Erler &
Kalinowski, Inc.

Results of
Soil and Groundwater Investigations
at 6601 and 6603 Bay Street

Emeryville, California

23 August 1996
(EKI 950074.03)

Erler & Kalinowski, Inc.

Consulting Engineers and Scientists

1730 So. Amphlett Blvd., Suite 320
San Mateo, California 94402
(415) 578-1172
Fax (415) 578-9131

23 August 1996

Ms. Susan Hugo
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: Results of Soil and Groundwater Investigations at 6601 and 6603 Bay Street, Emeryville, California (EKI 950074.03)

Dear Ms. Hugo:

On behalf of Sybase, Inc., Erler & Kalinowski, Inc. is pleased to present the enclosed report, entitled *Results of Soil and Groundwater Investigations at 6601 and 6603 Bay Street, Emeryville, California* and dated 23 August 1996.

Results of the investigations in the vicinity of the former underground storage tanks (USTs) indicate the following:

(1) there is no significant on-going source of petroleum hydrocarbons and benzene, toluene, ethylbenzene, and xylenes to groundwater, and

(2) concentrations of these compounds in groundwater are stable or decreasing.

On the basis of the results of this investigation, closure of the former USTs is requested.

Free-phase hydrocarbons were detected approximately 50 to 75 feet upgradient and cross-gradient of the former USTs. These hydrocarbons do not appear to be associated with the former USTs; rather, they likely originate from the former municipal landfill located on the site. Because the hydrocarbons on the site do not appear to be mobile and there are no complete human or aquatic exposure pathways to the hydrocarbons, no additional investigation in this area is warranted.

We look forward to discussing the results of the investigation with you at our meeting on 4 September 1996. If you have any questions, please do not hesitate to call.

Very truly yours,

ERLER & KALINOWSKI, INC.

Michelle Kriegman King, Ph.D.
Project Manager

cc: David Tricaso, Sybase, Inc.
John Bruno, Sybase, Inc.

Results of Soil and Groundwater Investigations at 6601 and 6603 Bay Street Emeryville, California

23 August 1996

Sybase Inc., Emeryville, California
(EKI 950074.03)

TABLE OF CONTENTS

Results of
Soil and Groundwater Investigations
at 6601 and 6603 Bay Street
Emeryville, California

23 August 1996

Sybase Inc., Emeryville, California
(EKI 950074.01)

LIST OF TABLES

Results of
Soil and Groundwater Investigations
at 6601 and 6603 Bay Street
Emeryville, California

23 August 1996

Sybase Inc., Emeryville, California
(EKI 950074.01)

LIST OF FIGURES

Results of
Soil and Groundwater Investigations
at 6601 and 6603 Bay Street
Emeryville, California

23 August 1996

Sybase Inc., Emeryville, California
(EKI 950074.01)

LIST OF APPENDICES

Results of
Soil and Groundwater Investigations
at 6601 and 6603 Bay Street
Emeryville, California

23 August 1996

Sybase Inc., Emeryville, California
(EKI 950074.03)

1.0 INTRODUCTION

At the request of Sybase, Inc., Erler & Kalinowski, Inc. ("EKI") has prepared this report on soil and groundwater investigations conducted on 15 and 16 June 1996 on the properties located at 6601 and 6603 Bay Street ("the Site") in Emeryville, California (Figure 1).

Three underground storage tanks ("USTs") were removed from the Site in 1989. At a meeting held on 8 November 1995, the Alameda County Department of Environmental Health ("ACDEH") requested that soil samples be collected adjacent to the former USTs to confirm that there is not an ongoing source of petroleum hydrocarbons to groundwater at the Site. If the investigation were to confirm this conclusion, ACDEH staff indicated that they would consider closing the former UST site.

The objectives of this soil and groundwater investigation were as follows:

- to evaluate the concentration and lateral extent of hydrocarbons in soil and groundwater;
- to evaluate if hydrocarbon concentrations in groundwater near the location of the removed USTs are indicative of free-phase hydrocarbons;
- to determine whether polycyclic aromatic hydrocarbons ("PAHs") or methyl tertiary butyl ether ("MTBE") are present in soil or groundwater; and
- to show, based on evaluation of existing monitoring well data, that hydrocarbon concentrations in groundwater are either stable or decreasing (i.e., the plume is either stable or shrinking).

The investigation consisted of collecting soil and groundwater samples from six borings and collecting groundwater samples from two monitoring wells. The investigation was performed in accordance with the work plan entitled *Work Plan for Soil and Groundwater Investigation at 6601 Bay Street & 6603 Bay Street, Emeryville, California* (EKI, 18 March 1996) and a subsequent addendum letter addressing ACDEH comments (EKI, 14 June 1996. These two documents are collectively referred to below as the "Work Plan".

2.0 SETTING

The Site is located on Bay Street between 66th Street and 67th Street in Emeryville, California. The northern portion of the Site is occupied by two concrete tiltup warehouse buildings that are used by Sybase, Inc. as office space for software engineers (Figure 2). The Site is bounded on the west by the Eastshore Freeway and on the east by Bay Street.

3.0 BACKGROUND

Previous investigations on the Site indicate that petroleum hydrocarbons and benzene, toluene, ethylbenzene, and xylenes ("BTEX") have been detected in soil and groundwater in the vicinity of the former USTs. An assessment of historic uses of the Site was included in the Work Plan to identify potential on-site sources, other than the former USTs, for the hydrocarbons detected in the soil and groundwater on the Site. These evaluations are discussed below.

A review of regulatory agency records was performed to identify potential off-site sources for hydrocarbons present in the soil and groundwater on the Site. The review of potentially upgradient release sites is summarized in the Work Plan.

3.1 PREVIOUS SOIL AND GROUNDWATER INVESTIGATIONS ON THE SITE

Three underground fuel storage tanks were removed from the Site in 1989 (Figure 2). A report prepared by William Dubovsky Environmental, dated July 1990 (Dubovsky, 1990) summarized the history and removal of the USTs and soil and groundwater sampling performed at that time. The three tanks were reportedly installed in 1973. The 6,000-gallon UST was used to store diesel and the 2,000-gallon and 7,500-gallon USTs were used to store gasoline (Dubovsky, 1990).

Prior to removal of the tanks, all three tanks were inspected and no obvious holes, perforations, or corrosion were noted. During excavation of the tanks, however, black petroleum product reportedly flowed from the south wall into the excavation beside the diesel tank. The product that accumulated in the excavation was removed by a hazardous waste hauler. In total, an estimated 2,000 gallons of petroleum product were removed from the excavations (Dubovsky, 1990).

