	<0.0046	<0.0046	<0.0046	None
8W[7]	7.5-8.0	07/21/00	**370**	**230**[HLY]	**90**	**0.75**	<0.025	<0.050	**1.1**	**1.2**	**1.2**	None
9W[7]	7.5-8.0	07/21/00	**1,400**	**160**[LY]	**26**	**5.2**	<0.2	**1.3**	**2.8**	**11**	**22**	None
11-E1[7]	7.5-8.0	07/24/00	**120**	**34**[LY]	**68**	<0.1	--	**0.088**	**0.15**	**0.5**	**0.2**	None
Groundwater (µg/L)												
BAT-1[8]		04/22/93	<1,000	--	--	--	–	<1	<1	**2**	<1	None
BAT-2[8]		04/22/93	<5,000	--	–	–	--	<1	<1	<1	<1	None
BAT-3[8]		04/22/93	<5,000	–	–	–	–	**2,000**	**1,800**	**190**	**1,000**	**Sheen**
HP-19[8]		04/28/93	**60,000**	–	–	–	–	**10**	**15**	**200**	**580**	None
HP-33[8]		06/30/93	**1,700**	–	–	--	–	**3**	**30**	**30**	**34**	None
HP-34[8]		06/30/93	<50	--	--	--	--	<0.3	**1**	<0.3	<0.3	None
MW-5[9]		08/24/00	**12,000**	**4,800**	**560**	**1,400**	–	**2,200**	**21**	**430**	**91**	None
MW-7[9]		08/24/00	<50	<50	<250	<5.0	–	<0.5	<0.5	<0.5	<0.5	None
MW-11[9]		08/24/00	**110**	<50	<250	<5.0	–	**6**	<0.5	**1**	**1**	None

Notes: ft. bgs = feet below ground surface.
<x.x = Compound not detected above laboratory reporting limit (i.e., <0.05 indicates that constituent was not present in sample above 0.05 mg/L).
x.x = Compound detected at indicated concentration.
-- = Not analyzed.
Boring locations are shown on Figure17.
Laboratory reports for July 2000 sampling event are included in Appendix D.
All analytical data, except July 2000 Soil Quality Investigation data, are compiled from summary tables included in previous reports; original laboratory reports were not reviewed.

[C] Presence of the compound confirmed by second column, however, concentration differed from the reported result by more than a factor of two.
[H] Heavier hydrocarbons contributed to quantitation.
[L] Lighter hydrocarbons contributed to quantitation.
[Y] Sample exhibited fuel pattern which does not resemble standard.

[1] Analyzed by EPA Method 8015M.
[2] Analyzed by EPA Method 8015M (with silica gel clean-up).
[3] Analyzed by EPA Method 8021B.
[4] Analyzed by EPA Method 8260B.
[5] Dove Engineering, 1997
[6] MicroSearch, 1997.
[7] BASELINE, 2000 (this document).
[8] Woodward-Clyde, 1996.
[9] Cambria, 2000.

TABLE 12
CENTRAL SUBAREA, SUMMARY OF ANALYTICAL RESULTS
Municipal Services Center, Oakland, California

Sample ID	Sample Depth (ft. bgs)	Date Collected	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	MTBE[3]	MTBE Conf.[4]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]	Product Thickness (ft.)
Soil (mg/kg)												
S-1[6]	10.0	05/21/97	70	6.2	--	<1.0	--	0.51	3.4	1.8	9.3	None
S-2[6]	10.0	05/21/97	3.8	19	--	0.13	--	0.04	0.0092	0.024	0.078	None
S-3[6]	10.0	05/21/97	770	98	--	<2.0	--	2.9	3	9.9	42	None
S-4[6]	10.0	05/21/97	<27	<1.0	--	<0.50	--	0.4	<0.11	2.2	1.7	None
S-5[6]	10.0	05/21/97	45	<1.0	--	<0.50	--	3	0.13	1.4	0.3	None
S-6[6]	10.0	05/21/97	120	<1.0	--	<1.0	--	3	<0.24	1.3	2	None
SB-A[7]	7.5	08/03/98	<1.0	6.0	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	None
SB-A[7]	11.5	08/03/98	1.1	76	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	None
SB-B[7]	7.5	08/03/98	<1.0	2.7	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	None
SB-B[7]	11.5	08/03/98	2.4	37	--	<0.05	--	<0.05	<0.05	<0.05	<0.05	None
SB-C[7]	7.5	08/03/98	4,400	910	--	<65	--	50	120	68	340	None
SB-C[7]	9.5	08/03/98	3.5	1.2	--	<0.05	--	0.32	0.17	0.091	0.42	None
SB-D[7]	7.5	08/03/98	23	6.8	--	<.40	--	1.2	0.38	0.55	1.7	None
SB-D[7]	11.5	08/03/98	3.3	1.4	--	<0.05	--	0.22	0.051	0.037	0.17	None
MW-13[8]	10.0	12/02/99	<0.1	20	240	<0.05	--	<0.001	<0.001	<0.001	<0.001	None
MW-13[8]	20.0	12/02/99	<0.1	790	11,000	<0.05	--	<0.001	<0.001	<0.001	<0.001	None
MW-13[8]	25.0	12/02/99	<0.1	800	13,000	<0.05	--	<0.001	<0.001	<0.001	<0.001	None
MW-14[8]	10.0	12/02/99	<0.1	<10	400	<0.05	--	<0.001	<0.001	<0.001	<0.001	None
MW-14[8]	15.0	12/02/99	0.31	230	1,400	<0.05	--	<0.001	<0.001	<0.001	<0.001	None
RW-1[8]	5.5	12/02/99	1,800	2,900	<50	<50	--	<1.0	<1.0	13	31	None
1E[9]	7.0-7.5	07/19/00	1,800	34[HLY]	52[Y]	<2.0	--	1.8	5.2	10	21.8	None[5]
1N[9]	6.5-7.0	07/19/00	5.2	720[HLY]	220	<0.019	--	0.12	0.07	0.053	0.27	None[5]
1S[9]	7.0-7.5	07/19/00	4,000	88[L]	45	<2.0	--	13	49	46	268	None[5]
1W[9]	N/A	07/19/00	–	–	–	–	–	–	–	–	–	0.75
1W-A[9]	6.5-7.0	07/19/00	420	570[L]	190[L]	<0.8	–	1.9	0.81	2	0.48	None[5]
2E[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	0.15
2E-A[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	Sheen
2E-B[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	0.79
2E-C[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	0.01
2E-D[9]	7.0-7.5	07/20/00	19[LY]	4.4[LY]	<5.0	0.49	<0.025	0.37	0.16	0.57	1.41	None[5]
2N[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	0.01
2N-A[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	Sheen
2N-B[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	Sheen
2N-C[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	Sheen
2N-E[9]	8.0-8.5	07/20/00	60	84[HLY]	57	<0.1	–	0.21	0.16	0.59	2.53	Sheen[5]
2S[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	1.25
2S-A[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	0.02
2S-B[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	Sheen

Table 12 - *continued*

Sample ID	Sample Depth (ft. bgs)	Date Collected	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	MTBE[3]	MTBE Conf.[4]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]	Product Thickness (ft.)
2S-C[9]	N/A	07/20/00	–	–	–	–	–	–	–	–	–	0.01
2S-D[9]	7.5-8.0	07/20/00	**810**	**730**[HLY]	**2,000**	**8.7**	<0.31	**5.6**	**2.3**	**10**	**17.1**	None[5]
2W[9]	7.0-7.5	07/20/00	**1,600**	**2,000**[H]	**1,500**	<0.4	–	**2.3**	**1.4**	**8.1**	**3.71**	Globules[5] <0.02
B-3b[10]	6.5	08/24/00	**40**[Y]	**16**	<50	<0.62	–	<0.62	<0.62	**0.81**	**2.6**	None
B-4b[10]	9.0	08/24/00	**12**[Y]	**12**	<50	<0.62	–	<0.62	<0.62	<0.62	<0.62	None
B-6[10]	7.0	08/24/00	<1.0	<1.0	<50	<0.05	–	<0.05	<0.05	<0.05	<0.05	None
B-7[10]	7.5	08/24/00	<1.0	**2.1**	<50	<0.05	–	<0.05	<0.05	<0.05	<0.05	None
B-8b[10]	N/A	08/24/00	<1.0	**1.6**	<50	<0.05	–	<0.05	<0.05	<0.05	<0.05	None
MW-18[10]	6.0	08/24/00	<1.0	**3.7**	<50	<0.05	–	<0.05	<0.05	<0.05	<0.05	None
Groundwater (µg/L)												
HP-7[11]	N/A	04/26/93	**20,000**	–	–	–	–	**6,000**	**1,500**	**800**	**3,200**	None
HP-8[11]	N/A	04/26/93	**4,000**	–	–	–	–	**3,200**	**60**	**40**	**280**	None
HP-10[11]	N/A	04/26/93	–	–	–	–	–	–	–	–	–	Black product
HP-11[11]	N/A	04/26/93	**3,000**	–	–	–	–	**14**	<1	**60**	**300**	None
HP-14[11]	N/A	04/27/93	**3,000**	–	–	–	–	**900**	<5	**150**	**180**	None
HP-15[11]	N/A	04/27/93	**1,800,000**	–	–	–	–	**120**	**450**	**230**	**7,000**	Product
HP-16[11]	N/A	04/27/93	**8,000 /2,000**	–	–	–	–	**280 / 70**	**220 / 100**	**115 / 30**	**570 / 190**	None
HP-22[11]	N/A	04/28/93	<1,000	–	–	–	–	**15**	**160**	<1	<1	None
HP-23[11]	N/A	04/28/93	**480**	–	–	–	–	**6**	**29**	**5**	**15**	None
HP-26[11]	N/A	04/28/93	**340**	–	–	–	–	**10**	**12**	**3**	**8**	None
SB-A[7]	N/A	08/03/98	**73**	**7,900**		<5.0	–	<0.5	**0.54**	**0.56**	**0.82**	None
SB-B[7]	N/A	08/03/98	**60**	**170**		<10	–	<0.5	**0.95**	<0.5	<0.5	None
SB-C[7]	N/A	08/03/98	**9,200**	**2,000**		<10	–	**750**	**580**	**290**	**1,400**	None
SB-D[7]	N/A	08/03/98	**39,000**	**6,600**		<100	–	**1,600**	**1,200**	**980**	**4,900**	None
TBW-1[12]	N/A	02/23/99	–	–	–	–	–	–	–	–	–	0.10
TBW-1[12]	N/A	05/27/99	–	–	–	–	–	–	–	–	–	0.01
TBW-1[12]	N/A	08/24/99	–	–	–	–	–	–	–	–	–	0.18
TBW-1[12]	N/A	05/11/00	–	–	–	–	–	–	–	–	–	N/A
TBW-1[12]	N/A	7/19/00[1]	–	–	–	–	–	–	–	–	–	Thick sheen <0.02
TBW-2[12]	N/A	–	–	–	–	–	–	–	–	–	–	–
TBW-5[12]	N/A	02/23/99	–	–	–	–	–	–	–	–	–	1.45
TBW-5[12]	N/A	05/27/99	–	–	–	–	–	–	–	–	–	1.13
TBW-5[12]	N/A	05/11/00	–	–	–	–	–	–	–	–	–	1.33
TBW-5[12]	N/A	08/24/00	–	–	–	–	–	–	–	–	–	1.29
TBW-5[12]	N/A	05/11/00	–	–	–	–	–	–	–	–	–	0.9
TBW-5[12]	N/A	08/24/00	–	–	–	–	–	–	–	–	–	N/A
TBW-6[12]	N/A	05/11/00	–	–	–	–	–	–	–	–	–	None
TBW-6[12]	N/A	08/24/00	–	–	–	–	–	–	–	–	–	None
MW-1[12]	N/A	08/25/00	**480**	**340**	<250	<5.0	–	**53**	**1.4**	<0.5	**2.9**	None

Table 12 - *continued*

Sample ID	Sample Depth (ft. bgs)	Date Collected	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Motor Oil[2]	MTBE[3]	MTBE Conf.[4]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]	Product Thickness (ft.)
MW-12[12]	N/A	08/25/00	170	3,500	5,000	<5.0	--	<0.5	<0.5	<0.5	<0.5	None
MW-13[12]	N/A	05/11/00	70	11,000[H]	110,000	<5.0	--	1.6	5.4	1.2	7.6	None
MW-13[12]	N/A	08/24/00	--	--	--	--	--	--	--	--	--	None
MW-13[12]	N/A	08/25/00	<50	3,100	13,000	<5.0	--	<0.5	<0.5	<0.5	<0.5	None
MW-14[12]	N/A	05/11/00	120	360[H]	4,300	<5.0	--	<0.5	<0.5	0.5	<0.5	None
MW-14[12]	N/A	08/24/00	--	--	--	--	--	--	--	--	--	None
MW-14[12]	N/A	08/25/00	90	1,000	3,100	<5.0	--	6	<0.5	<0.5	<0.5	None
SW-1[10]	N/A	08/24/00	25,000	13,000	<2,500	<500	--	<50	60	1,500	4,600	None
MW-18[10]	N/A	08/24/00	<50	<50	<500	<5.0	--	<0.50	<0.50	<0.50	0.88	None
B-3b[10]	N/A	08/24/00	44,000	23,000	<2,500	<2,500	--	890	680	1,700	8,500	None
B-4b[10]	N/A	08/24/00	35,000	350,000	<25,000	<2,500	--	190	35	770	4,000	None
B-6[10]	N/A	08/24/00	67	130	<500	<5.0	--	<0.50	<0.50	1.0	4.0	None
B-7[10]	N/A	08/24/00	120	120	<500	<5.0	--	<0.50	<0.50	2.8	9.5	None

Notes: ft. bgs = feet below ground surface.
<x.x = Compound not detected above laboratory reporting limit (i.e., <0.05 indicates that constituent was not present in sample above 0.05 mg/L).
x.x = Compound detected at indicated concentration.
-- = Not analyzed.
Sampling locations are shown on Figure 18.
Laboratory reports for July 2000 sampling event are included in Appendix D.
All analytical data, except July 2000 Soil Quality Investigation data, are compiled from summary tables included in previous reports; original laboratory reports were not reviewed.

C Presence of the compound confirmed by second column, however, concentration differed from the reported result by more than a factor of two.
H Heavier hydrocarbons contributed to quantitation.
L Lighter hydrocarbons contributed to quantitation.
Y Sample exhibited fuel pattern that does not resemble standard.

1 Analyzed by EPA Method 8015M.
2 Analyzed by EPA Method 8015M (with silica gel clean-up).
3 Analyzed by EPA Method 8021B.
4 Analyzed by EPA Method 8260B.
5 Product thickness obtained by measuring accumulated product thickness in the boring after completion. Measurement obtained by the use of dual interface probe.
6 MicroSearch, 1997.
7 Cambria, 1999a.
8 Cambria, 2000a.
9 BASELINE, 2000 (this document).
10 Subsurface Consultants, 2000.
11 Woodward-Clyde, 1996.
12 Cambria, 2000.

TABLE 13

SUMMARY OF PETROLEUM AND AROMATIC HYDROCARBONS RESULTS, SOIL

Shoreline Area, Municipal Services Center, Oakland, California

(mg/kg)

Sample ID	Sample Depth (ft. bgs)	Date	TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	TPH as Kerosene	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
MW-12	5.5-6.0	12/1/99	**1.4**	**399**	**5,200**	**69**	<0.001	**0.004**	**0.008**	**0.046**	<0.05
MW-12	11.0-11.5	12/1/99	**1.1**	**37**	**100**	<4.0	<0.001	<0.001	**0.002**	**0.007**	<0.125
MW-12	14.5-15.0	12/1/99	<0.1	<10	**140**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-13	10.0-10.5	12/2/99	<0.1	**20**	**240**	<4.0	<0.001	<0.001	<0.001	<0.001	<0.05
MW-13	20.0-20.5	12/2/99	<0.1	**790**	**11,000**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-13	25.0-25.5	12/2/99	<0.1	**800**	**13,000**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-14	10.0-10.5	12/2/99	<0.1	<10	**400**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-14	15.0-15.5	12/2/99	**0.31**	**230**	**1,400**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-15	10.0-10.5	12/2/99	<0.1	**240**	**500**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-15	15.0-15.5	12/2/99	<0.1	**63**	**450**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-15	19.0-19.5	12/2/99	<0.1	**170**	**1,200**	<10	<0.001	<0.001	<0.001	<0.001	<0.05
MW-16	15.0-15.5	12/2/99	**830**	<40	**1,900**	**340**	**1.3**	<1.0	**13.0**	**7.0**	<50
MW-17	11.0-11.5	12/2/99	<0.1	**140**	**2,900**	<20	<0.001	<0.001	<0.001	<0.001	<0.05
MW-17	19.0-19.5	12/2/99	<0.1	**170**	**1,900**	<20	<0.001	<0.001	<0.001	<0.001	<0.05

Source: Cambria, 2000.

Note: Well locations are shown on Figure 12.
ft. bgs = feet below ground surface.

TABLE 14
SUMMARY OF METALS RESULTS, SOIL
Municipal Services Center, Oakland, California
(mg/kg)

Sample ID	Sample Depth (ft. bgs)	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc
010497-FE	2.5	--	--	--	--	--	**17**	--
010497-FW	2	--	--	--	--	--	**11**	--
010597-2	4	--	<0.50	**38**		**50**	**12**	**80**
MW-5	8	**1.5**	<0.6	**28.1**	**89.4**	**37.8**	**7.9**	**92.7**
MW-6	7.5	**2.1**	**0.3**	**43.4**	**26.3**	**43.4**	**94**	**79.5**
MW-7	7	**1.4**	<0.6	**30.2**	**81.5**	**35.9**	**7.3**	**104**
S-1	10	--	--	--	--	--	**8.9**	--
S-2	10	--	--	--	--	--	**92**	--
S-3	10	--	--	--	--	--	**18**	--
S-4	10	--	--	--	--	--	<5.0	--
S-5	10	--	--	--	--	--	**8.1**	--
S-6	10	--	--	--	--	--	**6.5**	--
S-7	8	--	--	--	--	--	**12**	--
S-8	8	--	--	--	--	--	**7.2**	--
S-9	3	--	--	--	--	--	<5.0	--

Source: Cambria, 1998.

Notes: ft. bgs = feet below ground surface.
Chromium = total chromium.
-- = not analyzed.
Sampling locations are shown on Figures 16, 17, and 18.
All analytical data, except July 2000 Soil Quality Investigation data, are compiled from summary tables included in previous reports; original laboratory reports were not reviewed.

TABLE 15
SUMMARY OF ANALYTICAL RESULTS FOR SEMI-VOLATILE ORGANIC COMPOUNDS, SOIL
Municipal Services Center, Oakland, California
(mg/kg)

Sample ID	Sample Depth (ft. bgs)	Fluorene	Phenanthrene	Naphthalene	2-Methylnaphthalene	Dibenzofuran	Pyrene	Fluoranthene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Ideno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Bis(2-ethylhexyl)phthalate
MW-1[1,2]	5.5	<0.1	<0.1	**0.66**	**0.74**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
MW-2[2]	8.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25
MW-3[2,5]	6.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
MW-4[2,]	6.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
MW-5[3]	8.0-8.5	<0.33	<0.011	**4.2**	**3.7**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
MW-6[3]	7.5-8.0	<0.33	<0.011	<0.33	<0.33	<0.33	**0.57**	**0.36**	<0.33	**0.56**	**0.66**	<0.33	**0.42**	<0.33	<0.33	<0.33	<0.33
MW-7[3]	7.0-7.5	<0.33	<0.011	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
3W[4]	7.5-8.0	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34
6W[4]	7.5-8.0	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
10N[4]	4.0-4.5	**1.1**	**2.1**	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
10S[4]	4.0-4.5	<1.7	**1.3**	**2**	**7.2**	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
10E[4]	3.5-4.0	**1.3**	**2**	<1.6	**8.1**	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
10W[4]	3.5-4.0	**0.53**	**1.3**	**3**	**5.6**	**0.21**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
11E[4]	4.0-4.5	**0.4**	**0.65**	**4.4**	**6.4**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
11-W2[4]	8.0-8.5	<1.7	<1.7	**8.6**	**8.6**	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
11-N3[4]	9.0-9.5	<1.6	<1.6	**3.1**	**2.6**	<1.6	**0.84**	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
11-S[4]	9.0-9.5	<0.34	**0.71**	**0.18**	**0.35**	<0.34	**2.9**	**2.1**	**2.5**	**4.1**	**2.9**	**2**	**3.5**	**1.6**	**0.87**	**1.7**	<0.34
11-E1[4]	9.0-9.5	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	**0.94**

Notes: ft. bgs = feet below ground surface.
-- = Not analyzed.
Boring locations are shown on Figures 16, 17, and 18. (MW-3 and MW-4 have been destroyed and are not shown on any figures in this report. They were located off-site.)
Only compounds identified above laboratory reporting limits in at least one of the samples is listed in this table.
Laboratory reports are contained in Appendix D.

All analytical data, except July 2000 Soil Quality Investigation data, are compiled from summary tables included in previous reports; original laboratory reports were not reviewed.

1 Phenol was identified in this sample at a concentration of 0.1 mg/kg.
2 Source: Woodward-Clyde, 1989.
3 Source: Woodward-Clyde, 1992.
4 Source: BASELINE, 2000 (this document).
5 Wells off-site, not shown on figure.

APPENDIX A

U.S. ARMY CORPS OF ENGINEERS LETTER

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
333 MARKET ST.
SAN FRANCISCO, CALIFORNIA 94111

October 17, 2000

Office of Counsel

SUBJECT: FOIA Request, Regarding Bay Filling Activities in the Port of Oakland, California, Our Request Number 203157

RECEIVED
OCT 20 2000
BASELINE

Baseline Environmental Consulting
Attention: Mr. Bruce Abelli-Amen
101 H Street, Suite L
Petaluma, California 94952

Dear Mr. Abelli-Amen:

Pursuant to your Freedom of Information Act (FOIA) request dated August 16, 2000, designated number 203157 this letter constitutes formal notification that no agency records were located which would satisfy your request and that you may appeal this determination in order to challenge the adequacy of our search.

I trust that you will appreciate the consideration upon which this determination is based. However, because your request has been denied, you are advised of your right to appeal this determination through this office to the Secretary of the Army (ATTN: John H. Eft, District Counsel). You must send your appeal in sufficient time to reach the Secretary of the Army no later than sixty (60) days of the date of this letter. The envelope containing the appeal should bear the notation "Freedom of Information Act Appeal" and should be sent to: U.S. Army Corps of Engineers, ATTN: CESPN-OC, 333 Market Street, Room 804, San Francisco, California 94105-2197.

Should you have any questions regarding the above, please contact me at (415) 977-8644.

Very truly yours,

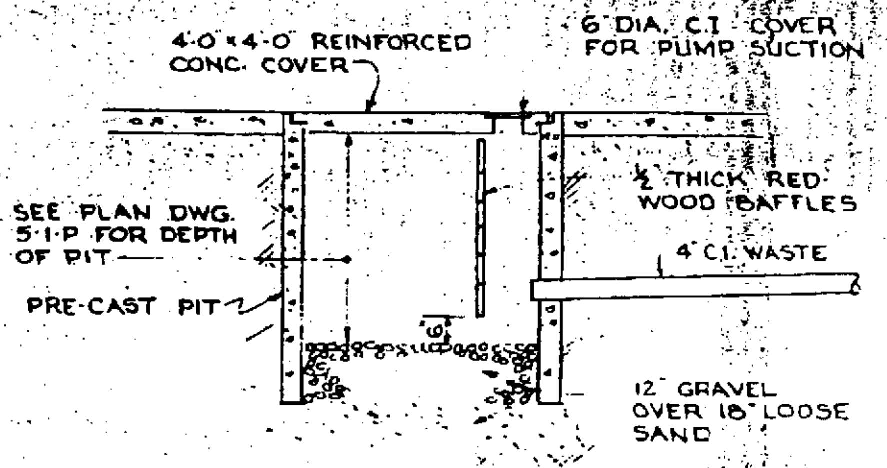
John H. Eft

John H. Eft
District Counsel

APPENDIX B

ARCHITECTURAL DRAWINGS

DETAIL 2
NTS 5/1/P
LUBE OIL STORAGE TANK



AS-BUILT
EH MORRILL Co.

DETAIL 5
SCALE: $\frac{1}{4}$"=1'-0" 5/1/P
WASTE COLLECTION PIT

1/4" = 1'-0" 5' 0' 5'

APPROVAL	DATE	
C. E. Fitzgerald Jr.	1/10/70	
SCALE	AS NOTED	DATE
DESIGNED BY	A.H. BLUM	3-9-70
DRAWN BY	S. TRUE	3-9-70
CHECKED BY	[illegible]	3-9-70
APPROVED BY	[illegible]	3-16-70
APPROVED BY	[illegible]	3-16-70

COUNT
WING
OVE
CONSTRUCTION APPROVAL

KAISER ENGINEERS

CONSOLIDATED SERVICE CENTER
CITY OF OAKLAND

DEPARTMENT OF PUBLIC WORKS BUILDING
PART PLANS & DETAILS

JOB No. 6929-20 | DWG. No. 4-2-P | REVISION R-1

APPENDIX C

BORING LOGS

BASELINE

DRILL LOG NO.: 1E

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 1E
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/19/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1–3			GC/CH		0	Yellowish-brown CLAYEY GRAVEL/GRAVELLY CLAY, trace of sand, 1/3- to 2-inch diameter subangular to angular clasts, fine to very fine grained sand, moderate plasticity, damp (Fill)	No recovery from 1 to 3 feet
4–5			CH		0	Greenish-gray to very dark gray CLAY with gravel, 1/3- to 3/4-inch diameter subangular clasts, high plasticity, very moist (Fill)	18 inches of recovery from 3 to 6 feet
6			SW		1,088	Black SAND, very fine to fine grained, damp to moist (Fill)	Petroleum odor No product observed 28 inches of recovery from 5 to 8 feet
	▼		SM			Brown SILTY SAND, very fine grained, very moist (Fill)	
7			CH			Greenish-gray SILTY CLAY, some gravel, 1/3- to 3/4-inch diameter subangular clasts, high plasticity, wet (Fill)	Less odor
8						Total Depth 8.0 feet	
9							
10							

BASELINE

DRILL LOG NO.: 1S

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 1S
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/19/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			CH		0	Yellowish-brown SILTY CLAY with gravel, 1/3- to 1.5-inch diameter subangular clasts, high plasticity, moist, some layers of clayey gravel (Fill)	
2							18 inches of recovery from 1 to 3 feet
3							No odor, no stain
					0	Becoming greenish-gray mottled with dark gray	
4							18 inches of recovery from 3 to 5 feet
5			SM			Black to very dark gray SILTY SAND with gravel, trace of clay (Fill)	
			CH			Black and greenish-gray SILTY CLAY (out of place Bay Mud) (Fill)	
6			CH		1,550	Very dark gray SILTY CLAY, some gravel and sand, 1/3- to 3/4-inch diameter subangular to rounded clases, soft, rootlet pieces, very moist to wet (Fill)	Strong gasoline odor at 6.5 to 8 feet
7	▼	X					
8						Total Depth 8.0 feet	
9							
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING1S.BOR

BASELINE

DRILL LOG NO.: 1W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 1W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GC/CL			Yellowish-brown CLAYEY GRAVEL/GRAVELLY CLAY, some sand, 1/3- to 2-inch diameter angular to subangular clasts, fine to coarse grained sand, moderate plasticity, damp (Fill)	
1			CH/GL			Brown GRAVELLY CLAY/CLAYEY GRAVEL, 1/3- to 1-inch diameter subangular clasts, high plasticity (Fill)	
2						Greenish-gray areas	
3					1,038	Becoming dark greenish-gray at 3 feet	
4							
5							Strong gasoline odor
6							No recovery from 5 to 8 feet Measured 4 inches of product at 8:30; 9 inches at 12:30
7	◆ ▼						
8						Total Depth 8.0 feet	
9							
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING1W.BOR

BASELINE

DRILL LOG NO.: 1W-A

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 1W-A
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
0.3–5			GC/CH		0	Yellowish-brown GRAVELLY CLAY/CLAYEY GRAVEL, trace of sand, 1/3- to 2-inch diameter subangular to angular clasts, fine to very fine grained sand, moderate plasticity (Fill)	No recovery from 1 to 3 feet 12 inches of recovery at 3 to 5 feet No odor
5–5.8			GW		357	Black SANDY GRAVEL, 1/3- to 3/4-inch subangular clasts, fine to coarse grained sand, moist, possible asphalt pieces (Fill)	Strong gasoline odor
5.8–9	▼		SC/CH		907	Dark gray to greenish-gray, interbedding of SANDY CLAY and SILTY CLAY with gravel, high plasticity, very moist to wet (Fill)	Sheen on soil from 6 to 7 feet No odor from 8 to 9 feet No product measured
9						Total Depth 9.0 feet	

BASELINE

DRILL LOG NO.: 1N

(Page 1 of 1)

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 1N
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/19/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Depth in	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0					Asphalt	
		GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1		CH		0	Greenish-gray GRAVELLY CLAY with sand lenses of CLAYEY GRAVEL, 1/3- to 2-inch diameter subangular to angular clasts, fine to medium grained sand, moderate plasticity, pieces of grass, moist (Fill)	24 inches of recovery from 1 to 4 feet; 18 inches of recovery from 4 to 6 feet
6		CH			Very dark gray SILTY CLAY, trace of gravel, moderate plasticity, wood pieces, moist (Fill)	Sheen seen in soil; 20 inches of recovery from 6 to 8 feet
7		CH		50	Reddiish-brown SANDY CLAY, very fine to coarse grained, low plasticity, wet (Fill)	
		CH			Greenish-gray SILTY CLAY, out of place, Bay Mud (Fill)	
8					Total Depth 8.0 feet	

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-NO\BORING1N.BOR

BASELINE

DRILL LOG NO.: 2N-A

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2N-A
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Depth in	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0					Asphalt	
		GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1		GC/CH			Brown GRAVELLY CLAY/CLAYEY GRAVEL, with sand, 1/3- to 2-inch diameter subangular to angular clasts, fine to medium grained sand, moderate to high plasticity (Fill)	Full recovery at 1 to 3 feet
				4.3		
2					Becoming greenish-gray at 2.5 feet	
3				144		Full recovery at 3 to 6 feet
5				48		
					Mixed bedding of brown and greenish-gray	
				121		
7					Becoming dark gray at 7.5 feet	
8		SW			Black GRAVELLY SAND, 1/3- to 1/2-inch diameter subangular clasts, fine to coarse grained, very moist to wet (Fill)	Product in soil at 8.5 feet
				150		
9					Total Depth 9.0 feet	
10						

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-NO\BORING2N-A.BOR

BASELINE

DRILL LOG NO.: 2N-B

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2N-B
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Depth in	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0					Asphalt	
		GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1					Brown to yellowish-brown CLAYEY GRAVEL/GRAVELLY CLAY, some sand, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, moist (Fill)	6-inch recovery at 1 to 3 feet
2						
3					Becoming greenish-gray at 3.0 to 4.5 feet	Slight gasoline odor
4		GC/CL				Full recovery at 3 to 6 feet
5					Mixed bedding of brown and greenish-gray	
6						18 inches of recovery at 6 to 9 feet
7					Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to rounded clasts, fine to coarse grained, wet (Fill)	Soil has been stained and product once present, currently in capillaries of soil
				110		
8		SW				
9					Total Depth 9.0 feet	
10						

BASELINE

DRILL LOG NO.: 2E-D

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2E-D
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1–2		X	GC/CL		0	Brown GRAVELLY CLAY/CLAYEY GRAVEL, some silt and sand, 1/3- to 2-inch diameter subangular to angular clasts, fine to very fine grained sand, moderate plasticity, moist (Fill)	14 inches of recovery at 1 to 3 feet
4–5		X					24 inches of recovery at 3 to 6 feet
6					0	Becoming dark gray at 6.0 feet	
7–8	▼	X	CH		4	Dark greenish-gray silty CLAY, some gravel and sand, 1/3- to 2-inch subangular clasts, fine to coarse grained, high plasticity, some grass pieces, soft, wet	No observed product or staining Slight odor 24 inches of recovery from 6 to 9 feet
9						Total Depth 9.0 feet	
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING2E-D.BOR

BASELINE

DRILL LOG NO.: 2N

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2N
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/19/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GC/CH			Yellowish-brown CLAYEY GRAVEL/GRAVELLY CLAY, some sand, 1/3- to 1.5-inch diameter subangular to angular clasts, fine to coarse grained sand, moist (Fill)	
2							18 inches of recovery from 1 to 3 feet
3					0	Becoming greenish-gray at 3 feet	
4							No odor 18 inches of recovery from 3 to 6 feet
5					110		
6	◆ ▽		SM		1,400	Dark greenish-gray SILTY SAND, some clay, fine to coarse grained sand, moist to very moist (Fill)	24 inches of recovery from 6 to 9 feet Product in boring at 6.49 feet Water level at 6.5 feet
7			CH			Very dark gray to greenish-gray GRAVELLY CLAY, some silt and sand, 1/3- to 2-inch diameter subangular clasts, high plasticity, very moist to wet (Fill)	
8	▼		CL		0	Pale brown SILTY CLAY, trace of gravel, high plasticity, wet (Fill)	No odor or staining at 8.5 feet
9						Total Depth 9.0 feet	
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING2N.BOR

BASELINE

DRILL LOG NO.: 2N-C

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2N-C
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			CL			Greenish-gray GRAVELLY CLAY with sand, 1/3- to 2-inch diameter rounded to angular clasts, fine to medium grained sand, moderate plasticity, moist (Fill)	
2					0		18 inches of recovery at 1 to 3 feet No odor
4					140		Strong gas? diesel odor at 4.5 feet Full recovery at 3 to 6 feet
6						Wood pieces at 6.0 feet	
7	▼		SC		110	Very dark gray to black CLAYEY SAND, trace of gravel, fine to coarse grained, pieces of leather, very moist (Fill)	Soil odor and stained Product in soil 24 inches of recovery at 6 to 9 feet
8			CH			Dark greenish-gray SILTY CLAY, some gravel, subangular clasts, high plasticity, wet	
9						Total Depth 9.0 feet	
10							

BASELINE

DRILL LOG NO.: 2N-D

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2N-D
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GC/CH			Yellowish-brown CLAYEY GRAVEL/GRAVELLY CLAY, some sand, 1/3- to 2-inch diameter clasts, fine to medium grained sand, moderate plasticity, moist (Fill)	8 inches of recovery at 1 to 3 feet
2					0		
3						Becoming greenish-gray at 3.5 feet	
4					34		
5							
6							Some petroleum odor Full recovery at 6 to 9 feet
7						Charcoal pieces at 7 feet	Strong odor; soil stained with product
	◆ ▽		SW		140	Black GRAVELLY SAND, some clay, 1/3- to 3/4-inch diameter subrounded to subangular clasts, fine to coarse grained, wet (Fill)	Product level, 7.51 feet Water level, 7.54 feet
8			CH			Greenish-gray SILTY CLAY, some gravel, high plasticity, wet Black sand lens	
9						Total Depth 9.0 feet	
10							

BASELINE

DRILL LOG NO.: 2N-E

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2N-E
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Base Rock	
1			GC/CH			Yellowish-brown CLAYEY GRAVEL/GRAVELLY CLAY, some sand and silt, 1/3- to >2-inch diameter clasts, fine to medium grained sand, high plasticity, moist (Fill)	
3.5						Becoming greenish-gray at 3.5 feet	
6					5.6		Full recovery from 6 to 9 feet
8.5	▼		CH		0	Greenish-gray SILTY CLAY with sand, fine to very fine grained, moderate to high plasticity	Slight sheen seen on probe No staining Full recovery from 9-12 feet
10					0	Greenish-gray/gray mottled SANDY CLAY with silt, high plasticity, fine grained, soft, wet (Bay Mud) (Native?)	
12						Wood piling pieces at 12 feet	
						Total depth 12.0 feet	

BASELINE

DRILL LOG NO.: 2S

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2S
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/17/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1						Yellowish-brown GRAVELLY CLAY/CLAYEY GRAVEL, trace of sand, 1/3- to 1.5-inch diameter subangular to angular clasts, fine to coarse grained sand, moderate to high plasticity, moist (Fill)	
2			GC/CH				18 inches of recovery from 1 to 3 feet
3					385		Strong gasoline odor
						Greenish-gray CLAYEY GRAVEL, some sand, 1/3- to 1.5-inch diameter subangular to angular clasts, fine to coarse grained sand, moderate to high plasticity, very moist (Fill)	
4							18 inches of recovery from 3 to 5 feet
5							No recovery from 5 to 8 feet Concrete pieces in tip Product all over sampler barrel
6			GC				
	◆						Product level, 6.75 feet
7							
8	▼						Water level, 8.05 feet
						Total Depth 8.05 feet	
9							
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING2S.BOR

BASELINE

DRILL LOG NO.: 2S-A

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2S-A
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/17/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1–2			GC/CH			Yellowish-brown GRAVELLY CLAY/CLAYEY GRAVEL, some sand, 1/3- to 1.5-inch diameter subangular to angular clasts, fine to medium grained sand, moderate to high plasticity, moist (Fill)	18 inches of recovery from 1 to 3 feet
3–7			GC/CH		58 487	Greenish-gray GRAVELLY CLAY/CLAYEY GRAVEL, some areas with very dark gray SILTY CLAY, 1/3- to 1.5-inch diameter subangular to angular clasts, fine to medium grained sand, moderate to high plasticity, moist (Fill)	Gasoline odor 24 inches of recovery from 3 to 6 feet Strong gasoline odor Full recovery from 6 to 9 feet
8			SM		700	Black SILTY SAND with clay, trace of gravel, 1/3- to 1/2-inch diameter subangular clasts, moderate plasticity, very moist (Fill)	Product and staining
9			SW		1,500	Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to subrounded clasts, fine to coarse grained, wet (Fill)	Product and staining
10	▼		CH		20	Greenish-gray SILTY CLAY, trace of gravel, high plasticity, wet	Full recovery from 9 to 10.5 feet Product level, 10.15 feet Water level, 10.17 feet

Total Depth 10.5 feet

11

12

09-22-2000 H:\BASELOGS\98383\MSC\98383MSC-WTR\BORING2S-A.BOR

BASELINE

DRILL LOG NO.: 2S-B

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2S-B
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GC/CH			Yellowish-brown CLAYEY GRAVEL/GRAVELLY CLAY, some sand, 1/3- to 1.5-inch diameter subangular to angular clasts, moderate to high plasticity, moist (Fill)	
2							12 inches of recovery from 1 to 3 feet
3					348		
4							24 inches of recovery from 3 to 6 feet
5					900		
6						Becoming greenish-gray at 6 feet	24 inches of recovery from 6 to 9 feet
7			GW			Black SANDY GRAVEL with clay, 1/3- to 1.5-inch diameter subangular to well rounded clasts, fine to coarse grained sand, very moist	Staining and strong odor
8	▼		CL		1,531	Black SILTY CLAY with gravel, 1/3- to 1-inch diameter subangular clasts, low plasticity, some grass pieces, wet Becoming greenish-gray at 8.7 feet	Product seen on gravel clasts
9						Total Depth 9.0 feet	
10							

BASELINE

DRILL LOG NO.: 2S-C

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2S-C
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Base Rock	
1–3			GC/CH			Yellowish-brown GRAVELLY CLAY/CLAYEY GRAVEL, some sand, 1/3- to 1.5-inch diameter subangular to angular clasts, fine to medium grained sand, moderate to high plasticity, moist (Fill)	6 inches of recovery from 1 to 3 feet
3–7.5			GC/CH			Greenish-gray GRAVELLY CLAY/CLAYEY GRAVEL, some areas with very dark gray silty clay, 1/3- to1.5-inch diameter subangular to angular clasts, fine to medium grained sand, moderate to high plasticity, moist (Fill)	No recovery from 3 to 6 feet No recovery from 6 to 9 feet
			SM			Black SILTY SAND with clay, trace of gravel, 1/3- to 1//2-inch diameter subangular clasts, moderate plasticity, very moist (Fill)	
9	▽ ▼		SW			Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to subrounded clasts, fine to coarse grained, wet (Fill)	Product level, 9.08 feet Water level, 9.09 feet
10			CH			Greenish-gray SILTY CLAY, trace of gravel, high plasticity, wet	
11						Total Depth 11.0 feet	
12							

BASELINE

DRILL LOG NO.: 2S-D

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2S-D
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GC/CH			Yellowish-brown GRAVELLY CLAY/CLAYEY GRAVEL, 1/3- to 2-inch diameter subangular to angular clasts, moderate to high plasticity, moist (Fill)	
2							6 inches of recovery from 1 to 3 feet
3							
					50		
4							22 inches of recovery from 3 to 6 feet
5					98	Becoming greenish-gray at 5.5 feet	
6							
7					105		Some sheen on gravel grains
8	▼		GW			Dark gray SANDY GRAVEL with clay, some silt, 1/2- to 2-inch diameter subangular to angular clasts, fine to coarse grained sand, wet at 8.0 feet	
			ML		20	Gray to light gray CLAYEY SILT, trace of sand, laminae, wet	
9						Total Depth 9.0 feet	
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING2S-D.BOR

BASELINE

DRILL LOG NO.: 2W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 2W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/20/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			CL		1.6	Greenish-gray GRAVELLY CLAY/CLAYEY GRAVEL, with sand, 1/3- to 2-inch diameter subangular to angular clasts, fine to very fine grained sand, moderate plasticity (Fill)	6-inch recovery at 1 to 3 feet Slight gasoline? diesel odor
3			CH		0.5	Greenish-gray SILTY CLAY with sand, moderate to high plasticity, very moist (Fill)	
			CH			Pale brown SILTY CLAY, moderate plasticity, very moist (Fill)	18 inches of recovery at 3 to 6 feet
			CL			Greenish-gray GRAVELLY CLAY with sand, 1/3- to 2-inch diameter subangular to angular clasts, fine to very fine grained sand, moderate plasticity (Fill)	18 inches of recovery at 6 to 9 feet
7		X	SW		89	Very dark gray GRAVELLY SAND with clay, fine to coarse grained, very moist to wet (Fill)	
	▼		CH			Dark gray SILTY CLAY, moderate to high plasticity, grass pieces, wet	
9						Total Depth 9.0 feet	Some globules of product on probe Measured water level am on 7/21/00
10							

BASELINE

DRILL LOG NO.: 3W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 3W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Concrete slab	
1			CH			Brown GRAVELLY CLAY, some sand, 1/3- to 1/2-inch diameter subangular to subrounded clasts, moderate to high plasticity, very moist (Fill)	Hand augered to 2 feet No odor, no sheen
2			CH		0	Dark gray SILTY CLAY with gravel, 1/3- to 1-inch diameter subangular clasts, high plasticity, moist to very moist (Fill)	No odor, no sheen
3					0	Brown SILTY CLAY with gravel and sand, 1/3- to 1/2-inch diameter subangular to rounded clasts, very fine to medium grained, high plasticity, very moist (Fill)	
4			CH				
5						Increase in sand and gravel content	
6						Dark gray SILTY CLAY, some gravel, 1/3- to 3/4-inch diameter angular clasts, some larger clasts up to 2 inches, high plasticity, very moist (Fill) Lenses of gravelly clay	
7			CH				Strong odor - solvent?
8	▼				670		
9						Total Depth 9.0 feet	
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING3W.BOR

BASELINE

DRILL LOG NO.: 4W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 4W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Concrete slab	Little recovery on first attempt; moved a few feet away
1			SW			Brown GRAVELLY SAND/Base Rock, 1/3 - to 3/4-inch diameter subangular to angular clasts, fine grained, moist (Fill)	
2			CH		0	Brown GRAVELLY CLAY with sand, 1/3- to >2-inch diameter subangular to subrounded clasts, fine to medium grained, moderate to high plasticity, (Fill)	18 inches of recovery from 1 to 3 feet
						Becoming greenish-gray at 2.75 feet	
3–6			CH		0		18 inches of recovery from 3 to 6 feet
						Large clasts, fire-brick at 6.5 feet	
7		X	SC/CH			SANDY CLAY/CLAYEY SAND with gravel, 1/3- to 3/4-inch diameter subangular to angular clasts, fine to medium grained, moderate to high plasticity, friable, very moist to wet	18 inches of recovery from 6 to 9 feet No odor or staining
8	▼		CH		0	Blackish-gray to dark gray SILTY CLAY, some rock fragments, high plasticity, wet	No odor, no staining
9						Total Depth 9.0 feet	
10							

BASELINE

DRILL LOG NO.: 5W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 5W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Concrete slab	
1		X	GW/SW		0	Base Rock, sand and gravel, angular clasts, fine to medium grained sand	
1–6.5			CH			Brown GRAVELLY CLAY, some sand, 1/3- to 1.5-inch diameter subangular to subrounded clasts, fine to medium grained sand, moderate plasticity, moist, some silty clay-sandy clay with gravel lenses up to 4 inches thick (Fill)	Full recovery from 1 to 3 feet No odor
4		X			0		24 inches of recovery from 3 to 6 feet No odor
6.5						Becoming dark gray at 6.5 feet	
7			CH/SC			SANDY CLAY/CLAYEY SAND with gravel, 1/3- to 3/4-inch diameter subangular to angular clasts, fine to medium grained sand, moderate to high plasticity, friable, very moist to wet (Fill)	30 inches of recovery from 6 to 9 feet No odor
7.8	▼	X			0		
8			CH			Mixed light gray and dark gray SILTY CLAY, some gravel, 1/3- to 3/4-inch diameter subangular to subrounded clasts, high plasticity, wet (Fill)	
9					0		6 inches of recovery from 9 to 11 feet
10			CH			Very dark gray mottled with black SILTY CLAY with rootlets, Bay Mud not in place	
10.5			CH			Mixed light gray and dark gray SILTY CLAY, some gravel, 1/3- to 3/4-inch diameter subangular to subrounded clasts, high plasticity, wet	
11						Total Depth 11.0 feet	
12							

BASELINE

DRILL LOG NO.: 6W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 6W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Concrete slab	Hand auguered to 2 feet
			GW/SW			Base Rock, sand and gravel, angular clasts, fine to medium grained (Fill)	
1–3			GC/CH			Brown to reddish-brown CLAYEY GRAVEL/GRAVELLY CLAY, 1/3- to 1.5-inch diameter subangular to angular clasts, moderate plasticity, moist	
3–5			CH		0	Greenish-gray GRAVELLY CLAY with sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, fine to medium grained sand, moderate plasticity, moist (Fill)	18 inches of recovery from 2 to 4 feet
5						4 inches of crushed silty clay rock	18 inches of recovery from 4 to 6 feet
			CH			Greenish-gray GRAVELLY CLAY with sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, fine to medium grained sand, moderate plasticity, moist (Fill)	Petroleum - solvent odor? Full recovery from 6 to 9 feet
	▼				17.8	Crushed silty clay rock	Petroleum - solvent odor?
8–9			CH			Greenish-gray GRAVELLY CLAY with sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, fine to medium grained sand, moderate plasticity, moist (Fill)	

Total Depth 9.0 feet

BASELINE

DRILL LOG NO.: 7W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 7W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Concrete slab	
1			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
2			CH			Gray to dark gray GRAVELLY CLAY, 1/3- to 3/4-inch diameter subangular to subrounded clasts, moderate to high plasticity, moist (Fill)	18 inches of recovery from 1 to 3 feet No odor
3			CH		0	Greenish-gray SANDY CLAY with gravel, 1/3- to 3/4-inch diameter angular clasts, high plasticity, moist to very moist (Fill)	
4			CH			Greenish-gray SILTY CLAY, moderate to high plasticity, very moist (Fill)	24 inches of recovery from 3 to 6 feet 4.4 No odor
5			GW			Greenish-gray SANDY GRAVEL, 1/2-inch diameter well rounded clasts, fine to coarse grained sand, very moist (Fill)	
6			CH		0	Greenish-gray and brown GRAVELLY CLAY, 1/3- to >2-inch diameter angular clasts, high plasticity, very moist (Fill)	
7							30 inches of recovery from 6 to 9 feet
8	▼				0	Dark brown at 7.5 to 8.5 feet, becoming friable	
						Brown SILTY CLAY with gravel, 1/3- to 3/4-inch diameter subangular clasts, wet (Fill)	
9						Total Depth 9.0 feet	
10							

BASELINE

DRILL LOG NO.: 8W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 8W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
1			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	6 inches of recovery from 1 to 3 feet
2–4			GC/CH		0 0	Brown GRAVELLY CLAY/CLAYEY GRAVEL with silt and sand, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, moist to very moist	24 inches of recovery from 3 to 6 feet
5–6			CH		17	Greenish-gray GRAVELLY CLAY with sand and silt, 1/3- to >2-inch diameter subangular to angular clasts, high plasticity, very moist (Fill)	
7			GC		856	Greenish-gray SILTY CLAY, moderate to high plasticity, very moist Gravelly sand lens	Strong gasoline? diesel odor 34 inches of recovery from 6 to 9 feet Sheen on probe
8	▼		CH		6	Greenish-gray CLAYEY GRAVEL (crushed rock, silty clay), 1/3- to 1.5-inch diameter subangular to angular clasts, high plasticity, very moist to wet	
			SW		0	Greenish-gray SILTY CLAY, high plasticity, not in place Bay Mud, gray fine to very fine grained sand, wet	No measured product
9						Total Depth 9.0 feet	
10							

BASELINE

DRILL LOG NO.: 9W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 9W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
1			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
2–4			GC/CH		0	Brown GRAVELLY CLAY/CLAYEY GRAVEL with silt and sand, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, moist to very moist	
5–6			CH		0	Greenish-gray GRAVELLY CLAY with sand and silt, 1/3- to >2-inch diameter subangular to angular clasts, high plasticity, very moist (Fill)	
7			GC		1,351	Greenish-gray SILTY CLAY, moderate to high plasticity, very moist Gravelly sand lens	30 inches of recovery from 6 to 9 feet Strong gasoline? diesel odor Sheen on probe
8	▼		CH			Greenish-gray CLAYEY GRAVEL (crushed rock, silty clay), 1/3- to 1.5-inch diameter subangular to angular clasts, high plasticity, very moist to wet	
9			SW			Greenish-gray SILTY CLAY, high plasticity, not in place Bay Mud, gray fine to very fine grained sand, wet	No measured product
10						Total Depth 9.0 feet	

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING9W.BOR

BASELINE

DRILL LOG NO.: 10W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 10W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
1			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
2			CH		6.7	Greenish-gray GRAVELLY CLAY, some sand, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, moist (Fill)	Full recovery from 1 to 4 feet
3					98		Strong petroleum odor
4	▼	X			500		
5			CH		117	Very dark gray mixed with greenish-gray SILTY CLAY, trace of gravel, high plasticity, moist (Fill)	12 inches of recovery from 4 to 7 feet
6							
7						Total Depth 7.0 feet	
8							
9							
10							

BASELINE

DRILL LOG NO.: 10S

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 10S
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GC/CH		0	Greenish-gray GRAVELLY CLAY/CLAYEY GRAVEL, some sand and silt, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, very moist (Fill)	
					5.6		
2							18 inches of recovery from 1 to 3 feet
3							
4							24 inches of recovery from 3 to 6 feet Strong diesel odor, stained soil
			SC		356	Greenish-gray SANDY CLAY, fine grained, high plasticity, some sand lenses, wet Black SANDY GRAVEL lens 1 inch or so thick	
	▼						
5			?			No recovery	
6						Total Depth 6.0 feet	
7							
8							
9							
10							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING10S.BOR

BASELINE

DRILL LOG NO.: 10N

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 10N
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			CH			Black and greenish-gray SILTY CLAY, trace of gravel, high plasticity (Fill)	
			GC/CH			Gray to greenish-gray CLAYEY GRAVEL/GRAVELLY CLAY, 1/3- to >2-inch diameter clasts, high plasticity, very moist (Fill)	
2–5	▼ (~4.9)		CH		338	Dark gray GRAVELLY CLAY, 1/3- to >2-inch diameter subangular to angular clasts, high plasticity, very moist (Fill)	18 inches of recovery from 1 to 3 feet Full recovery from 3 to 6 feet
5			SM			Greenish-gray SILTY SAND, some gravel and clay, fine to medium grained, moist (Fill)	
			GW		256	Black SANDY GRAVEL, 1/3- to 3/4-inch diameter well rounded clasts, fine to coarse grained sand, wet (Fill)	
6–9			CH			Dark gray SILTY CLAY (crushed silty clay rock, friable), wet (Fill)	Strong odor and staining Sheen seen in soil No recovery from 6 to 9 feet
9						Total Depth 9.0 feet	
10							

BASELINE

DRILL LOG NO.: 10E

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 10E
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/21/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1–3			GC			Brown CLAYEY GRAVEL, some sand, 1/3- to 1.5-inch diameter subangular to angular clasts, moist (Fill)	12 inches of recovery from 1 to 3 feet
3–5	▼		SC/CH		176	Greenish-gray CLAYEY SAND/SANDY CLAY with gravel, 1/3- to 3/4-inch diameter subangular to angular clasts, fine to very fine grained, wet (Fill) Some sand lenses a few inches thick	26 inches of recovery from 3 to 6 feet
5–6			CH		58	Greenish-gray SANDY CLAY with silt, trace of gravel, lenses of sand, very fine to fine grained, high plasticity, wet (Fill)	Minor product Sheen on soil
6						Total Depth 6.0 feet	
7							
8							
9							
10							

BASELINE

DRILL LOG NO.: 11W

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11W
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Depth in	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0					Asphalt	
1		GC/CH			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
					Brown GRAVELLY CLAY/CLAYEY GRAVEL, some sand, 1/3- to >2-inch diameter subangular to subrounded clasts, moderate to high plasticity, moist (Fill)	
2		CH			Brown GRAVELLY CLAY, trace of sand, 1/3- to 3/4-inch subangular to subrounded clasts, high plasticity, moist	30 inches of recovery from 1 to 4 feet
3					Becoming greenish-gray	
4					Concrete pieces	
				2.4		
5		SM/ML			Very dark gray mixed SANDY SILT/SILTY SAND, some gravel, 1/3- to 3/4-inch diameter subangular to angular clasts, pieces of concrete, moist to very moist, no visible product, construction debris	12 inches of recovery from 4 to 7 feet. Moved south 1 foot, redrilled to 4 feet, pushed from 4 to 6 and 6 to 8 feet 12 inches of recovery on both runs
6				270		
7		CH			Greenish-gray SILTY CLAY, not in place Bay Mud?, sand lenses, hard resin (pale green) sand lenses bright yellow and brown	
				0		
8					Total Depth 8.0 feet	
9						
10						

BASELINE

DRILL LOG NO.: 11S

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11S
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Depth in	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0					Asphalt	
		GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1		GC/CH			Brown GRAVELLY CLAY/CLAYEY GRAVEL, some sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, high plasticity, moist (Fill)	
2					Brown GRAVELLY CLAY trace of sand, 1/3- to 3/4-inch diameter subangular to subrounded clasts, high plasticity, moist (Fill)	
3						
4						
5		SM/ML			Very dark gray SANDY SILT/SILTY SAND, some gravel, 1/3- to 3/4-inch diameter subangular to angular clasts, pieces of concrete and brick (Fill)	
6				0		18 inches of recovery from 5 to 8 feet
7				0		
8		CH		0	Greenish-gray SILTY CLAY, high plasticity, very moist to wet (Fill)	18 inches of recovery from 8 to 10 feet No odor
9		SW		0	Black SAND, some gravel, fine grained, wet (Fill)	No odor
10					Total Depth 10.0 feet	
11						

H:\BASELOGS\98383MSC\98383MSC-MO\BORING11S.BOR 09-22-2000

BASELINE

DRILL LOG NO.: 11E

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11E
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1–3			CH			Greenish-gray GRAVELLY CLAY with sand and silt, moderate to high plasticity, 1/3 to 1.5-inch in diameter subangular to subrounded clasts, moist to very moist (Fill)	30 inches of recovery from 1 to 4 feet First attempt 12 inches of recovery
4			CH		1,030	Mixed greenish-gray to very dark gray SILTY CLAY, trace of gravel, high plasticity, very moist (Fill)	
	▼					CLAYEY GRAVEL/GRAVELLY CLAY lens 2 inches thick, sheen	
5–6			CH		330 565	Mixed greenish-gray to very dark gray SILTY CLAY, trace of gravel, high plasticity, very moist (Fill)	Redrilled to 5 feet Second attempt 18 inches of recovery from 5 to 7 feet
			CH			Black to very dark gray GRAVELLY SAND lens, 1/2-inch thick, wet	
7						Mixed greenish-gray to very dark gray SILTY CLAY, trace of gravel, high plasticity, very moist to wet	

Total Depth 7.0 feet

BASELINE

DRILL LOG NO.: 11E-1

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11E-1
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Concrete slab	
1			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
2–5			GC/CH			Brown GRAVELLY CLAY/CLAYEY GRAVEL, some sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, moderate to high plasticity, moist (Fill)	
6–8	▼		GC/CH		110	Greenish-gray GRAVELLY CLAY, 1/3- to >2-inch diameter subangular to subrounded clasts, high plasticity, very moist (Fill)	Strong petroleum odor at 7.5 feet 12 inches of recovery from 7 to 9 feet
9–10			SW		0	Greenish-gray SAND with gravel, fine to medium grained, 1/3 to 3/4 inch diameter subangular to subrounded clasts, wet	18 inches of recovery from 9 to 12 feet No odor
11			CH			Greenish-gray SILTY CLAY (Bay Mud)	
12						Total Depth 12.0 feet	
13							
14							

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTRBORING11E-1.BOR

BASELINE

DRILL LOG NO.: 11N

(Page 1 of 1)

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11N
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1–4			CH		7.1	Greenish-gray GRAVELLY CLAY with silt and sand, 1/3- to >2-inch diameter rounded to subangular clasts, moderate to high plasticity, moist (Fill)	Diesel odor
4			CH		5.2	Mixed greenish-gray and very dark gray SILTY CLAY, trace of gravel, high plasticity, very moist (Fill) Increase in gravel content at 5.5 feet	
		X	SW		572	Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to subrounded clasts, fine to coarse grained, wet (Fill)	Strong diesel odor
	▼		CH		800	Greenish-gray SANDY CLAY with silt, wet (Fill) Some sand lenses 1/2 inch thick, petroleum stained	Product in soil Heavy sheen
7						Total Depth 7.0 feet	
8							
9							
10							

09-22-2000 H:\BASELOGS\98383\MSC\98383MSC-WTR\BORING11N.BOR

BASELINE

DRILL LOG NO.: 11-N1

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11-N1
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	USCS	PID (ppm)	DESCRIPTION	NOTES
0			Asphalt	
0.5	GW		Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1	GC/CH		Brown GRAVELLY CLAY/CLAYEY GRAVEL, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, moist (Fill)	
2	CH	0	Greenish-gray GRAVELLY CLAY, 1/3- to >2-inch diameter subrounded to subangular clasts, high plasticity, very moist (Fill)	10 inches of recovery from 1 to 4 feet
4		80		
5		638		Full recovery from 4 to 7 feet
6		256		
6	SW	1050	Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to rounded clasts, fine to coarse grained, very moist (Fill)	Strong petroleum odor
7	CH		Greenish-gray SILTY CLAY (out of place Bay Mud)	
8 ▼	SW		Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to rounded clasts, fine to coarse grained sand, wet (Fill)	12 inches of recovery from 8 to 10 feet Strong odor Heavy sheen
10			Total Depth 10.0 feet	

BASELINE

DRILL LOG NO.: 11-N2

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11-N2
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GC/CH			Brown GRAVELLY CLAY/CLAYEY GRAVEL, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, moist (Fill)	
2–6			CH			Greenish-gray GRAVELLY CLAY, 1/3- to >2-inch diameter subrounded to subangular clasts, high plasticity, very moist (Fill)	Pushed to 7.0 feet before collecting samples
7			SW			Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to rounded clasts, fine to coarse grained, very moist (Fill)	
			SP		1,000	Greenish-gray to brown SAND, fine grained, very moist (Fill)	Strong petroleum odor
8–9	◆ ▼		SW		1,150	Black GRAVELLY SAND, 1/3- to 1-inch diameter subangular to rounded clasts, fine to coarse grained sand, wet (Fill)	30 inches of recovery from 7 to 10 feet
10						Total Depth 10.0 feet	
11							

BASELINE

DRILL LOG NO.: 11-N3

(Page 1 of 1)

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11-N3
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels
▼ Water level observed during drilling
▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GC/CH			Brown GRAVELLY CLAY/CLAYEY GRAVEL, 1/3- to >2-inch diameter subangular to angular clasts, moderate to high plasticity, moist (Fill)	
2–6			CH			Greenish-gray GRAVELLY CLAY, 1/3- to >2-inch diameter subrounded to subangular clasts, high plasticity, very moist (Fill)	Pushed to 7.0 feet before collecting samples
7			SW			Black GRAVELLY SAND, 1/3- to 3/4-inch diameter subangular to rounded clasts, fine to coarse grained, very moist (Fill)	
8			CH		340	Greenish-gray SILTY CLAY, with gravel, 1/3- to 1.5-inch diameter subangular to subrounded clasts, very moist, (Fill)	30 inches of recovery from 7 to 10 feet
9	▼		SW		77 780	Black GRAVELLY SAND, fine to coarse grained, 1/3- to 3/4-inch diameter subangular to rounded clasts, very moist to wet (Fill)	Heavy sheen
10						Total Depth 10.0 feet	
11							

H:\BASELOGS\98383MSC\98383MSC-WTR\BORING11-N3.BOR

09-22-2000

BASELINE

DRILL LOG NO.: 11-S1

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11-1
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	Water Levels	Samples	USCS	GRAPHIC	PID (ppm)	DESCRIPTION	NOTES
0						Asphalt	
			GW			Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1			GH/GC			Brown GRAVELLY CLAY/CLAYEY GRAVEL, some sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, moderate plasticity, moist (Fill)	
2			CH		0	Greenish-gray GRAVELLY CLAY, with sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, very moist to moist (Fill)	12 inches of recovery from 1 to 4 feet
3							
4					0		
5							20 inches of recovery from 4 to 6 feet
			BRICK			Large brick pieces	No odor; no staining
6							
7	▼		SM		0	Black SILTY SAND, fine grained, moist becoming wet at 7.5 feet	20 inches of recovery 6 to 8 feet No odor Soft at 7 feet
8						Total Depth 8.0 feet	
9							
10							

BASELINE

DRILL LOG NO.: 11-W2

(Page 1 of 1)

5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686 voice
(510) 420-1707 fax

Location	: MSC, Oakland	Boring no.	: 11-W2
Driller	: Precision Sampling	Project no.	: 98383-17
Method	: Direct push technology	Date	: 7/24/00
Logger	: WKS	Casing size	: N/A
Datum	: NA	Bore size	: 4 inch

Water Levels

▼ Water level observed during drilling

▽ Water level measured with dual-interface probe

Depth in	USCS	PID (ppm)	DESCRIPTION	NOTES
0			Asphalt	
	GW		Yellowish-brown GRAVEL with sand, trace to some clay, 1/3- to >2-inch diameter subangular to angular clasts, fine to coarse grained, damp (Base Rock)	
1	GC/CH		Brown GRAVELLY CLAY/CLAYEY GRAVEL, some sand and silt, 1/3- to >2-inch diameter subangular to subrounded clasts, moderate to high plasticity, moist (Fill)	
2–7.8	CH	0	Greenish-gray GRAVELLY CLAY, 1/3- to >2-inch diameter subangular to subrounded clasts, moderate to high plasticity, very moist (Fill)	12 inches of recovery from 1 to 4 feet
		0		
		0		12 inches of recovery from 4 to 7 feet
		0		
		875		
8–10	SW		Black GRAVELLY SAND, 1/2- to 3/4-inch diameter subangular to rounded clasts, wet	12 inches of recovery from 7 to 10 feet Product in soil
10			Total Depth 10.0 feet	

09-22-2000 H:\BASELOGS\98383MSC\98383MSC-WTR\BORING11W-2.BOR

APPENDIX D

LABORATORY REPORTS - JULY 2000 INVESTIGATION

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17
Laboratory: Curtis + Tompkins
Report Date: 8-3-00

Site: Municipal Service Center, City of Oakland
Laboratory Report No: 146684
BASELINE Review By: WKS

	Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)**			
1a. Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?	✓		
1e. Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable)?	✓		
2a. Is the laboratory report format consistent and legible throughout the report?	✓		
2b. Are the sample and reported dates shown in the laboratory report correct?			
3a. Does the lab report include the original chain-of-custody form?	✓		
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?		✓ *1	
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			✓
6. Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7. Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)			
8a. Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)		✓	
8b. If no, is an explanation provided by the laboratory?	✓		

		Yes	No	NA
9a	Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	✓		
9b	If no, was it flagged in the report?			✓
10	If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a.	Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	✓		
11b.	Is a standard chromatogram(s) included in the laboratory report?	✓		
11c.	Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	✓		
12.	Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*			✓
13a.	REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b.	REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c.	REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d.	REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses				
14.	Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15.	Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16.	Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*	✓		
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?			✓

		Yes	No	NA
Sample Quality Control				
21a.	Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*		✓	
21b.	If no, is an explanation given in the case narrative to validate the data?	✓		

Comments:
*' CTT could not perform porosity, not enough sample

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:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 03-AUG-00
Lab Job Number: 146684
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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: Carol Wutham for Anna Pajarillo
Project Manager

Reviewed by:
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number: 146684 **Receipt Date:** 07/21/00
Client: Baseline Environmental
Location: MSC-7101 Edgewater Drive
Project#: 98383-17

CASE NARRATIVE

This hardcopy data package contains sample and QC results for twelve soil samples that were received on July 21, 2000.

TPH-Purgeable Hydrocarbons and BTXE: A high surrogate recovery was observed for bromofluorobenzene in sample 6W;7.5-8.0 (CT#146684-006) due to coelution with a hydrocarbon peak. No other analytical problems were encountered.

TPH-Extractable Hydrocarbons: Samples 10N;4.5-5.0 (CT#146684-010), 10S;4.0-4.5 (CT#146684-011), and 10E;3.5-4.0 (CT#146684-012) were diluted due to high levels of hydrocarbons causing the surrogates to be diluted out. No other analytical problems were encountered.

Volatile Organics: Sample 3W;7.5-8.0 (CT#146684-001) was diluted due to high levels of hydrocarbons present in the sample. A high surrogate recovery was observed for bromofluorobenzene in sample 3W;7.5-8.0 (CT#146684-001) due to hydrocarbon interference. High surrogate recoveries and a spike recovery were observed in the matrix spike and spike duplicate of 3W;7.5-8.0 (CT#146684-001) due to high levels of hydrocarbons present in the sample. No other analytical problems were encountered.

Polynuclear Aromatic Hydrocarbons: High surrogate recoveries were observed for nitrobenzene-d5 in samples 10N;4.5-5.0 (CT#146684-010), 10S;4.0-4.5 (CT#146684-011), and 10E;3.5-4.0 (CT#146684-012) due to high levels of non-target compounds present in the samples. The samples were also diluted due to the non-target compounds. No other analytical problems were encountered.

Wet Chemistry: No analytical problems were encountered.

T96684

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

CHAIN OF CUSTODY RECORD

Turn-around Time: Standard (5-day)
Lab: C & T
BASELINE Contact Person: Bruce

Project No.: 98383-17

Project Name and Location: MSC 7101 Edgewater Dr.