Analytical results for soil and groundwater samples collected from the excavation sidewalls and excavation pit, respectively, indicated the presence of total extractable petroleum hydrocarbons ("TEPH") quantified as diesel, total purgeable petroleum hydrocarbons ("TPPH") quantified as gasoline, oil and grease, and BTEX in both soil and groundwater. Compounds detected in soil samples and their maximum concentrations were as follows (Dubovsky, 1990):

Compound	Maximum Concentration (mg/kg)
Benzene	0.76
Toluene	1.20
Ethylbenzene	0.48
Total Xylenes	21
TEPH as Diesel	2,700
TPPH as Gasoline	270
Oil & Grease	3,400

Grab groundwater samples were collected from the hydrocarbon/water mixture that accumulated in the excavation. Compounds detected in the grab groundwater samples and their maximum concentrations were as follows (Dubovsky, 1990):

Compound	Maximum Concentration (ug/L)
Benzene	400
Toluene	180
Ethylbenzene	38
Total Xylenes	290
TEPH as Diesel	520
TPPH as Gasoline	6,300

Plate 1 in Appendix A depicts the groundwater potentiometric surface in the vicinity of the Site. These data were collected as part of investigations of properties adjacent to the Site (Subsurface Consultants, December 1995; PES,

December 1995). Groundwater flow is to the southwest in the vicinity of the former USTs.

Since 1989, groundwater samples have been collected from the two monitoring wells (MW-5 and MW-7), located off site and downgradient of the former tanks, and analyzed for TPPH and BTEX (Figure 2). This groundwater monitoring has been performed by PES Environmental, Inc. on behalf of the Martin Group who owns the downgradient, adjacent property, located at 1650 65th Street (PES, December 1995). Although these wells are located off-site, they are both less than 75 feet downgradient of the former USTs.

The analytical results for all groundwater samples collected from the two downgradient monitoring wells (MW-5 and MW-7) are shown in Table 1. A plot of benzene concentrations measured in the downgradient wells over the past six years is shown on Figure 3. Benzene concentrations measured downgradient of the former USTs have decreased since 1989 (see Figure 3 and Section 5.2.3).

3.2 SITE LAND USE HISTORY

Information on the land use history of the Site was obtained from a review of Sanborn fire insurance maps, historical aerial photographs, and a 21 December 1993 technical briefing prepared by Weiss Associates (Weiss Associates, December 1993). According to Weiss' technical briefing and review of aerial photographs, the subject property was within San Francisco Bay until the 1930's. From the 1930's until the early 1950's, the Site was used by the City of Emeryville for disposal of municipal waste (Weiss Associates, December 1993).

As indicated by an aerial photograph of the Site from 7 July 1959, the currently existing buildings were constructed by 1959. In the same aerial photograph, a possible tank pad is visible south of the buildings on the Site. The two buildings on the Site were reportedly used for warehouse activities (Dubovsky, 1990). A 1967 Sanborn Map shows the buildings were used as a sugar warehouse and a liquor warehouse. In 1973, the two gasoline tanks and the diesel tank were reportedly installed in the approximate location of the suspected tank pad (Weiss Associates, December 1993).

4.0 FIELD INVESTIGATION

Six soil borings were completed to collect soil and groundwater samples (Figure 2). Groundwater samples were also collected from monitoring wells MW-5 and MW-7.

- Borings SB-3 and SB-4 were drilled adjacent to the former UST excavation area for comparison with the results of soil and groundwater sampling performed during the tank excavation.

- Samples from borings SB-1, SB-2, SB-5, and SB-6 were collected to help evaluate the lateral extent of hydrocarbons in soil and groundwater and to evaluate "background" levels of hydrocarbons in this part of Emeryville. Borings SB-5 and SB-6 are located upgradient of the former tanks.

- Groundwater samples from off-site monitoring wells MW-5 and MW-7 were collected to update information about conditions downgradient of the Site.

4.1 FIELD ACTIVITIES

Field activities performed on 15 and 16 June 1996 at the Site included the following:

- six soil borings were drilled to a depth of 11 to 14.5 feet below ground surface ("bgs"),

- one soil sample was collected for laboratory analysis from each of the six soil borings at depths ranging from 4.5 to 6 feet bgs,

- grab groundwater samples were collected from each of the soil borings,

- groundwater samples were collected from the two existing downgradient monitoring wells, and

- locations of the soil borings, the groundwater monitoring wells, and three building corners were surveyed by a licensed surveyor.

Prior to drilling, a permit was obtained from the Zone 7 Water Agency (Appendix B). Each proposed boring location

was cleared for the presence of underground utilities by Subdynamic Locating Services of San Jose, California. In addition, Underground Services Alert ("USA") was contacted.

The locations of the soil borings and the groundwater monitoring wells are illustrated on Figure 2. Drilling was performed by Spectrum Exploration, Inc. of Stockton, California, under the oversight of EKI. Methods and procedures for the completed work are described in Appendix C. Field Notes and monitoring well purge and sample forms are included in Appendix D. Boring logs are included in Appendix E. The surveyor's report is included as Appendix F.

4.2 SOIL AND GROUNDWATER SAMPLE ANALYSIS

Chemical analyses were performed by Sequoia Analytical Laboratory in Redwood City, California. Laboratory data sheets and chain-of-custody forms are included in Appendix G. Laboratory chromatograms for samples and standards are included in Appendix H.

An itemized list of laboratory analyses performed by Sequoia for soil and groundwater samples is presented in Table 2. All soil and groundwater samples were analyzed for the following chemical constituents:

- TPPH/BTEX & MTBE (EPA Methods 8015 and 8020).
- TEPH (EPA Method 8015)

Groundwater samples analyzed for TEPH included either quantification as diesel or a fuel fingerprint analysis of the extractable range from carbon chain length C9 to C40. Selected soil and groundwater samples were also analyzed for the following constituents:

- PAHs (EPA Method 8100).

A travel blank was also analyzed for TPPH, BTEX, and MTBE using EPA Methods 8015 and 8020.

5.0 RESULTS OF SOIL AND GROUNDWATER SAMPLING

The results of the soil and groundwater sampling are summarized in Tables 3 through 6 and on Figures 4 and 5.

5.1 SOIL

Laboratory analysis of soil samples collected from borings SB-1 through SB-6 indicate the following:

- Hydrocarbons are present in soil at low concentrations (i.e., up to 360 mg/kg) in the vicinity of the former USTs.

- The highest concentrations of TPPH and TEPH were detected in soil samples collected from borings SB-1 and SB-6, located at a distance of 50 to 75 feet from the site of the former USTs.

- The laboratory chromatograms for soil samples collected from borings SB-1 and SB-6 indicate that the hydrocarbons detected at these locations are different from those detected in soil from borings SB-2 through SB-5.

- BTEX concentrations in the six soil samples are low or below laboratory method detection limits.

- MTBE and PAHs were not detected in any of the soil samples.

These results are discussed in more detail in the following sections.

5.1.1 Petroleum Hydrocarbons

TPPH was measured in soil samples at concentrations ranging from less than 1 mg/kg to 200 mg/kg (Table 3). The highest concentration of TPPH was detected in the soil sample from boring SB-1, approximately 75 feet from the former excavation area (Figure 4). The laboratory indicated that the TPPH comprised an unidentified hydrocarbons in the gasoline range. In each of the other five soil samples, TPPH was present at concentrations less than 10 mg/kg.

TEPH detected in soil samples ranged from 86 mg/kg to 1,800 mg/kg (Table 3). TEPH concentrations in soil samples collected from borings nearest the excavation area (i.e., borings SB-2 through SB-5) were lower than in soil samples collected furthest from the former excavation area (i.e., borings SB-1 and SB-6) (Figure 4).

Based on an examination of the laboratory chromatograms from the TEPH analyses (Table 3), it appears that the petroleum

hydrocarbons detected in soil samples from borings SB-1 and SB-6 are chemically different from those in soil samples from borings SB-2 through SB-5. The chromatograms for soil samples from borings SB-2 through SB-5 are characteristic of a high molecular weight petroleum product that is heavier than motor oil (see Appendix H for sample chromatograms and standard chromatograms). The chromatogram for soil sample SB-1-5 indicates the presence of a large low molecular weight fraction in the gasoline range and a broad, higher molecular weight fraction. In contrast, the chromatogram from soil sample SB-6-5 shows a number of discrete peaks over a wide molecular weight range.

5.1.2 Petroleum Hydrocarbon-Related Compounds

BTEX concentrations in the six soil samples were low or below laboratory method detection limits (Table 4). The detected concentrations of these compounds are significantly less than the U.S. Environmental Protection Agency's ("EPA") respective Preliminary Remediation Goals ("PRGs") for these compounds at industrial sites (EPA, 1995), as listed in Table 4.

MTBE and PAHs were not detected in any of the soil samples (Table 4).

5.2 GROUNDWATER

Laboratory analysis of groundwater samples collected from borings SB-1 through SB-6 and from off-site, downgradient wells MW-5 and MW-7 indicate the following:

- Hydrocarbon concentrations in groundwater samples collected near the site of the removed USTs may indicate the presence of free-phase diesel range hydrocarbons. Downgradient concentrations of hydrocarbons are not indicative of free-phase hydrocarbons.

- Significant levels of free-phase hydrocarbons were observed in the groundwater samples from upgradient/ cross-gradient borings SB-5 and SB-6, but not from borings SB-3 and SB-4, which are located nearest to the former USTs.

- MTBE was detected in only three groundwater samples, at concentrations significantly less than the U.S. EPA PRG.

- PAHs were detected in the groundwater sample collected from boring SB-6, but are likely associated with the free-phase hydrocarbons present at that location. PAHs are typically not very mobile in groundwater.

- Of the BTEX compounds, only benzene was detected in groundwater samples at concentrations greater than the Maximum Contaminant Levels ("MCLs") for these compounds in drinking water. Statistical analysis of historical concentrations of TPPH, benzene, toluene, and xylenes measured in groundwater samples collected from downgradient monitoring wells indicates that conditions are stable or non-worsening.

These results are discussed in more detail in the following sections.

5.2.1 Petroleum Hydrocarbons

A hydrocarbon sheen or free-phase hydrocarbons were noted at all grab groundwater sampling locations, except from boring SB-2 (see Field Notes in Appendix D). The high concentrations of petroleum hydrocarbons measured at these sampling locations are likely due to the free-phase hydrocarbons and are not necessarily reflective of the dissolved hydrocarbon concentrations.

TEPH concentrations greater than 5,000 ug/L are likely indicative of a separate hydrocarbon phase (Zürcher and Thüer, 1978). However, downgradient of the former tanks at well MW-7, TEPH concentrations were significantly lower than this indicator level (1,000 ug/L) and there was no visible hydrocarbon sheen (Appendix D). Therefore, free-phase hydrocarbons do not appear to be migrating off-site. The results from well MW-5 are inconclusive because detection limits were elevated in groundwater sample MW-5 (Table 5).

TPPH was not detected above laboratory method detection limits for the groundwater samples collected from borings SB-2, SB-3, and SB-4, and monitoring well MW-7 (Table 5). In the groundwater sample from boring SB-1, TPPH was detected at a concentration of 930 ug/L, with the TPPH described as an unidentified hydrocarbon in the gasoline range. Because TPPH was not detected in the groundwater sample collected from boring SB-2, located between the former excavation area and boring SB-1 (Figure 5), the hydrocarbons detected in the groundwater from sample SB-1 appear to be unrelated to petroleum hydrocarbons present in groundwater near the former tanks. The differences in the

chromatograms for the groundwater sample from boring SB-1 as compared to the other samples further support this conclusion (Table 5 and Appendix H).

The highest TPPH concentrations were detected in the groundwater samples collected from borings SB-5 and SB-6 (1,800 and 370,000 ug/L, respectively). Given that borings SB-5 and SB-6 are located upgradient of the former USTs, the source of the hydrocarbons detected in the samples collected from this location is unclear. Because the TPPH concentration in the sample collected from boring SB-6 was much greater than in samples from locations nearer to the site of the removed USTs (Figure 5), the detected gasoline-range hydrocarbons appear to be unrelated to the former USTs (see below).

TPPH concentration measured in groundwater samples collected from wells MW-5 and MW-7, located downgradient of the former tanks, are low or not detected.

5.2.2 Petroleum Hydrocarbon-Related Compounds

Toluene, ethylbenzene, and total xylenes concentrations detected in each of the 8 groundwater samples are significantly less than the MCLs (Table 6). MTBE was detected in three groundwater samples (i.e., from boring SB-2 and wells MW-5 and MW-7) at concentrations less than 10 ug/L, which is significantly less than the U.S. EPA PRG of 180 ug/L (EPA, 1995).

Benzene was detected at concentrations up to 160 ug/L in groundwater samples collected from the soil borings (Table 6). Lower benzene concentrations were detected in groundwater samples collected from monitoring wells MW-5 and MW-7, located downgradient from the former USTs and from the borings with the highest benzene concentrations in groundwater (i.e., borings SB-3 and SB-5; Figure 5). Statistical analysis of benzene concentrations detected in groundwater samples collected from wells MW-5 and MW-7 (Table 1, Figure 3) indicates a stable or decreasing trend (Section 5.2.3).

Because the petroleum hydrocarbons in boring SB-6 appeared to be different from the hydrocarbons detected in the vicinity of the former tanks, the groundwater sample collected from boring SB-6 was also analyzed for PAHs. Acenaphthene and fluorene were detected at concentration ranges of 12,000 to 42,000 and 25,000 to 96,000 ug/L, respectively, for duplicate analyses.