Samplers: (Signature)

	Sample ID No. Station	Date:	Time:	Media	Containers No.	Containers Type	Preservative None	HCl	NO_3	SO_4	Other:	TPH gas gasoline, diesel, motor oil	BTEX, MTBE	EPA 8260 Volatiles	EPA 8270 Semi Volatiles	Moisture content, oil by volume, TOC, porosity, bulk density				Remarks/ Composite
-1	3W-7.5-8.0	7-21-00	7:30	S	1	SS	X					X	X	X	X					
-2	5W; 1-1.5		8:50	S	1	SS	X									X				
-3	5W; 4-4.5		9:00	S	1	SS	X									X				
-4	5W; 7.5-8.0		9:20	S	1	SS	X					X	X	X						
-5	4W; 7-7.5		9:42	S	1	SS	X					X	X	X						
-6	6W; 7.5-8.0		10:40	S	1	SS	X					X	X	X	X					
-7	7W; 7.5-8.0		11:30	S	1	SS	X					X	X	X						
-8	8W; 7.5-8.0		12:47	S	1	SS	X					X	X							
-9	9W; 7.5-8.0		13:40	S	1	SS	X					X	X							
-10	10N; 4.5-5.0		13:50	S	1	SS	X													Hold
-11	10S; 4.0-4.5		14:20	S	1	SS	X					X	X		X					
-12	10E; 3.5-4.0		15:00	S	1	SS	X					X	X		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Conditions of Samples Upon Arrival at Laboratory:
	7/21/00 16:45		7/21/00 3:45	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Remarks: Received chilled NB
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	

Baseline

CURTIS & TOMPKINS, LTD. BERKELEY LOGIN CHANGE FORM

Reason for change: * Client Request By: Bill Scott Date/Time: 7/24/00 10:00 AM Initials: ________
________ Login Review ________ Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
		10N; 4.5-5.0	Soil	+	TVH/BTXE/MTBE	
					TEH w/Motor Oil	
					8270	

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	3W;7.5-8.0	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-001	Analyzed:	07/28/00

Analyte	Result	RL
Gasoline C7-C12	2,100 H Y	100

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	62-138
Bromofluorobenzene (FID)	136	46-150

Field ID:	5W;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-004	Analyzed:	07/28/00

Analyte	Result	RL
Gasoline C7-C12	ND	0.96

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	62-138
Bromofluorobenzene (FID)	114	46-150

Field ID:	4W;7-7.5	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-005	Analyzed:	07/25/00

Analyte	Result	RL
Gasoline C7-C12	ND	0.93

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	62-138
Bromofluorobenzene (FID)	116	46-150

Field ID:	6W;7.5-8.0	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-006	Analyzed:	07/28/00

Analyte	Result	RL
Gasoline C7-C12	170 H	5.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	62-138
Bromofluorobenzene (FID)	174 *	46-150

* = Value outside of QC limits; see narrative
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	7W;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-007	Analyzed:	07/25/00

Analyte	Result	RL
Gasoline C7-C12	ND	0.99

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	62-138
Bromofluorobenzene (FID)	112	46-150

Field ID:	8W;7.5-8.0	Diln Fac:	10.00
Type:	SAMPLE	Batch#:	57333
Lab ID:	146684-008	Analyzed:	07/31/00

Analyte	Result	RL
Gasoline C7-C12	370	10

Surrogate	%REC	Limits
Trifluorotoluene (FID)	136	62-138
Bromofluorobenzene (FID)	146	46-150

Field ID:	9W;7.5-8.0	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-009	Analyzed:	07/26/00

Analyte	Result	RL
Gasoline C7-C12	1,400	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	129	62-138
Bromofluorobenzene (FID)	134	46-150

Field ID:	10N;4.5-5.0	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-010	Analyzed:	07/26/00

Analyte	Result	RL
Gasoline C7-C12	1,600 H	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	62-138
Bromofluorobenzene (FID)	136	46-150

* = Value outside of QC limits; see narrative
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	10S;4.0-4.5	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-011	Analyzed:	07/25/00

Analyte	Result	RL
Gasoline C7-C12	5.7	0.96

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	62-138
Bromofluorobenzene (FID)	130	46-150

Field ID:	10E;3.5-4.0	Diln Fac:	200.0
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-012	Analyzed:	07/28/00

Analyte	Result	RL
Gasoline C7-C12	1,700 H	200

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	62-138
Bromofluorobenzene (FID)	119	46-150

Type:	BLANK	Batch#:	57222
Lab ID:	QC120958	Analyzed:	07/25/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	62-138
Bromofluorobenzene (FID)	105	46-150

Type:	BLANK	Batch#:	57298
Lab ID:	QC121261	Analyzed:	07/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	62-138
Bromofluorobenzene (FID)	107	46-150

* = Value outside of QC limits; see narrative
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet		

Type:	BLANK	Batch#:	57333
Lab ID:	QC121407	Analyzed:	07/31/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	62-138
Bromofluorobenzene (FID)	107	46-150

* = Value outside of QC limits; see narrative
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	3W;7.5-8.0	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-001	Analyzed:	07/28/00

Analyte	Result	RL
MTBE	ND	2,000
Benzene	ND	500
Toluene	ND	500
Ethylbenzene	ND	500
m,p-Xylenes	ND	500
o-Xylene	ND	500

Surrogate	%REC	Limits
Trifluorotoluene (PID)	100	65-134
Bromofluorobenzene (PID)	114	55-138

Field ID:	5W;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-004	Analyzed:	07/25/00

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	113	65-134
Bromofluorobenzene (PID)	120	55-138

Field ID:	4W;7-7.5	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-005	Analyzed:	07/25/00

Analyte	Result	RL
MTBE	ND	19
Benzene	ND	4.6
Toluene	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	65-134
Bromofluorobenzene (PID)	118	55-138

C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	6W;7.5-8.0	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-006	Analyzed:	07/28/00

Analyte	Result	RL
MTBE	ND	100
Benzene	ND	25
Toluene	510	25
Ethylbenzene	1,300	25
m,p-Xylenes	5,900	25
o-Xylene	2,700	25

Surrogate	%REC	Limits
Trifluorotoluene (PID)	99	65-134
Bromofluorobenzene (PID)	119	55-138

Field ID:	7W;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-007	Analyzed:	07/28/00

Analyte	Result	RL
MTBE	ND	18
Benzene	ND	4.6
Toluene	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6

Surrogate	%REC	Limits
Trifluorotoluene (PID)	107	65-134
Bromofluorobenzene (PID)	110	55-138

Field ID:	8W;7.5-8.0	Diln Fac:	10.00
Type:	SAMPLE	Batch#:	57333
Lab ID:	146684-008	Analyzed:	07/31/00

Analyte	Result	RL
MTBE	750	200
Benzene	ND	50
Toluene	1,100	50
Ethylbenzene	1,200	50
m,p-Xylenes	790	50
o-Xylene	440	50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	127	65-134
Bromofluorobenzene (PID)	137	55-138

C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	9W;7.5-8.0	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-009	Analyzed:	07/26/00

Analyte	Result	RL
MTBE	5,200	1,000
Benzene	1,300	250
Toluene	2,800	250
Ethylbenzene	11,000	250
m,p-Xylenes	14,000	250
o-Xylene	7,600	250

Surrogate	%REC	Limits
Trifluorotoluene (PID)	131	65-134
Bromofluorobenzene (PID)	133	55-138

Field ID:	10N;4.5-5.0	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-010	Analyzed:	07/26/00

Analyte	Result	RL
MTBE	ND	1,000
Benzene	620 C	250
Toluene	1,000	250
Ethylbenzene	1,000 C	250
m,p-Xylenes	2,500	250
o-Xylene	6,200 C	250

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	65-134
Bromofluorobenzene (PID)	126	55-138

Field ID:	10S;4.0-4.5	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57222
Lab ID:	146684-011	Analyzed:	07/25/00

Analyte	Result	RL
MTBE	34 C	19
Benzene	74	4.8
Toluene	6.8	4.8
Ethylbenzene	20	4.8
m,p-Xylenes	8.2	4.8
o-Xylene	ND	4.8

Surrogate	%REC	Limits
Trifluorotoluene (PID)	120	65-134
Bromofluorobenzene (PID)	122	55-138

C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	10E;3.5-4.0	Diln Fac:	200.0
Type:	SAMPLE	Batch#:	57298
Lab ID:	146684-012	Analyzed:	07/28/00

Analyte	Result	RL
MTBE	ND	4,000
Benzene	ND	1,000
Toluene	1,000	1,000
Ethylbenzene	ND	1,000
m,p-Xylenes	2,200	1,000
o-Xylene	ND	1,000

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	65-134
Bromofluorobenzene (PID)	108	55-138

Type:	BLANK	Batch#:	57222
Lab ID:	QC120958	Analyzed:	07/25/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	102	65-134
Bromofluorobenzene (PID)	107	55-138

Type:	BLANK	Batch#:	57298
Lab ID:	QC121261	Analyzed:	07/27/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	109	65-134
Bromofluorobenzene (PID)	110	55-138

C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet		

Type:	BLANK	Batch#:	57333
Lab ID:	QC121407	Analyzed:	07/31/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	105	65-134
Bromofluorobenzene (PID)	110	55-138

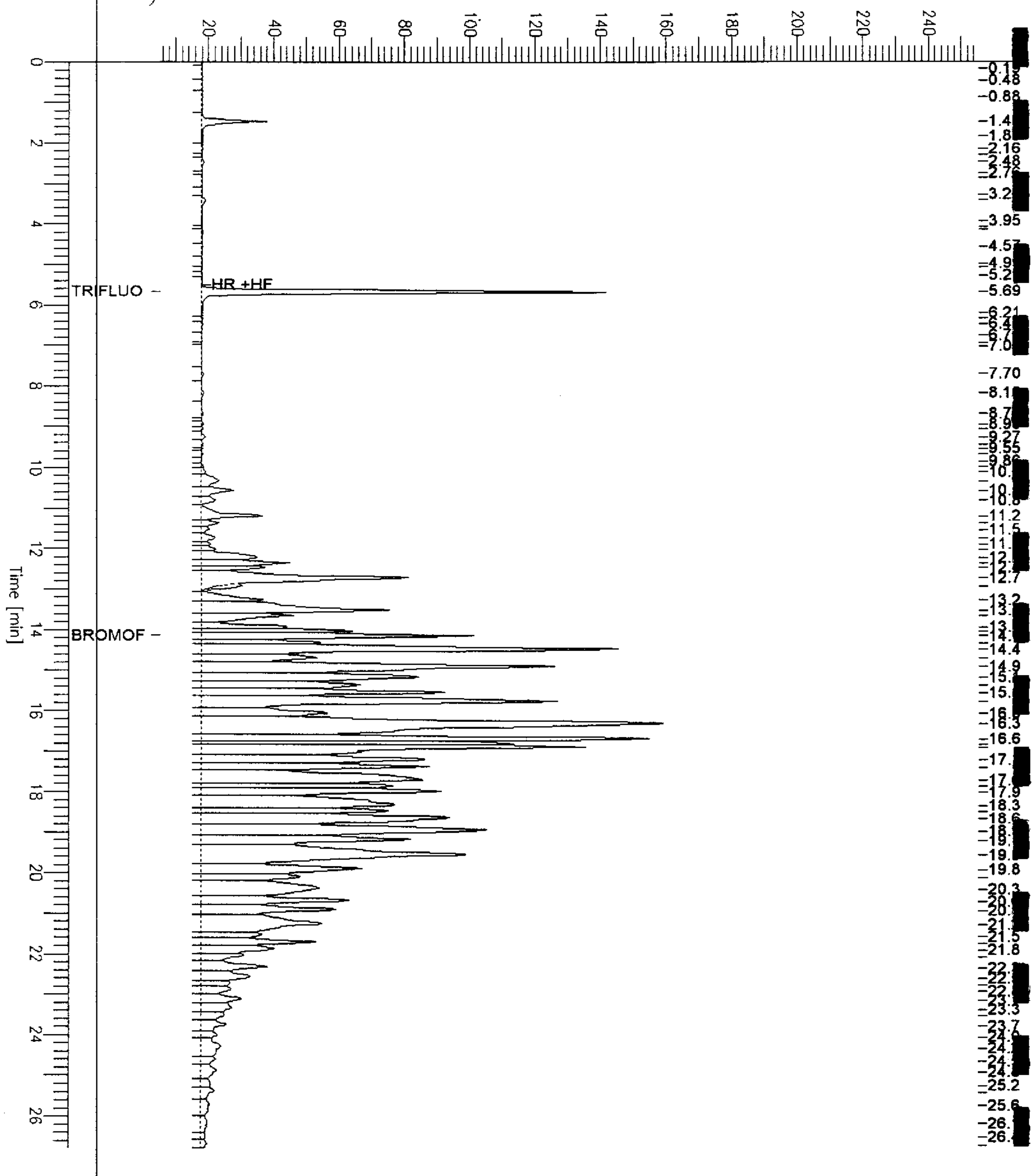
C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 146684-001,57298,+mtbe
FileName : G:\GC19\DATA\209X026.raw
Method : TVHBTXE
Start Time : 0.00 min   End Time : 26.80 min
Scale Factor: -1.0   Plot Offset: 5 mV

Sample #: 100x,a   Page 1 of 1
Date : 7/28/00 02:33 PM
Time of Injection: 7/28/00 09:14 AM
Low Point : 5.37 mV   High Point : 255.37 mV
Plot Scale: 250.0 mV

30; 7.5-8.0



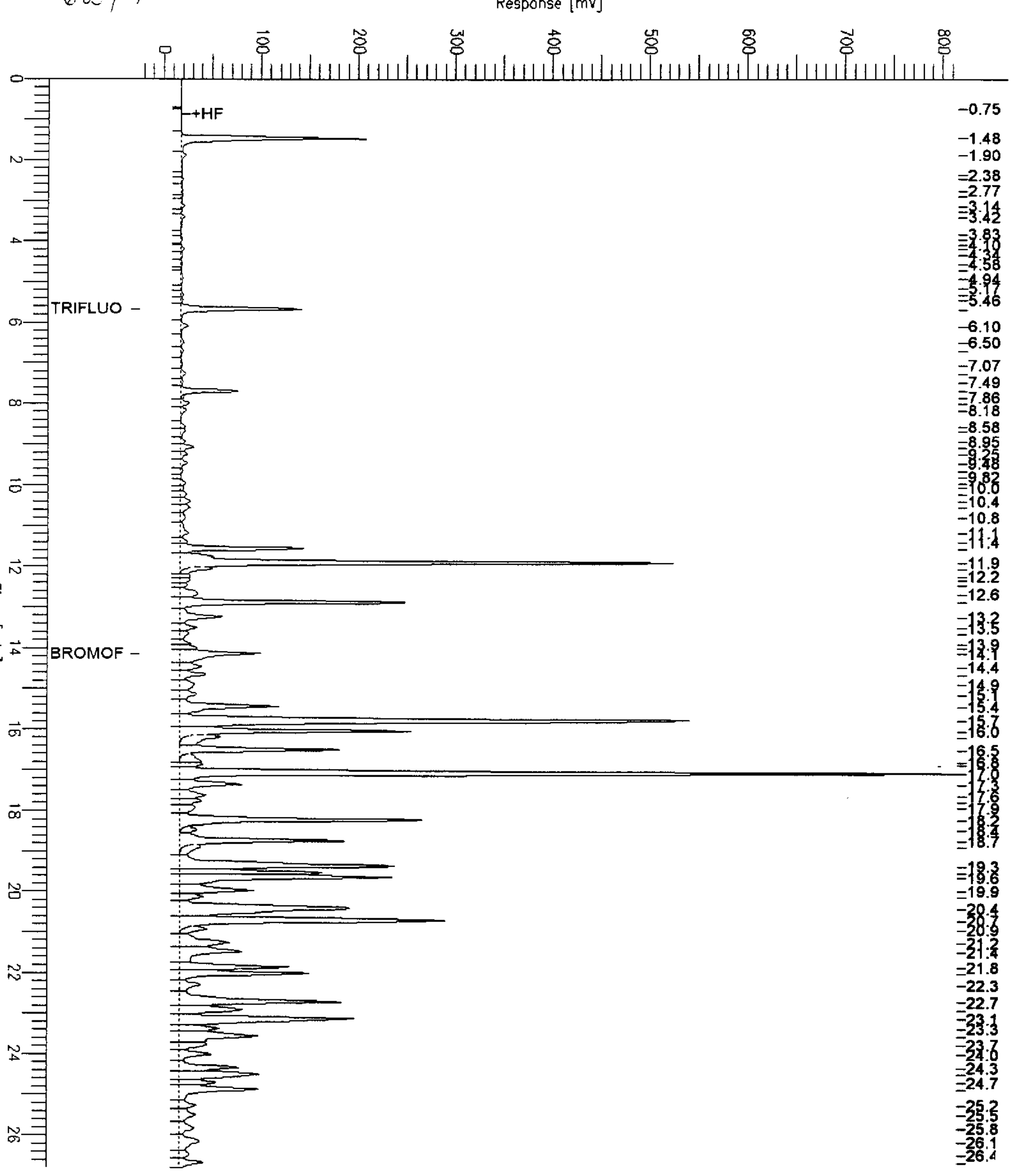
GC19 TVH 'X' Data File (FID)

Sample Name : 146684-006,57298,+mtbe
FileName : G:\GC19\DATA\209X018.RAW
Method :
Start Time : 0.00 min
Scale Factor: 0.0
End Time : 26.80 min
Plot Offset: -24 mV

Sample #: 5x,a
Date : 7/28/00 12:56 PM
Time of Injection: 7/28/00 04:10 AM
Low Point : -24.19 mV
Plot Scale: 840.2 mV

High Point : 816.04 mV

6W; 7.5-8.0

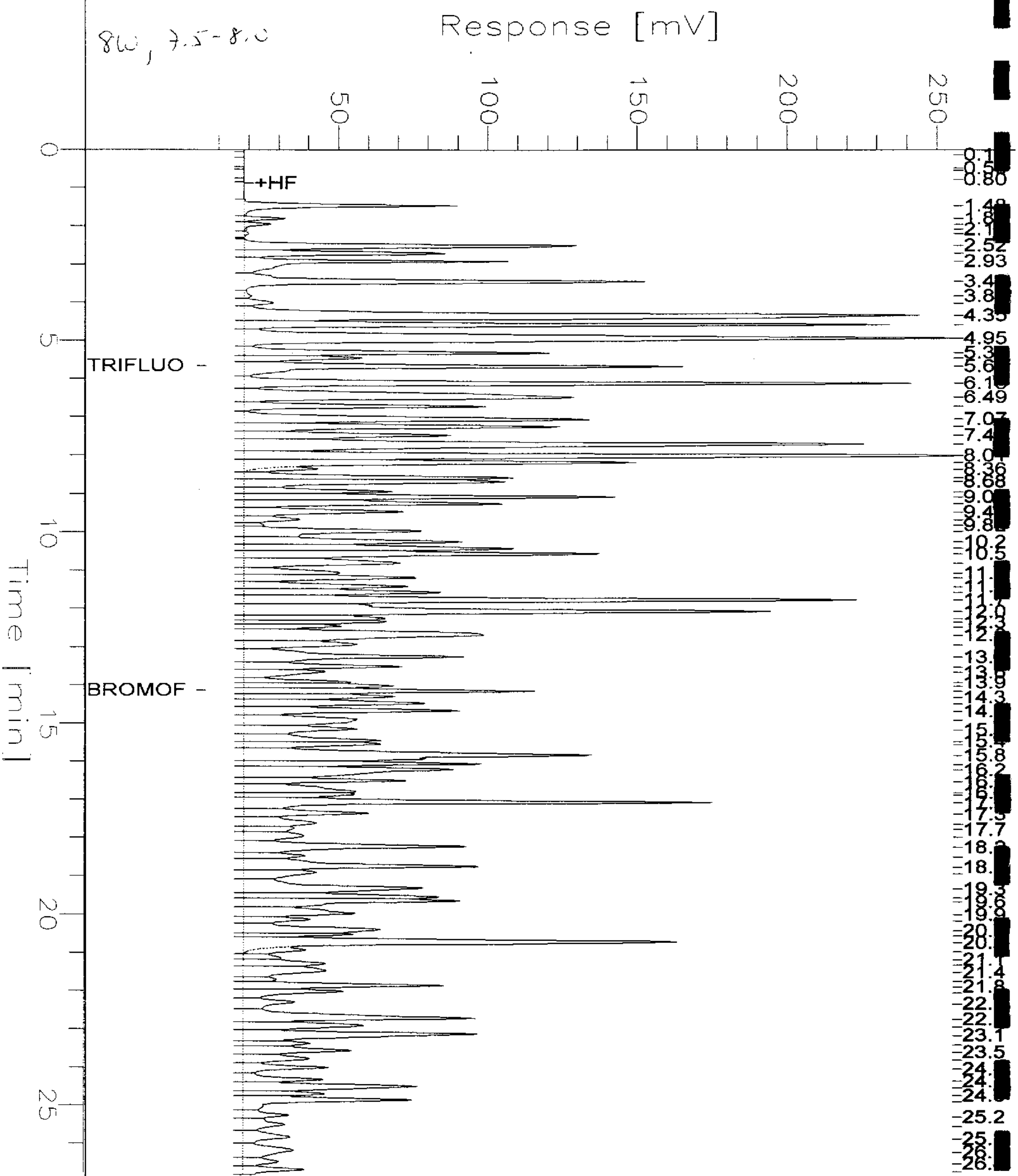


GC19 TVH 'X' Data File (FID)

Sample Name : 146684-008,57333,tvh only
FileName : G:\GC19\DATA\213X012.raw
Method : TVHBTXE
Start Time : 0.00 min   End Time : 26.80 min
Scale Factor: -1.0   Plot Offset: 6 mV

Sample #: a,10x   Page 1 of 1
Date : 8/1/00 03:49 PM
Time of Injection: 7/31/00 07:30 PM
Low Point : 5.67 mV   High Point : 255.67 mV
Plot Scale: 250.0 mV

8W, 7.5-8.0

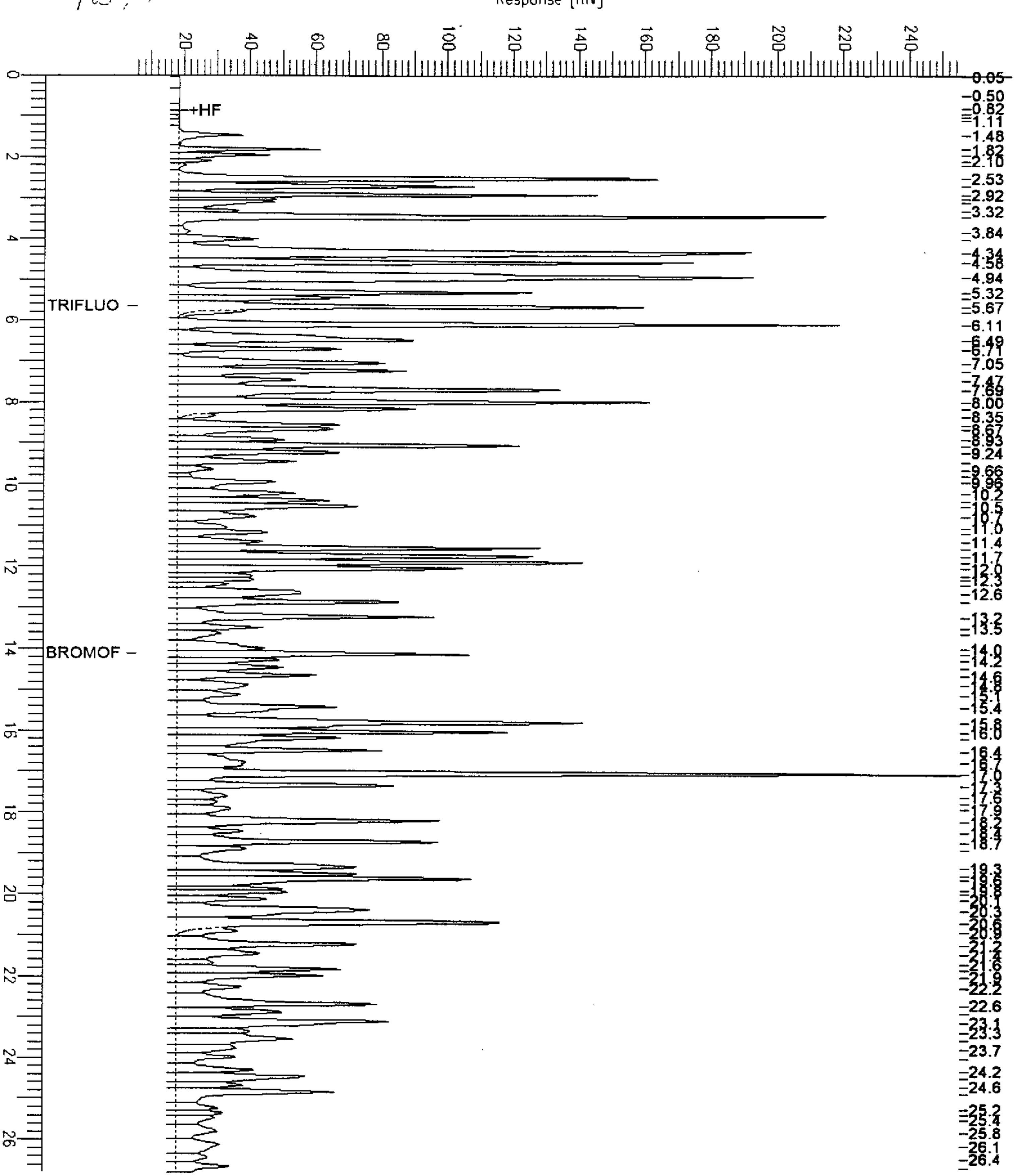


GC19 TVH 'X' Data File (FID)

Sample Name : 146684-009,57222
FileName : G:\GC19\DATA\207X034.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 6 mV

Sample #: A Page 1 of 1
Date : 7/27/00 12:51 PM
Time of Injection: 7/26/00 07:33 AM
Low Point : 5.80 mV High Point : 255.80 mV
Plot Scale: 250.0 mV

9ω, 7.5-8.0

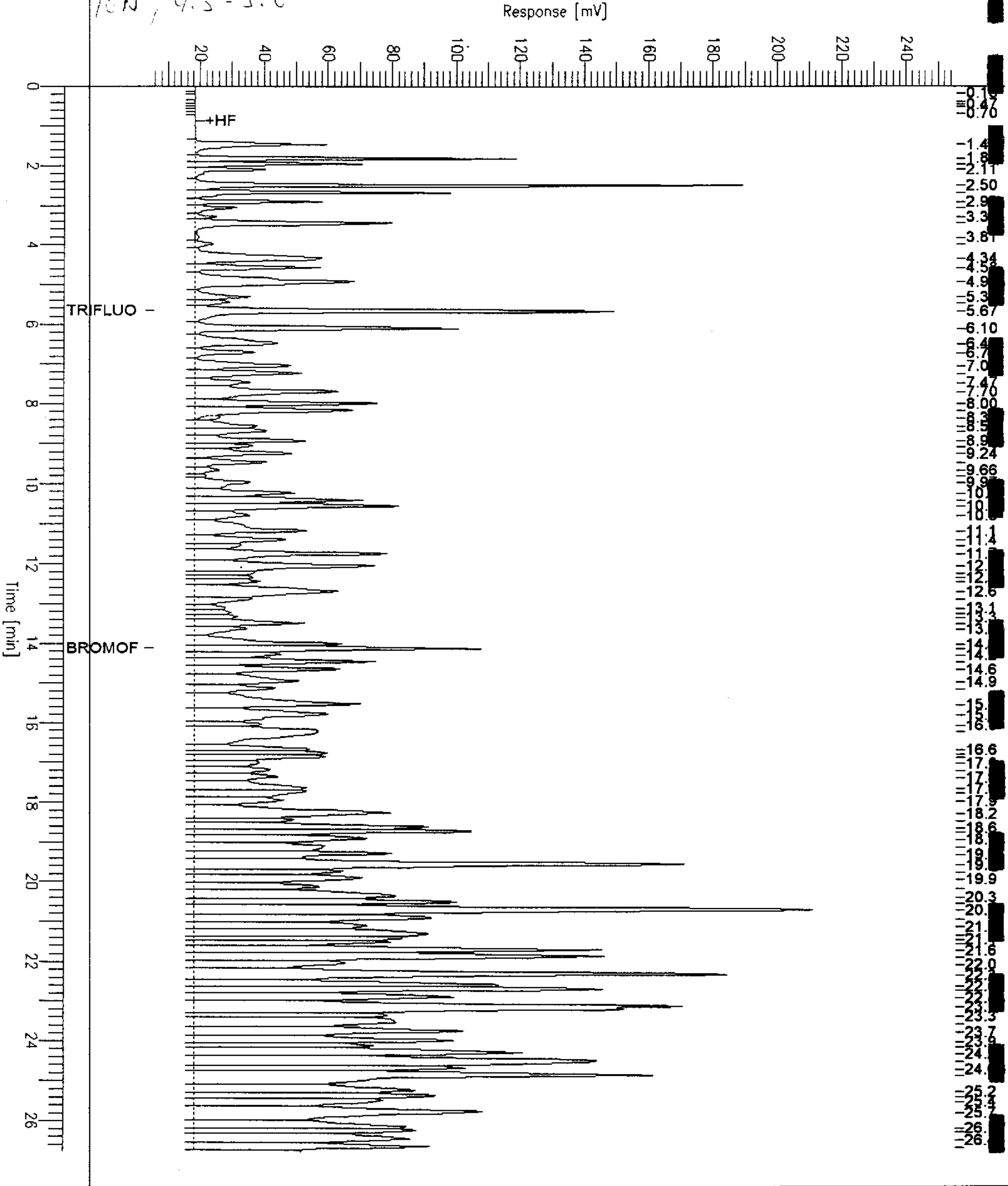


GC19 TVH 'X' Data File (FID)

Sample Name : 146684-010,57222
FileName : G:\GC19\DATA\207X035.raw
Method : TVHBTXE
Start Time : 0.00 min
End Time : 26.80 min
Scale Factor: -1.0
Plot Offset: 6 mV

Sample #: A
Page 1 of 1
Date : 7/27/00 12:52 PM
Time of Injection: 7/26/00 08:11 AM
Low Point : 5.72 mV
High Point : 255.72 mV
Plot Scale: 250.0 mV

10N, 4.5-5.0



GC19 TVH 'X' Data File (FID)

Sample Name : 146684-011,57222
FileName : G:\GC19\DATA\207X014.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0

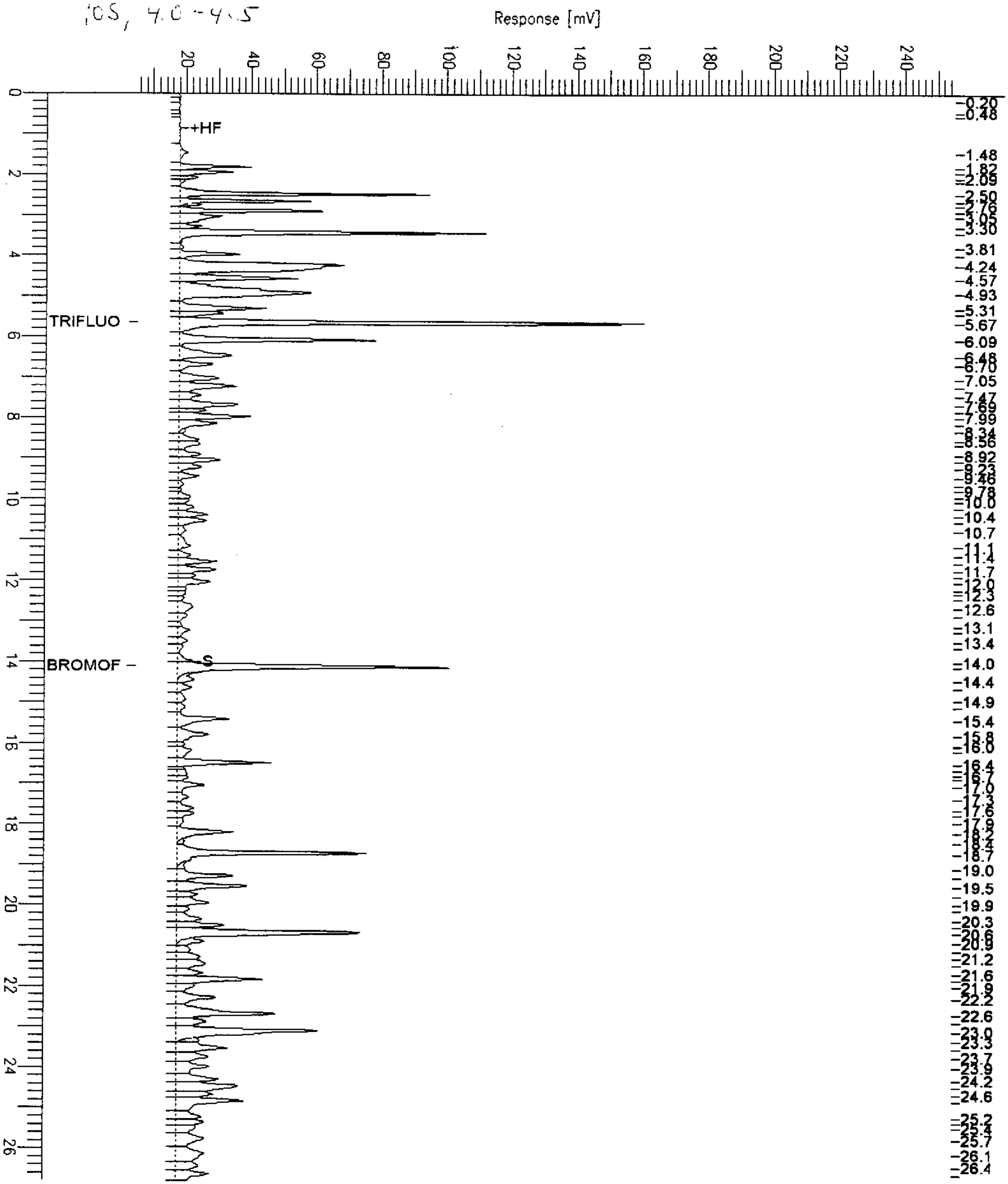
End Time : 26.80 min
Plot Offset: 5 mV

Sample #: A
Date : 7/27/00 12:10 PM
Time of Injection: 7/25/00 06:54 PM
Low Point : 5.27 mV
Plot Scale: 250.0 mV

Page 1 of 1

High Point : 255.27 mV

ICS, 4.0-4.5

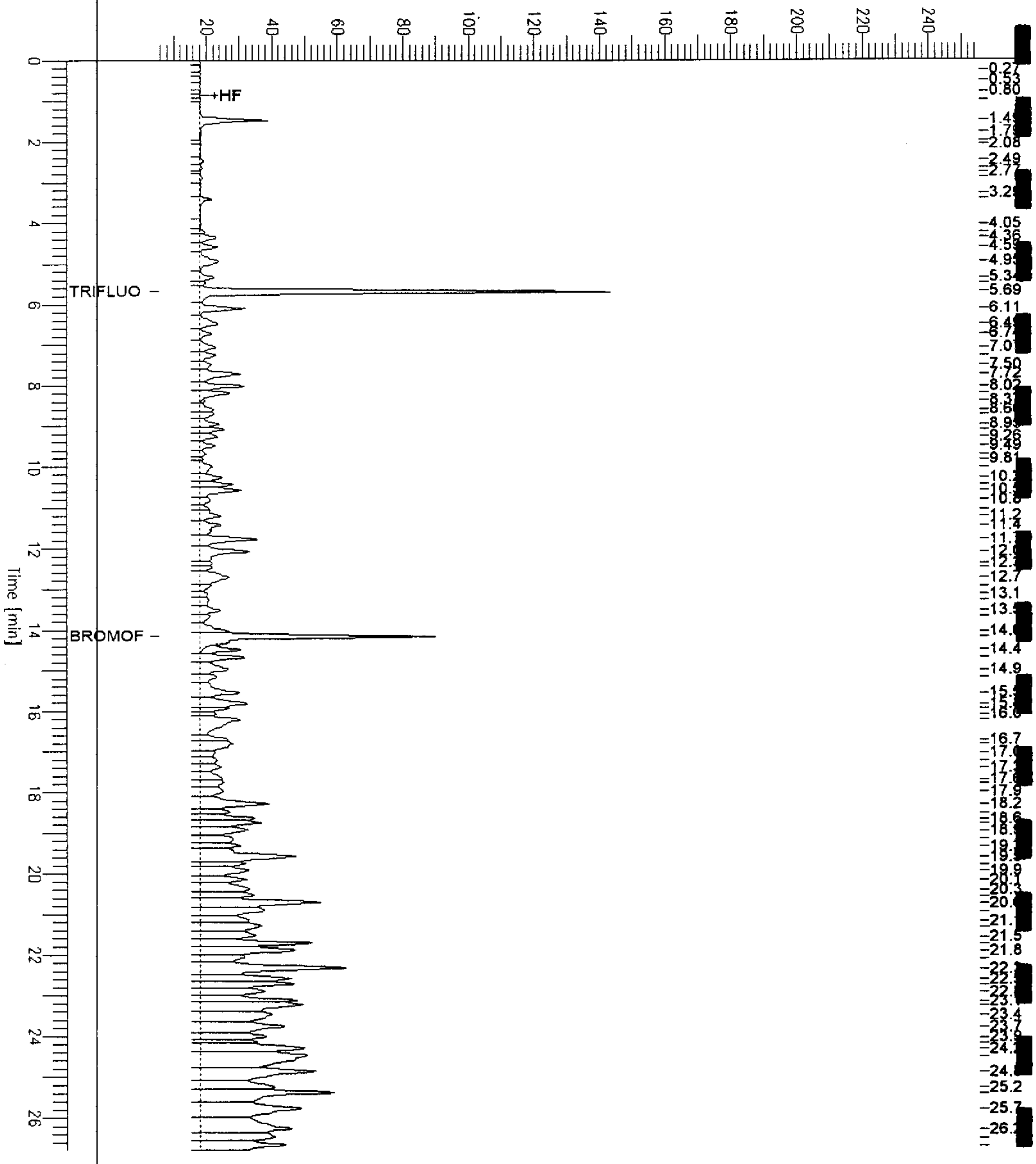


GC19 TVH 'X' Data File (FID)

Sample Name : 146684-C12,57298,+mtbe
FileName : G:\GC19\DATA\209X028.raw
Method : TVHBTXE
Start Time : 0.00 min
End Time : 26.80 min
Scale Factor: -1.0
Plot Offset: 5 mV

Sample #: 200x,a
Page 1 of 1
Date : 7/28/00 02:34 PM
Time of Injection: 7/28/00 10:30 AM
Low Point : 5.48 mV
High Point : 255.48 mV
Plot Scale: 250.0 mV

10E, 3.5-4.0



GC19 TVH 'X' Data File (FID)

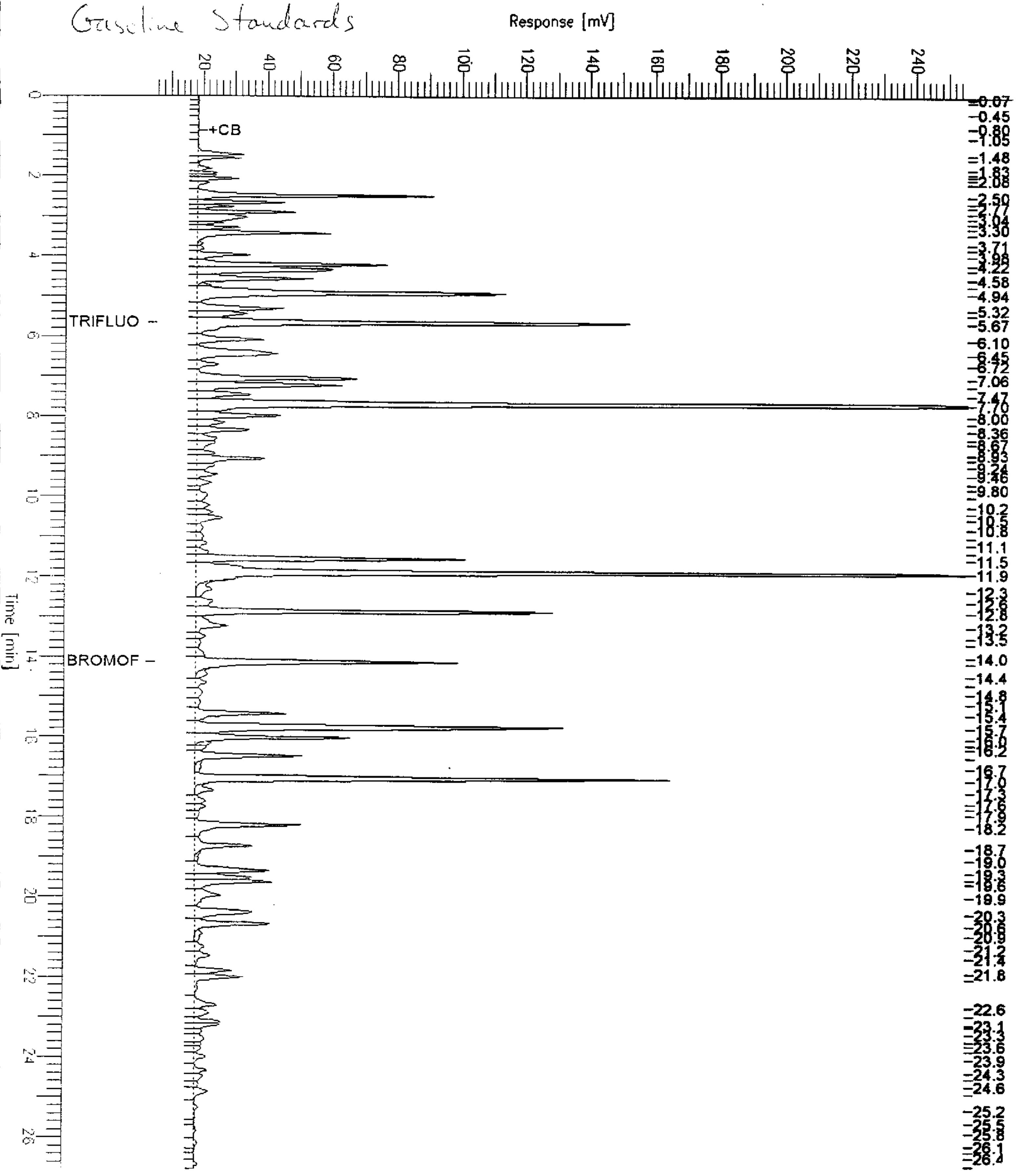
Sample Name : CCV/LCS,QC120956,57222,00WS9313,5/5000
FileName : G:\GC19\DATA\207X003.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 26.80 min
Plot Offset: 6 mV

Sample #: gas
Date : 7/25/00 10:54 AM
Time of Injection: 7/25/00 10:27 AM
Low Point : 5.75 mV
Plot Scale: 250.0 mV

High Point : 255.75 mV

Gasoline Standards



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Basis:	wet
Lab ID:	QC120956	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57222
Units:	mg/Kg	Analyzed:	07/25/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.455	95	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	62-138
Bromofluorobenzene (FID)	129	46-150

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Type:	LCS	Basis:	wet
Lab ID:	QC120957	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57222
Units:	ug/Kg	Analyzed:	07/25/00

Analyte	Spiked	Result	%REC	Limits
MTBE	100.0	114.5	115	58-115
Benzene	100.0	96.10	96	68-117
Toluene	100.0	96.90	97	70-120
Ethylbenzene	100.0	99.81	100	67-124
m,p-Xylenes	200.0	212.5	106	72-124
o-Xylene	100.0	101.2	101	72-123

Surrogate	%REC	Limits
Trifluorotoluene (PID)	107	65-134
Bromofluorobenzene (PID)	112	55-138

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Batch#:	57298
Basis:	wet	Analyzed:	07/27/00

Type: BS   Lab ID: QC121262

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.673	97	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	62-138
Bromofluorobenzene (FID)	132	46-150

Type: BSD   Lab ID: QC121263

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	10.01	100	75-123	3	2[illegible]

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	62-138
Bromofluorobenzene (FID)	136	46-150

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Type:	LCS	Basis:	wet
Lab ID:	QC121264	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57298
Units:	ug/Kg	Analyzed:	07/27/00

Analyte	Spiked	Result	%REC	Limits
MTBE	100.0	115.4	115	58-115
Benzene	100.0	98.12	98	68-117
Toluene	100.0	100.0	100	70-120
Ethylbenzene	100.0	104.1	104	67-124
m,p-Xylenes	200.0	220.2	110	72-124
o-Xylene	100.0	105.1	105	72-123

Surrogate	%REC	Limits
Trifluorotoluene (PID)	105	65-134
Bromofluorobenzene (PID)	113	55-138

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Basis:	wet
Lab ID:	QC121408	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57333
Units:	mg/Kg	Analyzed:	07/31/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.155	92	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	118	62-138
Bromofluorobenzene (FID)	131	46-150

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Type:	LCS	Basis:	wet
Lab ID:	QC121409	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57333
Units:	ug/Kg	Analyzed:	08/01/00

Analyte	Spiked	Result	%REC	Limits
MTBE	100.0	111.7	112	58-115
Benzene	100.0	93.53	94	68-117
Toluene	100.0	96.41	96	70-120
Ethylbenzene	100.0	101.0	101	67-124
m,p-Xylenes	200.0	212.5	106	72-124
o-Xylene	100.0	102.7	103	72-123

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	65-134
Bromofluorobenzene (PID)	118	55-138

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146679-005	Batch#:	57222
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/22/00
Basis:	wet	Analyzed:	07/26/00

Type: MS   Lab ID: QC120959

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.8764	9.346	7.100	67	41-132

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	62-138
Bromofluorobenzene (FID)	130	46-150

Type: MSD   Lab ID: QC120960

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.346	7.453	70	41-132	5	2[illegible]

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	62-138
Bromofluorobenzene (FID)	130	46-150

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146757-005	Batch#:	57298
Matrix:	Soil	Sampled:	07/26/00
Units:	ug/Kg	Received:	07/27/00
Basis:	wet	Analyzed:	07/27/00

Type: MS Lab ID: QC121265

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	ND	100.0	112.7	113	58-116
Benzene	ND	100.0	95.31	95	62-117
Toluene	ND	100.0	96.95	97	55-121
Ethylbenzene	ND	100.0	99.85	100	46-128
m,p-Xylenes	ND	200.0	210.6	105	33-141
o-Xylene	ND	100.0	100.6	101	40-136

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	65-134
Bromofluorobenzene (PID)	116	55-138

Type: MSD Lab ID: QC121266

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	100.0	110.3	110	58-116	2	20
Benzene	100.0	94.17	94	62-117	1	20
Toluene	100.0	95.57	96	55-121	1	20
Ethylbenzene	100.0	99.07	99	46-128	1	20
m,p-Xylenes	200.0	209.0	105	33-141	1	20
o-Xylene	100.0	100.3	100	40-136	0	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	65-134
Bromofluorobenzene (PID)	120	55-138

ND = Not Detected
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146704-002	Batch#:	57333
Matrix:	Soil	Sampled:	07/24/00
Units:	mg/Kg	Received:	07/25/00
Basis:	wet	Analyzed:	07/31/00

Type: MS Lab ID: QC121410

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1774	9.804	8.732	87	41-132

Surrogate	%REC	Limits
Trifluorotoluene (FID)	129	62-138
Bromofluorobenzene (FID)	139	46-150

Type: MSD Lab ID: QC121411

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.804	8.943	89	41-132	2	25

Surrogate	%REC	Limits
Trifluorotoluene (FID)	131	62-138
Bromofluorobenzene (FID)	140	46-150

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/25/00
Batch#:	57232		

Field ID: 3W;7.5-8.0
Type: SAMPLE
Lab ID: 146684-001
Diln Fac: 2.000
Analyzed: 07/27/00

Analyte	Result	RL
Diesel C10-C24	280 H L Y	2.0
Motor Oil C24-C36	220	10

Surrogate	%REC	Limits
Hexacosane	109	60-136

Field ID: 5W;7.5-8.0
Type: SAMPLE
Lab ID: 146684-004
Diln Fac: 1.000
Analyzed: 07/27/00

Analyte	Result	RL
Diesel C10-C24	150 H Y	1.0
Motor Oil C24-C36	170	5.0

Surrogate	%REC	Limits
Hexacosane	98	60-136

Field ID: 4W;7-7.5
Type: SAMPLE
Lab ID: 146684-005
Diln Fac: 1.000
Analyzed: 07/27/00

Analyte	Result	RL
Diesel C10-C24	4.8 Y	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	93	60-136

Field ID: 6W;7.5-8.0
Type: SAMPLE
Lab ID: 146684-006
Diln Fac: 1.000
Analyzed: 07/27/00

Analyte	Result	RL
Diesel C10-C24	60 L Y	0.99
Motor Oil C24-C36	20	4.9

Surrogate	%REC	Limits
Hexacosane	96	60-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/25/00
Batch#:	57232		

Field ID:	7W;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146684-007		

Analyte	Result	RL
Diesel C10-C24	4.9 H Y	0.99
Motor Oil C24-C36	13	5.0

Surrogate	%REC	Limits
Hexacosane	85	60-136

Field ID:	8W;7.5-8.0	Diln Fac:	2.000
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146684-008		

Analyte	Result	RL
Diesel C10-C24	270 L Y	2.0
Motor Oil C24-C36	59	10

Surrogate	%REC	Limits
Hexacosane	110	60-136

Field ID:	9W;7.5-8.0	Diln Fac:	2.000
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146684-009		

Analyte	Result	RL
Diesel C10-C24	240 L Y	2.0
Motor Oil C24-C36	26	9.9

Surrogate	%REC	Limits
Hexacosane	97	60-136

Field ID:	10N;4.5-5.0	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146684-010		

Analyte	Result	RL
Diesel C10-C24	3,600	10
Motor Oil C24-C36	ND	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/25/00
Batch#:	57232		

Field ID:	10S;4.0-4.5	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146684-011		

Analyte	Result	RL
Diesel C10-C24	3,700	10
Motor Oil C24-C36	ND	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID:	10E;3.5-4.0	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146684-012		

Analyte	Result	RL
Diesel C10-C24	1,700	20
Motor Oil C24-C36	ND	99

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC120990	Analyzed:	07/31/00

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	100	60-136

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

Chromatogram

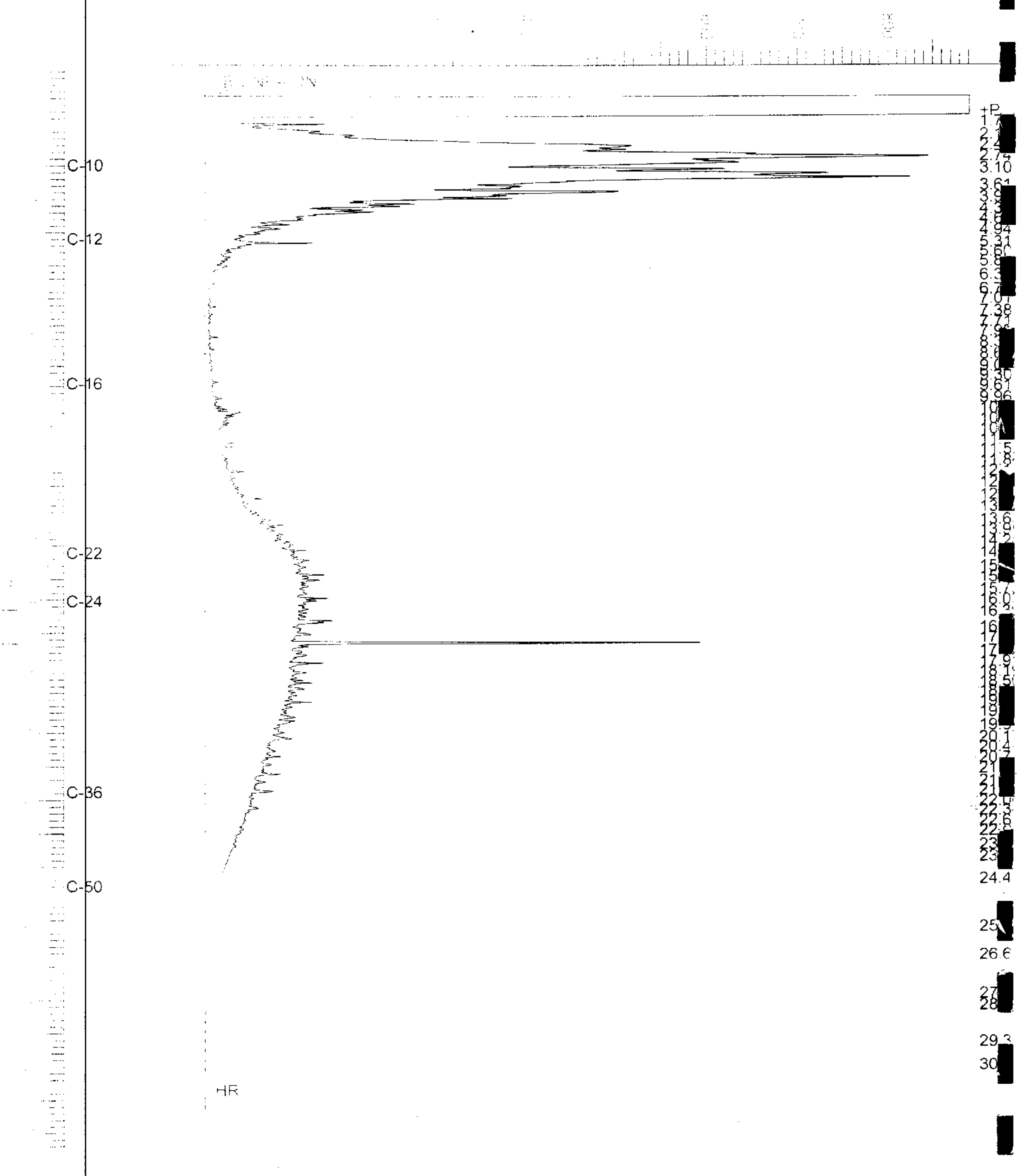
Sample Name : 146684-001,57232
FileName : G:\GC11\CHA\208A033.RAW
Method : ATEH206.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 32.41 min
Plot Offset: -10 mV

Sample #: 57232
Date : 7/27/00 04:53 PM
Time of Injection: 7/27/00 04:01 PM
Low Point : -9.59 mV
Plot Scale: 900.7 mV

High Point : 891.11 mV

3W; 7.5-8.0

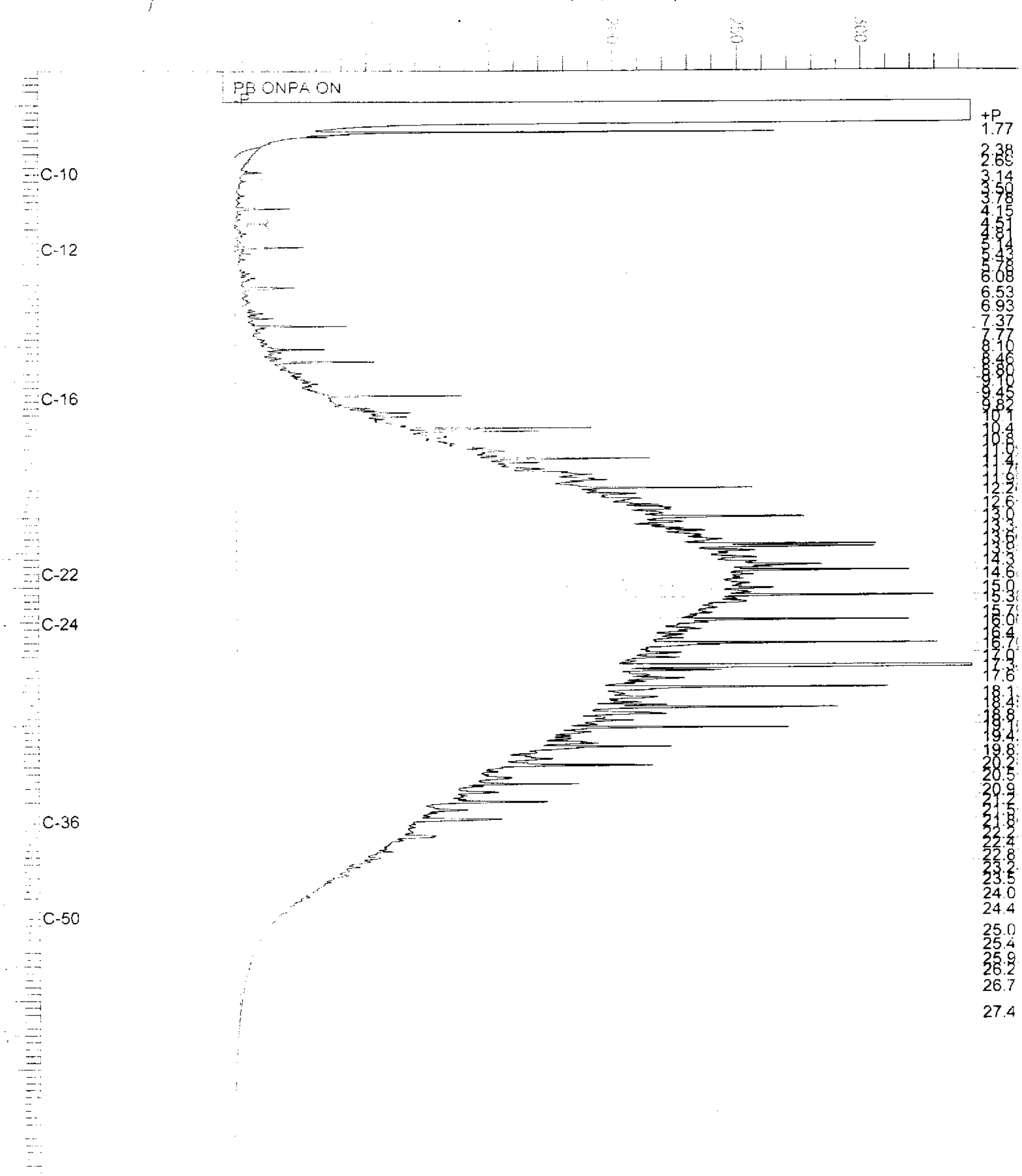


Chromatogram

Sample Name : 146684-004,57232
FileName : G:\GC11\CHA\208A032.RAW
Method : ATEH206.MTH
Start Time : 0.01 min
End Time : 32.41 min
Scale Factor: 0.0
Plot Offset: 5 mV

Sample #: 57232
Page 1 of 1
Date : 7/27/00 04:09 PM
Time of Injection: 7/27/00 03:21 PM
Low Point : 5.16 mV
High Point : 344.88 mV
Plot Scale: 339.7 mV

SW, 7.5-8.0

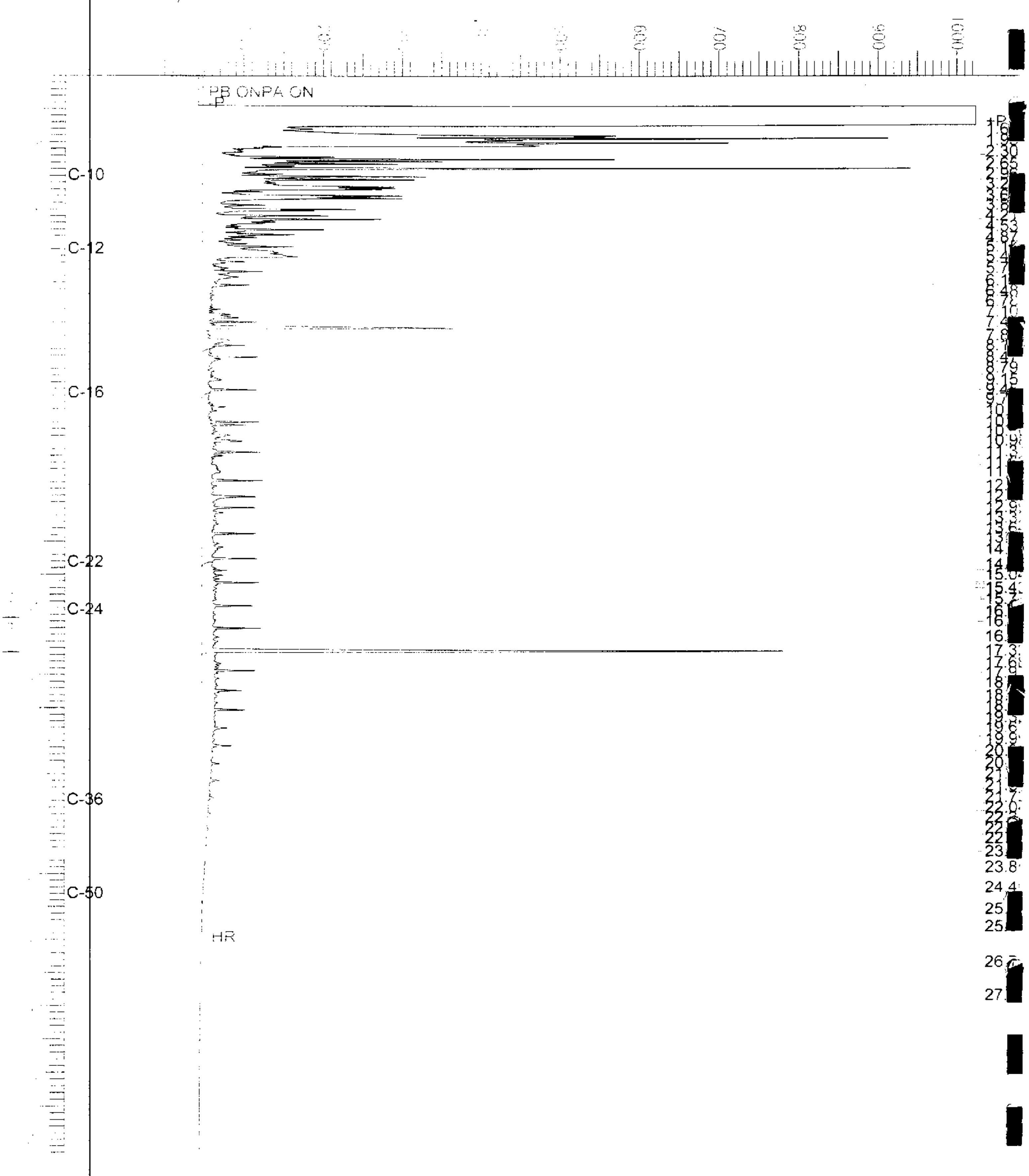


Chromatogram

Sample Name : 146684-006,57232
FileName : G:\GC11\CHA\208A021.RAW
Method : ATEH206.MTH
Start Time : 0.00 min
End Time : 32.42 min
Scale Factor: 0.0
Plot Offset: -9 mV

Sample #: 57232
Page 1 of 1
Date : 7/27/00 07:28 AM
Time of Injection: 7/27/00 06:10 AM
Low Point : -9.44 mV
High Point : 1024.00 mV
Plot Scale: 1033.4 mV

6W; 7.5-8.0

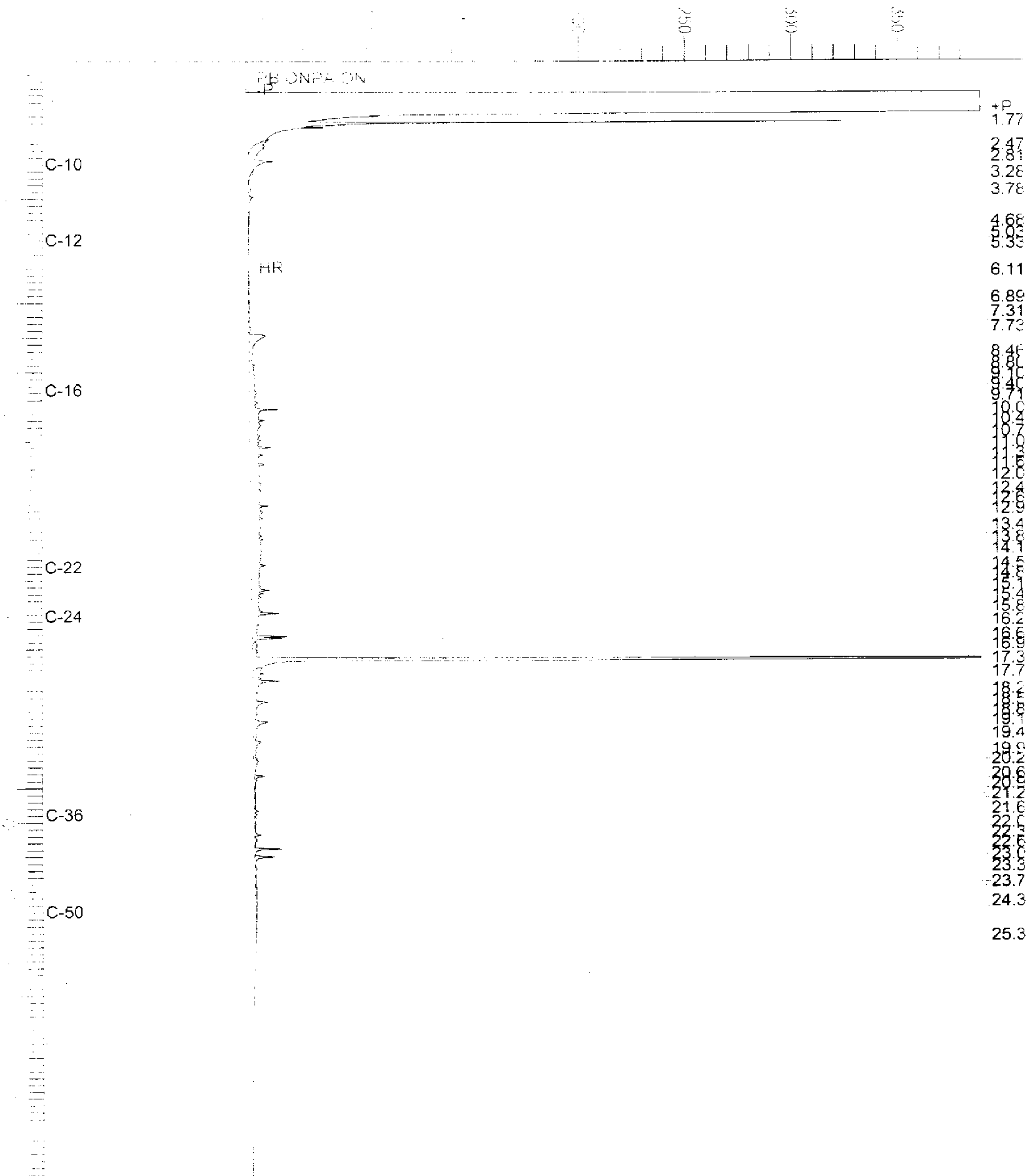


Chromatogram

Sample Name : 146684-005,57232
FileName : G:\GC11\CHA\208A020.RAW
Method : ATEH206.MTH
Start Time : 0.01 min   End Time : 32.41 min
Scale Factor: 0.0   Plot Offset: -9 mV

Sample #: 57232   Page 1 of 1
Date : 7/27/00 07:27 AM
Time of Injection: 7/27/00 05:30 AM
Low Point : -8.82 mV   High Point : 389.55 mV
Plot Scale: 398.4 mV

9W, 7-7.5



Chromatogram

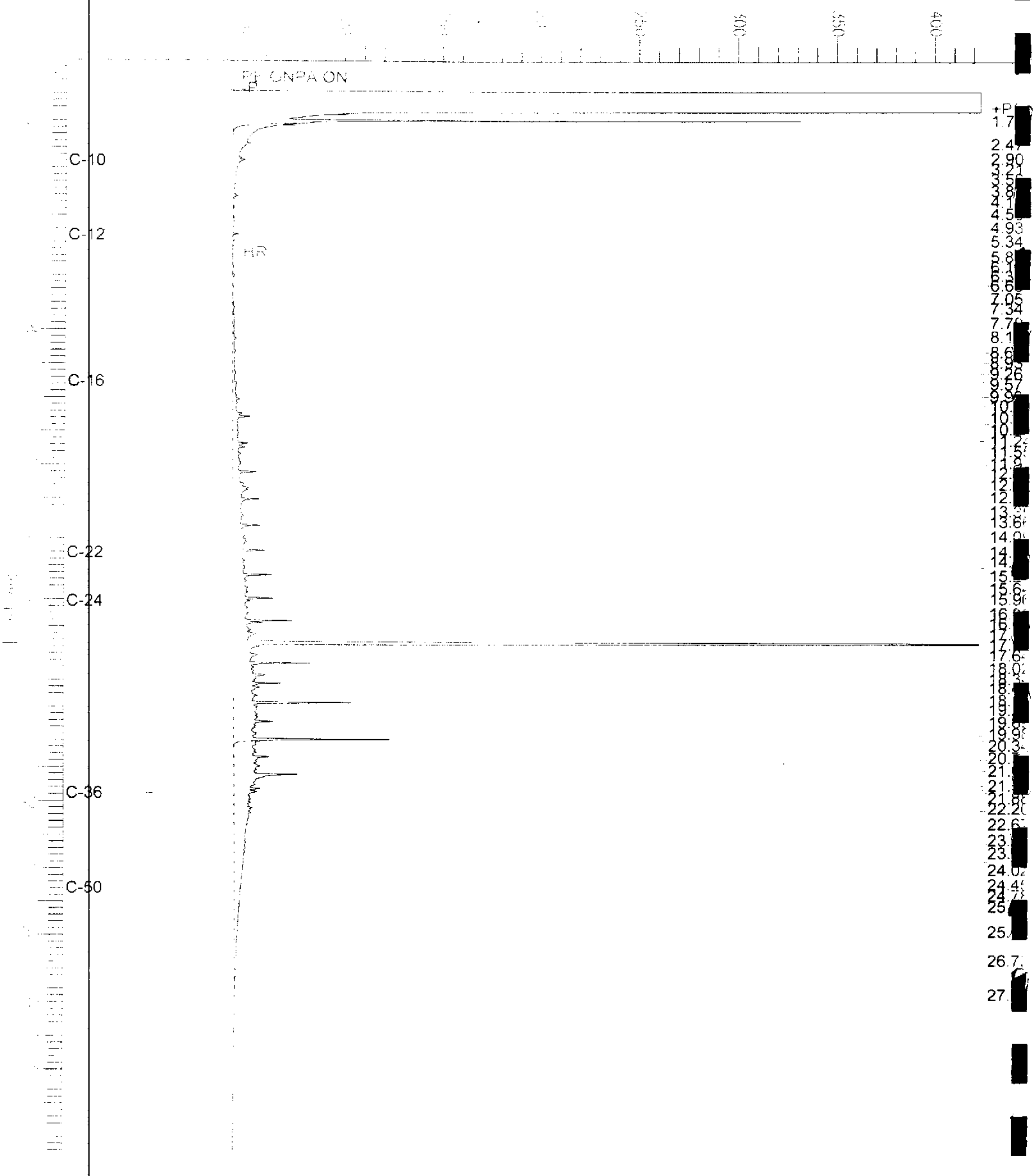
Sample Name : 146684-007,57232
FileName : G:\GC11\CHA\208A022.RAW
Method : ATEH206.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 32.41 min
Plot Offset: 5 mV

Sample #: 57232
Date : 7/27/00 07:39 AM
Time of Injection: 7/27/00 06:50 AM
Low Point : 5.01 mV
Plot Scale: 418.4 mV

High Point : 423.41 mV

7W; 7.5-8.0



Chromatogram

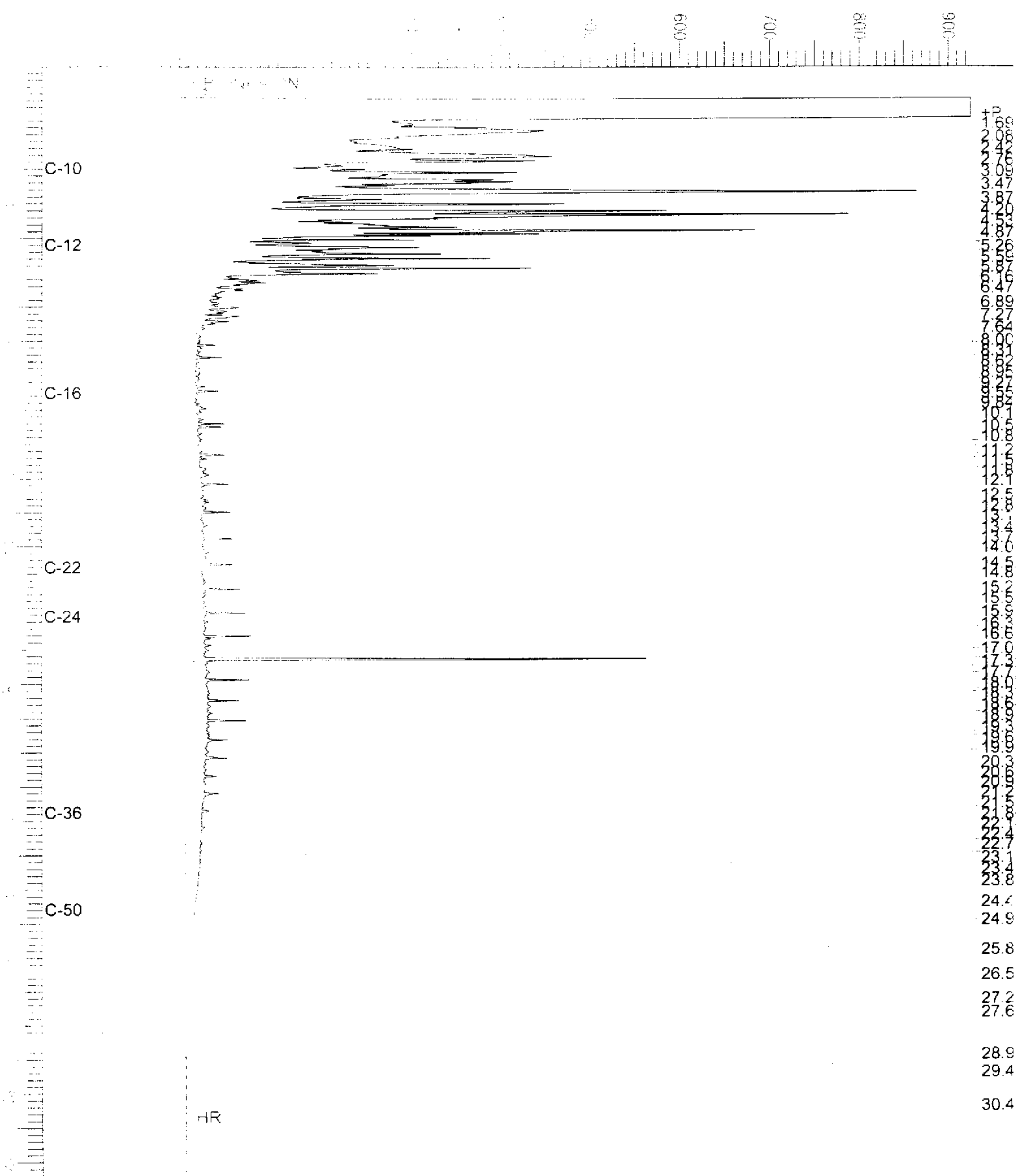
Sample Name : 146684-208,57232
FileName : G:\GC11\CHA\208A034.RAW
Method : ATEH206.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 32.41 min
Plot Offset: -10 mV

Sample #: 57232
Date : 7/27/00 05:17 PM
Time of Injection: 7/27/00 04:41 PM
Low Point : -9.79 mV
Plot Scale: 935.3 mV

High Point : 925.55 mV

8W, 7.5-8.0

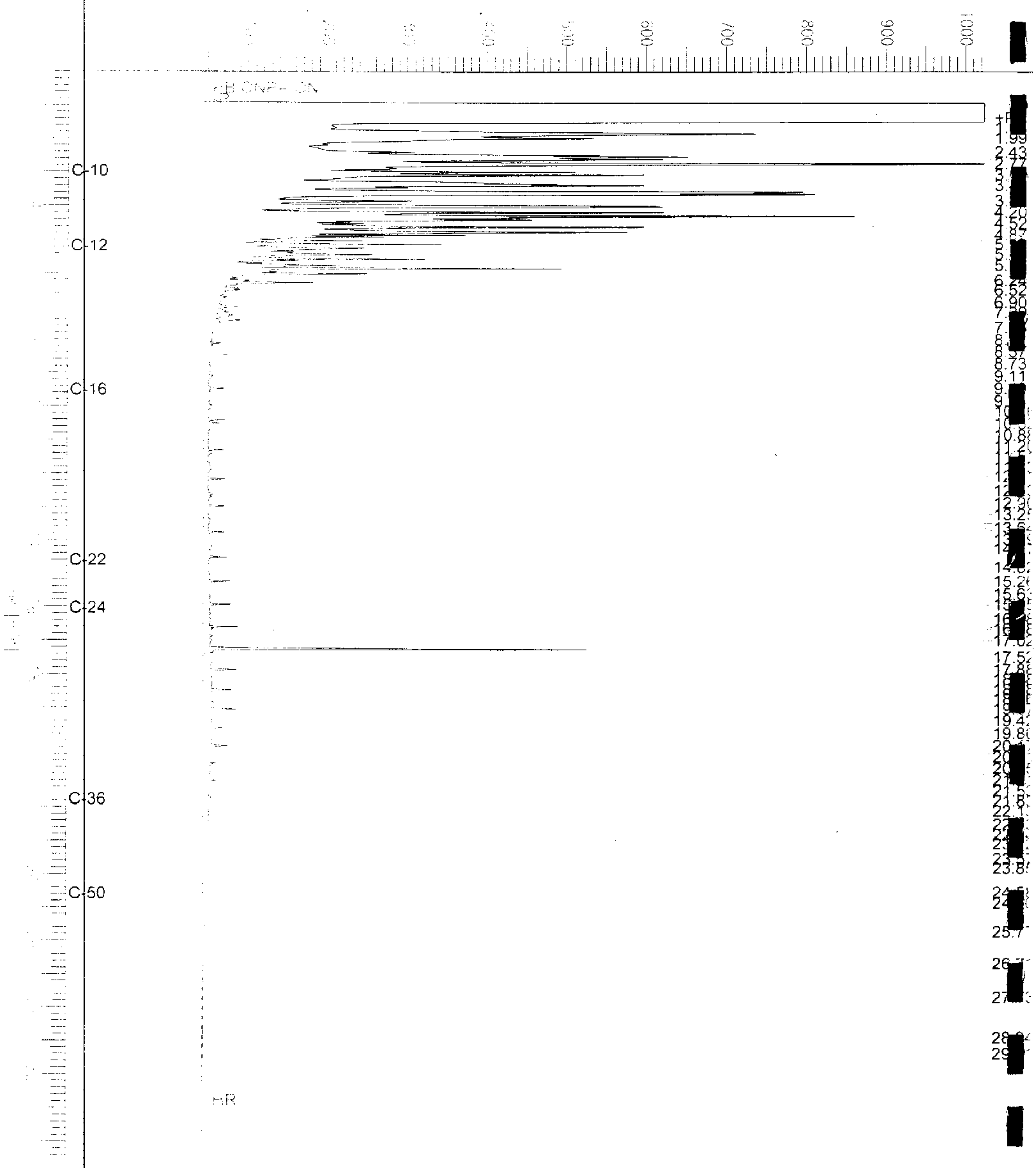


Chromatogram

Sample Name : 146684-009,57232
FileName : G:\GC11\CHA\208A035.RAW
Method : ATEH206.MTH
Start Time : 0.00 min
End Time : 32.42 min
Scale Factor: 0.0
Plot Offset: -10 mV

Sample #: 57232
Page 1 of 1
Date : 7/27/00 05:57 PM
Time of Injection: 7/27/00 05:22 PM
Low Point : -9.62 mV
High Point : 1024.00 mV
Plot Scale: 1033.6 mV

9W, 7.5-8.0

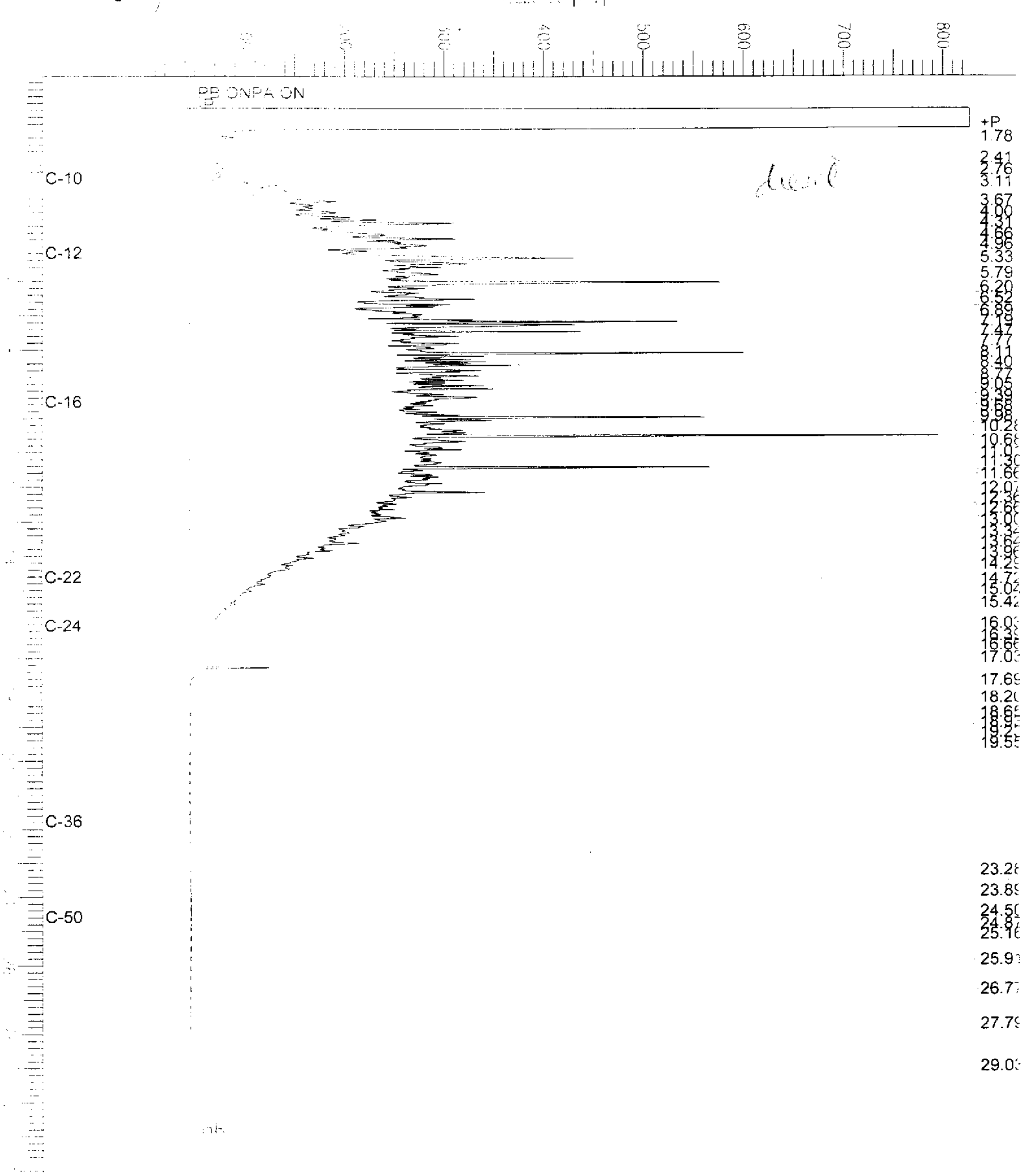


Chromatogram

Sample Name : 146684-010,57232
FileName : G:\GC11\CHA\208A036.RAW
Method : ATEH206.MTH
Start Time : 0.01 min End Time : 32.41 min
Scale Factor: 0.0 Plot Offset: -9 mV

Sample #: 57232 Page 1 of 1
Date : 7/27/00 07:34 PM
Time of Injection: 7/27/00 06:02 PM
Low Point : -9.48 mV High Point : 827.10 mV
Plot Scale: 836.6 mV

10N; 4.5-5.0

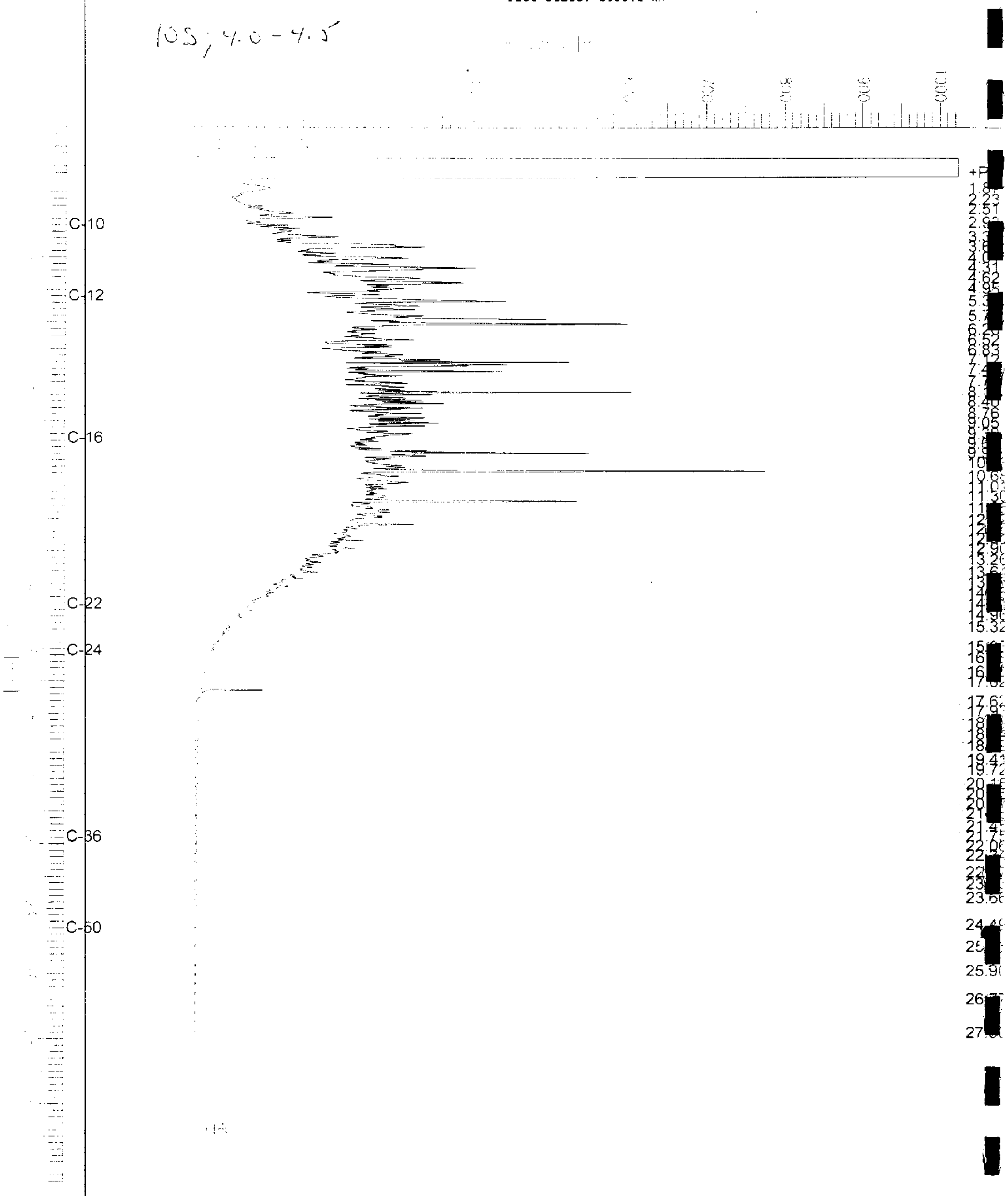


Chromatogram

Sample Name : 146684-011,57232
FileName : G:\GC11\CHA\208A037.RAW
Method : ATEH206.MTH
Start Time : 0.00 min   End Time : 32.42 min
Scale Factor: 0.0   Plot Offset: -9 mV

Sample #: 57232
Date : 7/27/00 07:35 PM
Time of Injection: 7/27/00 06:42 PM
Low Point : -9.14 mV   High Point : 1024.00 mV
Plot Scale: 1033.1 mV