However, these concentrations are significantly higher than the reported solubilities of these compounds in water, ranging from 200 to 4,000 ug/L (Montgomery and Welkom, 1991). Therefore, the detected PAHs are likely associated with the free-phase hydrocarbons observed at upgradient location SB-6 (Appendix D). Given that the downgradient monitoring well data indicate that the free-phase hydrocarbons at the Site are not mobile and that PAHs generally are not mobile in groundwater (i.e., they sorb strongly to soil), the extent of PAHs in off-site groundwater is likely to be limited. In addition, because (1) the Site is capped with asphaltic paving; (2) groundwater at the Site is not being used as a drinking water source and is not likely to be used as such in the future; and (3) PAHs are not mobile in groundwater, there are no complete human or aquatic exposure pathways to PAHs at the Site.

5.2.3 Evaluation of Data for Wells MW-5 and MW-7

Groundwater samples from wells MW-5 and MW-7 have been collected 18 times since January 1992 (Table 1). As an example of the observed data trends, benzene concentrations in groundwater samples collected from wells MW-5 and MW-7 are plotted on Figure 3. Linear regressions to the data indicate a generally decreasing trend (Figure 3). Groundwater data from wells MW-5 and MW-7 were statistically analyzed for a trend using the nonparametric Mann-Kendall test. The Mann-Kendall test is useful for detecting trends because the data do not have to be equally spaced in time and do not need to follow a particular distribution. The null hypothesis tested was "no upward trend exists." The alternative hypothesis was "an upward trend exists." The test was applied at a significance level equal to 0.05. Statistical guidance from the U.S. EPA (April 1994) recommends a significance level of 0.05 to help ensure adequate statistical power, while limiting the number of false positive results.

The Mann-Kendall test was performed on the groundwater monitoring results for TPPH, benzene, toluene, and xylenes measured in samples collected from wells MW-5 and MW-7 (Table 1). Ethylbenzene was not evaluated because it has not been detected in the last 6 to 7 sampling rounds. TEPH was not evaluated because it was analyzed infrequently. If concentrations were below the laboratory method detection limit, then one-half the detection limit value was used in the Mann-Kendall test. The number of measurements, "n", and

the calculated "S" statistic are listed in Table 7. According to Gilbert (1987), when S is less than zero, the null hypothesis, "no upward trend exists", is accepted. When S is greater than zero, if the probability associated with S is greater than the significance level of 0.05, the null hypothesis, "no upward trend exists", is also accepted.

As shown in Table 7, the S statistic is negative for benzene and toluene in both wells, and for TPPH in well MW-7, indicating that "no upward trend exists" for these compounds. The S statistic for TPPH in well MW-5 is 14, corresponding to a probability level of 0.313 for S=14 and n=18 (Hollander and Wolfe, 1973). Because the significance level of 0.05 is less than the probability of 0.313, the null hypothesis, "no upward trend exists", is accepted. Similarly, for total xylenes in both wells, the probability values are greater than the significance level of 0.05 (Table 7). Therefore, the null hypothesis, "no upward trend exists" (i.e. there is no upward trend), is accepted for TPPH, benzene, toluene, and xylenes.

The results of the Mann-Kendall test indicate that no upward trend exists for the two monitoring wells for all four analytes (i.e. a total of eight statistical tests) providing evidence of stable or improving groundwater conditions downgradient of the former USTs (i.e., a stable or shrinking plume).

6.0 CONCLUSIONS

The following conclusions can be drawn from the June 1996 soil and groundwater investigation in the vicinity of the former UST site:

- Hydrocarbons are present in soil at low concentrations (i.e., up to 360 mg/kg) in the vicinity of the former USTs. These results indicate that there are no significant sources of petroleum hydrocarbons remaining in soil.

- The highest concentrations of TPPH and TEPH were detected in soil samples collected from borings SB-1 and SB-6, located 50 to 75 feet from site of the former USTs. The laboratory chromatograms for soil samples collected from borings SB-1 and SB-6 indicate that the hydrocarbons detected at these locations are different from those detected in soil from borings SB-2 through SB-5. Therefore, the hydrocarbons detected in borings SB-1 and SB-6 do not likely originate from the former USTs.

- Hydrocarbon concentrations in groundwater samples collected near the site of the former USTs may indicate the presence of free-phase diesel range hydrocarbons; however, downgradient concentrations of hydrocarbons are not indicative of free-phase hydrocarbons. Significant levels of free-phase hydrocarbons were observed in the groundwater samples from upgradient borings SB-5 and SB-6, but not from borings SB-3 and SB-4 which are located nearest to the former USTs.

- The origin of the hydrocarbons detected at locations SB-1, SB-5, and SB-6 is unclear, but is likely related to the fact that the Site was once part of the City of Emeryville municipal waste landfill. Because the waste materials disposed in the landfill probably contained various types of petroleum hydrocarbons (i.e., hydrocarbons are likely to be ubiquitous at the Site), further soil and groundwater characterization in the vicinity of the former USTs is not warranted.

- MTBE was not detected in any of the soil samples. MTBE was detected in only three groundwater samples, at concentrations significantly less than the U.S. EPA PRG.

- PAHs were not detected in soil samples collected adjacent to the former USTs (samples SB-3 and SB-4). Therefore, PAHs are not likely associated with the former USTs.

- PAHs were detected in the groundwater sample collected from upgradient boring SB-6, but are likely associated with the free-phase hydrocarbon product at that location. These PAHs are not likely to be mobile in groundwater. In addition, there are no complete human or aquatic exposure pathways to PAHs at the Site.

- Of the BTEX compounds, only benzene was detected in groundwater samples at concentrations greater than the MCLs. Statistical analysis of historical concentrations of TPPH, benzene, toluene, and xylenes measured in groundwater samples collected from downgradient monitoring wells indicates that plume chemical trends are stable or non-worsening.

7.0 RECOMMENDATIONS

Current soil and groundwater conditions in the vicinity of the former USTs indicate that there is no significant on-going source of petroleum hydrocarbons and BTEX to groundwater, and that concentrations in groundwater are stable or improving. In addition, PAHs are not present in hydrocarbons adjacent to the former USTs. Therefore, closure of the former USTs located on the Sybase, Inc. property at 6601/6603 Bay Street is requested.

Free-phase hydrocarbons with PAHs are present approximately 50 feet upgradient/cross-gradient of the former USTs. Given that (1) the hydrocarbons on the Site do not appear to be mobile; (2) the PAHs are likely associated with the free-phase hydrocarbons; (3) these free-phase hydrocarbons likely originated from the former municipal landfill; and (4) there are no complete human or aquatic exposure pathways to the PAHs, no additional investigations in this area are warranted.

8.0 REFERENCES

Engineering-Science, June 1990, *Evaluation of Groundwater Remediation Alternatives and Remedial Action Plan*, 1650 65th Street Property, Emeryville, California.

Erler & Kalinowski, Inc., 18 March 1996, *Work Plan for Soil and Groundwater Remediation at 6601 Bay Street & 6603 Bay Street*, Emeryville, California.

Erler & Kalinowski, Inc., 14 June 1996, Letter to ACDEH regarding Work Plan for Soil and Groundwater Remediation at 6601 Bay Street & 6603 Bay Street, Emeryville, California.

Gilbert, R.O., 1987, *Statistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York.

Hollander, M. and D.A. Wolfe, 1973, *Nonparametric Statistical Methods*, Wiley, New York.

Montgomery, J.H. and L.M. Welkom, 1991, *Groundwater Chemicals Desk Reference*, Lewis Publishers, Chelsea, MI.

PES Environmental , Inc., 29 December 1995, *Year End Summary Report Bioremediation Pilot Study and Quarterly Groundwater Monitoring, November 1995 Sampling Event*, Emery Bay Plaza, 1650 65th Street, Emeryville, California.

Subsurface Consultants, Inc., 23 May 1994, *Summary of Environmental Investigation/Remediation, 6707 Bay Street*, Emeryville, California.

Subsurface Consultants, Inc., 15 December 1995, *Groundwater Monitoring, November 1995 Event*, 6707 Bay Street, Emeryville, California.

U.S. Environmental Protection Agency, April 1994, *Statistical Training Course for Ground-water Monitoring Data Analysis*, Solid Waste and Emergency Response, EPA 530-R-93-003.

U.S. Environmental Protection Agency, 1 September 1995, *Region IX Preliminary Remediation Goals (PRGs) Second Half 1995*, San Francisco, California.

Weiss Associates, 21 December 1993, *Technical Briefing for Sybase Regarding Environmental Assessment of 6601 and 6603 Bay Street*, Emeryville, California.

William Dubovsky Environmental, July 1990, *Environmental Report, 6601 and 6603 Bay Street*, Emeryville, California.

Zürcher, F. and M. Thüer, 1978, Rapid Weathering Processes of Fuel Oil in Natural Waters: Analyses and Interpretations, *Environmental Science & Technology*, Vol. 12, No. 7, pp. 838-843.

Table 1
Analytical Results for Groundwater Samples Collected Downgradient of the
Former Underground Storage Tanks (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

Well Number	Sample Date	Chemical Concentration (ug/L) (b)					
		TPPH	TEPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-5	Nov 89	ND (c)	NA (d)	74	ND	ND	4.2
	Feb 90	ND	NA	200	ND	ND	ND
	May 90	ND	ND	110	ND	ND	ND
	Aug 90	ND	700	66	2.2	ND	3.8
	Nov 90	600	900	69	ND	ND	ND
	Mar 91	ND	1100	66	2.3	ND	ND
	May 91	ND	ND	110	ND	ND	ND
	Aug 91	ND	ND	78	2.1	ND	ND
	29 Jan 92	190	NA	90	0.5	<0.3 (e)	0.6
	28 Feb 92	230	NA	110	0.9	<0.3	0.5
	28 May 92	130	NA	100	<0.5	<0.5	<0.5
	27 Aug 92	520	NA	83	2	<0.5	<0.5
	10 Nov 92	240	<100	74	1	<0.3	<0.6
	18 Feb 93	190	NA	56	0.6	<0.5	<0.5
	20 May 93	<200	NA	56	<2	<2	<2
	19 Aug 93	170	NA	50	0.7	<0.5	<0.5
	15 Nov 93	220	NA	49	1	<1	<1
	14 Feb 94	140	NA	62	<0.5	<0.5	<0.5
	16 May 94	310	NA	140	3	<3	<3
	12 Aug 94	500	NA	95	34	4	14
	3 Nov 94	400	NA	79	0.6	<0.5	<2
	9 Feb 95	300	NA	74	0.8	<0.5	<.2
	9 May 95	200	NA	47	0.5	<0.5	<2
	10 Aug 95	200	NA	46	0.5	<0.5	<2
	13 Nov 95	300	NA	48	0.7	<0.5	<2
	15 Jun 96	180	<40,000	39	<0.5	<0.5	<0.5
MW-7	May 90	NA	600	240	ND	ND	ND
	Aug 90	ND	ND	81	1.8	ND	ND
	Nov 90	ND	800	54	ND	ND	ND
	Mar 91	ND	ND	100	3.6	ND	ND
	May 91	ND	ND	120	2.7	ND	ND
	Aug 91	ND	ND	74	3.3	ND	ND
	29 Jan 92	270	NA	25	0.5	<0.3	0.8
	28 Feb 92	100	NA	33	0.7	<0.3	0.7
	28 May 92	150	NA	21	<0.5	<0.5	<0.5
	27 Aug 92	440	NA	11	1	<0.5	<0.5
	10 Nov 92	370	<100	31	1.2	<0.3	1.2
	18 Feb 93	270	NA	77	1.3	<0.5	1.4
	20 May 93	300	NA	150	3	<2	3

Table 1
Analytical Results for Groundwater Samples Collected Downgradient of the Former Underground Storage Tanks (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

Well Number	Sample Date	Chemical Concentration (ug/L) (b)					
		TPPH	TEPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-7 (cont.)	19 Aug 93	110	NA	40	1	<0.5	1.1
	15 Nov 93	120	NA	15	0.6	<0.5	2.3
	14 Feb 94	120	NA	38	<0.5	<0.5	<0.5
	17 May 94	<300	NA	61	<3	<3	<3
	10 Aug 94	100	NA	9	<0.5	<0.5	<2
	3 Nov 94	100	NA	3	<0.5	<0.5	<2
	9 Feb 95	200	NA	50	0.6	<0.5	<2
	9 May 95	300	NA	120	1	<0.5	<2
	10 Aug 95	<50	NA	7	<0.5	<0.5	<2
	13 Nov 95	90	NA	3	<0.5	<0.5	<2
	16 Jun 96	<50	1,000	47	0.87	<0.5	0.8

Notes:
(a) Samples in 1996 were collected by Erler & Kalinowski, Inc. Samples prior to 1992 were collected by Engineering Science. All other data from PES Environmental, Inc. (December 1995).
(b) TPPH = Total Purgeable Petroleum Hydrocarbons quantified as Gasoline
TEPH = Total Extractable Petroleum Hydrocarbons quantified as Diesel
(c) ND = Not Detected
Note that detection limits were not available in the summary tables in PES, December 1995.
(d) NA = Not Analyzed
(e) Less than symbol ("<") indicated that the compound was not present above the detection limit indicated.