105; 4.0 - 4.5

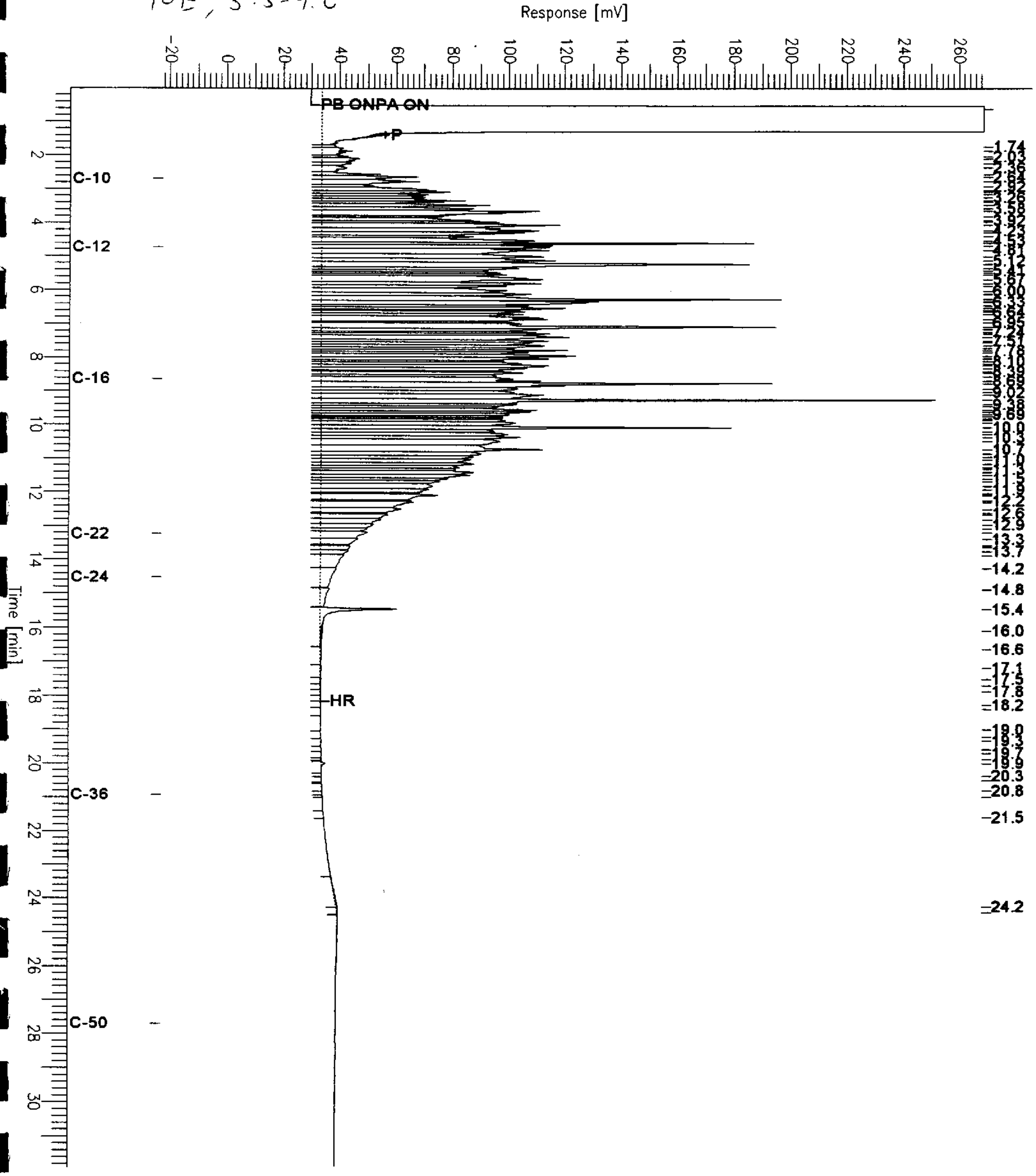


Chromatogram

Sample Name : 146684-012,57232
FileName : G:\GC15\CHB\207B061.RAW
Method : BTEH180.MTH
Start Time : 0.01 min
End Time : 31.91 min
Scale Factor: 0.0
Plot Offset: -23 mV

Sample #: 57232
Page 1 of 1
Date : 07/28/2000 12:32 AM
Time of Injection: 07/27/2000 05:18 PM
Low Point : -22.66 mV
High Point : 268.76 mV
Plot Scale: 291.4 mV

10E; 3.5-4.0

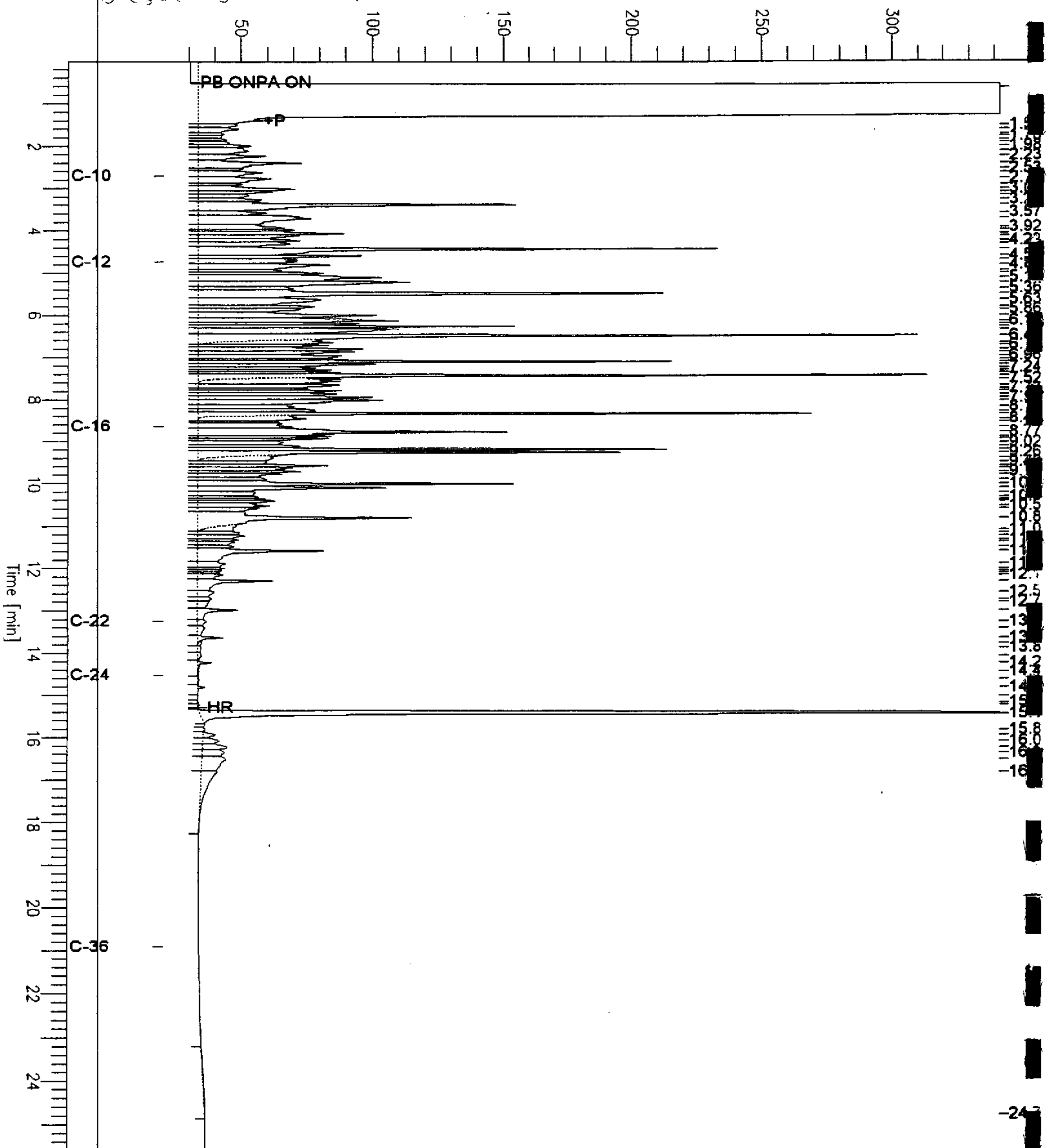


Chromatogram

ample Name : ccv,00ws9382,dsl
ileName : G:\GC15\CHB\207B003.RAW
ethod : BTEH180.MTH
tart Time : 0.01 min   End Time : 25.60 min
cale Factor: 0.0   Plot Offset: 20 mV

Sample #: 500mg/l
Date : 07/26/2000 09:31 AM
Time of Injection: 07/25/2000 04:24 PM
Low Point : 20.26 mV   High Point : 342.05 mV
Plot Scale: 321.8 mV

Diesel Standard



Chromatogram

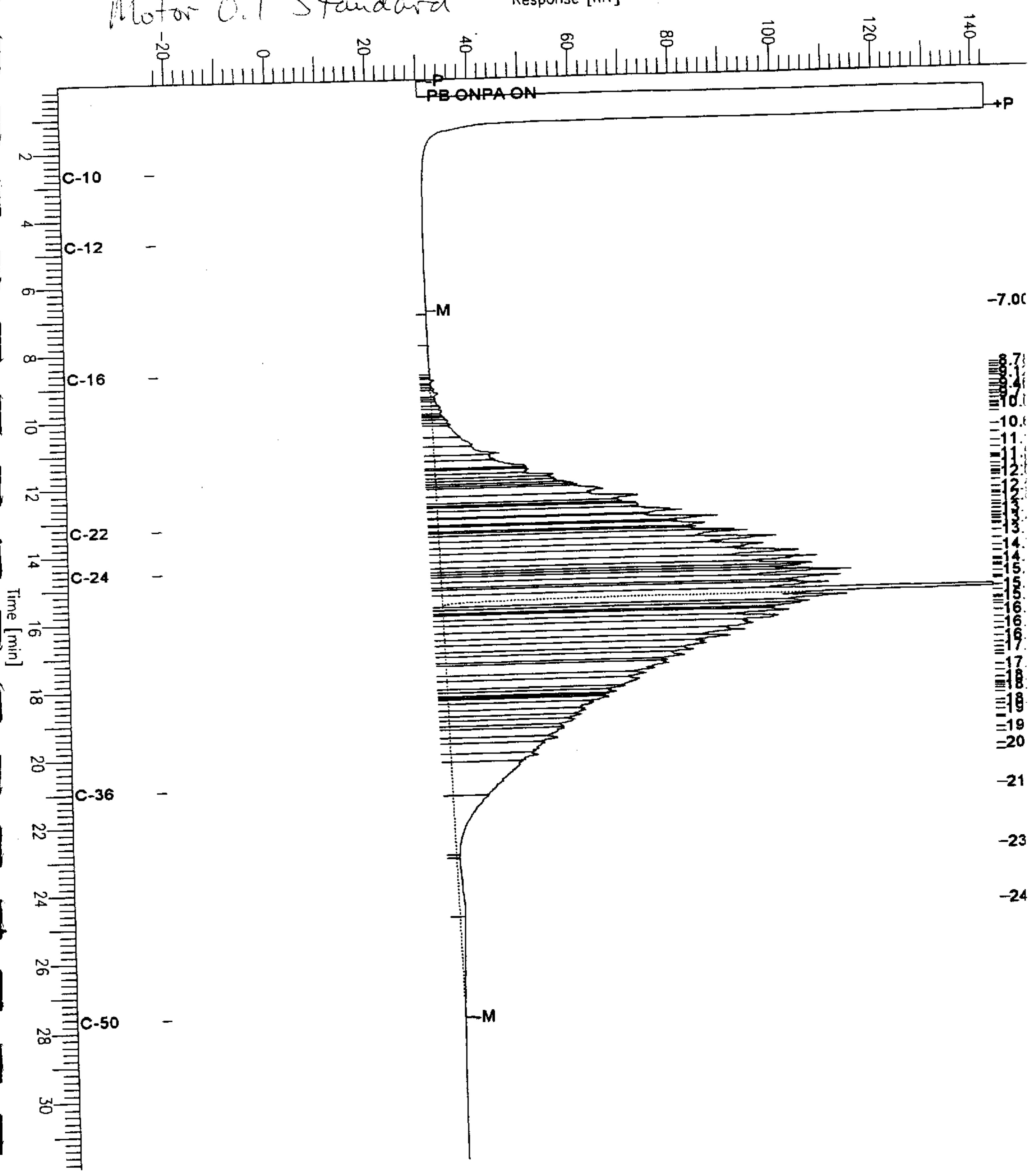
Sample Name : ccv,00ws9383,mo
FileName : G:\GC15\CHB\207B005.RAW
Method : BTEH108.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: -22 mV

Sample #:
Date : 07/25/2000 06:13 PM
Time of Injection: 07/25/2000 05:41 PM
Low Point : -22.10 mV
Plot Scale: 164.7 mV

High Point : 142.62 mV

Motor 0.1 Standard



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC120991	Batch#:	57232
Matrix:	Soil	Prepared:	07/25/00
Units:	mg/Kg	Analyzed:	07/27/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	46.31	41.94	91	67-121

Surrogate	%REC	Limits
Hexacosane	103	60-136

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	57232
MSS Lab ID:	146675-002	Sampled:	07/18/00
Matrix:	Soil	Received:	07/21/00
Units:	mg/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	1.000		

Type: MS Lab ID: QC120992

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	18.78	46.72	37.12	39	35-146

Surrogate	%REC	Limits
Hexacosane	75	60-136

Type: MSD Lab ID: QC120993

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	47.23	45.47	57	35-146	19	48

Surrogate	%REC	Limits
Hexacosane	84	60-136

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	3W;7.5-8.0	Diln Fac:	50.00
Lab ID:	146684-001	Batch#:	57347
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/31/00

Analyte	Result	RL
Freon 12	ND	500
Chloromethane	ND	500
Vinyl Chloride	ND	500
Bromomethane	ND	500
Chloroethane	ND	500
Trichlorofluoromethane	ND	250
Acetone	ND	1,000
Freon 113	ND	250
1,1-Dichloroethene	ND	250
Methylene Chloride	ND	1,000
Carbon Disulfide	ND	250
MTBE	ND	250
trans-1,2-Dichloroethene	ND	250
Vinyl Acetate	ND	2,500
1,1-Dichloroethane	ND	250
2-Butanone	ND	500
cis-1,2-Dichloroethene	ND	250
2,2-Dichloropropane	ND	250
Chloroform	ND	250
Bromochloromethane	ND	250
1,1,1-Trichloroethane	ND	250
1,1-Dichloropropene	ND	250
Carbon Tetrachloride	ND	250
1,2-Dichloroethane	ND	250
Benzene	ND	250
Trichloroethene	ND	250
1,2-Dichloropropane	ND	250
Bromodichloromethane	ND	250
Dibromomethane	ND	250
4-Methyl-2-Pentanone	ND	500
cis-1,3-Dichloropropene	ND	250
Toluene	ND	250
trans-1,3-Dichloropropene	ND	250
1,1,2-Trichloroethane	ND	250
2-Hexanone	ND	500
1,3-Dichloropropane	ND	250
Tetrachloroethene	ND	250
Dibromochloromethane	ND	250
1,2-Dibromoethane	ND	250
Chlorobenzene	ND	250
1,1,1,2-Tetrachloroethane	ND	250
Ethylbenzene	ND	250
m,p-Xylenes	ND	250
o-Xylene	ND	250
Styrene	ND	250
Bromoform	ND	250
Isopropylbenzene	ND	250
1,1,2,2-Tetrachloroethane	ND	250
1,2,3-Trichloropropane	ND	250
Propylbenzene	440	250
Bromobenzene	ND	250
1,3,5-Trimethylbenzene	ND	250
2-Chlorotoluene	ND	250
4-Chlorotoluene	ND	250

* = Value outside of QC limits; see narrative
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

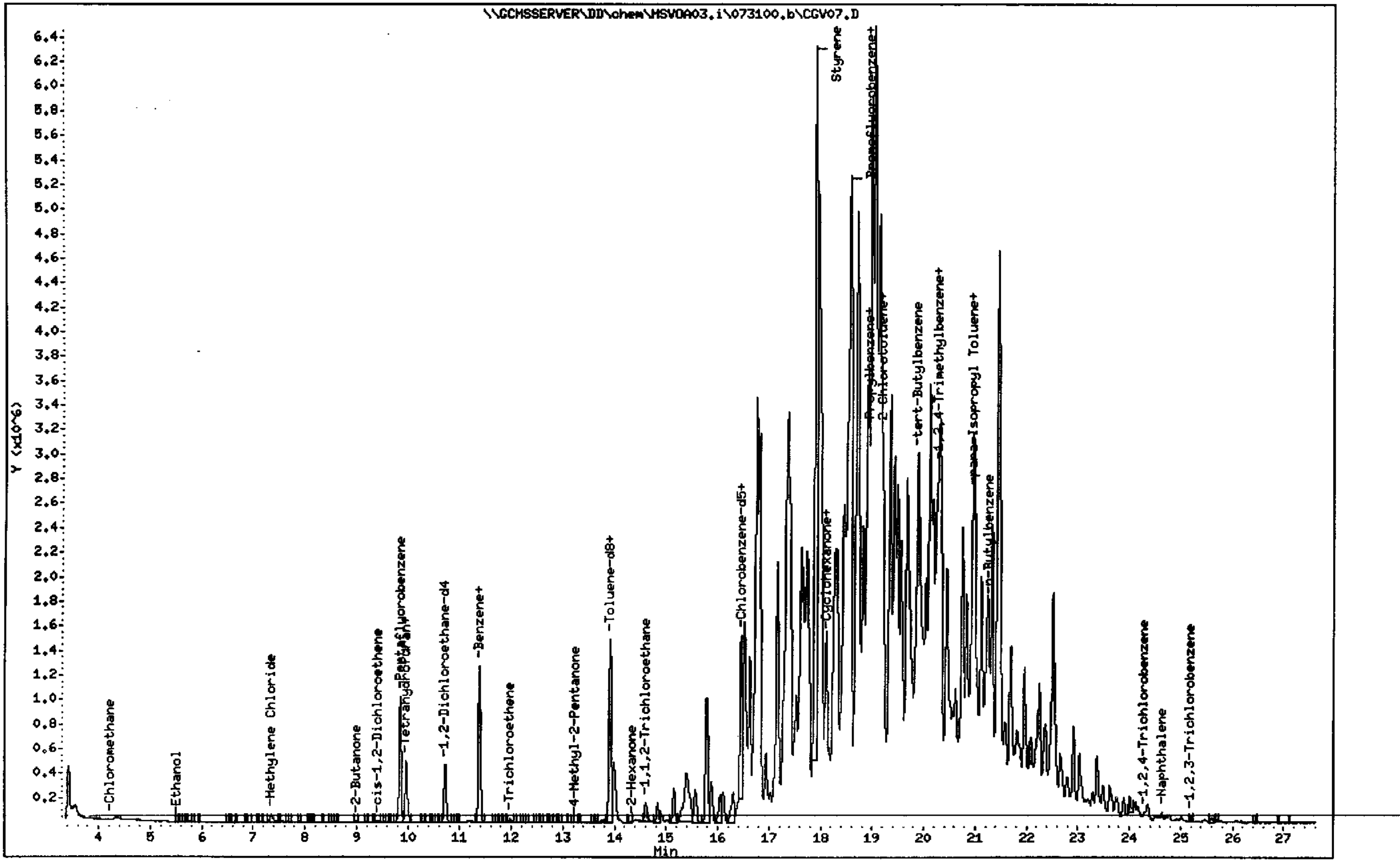
Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	3W;7.5-8.0	Diln Fac:	50.00
Lab ID:	146684-001	Batch#:	57347
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/31/00

Analyte	Result	RL
tert-Butylbenzene	ND	250
1,2,4-Trimethylbenzene	ND	250
sec-Butylbenzene	260	250
para-Isopropyl Toluene	ND	250
1,3-Dichlorobenzene	ND	250
1,4-Dichlorobenzene	ND	250
n-Butylbenzene	ND	250
1,2-Dichlorobenzene	ND	250
1,2-Dibromo-3-Chloropropane	ND	250
1,2,4-Trichlorobenzene	ND	250
Hexachlorobutadiene	ND	250
Naphthalene	ND	250
1,2,3-Trichlorobenzene	ND	250

Surrogate	%REC	Limits
Dibromofluoromethane	89	63-133
1,2-Dichloroethane-d4	89	76-127
Toluene-d8	110	80-111
Bromofluorobenzene	156 *	77-126

* = Value outside of QC limits; see narrative
ND = Not Detected
RL = Reporting Limit

Data File: \\GCMSSERVER\DD\chem\MSVOA03.i\073100.b\CGV07.D
Date : 31-JUL-2000 15:23
Client ID: DYNA P&T
Instrument: MSVOA03.i
Sample Info: MSS,146684-001
Purge Volume: 5.0
Operator: LLH
Column phase: RTx Volatiles
Column diameter: 0.32



Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	5W;7.5-8.0	Diln Fac:	0.9615
Lab ID:	146684-004	Batch#:	57283
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Analyte	Result	RL
Freon 12	ND	9.6
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.6
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.6
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.6
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	5W;7.5-8.0	Diln Fac:	0.9615
Lab ID:	146684-004	Batch#:	57283
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	97	63-133
1,2-Dichloroethane-d4	98	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	102	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	4W;7-7.5	Diln Fac:	0.9615
Lab ID:	146684-005	Batch#:	57283
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Analyte	Result	RL
Freon 12	ND	9.6
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.6
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.6
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.6
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	4W;7-7.5	Diln Fac:	0.9615
Lab ID:	146684-005	Batch#:	57283
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	97	63-133
1,2-Dichloroethane-d4	99	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	103	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	6W;7.5-8.0	Diln Fac:	83.33
Lab ID:	146684-006	Batch#:	57347
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/31/00

Analyte	Result	RL
Freon 12	ND	830
Chloromethane	ND	830
Vinyl Chloride	ND	830
Bromomethane	ND	830
Chloroethane	ND	830
Trichlorofluoromethane	ND	420
Acetone	1,700	1,700
Freon 113	ND	420
1,1-Dichloroethene	ND	420
Methylene Chloride	ND	1,700
Carbon Disulfide	ND	420
MTBE	ND	420
trans-1,2-Dichloroethene	ND	420
Vinyl Acetate	ND	4,200
1,1-Dichloroethane	ND	420
2-Butanone	ND	830
cis-1,2-Dichloroethene	ND	420
2,2-Dichloropropane	ND	420
Chloroform	ND	420
Bromochloromethane	ND	420
1,1,1-Trichloroethane	ND	420
1,1-Dichloropropene	ND	420
Carbon Tetrachloride	ND	420
1,2-Dichloroethane	ND	420
Benzene	ND	420
Trichloroethene	ND	420
1,2-Dichloropropane	ND	420
Bromodichloromethane	ND	420
Dibromomethane	ND	420
4-Methyl-2-Pentanone	ND	830
cis-1,3-Dichloropropene	ND	420
Toluene	550	420
trans-1,3-Dichloropropene	ND	420
1,1,2-Trichloroethane	ND	420
2-Hexanone	ND	830
1,3-Dichloropropane	ND	420
Tetrachloroethene	ND	420
Dibromochloromethane	ND	420
1,2-Dibromoethane	ND	420
Chlorobenzene	ND	420
1,1,1,2-Tetrachloroethane	ND	420
Ethylbenzene	1,300	420
m,p-Xylenes	5,500	420
o-Xylene	2,600	420
Styrene	ND	420
Bromoform	ND	420
Isopropylbenzene	210 J	420
1,1,2,2-Tetrachloroethane	ND	420
1,2,3-Trichloropropane	ND	420
Propylbenzene	1,200	420
Bromobenzene	ND	420
1,3,5-Trimethylbenzene	3,000	420
2-Chlorotoluene	ND	420
4-Chlorotoluene	ND	420

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	6W;7.5-8.0	Diln Fac:	83.33
Lab ID:	146684-006	Batch#:	57347
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/31/00

Analyte	Result	RL
tert-Butylbenzene	ND	420
1,2,4-Trimethylbenzene	11,000	420
sec-Butylbenzene	210 J	420
para-Isopropyl Toluene	ND	420
1,3-Dichlorobenzene	ND	420
1,4-Dichlorobenzene	ND	420
n-Butylbenzene	1,800	420
1,2-Dichlorobenzene	ND	420
1,2-Dibromo-3-Chloropropane	ND	420
1,2,4-Trichlorobenzene	ND	420
Hexachlorobutadiene	ND	420
Naphthalene	2,500	420
1,2,3-Trichlorobenzene	ND	420

Surrogate	%REC	Limits
Dibromofluoromethane	85	63-133
1,2-Dichloroethane-d4	84	76-127
Toluene-d8	109	80-111
Bromofluorobenzene	102	77-126

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	7W;7.5-8.0	Diln Fac:	1.042
Lab ID:	146684-007	Batch#:	57283
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.2
Acetone	ND	21
Freon 113	ND	5.2
1,1-Dichloroethene	ND	5.2
Methylene Chloride	ND	21
Carbon Disulfide	ND	5.2
MTBE	ND	5.2
trans-1,2-Dichloroethene	ND	5.2
Vinyl Acetate	ND	52
1,1-Dichloroethane	ND	5.2
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.2
2,2-Dichloropropane	ND	5.2
Chloroform	ND	5.2
Bromochloromethane	ND	5.2
1,1,1-Trichloroethane	ND	5.2
1,1-Dichloropropene	ND	5.2
Carbon Tetrachloride	ND	5.2
1,2-Dichloroethane	ND	5.2
Benzene	ND	5.2
Trichloroethene	ND	5.2
1,2-Dichloropropane	ND	5.2
Bromodichloromethane	ND	5.2
Dibromomethane	ND	5.2
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.2
Toluene	ND	5.2
trans-1,3-Dichloropropene	ND	5.2
1,1,2-Trichloroethane	ND	5.2
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.2
Tetrachloroethene	ND	5.2

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	7W;7.5-8.0	Diln Fac:	1.042
Lab ID:	146684-007	Batch#:	57283
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Analyte	Result	RL
Dibromochloromethane	ND	5.2
1,2-Dibromoethane	ND	5.2
Chlorobenzene	ND	5.2
1,1,1,2-Tetrachloroethane	ND	5.2
Ethylbenzene	ND	5.2
m,p-Xylenes	ND	5.2
o-Xylene	ND	5.2
Styrene	ND	5.2
Bromoform	ND	5.2
Isopropylbenzene	ND	5.2
1,1,2,2-Tetrachloroethane	ND	5.2
1,2,3-Trichloropropane	ND	5.2
Propylbenzene	ND	5.2
Bromobenzene	ND	5.2
1,3,5-Trimethylbenzene	ND	5.2
2-Chlorotoluene	ND	5.2
4-Chlorotoluene	ND	5.2
tert-Butylbenzene	ND	5.2
1,2,4-Trimethylbenzene	ND	5.2
sec-Butylbenzene	ND	5.2
para-Isopropyl Toluene	ND	5.2
1,3-Dichlorobenzene	ND	5.2
1,4-Dichlorobenzene	ND	5.2
n-Butylbenzene	ND	5.2
1,2-Dichlorobenzene	ND	5.2
1,2-Dibromo-3-Chloropropane	ND	5.2
1,2,4-Trichlorobenzene	ND	5.2
Hexachlorobutadiene	ND	5.2
Naphthalene	8.2	5.2
1,2,3-Trichlorobenzene	ND	5.2

Surrogate	%REC	Limits
Dibromofluoromethane	93	63-133
1,2-Dichloroethane-d4	86	76-127
Toluene-d8	99	80-111
Bromofluorobenzene	107	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Basis:	wet
Lab ID:	QC121202	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57283
Units:	ug/Kg	Analyzed:	07/27/00

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND = Not Detected
RL = Reporting Limit

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Basis:	wet
Lab ID:	QC121202	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57283
Units:	ug/Kg	Analyzed:	07/27/00

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	97	63-133
1,2-Dichloroethane-d4	99	76-127
Toluene-d8	101	80-111
Bromofluorobenzene	105	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Basis:	wet
Lab ID:	QC121459	Diln Fac:	1.000
Matrix:	Miscell.	Batch#:	57347
Units:	ug/Kg	Analyzed:	07/31/00

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Basis:	wet
Lab ID:	QC121459	Diln Fac:	1.000
Matrix:	Miscell.	Batch#:	57347
Units:	ug/Kg	Analyzed:	07/31/00

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	89	63-133
1,2-Dichloroethane-d4	89	76-127
Toluene-d8	108	80-111
Bromofluorobenzene	98	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	LCS	Basis:	wet
Lab ID:	QC121201	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57283
Units:	ug/Kg	Analyzed:	07/27/00

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	54.15	108	66-138
Benzene	50.00	56.21	112	76-121
Trichloroethene	50.00	58.31	117	75-124
Toluene	50.00	58.60	117	75-124
Chlorobenzene	50.00	57.73	115	78-115

Surrogate	%REC	Limits
Dibromofluoromethane	98	63-133
1,2-Dichloroethane-d4	98	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	93	77-126

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	LCS	Basis:	wet
Lab ID:	QC121460	Diln Fac:	1.000
Matrix:	Miscell.	Batch#:	57347
Units:	ug/Kg	Analyzed:	07/31/00

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	53.11	106	66-138
Benzene	50.00	52.46	105	76-121
Trichloroethene	50.00	56.29	113	75-124
Toluene	50.00	62.07	124	75-124
Chlorobenzene	50.00	55.17	110	78-115

Surrogate	%REC	Limits
Dibromofluoromethane	100	63-133
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	108	80-111
Bromofluorobenzene	99	77-126

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	0.9615
MSS Lab ID:	146691-001	Batch#:	57283
Matrix:	Soil	Sampled:	07/20/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Type: MS   Lab ID: QC121218

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<4.808	48.08	42.94	89	42-145
Benzene	<4.808	48.08	46.15	96	50-133
Trichloroethene	<4.808	48.08	45.63	95	33-133
Toluene	<4.808	48.08	44.85	93	45-134
Chlorobenzene	<4.808	48.08	42.17	88	38-137

Surrogate	%REC	Limits
Dibromofluoromethane	100	63-133
1,2-Dichloroethane-d4	96	76-127
Toluene-d8	99	80-111
Bromofluorobenzene	92	77-126

Type: MSD   Lab ID: QC121219

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.08	43.43	90	42-145	1	31
Benzene	48.08	45.02	94	50-133	2	29
Trichloroethene	48.08	45.66	95	33-133	0	30
Toluene	48.08	43.08	90	45-134	4	29
Chlorobenzene	48.08	38.29	80	38-137	10	31

Surrogate	%REC	Limits
Dibromofluoromethane	99	63-133
1,2-Dichloroethane-d4	97	76-127
Toluene-d8	99	80-111
Bromofluorobenzene	92	77-126

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	3W;7.5-8.0	Diln Fac:	50.00
MSS Lab ID:	146684-001	Batch#:	57347
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	07/31/00

Type: MS Lab ID: QC121475

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<250.0	2,500	3,033	121	42-14
Benzene	<250.0	2,500	2,745	109	50-13
Trichloroethene	<250.0	2,500	2,948	114	33-133
Toluene	<250.0	2,500	3,408	136 *	45-13
Chlorobenzene	<250.0	2,500	2,822	113	38-13

Surrogate	%REC	Limits
Dibromofluoromethane	102	63-133
1,2-Dichloroethane-d4	100	76-127
Toluene-d8	117 *	80-111
Bromofluorobenzene	116	77-126

Type: MSD Lab ID: QC121476

Analyte	Spiked	Result	%REC	Limits	RPD	Li
1,1-Dichloroethene	2,500	2,579	103	42-145	16	3
Benzene	2,500	2,649	105	50-133	4	2
Trichloroethene	2,500	2,773	107	33-133	6	30
Toluene	2,500	3,137	125	45-134	8	2
Chlorobenzene	2,500	2,695	108	38-137	5	3

Surrogate	%REC	Limits
Dibromofluoromethane	93	63-133
1,2-Dichloroethane-d4	91	76-127
Toluene-d8	114 *	80-111
Bromofluorobenzene	125	77-126

* = Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	3W;7.5-8.0	Batch#:	57239
Lab ID:	146684-001	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/26/00
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	340
Phenol	ND	340
bis(2-Chloroethyl)ether	ND	340
2-Chlorophenol	ND	340
1,3-Dichlorobenzene	ND	340
1,4-Dichlorobenzene	ND	340
Benzyl alcohol	ND	340
1,2-Dichlorobenzene	ND	340
2-Methylphenol	ND	340
bis(2-Chloroisopropyl) ether	ND	340
3-,4-Methylphenol	ND	340
N-Nitroso-di-n-propylamine	ND	340
Hexachloroethane	ND	340
Nitrobenzene	ND	340
Isophorone	ND	340
2-Nitrophenol	ND	1,700
2,4-Dimethylphenol	ND	340
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	340
2,4-Dichlorophenol	ND	340
1,2,4-Trichlorobenzene	ND	340
Naphthalene	ND	340
4-Chloroaniline	ND	340
Hexachlorobutadiene	ND	340
4-Chloro-3-methylphenol	ND	340
2-Methylnaphthalene	ND	340
Hexachlorocyclopentadiene	ND	1,700
2,4,6-Trichlorophenol	ND	340
2,4,5-Trichlorophenol	ND	340
2-Chloronaphthalene	ND	340
2-Nitroaniline	ND	1,700
Dimethylphthalate	ND	340
Acenaphthylene	ND	340
2,6-Dinitrotoluene	ND	340
3-Nitroaniline	ND	1,700
Acenaphthene	ND	340
2,4-Dinitrophenol	ND	1,700
4-Nitrophenol	ND	1,700
Dibenzofuran	ND	340
2,4-Dinitrotoluene	ND	340
Diethylphthalate	ND	340
Fluorene	ND	340
4-Chlorophenyl-phenylether	ND	340
4-Nitroaniline	ND	1,700
4,6-Dinitro-2-methylphenol	ND	1,700
N-Nitrosodiphenylamine	ND	340
Azobenzene	ND	340
4-Bromophenyl-phenylether	ND	340
Hexachlorobenzene	ND	340
Pentachlorophenol	ND	1,700
Phenanthrene	ND	340
Anthracene	ND	340
Di-n-butylphthalate	ND	340
Fluoranthene	ND	340

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	3W;7.5-8.0	Batch#:	57239
Lab ID:	146684-001	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/26/00
Diln Fac:	1.000		

Analyte	Result	RL
Pyrene	ND	340
Butylbenzylphthalate	ND	340
3,3'-Dichlorobenzidine	ND	1,700
Benzo(a)anthracene	ND	340
Chrysene	ND	340
bis(2-Ethylhexyl)phthalate	ND	340
Di-n-octylphthalate	ND	340
Benzo(b)fluoranthene	ND	340
Benzo(k)fluoranthene	ND	340
Benzo(a)pyrene	ND	340
Indeno(1,2,3-cd)pyrene	ND	340
Dibenz(a,h)anthracene	ND	340
Benzo(g,h,i)perylene	ND	340

Surrogate	%REC	Limits
2-Fluorophenol	86	40-134
Phenol-d5	86	39-135
2,4,6-Tribromophenol	54	16-131
Nitrobenzene-d5	88	38-131
2-Fluorobiphenyl	95	45-129
Terphenyl-d14	85	41-140

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	6W;7.5-8.0	Batch#:	57239
Lab ID:	146684-006	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
3-,4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	1,700
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	1,700
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1,700
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1,700
Acenaphthene	ND	330
2,4-Dinitrophenol	ND	1,700
4-Nitrophenol	ND	1,700
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	330
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	1,700
4,6-Dinitro-2-methylphenol	ND	1,700
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	1,700
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	6W;7.5-8.0	Batch#:	57239
Lab ID:	146684-006	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1,700
Benzo(a)anthracene	ND	330
Chrysene	ND	330
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenz(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

Surrogate	%REC	Limits
2-Fluorophenol	90	40-134
Phenol-d5	94	39-135
2,4,6-Tribromophenol	52	16-131
Nitrobenzene-d5	83	38-131
2-Fluorobiphenyl	91	45-129
Terphenyl-d14	91	41-140

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	10N;4.5-5.0	Batch#:	57239
Lab ID:	146684-010	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	5.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	1,700
Phenol	ND	1,700
bis(2-Chloroethyl)ether	ND	1,700
2-Chlorophenol	ND	1,700
1,3-Dichlorobenzene	ND	1,700
1,4-Dichlorobenzene	ND	1,700
Benzyl alcohol	ND	1,700
1,2-Dichlorobenzene	ND	1,700
2-Methylphenol	ND	1,700
bis(2-Chloroisopropyl) ether	ND	1,700
3-,4-Methylphenol	ND	1,700
N-Nitroso-di-n-propylamine	ND	1,700
Hexachloroethane	ND	1,700
Nitrobenzene	ND	1,700
Isophorone	ND	1,700
2-Nitrophenol	ND	8,400
2,4-Dimethylphenol	ND	1,700
Benzoic acid	ND	8,400
bis(2-Chloroethoxy)methane	ND	1,700
2,4-Dichlorophenol	ND	1,700
1,2,4-Trichlorobenzene	ND	1,700
Naphthalene	ND	1,700
4-Chloroaniline	ND	1,700
Hexachlorobutadiene	ND	1,700
4-Chloro-3-methylphenol	ND	1,700
2-Methylnaphthalene	ND	1,700
Hexachlorocyclopentadiene	ND	8,400
2,4,6-Trichlorophenol	ND	1,700
2,4,5-Trichlorophenol	ND	1,700
2-Chloronaphthalene	ND	1,700
2-Nitroaniline	ND	8,400
Dimethylphthalate	ND	1,700
Acenaphthylene	ND	1,700
2,6-Dinitrotoluene	ND	1,700
3-Nitroaniline	ND	8,400
Acenaphthene	ND	1,700
2,4-Dinitrophenol	ND	8,400
4-Nitrophenol	ND	8,400
Dibenzofuran	ND	1,700
2,4-Dinitrotoluene	ND	1,700
Diethylphthalate	ND	1,700
Fluorene	1,100 J	1,700
4-Chlorophenyl-phenylether	ND	1,700
4-Nitroaniline	ND	8,400
4,6-Dinitro-2-methylphenol	ND	8,400
N-Nitrosodiphenylamine	ND	1,700
Azobenzene	ND	1,700
4-Bromophenyl-phenylether	ND	1,700
Hexachlorobenzene	ND	1,700
Pentachlorophenol	ND	8,400
Phenanthrene	2,100	1,700
Anthracene	ND	1,700

* = Value outside of QC limits; see narrative
J = Estimated value
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	10N;4.5-5.0	Batch#:	57239
Lab ID:	146684-010	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	5.000		

Analyte	Result	RL
Di-n-butylphthalate	ND	1,700
Fluoranthene	ND	1,700
Pyrene	ND	1,700
Butylbenzylphthalate	ND	1,700
3,3'-Dichlorobenzidine	ND	8,400
Benzo(a)anthracene	ND	1,700
Chrysene	ND	1,700
bis(2-Ethylhexyl)phthalate	ND	1,700
Di-n-octylphthalate	ND	1,700
Benzo(b)fluoranthene	ND	1,700
Benzo(k)fluoranthene	ND	1,700
Benzo(a)pyrene	ND	1,700
Indeno(1,2,3-cd)pyrene	ND	1,700
Dibenz(a,h)anthracene	ND	1,700
Benzo(g,h,i)perylene	ND	1,700

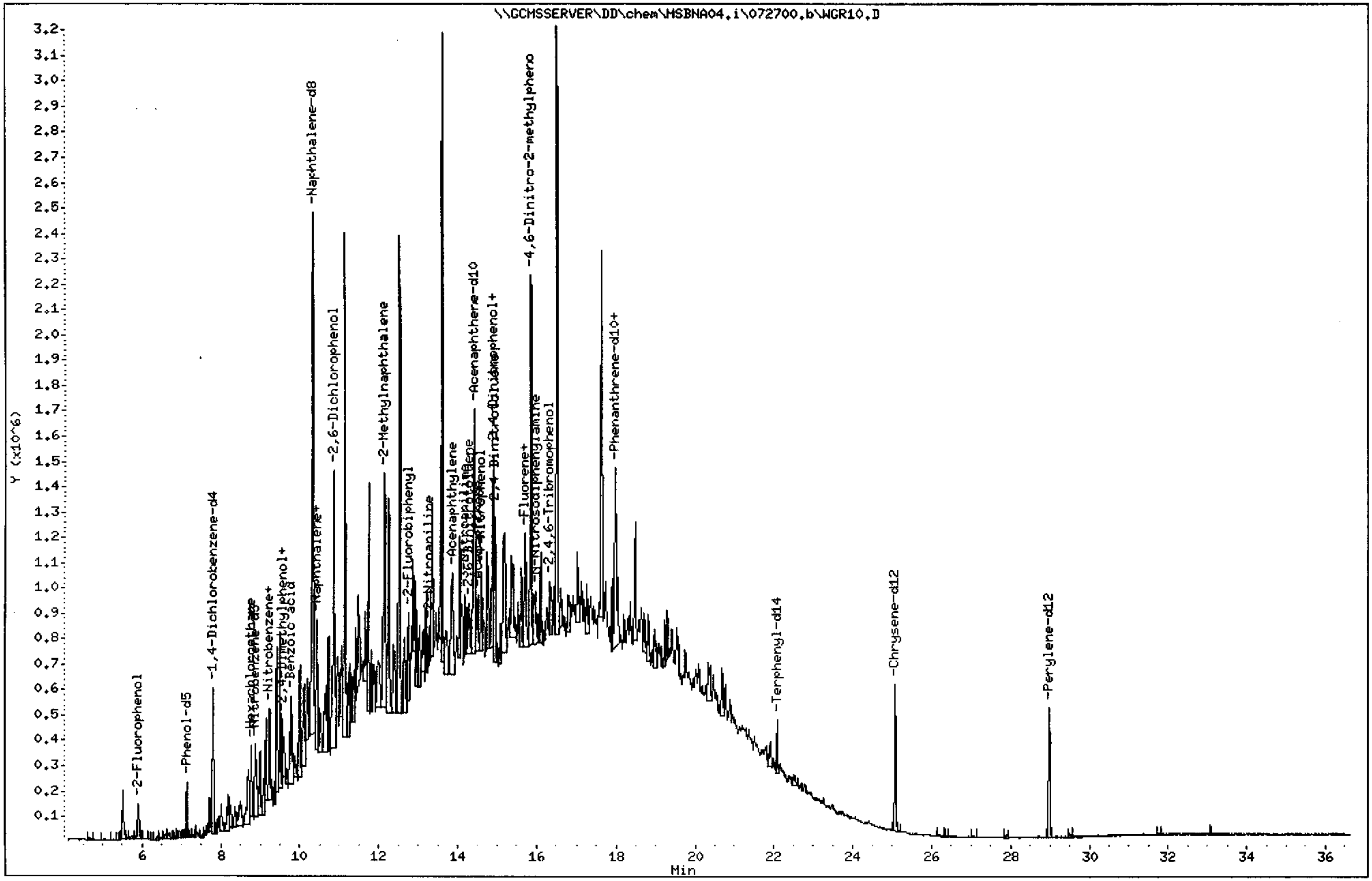
Surrogate	%REC	Limits
2-Fluorophenol	97	40-134
Phenol-d5	102	39-135
2,4,6-Tribromophenol	107	16-131
Nitrobenzene-d5	154 *	38-131
2-Fluorobiphenyl	125	45-129
Terphenyl-d14	99	41-140

* = Value outside of QC limits; see narrative
J = Estimated value
ND = Not Detected
RL = Reporting Limit

Data File: \\GCMSSERVER\DD\chem\MSBNA04.i\072700.b\WGR10.D
Date : 27-JUL-2000 22:00
Client ID: CURTIS&TOMPKINS
Sample Info: S,146684-010
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: MSBNA04.i

Operator: DSH
Column diameter: 0.25



Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	10S;4.0-4.5	Batch#:	57239
Lab ID:	146684-011	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	5.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	1,700
Phenol	ND	1,700
bis(2-Chloroethyl)ether	ND	1,700
2-Chlorophenol	ND	1,700
1,3-Dichlorobenzene	ND	1,700
1,4-Dichlorobenzene	ND	1,700
Benzyl alcohol	ND	1,700
1,2-Dichlorobenzene	ND	1,700
2-Methylphenol	ND	1,700
bis(2-Chloroisopropyl) ether	ND	1,700
3-,4-Methylphenol	ND	1,700
N-Nitroso-di-n-propylamine	ND	1,700
Hexachloroethane	ND	1,700
Nitrobenzene	ND	1,700
Isophorone	ND	1,700
2-Nitrophenol	ND	8,400
2,4-Dimethylphenol	ND	1,700
Benzoic acid	ND	8,400
bis(2-Chloroethoxy)methane	ND	1,700
2,4-Dichlorophenol	ND	1,700
1,2,4-Trichlorobenzene	ND	1,700
Naphthalene	2,000	1,700
4-Chloroaniline	ND	1,700
Hexachlorobutadiene	ND	1,700
4-Chloro-3-methylphenol	ND	1,700
2-Methylnaphthalene	7,200	1,700
Hexachlorocyclopentadiene	ND	8,400
2,4,6-Trichlorophenol	ND	1,700
2,4,5-Trichlorophenol	ND	1,700
2-Chloronaphthalene	ND	1,700
2-Nitroaniline	ND	8,400
Dimethylphthalate	ND	1,700
Acenaphthylene	ND	1,700
2,6-Dinitrotoluene	ND	1,700
3-Nitroaniline	ND	8,400
Acenaphthene	ND	1,700
2,4-Dinitrophenol	ND	8,400
4-Nitrophenol	ND	8,400
Dibenzofuran	ND	1,700
2,4-Dinitrotoluene	ND	1,700
Diethylphthalate	ND	1,700
Fluorene	ND	1,700
4-Chlorophenyl-phenylether	ND	1,700
4-Nitroaniline	ND	8,400
4,6-Dinitro-2-methylphenol	ND	8,400
N-Nitrosodiphenylamine	ND	1,700
Azobenzene	ND	1,700
4-Bromophenyl-phenylether	ND	1,700
Hexachlorobenzene	ND	1,700
Pentachlorophenol	ND	8,400
Phenanthrene	1,300 J	1,700
Anthracene	ND	1,700
Di-n-butylphthalate	ND	1,700

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

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	10S;4.0-4.5	Batch#:	57239
Lab ID:	146684-011	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	5.000		

Analyte	Result	RL
Fluoranthene	ND	1,700
Pyrene	ND	1,700
Butylbenzylphthalate	ND	1,700
3,3'-Dichlorobenzidine	ND	8,400
Benzo(a)anthracene	ND	1,700
Chrysene	ND	1,700
bis(2-Ethylhexyl)phthalate	ND	1,700
Di-n-octylphthalate	ND	1,700
Benzo(b)fluoranthene	ND	1,700
Benzo(k)fluoranthene	ND	1,700
Benzo(a)pyrene	ND	1,700
Indeno(1,2,3-cd)pyrene	ND	1,700
Dibenz(a,h)anthracene	ND	1,700
Benzo(g,h,i)perylene	ND	1,700

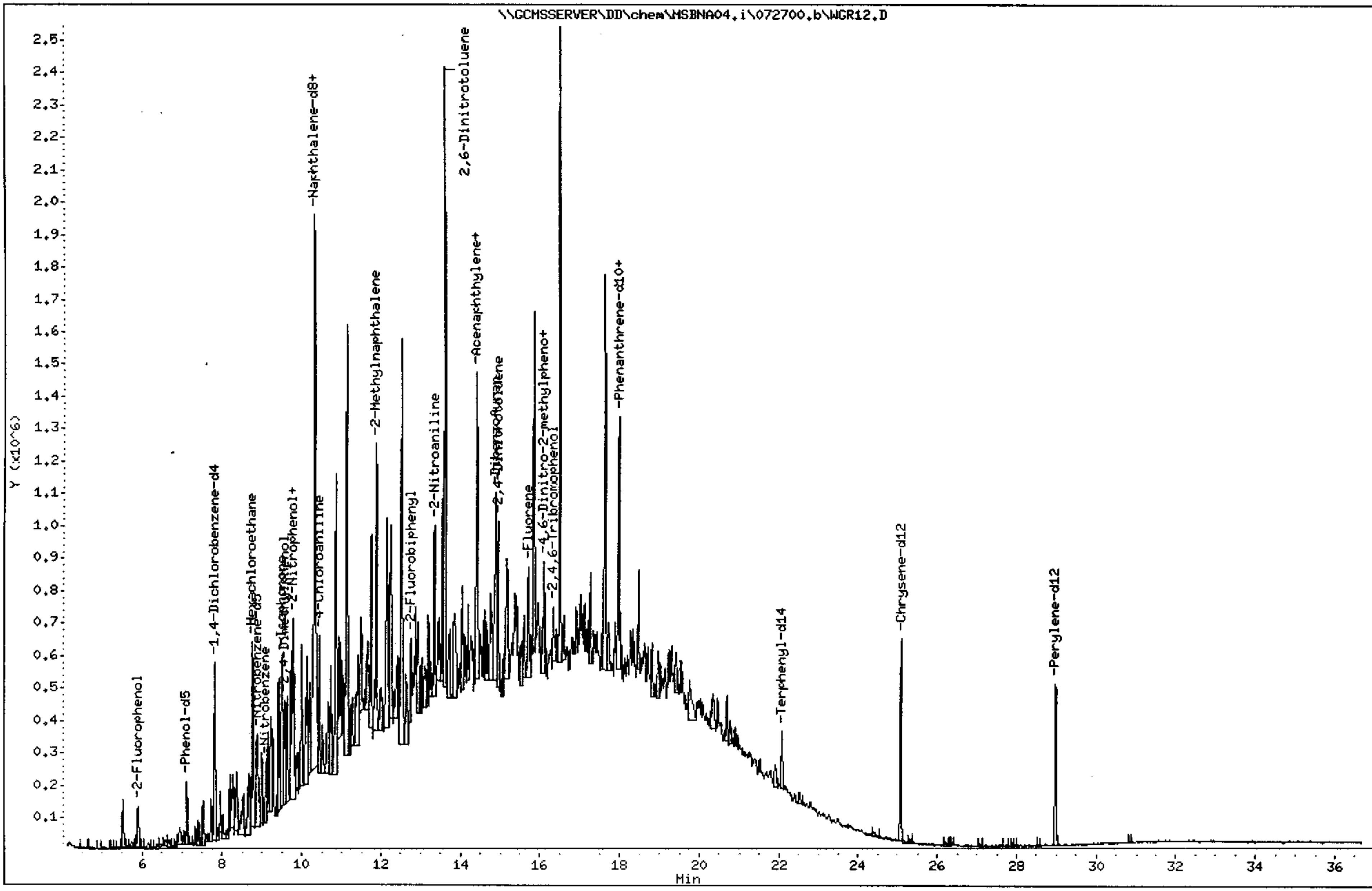
Surrogate	%REC	Limits
2-Fluorophenol	85	40-134
Phenol-d5	87	39-135
2,4,6-Tribromophenol	77	16-131
Nitrobenzene-d5	121	38-131
2-Fluorobiphenyl	110	45-129
Terphenyl-d14	88	41-140

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

Data File: \\GCMSSERVER\DD\chem\MSBNA04.i\072700.b\WGR12.D
Date : 27-JUL-2000 23:38
Client ID: CURTIS&TOMPKINS
Sample Info: S,146684-011
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: MSBNA04.i

Operator: dsh
Column diameter: 0.25



Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	10E;3.5-4.0	Batch#:	57239
Lab ID:	146684-012	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	5.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	1,600
Phenol	ND	1,600
bis(2-Chloroethyl)ether	ND	1,600
2-Chlorophenol	ND	1,600
1,3-Dichlorobenzene	ND	1,600
1,4-Dichlorobenzene	ND	1,600
Benzyl alcohol	ND	1,600
1,2-Dichlorobenzene	ND	1,600
2-Methylphenol	ND	1,600
bis(2-Chloroisopropyl) ether	ND	1,600
3-,4-Methylphenol	ND	1,600
N-Nitroso-di-n-propylamine	ND	1,600
Hexachloroethane	ND	1,600
Nitrobenzene	ND	1,600
Isophorone	ND	1,600
2-Nitrophenol	ND	8,200
2,4-Dimethylphenol	ND	1,600
Benzoic acid	ND	8,200
bis(2-Chloroethoxy)methane	ND	1,600
2,4-Dichlorophenol	ND	1,600
1,2,4-Trichlorobenzene	ND	1,600
Naphthalene	ND	1,600
4-Chloroaniline	ND	1,600
Hexachlorobutadiene	ND	1,600
4-Chloro-3-methylphenol	ND	1,600
2-Methylnaphthalene	8,100	1,600
Hexachlorocyclopentadiene	ND	8,200
2,4,6-Trichlorophenol	ND	1,600
2,4,5-Trichlorophenol	ND	1,600
2-Chloronaphthalene	ND	1,600
2-Nitroaniline	ND	8,200
Dimethylphthalate	ND	1,600
Acenaphthylene	ND	1,600
2,6-Dinitrotoluene	ND	1,600
3-Nitroaniline	ND	8,200
Acenaphthene	ND	1,600
2,4-Dinitrophenol	ND	8,200
4-Nitrophenol	ND	8,200
Dibenzofuran	ND	1,600
2,4-Dinitrotoluene	ND	1,600
Diethylphthalate	ND	1,600
Fluorene	1,300 J	1,600
4-Chlorophenyl-phenylether	ND	1,600
4-Nitroaniline	ND	8,200
4,6-Dinitro-2-methylphenol	ND	8,200
N-Nitrosodiphenylamine	ND	1,600
Azobenzene	ND	1,600
4-Bromophenyl-phenylether	ND	1,600
Hexachlorobenzene	ND	1,600
Pentachlorophenol	ND	8,200
Phenanthrene	2,000	1,600
Anthracene	ND	1,600

* = Value outside of QC limits; see narrative
J = Estimated value
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	10E;3.5-4.0	Batch#:	57239
Lab ID:	146684-012	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	5.000		

Analyte	Result	RL
Di-n-butylphthalate	ND	1,600
Fluoranthene	ND	1,600
Pyrene	ND	1,600
Butylbenzylphthalate	ND	1,600
3,3'-Dichlorobenzidine	ND	8,200
Benzo(a)anthracene	ND	1,600
Chrysene	ND	1,600
bis(2-Ethylhexyl)phthalate	ND	1,600
Di-n-octylphthalate	ND	1,600
Benzo(b)fluoranthene	ND	1,600
Benzo(k)fluoranthene	ND	1,600
Benzo(a)pyrene	ND	1,600
Indeno(1,2,3-cd)pyrene	ND	1,600
Dibenz(a,h)anthracene	ND	1,600
Benzo(g,h,i)perylene	ND	1,600

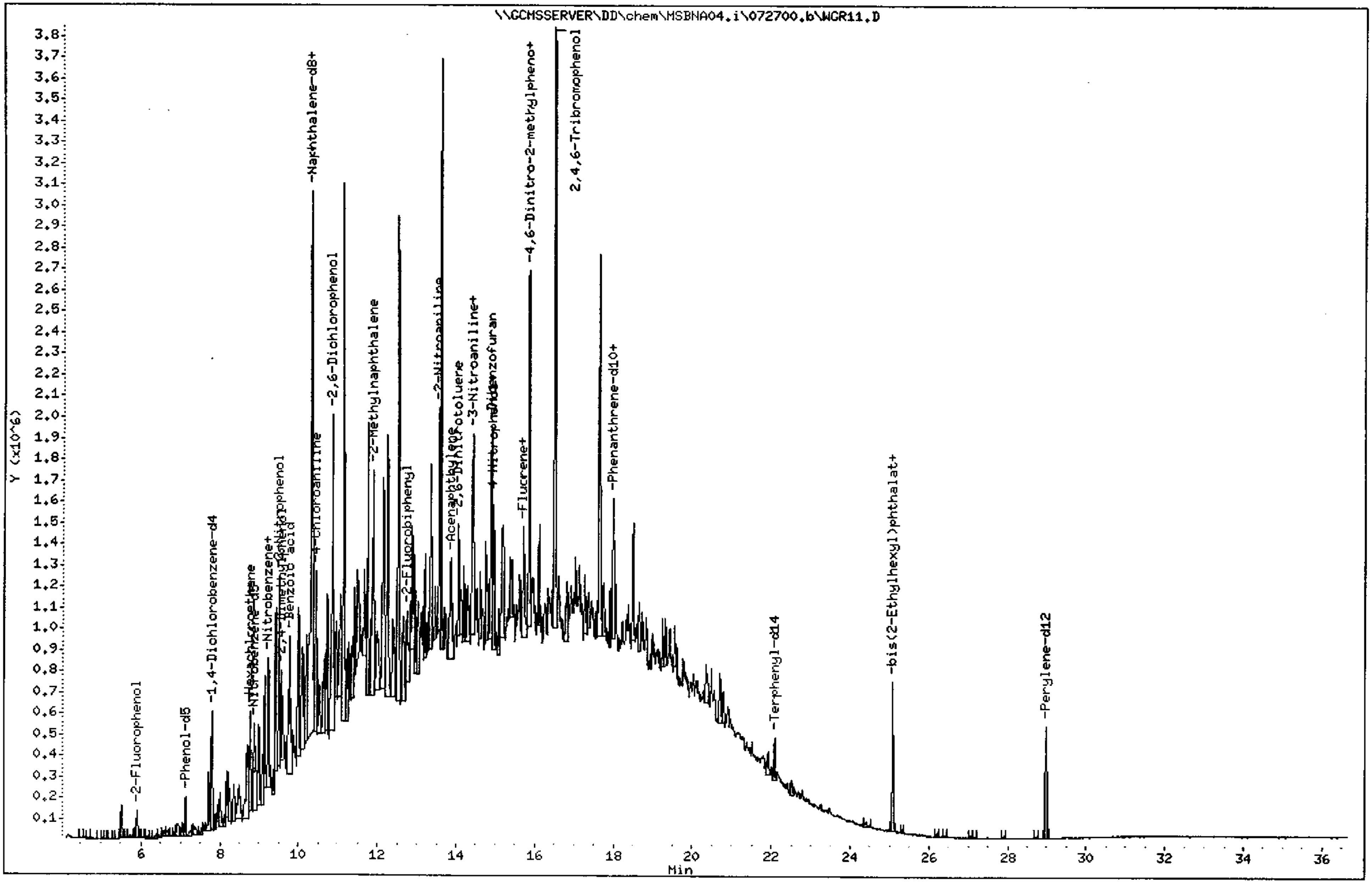
Surrogate	%REC	Limits
2-Fluorophenol	87	40-134
Phenol-d5	87	39-135
2,4,6-Tribromophenol	92	16-131
Nitrobenzene-d5	167 *	38-131
2-Fluorobiphenyl	111	45-129
Terphenyl-d14	85	41-140

* = Value outside of QC limits; see narrative
J = Estimated value
ND = Not Detected
RL = Reporting Limit

Data File: \\GCMSSERVER\DD\chem\MSBNA04.i\072700.b\WGR11.D
Date : 27-JUL-2000 22:49
Client ID: CURTIS&TOMPKINS
Sample Info: S,146684-012
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: MSBNA04.i

Operator: DSH
Column diameter: 0.25



Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121024	Batch#:	57239
Matrix:	Miscell.	Prepared:	07/25/00
Units:	ug/Kg	Analyzed:	07/27/00
Basis:	wet		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
3-,4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	1,700
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	1,700
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1,700
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1,700
Acenaphthene	ND	330
2,4-Dinitrophenol	ND	1,700
4-Nitrophenol	ND	1,700
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	330
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	1,700
4,6-Dinitro-2-methylphenol	ND	1,700
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	1,700
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Pyrene	ND	330

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121024	Batch#:	57239
Matrix:	Miscell.	Prepared:	07/25/00
Units:	ug/Kg	Analyzed:	07/27/00
Basis:	wet		

Analyte	Result	RL
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1,700
Benzo(a)anthracene	ND	330
Chrysene	ND	330
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenz(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

Surrogate	%REC	Limits
2-Fluorophenol	83	40-134
Phenol-d5	88	39-135
2,4,6-Tribromophenol	86	16-131
Nitrobenzene-d5	89	38-131
2-Fluorobiphenyl	89	45-129
Terphenyl-d14	92	41-140

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC121025	Batch#:	57239
Matrix:	Miscell.	Prepared:	07/25/00
Units:	ug/Kg	Analyzed:	07/27/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Phenol	3,296	2,984	91	39-128
2-Chlorophenol	3,296	3,294	100	45-137
1,4-Dichlorobenzene	1,648	1,431	87	41-127
N-Nitroso-di-n-propylamine	1,648	1,480	90	40-140
1,2,4-Trichlorobenzene	1,648	1,497	91	46-128
4-Chloro-3-methylphenol	3,296	3,033	92	45-130
Acenaphthene	1,648	1,542	94	47-124
4-Nitrophenol	3,296	2,208	67	36-110
2,4-Dinitrotoluene	1,648	1,546	94	42-123
Pentachlorophenol	3,296	2,038	62	15-110
Pyrene	1,648	1,507	91	44-123

Surrogate	%REC	Limits
2-Fluorophenol	91	40-134
Phenol-d5	93	39-135
2,4,6-Tribromophenol	90	16-131
Nitrobenzene-d5	88	38-131
2-Fluorobiphenyl	89	45-129
Terphenyl-d14	97	41-140

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	ZZZZZZZZZZ	Batch#:	57239
MSS Lab ID:	146613-001	Sampled:	07/19/00
Matrix:	Soil	Received:	07/19/00
Units:	ug/Kg	Prepared:	07/25/00
Basis:	wet	Analyzed:	07/27/00
Diln Fac:	1.000		

Type: MS Lab ID: QC121026

Analyte	MSS Result	Spiked	Result	%REC	Limits
Phenol	<332.8	3,333	2,707	81	38-133
2-Chlorophenol	<332.8	3,333	2,995	90	34-146
1,4-Dichlorobenzene	<332.8	1,667	1,239	74	43-124
N-Nitroso-di-n-propylamine	242.1	1,667	1,312	79	48-130
1,2,4-Trichlorobenzene	<332.8	1,667	1,377	83	53-128
4-Chloro-3-methylphenol	<332.8	3,333	2,682	80	37-132
Acenaphthene	<332.8	1,667	1,444	87	55-122
4-Nitrophenol	41.55	3,333	1,996	59	24-112
2,4-Dinitrotoluene	<332.8	1,667	1,341	80	37-122
Pentachlorophenol	<1,664	3,333	1,691	51	15-110
Pyrene	<332.8	1,667	1,367	82	30-134

Surrogate	%REC	Limits
2-Fluorophenol	82	40-134
Phenol-d5	82	39-135
2,4,6-Tribromophenol	79	16-131
Nitrobenzene-d5	80	38-131
2-Fluorobiphenyl	83	45-129
Terphenyl-d14	89	41-140

Type: MSD Lab ID: QC121027

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Phenol	3,333	3,027	91	38-133	11	33
2-Chlorophenol	3,333	3,527	106	34-146	16	34
1,4-Dichlorobenzene	1,667	1,479	89	43-124	18	26
N-Nitroso-di-n-propylamine	1,667	1,582	95	48-130	19	43
1,2,4-Trichlorobenzene	1,667	1,611	97	53-128	16	24
4-Chloro-3-methylphenol	3,333	3,050	91	37-132	13	35
Acenaphthene	1,667	1,653	99	55-122	14	26
4-Nitrophenol	3,333	2,288	67	24-112	14	47
2,4-Dinitrotoluene	1,667	1,583	95	37-122	17	33
Pentachlorophenol	3,333	1,803	54	15-110	6	50
Pyrene	1,667	1,542	93	30-134	12	32

Surrogate	%REC	Limits
2-Fluorophenol	95	40-134
Phenol-d5	94	39-135
2,4,6-Tribromophenol	89	16-131
Nitrobenzene-d5	93	38-131
2-Fluorobiphenyl	95	45-129
Terphenyl-d14	100	41-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Percent Solids

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Analysis:	ASTM D2216/CLP
Project#:	98383-17		
Analyte:	Solids	Batch#:	57242
Matrix:	Soil	Sampled:	07/21/00
Units:	%	Received:	07/21/00
Basis:	wet	Prepared:	07/25/00
Diln Fac:	1.000	Analyzed:	07/26/00

Field ID	Lab ID	Result	RL
5W;1-1.5	146684-002	83	1
5W;4-4.5	146684-003	85	1

RL = Reporting Limit

Curtis & Tompkins, Ltd.

Percent Solids

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Analysis:	ASTM D2216/CLP
Project#:	98383-17		
Analyte:	Solids	Basis:	wet
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
Type:	SDUP	Batch#:	57242
MSS Lab ID:	146659-002	Sampled:	07/17/00
Lab ID:	QC121035	Received:	07/20/00
Matrix:	Soil	Prepared:	07/25/00
Units:	%	Analyzed:	07/26/00

MSS Result	Result	RL	RPD	Lim
95.00	96.00	1	1	15

RL = Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Organic Carbon (TOC)

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Analysis:	WALKLEY-BLACK
Project#:	98383-17		
Analyte:	Total Organic Carbon	Batch#:	57294
Matrix:	Soil	Sampled:	07/21/00
Units:	%	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Field ID	Type	Lab ID	Result	RL	Diln Fac
5W;1-1.5	SAMPLE	146684-002	0.24	0.04	2.000
5W;4-4.5	SAMPLE	146684-003	0.08	0.02	1.000
	BLANK	QC121249	ND	0.02	1.000

ND = Not Detected
RL = Reporting Limit

Total Organic Carbon (TOC)

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Analysis:	WALKLEY-BLACK
Project#:	98383-17		
Analyte:	Total Organic Carbon	Diln Fac:	1.000
Field ID:	5W;4-4.5	Batch#:	57294
MSS Lab ID:	146684-003	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	%	Analyzed:	07/27/00
Basis:	wet		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC121250	0.07500	0.1300	0.1830	83	22-150		
MSD	QC121251		0.1300	0.1900	89	22-150	4	20
LCS	QC121252		0.1300	0.1380	106	80-110		

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17 **Site:** MJC

Laboratory: C & T **Laboratory Report No:** 146631

Report Date: 8/11/00 **BASELINE Review By:** RAA

	Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)**			
1a. Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?			✓
1e. Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?	✓		
2a. Is the laboratory report format consistent and legible throughout the report?	✓		
2b. Are the sample and reported dates shown in the laboratory report correct?	✓		
3a. Does the lab report include the original chain-of-custody form?	✓		
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?	✓		
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			✓
6. Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7. Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	✓		
8a. Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	✓		
8b. If no, is an explanation provided by the laboratory?			✓

		Yes	No	NA
9a.	Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	✓		
9b.	If no, was it flagged in the report?			✓
10.	If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a.	Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	✓		
11b.	Is a standard chromatogram(s) included in the laboratory report?	✓		
11c.	Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	✓		
12.	Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*	✓		
13a.	REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b.	REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c.	REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d.	REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses				
14.	Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15.	Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16.	Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*			✓
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?			✓

	Yes	No	NA
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*		✓	
21b. If no, is an explanation given in the case narrative to validate the data?	✓		

Comments:

BRUCE

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

RECEIVED
BASELINE

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 11-AUG-00
Lab Job Number: 146631
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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

This package may be reproduced only in its entirety.

Curtis & Tompkins, Ltd.

Laboratory Number: **146631** Receipt Date: **07/20/00**
Client: **Baseline Environmental**
Project Name: **MSC-7101 Edgewater Drive**

CASE NARRATIVE

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

Total Volatile Hydrocarbons (TVH)/BTXE: The TVH trifluorotoluene surrogate recovery for sample 1N;6.5-7 (146631-004) was outside acceptance limits. The associated bromofluorobenzene surrogate recovery was acceptable. No other analytical problems were encountered.

Total Extractable Hydrocarbons: The matrix spike recoveries were outside acceptance limits. The associated laboratory control sample recovery was acceptable. No other analytical problems were encountered.

146631

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

CHAIN OF CUSTODY RECORD

Turn-around Time
Lab: Curtis Tompkins
BASELINE Contact Person: Bruce Abelli-Amen

Project No.: 98383-17

Project Name and Location: MSC - 7101 Edgewater Drive

Samplers: (Signature) [signature]

Sample ID No. Station	Date:	Time:	Media	Containers No.	Containers Type	Preservative: None	HCl	NO_3	SO_4	Other:	Moisture Content (% by Vol) T.O.C., Porosity, Bulk Density	TPH-g,d,mo	BTEX + MTBE					Remarks/ Composite
1W-A; 6.5-7.0	7/19/00	9:20	S	1	SS	X						X	X					
1E; 7-7.5	↓	10:10	S	1	↓	X						X	X					
1S; 7-7.5	↓	10:46	S	1	↓	X						X	X					
1N; 6.5-7	↓	11:30	S	1	↓	X						X	X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	7/20/00 9:00 AM	[signature]	7/20/00 9:00 am
[signature]	7/20/00 10:20 am	[signature]	7/20/00 - 10:20 A.M.

Conditions of Samples Upon Arrival at Laboratory:

Remarks:

D:\Graphic\Chain of Custody Record\Master.cdr 4/12/00

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/19/00
Units:	mg/Kg	Received:	07/20/00
Basis:	wet		

Field ID:	1W-A;6.5-7.0	Diln Fac:	40.00
Type:	SAMPLE	Batch#:	57298
Lab ID:	146631-001	Analyzed:	07/28/00

Analyte	Result	RL
Gasoline C7-C12	420	40

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	62-138
Bromofluorobenzene (FID)	117	46-150

Field ID:	1E;7-7.5	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57135
Lab ID:	146631-002	Analyzed:	07/21/00

Analyte	Result	RL
Gasoline C7-C12	1,800	100

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	62-138
Bromofluorobenzene (FID)	130	46-150

Field ID:	1S;7-7.5	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57135
Lab ID:	146631-003	Analyzed:	07/21/00

Analyte	Result	RL
Gasoline C7-C12	4,000	100

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	62-138
Bromofluorobenzene (FID)	133	46-150

Field ID:	1N;6.5-7	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57248
Lab ID:	146631-004	Analyzed:	07/26/00

Analyte	Result	RL
Gasoline C7-C12	5.2	0.92

Surrogate	%REC	Limits
Trifluorotoluene (FID)	154 *	62-138
Bromofluorobenzene (FID)	121	46-150

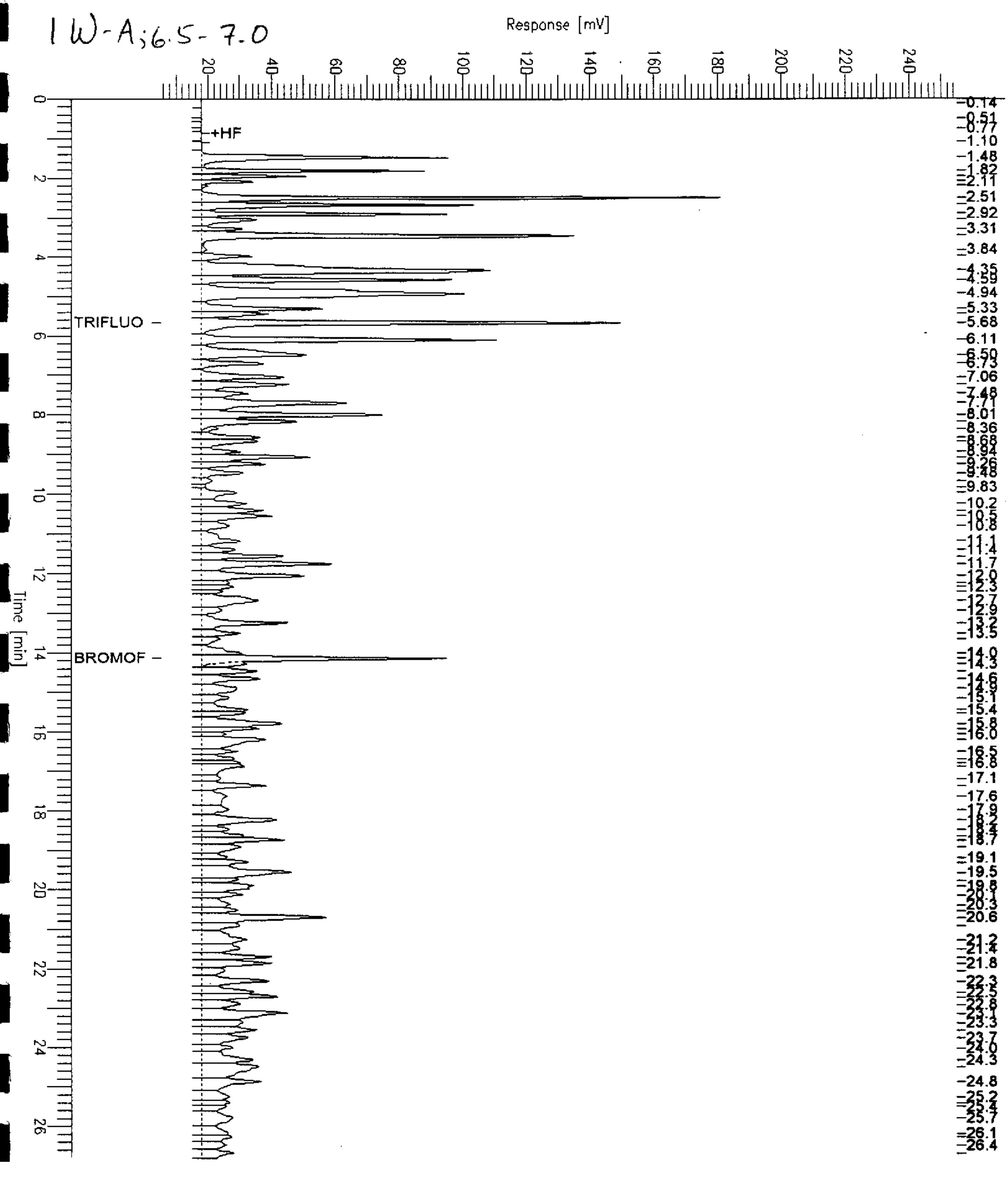
* = Value outside of QC limits; see narrative
ND = Not Detected
RL = Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 146631-001,57298,+mtbe
FileName : G:\GC19\DATA\209X021.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 5 mV

Sample #: 40x,a
Date : 7/28/00 02:32 PM
Time of Injection: 7/28/00 06:04 AM
Low Point : 5.16 mV High Point : 255.16 mV
Plot Scale: 250.0 mV

1W-A;6.5-7.0



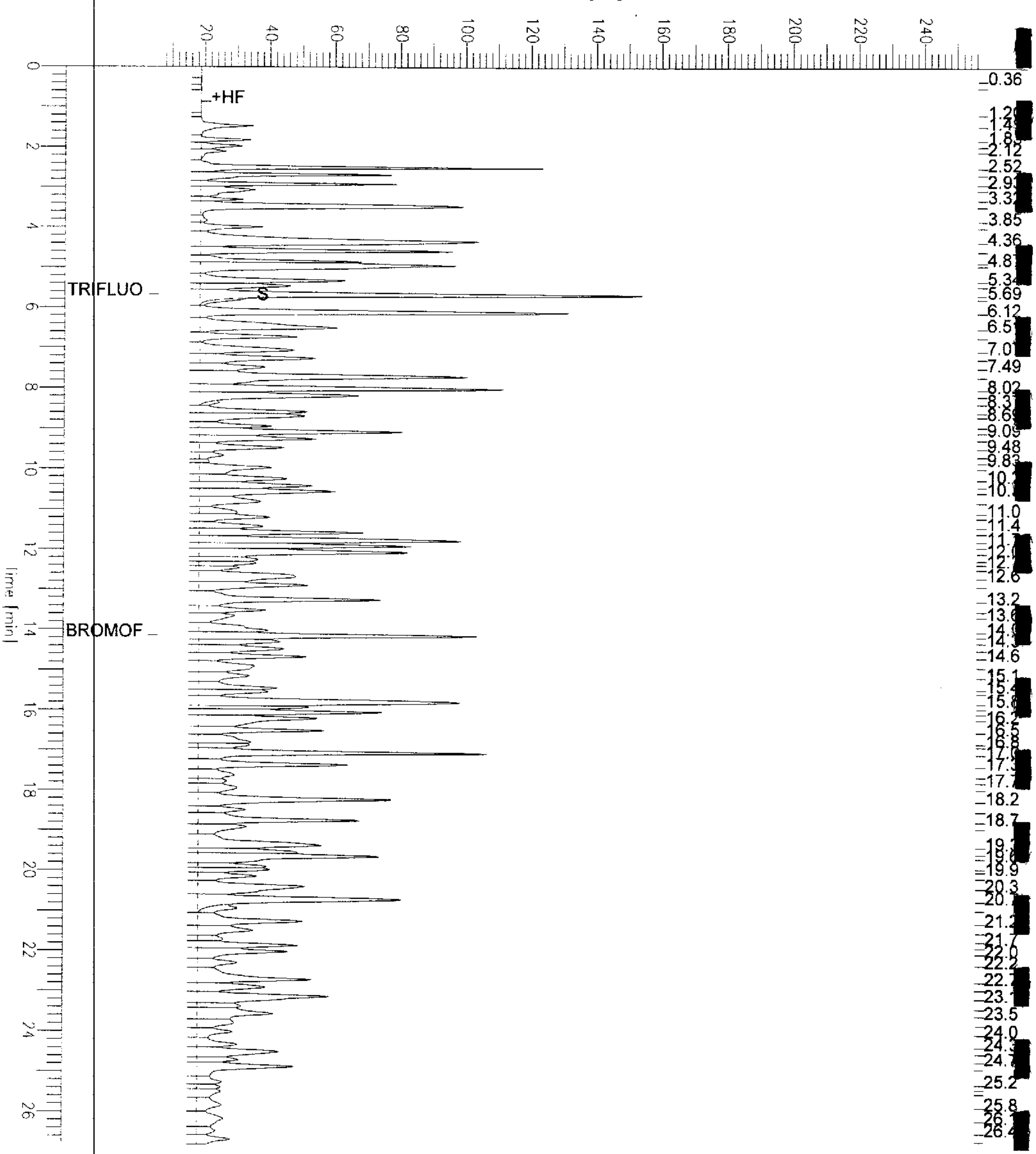
GC19 TVH 'X' Data File (FID)

Sample Name : 146631-002,57135,+mtbe
FileName : G:\GC19\DATA\202X031.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0
End Time : 26.80 min
Plot Offset: 6 mV

Sample #: 100x,a
Date : 7/25/00 02:05 PM
Time of Injection: 7/21/00 09:03 AM
Low Point : 6.18 mV
Plot Scale: 250.0 mV

High Point : 256.18 mV

1E; 7-7.5



GC19 TVH 'X' Data File (FID)

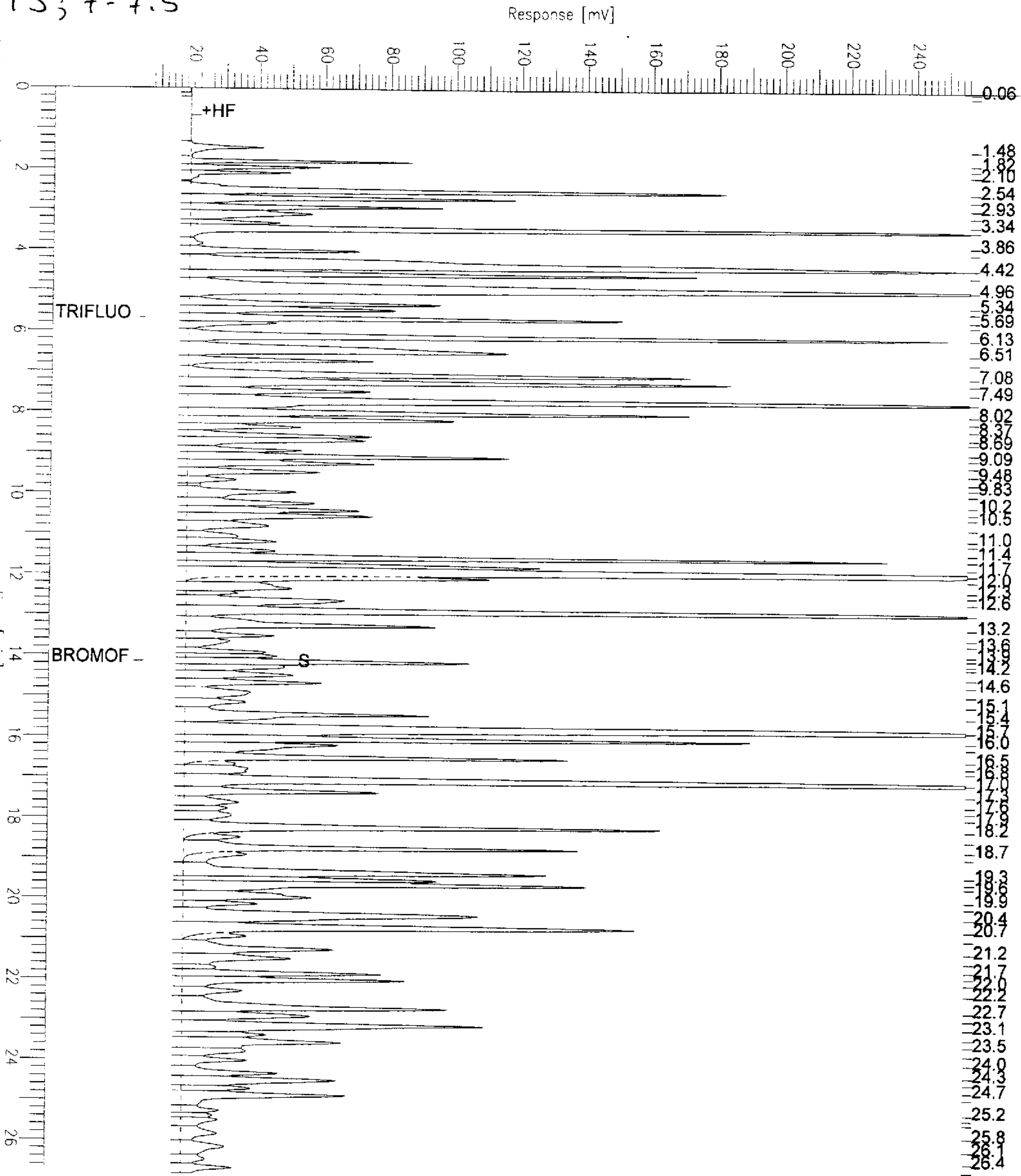
Sample Name : 146631-003,57135,+mtbe
FileName : G:\GC19\DATA\202X032.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 26.80 min
Plot Offset: 6 mV

Sample #: 100x,a
Date : 7/25/00 02:05 PM
Time of Injection: 7/21/00 09:40 AM
Low Point : 6.30 mV
Plot Scale: 250.0 mV

High Point : 256.30 mV

IS; 7-7.5



GC07 TVH 'A' Data File RTX 502

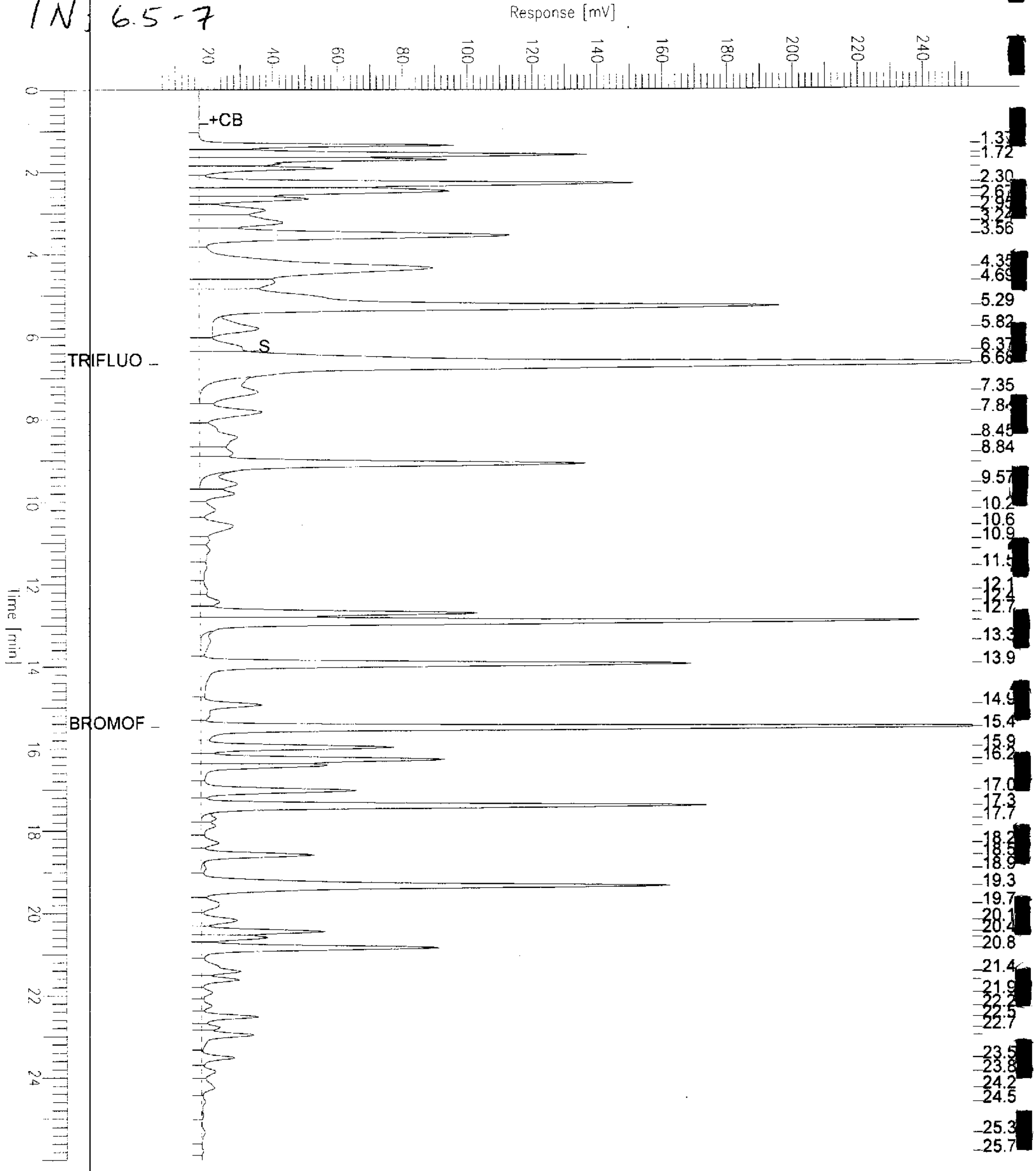
Sample Name : 146631-004,57248
FileName : G:\GC07\DATA\207A008.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 26.00 min
Plot Offset: 5 mV

Sample #: a
Date : 7/26/00 05:49 PM
Time of Injection: 7/26/00 12:47 AM
Low Point : 4.60 mV
Plot Scale: 250.0 mV

High Point : 254.60 mV

IN; 6.5-7

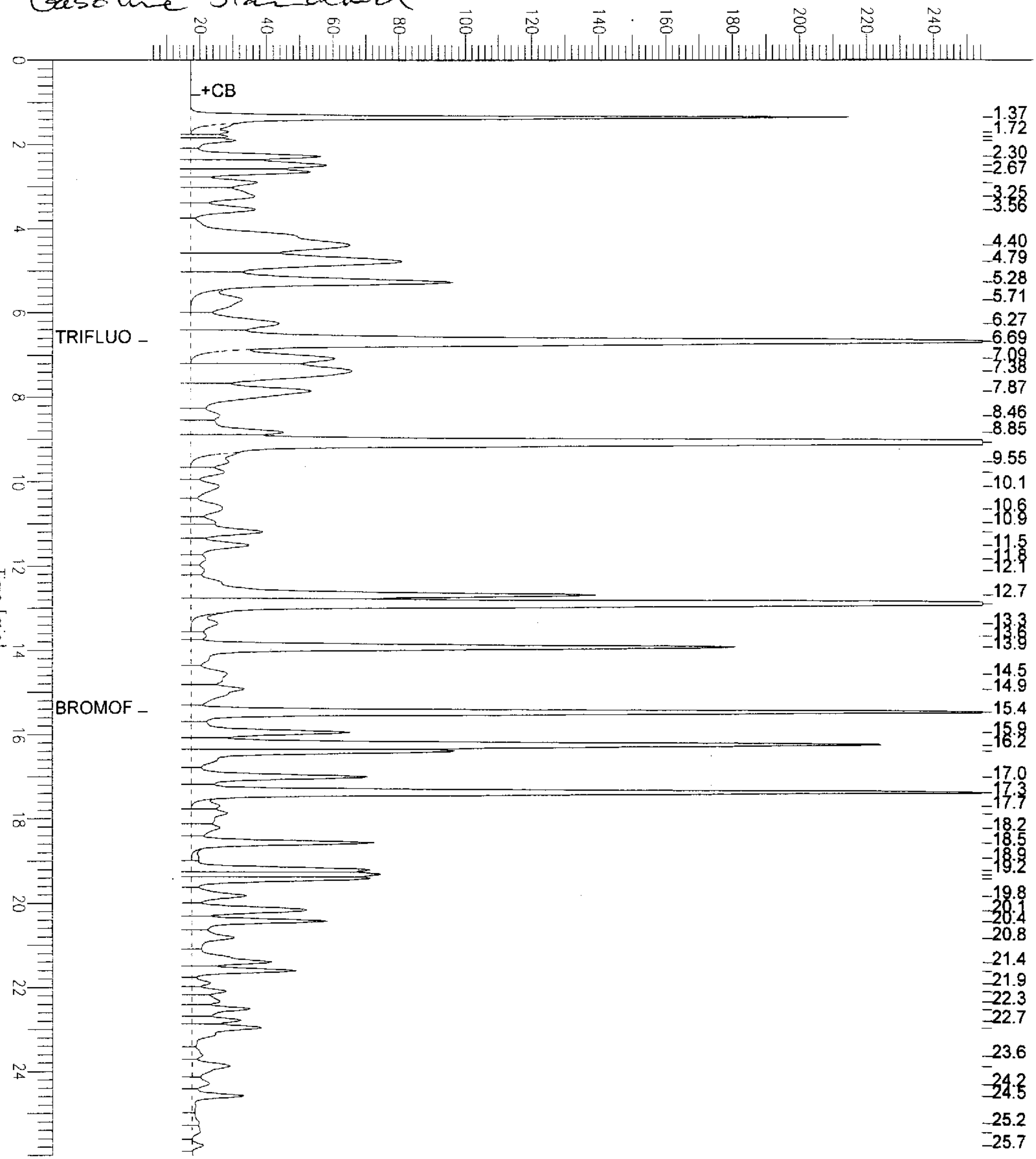


GC07 TVH 'A' Data File RTX 502

ample Name : ccv/lcs,qc121052,57248,00ws9313,5/5000
ileName : G:\GC07\DATA\207A002.raw
ethod : TVHBTXE
tart Time : 0.00 min End Time : 26.00 min
cale Factor: -1.0 Plot Offset: 5 mV

Sample #: gas
Date : 7/25/00 09:48 PM
Time of Injection: 7/25/00 09:22 PM
Low Point : 4.63 mV High Point : 254.63 mV
Plot Scale: 250.0 mV

Gasoline Standard



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/19/00
Units:	mg/Kg	Received:	07/20/00
Basis:	wet		

Type:	BLANK	Batch#:	57135
Lab ID:	QC120633	Analyzed:	07/20/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	62-138
Bromofluorobenzene (FID)	106	46-150

Type:	BLANK	Batch#:	57248
Lab ID:	QC121051	Analyzed:	07/25/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	62-138
Bromofluorobenzene (FID)	112	46-150

Type:	BLANK	Batch#:	57298
Lab ID:	QC121261	Analyzed:	07/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	62-138
Bromofluorobenzene (FID)	107	46-150

* = Value outside of QC limits; see narrative
ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Sampled:	07/19/00
Units:	ug/Kg	Received:	07/20/00
Basis:	wet		

Field ID:	1W-A;6.5-7.0	Diln Fac:	40.00
Type:	SAMPLE	Batch#:	57298
Lab ID:	146631-001	Analyzed:	07/28/00

Analyte	Result	RL
MTBE	ND	800
Benzene	1,900	200
Toluene	810	200
Ethylbenzene	2,000	200
m,p-Xylenes	210	200
o-Xylene	270	200

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	65-134
Bromofluorobenzene (PID)	113	55-138

Field ID:	1E;7-7.5	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57135
Lab ID:	146631-002	Analyzed:	07/21/00

Analyte	Result	RL
MTBE	ND	2,000
Benzene	1,800	500
Toluene	5,200	500
Ethylbenzene	10,000	500
m,p-Xylenes	15,000	500
o-Xylene	6,800	500

Surrogate	%REC	Limits
Trifluorotoluene (PID)	125	65-134
Bromofluorobenzene (PID)	134	55-138

Field ID:	1S;7-7.5	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57135
Lab ID:	146631-003	Analyzed:	07/21/00

Analyte	Result	RL
MTBE	ND	2,000
Benzene	13,000	500
Toluene	49,000	500
Ethylbenzene	46,000	500
m,p-Xylenes	190,000	500
o-Xylene	78,000	500

Surrogate	%REC	Limits
Trifluorotoluene (PID)	133	65-134
Bromofluorobenzene (PID)	136	55-138

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Sampled:	07/19/00
Units:	ug/Kg	Received:	07/20/00
Basis:	wet		

Field ID:	1N;6.5-7	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57298
Lab ID:	146631-004	Analyzed:	07/28/00

Analyte	Result	RL
MTBE	ND	19
Benzene	120	4.8
Toluene	70	4.8
Ethylbenzene	53	4.8
m,p-Xylenes	160	4.8
o-Xylene	110	4.8

Surrogate	%REC	Limits
Trifluorotoluene (PID)	113	65-134
Bromofluorobenzene (PID)	123	55-138

Type:	BLANK	Batch#:	57135
Lab ID:	QC120633	Analyzed:	07/20/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	100	65-134
Bromofluorobenzene (PID)	107	55-138

Type:	BLANK	Batch#:	57298
Lab ID:	QC121261	Analyzed:	07/27/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	109	65-134
Bromofluorobenzene (PID)	110	55-138

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Basis:	wet
Lab ID:	QC120634	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57135
Units:	mg/Kg	Analyzed:	07/20/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.700	97	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	117	62-138
Bromofluorobenzene (FID)	124	46-150

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Basis:	wet
Lab ID:	QC121052	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57248
Units:	mg/Kg	Analyzed:	07/25/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	10.10	101	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	62-138
Bromofluorobenzene (FID)	116	46-150

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Type:	LCS	Basis:	wet
Lab ID:	QC120635	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57135
Units:	ug/Kg	Analyzed:	07/20/00

Analyte	Spiked	Result	%REC	Limits
MTBE	100.0	107.1	107	58-115
Benzene	100.0	96.58	97	68-117
Toluene	100.0	96.65	97	70-120
Ethylbenzene	100.0	100.2	100	67-124
m,p-Xylenes	200.0	211.5	106	72-124
o-Xylene	100.0	99.51	100	72-123

Surrogate	%REC	Limits
Trifluorotoluene (PID)	105	65-134
Bromofluorobenzene (PID)	110	55-138

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Type:	LCS	Basis:	wet
Lab ID:	QC121264	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57298
Units:	ug/Kg	Analyzed:	07/27/00

Analyte	Spiked	Result	%REC	Limits
MTBE	100.0	115.4	115	58-115
Benzene	100.0	98.12	98	68-117
Toluene	100.0	100.0	100	70-120
Ethylbenzene	100.0	104.1	104	67-124
m,p-Xylenes	200.0	220.2	110	72-124
o-Xylene	100.0	105.1	105	72-123

Surrogate	%REC	Limits
Trifluorotoluene (PID)	105	65-134
Bromofluorobenzene (PID)	113	55-138

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Batch#:	57298
Basis:	wet	Analyzed:	07/27/00

Type: BS Lab ID: QC121262

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.673	97	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	62-138
Bromofluorobenzene (FID)	132	46-150

Type: BSD Lab ID: QC121263

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	10.01	100	75-123	3	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	62-138
Bromofluorobenzene (FID)	136	46-150

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146613-002	Batch#:	57135
Matrix:	Soil	Sampled:	07/19/00
Units:	mg/Kg	Received:	07/19/00
Basis:	wet	Analyzed:	07/20/00

Type: MS   Lab ID: QC120636

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1669	10.00	5.846	57	41-132

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	62-138
Bromofluorobenzene (FID)	122	46-150

Type: MSD   Lab ID: QC120637

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	6.523	64	41-132	11	25

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	62-138
Bromofluorobenzene (FID)	131	46-150

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146687-001	Batch#:	57248
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/20/00
Basis:	wet	Analyzed:	07/26/00

Type: MS Lab ID: QC121053

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.09463	9.434	7.671	80	41-132

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	62-138
Bromofluorobenzene (FID)	120	46-150

Type: MSD Lab ID: QC121054

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.434	6.849	72	41-132	11	25

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	62-138
Bromofluorobenzene (FID)	118	46-150

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146757-005	Batch#:	57298
Matrix:	Soil	Sampled:	07/26/00
Units:	ug/Kg	Received:	07/27/00
Basis:	wet	Analyzed:	07/27/00

Type: MS Lab ID: QC121265

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	ND	100.0	112.7	113	58-116
Benzene	ND	100.0	95.31	95	62-117
Toluene	ND	100.0	96.95	97	55-121
Ethylbenzene	ND	100.0	99.85	100	46-128
m,p-Xylenes	ND	200.0	210.6	105	33-141
o-Xylene	ND	100.0	100.6	101	40-136

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	65-134
Bromofluorobenzene (PID)	116	55-138

Type: MSD Lab ID: QC121266

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	100.0	110.3	110	58-116	2	20
Benzene	100.0	94.17	94	62-117	1	20
Toluene	100.0	95.57	96	55-121	1	20
Ethylbenzene	100.0	99.07	99	46-128	1	20
m,p-Xylenes	200.0	209.0	105	33-141	1	20
o-Xylene	100.0	100.3	100	40-136	0	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	65-134
Bromofluorobenzene (PID)	120	55-138

ND = Not Detected
RPD= Relative Percent Difference

Total Extractable Hydrocarbons

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/19/00
Units:	mg/Kg	Received:	07/20/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Field ID:	1W-A;6.5-7.0	Diln Fac:	2.000
Type:	SAMPLE	Analyzed:	07/28/00
Lab ID:	146631-001		

Analyte	Result	RL
Diesel C10-C24	740	2.0
Motor Oil C24-C36	160	9.9

Surrogate	%REC	Limits
Hexacosane	107	60-136

Field ID:	1E;7-7.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146631-002		

Analyte	Result	RL
Diesel C10-C24	46 H L Y	[illegible].0
Motor Oil C24-C36	120 L Y	5.0

Surrogate	%REC	Limits
Hexacosane	81	60-136

Field ID:	1S;7-7.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146631-003		

Analyte	Result	RL
Diesel C10-C24	110 L Y	1.0
Motor Oil C24-C36	93	5.0

Hexacosane	9[illegible]	60-136

Field ID:	1N;6.5-7	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146631-004		

Analyte	Result	RL
Diesel C10-C24	740 L Y	20
Motor Oil C24-C36	300	100

Surrogate	%REC	Limits
Hexacosane	DO	60-136

These samples were analyzed for TPHd and TPHmo without silica gel clean-up. For TPHd and TPHmo results with silica gel clean-up, refer to laboratory report 147133 dated 9/18/00.

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

Chromatogram

ample Name : 146631-001,57214
..eName : G:\GC1\CHA-208A041.RAW
ethod : ATEH208.MTH
art Time : 0.00 min
ale Factor: 0.0

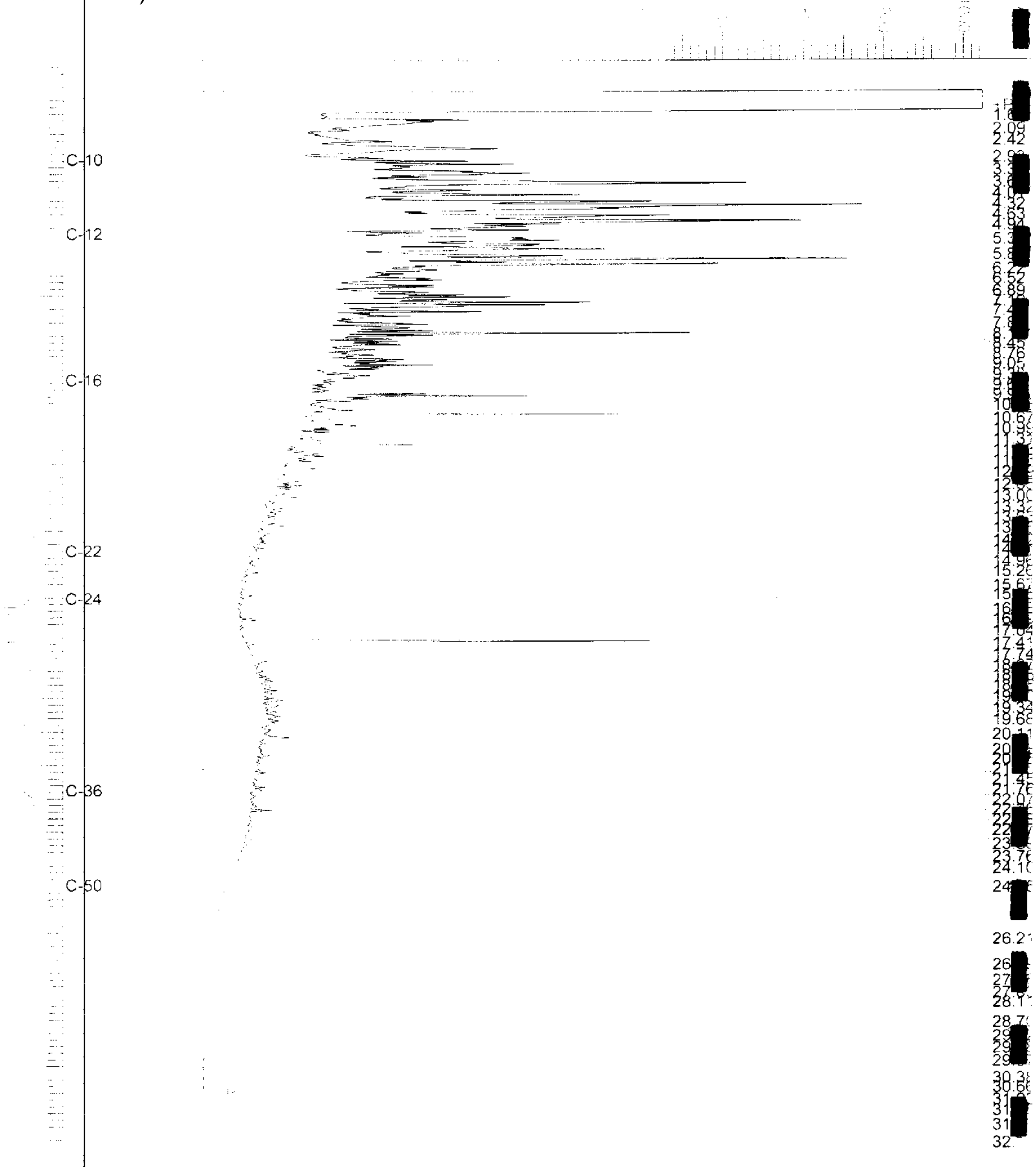
End Time : 32.42 min
Plot Offset: -9 mV

Sample #: 57214
Date : 7/28/00 02:24 AM
Time of Injection: 7/28/00 01:50 AM
Low Point : -8.58 mV
Plot Scale: 1032.6 mV

Page 1 of 1

High Point : 1024.00 mV

IW-A; 6.5-7.0



Chromatogram

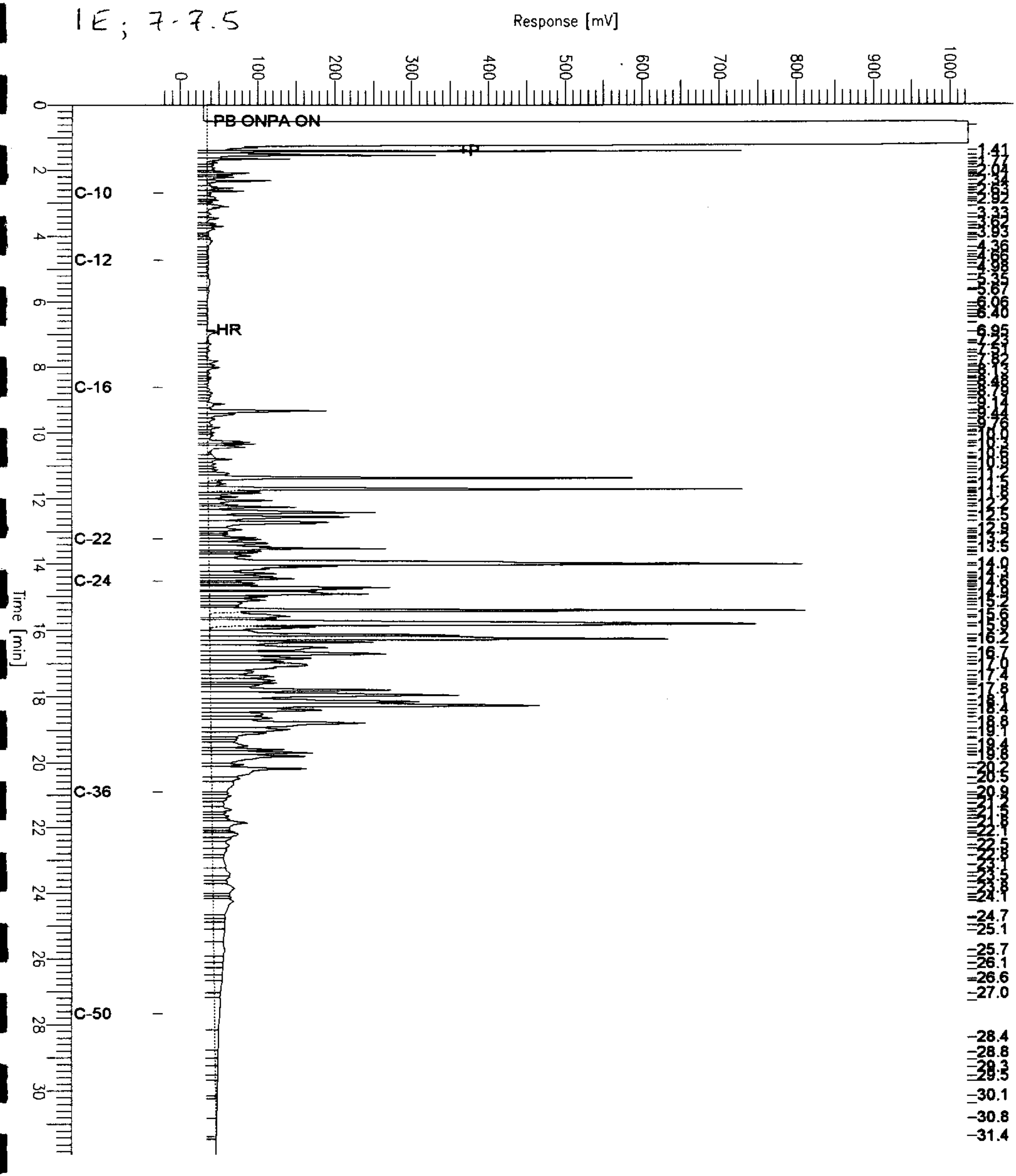
Sample Name : 146631-002,57214
FileName : G:\GC15\CHB\207B050.RAW
Method : BTEH180.MTH
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: -22 mV

Sample #: 57214
Date : 07/27/2000 10:19 AM
Time of Injection: 07/27/2000 09:24 AM
Low Point : -22.21 mV
Plot Scale: 1046.2 mV

High Point : 1024.00 mV

1E; 7-7.5

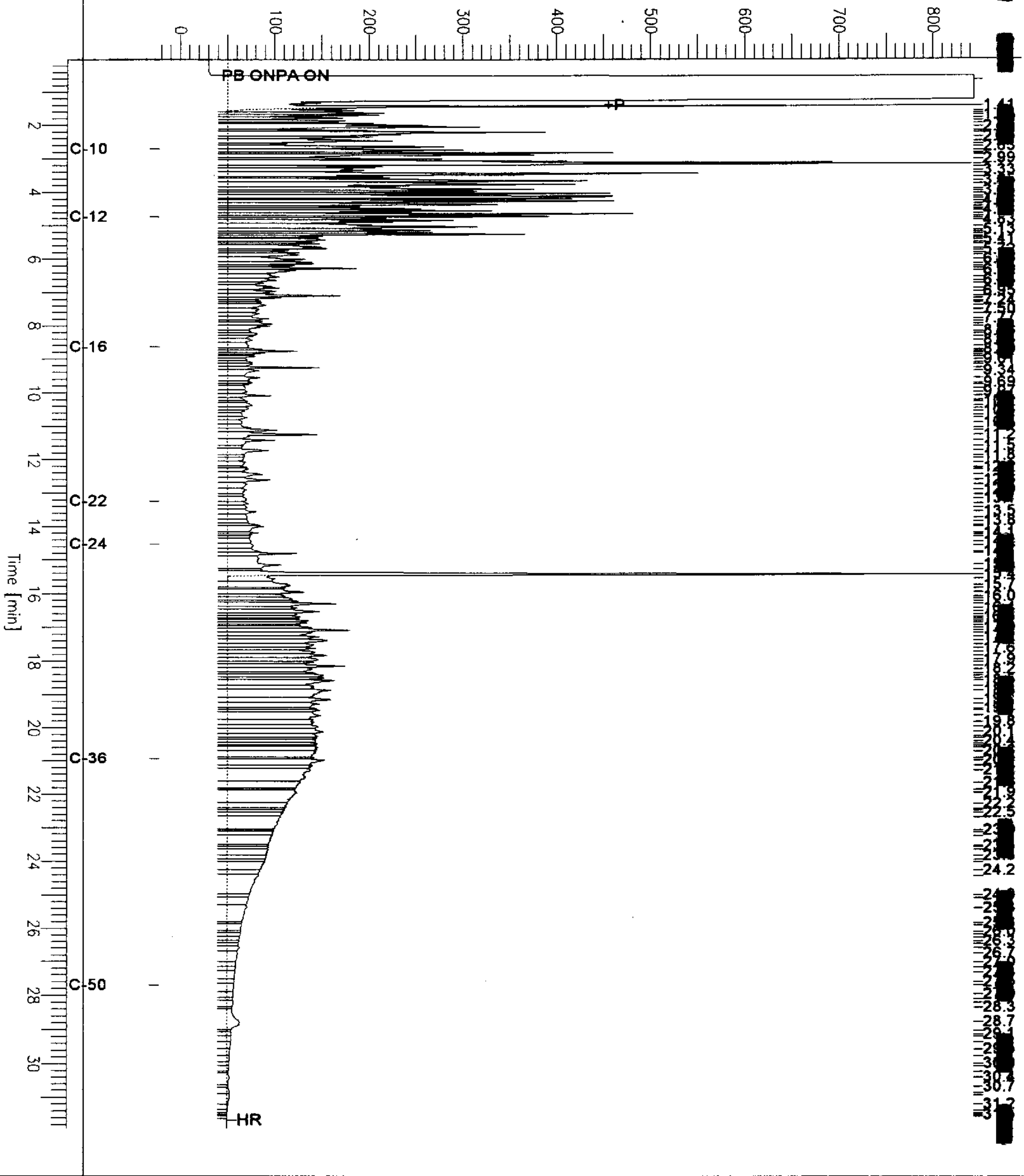


Chromatogram

Sample Name : 146631-003,57214
FileName : G:\GC15\CHB\207B051.RAW
Method : BTEH180.MTH
Start Time : 0.01 min
End Time : 31.91 min
Scale Factor: 0.0
Plot Offset: -22 mV

Sample #: 57214
Date : 07/27/2000 11:27 AM
Time of Injection: 07/27/2000 10:07 AM
Low Point : -22.18 mV
High Point : 843.92 mV
Plot Scale: 866.1 mV

(S; 7-7.5

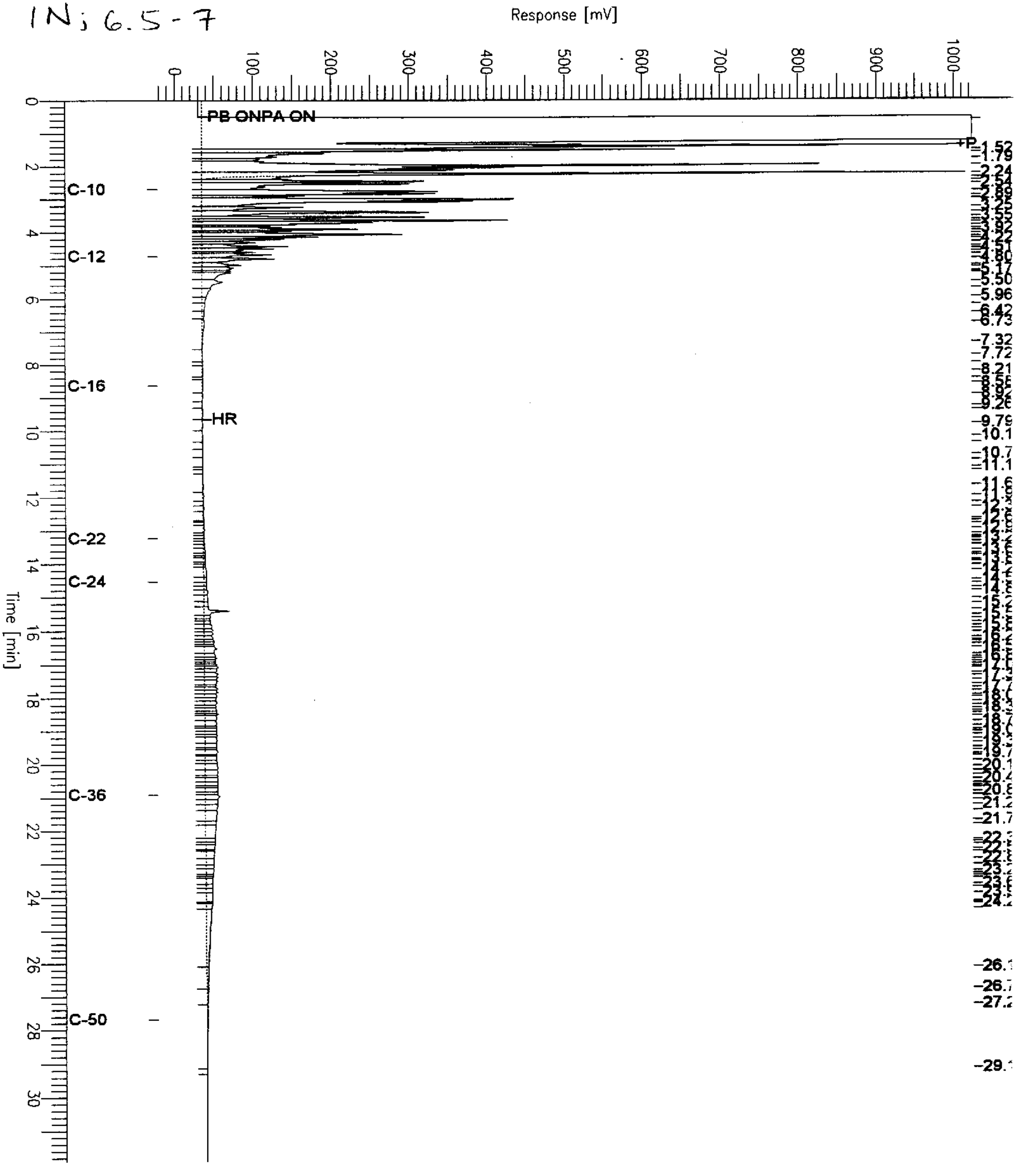


Chromatogram

Sample Name : 146631-004,57214
FileName : G:\GC15\CHB\207B062.RAW
Method : BTEH180.MTH
Start Time : 0.00 min   End Time : 31.90 min
Scale Factor: 0.0   Plot Offset: -22 mV

Sample #: 57214   Page 1 of 1
Date : 07/28/2000 12:33 AM
Time of Injection: 07/27/2000 06:02 PM
Low Point : -22.36 mV   High Point : 1024.00 mV
Plot Scale: 1046.4 mV

IN; 6.5-7



Chromatogram

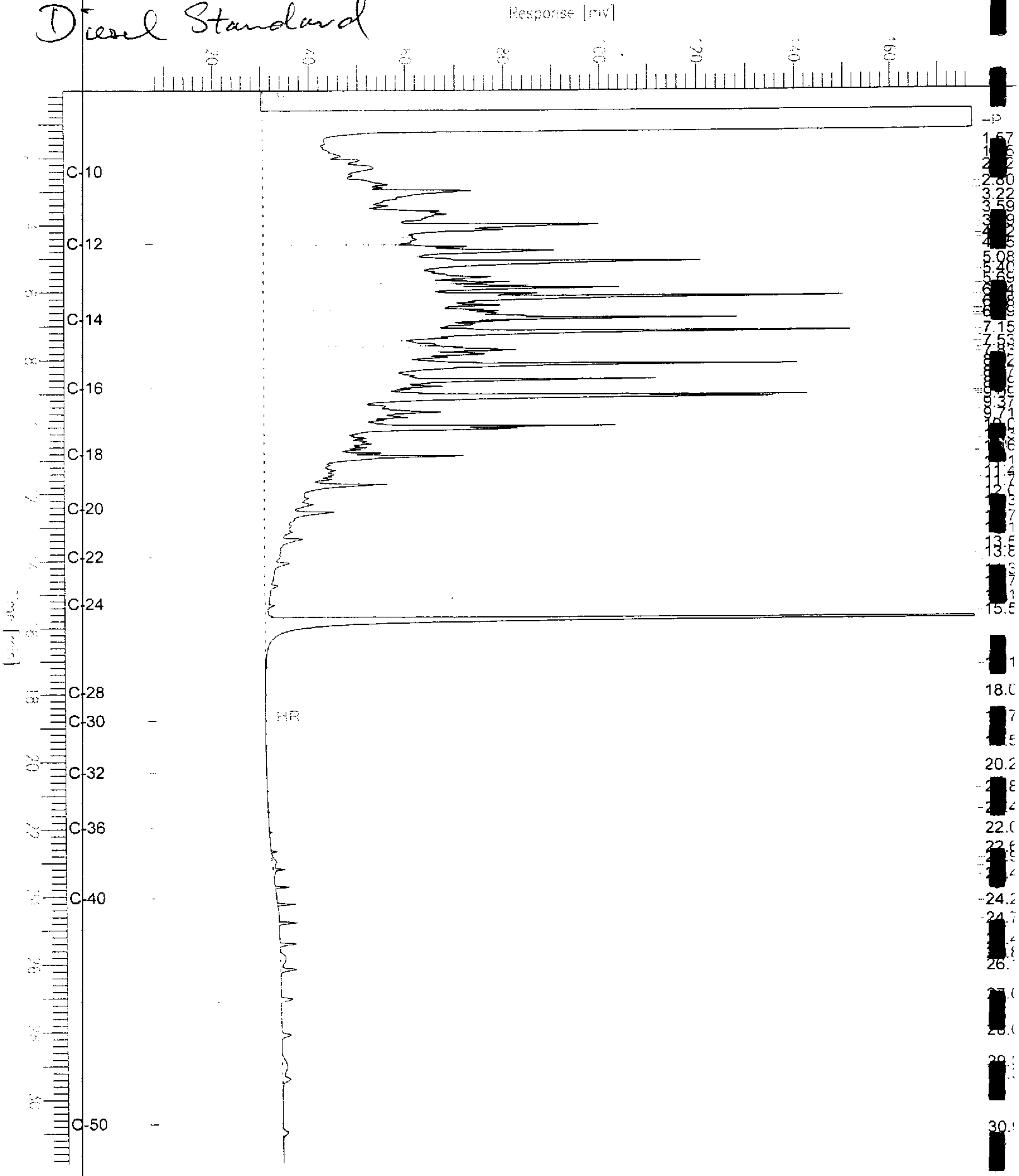
:ample Name : ccv,00ws9475,dsl
:ileName : G:\GC13\CHB\213B002.RAW
:ethod : BTEH164.MTH
:tart Time : 0.01 min
:cale Factor: 0.0

End Time : 31.91 min
Plot Offset: 8 mV

Sample #: 500mg/l
Date : 07/31/2000 11:12 AM
Time of Injection: 07/31/2000 10:05 AM
Low Point : 7.84 mV
Plot Scale: 169.5 mV

High Point : 177.31 mV

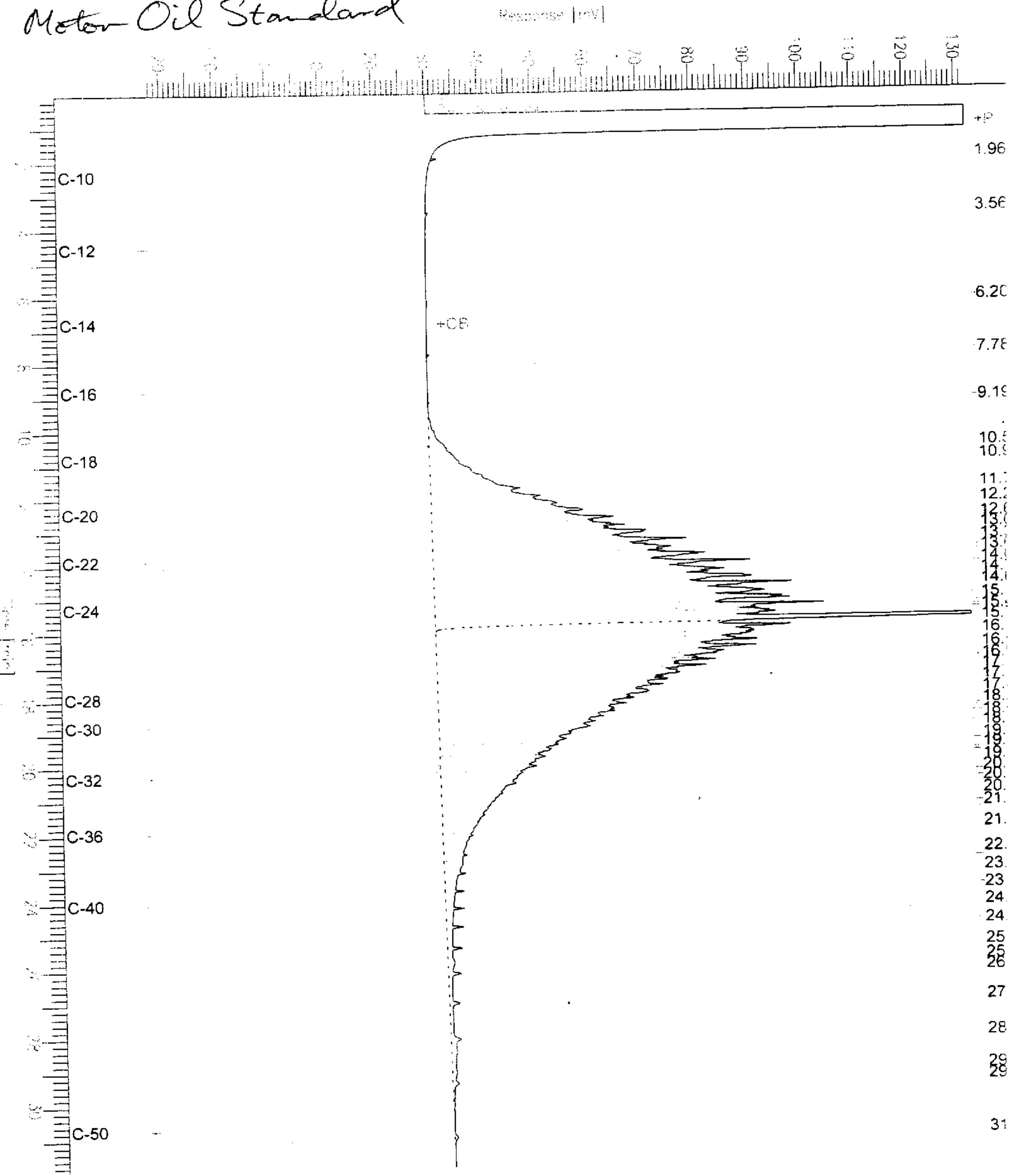
Diesel Standard



Chromatogram

mple Name : ccv,00ws9383,mo		Sample #: 500mg/l	Page 1 of 1
leName : G:\GC13\CHB\213B003.RAW		Date : 07/31/2000 11:23 AM	
thod : BTEH164.MTH		Time of Injection: 07/31/2000 10:47 AM	
art Time : 0.01 min	End Time : 31.91 min	Low Point : -22.34 mV	High Point : 131.94 mV
ale Factor: 0.0	Plot Offset: -22 mV	Plot Scale: 154.3 mV	

Motor Oil Standard



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/19/00
Units:	mg/Kg	Received:	07/20/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC120927	Analyzed:	07/28/00

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	75	60-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC120928	Batch#:	57214
Matrix:	Soil	Prepared:	07/24/00
Units:	mg/Kg	Analyzed:	07/28/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	47.24	35.93	76	67-121

Surrogate	%REC	Limits
Hexacosane	70	60-136

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	57214
MSS Lab ID:	146613-002	Sampled:	07/19/00
Matrix:	Soil	Received:	07/19/00
Units:	mg/Kg	Prepared:	07/24/00
Basis:	wet	Analyzed:	07/31/00
Diln Fac:	20.00		

Type: MS Lab ID: QC120929

Analyte	MSS Result	Spiked	Result	%REC	Limit
Diesel C10-C24	95.25	46.46	699.6	1301 *	35-14

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Type: MSD Lab ID: QC120930

Analyte	Spiked	Result	%REC	Limits	RPD	Li
Diesel C10-C24	46.79	564.6	1003 *	35-146	22	48

Surrogate	%REC	Limits
Hexacosane	DO	60-136

* = Value outside of QC limits; see narrative
DO = Diluted Out
RPD= Relative Percent Difference

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17
Site: MSC - 7101 Ed
Laboratory: Curtis + Tompkins
Laboratory Report No: 146652
Report Date: August 11 - 2000
BASELINE Review By: WKS

		Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)**				
1a.	Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b.	Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓		
1c.	Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d.	Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?			✓
1e.	Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f.	Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?	✓		
2a.	Is the laboratory report format consistent and legible throughout the report?	✓		
2b.	Are the sample and reported dates shown in the laboratory report correct?	✓		
3a.	Does the lab report include the original chain-of-custody form?		✓	
3b.	Were all samples appropriately analyzed as requested on the chain-of-custody form?	✓		
4.	Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a.	Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b.	If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			✓
6.	Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7.	Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	✓		
8a.	Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	✓		
8b.	If no, is an explanation provided by the laboratory?			✓
9a.	Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	✓		

	Yes	No	NA
9b. If no, was it flagged in the report?			✓
10. If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a. Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	✓		
11b. Is a standard chromatogram(s) included in the laboratory report?	✓		
11c. Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	✓		
12. Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*			✓
13a. REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b. REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c. REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d. REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses			
14. Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15. Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16. Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*	✓		
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓*		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?	✓		

	Yes	No	NA
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*		✓	
21b. If no, is an explanation given in the case narrative to validate the data?	✓		

Comments:
*' The MS + MSD recovery for TEH & MTOE were outside limits. The Laboratory control sample was acceptable (See case Narrative)

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:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 11-AUG-00
Lab Job Number: 146652
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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: Teresa K Morrison for ____________
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number: **146652** Receipt Date: **07/21/00**
Client: **Baseline Environmental**
Project Name: **MSC 7101 Edgewater Dr.**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for six soil samples received from the above referenced project. The samples were received cold and intact. The bulk density and porosity analyses could not be performed as these analyses require a separate undisturbed core.

Total Volatile Hydrocarbons (TVH)/BTXE: The trifluorotoluene surrogate recovery for sample 2S-D;7.5-8.0 (146652-001) was outside acceptance limits due to coelution of the surrogate peak with hydrocarbon peaks. The associated bromofluorobenzene surrogate recovery was acceptable.

The bromofluorobenzene surrogate recovery for sample 2W;7.0-7.5 (146652-005) was outside acceptance limits due to coelution of the surrogate peak with hydrocarbon peaks. The associated trifluorotoluene surrogate recovery was acceptable.

The matrix spike duplicate recovery for MTBE was outside acceptance limits. The associated laboratory control sample and matrix spike recoveries were acceptable. No other analytical problems were encountered.

Total Extractable Hydrocarbons: The matrix spike recoveries were outside acceptance limits. The associated laboratory control sample recovery was acceptable. No other analytical problems were encountered.

General Chemistry: No analytical problems were encountered.

T46652

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

CHAIN OF CUSTODY RECORD

2p.00

Turn-around Time: Normal (5 dys)
Lab: CBT
BASELINE Contact Person: Bruce

Project No.: 98383-17
Project Name and Location: MSC 7101 Edgewater Dr.

Samplers: (Signature) JM Nance / Millan E. Smith

Sample ID No. Station	Date:	Time:	Media	Containers No.	Containers Type	Preservative None	HCl	NO_3	SO_4	Other:	Moisture Content (% by vol), T.O.C., Porosity, ~~Bulk Density~~	TPH-g,d,MO	BTEX + MTBE						Remarks/ Composite
2S-D; 7.5-8.0	7/20/00	9:30	S	1	SS	X						X	X						
2E-D; 1.0-1.5	↓	11:25	↓	1	↓	↓					X								
2E-D; 4.0-4.5		11:30		1							X								
2E-D; 7.0-7.5		11:40		1								X	X						
2W; 7.0-7.5		14:20		1								X	X						
2N-E; 8.0-8.5	↓	16:40	↓	1	↓	↓						X	X						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Conditions of Samples Upon Arrival at Laboratory:
JM Nance	7/21/00 11:20	T. Morrison	7/21/00 11:20	Cold & intact
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Remarks: NES for Bulk Density OK per Y.N. 7/21/00
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	2S-D;7.5-8.0	Diln Fac:	20.00
Type:	SAMPLE	Batch#:	57188
Lab ID:	146652-001	Analyzed:	07/23/00

Analyte	Result	RL
Gasoline C7-C12	810	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	131	62-138
Bromofluorobenzene (FID)	132	46-150

Field ID:	2E-D;7.0-7.5	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	57188
Lab ID:	146652-004	Analyzed:	07/23/00

Analyte	Result	RL
Gasoline C7-C12	19 L Y	5.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	129	62-138
Bromofluorobenzene (FID)	126	46-150

Field ID:	2W;7.0-7.5	Diln Fac:	40.00
Type:	SAMPLE	Batch#:	57298
Lab ID:	146652-005	Analyzed:	07/28/00

Analyte	Result	RL
Gasoline C7-C12	1,600	40

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	62-138
Bromofluorobenzene (FID)	148	46-150

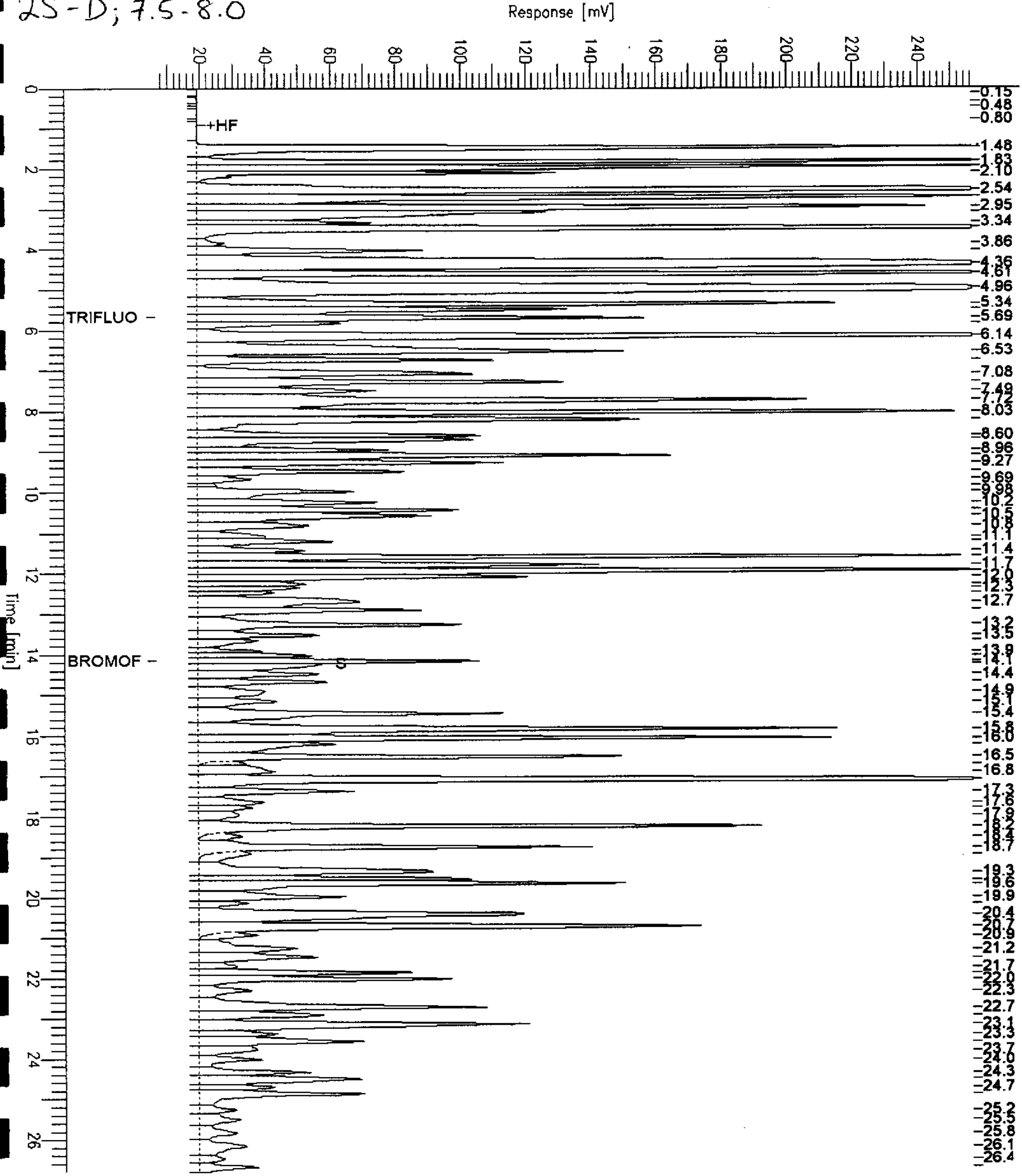
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
ND = Not Detected
RL = Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 146652-001,57188,+mtbe
FileName : G:\GC19\DATA\204X029.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 6 mV

Sample #: 20x,a Page 1 of 1
Date : 7/25/00 02:29 PM
Time of Injection: 7/23/00 10:47 AM
Low Point : 6.40 mV High Point : 256.40 mV
Plot Scale: 250.0 mV

25-D; 7.5-8.0

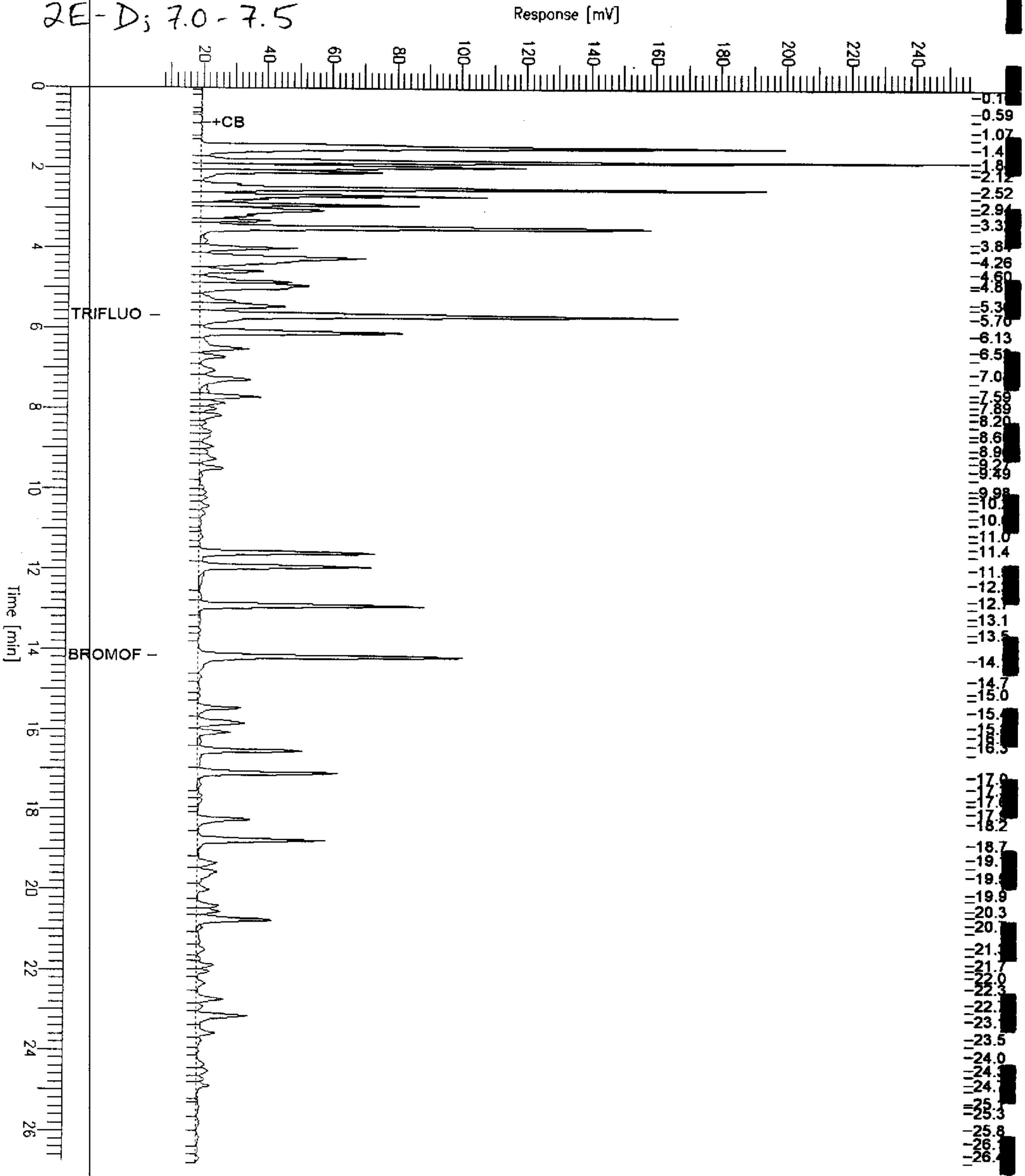


GC19 TVH 'X' Data File (FID)

Sample Name : 146652-004,57188,+mtbe
FileName : G:\GC19\DATA\204X027.raw
Method : TVHBTXE
Start Time : 0.00 min
End Time : 26.80 min
Scale Factor: -1.0
Plot Offset: 7 mV

Sample #: 5x,a
Date : 7/23/00 09:58 AM
Time of Injection: 7/23/00 09:31 AM
Low Point : 6.82 mV
High Point : 256.82 mV
Plot Scale: 250.0 mV

2E-D; 7.0-7.5

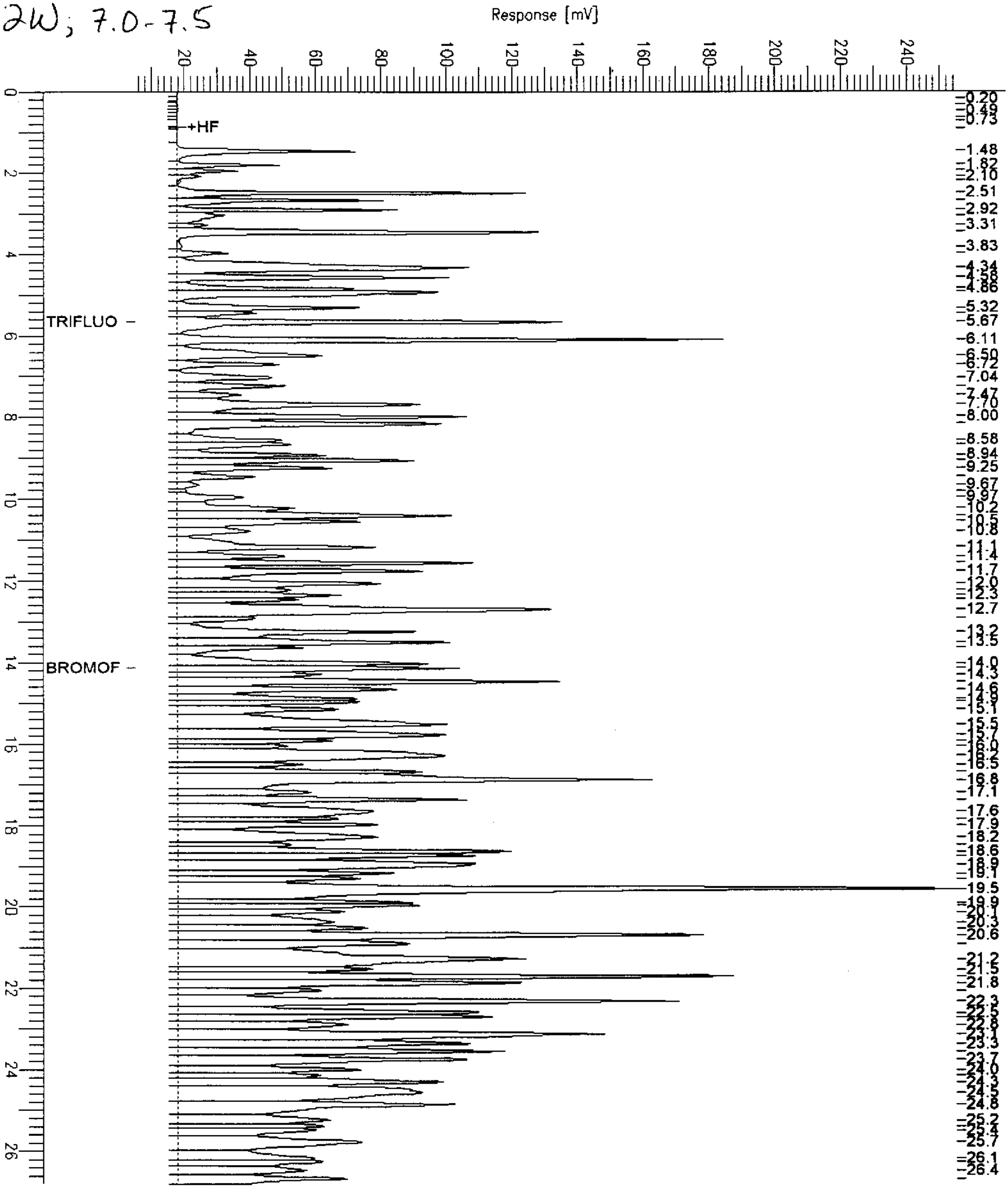


GC19 TVH 'X' Data File (FID)

Sample Name : 146652-005,57298,tvh only
FileName : G:\GC19\DATA\209X022.raw
Method : TVHBTXE
Start Time : 0.00 min
End Time : 26.80 min
Scale Factor: -1.0
Plot Offset: 5 mV

Sample #: 40x,a
Date : 7/28/00 02:33 PM
Time of Injection: 7/28/00 06:42 AM
Low Point : 5.09 mV
High Point : 255.09 mV
Plot Scale: 250.0 mV

2W; 7.0-7.5



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet		

Field ID:	2N-E;8.0-8.5	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	57188
Lab ID:	146652-006	Analyzed:	07/23/00

Analyte	Result	RL
Gasoline C7-C12	60	5.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	62-138
Bromofluorobenzene (FID)	145	46-150

Type:	BLANK	Batch#:	57188
Lab ID:	QC120838	Analyzed:	07/22/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	62-138
Bromofluorobenzene (FID)	108	46-150

Type:	BLANK	Batch#:	57298
Lab ID:	QC121261	Analyzed:	07/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	62-138
Bromofluorobenzene (FID)	107	46-150

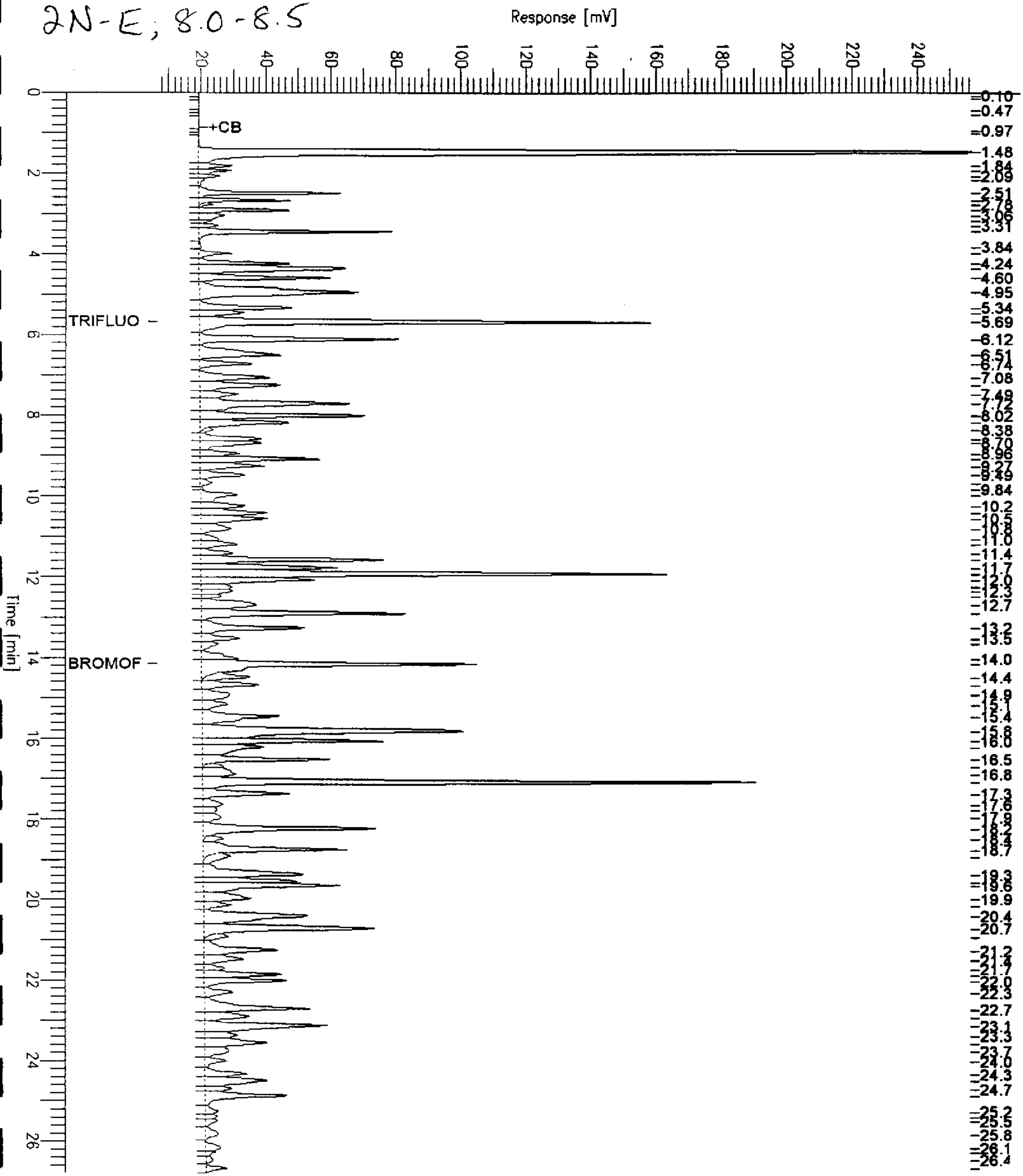
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
ND = Not Detected
RL = Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 146652-006,57188,+mtbe
FileName : G:\GC19\DATA\204X028.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 7 mV

Sample #: 5x,a
Date : 7/23/00 10:36 AM
Time of Injection: 7/23/00 10:09 AM
Low Point : 6.66 mV High Point : 256.66 mV
Plot Scale: 250.0 mV

2N-E; 8.0-8.5



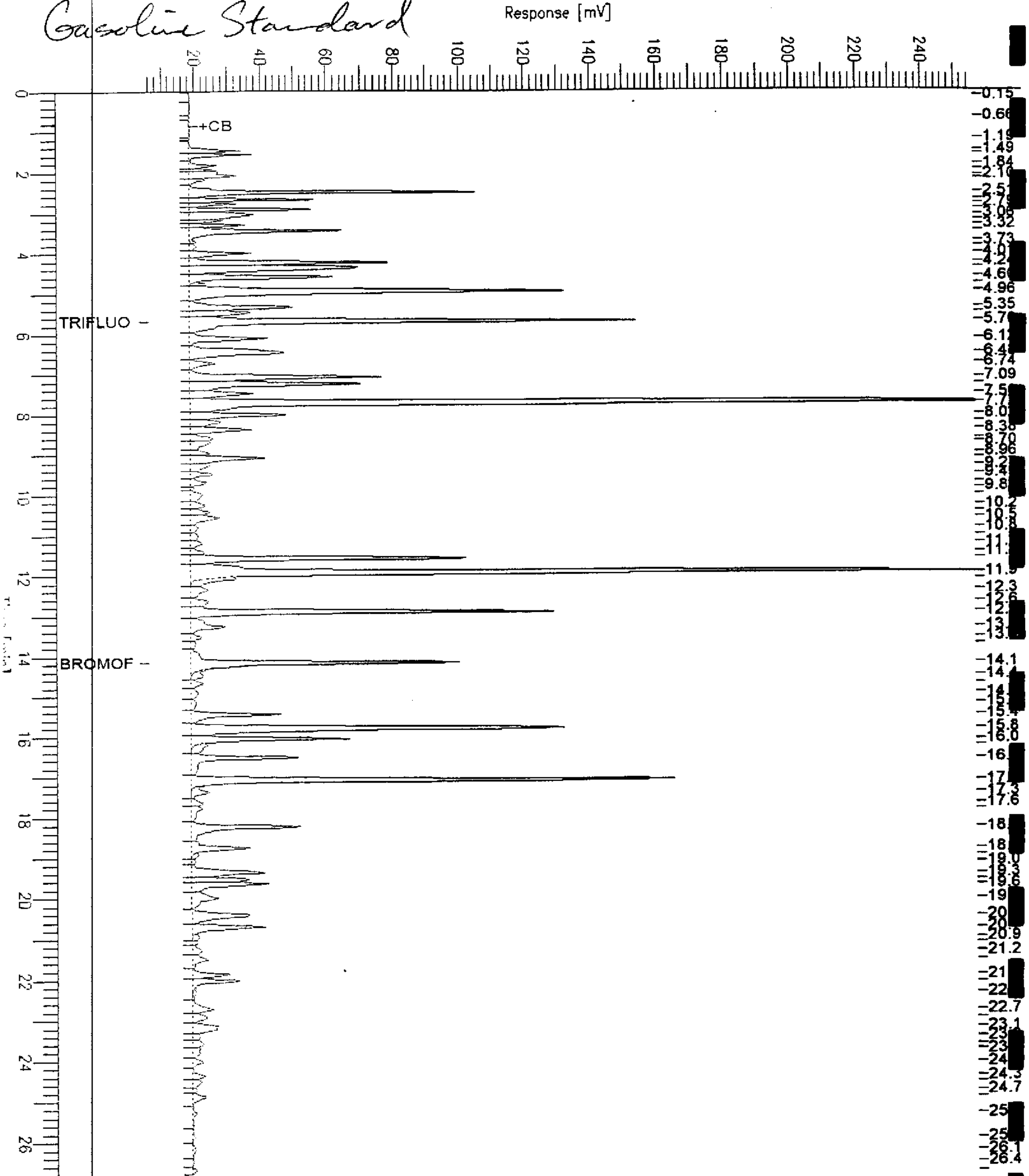
ple Name : ccv,tvh,57166,00ws9313,5/5000
eName : G:\GC19\DATA\204X035.raw
hod : TVHBTXE
rt Time : 0.00 min
le Factor: -1.0

End Time : 26.80 min
Plot Offset: 6 mV

Sample #: gas
Date : 7/23/00 03:02 PM
Time of Injection: 7/23/00 02:35 PM
Low Point : 5.98 mV
Plot Scale: 250.0 mV

High Point : 255.98 mV

Gasoline Standard



Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Batch#:	57188
Units:	ug/Kg	Sampled:	07/20/00
Basis:	wet	Received:	07/21/00

Field ID:	2S-D;7.5-8.0	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	07/23/00
Lab ID:	146652-001		

Analyte	Result	RL
MTBE	8,700 C	400
Benzene	5,600	100
Toluene	2,300	100
Ethylbenzene	10,000	100
m,p-Xylenes	14,000	100
o-Xylene	3,100	100

Surrogate	%REC	Limits
Trifluorotoluene (PID)	141 *	65-134
Bromofluorobenzene (PID)	138	55-138

Field ID:	2E-D;7.0-7.5	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	07/23/00
Lab ID:	146652-004		

Analyte	Result	RL
MTBE	490 C	100
Benzene	370	25
Toluene	160	25
Ethylbenzene	570	25
m,p-Xylenes	630	25
o-Xylene	780	25

Surrogate	%REC	Limits
Trifluorotoluene (PID)	126	65-134
Bromofluorobenzene (PID)	127	55-138

Field ID:	2W;7.0-7.5	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	07/23/00
Lab ID:	146652-005		

Analyte	Result	RL
MTBE	ND	400
Benzene	2,300	100
Toluene	1,400	100
Ethylbenzene	8,100	100
m,p-Xylenes	710	100
o-Xylene	3,000	100

Surrogate	%REC	Limits
Trifluorotoluene (PID)	119	65-134
Bromofluorobenzene (PID)	149 *	55-138

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

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Batch#:	57188
Units:	ug/Kg	Sampled:	07/20/00
Basis:	wet	Received:	07/21/00

Field ID:	2N-E;8.0-8.5	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	07/23/00
Lab ID:	146652-006		

Analyte	Result	RL
MTBE	ND	100
Benzene	210	25
Toluene	160	25
Ethylbenzene	590	25
m,p-Xylenes	1,800	25
o-Xylene	730	25

Surrogate	%REC	Limits
Trifluorotoluene (PID)	121	65-134
Bromofluorobenzene (PID)	128	55-138

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC120838	Analyzed:	07/22/00

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Trifluorotoluene (PID)	108	65-134
Bromofluorobenzene (PID)	110	55-138

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

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Basis:	wet
Lab ID:	QC120839	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57188
Units:	mg/Kg	Analyzed:	07/22/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.602	96	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	62-138
Bromofluorobenzene (FID)	130	46-150

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Type:	LCS	Basis:	wet
Lab ID:	QC120840	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57188
Units:	ug/Kg	Analyzed:	07/22/00

Analyte	Spiked	Result	%REC	Limits
MTBE	100.0	115.0	115	58-115
Benzene	100.0	100.1	100	68-117
Toluene	100.0	101.3	101	70-120
Ethylbenzene	100.0	104.6	105	67-124
m,p-Xylenes	200.0	222.2	111	72-124
o-Xylene	100.0	105.2	105	72-123

Surrogate	%REC	Limits
Trifluorotoluene (PID)	109	65-134
Bromofluorobenzene (PID)	114	55-138

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Batch#:	57298
Basis:	wet	Analyzed:	07/27/00

Type: BS　　Lab ID: QC121262

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.673	97	75-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	62-138
Bromofluorobenzene (FID)	132	46-150

Type: BSD　　Lab ID: QC121263

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	10.01	100	75-123	3	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	62-138
Bromofluorobenzene (FID)	136	46-150

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146626-005	Batch#:	57188
Matrix:	Soil	Sampled:	07/19/00
Units:	ug/Kg	Received:	07/20/00
Basis:	wet	Analyzed:	07/22/00

Type: MS   Lab ID: QC120841

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	ND	100.0	109.8	110	58-116
Benzene	ND	100.0	96.97	97	62-117
Toluene	ND	100.0	96.13	96	55-121
Ethylbenzene	ND	100.0	99.41	99	46-128
m,p-Xylenes	ND	200.0	213.8	107	33-141
o-Xylene	ND	100.0	101.7	102	40-136

Surrogate	%REC	Limits
Trifluorotoluene (PID)	115	65-134
Bromofluorobenzene (PID)	121	55-138

Type: MSD   Lab ID: QC120842

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	100.0	117.6	118 *	58-116	7	20
Benzene	100.0	98.64	99	62-117	2	20
Toluene	100.0	97.75	98	55-121	2	20
Ethylbenzene	100.0	99.86	100	46-128	0	20
m,p-Xylenes	200.0	213.7	107	33-141	0	20
o-Xylene	100.0	102.1	102	40-136	0	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	116	65-134
Bromofluorobenzene (PID)	124	55-138

* = Value outside of QC limits; see narrative
ND = Not Detected
RPD= Relative Percent Difference

Total Extractable Hydrocarbons

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Field ID:	2S-D;7.5-8.0	Diln Fac:	50.00
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146652-001		

Analyte	Result	RL
Diesel C10-C24	760 L Y	[illegible]0
Motor Oil C24-C36	3,900	2[illegible]0

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID:	2E-D;7.0-7.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146652-004		

Analyte	Result	RL
Diesel C10-C24	[illegible].2 Y	1.0
Motor Oil C24-C36	7.[illegible] Y	5.0

Surrogate	%REC	Limits
Hexacosane	72	60-136

Field ID:	2W;7.0-7.5	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146652-005		

Analyte	Result	RL
Diesel C10-C24	2,000 H	9.9
Motor Oil C24-C36	1,200 L	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID:	2N-E;8.0-8.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/27/00
Lab ID:	146652-006		

Analyte	Result	RL
Diesel C10-C24	84 L Y	1.0
Motor Oil C24-C36	85	5.0

Surrogate	%REC	Limits
Hexacosane	84	60-136

These samples were analyzed for TPHd and TPHmo without silica gel clean-up. For TPHd and TPHmo results with silica gel clean-up, refer to laboratory report 147133 dated 9/18/00.