Table 2
Summary of Soil and Groundwater Sampling Depths and Analyses (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

Sample ID (b)	Sample Location	Sample Depth (feet bgs) (c)	TPPH as gasoline / BTEX & MTBE (EPA 8015 and 8020)	TEPH as diesel (EPA 8015)	TEPH and Fuel Fingerprint (d)	PAHs (EPA Method 8100)
Soil						
SB-1-5	SB-1	4.5-5	x	x		
SB-2-5	SB-2	4.5-5	x	x		
SB-3-5	SB-3	4.5-5	x	x		x
SB-4-5	SB-4	4.5-5	x	x		x
SB-5-6	SB-5	5.5-6	x	x		
SB-6-5	SB-6	4.5-5	x	x		
Groundwater						
Travel Blank	-	-	x			
SB-1	SB-1	11.0	x	x		
SB-2	SB-2	13.5	x	x		
SB-3	SB-3	11.5	x		x	
SB-4	SB-4	11.5	x	x		
SB-5	SB-5	10.5	x		x	
SB-6	SB-6	11.5	x		x	x
MW-5	MW-5	18.0 (e)	x	x		
MW-7	MW-7	6.7-18.7 (e)	x	x		

Notes:

(a) Soil and grab groundwater samples collected by Erler & Kalinowski, Inc. on 15 June 1996 and 16 June 1996.

(b) See Figure 2 for sampling locations corresponding to Sample ID.

(c) "feet bgs" denotes feet below ground surface. Grab groundwater samples were collected through the hollow stem augers in borings drilled to the depth indicated.

(d) For a fuel fingerprint analysis, the laboratory attempts to match the sample chromatogram with that of various hydrocarbon standards. The analysis includes the entire extractable range, i.e. from carbon chain lengths C9 to C40.

(e) Sample depth for the monitoring wells are indicated by the screened interval of the well. For well MW-5, only the bottom depth of the screened interval is known.

Abbreviations:

TPPH = Total Purgeable Petroleum Hydrocarbons
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
MTBE = Methyl tertiary butyl ether
TEPH = Total Extractable Petroleum Hydrocarbons
PAHs = Polycyclic Aromatic Hydrocarbons

Table 3
Total Petroleum Hydrocarbon Concentrations in Soil Samples (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

	Total Purgeable Petroleum Hydrocarbons			Total Extractable Petroleum Hydrocarbons		
Sample ID (b)	Conc. as gas (c) (mg/kg)	Laboratory Description of Chromatogram Pattern	Additional Comments (d)	Conc. as diesel (e) (mg/kg)	Laboratory Description of Chromatogram Pattern	Additional Comments (c)
SB-1-5	200	Unidentifiable pattern of hydrocarbons in C8-C12 range.	Mound centered at 17 min. (not observed in other soil samples).	820	Unidentifiable pattern of hydrocarbons in C9-C24 range.	Mound in less than C12 range (not observed in other soil samples). Mound centered at C28.
SB-2-5	1.1	Pattern characteristic of weathered gasoline in C8-C12 range.	Mound centered at 23 min.	210	Unidentifiable pattern of hydrocarbons in C9-C24 range.	Mound centered at C30.
SB-3-5	<1.0	Not detected.	Mound centered at 23 min.	86	Unidentifiable pattern of hydrocarbons in C9-C24 range.	Mound centered at C30.
SB-4-5	4.2	Unidentifiable pattern of hydrocarbons greater than C9.	Mound centered at 23 min.	360	Unidentifiable pattern of hydrocarbons in C10-C24 range.	Mound centered at C30.
SB-5-6	7.3	Unidentifiable pattern of hydrocarbons greater than C8.	Mound centered at 23 min.	120	Unidentifiable pattern of hydrocarbons in C9-C24 range.	Some small peaks in less than C12 range. Mound centered at C30.
SB-6-5	2.5	Unidentifiable pattern of hydrocarbons in C8-C12 range.	Mound centered at 23 min. Also several peaks centered at 17 min.	1,800	Unidentifiable pattern of hydrocarbons in C9-C40 range.	Very different pattern from other soil samples. Discrete peaks at C14, C17, C20, C24, and C28.

Notes:

(a) Soil samples collected by Erler & Kalinowski, Inc. on 15 June 1996.

(b) Sampling locations corresponding to Sample ID are shown in Figure 3.

(c) Concentration quantified as gasoline (includes C6 to C12 compounds).

(d) Appendix G contains chromatograms from laboratory analysis of soil samples and, for comparison, petroleum hydrocarbon and n-alkane standards.

(e) Concentration quantified as diesel (includes C9 to C24 compounds).

Table 4
Concentrations of Petroleum Hydrocarbon-Related Compounds in Soil Samples (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

Sample ID (b)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	PAHs (mg/kg)
SB-1-5	<0.12	<0.12	0.29	2.8	<0.62	NA
SB-2-5	0.019	<0.005	<0.005	0.0092	<0.025	NA
SB-3-5	<0.005	<0.005	<0.005	<0.005	<0.025	ND
SB-4-5	<0.005	0.0094	<0.005	0.015	<0.025	ND
SB-5-6	<0.005	0.0062	<0.005	0.021	<0.025	NA
SB-6-5	<0.005	<0.005	<0.005	0.026	<0.025	NA
PRG (c)	3.2	2,800	690	990	3,400	

Notes:

(a) Soil samples collected by Erler & Kalinowski, Inc. on 15 June 1996.

(b) Sampling locations corresponding to Sample ID are shown in Figure 2.

(c) U.S. EPA Preliminary Remediation Goals ("PRGs") for industrial soils (U.S. EPA, 1 September 1995).

Abbreviations:

MTBE = Methyl tertiary butyl ether

PAHs = Polycyclic Aromatic Hydrocarbons

NA = Not analyzed

ND = No compounds detected above laboratory method detection limits (See Appendix E for laboratory data sheets

Table 5
Total Petroleum Hydrocarbon Concentrations in Groundwater Samples (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

	Total Purgeable Petroleum Hydrocarbons			Total Extractable Petroleum Hydrocarbons		
Sample ID (b)	Conc. as gas (c) (ug/L)	Laboratory Description of Chromatogram Pattern	Additional Comments (c)	Conc. (d) (ug/L)	Laboratory Description of Chromatogram Pattern	Additional Comments (c)
SB-1	930	Unidentifiable pattern of hydrocarbons greater than C8.	Discrete peaks in 12-20 min. range.	9,400 (as diesel)	Unidentifiable pattern of hydrocarbons in C9-C24 range.	Mound in less than C12 range.
SB-2	<50	Not detected.	Small mound centered at 24 min.	<41,000 (as diesel)	Not detected.	No peaks visible.
SB-3	<5000	Not detected.	Mound centered at 24 min.	13,000,000 (total extract.)	Pattern characteristic of diesel and unidentifiable pattern of hydrocarbons in C25-C36 range.	Mound centered at C17 with some discrete peaks.
SB-4	<200	Not detected.	Small mound centered at 24 min.	690,000 (as diesel)	Pattern characteristic of weathered diesel.	Mound centered at C17 with some discrete peaks.
SB-5	1,800	Unidentifiable pattern of hydrocarbons greater than C11 and discrete peak in C6-C7 range.	Mound centered at 24 min.	2,100,000 (total extract.)	Pattern characteristic of diesel.	Mound centered at C17.
SB-6	370,000	Unidentifiable pattern of hydrocarbons greater than C11.	Mound centered at 24 min.	22,000,000 (total extract.)	Pattern characteristic of diesel.	Mound centered at C17.
MW-5	180	Pattern characteristic of weathered gasoline in C6-C12 range.	Discrete peaks in 16-23 min. range.	<40,000 (as diesel)	Not detected.	No peaks visible.
MW-7	<50	Not detected.	No peaks or mounds.	1,000 (as diesel)	Unidentifiable pattern of hydrocarbons in C9-C24 range.	Mound centered at C24 (not observed in other groundwater samples).