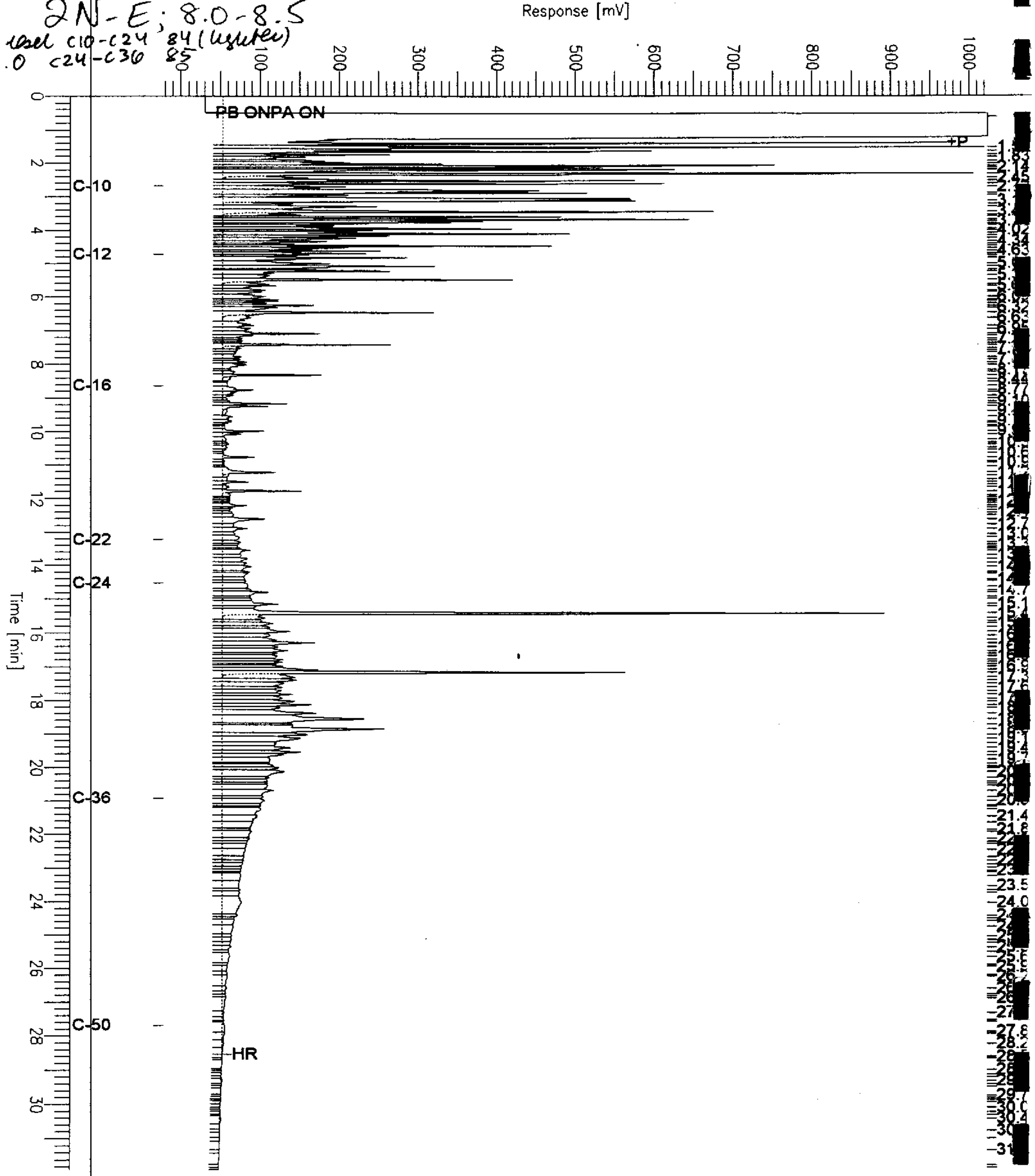
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
DO = Diluted Out
ND = Not Detected
RL = Reporting Limit

Chromatogram

Sample Name : 146652-006,57214
FileName : G:\GC15\CHB\207B048.RAW
Method : BTEH180.MTH
Start Time : 0.00 min   End Time : 31.90 min
Scale Factor: 0.0   Plot Offset: -22 mV

Sample #: 57214   Page 1 of 1
Date : 07/27/2000 08:48 AM
Time of Injection: 07/27/2000 07:58 AM
Low Point : -22.09 mV   High Point : 1024.00 mV
Plot Scale: 1046.1 mV

2N-E; 8.0-8.5
used C10-C24 84 (lighter)
.0 C24-C36 85

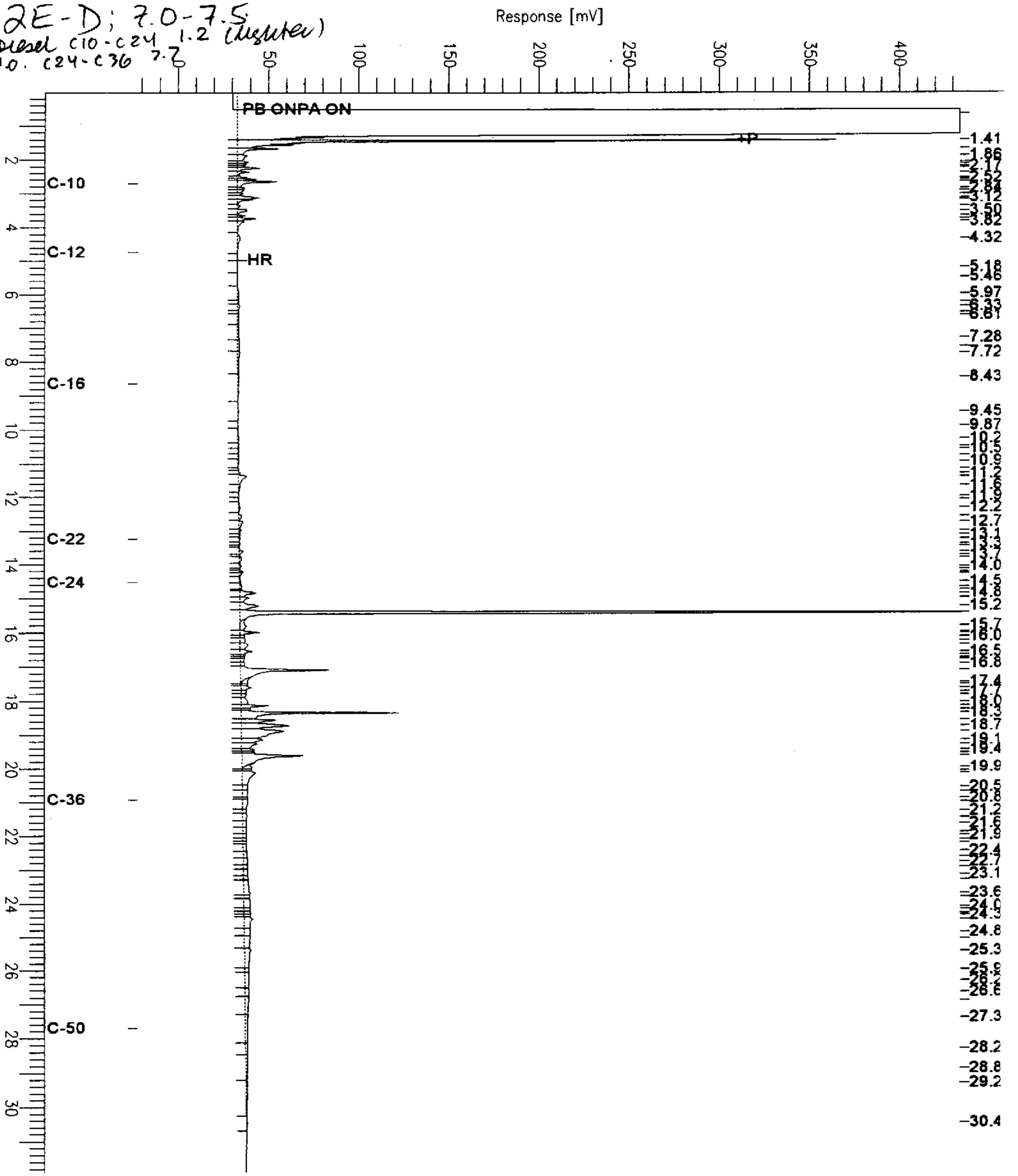


Chromatogram

Sample Name : 146652-004,57214
FileName : G:\GC15\CHB\207B046.RAW
Method : BTEH180.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: -22 mV

Sample #: 57214 Page 1 of 1
Date : 07/27/2000 08:46 AM
Time of Injection: 07/27/2000 06:32 AM
Low Point : -22.08 mV High Point : 433.87 mV
Plot Scale: 455.9 mV

2E-D; 7.0-7.5
Diesel C10-C24 1.2 (Lighter)
M.O. C24-C36 7.7



Chromatogram

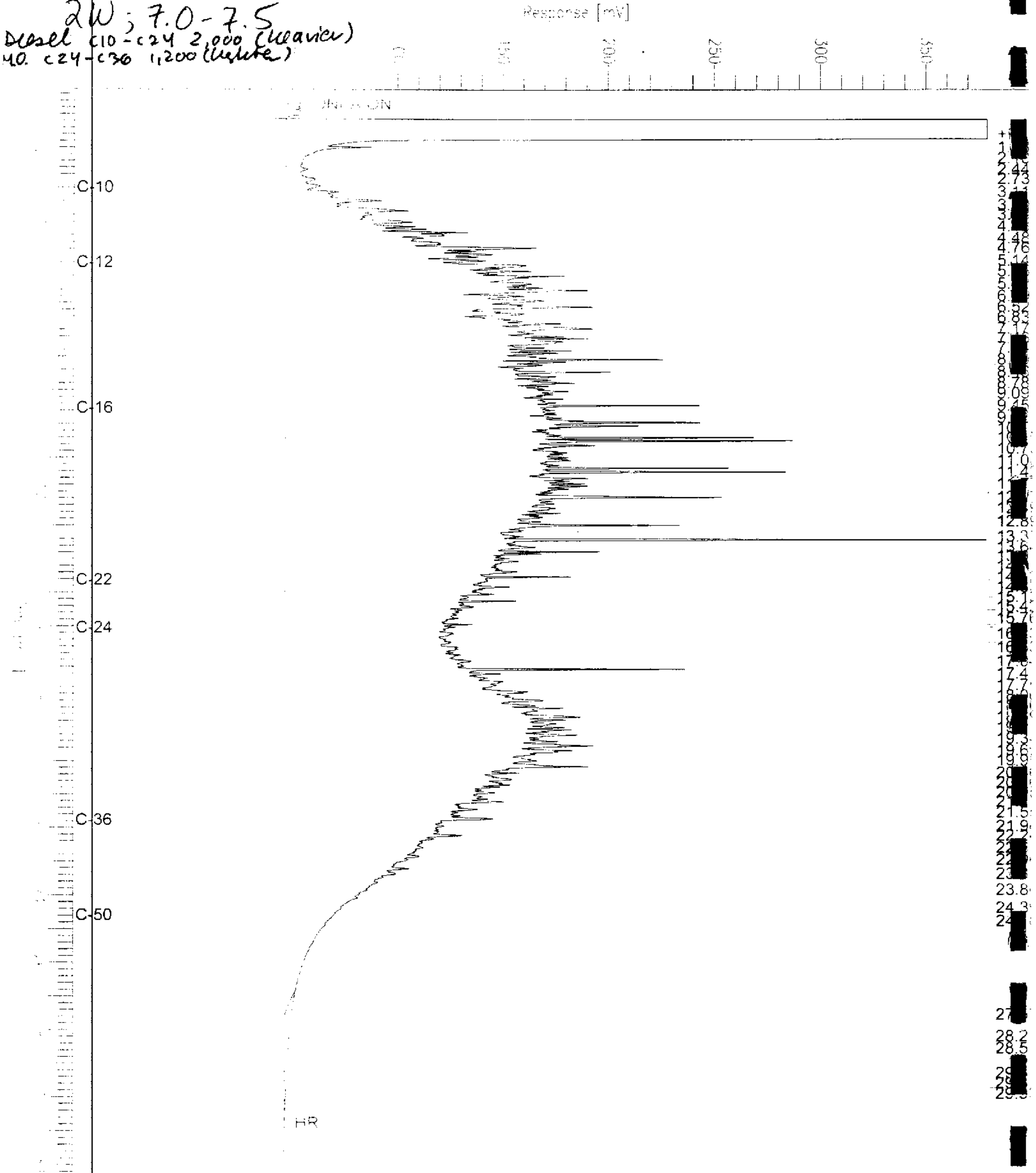
Sample Name : 146652-.05,57214
FileName : G:\GCII\CHA\208A03a.RAW
Method : ATEH206.MTH
Start Time : 0.07 min
Scale Factor: 0.0

End Time : 32.41 min
Plot Offset: -10 mV

Sample #: 57214
Date : 7/28/00 12:17 AM
Time of Injection: 7/27/00 07:22 PM
Low Point : -9.64 mV
Plot Scale: 388.9 mV

High Point : 379.26 mV

2W ; 7.0-7.5
Diesel C10-C24 2,000 (heavier)
MO. C24-C36 1,200 (lighter)

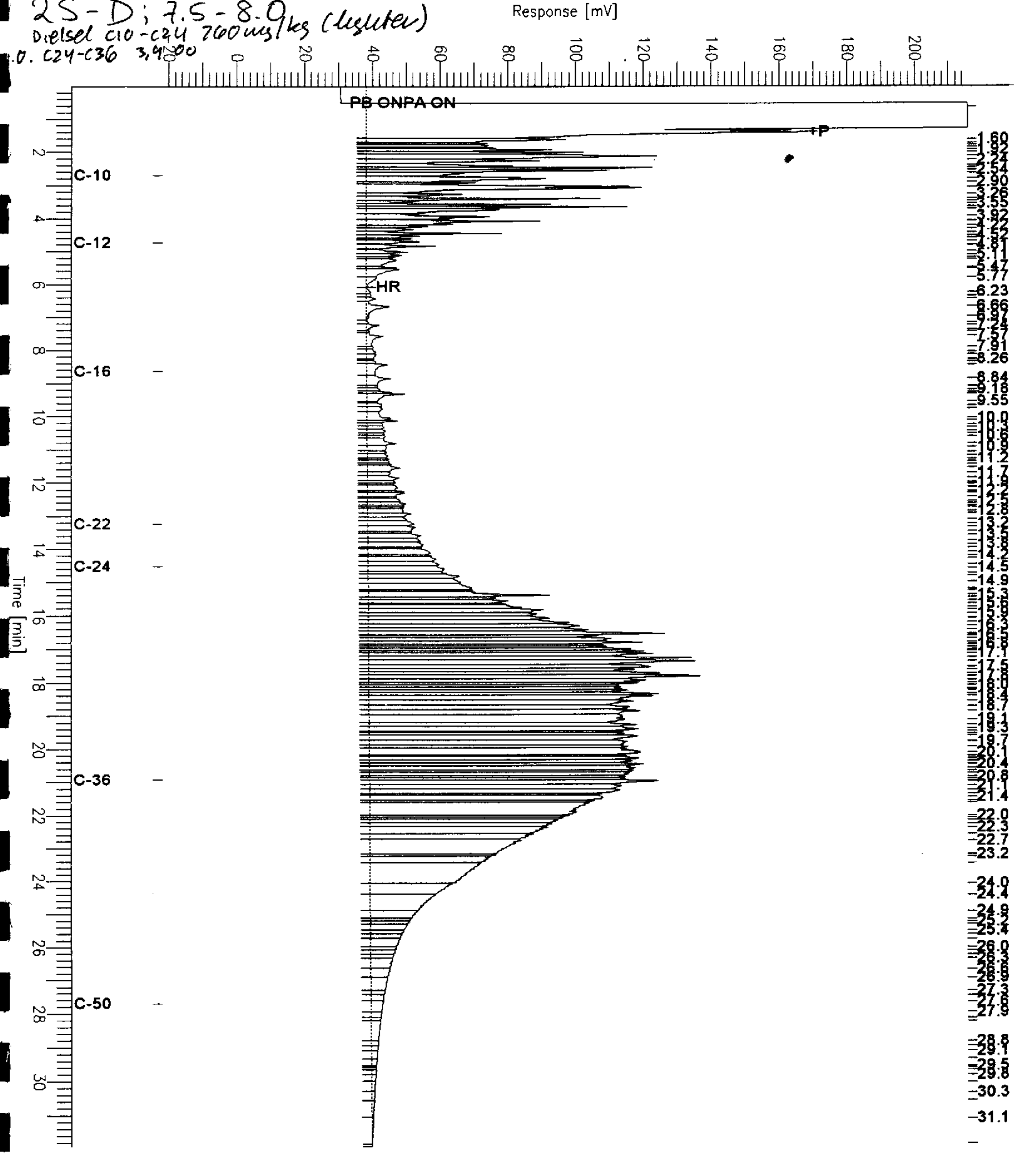


Chromatogram

Sample Name : 146652-001,57214
FileName : G:\GC15\CHB\207B045.RAW
Method : BTEH180.MTH
Start Time : 0.01 min   End Time : 31.91 min
Scale Factor: 0.0   Plot Offset: -22 mV

Sample #: 57214   Page 1 of 1
Date : 07/27/2000 08:45 AM
Time of Injection: 07/27/2000 05:49 AM
Low Point : -21.80 mV   High Point : 215.73 mV
Plot Scale: 237.5 mV

2S-D; 7.5-8.0 (lighter)
Dielsel C10-C24 700 mg/kg
.0. C24-C36 3,900

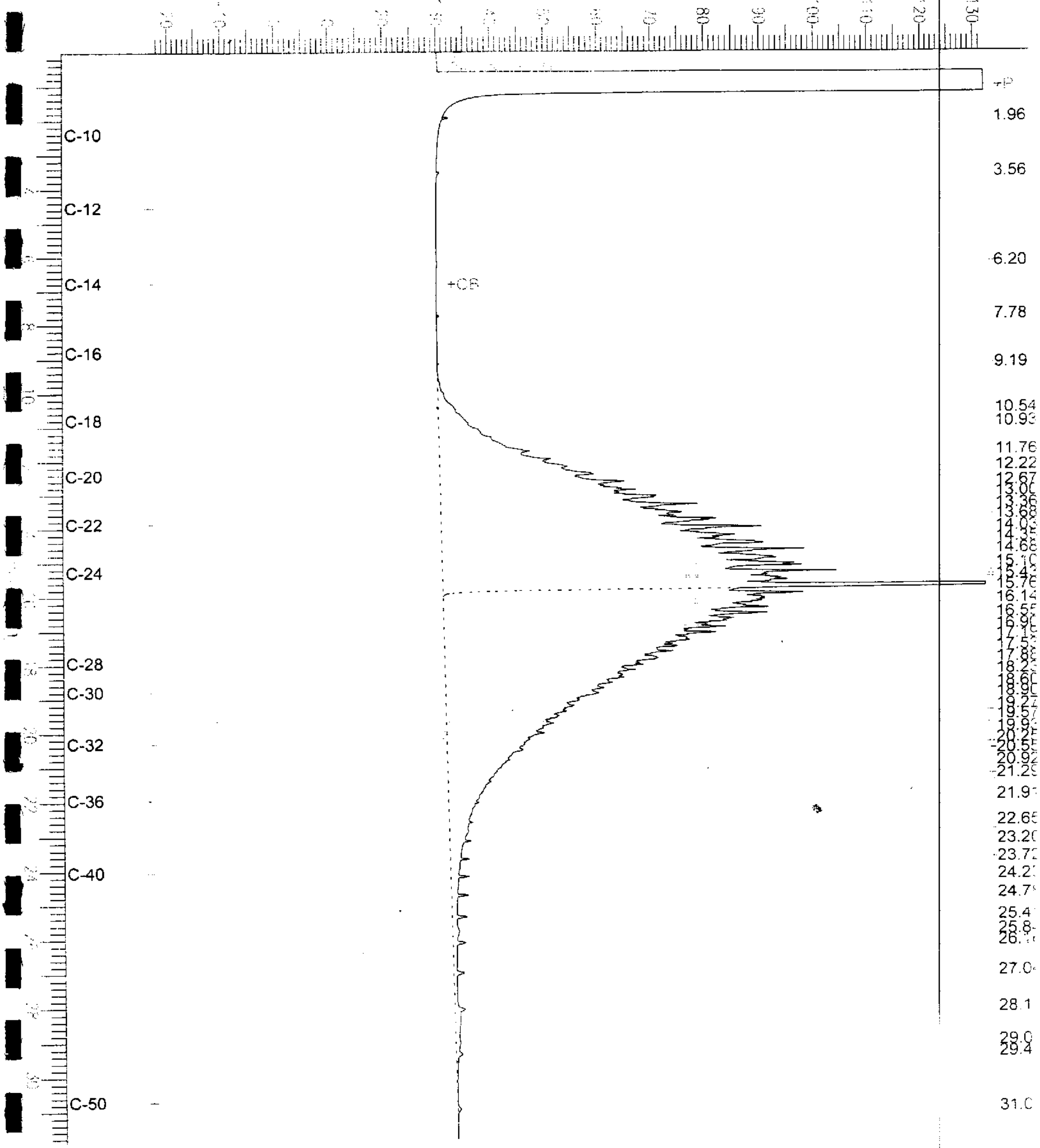


Chromatogram

mple Name : ccv,00ws9383,mo
eName : G:\GC13\CHB\213B003.RAW
hod : BTEH164.MTH
art Time : 0.01 min   End Time : 31.91 min
ale Factor: 0.0   Plot Offset: -22 mV

Sample #: 500mg/l   Page 1 of 1
Date : 07/31/2000 11:23 AM
Time of Injection: 07/31/2000 10:47 AM
Low Point : -22.34 mV   High Point : 131.94 mV
Plot Scale: 154.3 mV

Motor Oil Standard

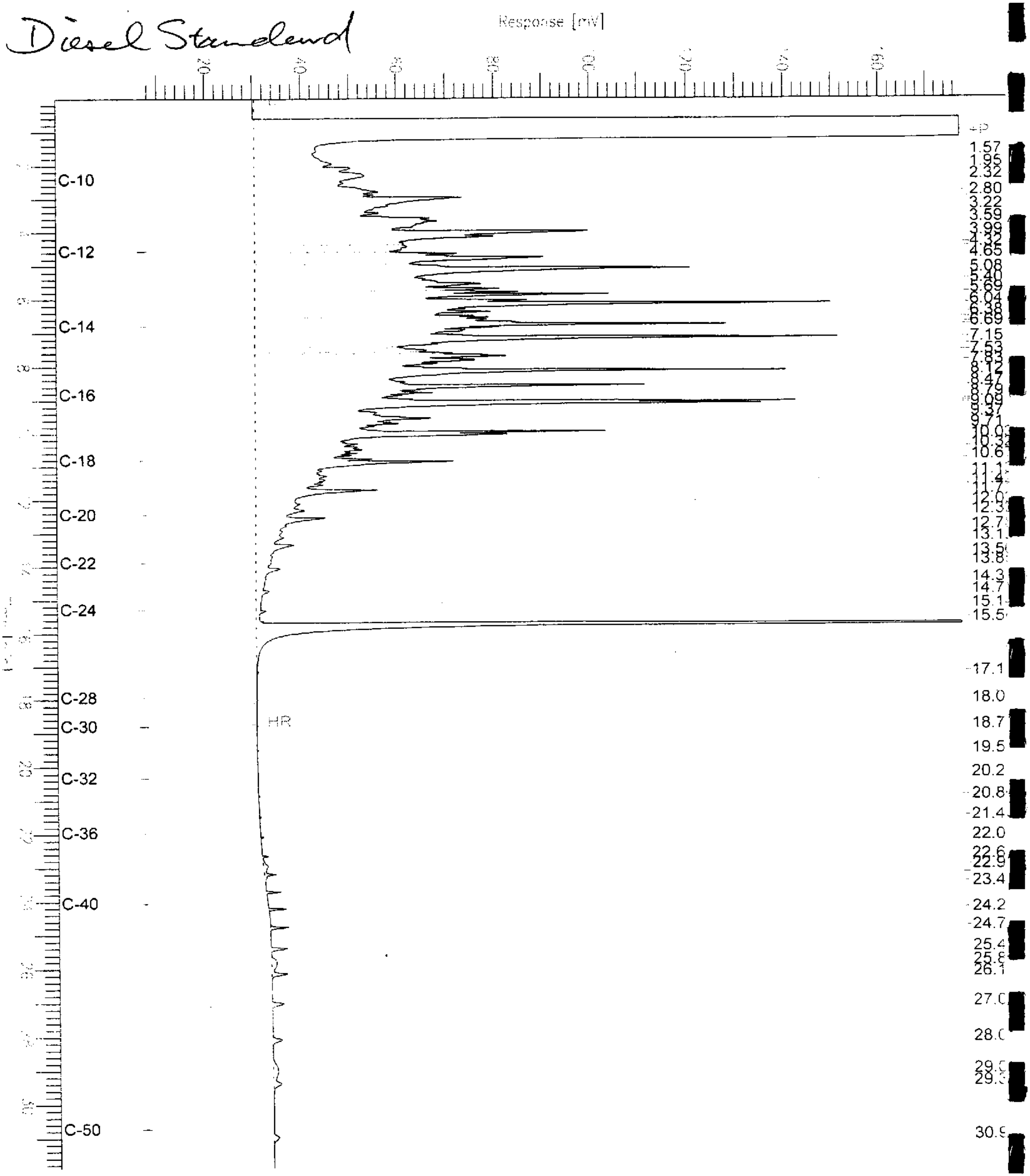


Chromatogram

ample Name : ccv,00ws9475,dsl
ileName : G:\GC13\CHB\213B002.RAW
ethod : BTEH164.MTH
art Time : 0.01 min   End Time : 31.91 min
ale Factor: 0.0   Plot Offset: 8 mV

Sample #: 500mg/1   Page 1 of 1
Date : 07/31/2000 11:12 AM
Time of Injection: 07/31/2000 10:05 AM
Low Point : 7.84 mV   High Point : 177.31 mV
Plot Scale: 169.5 mV

Diesel Standard



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC120927	Analyzed:	07/28/00

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	75	60-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC120928	Batch#:	57214
Matrix:	Soil	Prepared:	07/24/00
Units:	mg/Kg	Analyzed:	07/28/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	47.24	35.93	76	67-121

Surrogate	%REC	Limits
Hexacosane	70	60-136

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	57214
MSS Lab ID:	146613-002	Sampled:	07/19/00
Matrix:	Soil	Received:	07/19/00
Units:	mg/Kg	Prepared:	07/24/00
Basis:	wet	Analyzed:	07/31/00
Diln Fac:	20.00		

Type: MS Lab ID: QC120929

Analyte	MSS Result	Spiked	Result	%REC	Limit
Diesel C10-C24	95.25	46.46	699.6	1301 *	35-14

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Type: MSD Lab ID: QC120930

Analyte	Spiked	Result	%REC	Limits	RPD	Li
Diesel C10-C24	46.79	564.6	1003 *	35-146	22	48

Surrogate	%REC	Limits
Hexacosane	DO	60-136

* = Value outside of QC limits; see narrative
DO = Diluted Out
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Organic Carbon (TOC)

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Analysis:	WALKLEY-BLACK
Project#:	98383-17		
Analyte:	Total Organic Carbon	Batch#:	57294
Matrix:	Soil	Sampled:	07/20/00
Units:	%	Received:	07/21/00
Basis:	wet	Analyzed:	07/27/00

Field ID	Type	Lab ID	Result	RL	Diln Fac
2E-D;1.0-1.5	SAMPLE	146652-002	0.15	0.02	2.000
2E-D;4.0-4.5	SAMPLE	146652-003	0.05	0.02	2.000
	BLANK	QC121249	ND	0.01	1.000

ND = Not Detected
RL = Reporting Limit

Total Organic Carbon (TOC)

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Analysis:	WALKLEY-BLACK
Project#:	98383-17		
Analyte:	Total Organic Carbon	Diln Fac:	1.000
Field ID:	5W;4-4.5	Batch#:	57294
MSS Lab ID:	146684-003	Sampled:	07/21/00
Matrix:	Soil	Received:	07/21/00
Units:	%	Analyzed:	07/27/00
Basis:	wet		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC121250	0.07500	0.1300	0.1830	83	22-150		
MSD	QC121251		0.1300	0.1900	89	22-150	4	20
LCS	QC121252		0.1300	0.1380	106	80-110		

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17
Site: MSC, 1701 Edgewater Drive
Laboratory: Curtis + Tompkins
Laboratory Report No: 146715 & 146800
Report Date: August 11 2000
BASELINE Review By: WKS

	Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)**			
1a. Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?			✓
1e. Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?	✓		
2a. Is the laboratory report format consistent and legible throughout the report?	✓		
2b. Are the sample and reported dates shown in the laboratory report correct?	✓		
3a. Does the lab report include the original chain-of-custody form?		✓	
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?	✓		
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			✓
6. Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7. Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	✓		
8a. Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	✓		
8b. If no, is an explanation provided by the laboratory?			✓
9a. Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	✓		

	Yes	No	NA
9b. If no, was it flagged in the report?			✓
10. If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a. Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	✓		
11b. Is a standard chromatogram(s) included in the laboratory report?	✓		
11c. Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	✓		
12. Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*			✓
13a. REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b. REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c. REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d. REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses			
14. Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15. Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16. Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*	✓		
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓*'		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?	✓		

	Yes	No	NA
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*		✓	
21b. If no, is an explanation given in the case narrative to validate the data?	✓		

Comments:
*' No matrix spike result for TEH. (See Case Narrative)

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:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 11-AUG-00
Lab Job Number: 146715
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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

This package may be reproduced only in its entirety.

Curtis & Tompkins, Ltd.

Laboratory Number: **146715** Receipt Date: **07/25/00**
Client: **Baseline Environmental**
Project Name: **MSC-1701 Edgewater**

CASE NARRATIVE

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

Total Volatile Hydrocarbons (TVH)/BTXE: The TVH bromofluorobenzene surrogate recoveries for samples 10W;3.5-4.0 (146715-001) and 11-E1 (146715-006) were outside acceptance limits. The associated trifluorotoluene surrogate recoveries were acceptable. No other analytical problems were encountered.

Total Extractable Hydrocarbons: No matrix spike results were available for the analytical batch. The concentration of analyte in the spiked sample rendered the spike amount insignificant. The associated laboratory control sample recovery was acceptable. No other analytical problems were encountered.

Semi-Volatile Organic Compounds: All samples were logged in for analysis per chain-of-custody request and reported under Lab Job Number 146800.

170715

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

CHAIN OF CUSTODY RECORD

Turn-around Time: Std. (5 Days)
Lab: C+T
BASELINE Contact Person: Bill Scott

Project No.: 98383-17
Project Name and Location: MSC -1701 Edgewater

Samplers: (Signature)

Sample ID No. Station	Date:	Time:	Media	Containers No.	Type	Preservative: None	HCl	NO_3	SO_4	Other:	TPH-g, d, MO	BTEX + MTBE	SVOCs 8270						Remarks/ Composite
10W; 3.5-4.0	7/24/00	7:40	S	1	SS	X					X	X	X						
11E; 4-4.5	7/24/00	8:40	S	1	SS	X					X	X	X						
11-W2; 8.0-8.5	7/24/00	13:15	S	1	SS	X					X	X	X						
11-N3; 9-9.5	7/24/00	15:40	S	1	SS	X					X	X	X						
11-S; 9-9.5	7/24/00	16:00	S	1	SS	X					X	X	X						
11-E1; 7.5-8.0	7/24/00	16:30	S	1	SS	X					X	X	X						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	
	7/25/00/12:00			Conditions of Samples Upon Arrival at Laboratory:
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Remarks: Only Run 8270 IF Diesel is Present
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	7/25/00/12:00	

D:\Graphic\Chain of Custody Record\Master.cdr 4/12/00

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17		
Matrix:	Soil	Sampled:	07/24/00
Basis:	wet	Received:	07/25/00

Field ID:	10W;3.5-4.0	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	57262
Lab ID:	146715-001	Analyzed:	07/27/00

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	910	50	mg/Kg	EPA 8015M
MTBE	ND	1,000	ug/Kg	EPA 8021B
Benzene	2,600	250	ug/Kg	EPA 8021B
Toluene	1,400	250	ug/Kg	EPA 8021B
Ethylbenzene	2,900	250	ug/Kg	EPA 8021B
m,p-Xylenes	600	250	ug/Kg	EPA 8021B
o-Xylene	670	250	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	120	62-138	EPA 8015M
Bromofluorobenzene (FID)	152 *	46-150	EPA 8015M
Trifluorotoluene (PID)	117	65-134	EPA 8021B
Bromofluorobenzene (PID)	124	55-138	EPA 8021B

Field ID:	11E;4-4.5	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57298
Lab ID:	146715-002	Analyzed:	07/28/00

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	3,100	100	mg/Kg	EPA 8015M
MTBE	ND	2,000	ug/Kg	EPA 8021B
Benzene	3,400	500	ug/Kg	EPA 8021B
Toluene	2,900	500	ug/Kg	EPA 8021B
Ethylbenzene	12,000	500	ug/Kg	EPA 8021B
m,p-Xylenes	1,500	500	ug/Kg	EPA 8021B
o-Xylene	840 C	500	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	126	62-138	EPA 8015M
Bromofluorobenzene (FID)	135	46-150	EPA 8015M
Trifluorotoluene (PID)	121	65-134	EPA 8021B
Bromofluorobenzene (PID)	123	55-138	EPA 8021B

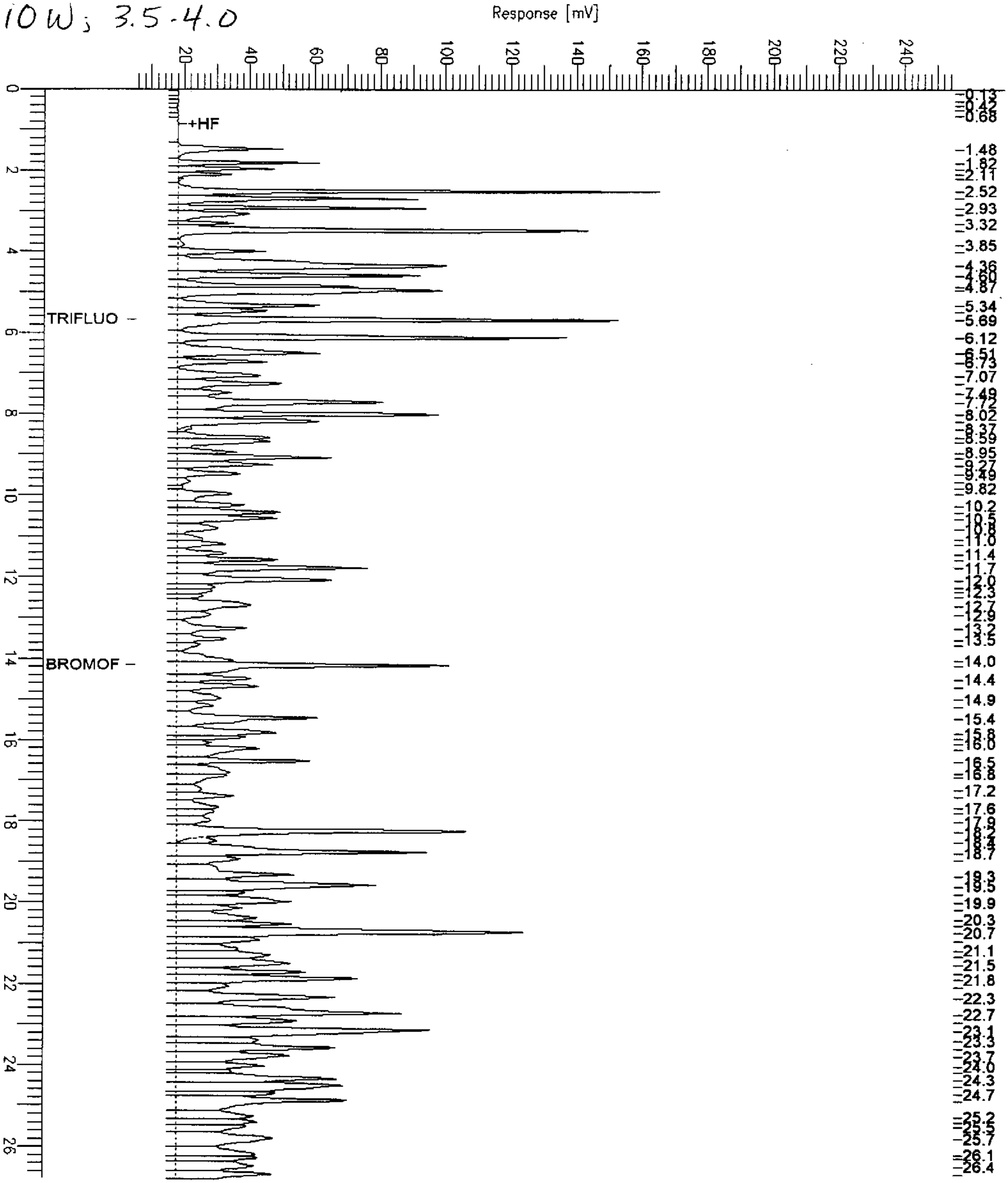
* = Value outside of QC limits; see narrative
C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 146715-001,57262,+mtbe
FileName : G:\GC19\DATA\208X034.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 5 mV

Sample #: 50x,a
Date : 7/27/00 02:19 PM
Time of Injection: 7/27/00 11:41 AM
Low Point : 5.29 mV High Point : 255.29 mV
Plot Scale: 250.0 mV

10 W; 3.5-4.0



GC19 TVH 'X' Data File (FID)

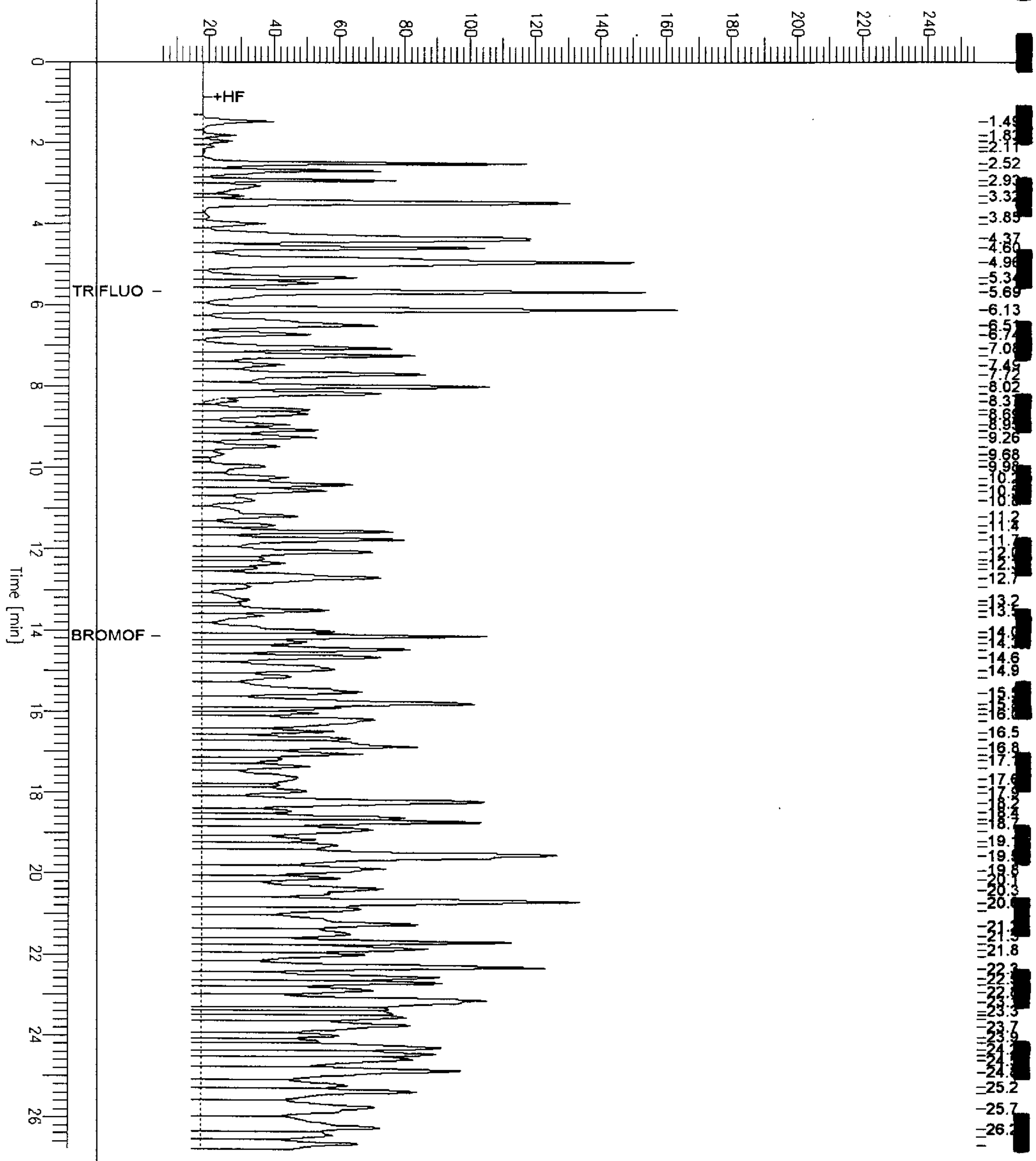
Sample Name : 146715-002,57298,+mtbe
FileName : G:\GC19\DATA\209X027.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0
End Time : 26.80 min
Plot Offset: 5 mV

Sample #: 100x,a
Date : 7/28/00 02:33 PM
Time of Injection: 7/28/00 09:52 AM
Low Point : 5.46 mV
Plot Scale: 250.0 mV

Page 1 of 1

High Point : 255.46 mV

11E; 4-4.5



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17		
Matrix:	Soil	Sampled:	07/24/00
Basis:	wet	Received:	07/25/00

Field ID:	11-W2;8.0-8.5	Diln Fac:	1,000
Type:	SAMPLE	Batch#:	57298
Lab ID:	146715-003	Analyzed:	07/28/00

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	30,000	1,000	mg/Kg	EPA 8015M
MTBE	ND	20,000	ug/Kg	EPA 8021B
Benzene	110,000	5,000	ug/Kg	EPA 8021B
Toluene	73,000	5,000	ug/Kg	EPA 8021B
Ethylbenzene	400,000	5,000	ug/Kg	EPA 8021B
m,p-Xylenes	940,000	5,000	ug/Kg	EPA 8021B
o-Xylene	52,000	5,000	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	128	62-138	EPA 8015M
Bromofluorobenzene (FID)	134	46-150	EPA 8015M
Trifluorotoluene (PID)	133	65-134	EPA 8021B
Bromofluorobenzene (PID)	127	55-138	EPA 8021B

Field ID:	11-N3;9-9.5	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	57262
Lab ID:	146715-004	Analyzed:	07/27/00

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	2,300	100	mg/Kg	EPA 8015M
MTBE	6,800	2,000	ug/Kg	EPA 8021B
Benzene	4,400	500	ug/Kg	EPA 8021B
Toluene	5,500	500	ug/Kg	EPA 8021B
Ethylbenzene	31,000	500	ug/Kg	EPA 8021B
m,p-Xylenes	31,000	500	ug/Kg	EPA 8021B
o-Xylene	3,900	500	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	119	62-138	EPA 8015M
Bromofluorobenzene (FID)	128	46-150	EPA 8015M
Trifluorotoluene (PID)	115	65-134	EPA 8021B
Bromofluorobenzene (PID)	123	55-138	EPA 8021B

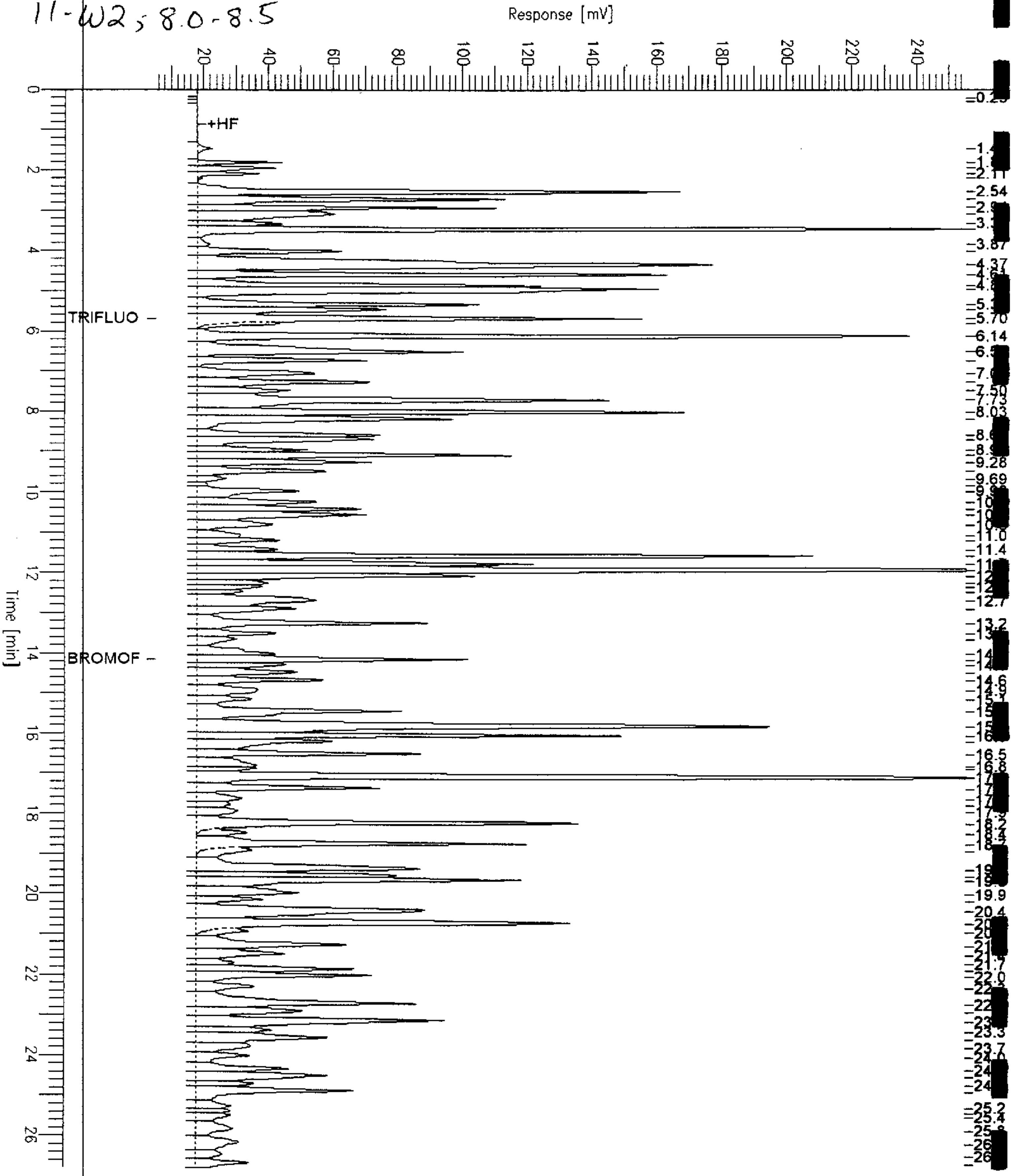
* = Value outside of QC limits; see narrative
C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 146715-003,57298,+mtbe
FileName : G:\GC19\DATA\209X030.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0
End Time : 26.80 min
Plot Offset: 5 mV

Sample #: 1000x,a
Date : 7/28/00 02:34 PM
Time of Injection: 7/28/00 11:45 AM
Low Point : 5.36 mV
Plot Scale: 250.0 mV
High Point : 255.36 mV

11-W2, 8.0-8.5

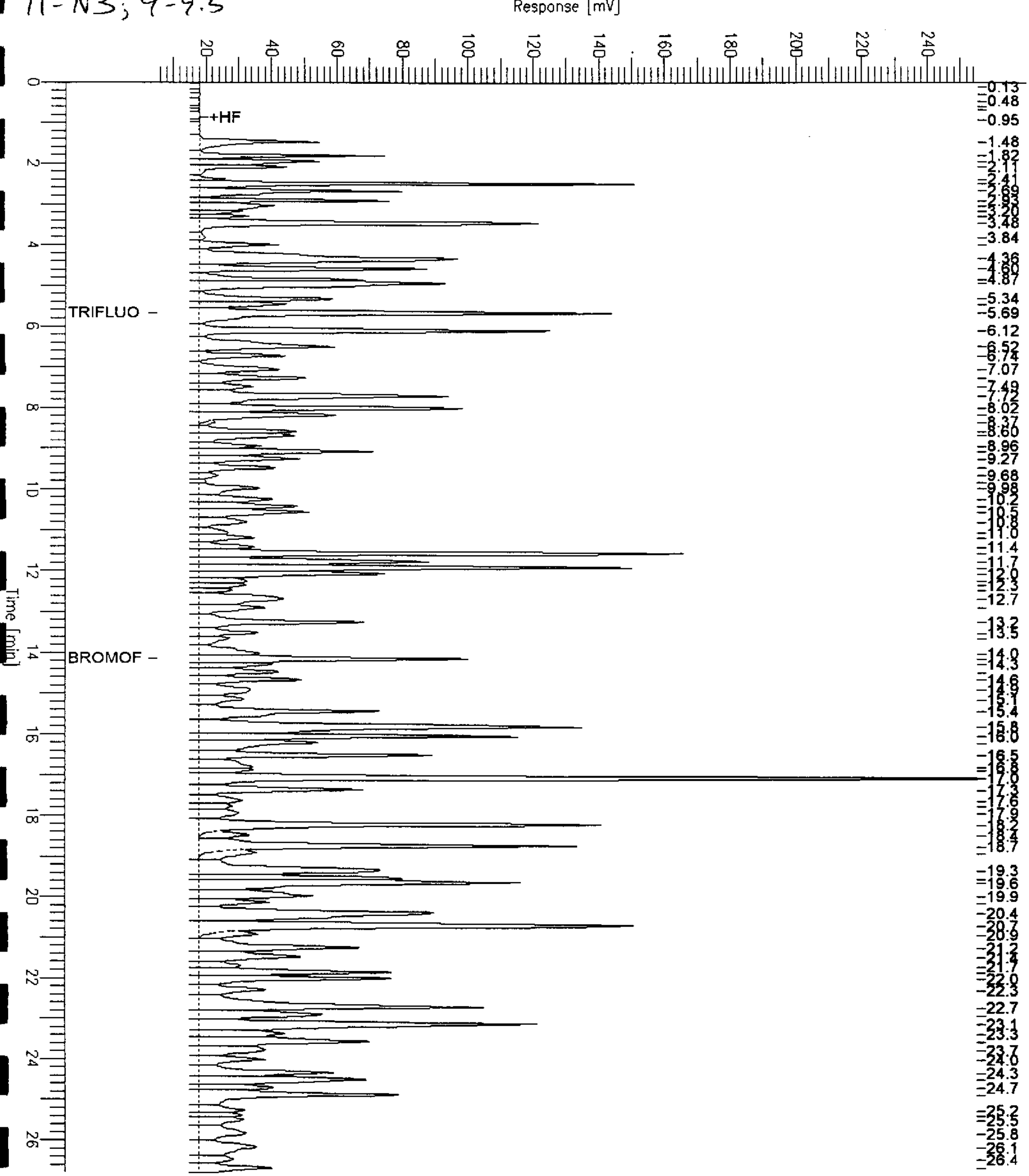


GC19 TVH 'X' Data File (FID)

Sample Name : 146715-004,57262,+mtbe
FileName : G:\GC19\DATA\208X035.raw
Method : TVHBTXE
Start Time : 0.00 min
End Time : 26.80 min
Scale Factor: -1.0
Plot Offset: 5 mV

Sample #: 100x,a
Page 1 of 1
Date : 7/27/00 02:20 PM
Time of Injection: 7/27/00 12:19 PM
Low Point : 5.28 mV
High Point : 255.28 mV
Plot Scale: 250.0 mV

11-N3; 9-9.5



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17		
Matrix:	Soil	Sampled:	07/24/00
Basis:	wet	Received:	07/25/00

Field ID:	11-S;9-9.5	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	57262
Lab ID:	146715-005	Analyzed:	07/27/00

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	0.91	mg/Kg	EPA 8015M
MTBE	ND	18	ug/Kg	EPA 8021B
Benzene	ND	4.5	ug/Kg	EPA 8021B
Toluene	ND	4.5	ug/Kg	EPA 8021B
Ethylbenzene	ND	4.5	ug/Kg	EPA 8021B
m,p-Xylenes	ND	4.5	ug/Kg	EPA 8021B
o-Xylene	ND	4.5	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	111	62-138	EPA 8015M
Bromofluorobenzene (FID)	118	46-150	EPA 8015M
Trifluorotoluene (PID)	112	65-134	EPA 8021B
Bromofluorobenzene (PID)	119	55-138	EPA 8021B

Field ID:	11-E1;7.5-8.0	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	57298
Lab ID:	146715-006	Analyzed:	07/28/00

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	120	5.0	mg/Kg	EPA 8015M
MTBE	ND	100	ug/Kg	EPA 8021B
Benzene	88	25	ug/Kg	EPA 8021B
Toluene	150	25	ug/Kg	EPA 8021B
Ethylbenzene	500	25	ug/Kg	EPA 8021B
m,p-Xylenes	110	25	ug/Kg	EPA 8021B
o-Xylene	74 C	25	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	127	62-138	EPA 8015M
Bromofluorobenzene (FID)	181 *	46-150	EPA 8015M
Trifluorotoluene (PID)	119	65-134	EPA 8021B
Bromofluorobenzene (PID)	128	55-138	EPA 8021B

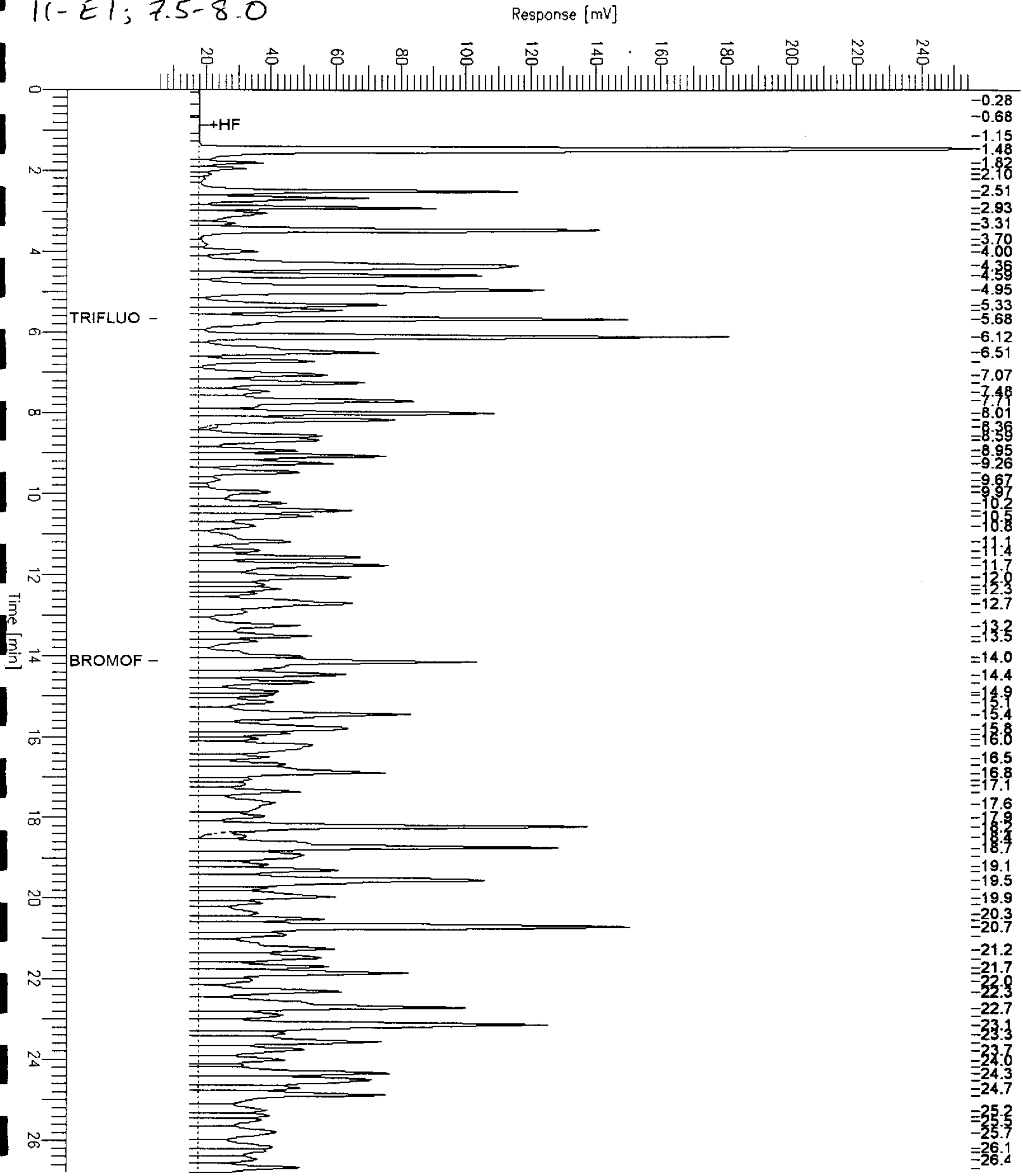
* = Value outside of QC limits; see narrative
C = Presence confirmed, but confirmation concentration differed by more than a factor of two
ND = Not Detected
RL = Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 146715-006,57298,+mtbe
FileName : G:\GC19\DATA\209X019.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: -1.0
End Time : 26.80 min
Plot Offset: 5 mV

Sample #: 5x,a
Date : 7/28/00 02:32 PM
Time of Injection: 7/28/00 04:48 AM
Low Point : 5.29 mV
Plot Scale: 250.0 mV
High Point : 255.29 mV

11-E1; 7.5-8.0

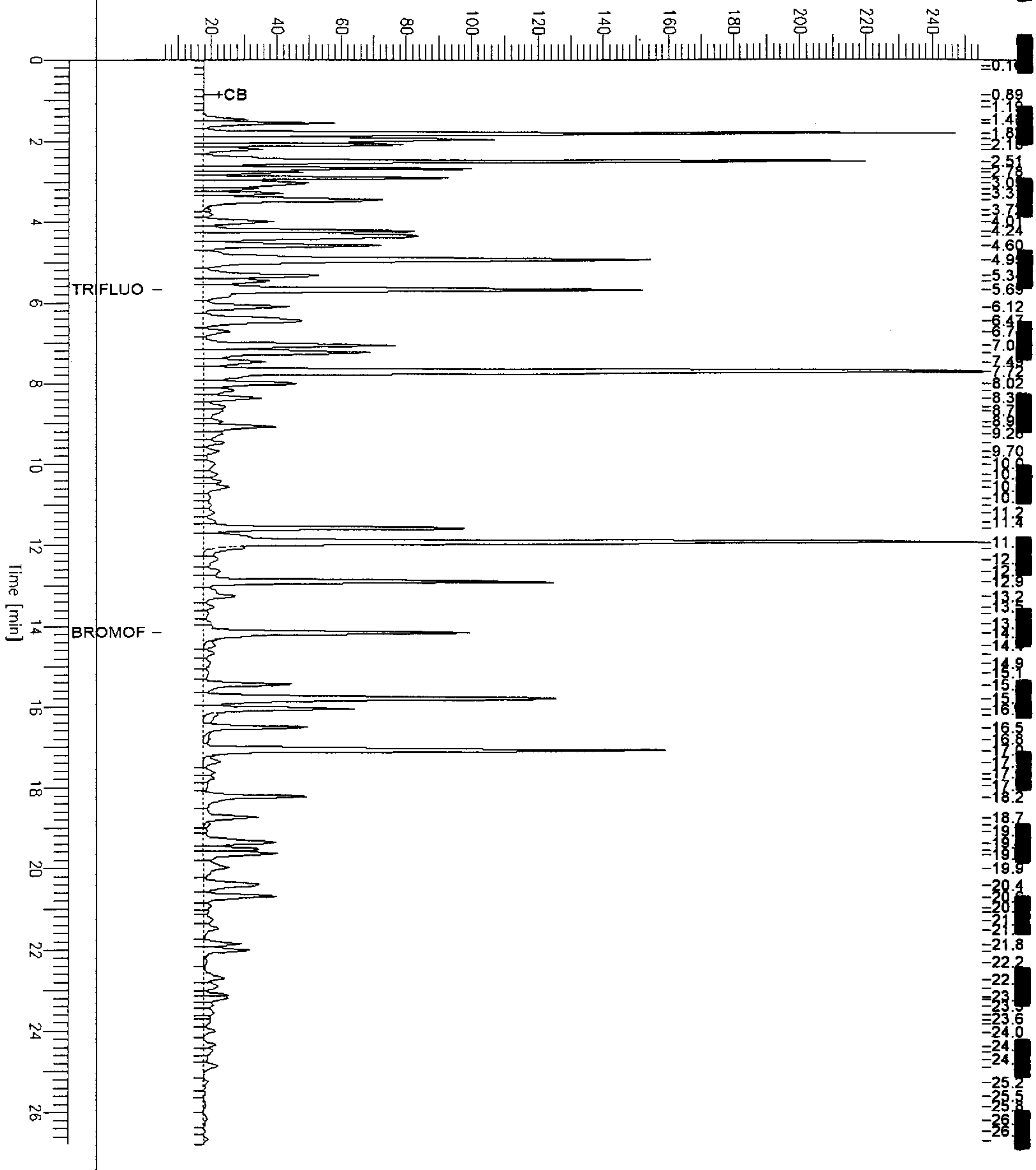


GC19 TVH 'X' Data File (FID)

Sample Name : ccv/lcs,qc121118,57262,00ws9465,5/5000
FileName : G:\GC19\DATA\208X002.raw
Method : TVHBTXE
Start Time : 0.00 min
End Time : 26.80 min
Scale Factor: -1.0
Plot Offset: 5 mV

Sample #: gas
Date : 7/26/00 03:31 PM
Time of Injection: 7/26/00 03:03 PM
Low Point : 5.12 mV
High Point : 255.12 mV
Plot Scale: 250.0 mV

Gasoline Standard



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17		
Matrix:	Soil	Sampled:	07/24/00
Basis:	wet	Received:	07/25/00

Type:	BLANK	Batch#:	57262
Lab ID:	QC121117	Analyzed:	07/26/00
Diln Fac:	1.000		

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

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	110	62-138	EPA 8015M
Bromofluorobenzene (FID)	115	46-150	EPA 8015M
Trifluorotoluene (PID)	113	65-134	EPA 8021B
Bromofluorobenzene (PID)	117	55-138	EPA 8021B

Type:	BLANK	Batch#:	57298
Lab ID:	QC121261	Analyzed:	07/27/00
Diln Fac:	1.000		

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

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	107	62-138	EPA 8015M
Bromofluorobenzene (FID)	107	46-150	EPA 8015M
Trifluorotoluene (PID)	109	65-134	EPA 8021B
Bromofluorobenzene (PID)	110	55-138	EPA 8021B

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

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Basis:	wet
Lab ID:	QC121118	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57262
Units:	mg/Kg	Analyzed:	07/26/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.714	97	75-123
MTBE	NA			
Benzene	NA			
Toluene	NA			
Ethylbenzene	NA			
m,p-Xylenes	NA			
o-Xylene	NA			

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		123	62-138
Bromofluorobenzene (FID)		131	46-150
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Matrix:	Soil	Diln Fac:	1.000
Units:	ug/Kg	Batch#:	57262
Basis:	wet	Analyzed:	07/26/00

Type: BS Lab ID: QC121119

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
MTBE	100.0	114.8	115	58-115
Benzene	100.0	97.22	97	68-117
Toluene	100.0	98.27	98	70-120
Ethylbenzene	100.0	102.2	102	67-124
m,p-Xylenes	200.0	216.7	108	72-124
o-Xylene	100.0	103.1	103	72-123

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		109	65-134
Bromofluorobenzene (PID)		115	55-138

Type: BSD Lab ID: QC121120

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12		NA				
MTBE	100.0	108.2	108	58-115	6	20
Benzene	100.0	95.85	96	68-117	1	20
Toluene	100.0	97.24	97	70-120	1	20
Ethylbenzene	100.0	102.0	102	67-124	0	20
m,p-Xylenes	200.0	215.1	108	72-124	1	20
o-Xylene	100.0	102.0	102	72-123	1	20

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		108	65-134
Bromofluorobenzene (PID)		113	55-138

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Batch#:	57298
Basis:	wet	Analyzed:	07/27/00

Type: BS Lab ID: QC121262

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.673	97	75-123
MTBE		NA		
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		124	62-138
Bromofluorobenzene (FID)		132	46-150
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: BSD Lab ID: QC121263

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	10.01	100	75-123	3	20
MTBE		NA				
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		125	62-138
Bromofluorobenzene (FID)		136	46-150
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Type:	LCS	Basis:	wet
Lab ID:	QC121264	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57298
Units:	ug/Kg	Analyzed:	07/27/00

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
MTBE	100.0	115.4	115	58-115
Benzene	100.0	98.12	98	68-117
Toluene	100.0	100.0	100	70-120
Ethylbenzene	100.0	104.1	104	67-124
m,p-Xylenes	200.0	220.2	110	72-124
o-Xylene	100.0	105.1	105	72-123

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		105	65-134
Bromofluorobenzene (PID)		113	55-138

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146682-002	Batch#:	57262
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/22/00
Basis:	wet	Analyzed:	07/26/00

Type: MS Lab ID: QC121121

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1804	10.00	9.815	96	41-132
MTBE			NA		
Benzene			NA		
Toluene			NA		
Ethylbenzene			NA		
m,p-Xylenes			NA		
o-Xylene			NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		128	62-138
Bromofluorobenzene (FID)		132	46-150
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: MSD Lab ID: QC121122

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	10.26	101	41-132	4	25
MTBE		NA				
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		129	62-138
Bromofluorobenzene (FID)		139	46-150
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	146757-005	Batch#:	57298
Matrix:	Soil	Sampled:	07/26/00
Units:	ug/Kg	Received:	07/27/00
Basis:	wet	Analyzed:	07/27/00

Type: MS   Lab ID: QC121265

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12			NA		
MTBE	ND	100.0	112.7	113	58-116
Benzene	ND	100.0	95.31	95	62-117
Toluene	ND	100.0	96.95	97	55-121
Ethylbenzene	ND	100.0	99.85	100	46-128
m,p-Xylenes	ND	200.0	210.6	105	33-141
o-Xylene	ND	100.0	100.6	101	40-136

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		111	65-134
Bromofluorobenzene (PID)		116	55-138

Type: MSD   Lab ID: QC121266

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12		NA				
MTBE	100.0	110.3	110	58-116	2	20
Benzene	100.0	94.17	94	62-117	1	20
Toluene	100.0	95.57	96	55-121	1	20
Ethylbenzene	100.0	99.07	99	46-128	1	20
m,p-Xylenes	200.0	209.0	105	33-141	1	20
o-Xylene	100.0	100.3	100	40-136	0	20

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		112	65-134
Bromofluorobenzene (PID)		120	55-138

ND = Not Detected
NA= Not Analyzed
RPD= Relative Percent Difference

Total Extractable Hydrocarbons

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/24/00
Units:	mg/Kg	Received:	07/25/00
Basis:	wet	Prepared:	07/27/00
Batch#:	57304		

Field ID:	10W;3.5-4.0	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	07/31/00
Lab ID:	146715-001		

Analyte	Result	RL
Diesel C10-C24	1,300	5.0
Motor Oil C24-C36	64	25

Surrogate	%REC	Limits
Hexacosane	96	60-136

Field ID:	11E;4-4.5	Diln Fac:	50.00
Type:	SAMPLE	Analyzed:	07/31/00
Lab ID:	146715-002		

Analyte	Result	RL
Diesel C10-C24	2,000	50
Motor Oil C24-C36	ND	250

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID:	11-W2;8.0-8.5	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	07/31/00
Lab ID:	146715-003		

Analyte	Result	RL
Diesel C10-C24	[illegible]20 L Y	10
Motor Oil C24-C36	250	50

Surrogate	%REC	Limits
Hexacosane	[illegible]	[illegible]

Field ID:	11-N3;9-9.5	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	07/28/00
Lab ID:	146715-004		

Analyte	Result	RL
Diesel C10-C24	630 L Y	20
Motor Oil C24-C36	530 H L	100

Surrogate	%REC	Limits
Hexacosane	DO	60-136

These samples were analyzed for TPHd and TPHmo without silica gel clean-up. For TPHd and TPHmo results with silica gel clean-up, refer to laboratory report 147133 dated 9/18/00.

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

Total Extractable Hydrocarbons

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/24/00
Units:	mg/Kg	Received:	07/25/00
Basis:	wet	Prepared:	07/27/00
Batch#:	57304		

Field ID:	11-S;9-9.5	Diln Fac:	2.000
Type:	SAMPLE	Analyzed:	07/31/00
Lab ID:	146715-005		

Analyte	Result	RL
Diesel C10-C24	340 H L Y	2.0
Motor Oil C24-C36	570 L	10

Surrogate	%REC	Limits
Hexacosane	95	60-136

Field ID:	11-E1;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	07/28/00
Lab ID:	146715-006		

Analyte	Result	RL
Diesel C10-C24	34 Y	1.0
Motor Oil C24-C36	78	5.0

Surrogate	%REC	Limits
Hexacosane	92	60-136

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121287	Analyzed:	07/28/00

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits

These samples were analyzed for TPHd and TPHmo without silica gel clean-up. For TPHd and TPHmo results with silica gel clean-up, refer to laboratory report 147133 dated 9/18/00.

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

Chromatogram

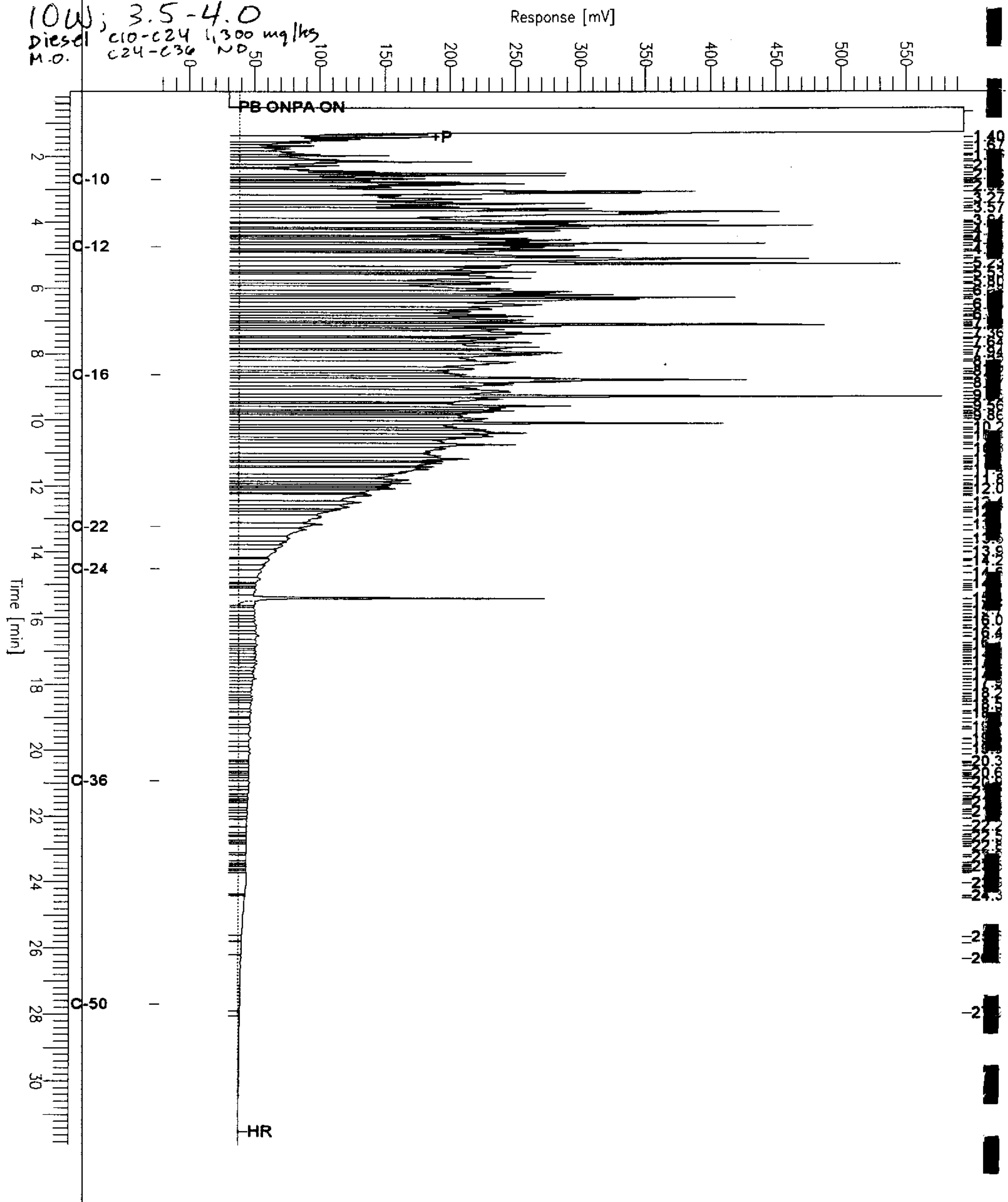
Sample Name : 146715-001,57304
FileName : G:\GC15\CHB\213B008.RAW
Method : BTEH180.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: -22 mV

Sample #: 57304
Date : 07/31/2000 03:39 PM
Time of Injection: 07/31/2000 03:00 PM
Low Point : -21.77 mV
Plot Scale: 616.8 mV

High Point : 594.98 mV

10W; 3.5-4.0
Diesel C10-C24 1,300 mg/kg
M.O. C24-C36 ND

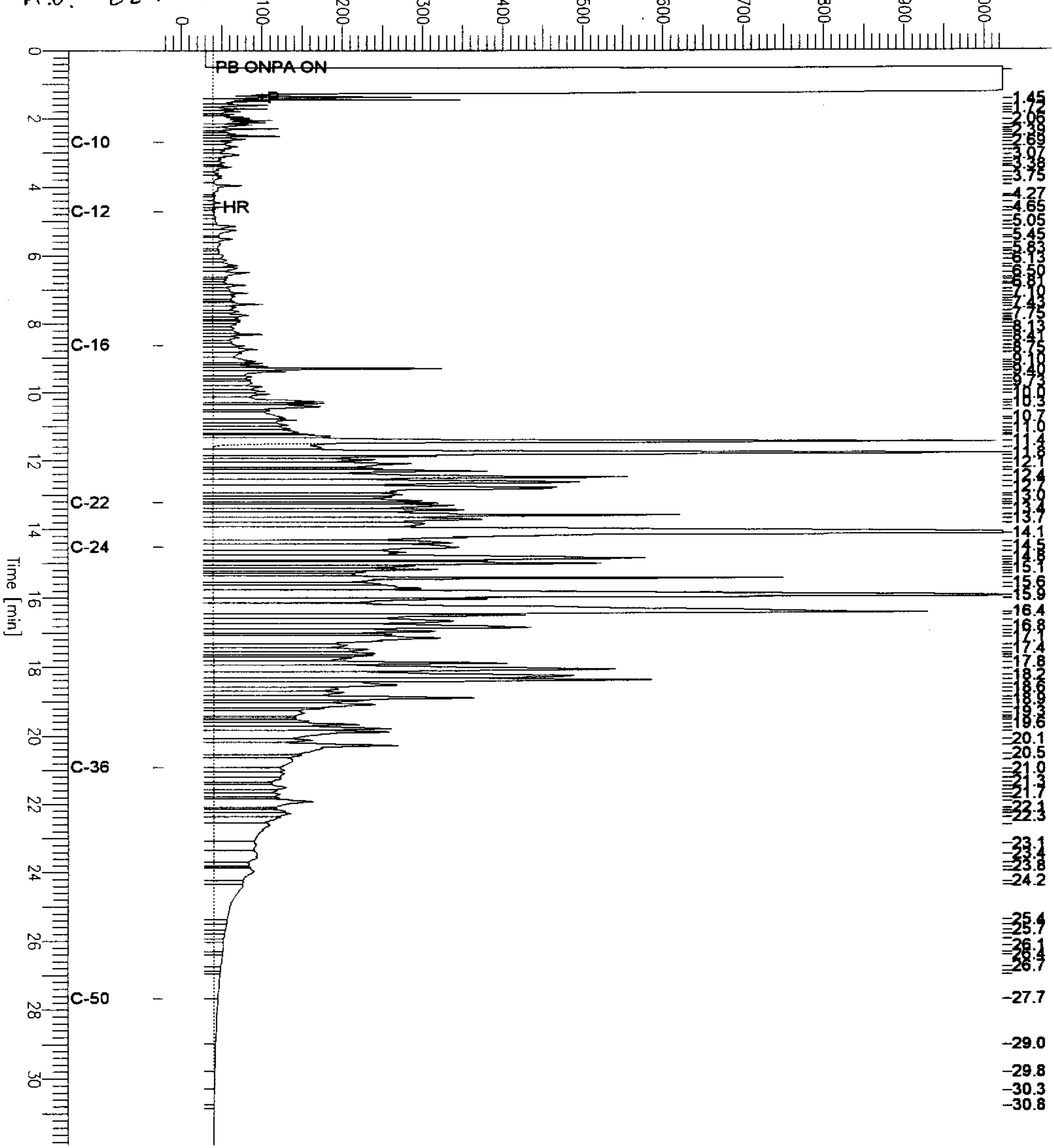


Chromatogram

Sample Name : 146715-005,57304
FileName : G:\GC15\CHB\213B004.RAW
Method : BTEH180.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -22 mV

Sample #: 57304 Page 1 of 1
Date : 07/31/2000 12:54 PM
Time of Injection: 07/31/2000 12:06 PM
Low Point : -21.98 mV High Point : 1024.00 mV
Plot Scale: 1046.0 mV

11-5; 9-9.5
Diesel C10-C24 340 (heavier + lighter)
M.O. C24-C36 570 (lighter)

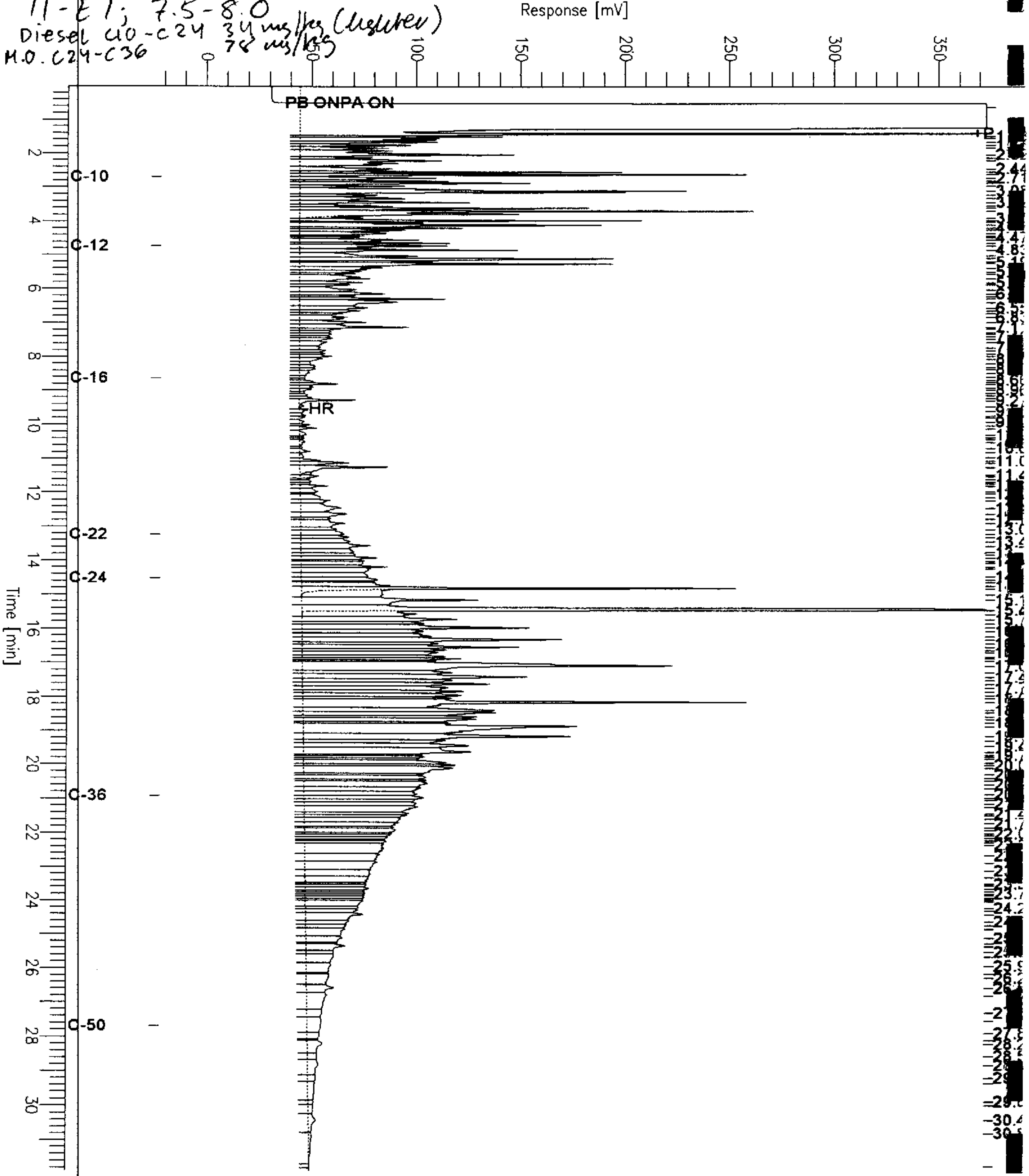


Chromatogram

Sample Name : 146715-006,57304
FileName : G:\GC15\CHB\210B013.RAW
Method : BTEH180.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -22 mV

Sample #:
Page 1 of 1
Date : 07/29/2000 08:31 PM
Time of Injection: 07/28/2000 08:58 PM
Low Point : -21.59 mV
High Point : 372.97 mV
Plot Scale: 394.6 mV

11-E1; 7.5-8.0
Diesel C10-C24 34 mg/kg (lighter)
M.O. C24-C36 78 mg/kg



Chromatogram

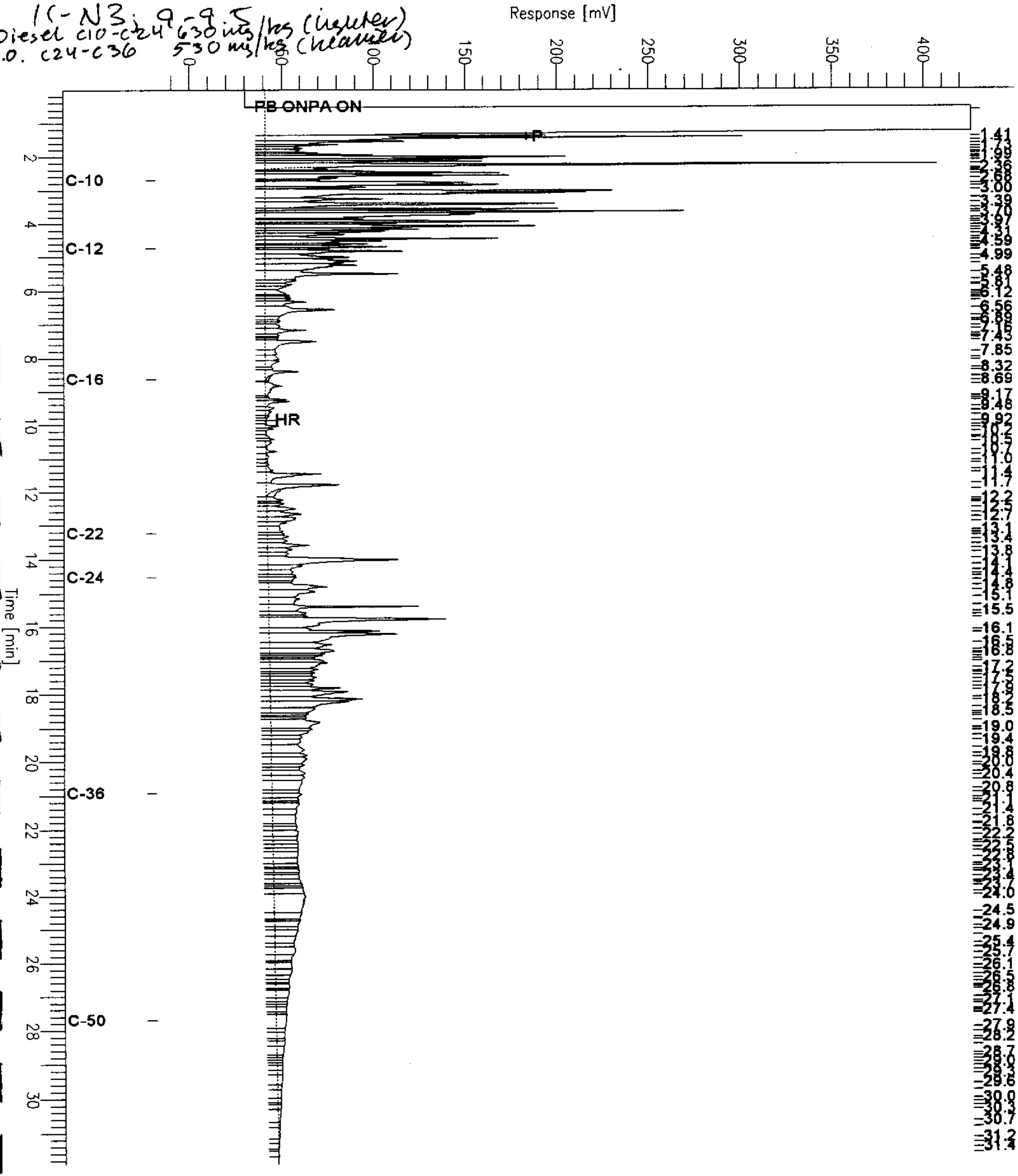
Sample Name : 146715-004,57304
FileName : G:\GC15\CHB\210B011.RAW
Method : BTEH180.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: -18 mV

Sample #:
Date : 07/29/2000 08:30 PM
Time of Injection: 07/28/2000 07:32 PM
Low Point : -18.39 mV
Plot Scale: 444.5 mV

High Point : 426.16 mV

1(-N3; 9-9.5
Diesel C10-C24 630 mg/kg (lighter)
M.O. C24-C36 530 mg/kg (heavier)

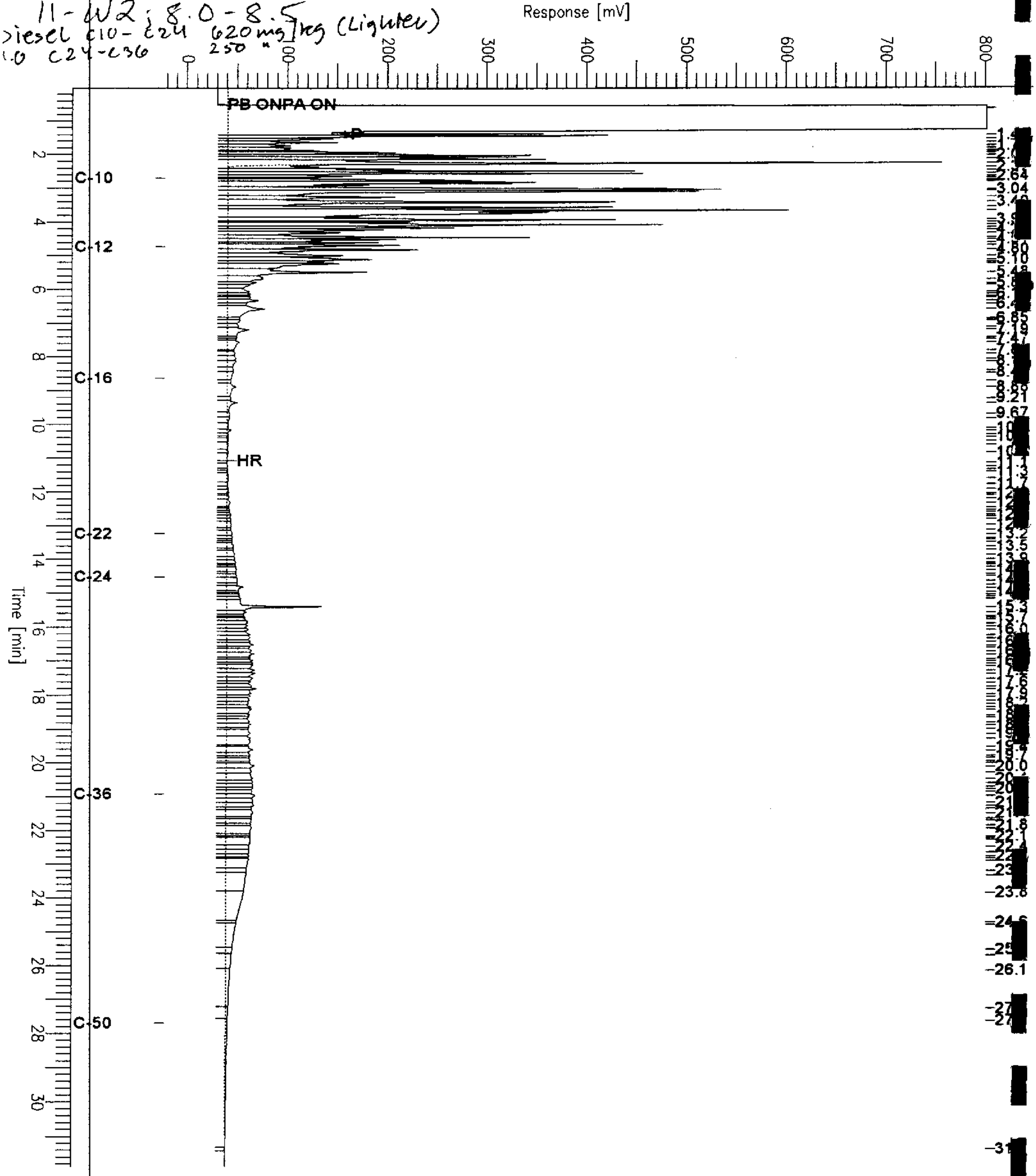


Chromatogram

Sample Name : 146715-003,57304
FileName : G:\GC15\CHB\213B013.RAW
Method : BTEH180.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: -22 mV

Sample #: 57304 Page 1 of 1
Date : 08/01/2000 07:46 AM
Time of Injection: 07/31/2000 06:33 PM
Low Point : -22.15 mV High Point : 801.81 mV
Plot Scale: 824.0 mV

11-W2; 8.0-8.5
Diesel C10-C24 620 mg/kg (Lighter)
1.0 C24-C36 250 "

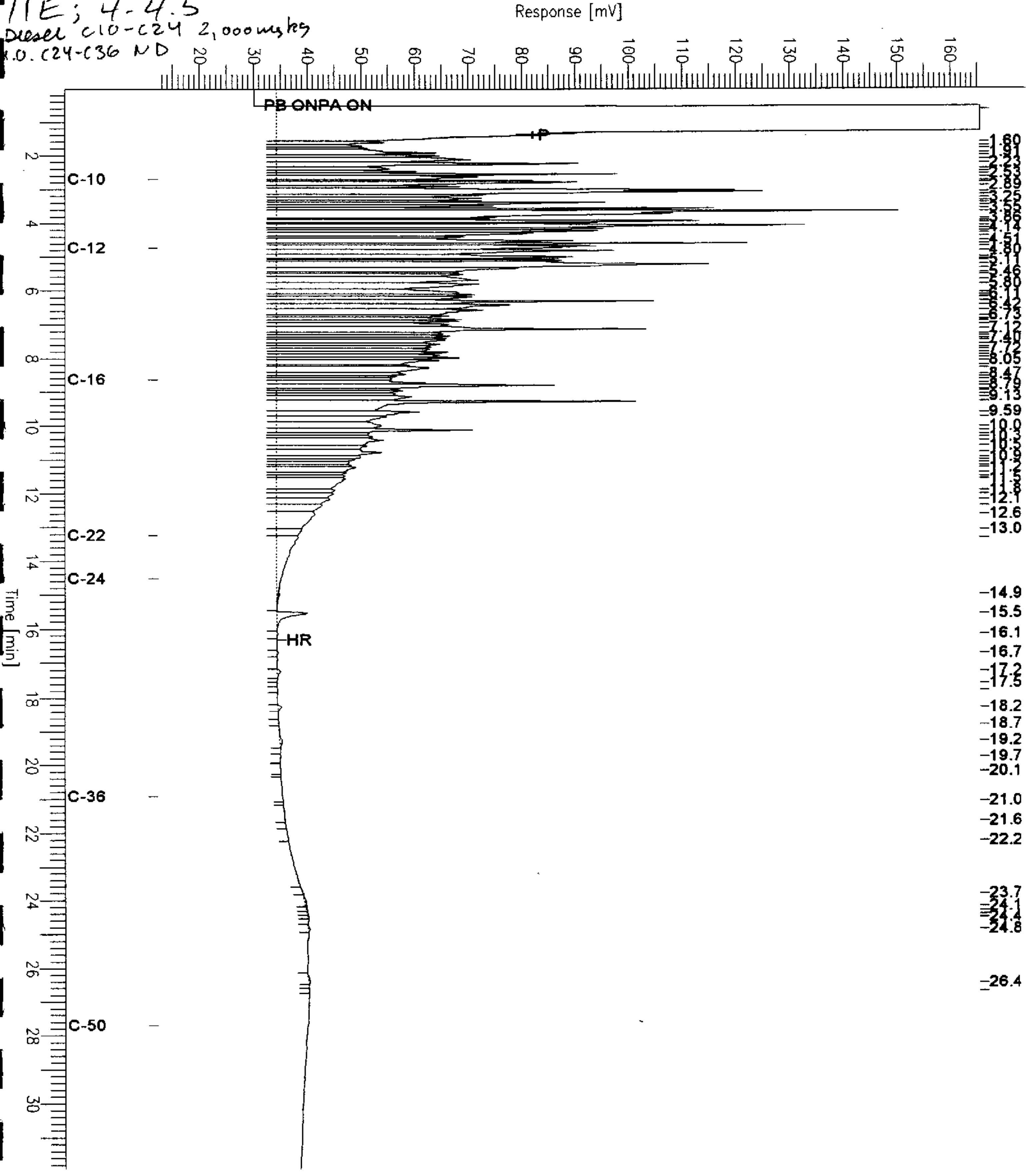


Chromatogram

Sample Name : 146715-002,57304
FileName : G:\GC15\CHB\213B005.RAW
Method : BTEH180.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 12 mV

Sample #: 57304 Page 1 of 1
Date : 07/31/2000 02:07 PM
Time of Injection: 07/31/2000 12:50 PM
Low Point : 12.27 mV High Point : 165.57 mV
Plot Scale: 153.3 mV

11E; 4-4.5
Diesel C10-C24 2,000mg/kg
R.O. C24-C36 ND



Chromatogram

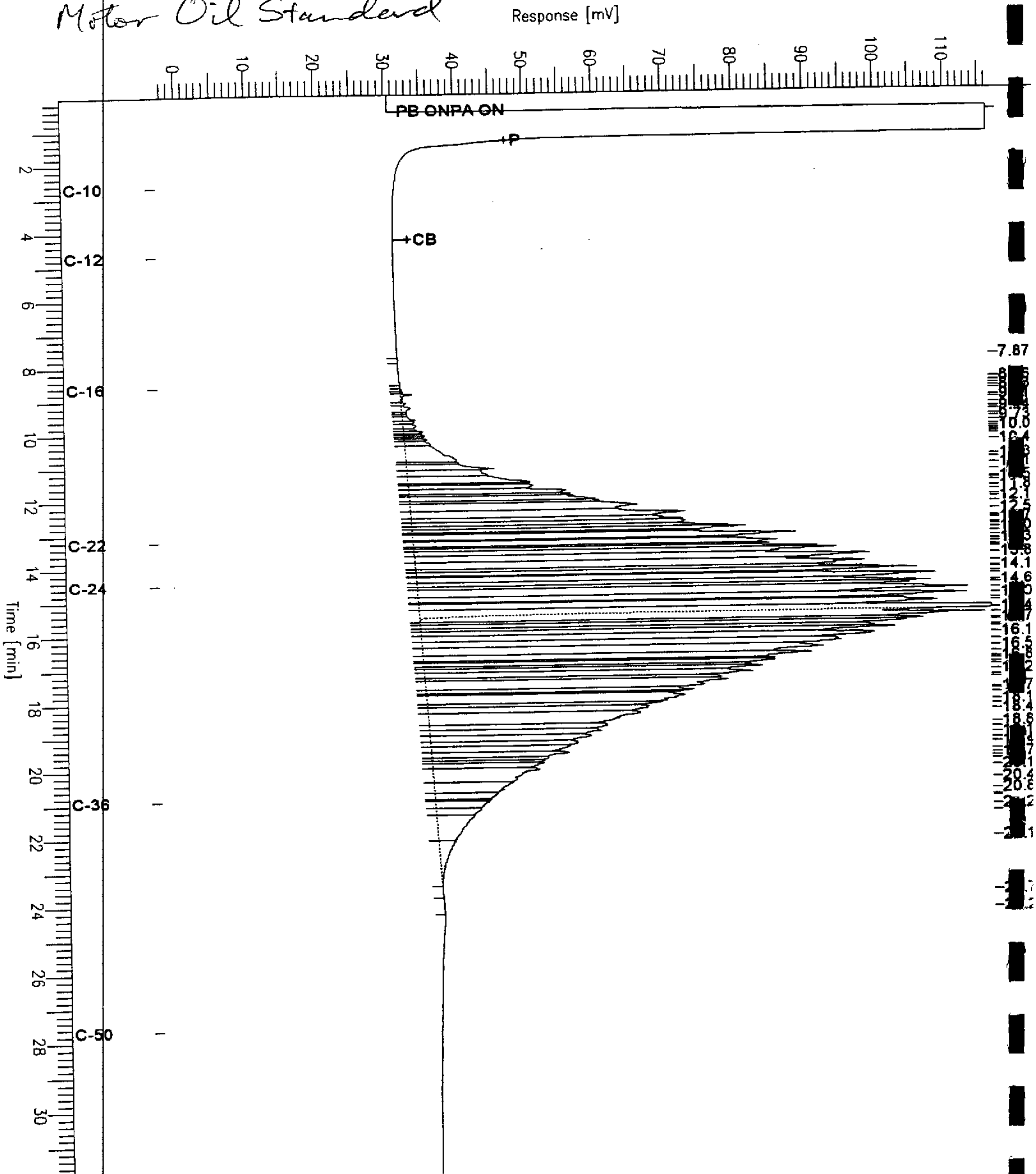
mple Name : ccv,00ws9383,mo
leName : G:\GC15\CHB\210B003.RAW
thod : BTEH180.MTH
art Time : 0.01 min
ale Factor: 0.0

End Time : 31.91 min
Plot Offset: -3 mV

Sample #: 500mg/l
Date : 07/28/2000 10:13 AM
Time of Injection: 07/28/2000 09:40 AM
Low Point : -2.66 mV
Plot Scale: 118.8 mV

High Point : 116.18 mV

Motor Oil Standard



Chromatogram

ample Name : ccv,00ws9475,dsl
ileName : G:\GC15\CHB\210B002.RAW
ethod : BTEH180.MTH
art Time : 0.01 min
cale Factor: 0.0

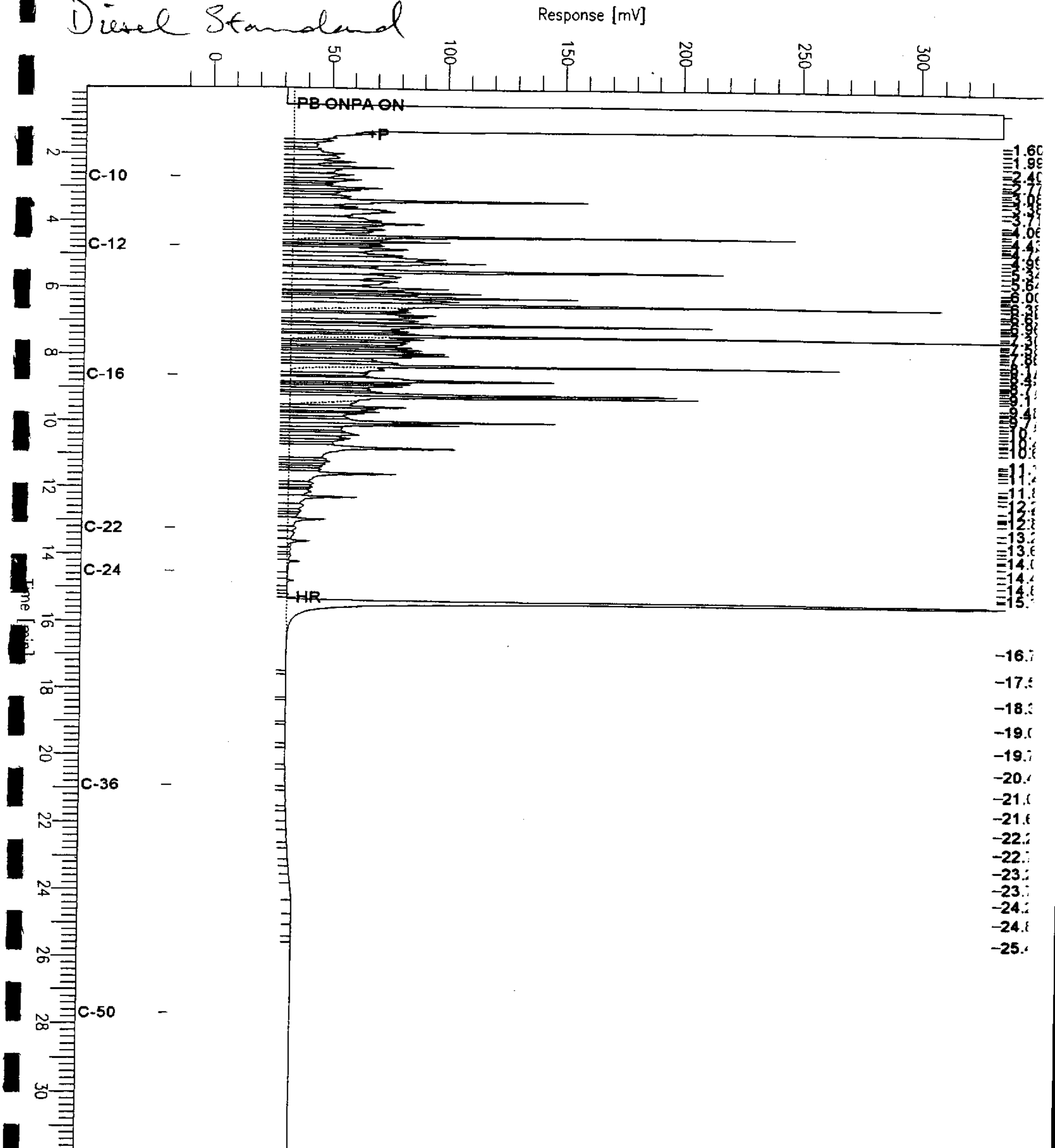
End Time : 31.91 min
Plot Offset: -14 mV

Sample #: 500mg/l
Date : 07/28/2000 10:11 AM
Time of Injection: 07/28/2000 08:57 AM
Low Point : -13.95 mV
Plot Scale: 348.5 mV

Page 1 of 1

High Point : 334.59 mV

Diesel Standard



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

ANALYTICAL REPORT

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

RECEIVED

Date:	17-AUG-00
Lab Job Number:	146800
Project ID:	98383-17
Location:	MSC-7101 Edgewater Drive

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: Teresa K Morrison for [illegible]
Operations Manager

CA ELAP # 1459

CURTIS & TOMPKINS, LTD. BERKELEY LOGIN CHANGE FORM

Reason for change: X Client Request By: Bill Scott Date/Time: 7/31 Initials: R

Login Review X Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
146800-001	146715-001	10W; 3.5-4.0	Soil	Add	8270	8/7
-002	-002	11E; 4-4.5				
-003	-003	11-W2; 8.0-8.5				
-004	-004	11-N3; 9-9.5				
-005	-005	11-S; 9-9.5				
-006	-006	11-E1; 7.5-8.0				

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

ANALYTICAL LABORATORIES, SINCE 1878
2323 FIFTH STREET
BERKELEY, CA 94710
PHONE (510) 486-0900
FAX (510) 486-0532

TO: Bruce or Bill Scott	FROM: Anna Pajarillo (anna@ctberk.com)
COMPANY: Baseline	DATE: 7/31/00
FAX NUMBER: 420 1707	PHONE NUMBER: (510) 486-0925 ext. 103
PHONE NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER: 3

RE: MSC-1701 Edgewater Project.

☐ URGENT ☒ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS: 8270 has been logged in. There are diesel hydrocarbons present, so per COC request the 8270 SVOC has been logged in. The 8270 data will be reported as CT Log # 146800. Tracy Babjar will be handling this Project in my absence. I will return 8/28. Thank You,

Anna

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	10W;3.5-4.0	Batch#:	57469
Lab ID:	146800-001	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/07/00
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
3-,4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	1,600
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,600
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	3,000	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	5,600	330
Hexachlorocyclopentadiene	ND	1,600
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1,600
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1,600
Acenaphthene	ND	330
2,4-Dinitrophenol	ND	1,600
4-Nitrophenol	ND	1,600
Dibenzofuran	210 J	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	530	330
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	1,600
4,6-Dinitro-2-methylphenol	ND	1,600
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	1,600
Phenanthrene	1,300	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330

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

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11E;4-4.5	Batch#:	57469
Lab ID:	146800-002	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/07/00
Diln Fac:	1.000		

Analyte	Result	RL
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1,700
Benzo(a)anthracene	ND	330
Chrysene	ND	330
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenz(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

Surrogate	%REC	Limits
2-Fluorophenol	58	40-134
Phenol-d5	52	39-135
2,4,6-Tribromophenol	63	16-131
Nitrobenzene-d5	69	38-131
2-Fluorobiphenyl	68	45-129
Terphenyl-d14	60	41-140

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-W2;8.0-8.5	Batch#:	57469
Lab ID:	146800-003	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/08/00
Diln Fac:	5.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	1,700
Phenol	ND	1,700
bis(2-Chloroethyl)ether	ND	1,700
2-Chlorophenol	ND	1,700
1,3-Dichlorobenzene	ND	1,700
1,4-Dichlorobenzene	ND	1,700
Benzyl alcohol	ND	1,700
1,2-Dichlorobenzene	ND	1,700
2-Methylphenol	ND	1,700
bis(2-Chloroisopropyl) ether	ND	1,700
3-,4-Methylphenol	ND	1,700
N-Nitroso-di-n-propylamine	ND	1,700
Hexachloroethane	ND	1,700
Nitrobenzene	ND	1,700
Isophorone	ND	1,700
2-Nitrophenol	ND	8,300
2,4-Dimethylphenol	ND	1,700
Benzoic acid	ND	8,300
bis(2-Chloroethoxy)methane	ND	1,700
2,4-Dichlorophenol	ND	1,700
1,2,4-Trichlorobenzene	ND	1,700
Naphthalene	8,600	1,700
4-Chloroaniline	ND	1,700
Hexachlorobutadiene	ND	1,700
4-Chloro-3-methylphenol	ND	1,700
2-Methylnaphthalene	8,600	1,700
Hexachlorocyclopentadiene	ND	8,300
2,4,6-Trichlorophenol	ND	1,700
2,4,5-Trichlorophenol	ND	1,700
2-Chloronaphthalene	ND	1,700
2-Nitroaniline	ND	8,300
Dimethylphthalate	ND	1,700
Acenaphthylene	ND	1,700
2,6-Dinitrotoluene	ND	1,700
3-Nitroaniline	ND	8,300
Acenaphthene	ND	1,700
2,4-Dinitrophenol	ND	8,300
4-Nitrophenol	ND	8,300
Dibenzofuran	ND	1,700
2,4-Dinitrotoluene	ND	1,700
Diethylphthalate	ND	1,700
Fluorene	ND	1,700
4-Chlorophenyl-phenylether	ND	1,700
4-Nitroaniline	ND	8,300
4,6-Dinitro-2-methylphenol	ND	8,300
N-Nitrosodiphenylamine	ND	1,700
Azobenzene	ND	1,700
4-Bromophenyl-phenylether	ND	1,700
Hexachlorobenzene	ND	1,700
Pentachlorophenol	ND	8,300
Phenanthrene	ND	1,700
Anthracene	ND	1,700
Di-n-butylphthalate	ND	1,700
Fluoranthene	ND	1,700

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-W2;8.0-8.5	Batch#:	57469
Lab ID:	146800-003	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/08/00
Diln Fac:	5.000		

Analyte	Result	RL
Pyrene	ND	1,700
Butylbenzylphthalate	ND	1,700
3,3'-Dichlorobenzidine	ND	8,300
Benzo(a)anthracene	ND	1,700
Chrysene	ND	1,700
bis(2-Ethylhexyl)phthalate	ND	1,700
Di-n-octylphthalate	ND	1,700
Benzo(b)fluoranthene	ND	1,700
Benzo(k)fluoranthene	ND	1,700
Benzo(a)pyrene	ND	1,700
Indeno(1,2,3-cd)pyrene	ND	1,700
Dibenz(a,h)anthracene	ND	1,700
Benzo(g,h,i)perylene	ND	1,700

Surrogate	%REC	Limits
2-Fluorophenol	58	40-134
Phenol-d5	60	39-135
2,4,6-Tribromophenol	48	16-131
Nitrobenzene-d5	64	38-131
2-Fluorobiphenyl	72	45-129
Terphenyl-d14	90	41-140

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-N3;9-9.5	Batch#:	57469
Lab ID:	146800-004	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/08/00
Diln Fac:	5.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	1,600
Phenol	ND	1,600
bis(2-Chloroethyl)ether	ND	1,600
2-Chlorophenol	ND	1,600
1,3-Dichlorobenzene	ND	1,600
1,4-Dichlorobenzene	ND	1,600
Benzyl alcohol	ND	1,600
1,2-Dichlorobenzene	ND	1,600
2-Methylphenol	ND	1,600
bis(2-Chloroisopropyl) ether	ND	1,600
3-,4-Methylphenol	ND	1,600
N-Nitroso-di-n-propylamine	ND	1,600
Hexachloroethane	ND	1,600
Nitrobenzene	ND	1,600
Isophorone	ND	1,600
2-Nitrophenol	ND	8,200
2,4-Dimethylphenol	ND	1,600
Benzoic acid	ND	8,200
bis(2-Chloroethoxy)methane	ND	1,600
2,4-Dichlorophenol	ND	1,600
1,2,4-Trichlorobenzene	ND	1,600
Naphthalene	3,100	1,600
4-Chloroaniline	ND	1,600
Hexachlorobutadiene	ND	1,600
4-Chloro-3-methylphenol	ND	1,600
2-Methylnaphthalene	2,600	1,600
Hexachlorocyclopentadiene	ND	8,200
2,4,6-Trichlorophenol	ND	1,600
2,4,5-Trichlorophenol	ND	1,600
2-Chloronaphthalene	ND	1,600
2-Nitroaniline	ND	8,200
Dimethylphthalate	ND	1,600
Acenaphthylene	ND	1,600
2,6-Dinitrotoluene	ND	1,600
3-Nitroaniline	ND	8,200
Acenaphthene	ND	1,600
2,4-Dinitrophenol	ND	8,200
4-Nitrophenol	ND	8,200
Dibenzofuran	ND	1,600
2,4-Dinitrotoluene	ND	1,600
Diethylphthalate	ND	1,600
Fluorene	ND	1,600
4-Chlorophenyl-phenylether	ND	1,600
4-Nitroaniline	ND	8,200
4,6-Dinitro-2-methylphenol	ND	8,200
N-Nitrosodiphenylamine	ND	1,600
Azobenzene	ND	1,600
4-Bromophenyl-phenylether	ND	1,600
Hexachlorobenzene	ND	1,600
Pentachlorophenol	ND	8,200
Phenanthrene	ND	1,600
Anthracene	ND	1,600
Di-n-butylphthalate	ND	1,600

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

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-N3;9-9.5	Batch#:	57469
Lab ID:	146800-004	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/08/00
Diln Fac:	5.000		

Analyte	Result	RL
Fluoranthene	ND	1,600
Pyrene	840 J	1,600
Butylbenzylphthalate	ND	1,600
3,3'-Dichlorobenzidine	ND	8,200
Benzo(a)anthracene	ND	1,600
Chrysene	ND	1,600
bis(2-Ethylhexyl)phthalate	ND	1,600
Di-n-octylphthalate	ND	1,600
Benzo(b)fluoranthene	ND	1,600
Benzo(k)fluoranthene	ND	1,600
Benzo(a)pyrene	ND	1,600
Indeno(1,2,3-cd)pyrene	ND	1,600
Dibenz(a,h)anthracene	ND	1,600
Benzo(g,h,i)perylene	ND	1,600

Surrogate	%REC	Limits
2-Fluorophenol	61	40-134
Phenol-d5	62	39-135
2,4,6-Tribromophenol	51	16-131
Nitrobenzene-d5	68	38-131
2-Fluorobiphenyl	76	45-129
Terphenyl-d14	93	41-140

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

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-S;9-9.5	Batch#:	57469
Lab ID:	146800-005	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/07/00
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	340
Phenol	ND	340
bis(2-Chloroethyl)ether	ND	340
2-Chlorophenol	ND	340
1,3-Dichlorobenzene	ND	340
1,4-Dichlorobenzene	ND	340
Benzyl alcohol	ND	340
1,2-Dichlorobenzene	ND	340
2-Methylphenol	ND	340
bis(2-Chloroisopropyl) ether	ND	340
3-,4-Methylphenol	ND	340
N-Nitroso-di-n-propylamine	ND	340
Hexachloroethane	ND	340
Nitrobenzene	ND	340
Isophorone	ND	340
2-Nitrophenol	ND	1,700
2,4-Dimethylphenol	ND	340
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	340
2,4-Dichlorophenol	ND	340
1,2,4-Trichlorobenzene	ND	340
Naphthalene	180 J	340
4-Chloroaniline	ND	340
Hexachlorobutadiene	ND	340
4-Chloro-3-methylphenol	ND	340
2-Methylnaphthalene	350	340
Hexachlorocyclopentadiene	ND	1,700
2,4,6-Trichlorophenol	ND	340
2,4,5-Trichlorophenol	ND	340
2-Chloronaphthalene	ND	340
2-Nitroaniline	ND	1,700
Dimethylphthalate	ND	340
Acenaphthylene	ND	340
2,6-Dinitrotoluene	ND	340
3-Nitroaniline	ND	1,700
Acenaphthene	ND	340
2,4-Dinitrophenol	ND	1,700
4-Nitrophenol	ND	1,700
Dibenzofuran	ND	340
2,4-Dinitrotoluene	ND	340
Diethylphthalate	ND	340
Fluorene	ND	340
4-Chlorophenyl-phenylether	ND	340
4-Nitroaniline	ND	1,700
4,6-Dinitro-2-methylphenol	ND	1,700
N-Nitrosodiphenylamine	ND	340
Azobenzene	ND	340
4-Bromophenyl-phenylether	ND	340
Hexachlorobenzene	ND	340
Pentachlorophenol	ND	1,700
Phenanthrene	710	340
Anthracene	ND	340
Di-n-butylphthalate	ND	340

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

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-S;9-9.5	Batch#:	57469
Lab ID:	146800-005	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/07/00
Diln Fac:	1.000		

Analyte	Result	RL
Fluoranthene	2,100	340
Pyrene	2,900	340
Butylbenzylphthalate	ND	340
3,3'-Dichlorobenzidine	ND	1,700
Benzo(a)anthracene	2,500	340
Chrysene	4,100	340
bis(2-Ethylhexyl)phthalate	ND	340
Di-n-octylphthalate	ND	340
Benzo(b)fluoranthene	2,900	340
Benzo(k)fluoranthene	2,000	340
Benzo(a)pyrene	3,500	340
Indeno(1,2,3-cd)pyrene	1,600	340
Dibenz(a,h)anthracene	870	340
Benzo(g,h,i)perylene	1,700	340

Surrogate	%REC	Limits
2-Fluorophenol	55	40-134
Phenol-d5	53	39-135
2,4,6-Tribromophenol	56	16-131
Nitrobenzene-d5	59	38-131
2-Fluorobiphenyl	67	45-129
Terphenyl-d14	64	41-140

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

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-E1;7.5-8.0	Batch#:	57469
Lab ID:	146800-006	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/07/00
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
3-,4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	1,700
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	1,700
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1,700
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1,700
Acenaphthene	ND	330
2,4-Dinitrophenol	ND	1,700
4-Nitrophenol	ND	1,700
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	330
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	1,700
4,6-Dinitro-2-methylphenol	ND	1,700
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	1,700
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	11-E1;7.5-8.0	Batch#:	57469
Lab ID:	146800-006	Sampled:	07/24/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/07/00
Diln Fac:	1.000		

Analyte	Result	RL
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1,700
Benzo(a)anthracene	ND	330
Chrysene	ND	330
bis(2-Ethylhexyl)phthalate	940	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenz(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

Surrogate	%REC	Limits
2-Fluorophenol	65	40-134
Phenol-d5	64	39-135
2,4,6-Tribromophenol	68	16-131
Nitrobenzene-d5	69	38-131
2-Fluorobiphenyl	73	45-129
Terphenyl-d14	73	41-140

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121953	Batch#:	57469
Matrix:	Soil	Prepared:	08/04/00
Units:	ug/Kg	Analyzed:	08/07/00
Basis:	wet		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
3-,4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	1,700
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	1,700
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1,700
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1,700
Acenaphthene	ND	330
2,4-Dinitrophenol	ND	1,700
4-Nitrophenol	ND	1,700
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	330
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	1,700
4,6-Dinitro-2-methylphenol	ND	1,700
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	1,700
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Pyrene	ND	330

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121953	Batch#:	57469
Matrix:	Soil	Prepared:	08/04/00
Units:	ug/Kg	Analyzed:	08/07/00
Basis:	wet		

Analyte	Result	RL
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1,700
Benzo(a)anthracene	ND	330
Chrysene	ND	330
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenz(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

Surrogate	%REC	Limits
2-Fluorophenol	58	40-134
Phenol-d5	58	39-135
2,4,6-Tribromophenol	67	16-131
Nitrobenzene-d5	62	38-131
2-Fluorobiphenyl	68	45-129
Terphenyl-d14	71	41-140

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC121954	Batch#:	57469
Matrix:	Soil	Prepared:	08/04/00
Units:	ug/Kg	Analyzed:	08/07/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Phenol	3,336	2,164	65	39-128
2-Chlorophenol	3,336	2,472	74	45-137
1,4-Dichlorobenzene	1,668	1,029	62	41-127
N-Nitroso-di-n-propylamine	1,668	1,038	62	40-140
1,2,4-Trichlorobenzene	1,668	1,154	69	46-128
4-Chloro-3-methylphenol	3,336	2,247	67	45-130
Acenaphthene	1,668	1,243	75	47-124
4-Nitrophenol	3,336	1,823	55	36-110
2,4-Dinitrotoluene	1,668	1,228	74	42-123
Pentachlorophenol	3,336	1,887	57	15-110
Pyrene	1,668	1,178	71	44-123

Surrogate	%REC	Limits
2-Fluorophenol	65	40-134
Phenol-d5	64	39-135
2,4,6-Tribromophenol	70	16-131
Nitrobenzene-d5	67	38-131
2-Fluorobiphenyl	69	45-129
Terphenyl-d14	73	41-140

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	146800	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 3550
Project#:	98383-17	Analysis:	EPA 8270C
Field ID:	ZZZZZZZZZZ	Batch#:	57469
MSS Lab ID:	146725-002	Sampled:	07/25/00
Matrix:	Soil	Received:	07/25/00
Units:	ug/Kg	Prepared:	08/04/00
Basis:	wet	Analyzed:	08/07/00
Diln Fac:	1.000		

Type: MS Lab ID: QC121955

Analyte	MSS Result	Spiked	Result	%REC	Limits
Phenol	<337.8	3,375	2,020	60	38-133
2-Chlorophenol	<337.8	3,375	2,266	67	34-146
1,4-Dichlorobenzene	<337.8	1,687	954.6	57	43-124
N-Nitroso-di-n-propylamine	141.4	1,687	944.6	56	48-130
1,2,4-Trichlorobenzene	<337.8	1,687	1,096	65	53-128
4-Chloro-3-methylphenol	<337.8	3,375	2,103	62	37-132
Acenaphthene	<337.8	1,687	1,185	70	55-122
4-Nitrophenol	<1,689	3,375	1,798	53	24-112
2,4-Dinitrotoluene	<337.8	1,687	1,121	66	37-122
Pentachlorophenol	<1,689	3,375	1,907	57	15-110
Pyrene	<337.8	1,687	1,144	68	30-134

Surrogate	%REC	Limits
2-Fluorophenol	59	40-134
Phenol-d5	58	39-135
2,4,6-Tribromophenol	66	16-131
Nitrobenzene-d5	61	38-131
2-Fluorobiphenyl	66	45-129
Terphenyl-d14	69	41-140

Type: MSD Lab ID: QC121956

Analyte	Spiked	Result	%REC	Limits	RPD	Li
Phenol	3,341	1,924	58	38-133	4	33
2-Chlorophenol	3,341	2,157	65	34-146	4	34
1,4-Dichlorobenzene	1,671	822.4	49	43-124	14	26
N-Nitroso-di-n-propylamine	1,671	915.5	55	48-130	2	43
1,2,4-Trichlorobenzene	1,671	965.3	58	53-128	12	24
4-Chloro-3-methylphenol	3,341	1,978	59	37-132	5	35
Acenaphthene	1,671	1,105	66	55-122	6	26
4-Nitrophenol	3,341	1,714	51	24-112	4	47
2,4-Dinitrotoluene	1,671	1,071	64	37-122	4	33
Pentachlorophenol	3,341	1,767	53	15-110	7	50
Pyrene	1,671	1,078	65	30-134	5	32

Surrogate	%REC	Limits
2-Fluorophenol	56	40-134
Phenol-d5	56	39-135
2,4,6-Tribromophenol	61	16-131
Nitrobenzene-d5	58	38-131
2-Fluorobiphenyl	63	45-129
Terphenyl-d14	65	41-140

RPD= Relative Percent Difference

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17
Laboratory: Curtis + Tompkins
Report Date: August 18 2000

Site: MSC-7101 Edgewater Drive
Laboratory Report No: 146872
BASELINE Review By: WLC

		Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)**				
1a.	Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b.	Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓		
1c.	Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d.	Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?	✓		
1e.	Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f.	Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?			✓
2a.	Is the laboratory report format consistent and legible throughout the report?	✓		
2b.	Are the sample and reported dates shown in the laboratory report correct?	✓		
3a.	Does the lab report include the original chain-of-custody form?	✓ 2		
3b.	Were all samples appropriately analyzed as requested on the chain-of-custody form?	✓		
4.	Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a.	Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b.	If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?	✓		
6.	Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7.	Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	✓		
8a.	Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	✓		
8b.	If no, is an explanation provided by the laboratory?			✓

Laboratory Quality Control Checklist

	Yes	No	NA
9a. Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)		√	
9b. If no, was it flagged in the report?			✓
10. If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a. Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)			✓
11b. Is a standard chromatogram(s) included in the laboratory report?			✓
11c. Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)			✓
12. Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*			✓
13a. REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b. REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c. REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d. REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses			
14. Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15. Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16. Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*	✓		
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?			✓

	Yes	No	NA
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*	✓		
21b. If no, is an explanation given in the case narrative to validate the data?			✓

Comments:

1) Following The 2 week Turn around Time, The Hold time was exceeded to ~~for~~ MTBE confirmation
2) Chain of Custody is included in original Lab Report for those samples

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

ANALYTICAL REPORT

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

RECEIVED
BASELINE

Date: 18-AUG-00
Lab Job Number: 146872
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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

This package may be reproduced only in its entirety.

CA ELAP # 1459

Laboratory Number: **146872**
Client: **Baseline Environmental**
Project Name: **MSC-7101 Edgewater Drive**

Order Date: **07/28/00**

CASE NARRATIVE

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

Volatile Organic Compounds: The samples were analyzed outside the EPA recommended hold time for confirmational purposes. No other analytical problems were encountered.

CURTIS & TOMPKINS, LTD. BERKELEY   LOGIN CHANGE FORM

Reason for change: __X__ Client Request: By: B. Scott Date/Time: 8/3/00 3:00P Initials: SES

_____ Login Review _____ Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
146872-001	146652-001	2S-D; 7.5-8.0	Soil	Add	MTBE (8260)	8/~~30~~ 10
-002	146652-004	2E-D; 7.0-7.5				
-003	146715-004	11-N3; 9-9.5				

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	2S-D;7.5-8.0	Diln Fac:	62.50
Lab ID:	146872-001	Batch#:	57464
Matrix:	Soil	Sampled:	07/20/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	08/04/00

Analyte	Result	RL
MTBE	ND	310

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	76-127
Toluene-d8	97	80-111
Bromofluorobenzene	86	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	2E-D;7.0-7.5	Diln Fac:	5.000
Lab ID:	146872-002	Batch#:	57454
Matrix:	Soil	Sampled:	07/20/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	08/05/00

Analyte	Result	RL
MTBE	ND	25

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	104	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	85	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	11-N3;9-9.5	Diln Fac:	25.00
Lab ID:	146872-003	Batch#:	57464
Matrix:	Soil	Sampled:	07/24/00
Units:	ug/Kg	Received:	07/25/00
Basis:	wet	Analyzed:	08/04/00

Analyte	Result	RL
MTBE	ND	130

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	76-127
Toluene-d8	98	80-111
Bromofluorobenzene	86	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121925	Batch#:	57464
Matrix:	Water	Analyzed:	08/04/00
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	117	76-127
Toluene-d8	104	80-111
Bromofluorobenzene	101	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Basis:	wet
Lab ID:	QC121890	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57454
Units:	ug/Kg	Analyzed:	08/04/00

Analyte	Result	RL
MTBE	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	95	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	LCS	Basis:	wet
Lab ID:	QC121889	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57454
Units:	ug/Kg	Analyzed:	08/04/00

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	50.07	100	50-150

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	76-127
Toluene-d8	102	80-111
Bromofluorobenzene	86	77-126

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	57464
Units:	ug/L	Analyzed:	08/04/00
Diln Fac:	1.000		

Type: BS Lab ID: QC121926

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	47.02	94	50-150

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	109	76-127
Toluene-d8	101	80-111
Bromofluorobenzene	88	77-126

Type: BSD Lab ID: QC121927

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	52.71	105	50-150	11	2

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	86	77-126

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146872	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	2.500
MSS Lab ID:	146805-007	Batch#:	57454
Matrix:	Soil	Sampled:	07/27/00
Units:	ug/Kg	Received:	07/28/00
Basis:	wet	Analyzed:	08/04/00

Type: MS Lab ID: QC121933

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<12.50	125.0	118.2	95	50-150

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	76-127
Toluene-d8	101	80-111
Bromofluorobenzene	88	77-126

Type: MSD Lab ID: QC121934

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	125.0	120.4	96	50-150	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	76-127
Toluene-d8	102	80-111
Bromofluorobenzene	88	77-126

RPD= Relative Percent Difference

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17 Site: MSC
Laboratory: C&T Laboratory Report No: 146883
Report Date: 8/21/00 BASELINE Review By: BAA

	Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)**			
1a. Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?			✓
1e. Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?			✓
2a. Is the laboratory report format consistent and legible throughout the report?	✓		
2b. Are the sample and reported dates shown in the laboratory report correct?	✓		
3a. Does the lab report include the original chain-of-custody form?		✓	
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?	✓		
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?	✓		
6. Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7. Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	✓		
8a. Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	✓		
8b. If no, is an explanation provided by the laboratory?			✓

		Yes	No	NA
9a.	Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	✓		
9b.	If no, was it flagged in the report?			✓
10.	If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a.	Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)			✓
11b.	Is a standard chromatogram(s) included in the laboratory report?			✓
11c.	Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)			✓
12.	Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*	✓		
13a.	REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b.	REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c.	REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d.	REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses				
14.	Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15.	Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16.	Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*			✓
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?			✓

		Yes	No	NA
Sample Quality Control				
21a.	Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*	✓		
21b.	If no, is an explanation given in the case narrative to validate the data?			✓

Comments:

VI included with original lab report; this report provides MTBE confirmation

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

RECEIVED
BASELINE

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

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 21-AUG-00
Lab Job Number: 146883
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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

CA ELAP # 1459

Project 98383-17

CURTIS & TOMPKINS, LTD. BERKELEY LOGIN CHANGE FORM

Reason for change: ✓ Client Request: By: William Scott Date/Time: 8/4/00 Initials: CW

____ Login Review ____ Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
146883-001	146684-008	8W; 7.5-8.0	Soil	Add	MTBE Confirmation	
-002	-009	9W; 7.5-8.0				
-003	-011	10S; 4-4.5				

Curtis & Tompkins, Ltd.

Subject: New MTBE request
Date: Fri, 04 Aug 2000 09:40:38 -0700
From: Lydia Huang <lydia@baseline-env.com>
To: steve@ctberk.com

Curtis & Tompkins, Ltd.

Steve,
I just recieved a fax from Carol Wortham for samples recieved and sampled on 7-21-00. Samples:8W;7.5-8.0, 9W;7.5-8.0, and 10S;4-4.5 need to be confirmed for MTBE using method 8260.
Thanks
William K Scott

- Lydia

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	8W;7.5-8.0	Diln Fac:	5.000
Lab ID:	146883-001	Batch#:	57454
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	08/04/00

Analyte	Result	RL
MTBE	ND	25

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	76-127
Toluene-d8	91	80-111
Bromofluorobenzene	87	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	9W;7.5-8.0	Diln Fac:	40.00
Lab ID:	146883-002	Batch#:	57464
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	08/04/00

Analyte	Result	RL
MTBE	ND	200

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	76-127
Toluene-d8	89	80-111
Bromofluorobenzene	84	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	10S;4.0-4.5	Diln Fac:	1.000
Lab ID:	146883-003	Batch#:	57454
Matrix:	Soil	Sampled:	07/21/00
Units:	ug/Kg	Received:	07/21/00
Basis:	wet	Analyzed:	08/05/00

Analyte	Result	RL
MTBE	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	76-127
Toluene-d8	97	80-111
Bromofluorobenzene	85	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Basis:	wet
Lab ID:	QC121890	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57454
Units:	ug/Kg	Analyzed:	08/04/00

Analyte	Result	RL
MTBE	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	95	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121925	Batch#:	57464
Matrix:	Water	Analyzed:	08/04/00
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	117	76-127
Toluene-d8	104	80-111
Bromofluorobenzene	101	77-126

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Type:	LCS	Basis:	wet
Lab ID:	QC121889	Diln Fac:	1.000
Matrix:	Soil	Batch#:	57454
Units:	ug/Kg	Analyzed:	08/04/00

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	50.07	100	50-150

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	76-127
Toluene-d8	102	80-111
Bromofluorobenzene	86	77-126

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	57464
Units:	ug/L	Analyzed:	08/04/00
Diln Fac:	1.000		

Type: BS   Lab ID: QC121926

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	47.02	94	50-150

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	109	76-127
Toluene-d8	101	80-111
Bromofluorobenzene	88	77-126

Type: BSD   Lab ID: QC121927

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	52.71	105	50-150	11	2

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	76-127
Toluene-d8	100	80-111
Bromofluorobenzene	86	77-126

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	146883	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	EPA 5030
Project#:	98383-17	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	2.500
MSS Lab ID:	146805-007	Batch#:	57454
Matrix:	Soil	Sampled:	07/27/00
Units:	ug/Kg	Received:	07/28/00
Basis:	wet	Analyzed:	08/04/00

Type: MS Lab ID: QC121933

Analyte	MSS Result	Spiked	Result	%REC	Limit
MTBE	<12.50	125.0	118.2	95	50-15

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	76-127
Toluene-d8	101	80-111
Bromofluorobenzene	88	77-126

Type: MSD Lab ID: QC121934

Analyte	Spiked	Result	%REC	Limits	RPD	Li
MTBE	125.0	120.4	96	50-150	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	76-127
Toluene-d8	102	80-111
Bromofluorobenzene	88	77-126

RPD= Relative Percent Difference

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17
Laboratory: C & T
Report Date: 9/14/00

Site: MSC
Laboratory Report No: 147416
BASELINE Review By: BAA

		Yes	No	NA
GENERAL QUESTIONS (Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)				
1a.	Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b.	Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓		
1c.	Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d.	Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?			✓
1e.	Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f.	Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?			✓
2a.	Is the laboratory report format consistent and legible throughout the report?	✓		
2b.	Are the sample and reported dates shown in the laboratory report correct?	✓		
3a.	Does the lab report include the original chain-of-custody form?	✓		
3b.	Were all samples appropriately analyzed as requested on the chain-of-custody form?	✓		
4.	Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a.	Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b.	If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			✓
6.	Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7.	Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	✓		
8a.	Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	✓		
8b.	If no, is an explanation provided by the laboratory?			✓

		Yes	No	NA
9a.	Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)		✓	
9b.	If no, was it flagged in the report?		✓	
10.	If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a.	Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	✓		
11b.	Is a standard chromatogram(s) included in the laboratory report?	✓		
11c.	Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	✓		
12.	Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*	✓		
13a.	REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b.	REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c.	REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d.	REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses				
14.	Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15.	Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16.	Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*			✓
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?			✓

	Yes	No	NA
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*		✓	
21b. If no, is an explanation given in the case narrative to validate the data?	✓		

Comments:

√ Samples were kept frozen prior to submittal to the lab. Analyses were conducted to further the understanding of the plume composition in the vicinity of MW-6 and MW-16. The analyses were conducted after the two week holding time.

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:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 14-SEP-00
Lab Job Number: 147416
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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: **147416** Receipt Date: **09/06/00**
Client: **Baseline Environmental**
Project ID: **98383-17**
Location: **City of Oakland, MSC, 7101 Edgewater Drive**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for three soil samples, which were received from the site referenced above on September 6, 2000. The samples were received past the recommended extraction hold time.

Total Extractable Hydrocarbons: All samples were treated with silica gel prior to analysis. Samples **11-N; 5.5-6.0** and **11-N1; 6.5-7.0** (CT#147416-001 and –003) were analyzed at dilutions, causing the surrogate to be diluted out. No analytical problems were encountered.

CT Login# 144416

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

CHAIN OF CUSTODY RECORD

Turn-around Time: 5-day
Lab: C&T
BASELINE Contact Person: Bruce Abelli-Amen

Project No.	Project Name and Location:
98383-17	CITY OF OAKLAND, MSC, 7101 EDGEWATER DRIVE

Samplers: (Signature) [signature]

Sample ID No. Station	Date:	Time:	Media	Containers No.	Type	Preservative: None	HCl	NO_3	SO_4	Other:	TPH as diesel/motor oil (8015M) (with silica gel cleanup)	TPH as gasoline, BTEX & MTBE, (8015M)						Remarks/ Composite
11-N 5.5-6.0	~~9-10~~ 7/21/00	8:10	SOIL	1							✓							-001
11-W 6.0-6.5	|	10:20	|	1							✓							-002
11-N1 6.5-7.0	|	12:20	|	1							✓							-003

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	
[signature]	9/6/00 3:07	Melinda Bury	9/6/00 3:07PM	Conditions of Samples Upon Arrival at Laboratory:
Melinda Bury	9/7/00 12:00	[signature]	9/7/00 12:00	Remarks: SAMPLES MAY CONTAIN FREE PRODUCT / FROZEN SINCE COLLECTION
[signature]	9/6/00 10:00	[signature]	9/6/00 12:05	

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	147416	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/24/00
Units:	mg/Kg	Received:	09/06/00
Basis:	wet	Prepared:	09/08/00
Batch#:	58174		

Field ID:	11-N; 5.5-6.0	Diln Fac:	50.00
Type:	SAMPLE	Analyzed:	09/12/00
Lab ID:	147416-001		

Analyte	Result	RL
Diesel C10-C24	980 H L Y	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID:	11-W; 6.0-6.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	09/11/00
Lab ID:	147416-002		

Analyte	Result	RL
Diesel C10-C24	120 H L Y	1.0

Surrogate	%REC	Limits
Hexacosane	100	60-136

Field ID:	11-N1; 6.5-7.0	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	09/12/00
Lab ID:	147416-003		

Analyte	Result	RL
Diesel C10-C24	3,600 H L Y	20

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC124706	Analyzed:	09/12/00

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
Hexacosane	103	60-136

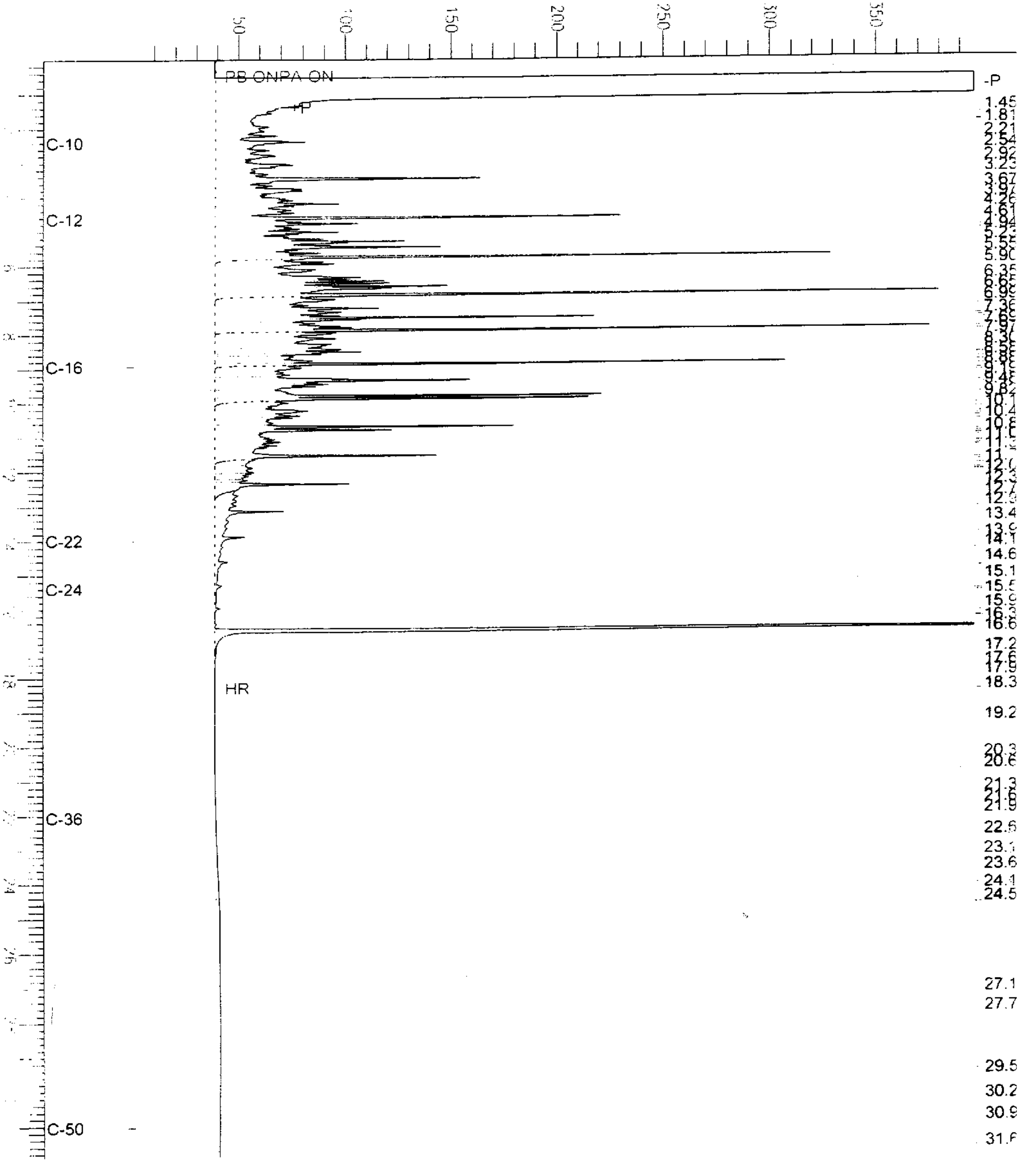
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
DO = Diluted Out
ND = Not Detected
RL = Reporting Limit

Chromatogram

Sample Name : ccv,00ws9684,dsl
FileName : G:\GC11\CHA\255A002.RAW
Method : ATEH254.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: 1 mV

Sample #:
Date : 9/11/00 05:02 PM
Time of Injection: 9/11/00 03:50 PM
Low Point : 1.42 mV
Plot Scale: 395.2 mV
High Point : 396.64 mV

Diesel



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	147416	Location:	MSC 7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC124707	Batch#:	58174
Matrix:	Soil	Prepared:	09/08/00
Units:	mg/Kg	Analyzed:	09/12/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	46.70	39.93	86	67-121

Surrogate	%REC	Limits
Hexacosane	115	60-136

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	147416	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Field ID:	11-N1; 6.5-7.0	Batch#:	58174
MSS Lab ID:	147416-003	Sampled:	07/24/00
Matrix:	Soil	Received:	09/06/00
Units:	mg/Kg	Prepared:	09/08/00
Basis:	wet	Analyzed:	09/12/00
Diln Fac:	1.000		

ype: MS Lab ID: QC124708

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	407.2	46.72	398.0	-20 NM	35-146

Surrogate	%REC	Limits
Hexacosane	95	60-136

ype: MSD Lab ID: QC124709

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	46.58	381.2	-56 NM	35-146	4	48

Surrogate	%REC	Limits
Hexacosane	207 * >LR	60-136

= Value outside of QC limits; see narrative
JM = Not Meaningful
LR= Response exceeds instrument's linear range
PD= Relative Percent Difference

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

FACSIMILE TRANSMISSION
FACSIMILE TRANSMISSION
FACSIMILE TRANSMISSION

TO: Bruce Amen
Baseline Environmental
Emeryville, CA

DATE: ~~9/14~~ 10/4

PAGE 1 of ~~9~~ 3

FAX #: (707) 762-5271

FROM: Anna M. Pajarillo

SUBJECT: Analytical Results for Login 147416

*** If you would like to receive your reports via email (PDF format), please contact your project manager for details.

Motor Oil Data

Curtis & Tompkins, Ltd

Total Extractable Hydrocarbons

Lab #:	147416	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/24/00
Units:	mg/Kg	Received:	09/06/00
Basis:	wet	Prepared:	09/08/00
Batch#:	58174		

Field ID: 11-N; 5.5-6.0 Diln Fac: 50.00
Type: SAMPLE Analyzed: 09/12/00
Lab ID: 147416-001

Analyte	Result	RL
Diesel C10-C24	980 H L Y	50
Motor Oil C24-C36	1,900 H	250

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID: 11-W; 6.0-6.5 Diln Fac: 1.000
Type: SAMPLE Analyzed: 09/11/00
Lab ID: 147416-002

Analyte	Result	RL
Diesel C10-C24	120 H L Y	1.0
Motor Oil C24-C36	220	5.0

Surrogate	%REC	Limits
Hexacosane	100	60-136

Field ID: 11-N1; 6.5-7.0 Diln Fac: 20.00
Type: SAMPLE Analyzed: 09/12/00
Lab ID: 147416-003

Analyte	Result	RL
Diesel C10-C24	3,600 H L Y	20
Motor Oil C24-C36	260 L	100

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Type: BLANK Diln Fac: 1.000
Lab ID: QC124706 Analyzed: 09/12/00

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	103	60-136

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

CT Login# 144116

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

CHAIN OF CUSTODY RECORD

Turn-around Time: 5-day
Lab: C&T
BASELINE Contact Person: Bruce Abelli-Amen

Project No	Project Name and Location:
98383-17	CITY OF OAKLAND, MSC, 7101 EDGEWATER DRIVE

Samplers: (Signature) [signature]

Sample ID No. Station	Date	Time:	Media	Containers No.	Type	Preservative: None	HCl	NO_3	SO_4	Other:	TPH as diesel / motor oil (8015M) (with silica gel cleanup)	TPH as gasoline, BTEX & MTBE (8015M)								Remarks/ Composite
11-N 5.5-6.0	~~8-10~~ 7/24/00	8:10	Soil	1							✓									-001
11-W 6.0-6.5	|	10:20	|	1							✓									-002
11-N1 6.5-7.0	|	12:20	|	1							✓									-003

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Conditions of Samples Upon Arrival at Laboratory:
[signature]	9/6/00 3:07	Melinda Bury	9/6/00 3:07PM	
Relinquished by. (Signature)	Date/Time	Received by. (Signature)	Date/Time	Remarks: SAMPLES MAY CONTAIN FREE PRODUCT / FROZEN SINCE COLLECTION
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	
[signature]	9/6/00 12:00	[signature]	9/6/00 12:05	

D:\Graphic\Chain of Custody Record\Master.cdr 4/12/00

[redacted]

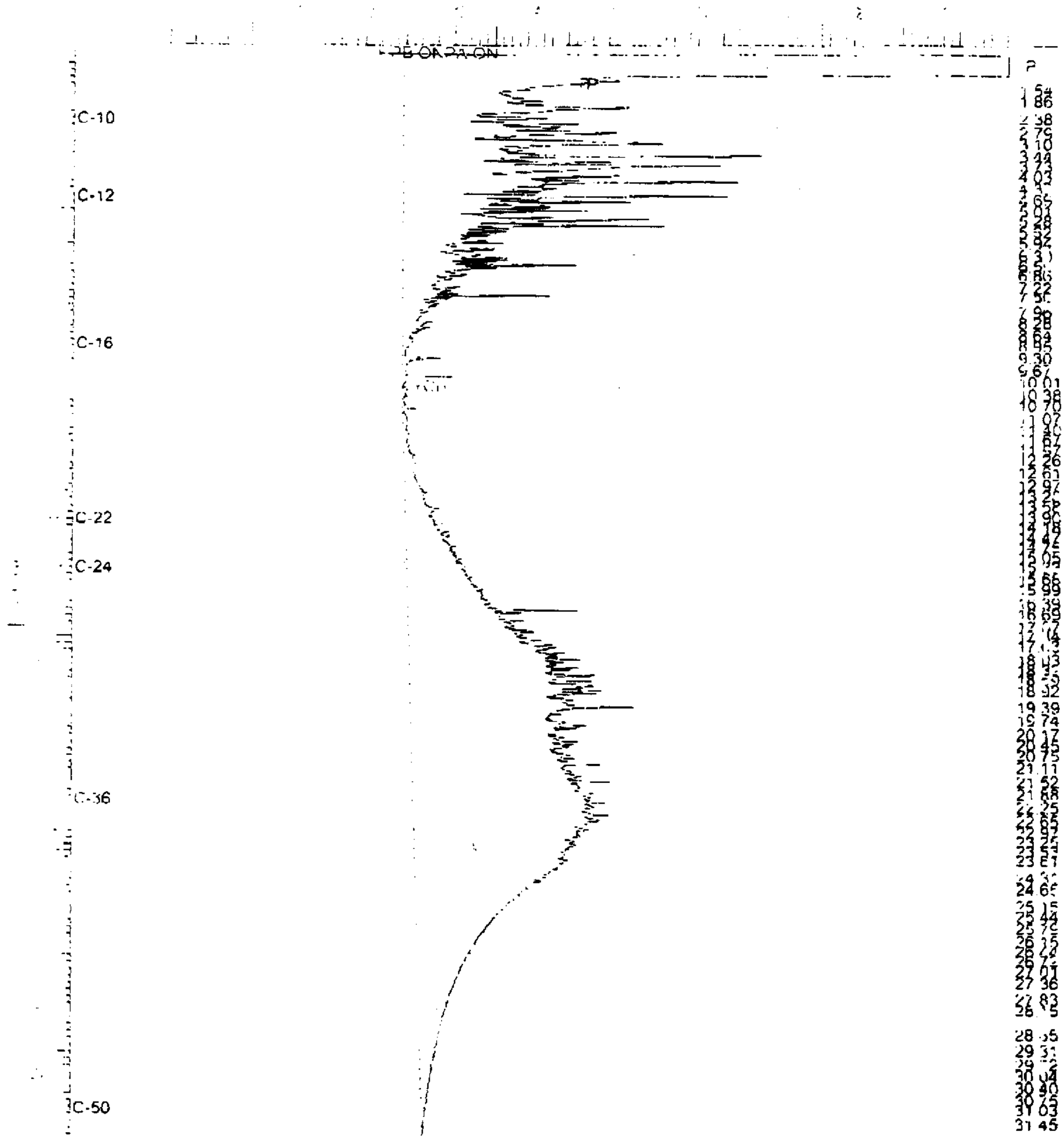
Chromatogram

Sample Name : 147416-03 sg 5827
FileName : G:\GC01\CHA\256A026.RAW
Method : [illegible]
Start Time : 0.27 min
Scale Factor : [illegible]
End Time : [illegible] min
Plot Offset : -11 mV

Sample #: 55174
Date : 9/12/00 09:10 AM
Time of Injection: 9/12/00 08:24 AM
Low Point : -10.62 mV
Plot Scale: 206.9 mV
High Point : 196.[illegible] mV

Page 1 of 1

11-N; 5.5-6.0 w/SilicaGel



within W 99, regarding the appropriateness of various models of the earthquake pro ess, and ea h ompeting model has un ertainty here are also un ertainties in measurements and observations W 9 introdu ed the use of logi trees to in orporate alternative segmentation and failure models for the eninsula segment of the an ndreas ault W 99 has expanded on this pra ti e, using weighted alternative values of inputs and models throughout the entire analysis

n important onsequen e of this strategy is the ability to quantify the un ertainty in earthquake probability values he final suite of probabilities represents a distribution of viable models, ontaining a range of potential behaviors of the regional earthquake ma hine, and preferen es of theories, hypotheses, and observations ontained in the analysis s knowledge is improved of the physi s of earthquakes and the behavior of faults, the range of defendable models will narrow and un ertainties will ontra t hus, it an be anti ipated that the results of resear h now in progress will lead to improvements upon the probabilities reported here

1 F M
M

n art 1 of the al ulations, W 99 onstru ted a model for earthquake o urren e on ma or faults in the (**ig.**) irst, geologi information on fault geometry and slip rates was ombined with alter native fault segmentation models to define a suite of possible rupture sour es for ea h fault system n area magnitude relation was used to al ulate a distribution of likely earthquake magnitudes for ea h rupture sour e ext, rupture sour es were ombined in order to onstru t a moment balan ed rupture model for the long term behavior of ea h fault system inally, the rupture sour e models for all seven fault systems were ombined to form an aggregated, regional model for earthquake o urren e Monte Carlo approa h was used to onstru t many su h aggregations a ross the range of un ertainties asso iated with ea h observation and al ulation step he known plate te toni rate of deformation a ross the region was used as a onstraint, su h that realizations violating this rate were thrown out bout 4 of the aggregated regional models were re e ted be ause they violated this onstraint hose remaining , ulled realizations of the regional earthquake ma hine were ombined to form the output of art 1 the mean magnitude and rate of o urren e of ea h rupture sour e (**e**)

M F F F

he an ndreas ault system in the ontains faults of different lengths, slip rates, and styles of movement his heterogeneity results in a broad range of earthquake sizes and rates of o urren e he W 99 study expli itly modeled faults with slip rates greater than 1 mm yr aults with lower slip rates are apable of produ ing moderate to large earthquakes, but the repeat times for these events are measured in thousands of years ix strike slip faults in the are known to be slipping faster than 1 mm yr the an ndreas, ayward odgers Creek, Calaveras, an regorio, Con ord reen alley, and reenville aults hese are the faults that, over the long term, release almost all of the seismi moment in the lip rates on these faults range from to 4 mm yr, and re urren e intervals for moderate to large events average hundreds of years, short enough for meaningful time dependent probability estimates n addition, one newly re ognized fault sour e, the blind Mount iablo hrust ault, slips at a long term rate of about mm yr and is in luded in the al ulations hus, there

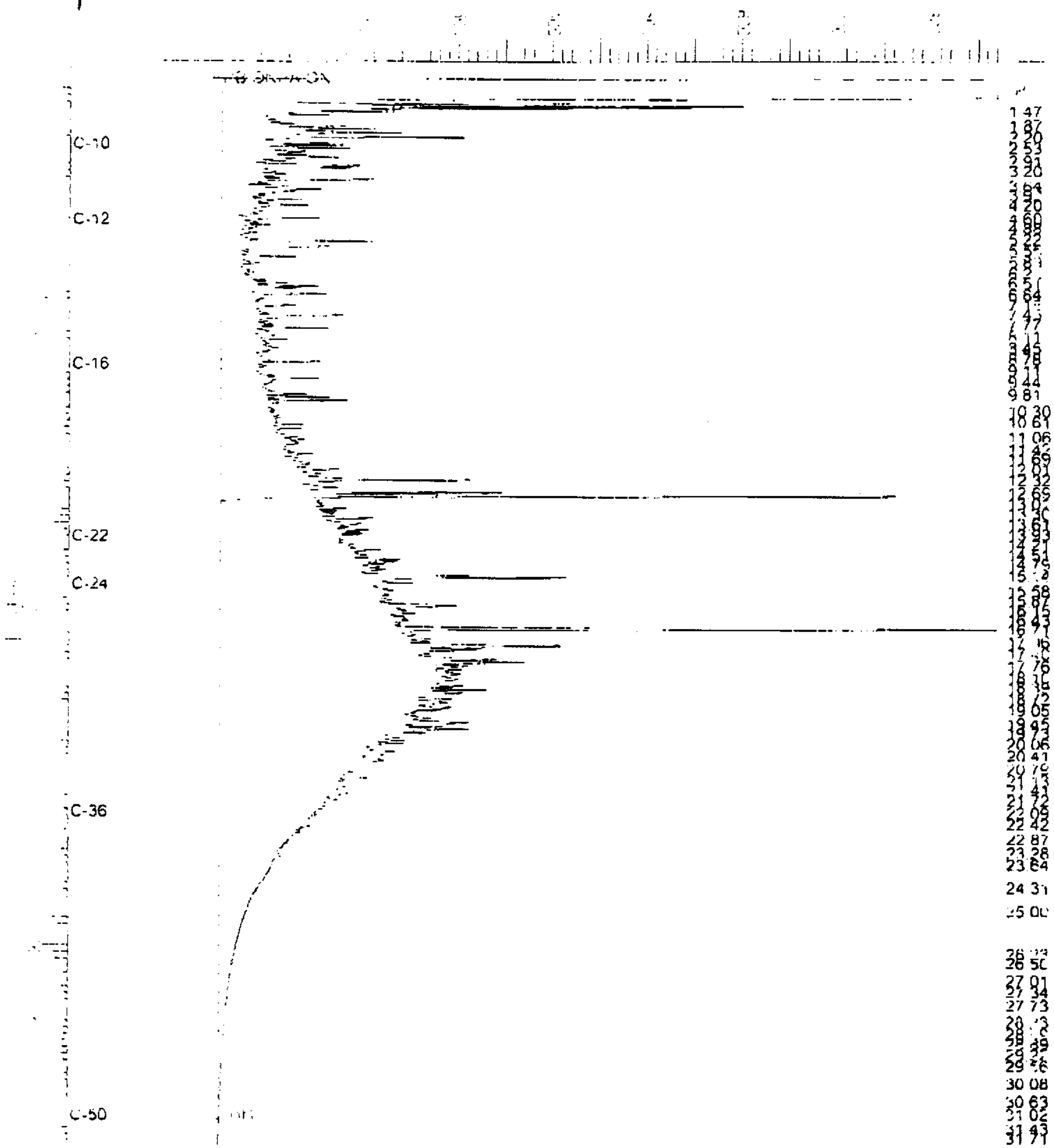
Chromatogram

Sample Name : 147416-002sg,58174
Filename : C:\GC11\CHA\256A011.RAW
Method : ATC4256.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -13 mV

Sample #: 58174
Date : 9/12/00 09:01 AM
Time of Injection: 9/11/00 10:22 PM
Low Point : -12.66 mV
High Point : 870.86 mV
Plot Scale: 883.7 mV

Page 1 of 1

11-W; 6.0-6.5 w/Silica Gel



earthquake o urren e is random in time, with no memory of previous events the only input is the mean rate of o urren e of earthquakes above a threshold magnitude

· . W 9 made the simplifying assumption that the loading of a fault segment o urs at the long term geologi slip rate n appli ation of the time predi table model W 99 assumes that fault loading is driven by deep shear under the suite of faults and, a ordingly, al ulates the loading rate for ea h fault segment using a three dimensional elasti model

· . urfa e reep, rarely observed worldwide, is o urring on several strike slip faults in the , in luding the ayward, Calaveras, and Con ord reen alley aults lthough surfa e reep rates are well onstrained, there are few estimates of the relative amount of moment released through reep and through earthquakes urthermore, little is known about how reep affe ts earthquake magnitudes and re urren e rates W 99 ommissioned expert groups to quantify the ratio of seismi to total slip, and their onsensus values are used here with broad un ertainties as ribed he estimated seismi slip fa tor is used to ad ust the area of the fault segment ontributing to earthquakes and thus tempers the earthquake magnitudes

· . W 9 estimated the hange in loading stress on an ndreas ault segments aused by slip in the 19 9 oma rieta earthquake and al ulated the resulting hanges in re urren e times for these segments in e then, the seismologi al ommunity has extensively examined the ways faults intera t by stress transfer, and su h intera tions are now generally a epted as an important omponent of earthquake physi s n W 99 s analysis, intera tion effe ts involving the 19 and 19 9 earthquakes are signifi ant and are in orporated into the time dependent probability al ulations

· . W 99 al ulates an earthquake magnitude and its probable distribution for ea h rupture sour e as an expli it step in onstru tion of the long term regional model he modeled rupture sour es produ e a suite of earthquakes over a broad range of magnitudes he magnitude threshold M≥ was hosen in onsideration of two fa tors (1) the regional geologi model is omplete down to this magnitude level i e , the segmentation model for ea h ma or fault ontains multiple sour es apable of rupturing with su h magnitudes ( ) M ≥ earthquakes are regional in the extent of their damage and pose a ma or threat to the or example, the 1994 M orthridge, California, earthquake killed many people and aused 4 billion damage in the os ngeles area

· . lthough the s ale of the regional fault model does not allow it to represent most earthquakes smaller than M , earthquakes in the range ≤M are apable of ausing signifi ant damage in the , parti ularly if they o ur in a heavily urbanized area herefore, W 99 estimated the regional probability for these earthquakes using a model based on histori al earthquake a tivity

. *A* lthough mu h has been learned about the nature of faults and the earthquake generation pro ess, many aspe ts of the physi s of earthquakes are not yet understood here are signifi ant, defendable differen es of opinion in the arth s ien es, and

Chromatogram

Sample Name : 147410-003,53174
FileName : C:\CC11\CHA\255A043.RAW
Method : ATTH256.MTH
Start Time : 0.00 min
Scale Factor: 0.0

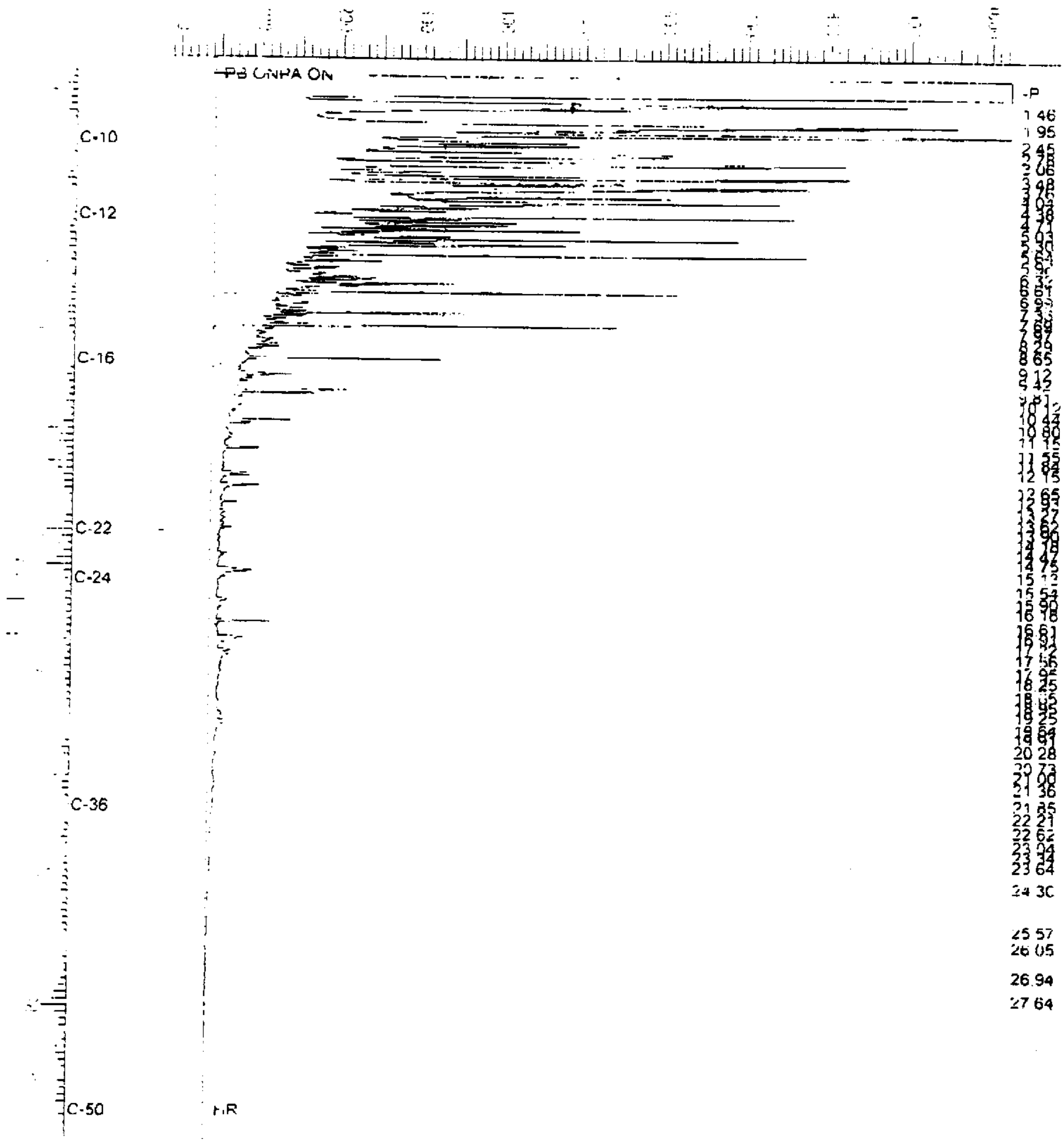
End Time : 31.90 min
Plot Offset: -13 mV

Sample #: 53174
Date : 9/13/00 05:04 AM
Time of Injection: 9/12/00 05:17 PM
Low Point : -12.15 mV
Plot Scale: 1037.2 mV

Page 1 of 1

High Point : 1024.00 mV

11-N1, 6.5-7.0 w/ Silica Gel



W 99 expands on that approa h in several distin t ways

- W 99 utilizes new data and interpretations in luding those listed in the ummary se tion above

- he goal of W 99 is the omprehensive assessment of large earthquake probabilities in the ike previous Working roups, it subdivides the faults into a number of segments on the basis of geologi , geophysi al and seismologi al information (**ig.** ***A B***) n addition, it allows for earthquakes that break multiple ad a ent fault segments, and for that represent ruptures on fault segments whose boundaries are unknown ollowing on a on ept introdu ed by the 199 outhern California arthquake Center (C C) hase report on southern California earthquake probabilities, W 99 also onsiders that might o ur on faults either not hara terized or not yet re ognized even faults are subdivided into nineteen segments thirty eight distin t rupture sour es (segments and groups of ontiguous segments) and floating sour es are hara terized ndividual faults may generate earthquakes that involve the failure of one, two, three, or (in the ase of the an ndreas ault) four ontiguous segments arthquake magnitudes are al ulated from rupture sour e area, whi h varies greatly hus, the regional model allows for the o urren e of earthquakes distributed over a broad range of magnitudes

- he regional model is onstrained by the requirment that the summed rates of fault slip (from earthquakes and reep) on transe ts a ross the region be onsistent with the measured plate motion rate of to 4 mm year he model is further he ked by omparing the predi ted earthquake rates with histori al seismi ity and by omparing predi ted fault segment parameters with geologi observations n intermediate output of the model is a suite of earthquake sour es that hara terize the long term seismi ity in the region, in luding mean values and distributions for the magnitude and annualized rate of o urren e of events on ea h fault lso produ ed is the rate at whi h ea h fault segment is broken by earthquakes above a threshold magnitude of **M** his segment spe ifi information is used as input to the al ulation of onditional year probabilities

- W 99 employs three distin t probability models to al ulate year probabilities onditional upon an earthquake not having o urred by the beginning of the year s done by W 9 , it uses the time predi table model where the date and slip in the last large event are known su h information is known only for the an ndreas and southern ayward aults o hara terize the entire suite of faults, in luding those for whi h slip in the prior event or even the date of that event is unknown, W 99 uses renewal models n the rownian assage ime ( ) model, the effe t of an earthquake is to reset the fault to a ground state from whi h it then evolves ba k towards a failure state through ontinued loading, tempered by intera tions with nearby earthquakes he ground state is independent of slip in the last event hus the strike slip Calaveras, Con ord reen alley, an regorio, and reenville aults and the blind Mt iablo hrust ault ould be in luded in the al ulations inally, year oisson (time independent) probabilities for all fault segments and rupture sour es were al ulated his al ulation relies least on assumptions about the physi s of the earthquake generation pro ess and assumes that

Quality Control Checklist
for Review of Laboratory Report

Job No.: 98383-17
Site: MSC
Laboratory: C&T
Laboratory Report No: 147133
Report Date: 9/18/00
BASELINE Review By: BAH

	Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on "no" responses; document discussion in comments section.)**			
1a. Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	✓		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	✓ 1		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor's name?			✓
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of "hold" samples)?			✓
1e. Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			✓
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?	✓		
2a. Is the laboratory report format consistent and legible throughout the report?	✓		
2b. Are the sample and reported dates shown in the laboratory report correct?	✓		
3a. Does the lab report include the original chain-of-custody form?		✓ 2	
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?	✓		
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	✓		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	✓		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			✓
6. Are the units in the lab report provided for each analysis consistent throughout the report?	✓		
7. Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	✓		
8a. Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	✓		
8b. If no, is an explanation provided by the laboratory?			✓

	Yes	No	NA
9a. Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	✓		
9b. If no, was it flagged in the report?			✓
10. If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			✓
11a. Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	✓		
11b. Is a standard chromatogram(s) included in the laboratory report?	✓		
11c. Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	✓		
12. Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*	✓		
13a. REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			✓
13b. REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			✓
13c. REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			✓
13d. REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			✓
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses			
14. Are field blanks reported as "ND"? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			✓
15. Are trip blanks reported as "ND"? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.*			✓
16. Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			✓

	Yes	No	NA
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	✓		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be "ND."*	✓		
18b. If no, is an explanation provided in the case narrative to validate the data?			✓
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*			✓
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			✓
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	✓		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab's limits (failure is probably due to matrix interference).*	✓		
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?			✓

	Yes	No	NA
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*		✓	
21b. If no, is an explanation given in the case narrative to validate the data?	✓		

Comments:

1/ page numbering not provided

2/ Original C.O.C. included the original lab reports

3/ Holding time of 30 days applies to extracts on hold at lab.