Notes:

(a) Groundwater samples collected by Erler & Kalinowski, Inc. on 15 and 16 June 1996.

(b) Sampling locations corresponding to Sample ID are shown in Figure 2.

(c) Concentration quantified as gasoline (includes C6 to C12 compounds).

(d) Appendix G contains chromatograms from laboratory analysis of samples and, for comparison, petroleum hydrocarbon and n-alkane standards.

(e) Concentration quantified either as diesel (includes C9 to C24 compounds) or as total extractable petroleum hydrocarbons (includes C9 to C40 compounds).

Table 6
Concentrations of Petroleum Hydrocarbon-Related Compounds
in Groundwater Samples (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

Sample ID (b)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	PAHs	
						Acenaph-thene (ug/L)	Fluorene (ug/L)
SB-1	<5	<5	11	17	<25	NA	NA
SB-2	0.99	<0.5	<0.5	<0.5	6.4	NA	NA
SB-3	160	<50	<50	<50	<250	NA	NA
SB-4	5.0	<2	<2	<2	<10	NA	NA
SB-5	150	<5	<5	11	<25	NA	NA
SB-6	<1,000	<1,000	<1,000	<1,000	<5,000	12,000-42,000 (c)	25,000-96,000 (c)
MW-5	39	<0.5	<0.5	<0.5	8.1	NA	NA
MW-7	47	0.87	<0.5	0.8	6.5	NA	NA
PRG (d)	0.39	720	1,300	1,400	180	370	240
MCL (e)	1	150	700	1,750	- (f)	-	-

Notes:

(a) Groundwater samples collected by Erler & Kalinowski, Inc. on 15 and 16 June 1996.

(b) Sampling locations corresponding to Sample ID are shown in Figure 2.

(c) Laboratory indicated that results may be artificially high due to presence of unknown, interfering hydrocarbon. PAHs are most likely associated with free product present in groundwater sample. Therefore, the reported concentrations are likely to be greater than actual aqueous concentrations. Sample analyzed after hold time.

(d) U.S. EPA Preliminary Remediation Goals ("PRGs") for drinking water (U.S. EPA, 1 September 1995).

(e) Maximum Contaminant Levels ("MCLs") for drinking water.

(f) Hyphen indicates that an MCL is not availabe for this compound.

Abbreviations:

MTBE = Methyl tertiary butyl ether

PAHs = Polycyclic Aromatic Hydrocarbons

NA = Not analyzed

Table 7
Results of Trend Analysis for Groundwater Data from Wells MW-5 and MW-7 (a)
6601 and 6603 Bay Street
Sybase, Inc.
Emeryville, California
(EKI 950074.03)

Statistical Parameters	Well MW-5				Well MW-7			
	TPPH	Benzene	Toluene	Total Xylenes	TPPH	Benzene	Toluene	Total Xylenes
n (b)	18	26	18	18	18	26	18	18
S (c)	14	-135	-18	21	-61	-96	-22	2
Mann-Kendall Probability (d)	0.313	NA (e)	NA (e)	0.227	NA (e)	NA (e)	NA (e)	0.485
Significance Level (f)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Result (g)	No upward trend	No upward trend	No upward trend	No upward trend	No upward trend	No upward trend	No upward trend	No upward trend

Notes:

(a) The data from Table 1 were evaluated using the Mann-Kendall test. A value equal to half the detection limit was used for concentrations reported to be less than laboratory method detection limits. Because detection limit values were not available for data prior to 1992, only the data from 29 January 1992 to 16 June 1996 were used in the analyses for all compounds except benzene. All historical data for benzene were used because the benzene concentrations were above detection limits. A statistical evaluation of ethylbenzene concentrations was not performed because ethylbenzene concentrations were less than detection limits in all but one sample.

(b) "n" is the number of sampling events.

(c) "S" is the Mann-Kendall statistic calculated using the methodology described in Gilbert (1987).

(d) Mann-Kendall probability is related to the values of S and n, and is obtained from Table A21 in Hollaender and Wolfe (1973).