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

ANALYTICAL REPORT

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 18-SEP-00
Lab Job Number: 147133
Project ID: 98383-17
Location: MSC-7101 Edgewater Drive

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: Anna Pajarito
Project Manager

Reviewed by: Teresa K Morrison for JG
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number: **147133**
Client: **Baseline Environmental**
Project Name: **MSC-7101 Edgewater Drive**

Request Date: **08/17/00**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for twenty-four soil samples received from the above referenced project. The samples were received cold and intact.

Per fax on August 17th, the client requested silica gel clean up for samples from CT Login numbers **146631, 146652, 146684,** and **146715.** The faxed list of samples was logged in as CT Login number 147133, but are reported using their original login numbers, respectively.

Total Extractable Hydrocarbons: All extracts were treated with silica gel prior to analysis. Many samples were analyzed at dilutions, causing the surrogates to be diluted out. No other analytical problems were encountered.

To: Tracy B.
From: Bruce
BASELINE

Aug 18 00 05:12p BASELINE Petaluma 707 762 5271 p.1

CURTIS & TOMPKINS, LTD. BERKELEY LOGIN CHANGE FORM

Reason for change: X Client Request By: Bruce Date/Time: 8/17 00 Initials: TB
____ Login Review ____ Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
147133-001	146631-001	1WA	Extract	Add	Silica	8/
-002	146631-002	1E			gel	25
-003	146631-003	1S			4 TEH	
-004	146631-004	1N			mod & MO	
-005	146652-001	2S-D				
-006	146652-004	2E-D				
-007	146652-005	2W				
-008	146652-006	2N-E				
-009	146684-001	3W				
-010	-004	5W				
-011	-005	4W				
-012	-006	6W				
-013	-007	7W				
-014	-008	-8W				
-015	-009	-9W				
-016	-010	10N				
147133-017	-012	10S	Extract	Add		8/25

Approved:
B. Belluomini

Curtis & Tompkins Ltd

CURTIS & TOMPKINS, LTD. BERKELEY LOGIN CHANGE FORM

Reason for change X Client Request By Brad Date/Time 8/17/00 Initials TD

____ Login Review ____ Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
147133-018	146684-012	10E	Extract	Add	Silica	8/25
-019	146715-001	10W			Gel	
-020	-002	11E			&	
-021	-003	11-W2			TEH -Diesel -m.O	
22	-004	11-W3				
23	-005	11-S				
147133 24	-006	11-E1	Extract	Add		8/25

Approved:
Brad Miller

Curtis & Tompkins, Ltd

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/19/00
Units:	mg/Kg	Received:	07/20/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Field ID:	1W-A;6.5-7.0	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146631-001		

Analyte	Result	RL
Diesel C10-C24	570 L	9.9
Motor Oil C24-C36	190 L	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID:	1E;7-7.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	08/22/00
Lab ID:	146631-002		

Analyte	Result	RL
Diesel C10-C24	34 H L Y	1.0
Motor Oil C24-C36	52 Y	5.0

Surrogate	%REC	Limits
Hexacosane	82	60-136

Field ID:	1S;7-7.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	08/22/00
Lab ID:	146631-003		

Analyte	Result	RL
Diesel C10-C24	88 L	1.0
Motor Oil C24-C36	45	5.0

Surrogate	%REC	Limits
Hexacosane	95	60-136

Field ID:	1N;6.5-7	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	09/11/00
Lab ID:	146631-004		

Analyte	Result	RL
Diesel C10-C24	720 L Y	10
Motor Oil C24-C36	220	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

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

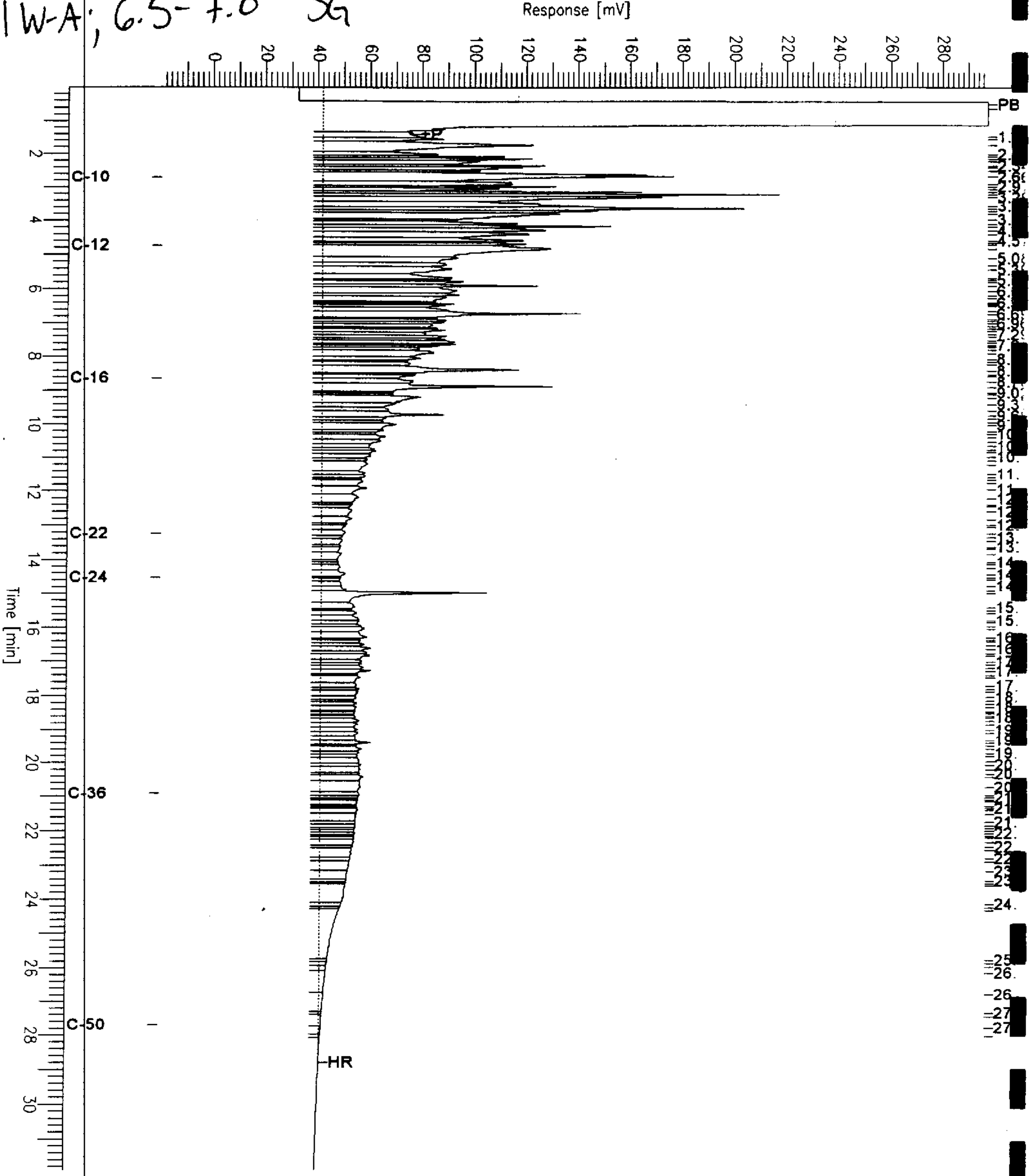
Chromatogram

Sample Name : 146631-001sg,57214
FileName : G:\GC15\CHB\245B020.RAW
Method : BTEH247.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -20 mV

Sample #: 57214
Date : 09/03/2000 03:40 PM
Time of Injection: 09/02/2000 09:41 AM
Low Point : -19.82 mV
Plot Scale: 317.4 mV

High Point : 297.53 mV

1W-A, 6.5-7.0 SG



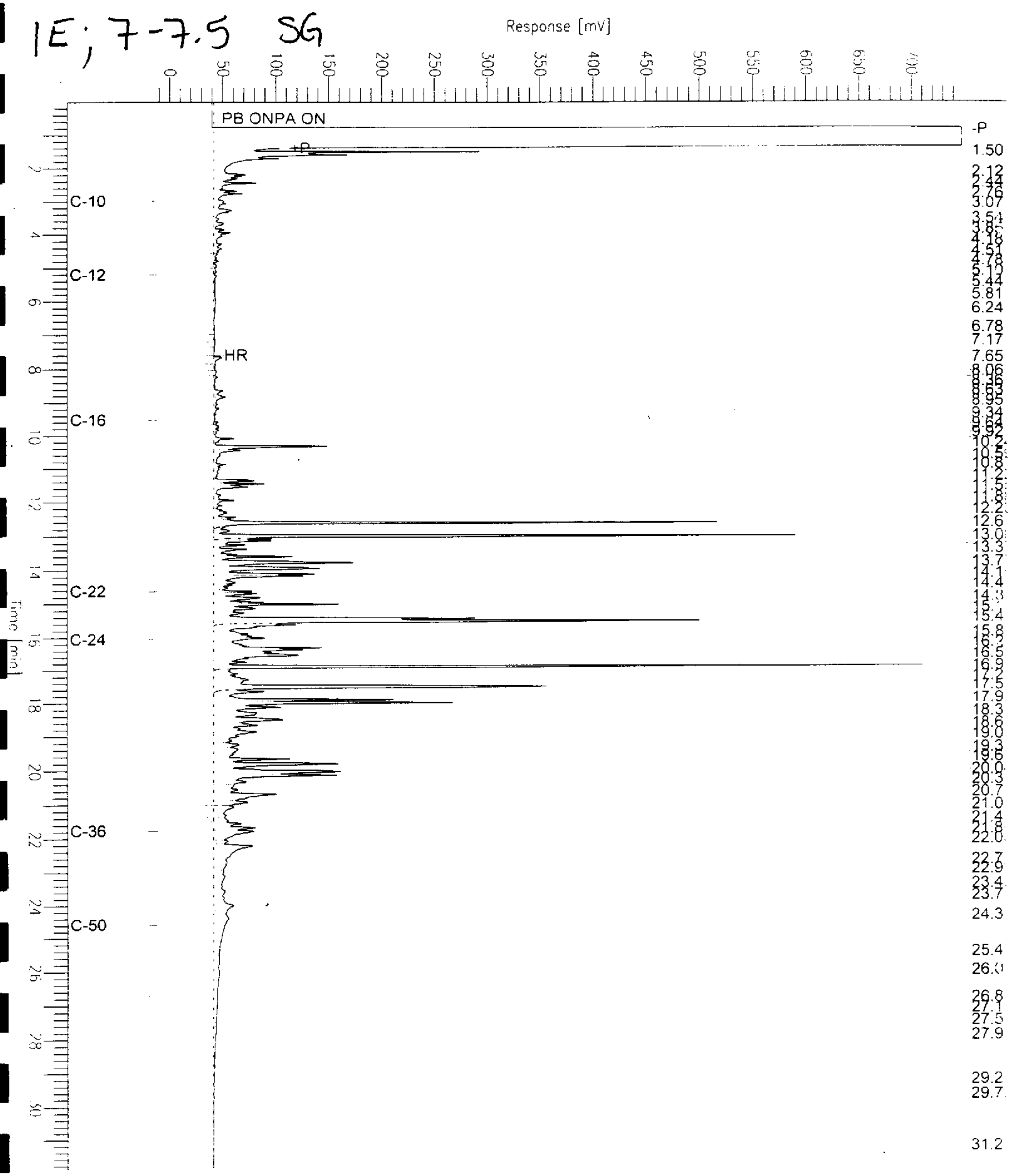
Chromatogram

146631 ~~147133~~ JV. 8/24/00

Sample Name : ~~147133~~-002sg,57214
FileName : G:\GC11\CHA\233A053.RAW
Method : ATEH234.MTH
Start Time : 0.01 min   End Time : 31.91 min
Scale Factor: 0.0   Plot Offset: -12 mV

Sample #: 57214   Page 1 of 1
Date : 8/22/00 09:40 AM
Time of Injection: 8/22/00 03:39 AM
Low Point : -11.98 mV   High Point : 747.78 mV
Plot Scale: 759.8 mV

1E; 7-7.5 SG

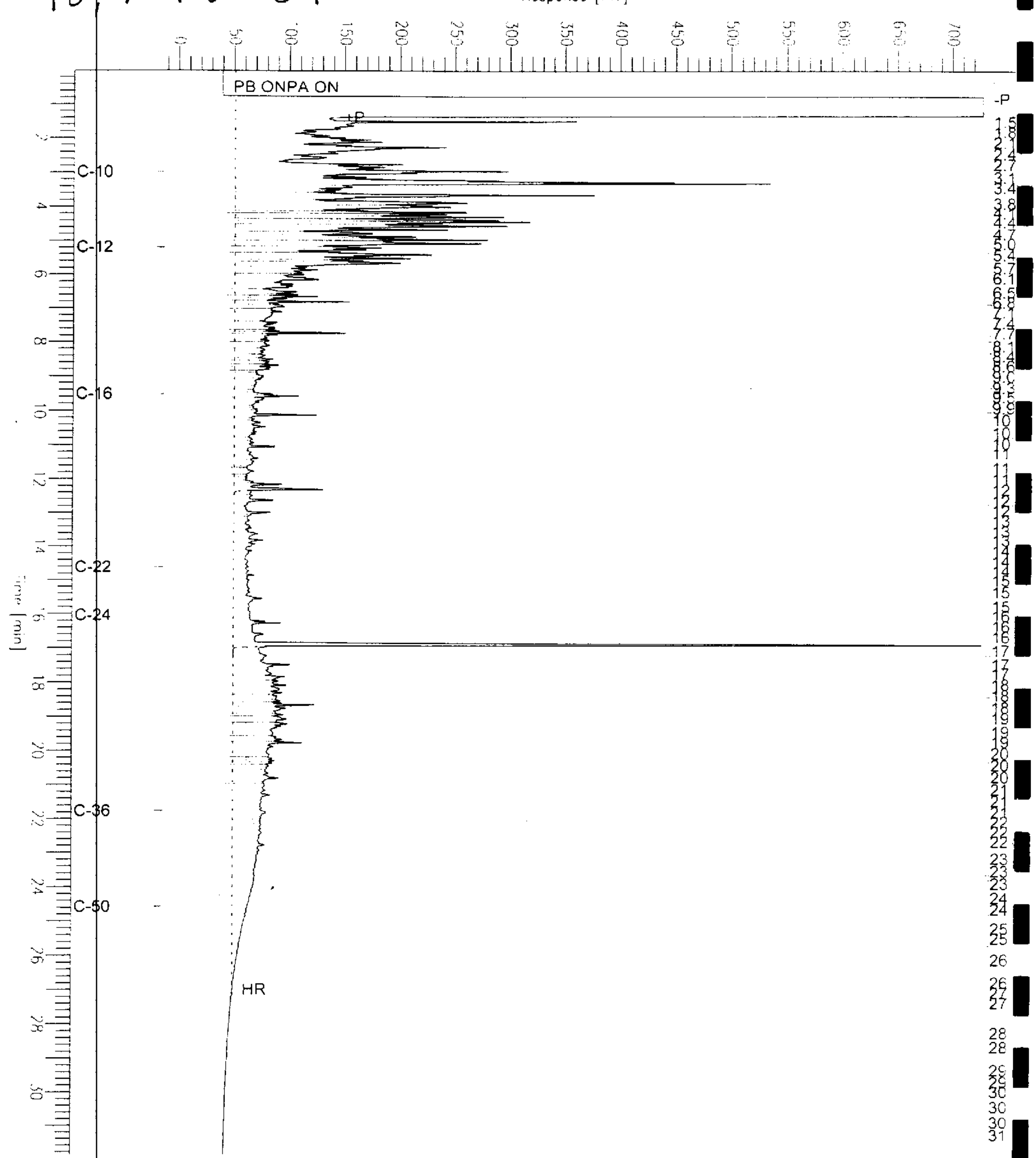


Chromatogram

Sample Name : ~~147133~~ 146631 -003sg,57214   JV. 8/24/00
FileName : G:\GC11\CHA\233A054.RAW
Method : ATEH234.MTH
Start Time : 0.01 min   End Time : 31.91 min
Scale Factor: 0.0   Plot Offset: -12 mV

Sample #: 57214   Page 1 of 1
Date : 8/22/00 09:41 AM
Time of Injection: 8/22/00 04:19 AM
Low Point : -12.50 mV   High Point : 727.86 mV
Plot Scale: 740.4 mV

15; 7-7.5 SG

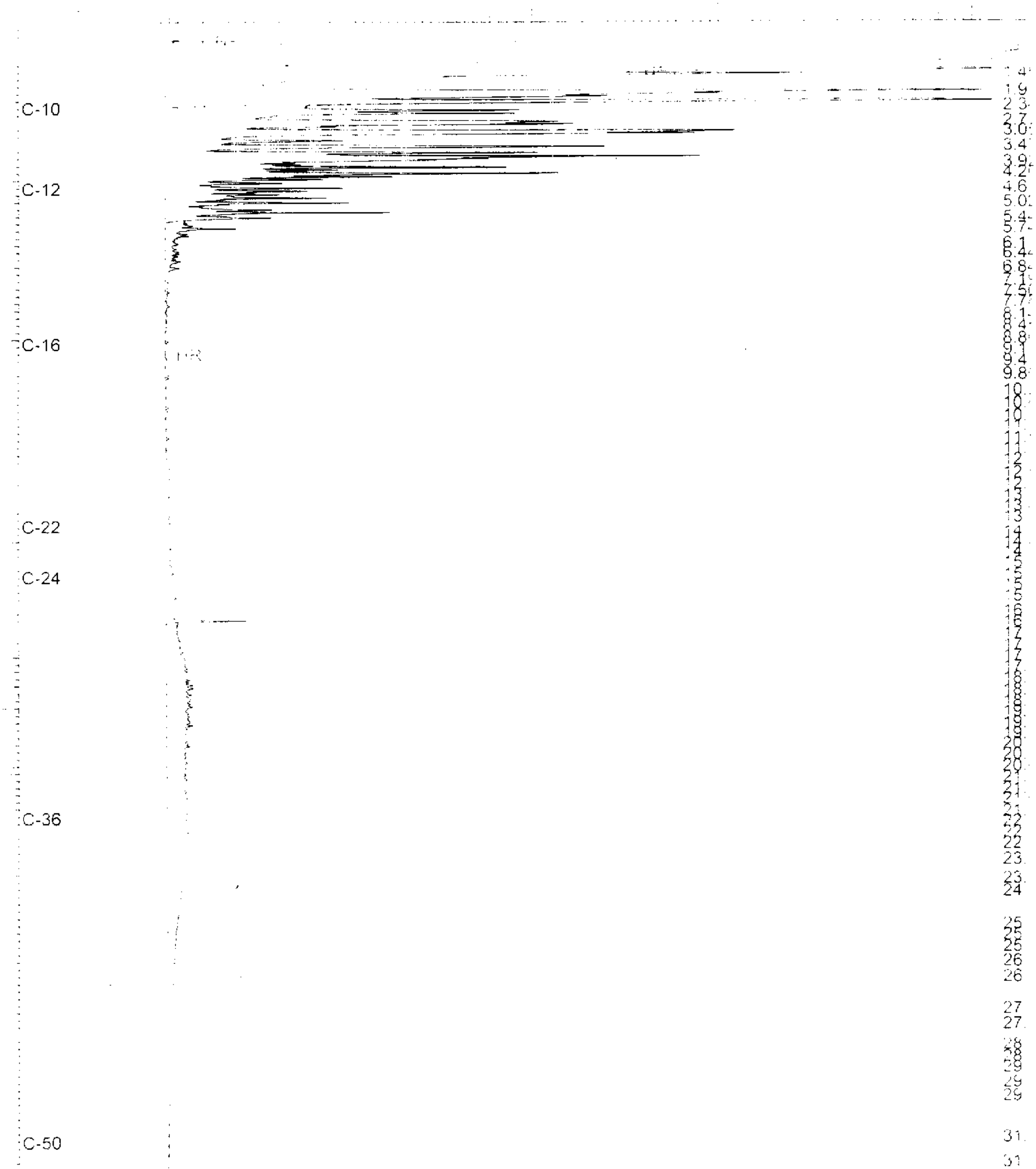


Chromatogram

Sample Name : 146631-004sg,57214
FileName : G:\GC11\CHA\255A013.RAW
Method : ATEH254.MTH
Start Time : 0.00 min
Scale Factor: 0.0
End Time : 31.90 min
Plot Offset: -13 mV

Sample #: 57214
Date : 9/12/00 09:02 AM
Time of Injection: 9/11/00 11:42 PM
Low Point : -12.60 mV
Plot Scale: 1036.6 mV
Page 1 of 1
High Point : 1024.00 mV

1N; 6.5-7



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/19/00
Units:	mg/Kg	Received:	07/20/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC120927	Analyzed:	08/22/00

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	100	60-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146631	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC120928	Batch#:	57214
Matrix:	Soil	Prepared:	07/24/00
Units:	mg/Kg	Analyzed:	09/04/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	47.24	37.18	79	67-121

Surrogate	%REC	Limits
Hexacosane	86	60-136

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Field ID: 2S-D;7.5-8.0
Type: SAMPLE
Lab ID: 146652-001
Diln Fac: 10.00
Analyzed: 08/22/00

Analyte	Result	RL
Diesel C10-C24	730 H L Y	10
Motor Oil C24-C36	2,000	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID: 2E-D;7.0-7.5
Type: SAMPLE
Lab ID: 146652-004
Diln Fac: 1.000
Analyzed: 08/22/00

Analyte	Result	RL
Diesel C10-C24	4.4 L Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	72	60-136

Field ID: 2W;7.0-7.5
Type: SAMPLE
Lab ID: 146652-005
Diln Fac: 10.00
Analyzed: 09/02/00

Analyte	Result	RL
Diesel C10-C24	2,000 H	9.9
Motor Oil C24-C36	1,500 L	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID: 2N-E;8.0-8.5
Type: SAMPLE
Lab ID: 146652-006
Diln Fac: 1.000
Analyzed: 08/22/00

Analyte	Result	RL
Diesel C10-C24	84 H L Y	0.99
Motor Oil C24-C36	57	5.0

Surrogate	%REC	Limits
Hexacosane	82	60-136

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

Chromatogram

146652-001 DV 8/24/00

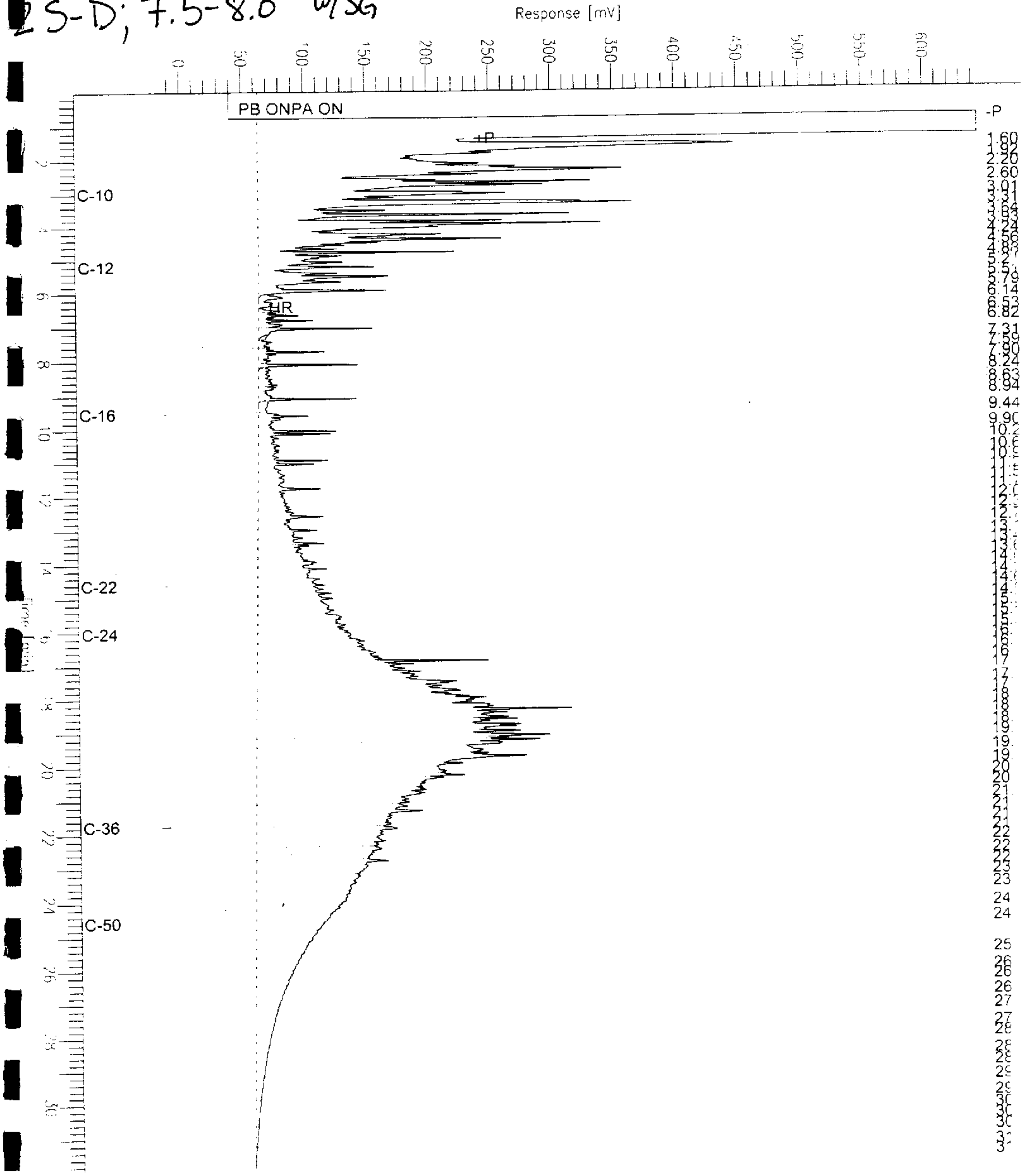
Sample Name : ~~147133-005~~sg,57214
[illegible]leName : G:\GC11\CHA\233A056.RAW
[illegible]thod : ATEH234.MTH
[illegible]art Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: -11 mV

Sample #: 57214
Date : 8/22/00 09:42 AM
Time of Injection: 8/22/00 05:39 AM
Low Point : -11.32 mV
Plot Scale: 655.8 mV

High Point : 644.45 mV

2S-D; 7.5-8.0 w/SG



Chromatogram

M4652-004 JV. 8/24/00

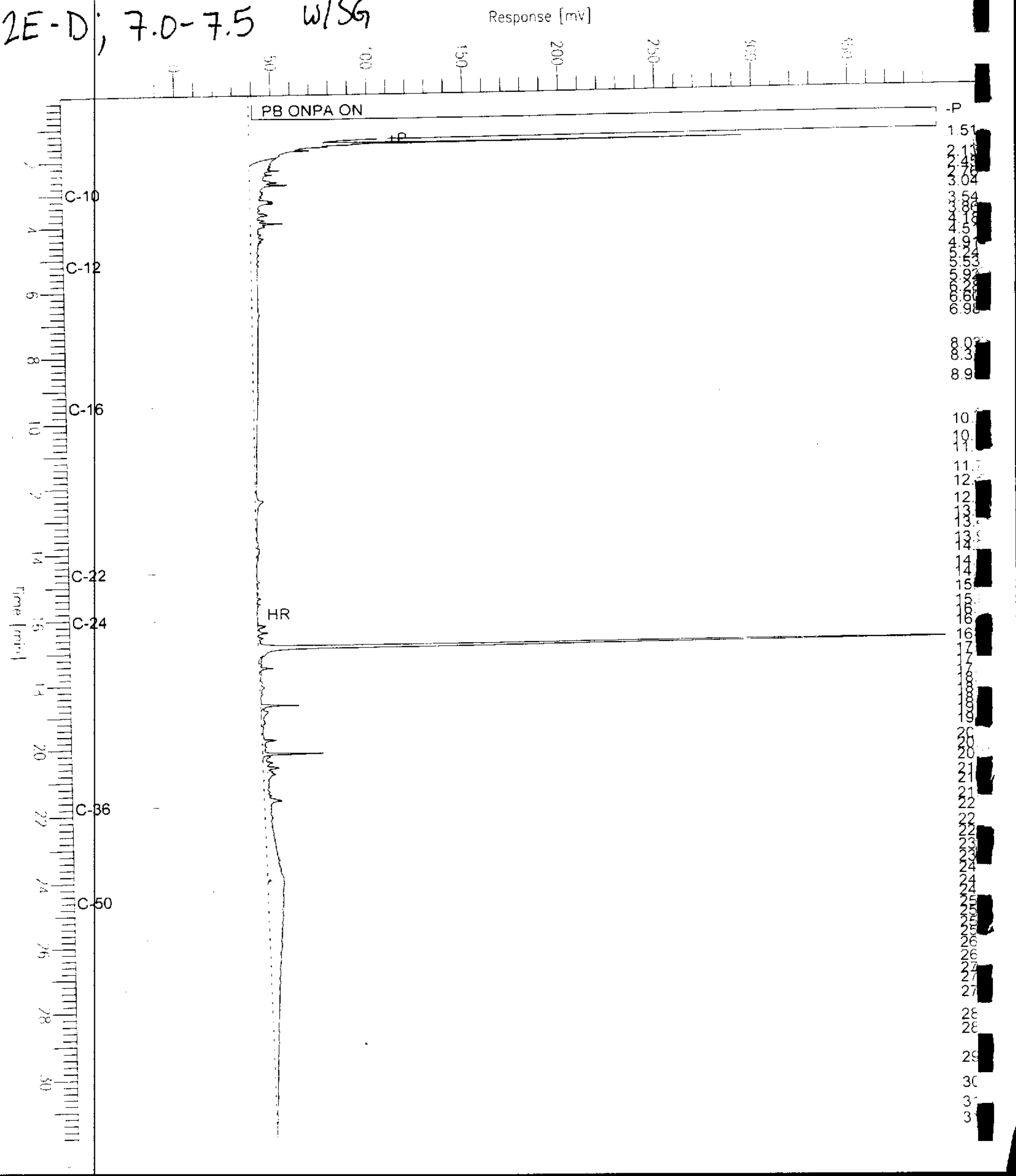
Sample Name : ~~147133-006~~sg,57214
FileName : G:\GC11\CHA\233A057.RAW
Method : ATEH234.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: -13 mV

Sample #: 57214
Date : 8/22/00 09:43 AM
Time of Injection: 8/22/00 06:19 AM
Low Point : -13.23 mV
Plot Scale: 410.0 mV

High Point : 396.73 mV

2E-D, 7.0-7.5 w/SG



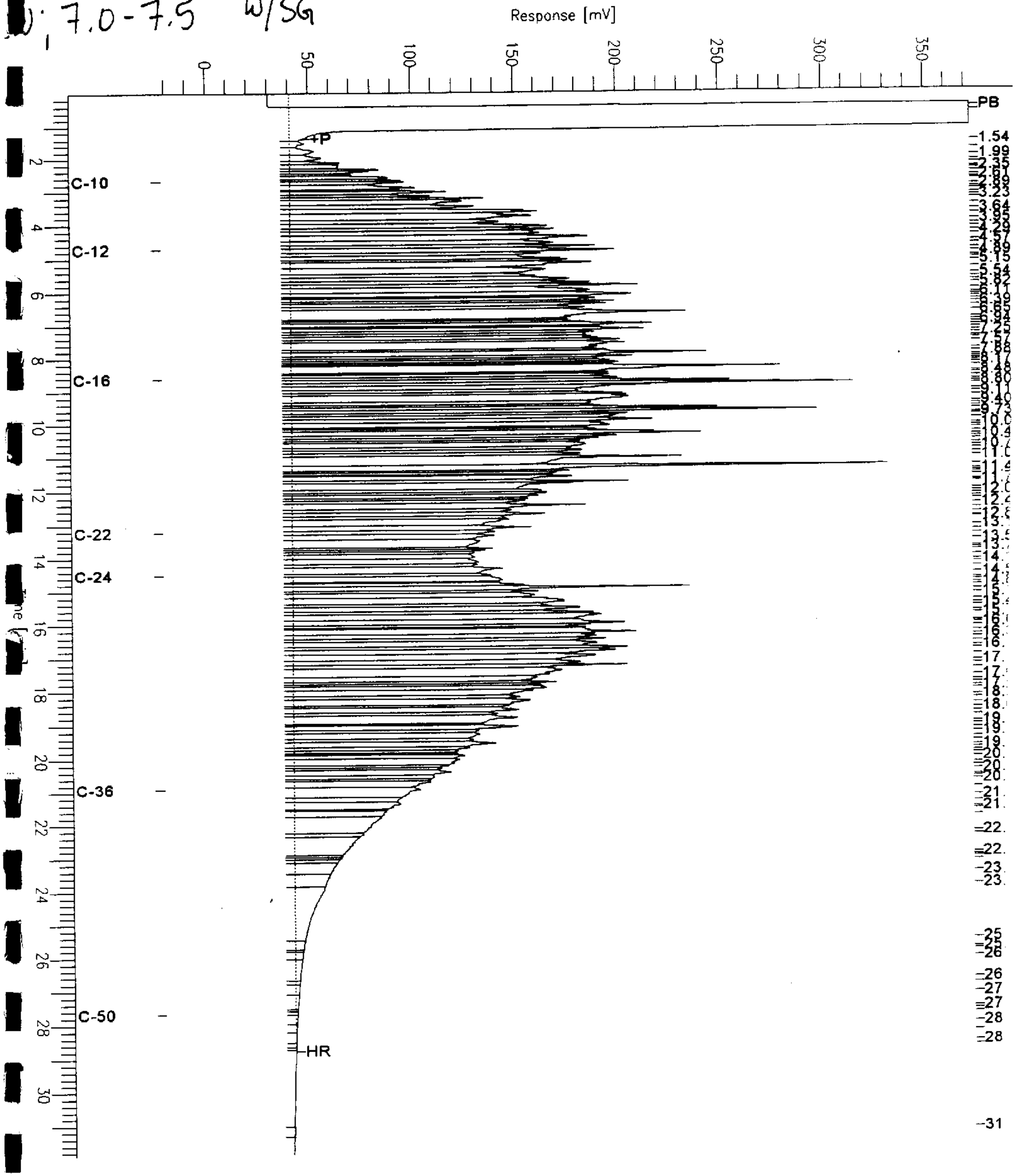
Chromatogram

Sample Name : 146652-005sg,57214
FileName : G:\GC15\CHB\245B025.RAW
Method : BTEH247.MTH
Start Time : 0.01 min
End Time : 31.91 min
Scale Factor: 0.0
Plot Offset: -22 mV

Sample #: 57214
Date : 09/03/2000 03:42 PM
Time of Injection: 09/02/2000 01:16 PM
Low Point : -21.68 mV
Plot Scale: 394.6 mV

High Point : 372.92 mV

D: 7.0-7.5 w/SG



Chromatogram

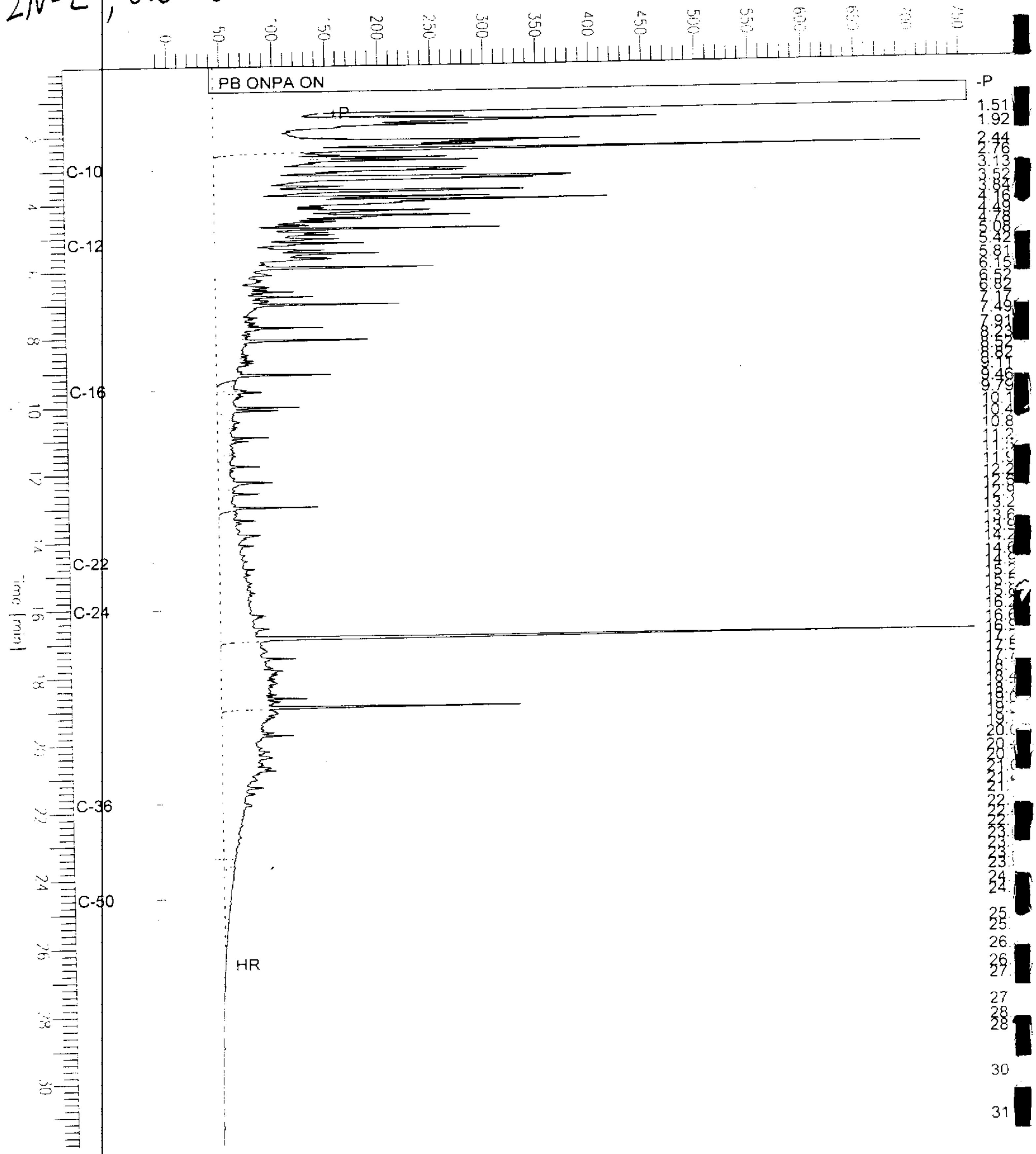
146652-006 JV. 8/24/00

Sample Name : ~~147133-008eg~~,57214
FileName : G:\GC11\CHA\233A051.RAW
Method : ATEH234.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -12 mV

Sample #: 57214
Date : 8/22/00 09:39 AM
Time of Injection: 8/22/00 02:19 AM
Low Point : -11.77 mV
Plot Scale: 769.5 mV

High Point : 757.71 mV

2N-E, 8.0-8.5 w/SG



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/20/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/24/00
Batch#:	57214		

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC120927	Analyzed:	08/22/00

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	100	60-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146652	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC120928	Batch#:	57214
Matrix:	Soil	Prepared:	07/24/00
Units:	mg/Kg	Analyzed:	09/04/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	47.24	37.18	79	67-121

Surrogate	%REC	Limits
Hexacosane	86	60-136

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/25/00
Batch#:	57232		

Field ID:	3W;7.5-8.0	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146684-001		

Analyte	Result	RL
Diesel C10-C24	220 H L Y	5.0
Motor Oil C24-C36	250 L	25

Surrogate	%REC	Limits
Hexacosane	93	60-136

Field ID:	5W;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	08/29/00
Lab ID:	146684-004		

Analyte	Result	RL
Diesel C10-C24	180 H Y	1.0
Motor Oil C24-C36	160 L	5.0

Surrogate	%REC	Limits
Hexacosane	89	60-136

Field ID:	4W;7-7.5	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	08/29/00
Lab ID:	146684-005		

Analyte	Result	RL
Diesel C10-C24	4.0 H Y	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	96	60-136

Field ID:	6W;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	08/29/00
Lab ID:	146684-006		

Analyte	Result	RL
Diesel C10-C24	39 H L Y	0.99
Motor Oil C24-C36	18 L	4.9

Surrogate	%REC	Limits
Hexacosane	91	60-136

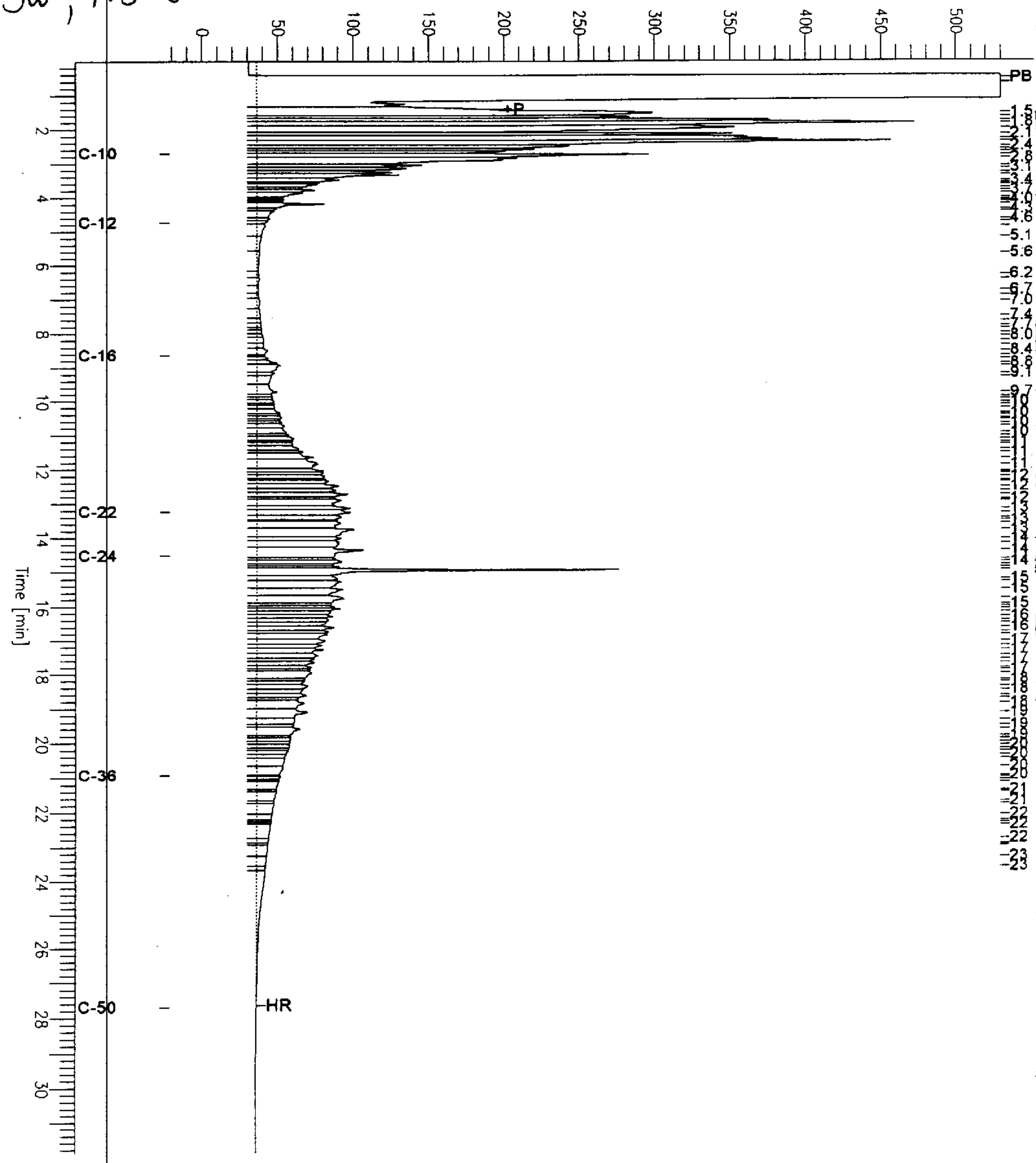
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
DO = Diluted Out
ND = Not Detected
RL = Reporting Limit

Chromatogram

Sample Name : 146684-001sg,57232
FileName : G:\GC15\CHB\245B011.RAW
Method : BTEH247.MTH
Start Time : 0.01 min   End Time : 31.91 min
Scale Factor: 0.0   Plot Offset: -21 mV

Sample #: 57232   Page 1 of 1
Date : 09/03/2000 03:35 PM
Time of Injection: 09/02/2000 03:13 AM
Low Point : -21.43 mV   High Point : 530.02 mV
Plot Scale: 551.4 mV

3W; 7.5-8.0 w/SG



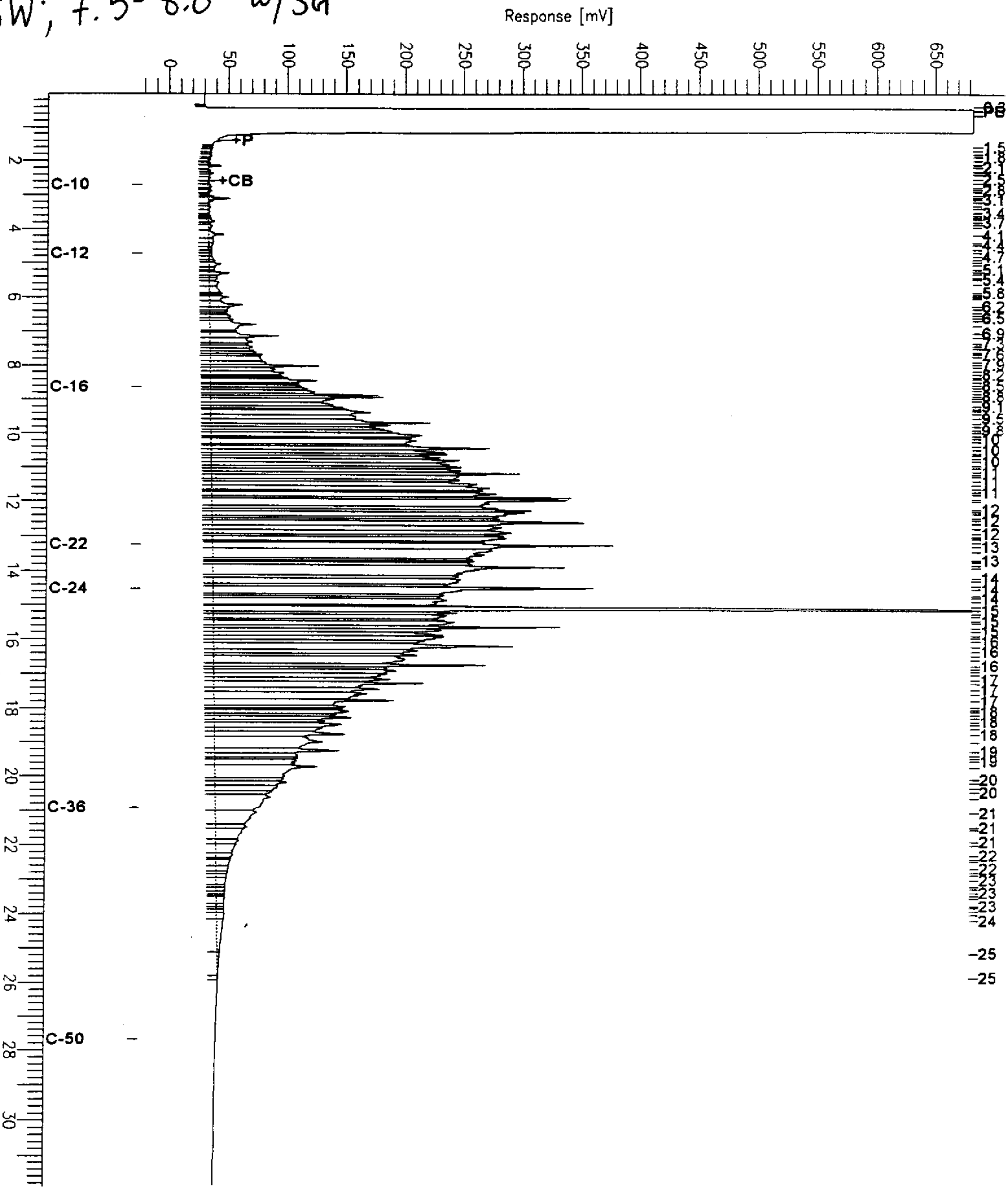
Chromatogram

Sample Name : 146684-004sg,57232
FileName : G:\GC15\CHB\238B067.RAW
Method : BTEH236.MTH
Start Time : 0.01 min
End Time : 31.91 min
Scale Factor: 0.0
Plot Offset: -23 mV

Sample #: 57232

Date : 08/29/2000 09:41 AM
Time of Injection: 08/29/2000 03:32 AM
Low Point : -22.81 mV
High Point : 682.79 mV
Plot Scale: 705.6 mV

5W; 7.5-8.0 w/SG

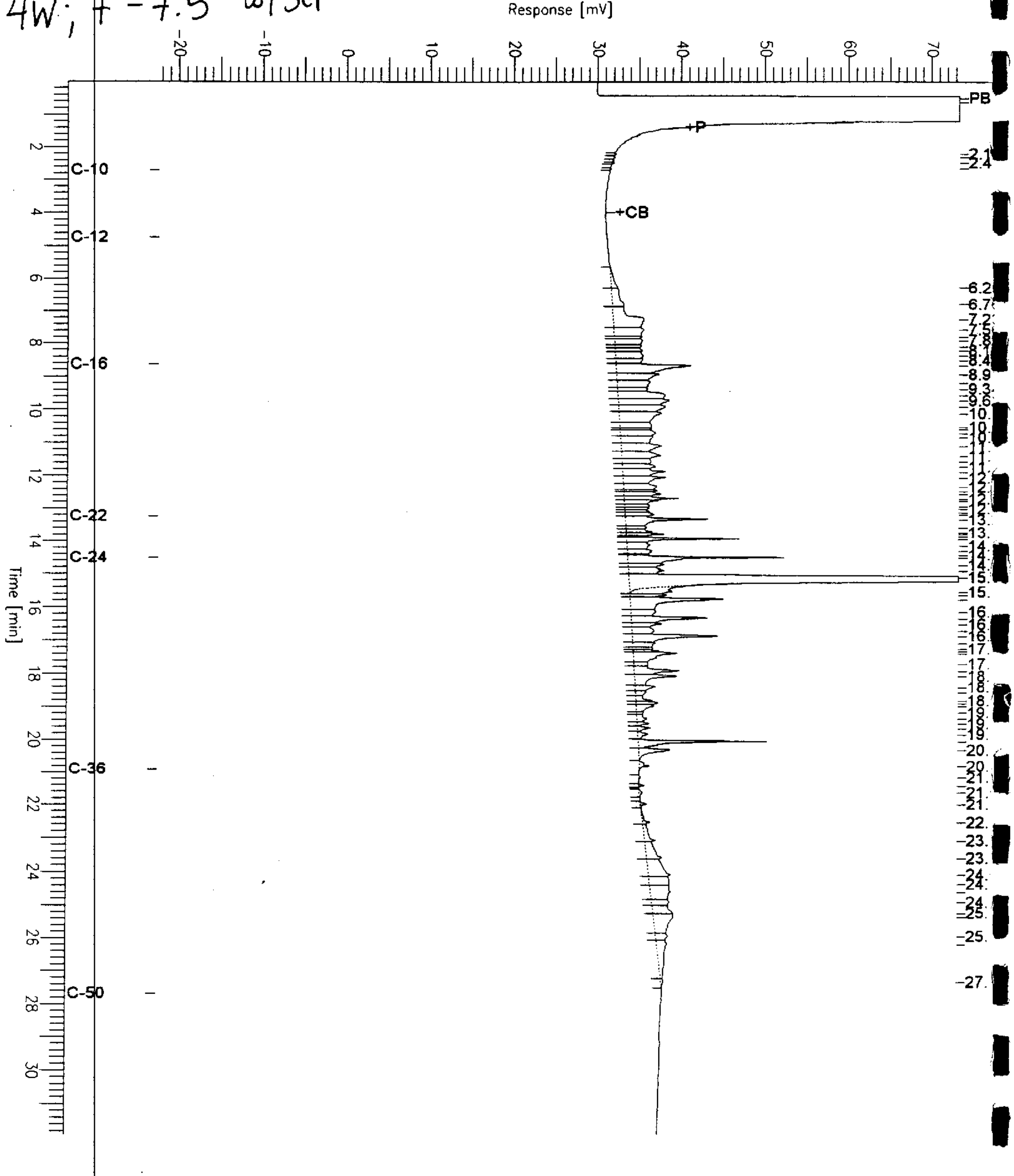


Chromatogram

Sample Name : 146684-005sg,57232
FileName : G:\GC15\CHB\238B078.RAW
Method : BTEH236.MTH
Start Time : 0.01 min   End Time : 31.91 min
Scale Factor: 0.0   Plot Offset: -22 mV

Sample #: 57232   Page 1 of 1
Date : 08/29/2000 02:54 PM
Time of Injection: 08/29/2000 11:27 AM
Low Point : -22.46 mV   High Point : 73.37 mV
Plot Scale: 95.8 mV

4W; 7-7.5 w/SG

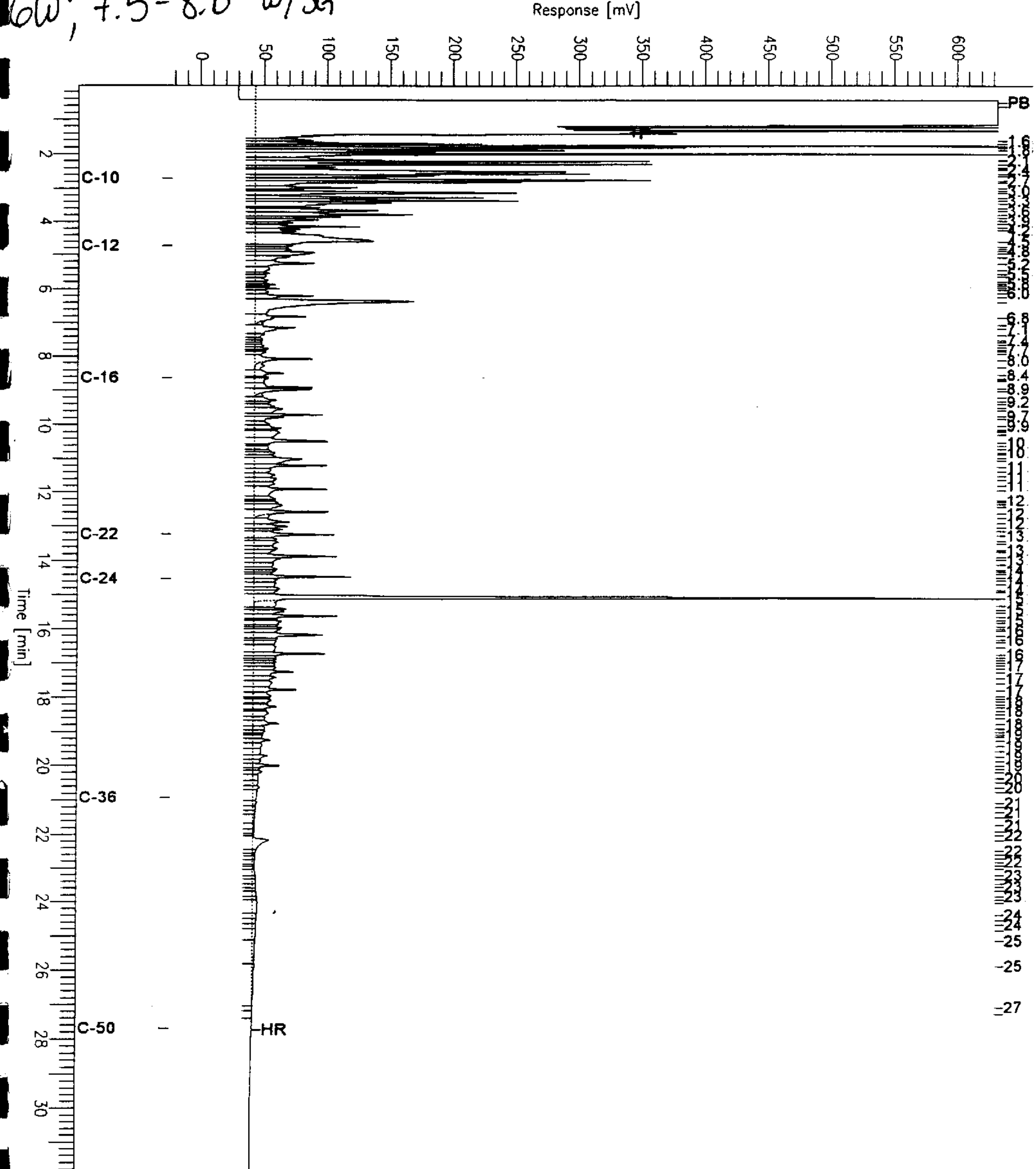


Chromatogram

Sample Name : 146684-006sg,57232
FileName : G:\GC15\CHB\238B068.RAW
Method : BTEH236.MTH
Start Time : 0.01 min   End Time : 31.91 min
Scale Factor: 0.0   Plot Offset: -23 mV

Sample #: 57232   Page 1 of 1
Date : 08/29/2000 09:42 AM
Time of Injection: 08/29/2000 04:16 AM
Low Point : -22.79 mV   High Point : 632.84 mV
Plot Scale: 655.6 mV

6W; 7.5-8.0 w/SG



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/25/00
Batch#:	57232		

Field ID: 7W;7.5-8.0 Diln Fac: 1.000
Type: SAMPLE Analyzed: 08/29/00
Lab ID: 146684-007

Analyte	Result	RL
Diesel C10-C24	6.6 H Y	0.99
Motor Oil C24-C36	18	5.0

Surrogate	%REC	Limits
Hexacosane	97	60-136

Field ID: 8W;7.5-8.0 Diln Fac: 2.000
Type: SAMPLE Analyzed: 09/02/00
Lab ID: 146684-008

Analyte	Result	RL
Diesel C10-C24	230 H L Y	2.0
Motor Oil C24-C36	90	10

Surrogate	%REC	Limits
Hexacosane	120	60-136

Field ID: 9W;7.5-8.0 Diln Fac: 2.000
Type: SAMPLE Analyzed: 09/04/00
Lab ID: 146684-009

Analyte	Result	RL
Diesel C10-C24	160 L Y	2.0
Motor Oil C24-C36	26	9.9

Surrogate	%REC	Limits
Hexacosane	90	60-136

Field ID: 10N;4.5-5.0 Diln Fac: 10.00
Type: SAMPLE Analyzed: 09/04/00
Lab ID: 146684-010

Analyte	Result	RL
Diesel C10-C24	3,300 L	10
Motor Oil C24-C36	ND	50

Surrogate	%REC	Limits
Hexacosane	DO	60-136

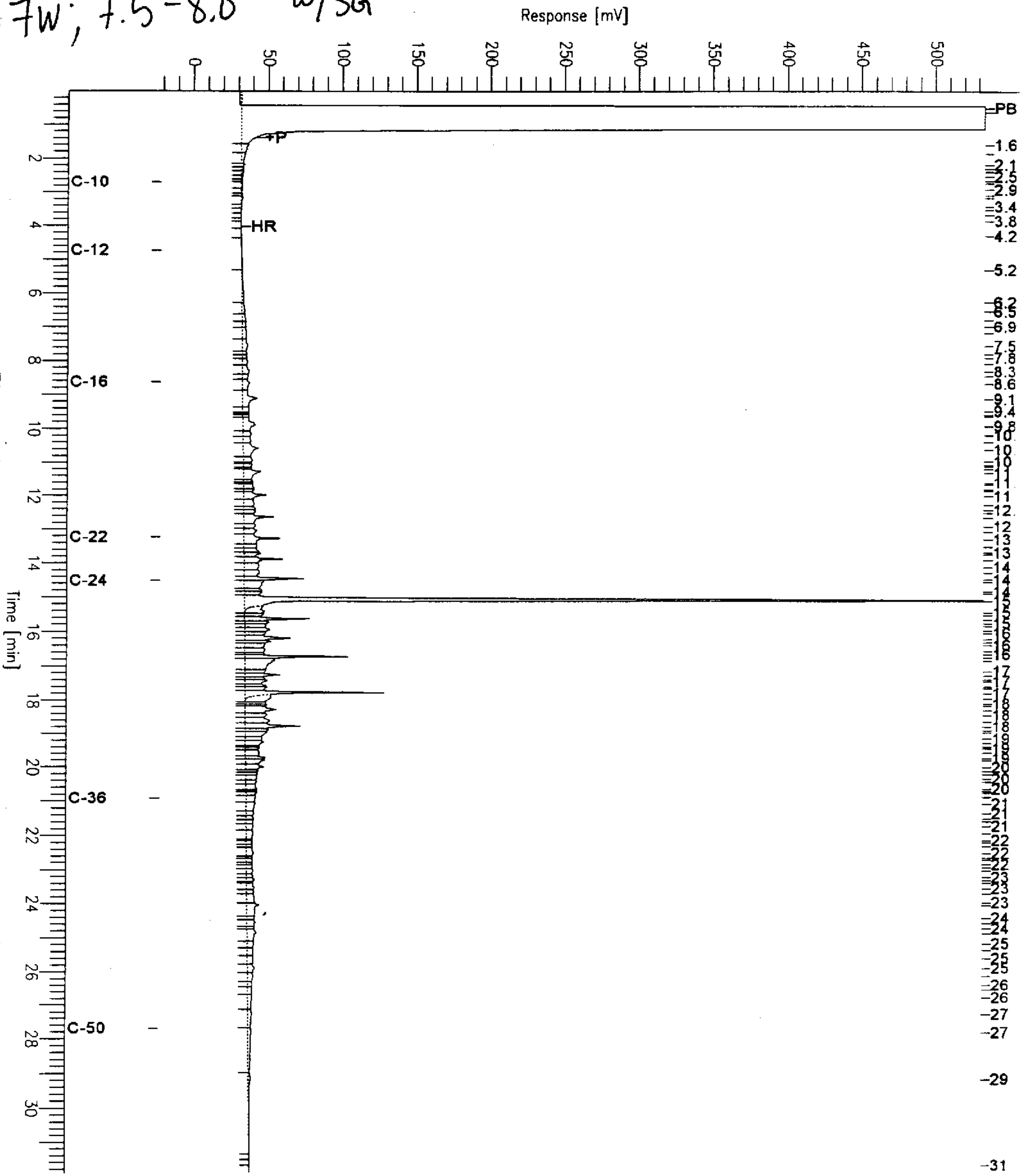
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
DO = Diluted Out
ND = Not Detected
RL = Reporting Limit

Chromatogram

Sample Name : 146684-007sg,57232
FileName : G:\GC15\CHB\238B076.RAW
Method : BTEH236.MTH
Start Time : 0.01 min
End Time : 31.91 min
Scale Factor: 0.0
Plot Offset: -22 mV

Sample #: 57232
Page 1 of 1
Date : 08/29/2000 11:18 AM
Time of Injection: 08/29/2000 10:00 AM
Low Point : -21.75 mV
High Point : 533.61 mV
Plot Scale: 555.4 mV

7W; 7.5-8.0 w/SG

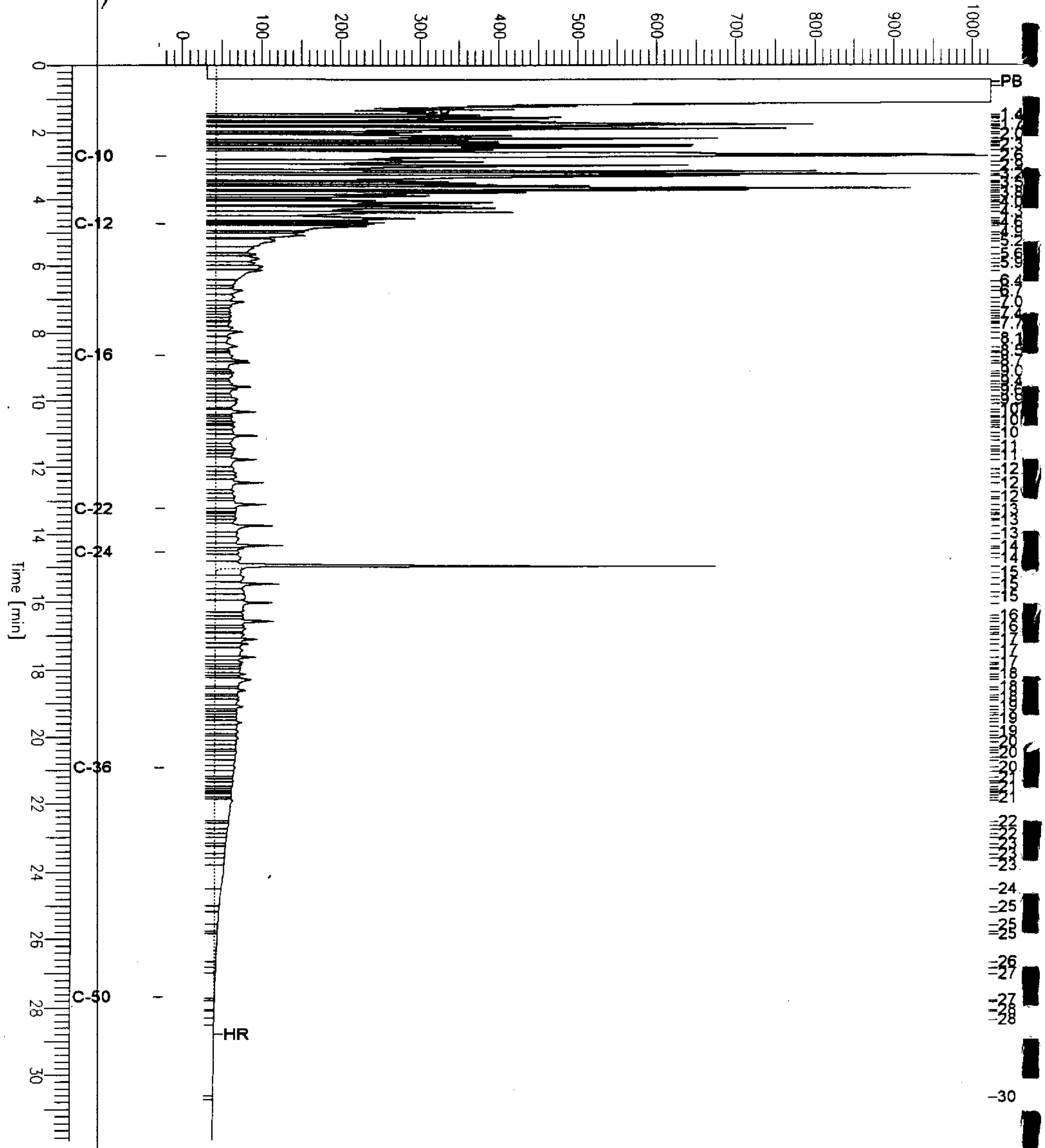


Chromatogram

Sample Name : 146684-008sg,57232
FileName : G:\GC15\CHB\245B023.RAW
Method : BTEH247.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -21 mV

Sample #: 57232
Date : 09/03/2000 03:41 PM
Time of Injection: 09/02/2000 11:50 AM
Low Point : -20.99 mV High Point : 1024.00 mV
Plot Scale: 1045.0 mV

8W, 7.5-8.0 w/SG

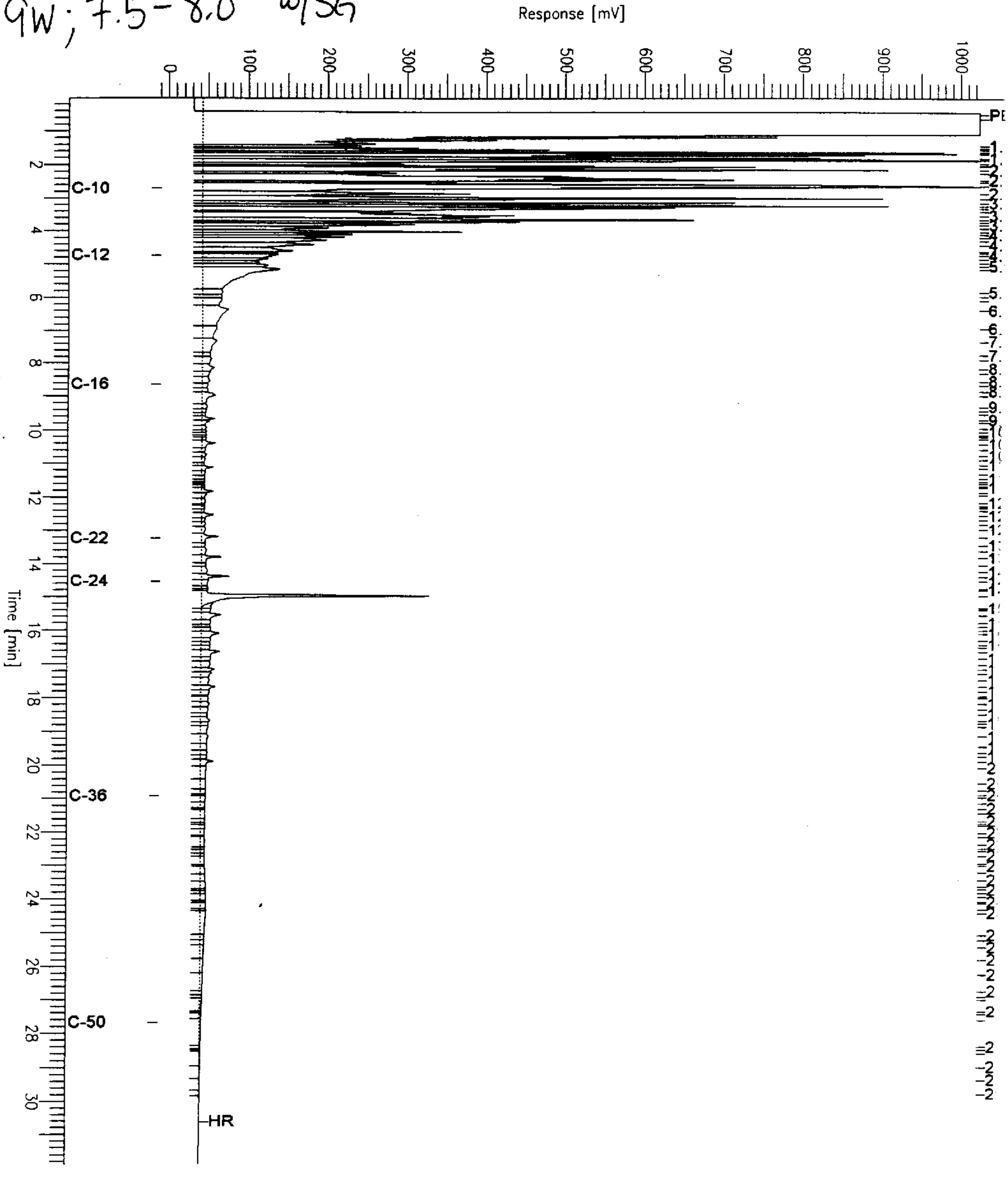


Chromatogram

Sample Name : 146684-009sg,57232
FileName : G:\GC15\CHB\245B098.RAW
Method : BTEH247.MTH
Start Time : 0.01 min
End Time : 31.91 min
Scale Factor: 0.0
Plot Offset: -10 mV

Sample #: 57232
Page 1 of 1
Date : 09/05/2000 11:47 AM
Time of Injection: 09/04/2000 08:30 PM
Low Point : -10.05 mV
High Point : 1024.00 mV
Plot Scale: 1034.0 mV

9W; 7.5-8.0 w/SG

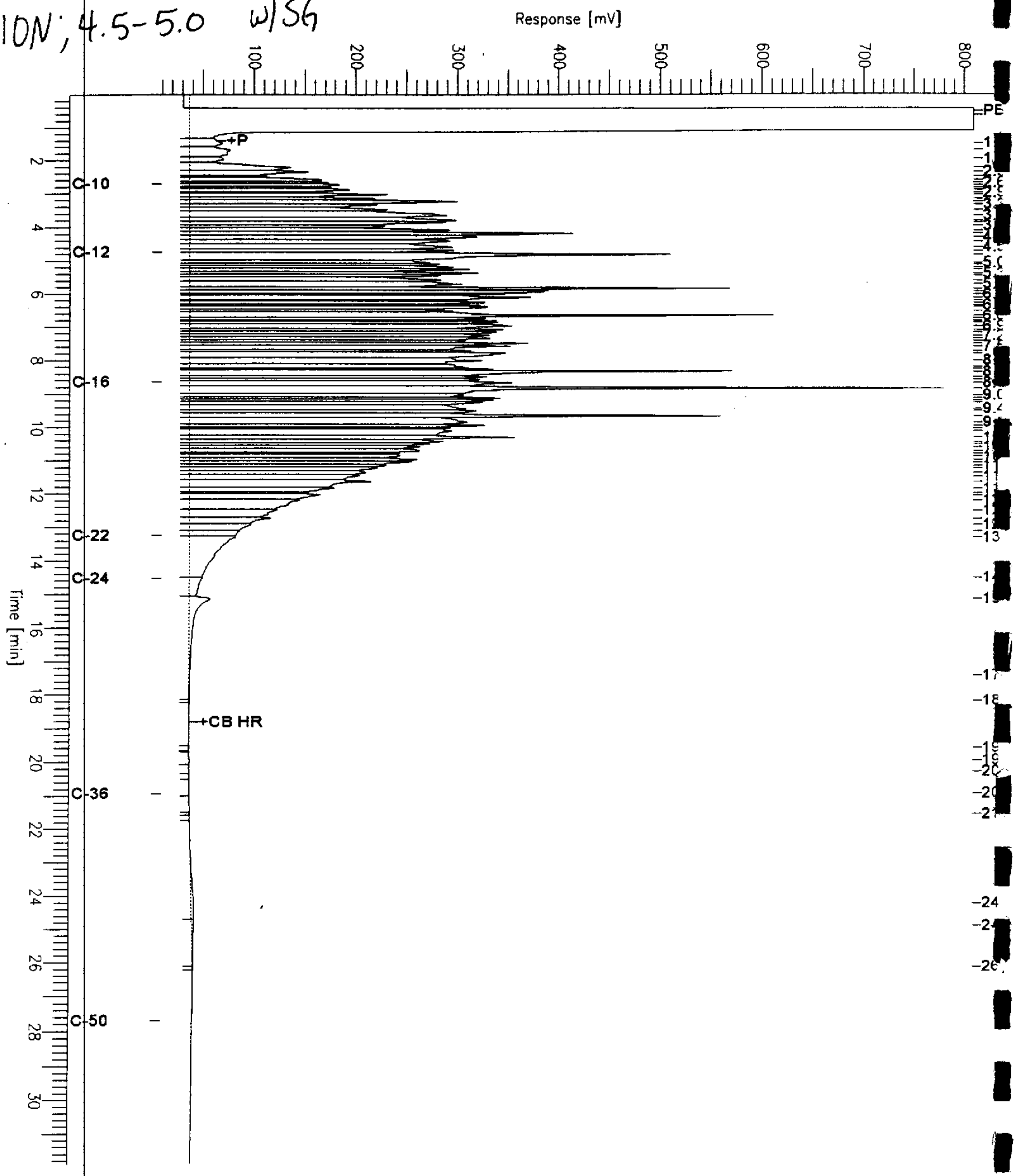


Chromatogram

Sample Name : 146684-010sg,57232
FileName : G:\GC15\CHB\245B099.RAW
Method : BTEH247.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 9 mV

Sample #: 57232 Page 1 of 1
Date : 09/05/2000 11:48 AM
Time of Injection: 09/04/2000 09:13 PM
Low Point : 8.90 mV High Point : 809.49 mV
Plot Scale: 800.6 mV

10N; 4.5-5.0 w/SG



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/21/00
Units:	mg/Kg	Received:	07/21/00
Basis:	wet	Prepared:	07/25/00
Batch#:	57232		

Field ID:	10S;4.0-4.5	Diln Fac:	40.00
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146684-011		

Analyte	Result	RL
Diesel C10-C24	3,500 L	40
Motor Oil C24-C36	ND	200

Surrogate	Result	%REC	Limits
Hexacosane	ND	DO ND	60-136

Field ID:	10E;3.5-4.0	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146684-012		

Analyte	Result	RL
Diesel C10-C24	1,500 L	20
Motor Oil C24-C36	ND	99

Surrogate	Result	%REC	Limits
Hexacosane	ND	DO ND	60-136

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC120990	Analyzed:	08/28/00

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	97	60-136

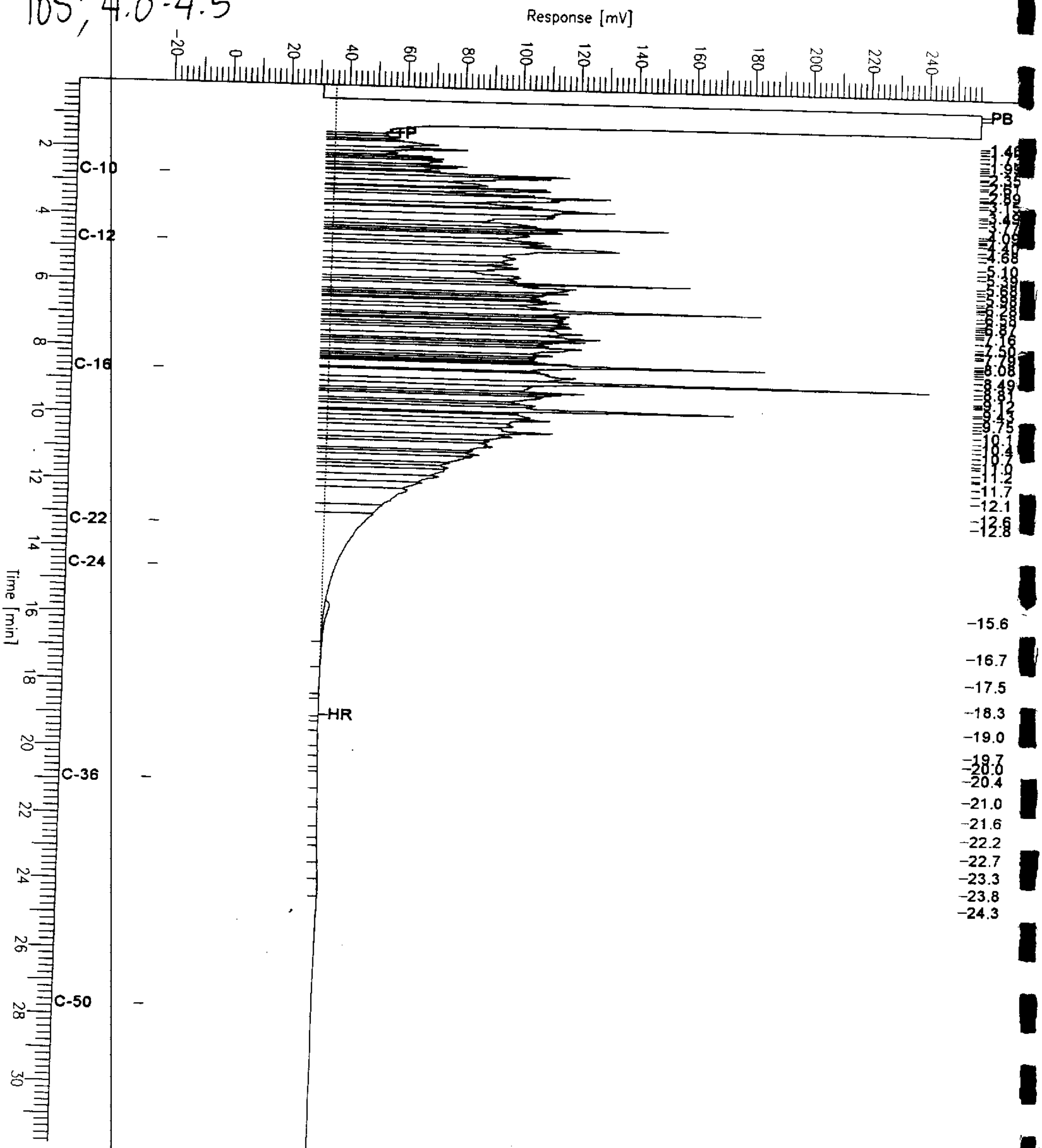
= Heavier hydrocarbons contributed to the quantitation
= Lighter hydrocarbons contributed to the quantitation
= Sample exhibits fuel pattern which does not resemble standard
DO = Diluted Out
ND = Not Detected
RL = Reporting Limit

Chromatogram

Sample Name : 146684-011sg,57232
FileName : G:\GC15\CHB\245B014.RAW
Method : BTEH247.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -21 mV

Sample #: 57232
Date : 09/03/2000 03:37 PM
Time of Injection: 09/02/2000 05:22 AM
Low Point : -21.40 mV
Plot Scale: 279.5 mV
High Point : 258.12 mV

105; 4.0-4.5

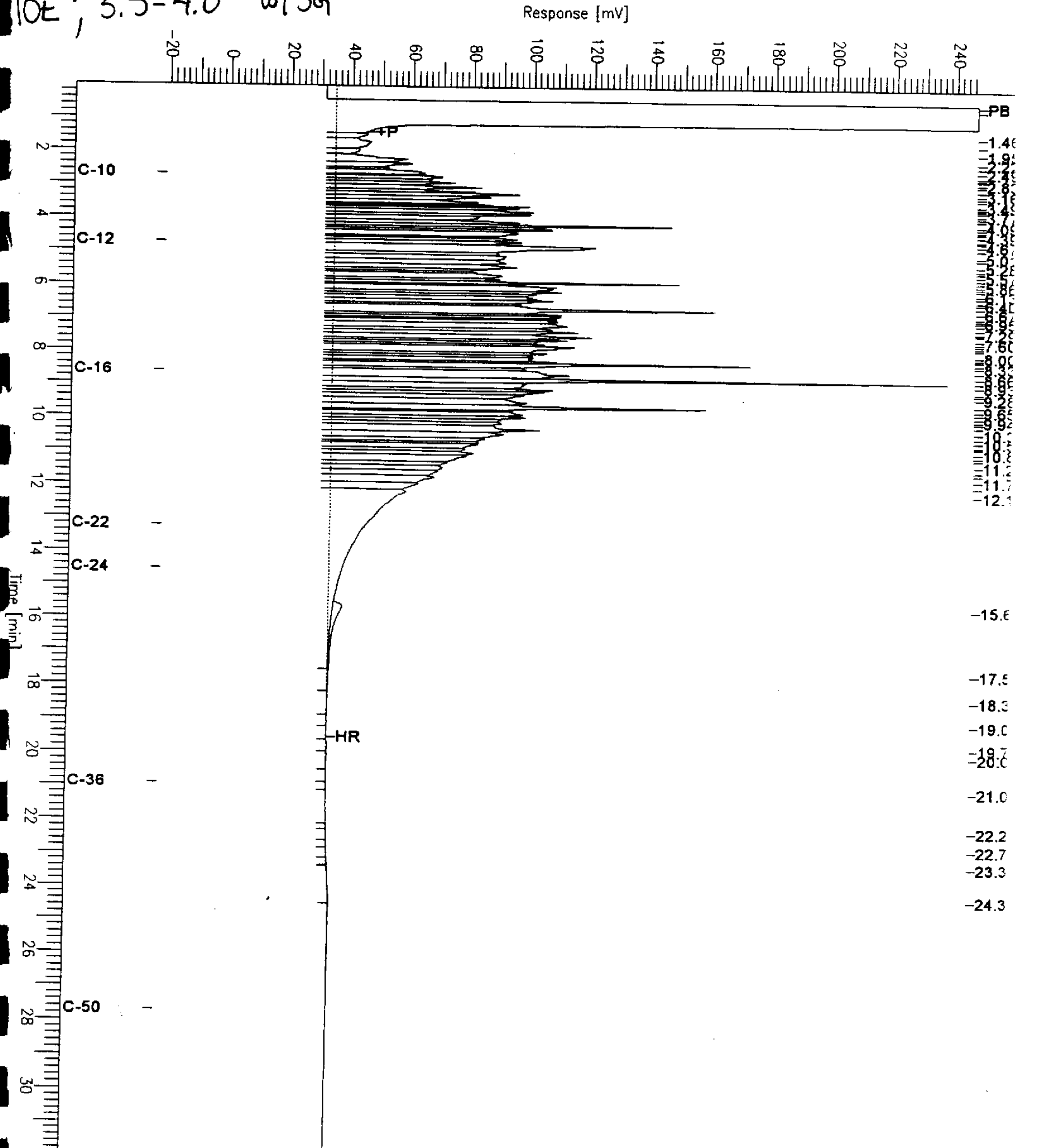


Chromatogram

Sample Name : 146684-012sg,57232
FileName : G:\GC15\CHB\245B013.RAW
Method : BTEH247.MTH
Start Time : 0.01 min
End Time : 31.91 min
Scale Factor: 0.0
Plot Offset: -21 mV

Sample #: 57232
Page 1 of 1
Date : 09/03/2000 03:36 PM
Time of Injection: 09/02/2000 04:39 AM
Low Point : -21.13 mV
High Point : 246.92 mV
Plot Scale: 268.1 mV

10E ; 3.5-4.0 w/SG



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146684	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC120991	Batch#:	57232
Matrix:	Soil	Prepared:	07/25/00
Units:	mg/Kg	Analyzed:	09/04/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	46.31	43.81	95	67-121

Surrogate	%REC	Limits
Hexacosane	90	60-136

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/24/00
Units:	mg/Kg	Received:	07/25/00
Basis:	wet	Prepared:	07/27/00
Batch#:	57304		

Field ID:	10W;3.5-4.0	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146715-001		

Analyte	Result	RL
Diesel C10-C24	970 L	5.0
Motor Oil C24-C36	71 L	25

Surrogate	%REC	Limits
Hexacosane	65	60-136

Field ID:	11E;4-4.5	Diln Fac:	25.00
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146715-002		

Analyte	Result	RL
Diesel C10-C24	1,800 L	25
Motor Oil C24-C36	ND	120

Surrogate	%REC	Limits
Hexacosane	DO	60-136

Field ID:	11-W2;8.0-8.5	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146715-003		

Analyte	Result	RL
Diesel C10-C24	490 L Y	5.0
Motor Oil C24-C36	320 H	25

Surrogate	%REC	Limits
Hexacosane	78	60-136

Field ID:	11-N3;9-9.5	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	09/02/00
Lab ID:	146715-004		

Analyte	Result	RL
Diesel C10-C24	630 L Y	5.0
Motor Oil C24-C36	750	25

Surrogate	%REC	Limits
Hexacosane	83	60-136

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

Chromatogram

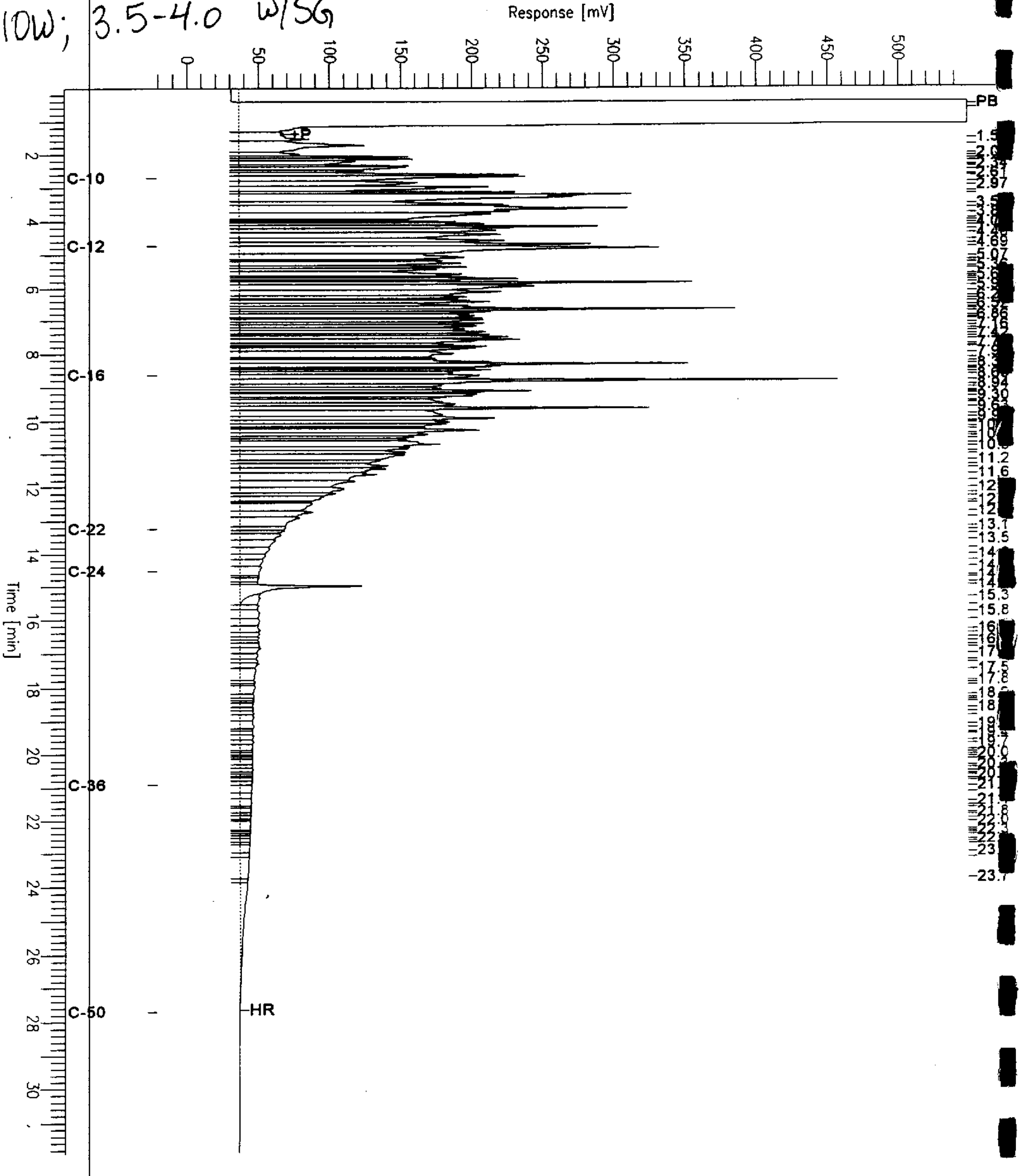
Sample Name : 146715-001sg,57304
FileName : G:\GC15\CHB\245B009.RAW
Method : BTEH247.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: -22 mV

Sample #: 57304
Date : 09/03/2000 03:33 PM
Time of Injection: 09/02/2000 01:46 AM
Low Point : -21.63 mV
Plot Scale: 570.7 mV

Page 1 of 1
High Point : 549.10 mV

10W; 3.5-4.0 w/SG



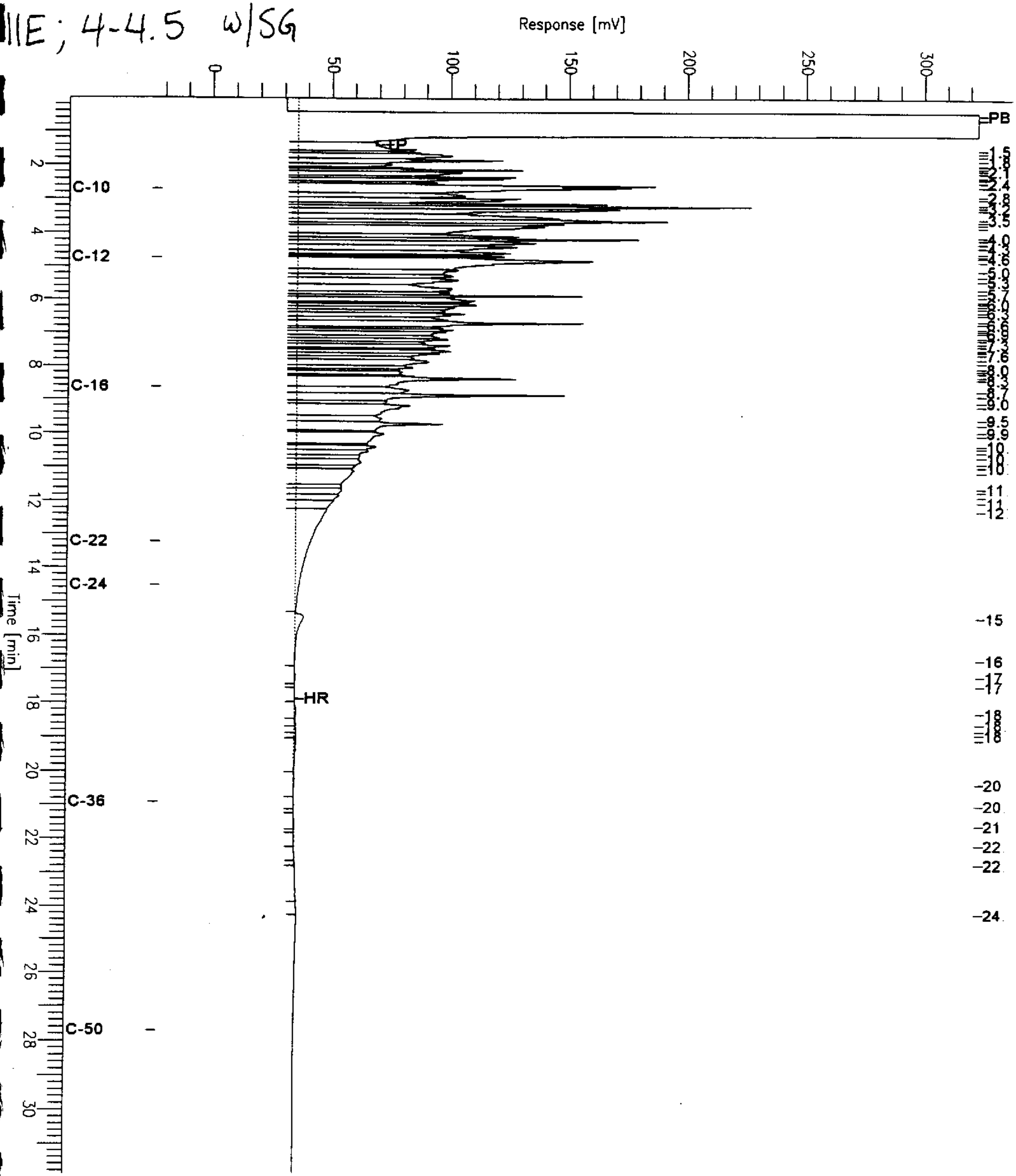
Chromatogram

Sample Name : 146715-002sg,57304
FileName : G:\GC15\CHB\245B010.RAW
Method : BTEH247.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -22 mV

Sample #: 57304
Date : 09/03/2000 03:34 PM
Time of Injection: 09/02/2000 02:29 AM
Low Point : -21.74 mV
Plot Scale: 344.8 mV

High Point : 323.03 mV

11E; 4-4.5 w/SG

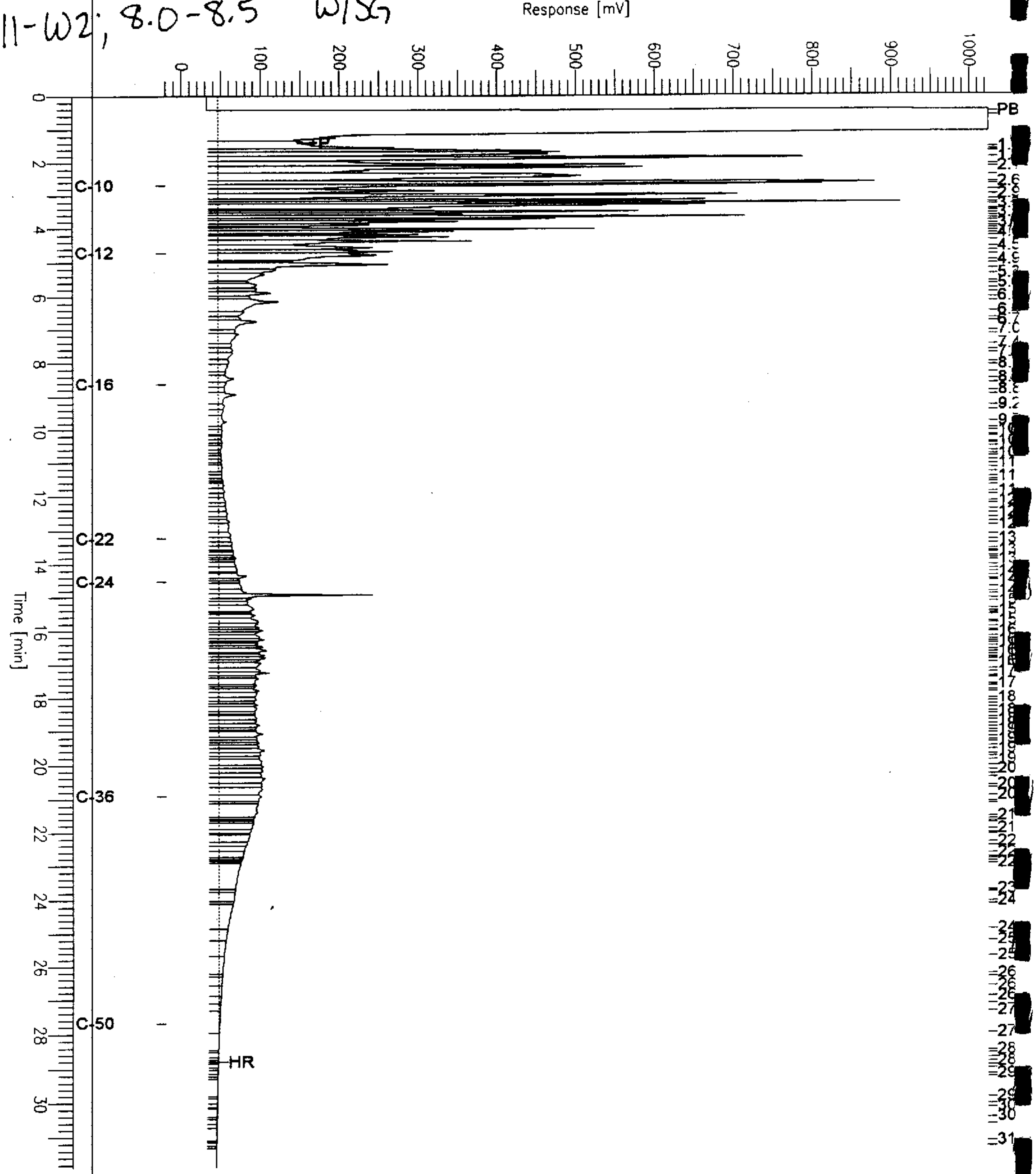


Chromatogram

Sample Name : 146715-003sg,57304
FileName : G:\GC15\CHB\245B022.RAW
Method : BTEH247.MTH
Start Time : 0.00 min
Scale Factor: 0.0
End Time : 31.90 min
Plot Offset: -20 mV

Sample #: 57304
Date : 09/03/2000 03:41 PM
Time of Injection: 09/02/2000 11:07 AM
Low Point : -20.36 mV
Plot Scale: 1044.4 mV
Page 1 of 1
High Point : 1024.00 mV

11-W2, 8.0-8.5 W/SG



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Matrix:	Soil	Sampled:	07/24/00
Units:	mg/Kg	Received:	07/25/00
Basis:	wet	Prepared:	07/27/00
Batch#:	57304		

Field ID:	11-S;9-9.5	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	09/04/00
Lab ID:	146715-005		

Analyte	Result	RL
Diesel C10-C24	370 H L Y	5.0
Motor Oil C24-C36	680 L	25

Surrogate	%REC	Limits
Hexacosane	106	60-136

Field ID:	11-E1;7.5-8.0	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	08/28/00
Lab ID:	146715-006		

Analyte	Result	RL
Diesel C10-C24	34 L Y	1.0
Motor Oil C24-C36	68	5.0

Surrogate	%REC	Limits
Hexacosane	85	60-136

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC121287	Analyzed:	08/28/00

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	99	60-136

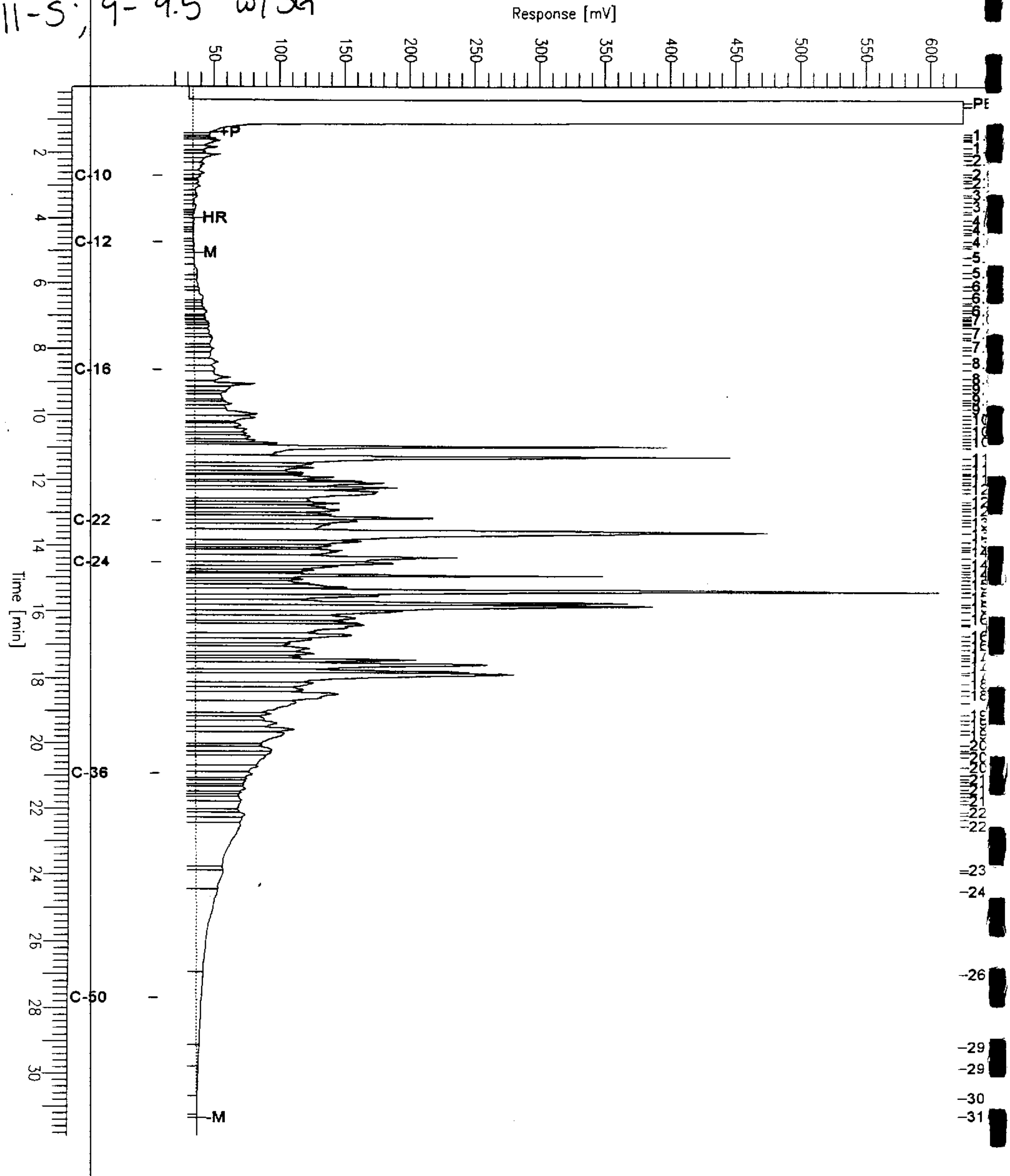
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits fuel pattern which does not resemble standard
DO = Diluted Out
ND = Not Detected
RL = Reporting Limit

Chromatogram

Sample Name : 146715-005sg,57304
FileName : G:\GC15\CHB\245B100.RAW
Method : BTEH247.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 10 mV

Sample #: 57304 Page 1 of 1
Date : 09/05/2000 11:50 AM
Time of Injection: 09/04/2000 09:56 PM
Low Point : 10.37 mV High Point : 625.67 mV
Plot Scale: 615.3 mV

11-S; 9-9.5 w/SG

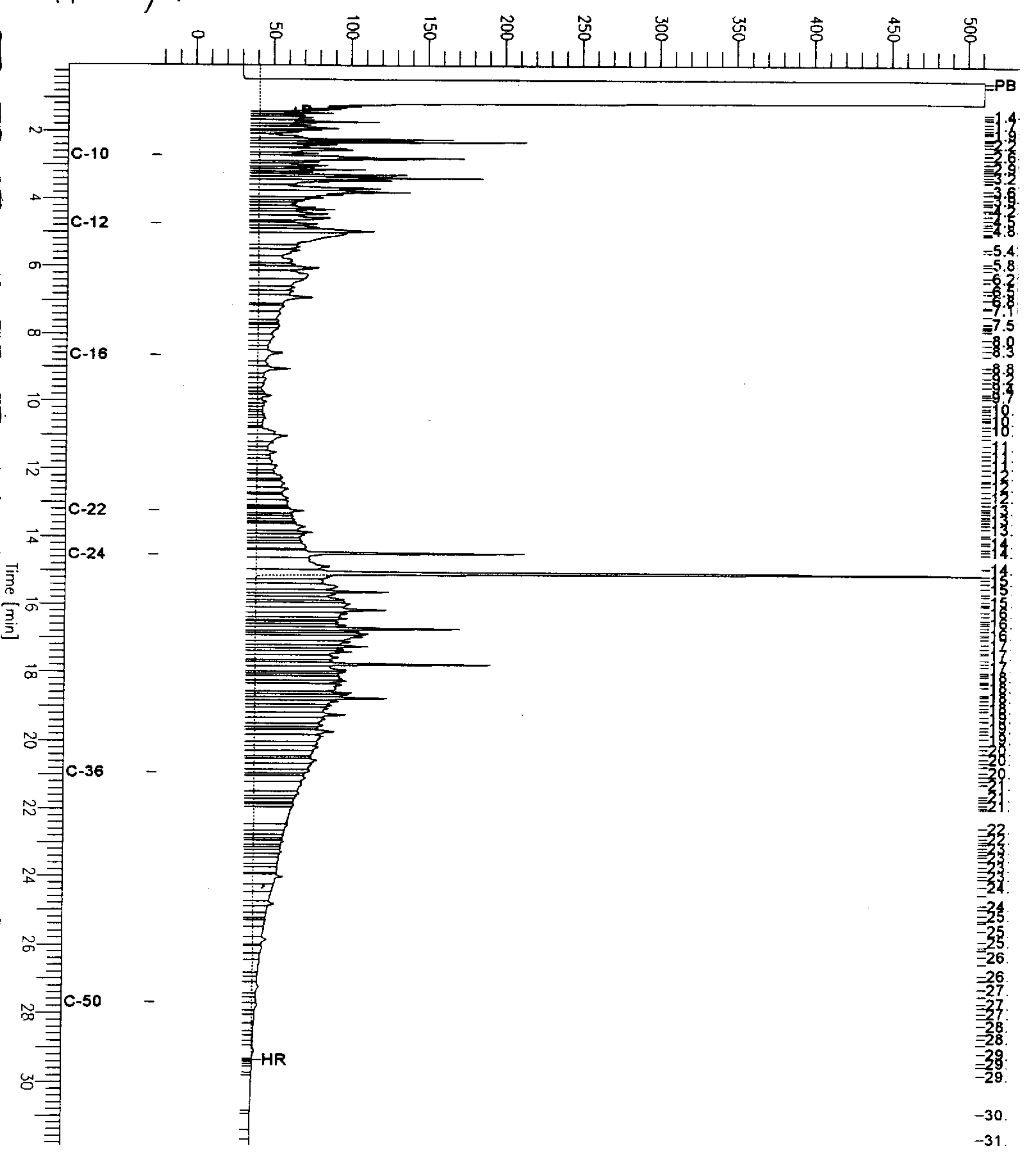


Chromatogram

Sample Name : 146715-006sg,57304
FileName : G:\GC15\CHB\238B054.RAW
Method : BTEH236.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: -22 mV

Sample #: 57304 Page 1 of 1
Date : 08/29/2000 09:33 AM
Time of Injection: 08/28/2000 06:13 PM
Low Point : -22.36 mV High Point : 510.37 mV
Plot Scale: 532.7 mV

11-E1; 7.5-8.0 w/SG



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	146715	Location:	MSC-7101 Edgewater Drive
Client:	Baseline Environmental	Prep:	SHAKER TABLE
Project#:	98383-17	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC121288	Batch#:	57304
Matrix:	Soil	Prepared:	07/27/00
Units:	mg/Kg	Analyzed:	09/04/00
Basis:	wet		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	46.61	40.31	86	67-121

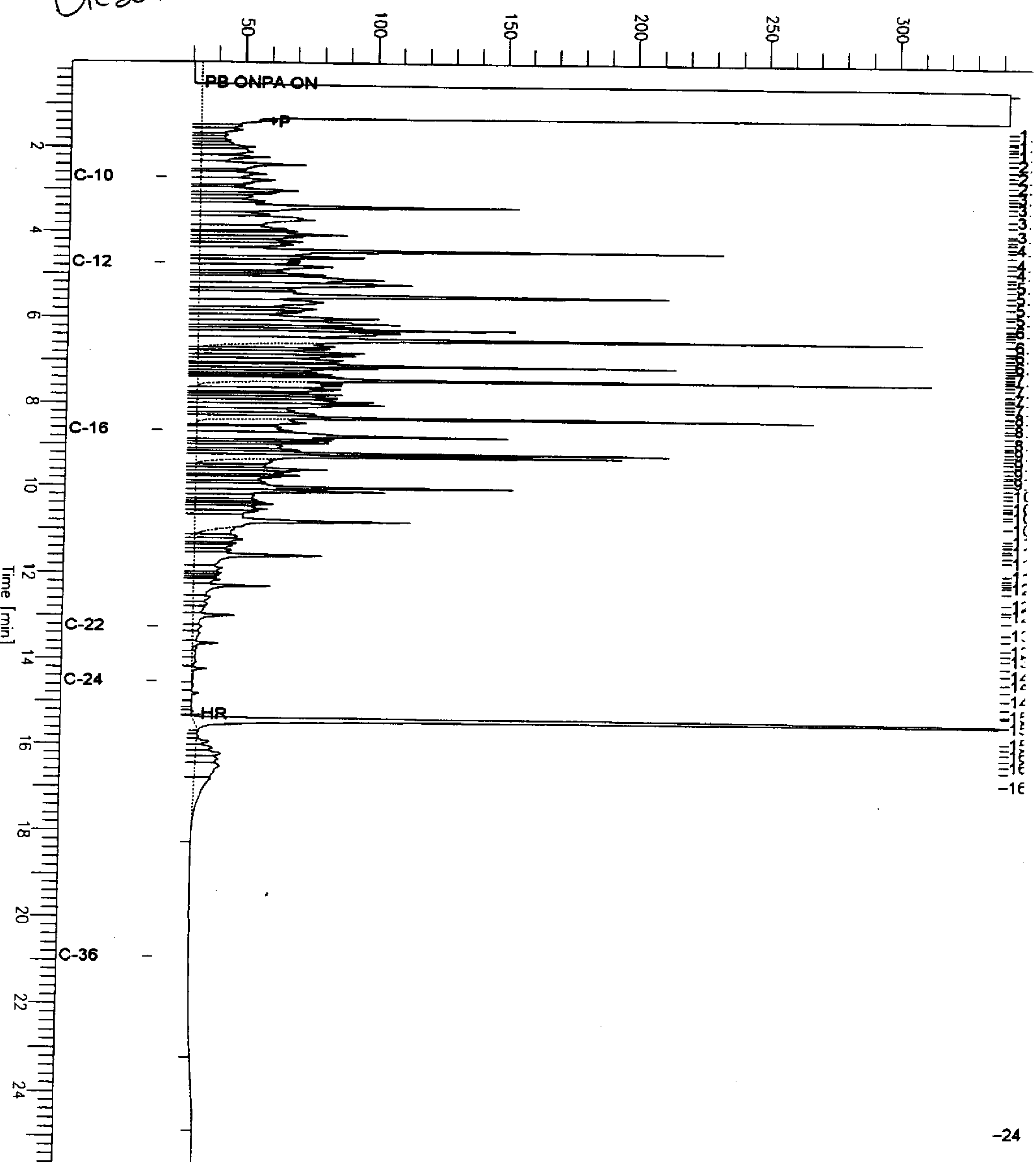
Surrogate	%REC	Limits
Hexacosane	89	60-136

Chromatogram

Sample Name : ccv,00ws9382,dsl
FileName : G:\GC15\CHB\207B003.RAW
Method : BTEH180.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 25.60 min
Plot Offset: 20 mV

Sample #: 500mg/l
Date : 07/26/2000 09:31 AM
Time of Injection: 07/25/2000 04:24 PM
Low Point : 20.26 mV
Plot Scale: 321.8 mV
High Point : 342.05 mV

Diesel



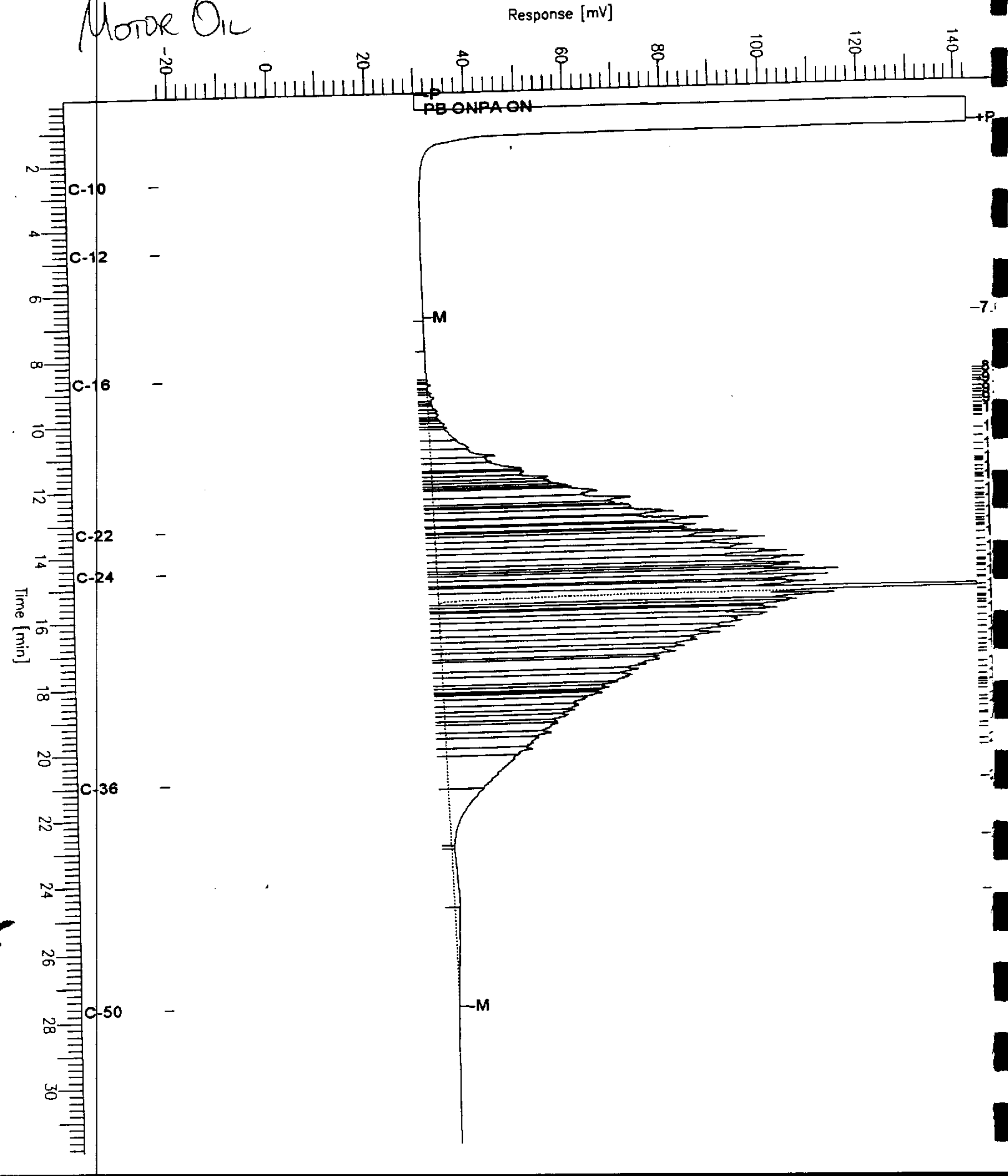
Chromatogram

Page 1 of 1

Sample Name : ccv,00ws9383,mo
FileName : G:\GC15\CHB\207B005.RAW
Method : BTEH108.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -22 mV

Sample #:
Date : 07/25/2000 06:13 PM
Time of Injection: 07/25/2000 05:41 PM
Low Point : -22.10 mV
High Point : 142.62 mV
Plot Scale: 164.7 mV

Motor Oil



APPENDIX E

SUMMARY OF GROUNDWATER MONITORING RESULTS

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<-----				μg/l					----->
MW-1															
10/04/1989	10.20	---	---	8020		---	---	---	540	65	26	14	22	---	---
10/04/1989	10.20	---	---	8240		---	---	---	---	120	46	43	78	---	---
04/27/1993	10.20	---	---	8020		---	---	---	<1,000	<1.0	<1.0	<1.0	<1.0	---	---
04/19/1995	10.20	---	---	8020		---	---	---	3,200	880	15	23	21	---	---
07/27/1995	10.20	4.62	5.58	8020		---	---	---	980	130	3.6	1.4	5.6	---	---
11/20/95	10.20	6.08	4.12	8020		---	---	---	400	99	2.8	1.1	4.6	---	---
02/21/1996	10.20	4.62	5.58	8020		---	---	---	1,700	340	8.4	5.3	16	---	---
05/13/1996	10.20	4.33	5.87	8020		---	---	---	7,300	2,000	30	42	38	---	---
08/27/1996	10.20	5.25	4.95	8020		---	---	---	380	61	2.4	<0.5	4.2	---	---
02/23/1998	10.20	1.75	8.45	8020		<50	<500	<50	820	160	4.9	3	9.7	---	---
08/19/1998	10.20	4.78	5.42	8020	SGC	1,200	---	---	780	69	4.1	0.84	8.5	<5.0	---
11/11/98	10.20	5.64	4.56	---		---	---	---	---	---	---	---	---	---	---
02/23/1999	10.20	3.41	6.79	8020	SGC	1,200	1,600	<50	1,100	190	5	3	12	<5.0	---
05/27/1999	10.20	3.96	6.24	---		---	---	---	---	---	---	---	---	---	---
08/24/1999	10.20	4.92	5.28	8020	SGC	640	1,900	<50	370	37	0.9	<0.5	1.9	<5.0	---
11/22/99	10.20	5.46	4.74	---		---	---	---	---	---	---	---	---	---	---
01/18/2000	10.05	5.41	4.64	---		---	---	---	---	---	---	---	---	---	---
01/19/2000	---	---	---	8020	SGC	50	<200	<50	660	43	2.3	1.1	6	<5.0	---
05/11/2000	10.05	4.63	5.42	---		---	---	---	---	---	---	---	---	---	---
08/24/2000	10.05	5.07	4.98	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	340	<250	290	480	53	1.4	<0.5	2.9	<5.0	---
MW-2															
10/04/1989	10.47	---	---	8020		---	---	---	<30	<0.3	<0.3	<0.3	<0.3	---	---
10/04/1989	10.47	---	---	8240		---	---	---	---	2	<2.0	<2.0	<2.0	---	---
04/27/1993	10.47	---	---	8020		---	---	---	<1,000	<1.0	<1.0	<1.0	<1.0	---	---
04/19/1995	10.47	---	---	8020		---	---	---	<50	1.8	<0.5	<0.5	<0.5	---	---
07/27/1995	10.47	6.22	4.25	8020		---	---	---	<50	2.3	<0.5	<0.5	<0.5	---	---
11/20/95	10.47	7.49	2.98	8020		---	---	---	<50	2.2	<0.5	<0.5	<0.5	---	---
02/21/1996	10.47	6.68	3.79	8020		---	---	---	<50	1.7	<0.5	<0.5	0.5	---	---
05/13/1996	10.47	6.32	4.15	8020		---	---	---	---	2	<0.5	<0.5	<0.5	---	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------	------	------	------	µg/l	------	------	------	------	------>
08/27/1996	10.47	6.84	3.63	8020		---	---	---	---	2.4	<0.5	<0.5	<0.5	---	---
02/24/1998	10.47	5.44	5.03	8020		<50	<500	<50	---	1.6	<0.5	<0.5	<0.5	---	---
08/19/1998	10.47	6.56	3.91	8020	SGC	330	---	---	<50	4.1	3.4	0.8	2.6	<5.0	<100
MW-2															
11/11/98	10.47	7.37	3.10	---		---	---	---	---	---	---	---	---	---	---
02/23/1999	10.47	8.68	1.79	8020	SGC	200	900	<50	<50	3.5	0.6	0.6	1.2	<5.0	---
05/27/1999	10.47	5.20	5.27	---		---	---	---	---	---	---	---	---	---	---
08/24/1999	10.47	6.75	3.72	8020	SGC	140	700	<50	<50	2.6	<0.5	<0.5	<0.5	<5.0	---
11/22/99	10.47	7.58	2.89	---		---	---	---	---	---	---	---	---	---	---
01/18/2000	10.47	7.41	3.06	8020	SGC	60 A	660	<50	<50	2.1	<0.5	<0.5	<0.5	<5.0	---
05/11/2000	10.47	6.43	4.04	---		---	---	---	---	---	---	---	---	---	---
08/24/2000	10.47	8.91	1.56	8020	SGC	170	440	130	<50	2.4	<0.5	<0.5	<0.5	<5.0	---
MW-3															
10/04/1989	---	---	---	8020		---	---	---	<30	<0.3	<0.3	<0.3	<0.3	---	---
10/04/1989	---	---	---	8240		---	---	---	---	<2.0	<2.0	<2.0	<2.0	---	---
02/23/1998	---	---	---	---		<50	<500	<50	---	---	---	---	---	---	---
11/11/98	---	5.83	---	---		---	---	---	---	---	---	---	---	---	---
02/23/1999	---	---	---	---	Submerged	---	---	---	---	---	---	---	---	---	---
05/27/1999	---	1.68	---	---		---	---	---	---	---	---	---	---	---	---
08/24/1999	---	4.76	---	---		---	---	---	---	---	---	---	---	---	---
11/22/99	---	6.46	---	---		---	---	---	---	---	---	---	---	---	---
11/22/99	---	---	---	---	Destroyed	---	---	---	---	---	---	---	---	---	---
MW-4															
10/04/1989	7.89	---	---	8020		---	---	---	<30	<0.3	<0.3	<0.3	<0.3	---	---
10/04/1989	7.89	---	---	8240		---	---	---	---	<2.0	<2.0	<2.0	<2.0	---	---
11/11/98	7.89	6.25	1.64	---		---	---	---	---	---	---	---	---	---	---
02/23/1999	7.89	3.10	4.79	---		---	---	---	---	---	---	---	---	---	---
05/27/1999	7.89	4.03	3.86	---		---	---	---	---	---	---	---	---	---	---
08/24/1999	7.89	5.07	2.82	---		---	---	---	---	---	---	---	---	---	---
11/22/99	7.89	6.32	1.57	---		---	---	---	---	---	---	---	---	---	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------				µg/l					------>
11/22/99	---	---	---	---	Destroyed	---	---	---	---	---	---	---	---	---	---
MW-5															
12/13/91	11.15	---	---	8020		1,900	---	---	13,000	1,500	190	970	2,500	---	---
12/13/91	---	---	---	8020	Dup	---	---	---	16,000	1,400	180	870	2,500	---	---
12/13/91	11.15	---	---	8240		---	---	---	---	1,800	<250	1,000	3,800	---	---
MW-5															
12/13/91	---	---	---	8240	Dup	---	---	---	---	1,600	<250	980	3,500	---	---
04/27/1993	11.15	---	---	8240		12,000	---	---	35,000	2,100	<1.0	1,800	2,700	---	---
04/19/1995	11.15	---	---	8240		880	4,700	---	14,000	490	51	610	1,200	---	---
07/27/1995	11.15	6.29	4.86	8240		590	5,000	---	22,000	1,300	54	1,500	2,400	---	---
11/20/95	11.15	6.98	4.17	8020		<50	<50	<50	8,900	430	31	610	880	---	---
02/21/1996	11.15	5.97	5.18	8020		480	<50	<50	1,000	540	65	700	970	---	---
05/13/1996	11.15	6.25	4.90	8020		<50	<50	<50	5,900	430	26	580	760	---	---
05/13/1996	---	---	---	8020	Dup	<50	<50	<50	7,300	360	22	49	640	---	---
08/27/1996	11.15	6.40	4.75	8020		2,000	<51	<51	6,600	430	27	600	650	---	---
08/27/1996	---	---	---	8020	Dup	6,600	<51	<51	6,300	410	25	580	620	---	---
02/23/1998	11.15	4.22	6.93	8020		<50	<500	<50	740	19	1.4	41	34	---	---
08/19/1998	11.15	6.14	5.01	8020		1,400	<250	1700	5,800	500	25	730	300	5,900	---
08/19/1998	11.15	6.14	5.01	8260	SGC	---	---	---	---	---	---	---	---	6,700	---
11/11/98	11.15	6.51	4.64	---		---	---	---	---	---	---	---	---	---	---
02/23/1999	11.15	3.59	7.56	8020	SGC	2,000	700	<50	6,700	300	26	800	690	1,600	---
05/27/1999	11.15	5.71	5.44	---		---	---	---	---	---	---	---	---	---	---
08/24/1999	11.15	6.02	5.13	8020	SGC	220	2,000	<50	2,100 E	190 E	5.5	340 E	78	380 E	---
11/22/99	11.15	6.16	4.99	---		---	---	---	---	---	---	---	---	---	---
01/18/2000	11.15	6.60	4.55	---		---	---	---	---	---	---	---	---	300 E	---
01/19/2000	---	---	---	8020	SGC	100	320	<50	3,000	66 E	6.3	400 E	90	(1,300)	---
05/11/2000	11.15	5.62	5.53	---		---	---	---	---	---	---	---	---	1,200	---
08/24/2000	11.15	6.32	4.83	8020	SGC	4,800	560	6,600	12,000	220	21	430	91	(1,400)	---
MW-6															
12/13/91	10.98	---	---	8020		520	---	---	780	110	2.7	<2.5	5.5	---	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<-------				µg/l					------->
12/13/91	10.98	---	---	8240		---	---	---	---	95	5	<5	<5	---	---
04/27/1993	10.98	---	---	8020		<1,000	---	---	<1,000	430	4	5	10	---	---
04/19/1995	10.98	---	---	8020		6,700	---	---	5,700	40	<0.8	3.9	29	---	---
04/19/1995	---	---	---	8020	Dup	3,700	---	---	3,000	310	3.1	2.7	100	---	---
07/27/1995	10.98	7.09	3.89	8020		3,900	---	---	6,100	430	15	200	600	---	---
07/27/1995	---	---	---	8020	Dup	2,600	---	---	6,300	420	15	200	600	---	---
11/20/95	10.98	7.89	3.09	8020		850	---	---	6,800	160	4.6	8	240	---	---
11/20/95	---	---	---	8020	Dup	---	---	---	3,600	130	11	4.4	200	---	---
02/21/1996	10.98	7.40	3.58	8020		1,700	---	---	2,800	230	2.8	3.8	44	---	---
MW-6															
02/21/1996	---	---	---	8020	Dup	2,500	---	---	2,200	280	3	4	4.6	---	---
05/13/1996	10.98	7.10	3.88	8020		400	<50	<50	3,100	430	12	5.2	67	---	---
08/27/1996	10.98	7.42	3.56	8020		3,100	---	---	4,200	300	9.3	110	110	---	---
08/19/1998	10.98	---	---	---	SPH: 0.125 ft	---	---	---	---	---	---	---	---	---	---
11/11/98	10.98	7.09	3.89	---	SPH: 0.05 ft	---	---	---	---	---	---	---	---	---	---
02/23/1999	10.98	7.31	3.67	---	SPH: NM	---	---	---	---	---	---	---	---	---	---
05/27/1999	10.98	6.91	4.07	---	SPH: 0.20 ft	---	---	---	---	---	---	---	---	---	---
08/24/1999	10.98	7.46	3.52	---	SPH: 0.03 ft	---	---	---	---	---	---	---	---	---	---
11/22/99	10.98	7.96	3.02	---	SPH: 0.16 ft	---	---	---	---	---	---	---	---	---	---
01/18/2000	10.98	8.08	2.90	---	SPH: 0.19 ft	---	---	---	---	---	---	---	---	---	---
05/11/2000	10.98	7.52	3.46	---	SPH: 0.01 ft	---	---	---	---	---	---	---	---	---	---
08/24/2000	10.98	7.50	3.48	---	SPH: 0.06 ft	---	---	---	---	---	---	---	---	---	---
MW-7															
12/13/91	11.51	---	---	8020		<50	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
12/13/91	11.51	---	---	8240		---	---	---	---	<5	<5	<5	<5	---	---
04/27/1993	11.51	---	---	8240		<1,000	---	---	<1,000	<1.0	<1.0	<1.0	<1.0	---	---
04/19/1995	11.51	---	---	8240		<50	<1,000	---	<50	<2.0	<2.0	<2.0	<2.0	---	---
07/27/1995	11.51	6.87	4.64	8240		<50	<1,000	---	<50	<2.0	<2.0	<2.0	<2.0	---	---
11/20/95	11.51	8.48	3.03	8020		<50	---	---	<50	<0.5	<0.5	<0.5	1.5	---	---
02/21/1996	11.51	6.29	5.22	8020		<50	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
05/13/1996	11.51	6.95	4.56	8020		<50	---	---	---	<0.5	<0.5	<0.5	<0.5	---	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------				µg/l					------>
08/27/1996	11.51	6.80	4.71	8020		---	---	---	---	<0.5	<0.5	<0.5	<0.5	---	---
08/19/1998	11.51	6.88	4.63	---		---	---	---	---	---	---	---	---	---	---
11/11/98	11.51	7.40	4.11	---		---	---	---	---	---	---	---	---	---	---
02/23/1999	11.51	5.57	5.94	8020		<50	<200	<50	80	<0.5	<0.5	<0.5	1	<5.0	---
05/27/1999	11.51	6.56	4.95	---		---	---	---	---	---	---	---	---	---	---
08/24/1999	11.51	6.29	5.22	8020	SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	5	---
11/22/99	11.51	6.80	4.71	---		---	---	---	---	---	---	---	---	---	---
01/18/2000	11.51	7.31	4.20	---		---	---	---	---	---	---	---	---	---	---
01/19/2000	11.51	---	---	8020	SGC	<50	<200	<50	54	1.5	1.5	2.4	3.8	<5.0	---
05/11/2000	11.51	6.41	5.10	---		---	---	---	---	---	---	---	---	---	---
08/24/2000	11.51	7.11	4.40	8020		<50	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------				µg/l					------>
MW-8															
11/20/96	12.22	---	---	8020		880	---	---	<50	0.66	<0.5	<0.5	<0.5	---	---
11/20/97	12.22	9.59	2.63	8020		200	---	---	<50	<0.5	<0.5	<0.5	<0.5	2	---
02/24/1998	12.22	8.42	3.80	8020		<50	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---
06/08/1998	12.22	9.57	2.65	8020		1,200	1,000	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---
08/19/1998	12.22	9.49	2.73	8020	SGC	<50	<250	<50	<50	1.6	3.4	1	2.8	<5.0	---
11/11/98	12.22	9.64	2.58	8020	SGC	<50	<200	<50	<50	0.9	0.8	0.6	2.3	<5.0	---
02/23/1999	12.22	11.53	0.69	8020		700	1500	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
05/27/1999	12.22	9.65	2.57	8020		<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
08/24/1999	12.22	9.62	2.60	8020	SGC	70	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
11/22/99	12.22	9.64	2.58	8020	SGC	57	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
01/18/2000	12.22	8.31	3.91	8020	SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
05/11/2000	12.22	9.69	2.53	8020	SGC	<50	<200	<50	<50	<0.5	1.3	<0.5	2.1	<5.0	---
08/24/2000	12.22	9.40	2.82	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	85	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
MW-9															
11/20/96	10.77	---	---	8020		1,900	---	---	240	21	0.81	1.8	2.2	---	---
11/20/97	10.77	7.91	2.86	8020		---	---	---	300	20	<0.5	<0.5	1.8	<1.0	---
02/24/1998	10.77	6.11	4.66	8020		<50	<500	<50	2,200	540	5.6	1.6	4.9	---	---
06/08/1998	10.77	7.14	3.63	8020		1,800	890	<50	840	450	6.1	3.3	5.3	---	---
08/19/1998	10.77	7.88	2.89	8020	SGC	190	<250	160	740	370	8.6	0.99	7.3	<5.0	---
11/11/98	10.77	8.23	2.54	8020	SGC	<50	230	<50	700	130	4.3	<0.5	3.9	<5.0	---
02/23/1999	10.77	6.65	4.12	8020		1,100	3,700	<50	1,100	620	9.7	1.5	7.7	<5.0	---
05/27/1999	10.77	7.70	3.07	8020	SGC	70	300	<50	950	470	11	1.5	9.2	<5.0	---
08/24/1999	10.77	8.12	2.65	8020	SGC	890	1,700	<50	290	45	2.8	<0.5	3	<5.0	---
11/22/99	10.77	8.33	2.44	8020	SGC	1,000	6,000	<50	170	12	1.8	<0.5	2	<5.0	---
01/18/2000	10.77	8.63	2.14	8020	SGC	200 A	2,300	<50	160	5.7	1.9	0.6	4.2	<5.0	---
05/11/2000	10.77	7.70	3.07	8020	SGC	180 A	980	<100	1,050	280	7.0	<2.5	5.9	<25	---
08/24/2000	10.77	8.31	2.46	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	580	2,200	170	180	23	2.4	<0.5	2.7	<5.0	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------	------	------	------	µg/l	------	------	------	------	------>
MW-10															
11/20/96	10.59	---	---	8020		940	---	---	<50	49	0.59	0.54	1.2	---	---
11/20/97	10.59	7.70	2.89	8020		---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
MW-10															
02/24/1998	10.59	4.39	6.20	8020		<50	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---
06/08/1998	10.59	6.94	3.65	8020		500	<500	<50	<50	7.3	<0.5	<0.5	<0.5	---	---
08/19/1998	10.59	6.99	3.60	8020	SGC	240	520	110	<50	<0.5	<0.5	<0.5	<0.5	---	---
11/11/98	10.59	7.57	3.02	8020	SGC	<50	<200	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
02/23/1999	10.59	5.51	5.08	8020		170	1,200	<50	<50	1.3	<0.5	<0.5	<0.5	<5.0	---
05/27/1999	10.59	6.72	3.87	8020	SGC	<50	<200	<50	350	170	1.5	0.5	2.3	<5.0	---
08/24/1999	10.59	7.27	3.32	8020	SGC	140	300	<50	380	160 E	<0.5	<0.5	2.6	<5.0	---
11/22/99	10.59	7.71	2.88	8020	SGC	570	3,400	<50	110	5.1	<0.5	<0.5	0.72	<5.0	---
01/18/2000	10.59	7.77	2.82	---		---	---	---	---	---	---	---	---	---	---
01/19/2000	---	---	---	8020	SGC	120 A,B	1,200	<50	100	<0.5	<0.5	0.8	<0.5	<5.0	---
05/11/2000	10.59	7.00	3.59	8020	SGC	110 A	990	<50	145	1.62	0.5	0.5	0.9	<5.0	---
08/24/2000	10.59	7.31	3.28	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	430	1,300	110	<50	1.0	<0.5	<0.5	<0.5	<5.0	---
MW-11															
01/18/2000	11.60	7.08	4.52	---		---	---	---	---	---	---	---	---	---	---
01/19/2000	---	---	---	8020	SGC	<50	500	<50	220	<0.5	<0.5	<0.5	<0.5	<5.0	---
05/11/2000	11.60	5.95	5.65	8020	SGC	<50	430	<50	600	23	2.1	18	15	<5.0	---
08/24/2000	11.60	6.58	5.02	8020		<50	<250	<50	110	5.9	<0.5	0.73	0.64	<5.0	---
MW-12															
01/18/2000	10.43	8.11	2.32	---		---	---	---	---	---	---	---	---	---	---
01/19/2000	---	---	---	8020	SGC	1,800 A	11,000	<50	200	<0.5	3.4	1.5	8.4	<5.0	---
05/11/2000	10.43	6.78	3.65	8020	SGC	2,400 A	4,900	<100	370	<0.5	<0.5	<0.5	0.9	<5.0	---
08/24/2000	10.43	7.56	2.87	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	3,500	5,000	3,700	170	<0.5	<0.5	<0.5	<0.5	<5.0	---
MW-13															

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------	------	------	------	------	µg/l	------	------	------	------>
01/18/2000	11.34	9.63	1.71	8020	SGC	8,800 A	120,000	<50	<50	<0.5	0.8	<0.5	<0.5	<5.0	---
05/11/2000	11.34	10.12	1.22	8020	SGC	11,000 A	110,000	<500	70	1.6	5.4	1.2	7.6	<5.0	---
08/24/2000	11.34	10.22	1.12	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	3,100	13,000	1,200	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<-------	-------	-------	-------	-------	μg/l	-------	-------	-------	------->
MW-14															
01/18/2000	10.05	7.37	2.68	8020	SGC	1,700 A	22,000	<50	120	<0.5	<0.5	<0.5	<0.5	<5.0	---
05/11/2000	10.05	6.73	3.32	8020	SGC	360 A	4,300	<100	120	<0.5	<0.5	0.5	<0.5	<5.0	---
08/24/2000	10.05	7.30	2.75	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	1,000	3,100	460	90	6.3	<0.5	<0.5	<0.5	<5.0	---
MW-15															
01/18/2000	12.36	10.56	1.80	8020	SGC	12,000 A	89,000	<50	110	3.8	2.1	1	4.6	<5.0	---
05/11/2000	12.36	10.03	2.33	8020	SGC	120 A	590	<50	90	0.9	0.9	<0.5	3.3	<5.0	---
08/24/2000	12.36	10.22	2.14	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	1,900	8,600	1,000	<50	1.9	<0.5	<0.5	1.5	<5.0	---
MW-16															
01/18/2000	13.57	10.22	3.35	---	SPH: 0.1 ft	---	---	---	---	---	---	---	---	---	---
05/11/2000	13.57	13.31	0.26	---	SPH: 0.01 ft	---	---	---	---	---	---	---	---	---	---
08/24/2000	13.57	8.91	4.66	---	SPH: NM	---	---	---	---	---	---	---	---	---	---
MW-17															
01/18/2000	9.86	5.35	4.51	8020	SGC	850 A	21,000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
05/11/2000	9.86	9.85	0.01	8020	SGC	150 A	2,900	<100	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
08/24/2000	9.86	8.59	1.27	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	190	610	71	<50	0.58	<0.5	<0.5	<0.5	<5.0	---
TBW-1															
02/23/1999	---	6.25	---	---	SPH: 0.10 ft	---	---	---	---	---	---	---	---	---	---
05/27/1999	---	5.29	---	---	SPH: 0.01 ft	---	---	---	---	---	---	---	---	---	---
08/24/1999	---	6.99	---	---	SPH: 0.18 ft	---	---	---	---	---	---	---	---	---	---
11/22/99	---	---	---	---	Inaccessible	---	---	---	---	---	---	---	---	---	---
01/18/2000	---	---	---	---	Inaccessible	---	---	---	---	---	---	---	---	---	---
05/11/2000	---	6.90	---	---	SPH: 0.10 ft	---	---	---	---	---	---	---	---	---	---
08/24/2000	---	7.12	---	---	SPH: NM	---	---	---	---	---	---	---	---	---	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<---				μg/l					--->
TBW-3															
08/19/1998	---	2.67	---	8020	SGC	810,000	---	---	920	3.2	<0.5	<0.5	0.77	<10	---
08/19/1998	---	2.67	---	8260		---	---	---	---	---	---	---	---	<5.0	---
TBW-3															
02/23/1999	---	1.25	---	8020		3,800	3,000	<50	110	1.6	<0.5	<0.5	<0.5	<5.0	---
05/27/1999	---	---	---	---	DTW: NM	---	---	---	---	---	---	---	---	---	---
08/24/1999	---	3.25	---	---	SPH globules	---	---	---	---	---	---	---	---	---	---
11/22/99	---	3.68	---	---		---	---	---	---	---	---	---	---	---	---
01/18/2000	9.92	3.73	6.19	---	SPH globules	---	---	---	---	---	---	---	---	---	---
05/11/2000	9.92	2.07	7.85	---		---	---	---	---	---	---	---	---	---	---
08/24/2000	9.92	2.82	7.10	---	SPH: sheen	44,000	13,000	34,000	570	4.7	<0.5	<0.5	<0.5	<5.0	---
TBW-5															
02/23/1999	---	9.72	---	---	SPH: 1.45 ft	---	---	---	---	---	---	---	---	---	---
05/27/1999	---	7.03	---	---	SPH: 1.13 ft	---	---	---	---	---	---	---	---	---	---
08/24/1999	---	6.52	---	---	SPH: 1.33 ft	---	---	---	---	---	---	---	---	---	---
11/22/99	---	8.31	---	---	SPH: 1.29 ft	---	---	---	---	---	---	---	---	---	---
01/18/2000	10.22	6.20	4.02	---	SPH: 0.90 ft	---	---	---	---	---	---	---	---	---	---
05/11/2000	10.22	9.41	0.81	---	SPH: 0.30 ft	---	---	---	---	---	---	---	---	---	---
08/24/2000	10.22	9.62	0.60	---	SPH: 0.26 ft	---	---	---	---	---	---	---	---	---	---
TBW-6															
02/23/1999	---	2.09	---	8020		160	600	<50	60	<0.5	<0.5	<0.5	<0.5	<5.0	---
05/27/1999	---	3.31	---	---		---	---	---	---	---	---	---	---	---	---
08/24/1999	---	7.29	---	8020	SGC	180	400	<50	130	<0.5	<0.5	<0.5	<0.5	<5.0	---
11/22/99	---	4.37	---	---		---	---	---	---	---	---	---	---	---	---
01/18/2000	9.49	3.83	5.66	---		---	---	---	---	---	---	---	---	---	---
01/19/2000	---	---	---	8020	SGC	55 C	<200	<50	170	0.6	<0.5	<0.5	<0.5	<5.0	---
05/11/2000	9.49	2.51	6.98	---		---	---	---	---	---	---	---	---	---	---
08/24/2000	9.49	4.34	5.15	---		---	---	---	---	---	---	---	---	---	---
08/25/2000	---	---	---	8020	SGC	320	<250	200	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------				µg/l					------>
Trip Blank															
08/19/1998	---	---	---	8020		---	---	---	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
11/22/99	---	---	---	8020		---	---	---	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---

CAMBRIA

Table 1. Groundwater Analytical Results for Fuel Hydrocarbons - City of Oakland Municipal Services Center, Oakland, California

Sample ID/ Date	TOC Elev.	DTW	GW Elev.	BTEX Method	Notes	TPHd	TPHmo	TPHk	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Organic Lead
						<------	------	------	------	μg/l	------	------	------	------	------>

Notes

All concentrations in micrograms per liter (μg/l)

--- = not measured/analyzed

TOC = Top of casing

DTW = Depth to water

GW = Groundwater

BTEX = Benzene, toluene, ethylbenzene, and xylenes - analyzed by EPA Method 8020 or 8240/8260

TPHd = Total petroleum hydrocarbons as diesel - analyzed by Modified EPA Method 8015

TPHmo = Total petroleum hydrocarbons as motor oil - analyzed by Modified EPA Method 8015

TPHk = Total petroleum hydrocarbons as kerosene - analyzed by Modified EPA Method 8015

TPHg = Total petroleum hydrocarbons as gasoline - analyzed by Modified EPA Method 8015

MTBE = Methyl tert-butyl ether - analyzed by EPA method 8020 or 8260. Confirmation 8260 results shown in parentheses

DUP = Duplicate sample

SPH = Separate-phase hydrocarbons; measured thickness

SGC = Silica gel cleanup prior to TPHd, TPHk, or TPHmo analysis

NM = Not measured

TBW = Tank backfill well

A = The analytical laboratory reviewed the data and noted that petroleum hydrocarbons quantified in the diesel range are actually the front end of the motor oil pattern

B = The analytical laboratory reviewed the data and noted that the quantitation in the diesel range show no diesel pattern; the response looks like lower carbon chain compounds close to the gasoline range

C = The analytical laboratory reviewed the data and noted that there is no pattern related to diesel range the peaks are small and random

E = Results are estimated due to concentrations exceeding the calibration ranged