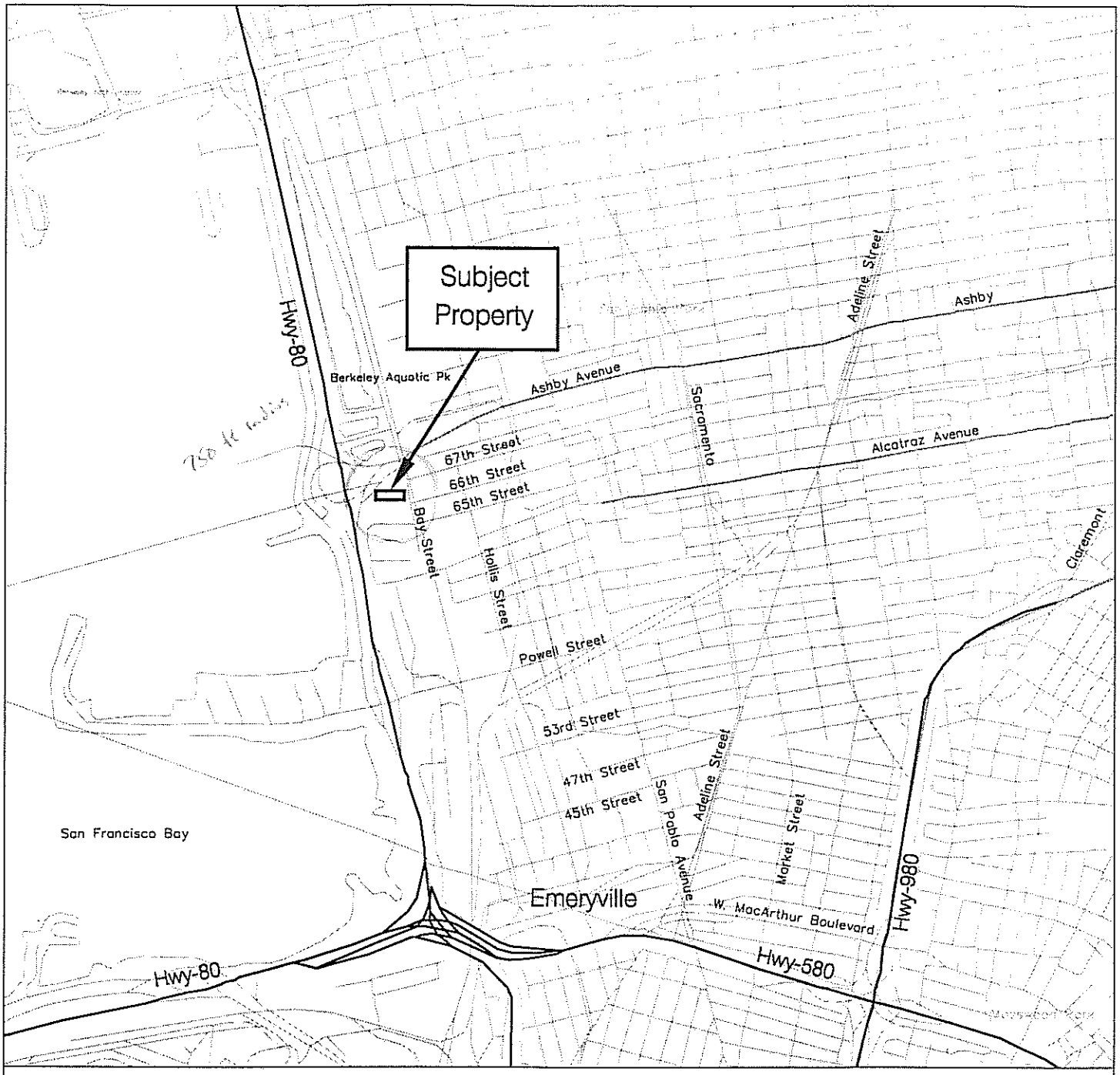
(e) A negative S value indicates that the data are clearly not increasing and a Mann-Kendall probability is not applicable ("NA").

(f) A significance level of 0.05 is recommended by U.S. EPA (1994).

(g) A negative S value or a Mann-Kendall probability greater than the significance level indicates that there is no upward trend in the data (Gilbert, 1987).

Abbreviations:

TPPH = Total Purgeable Petroleum Hydrocarbons quantified as gasoline



0 2500 5000

(Approximate Scale in Feet)

N

Erler & Kalinowski, Inc.

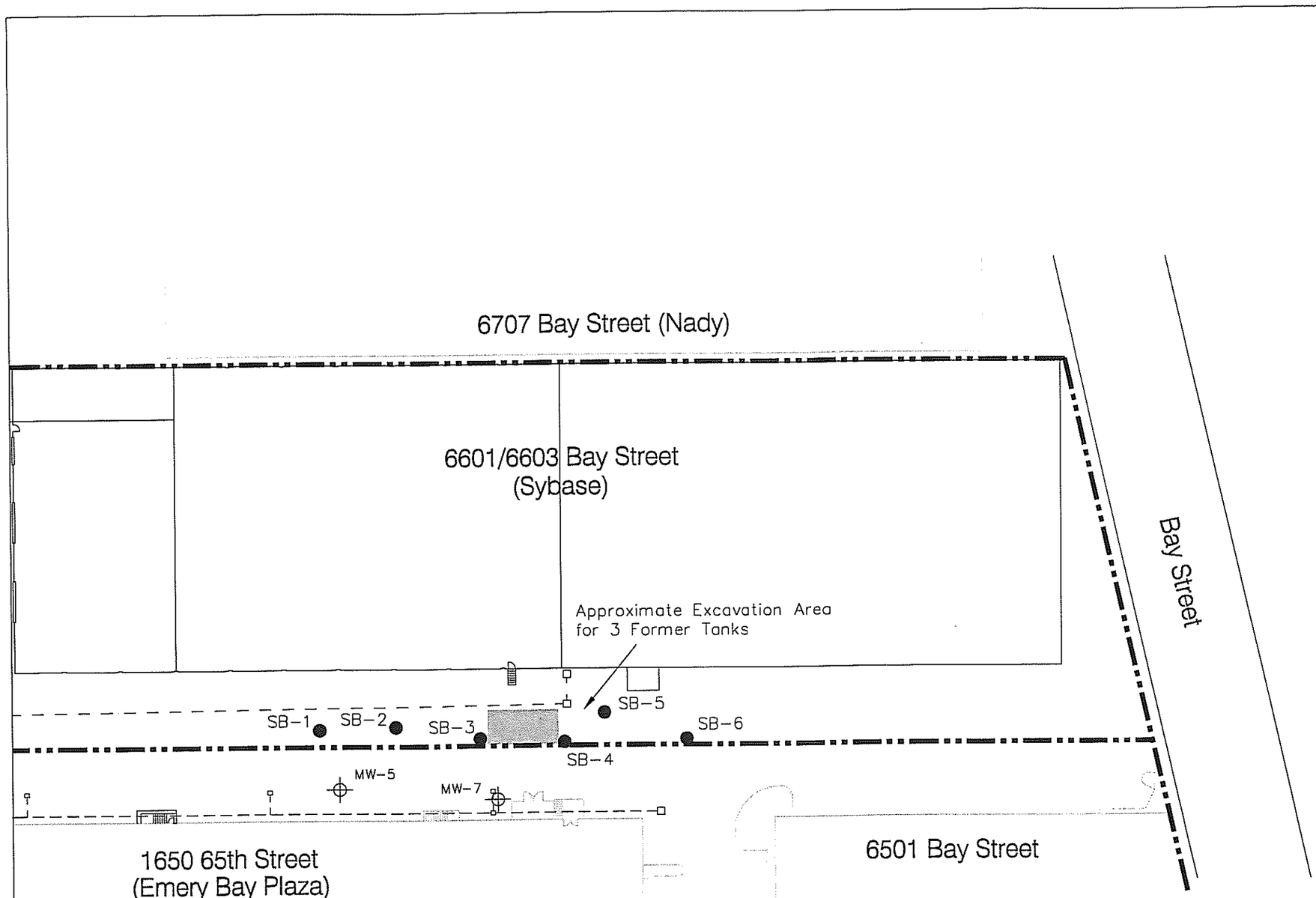
Site Location

6601/6603 Bay Street
Emeryville, CA
August 1996
EKI 950074.03

Figure 1

Notes:

1. All locations are approximate.



N

0 50 100

(Approximate Scale in Feet)

LEGEND

- Property Boundary
- Sanitary Sewer Line
- Storm Drain Line
- Off-Site Monitoring Well Location
- Approximate Excavation Area
- Soil Boring Location

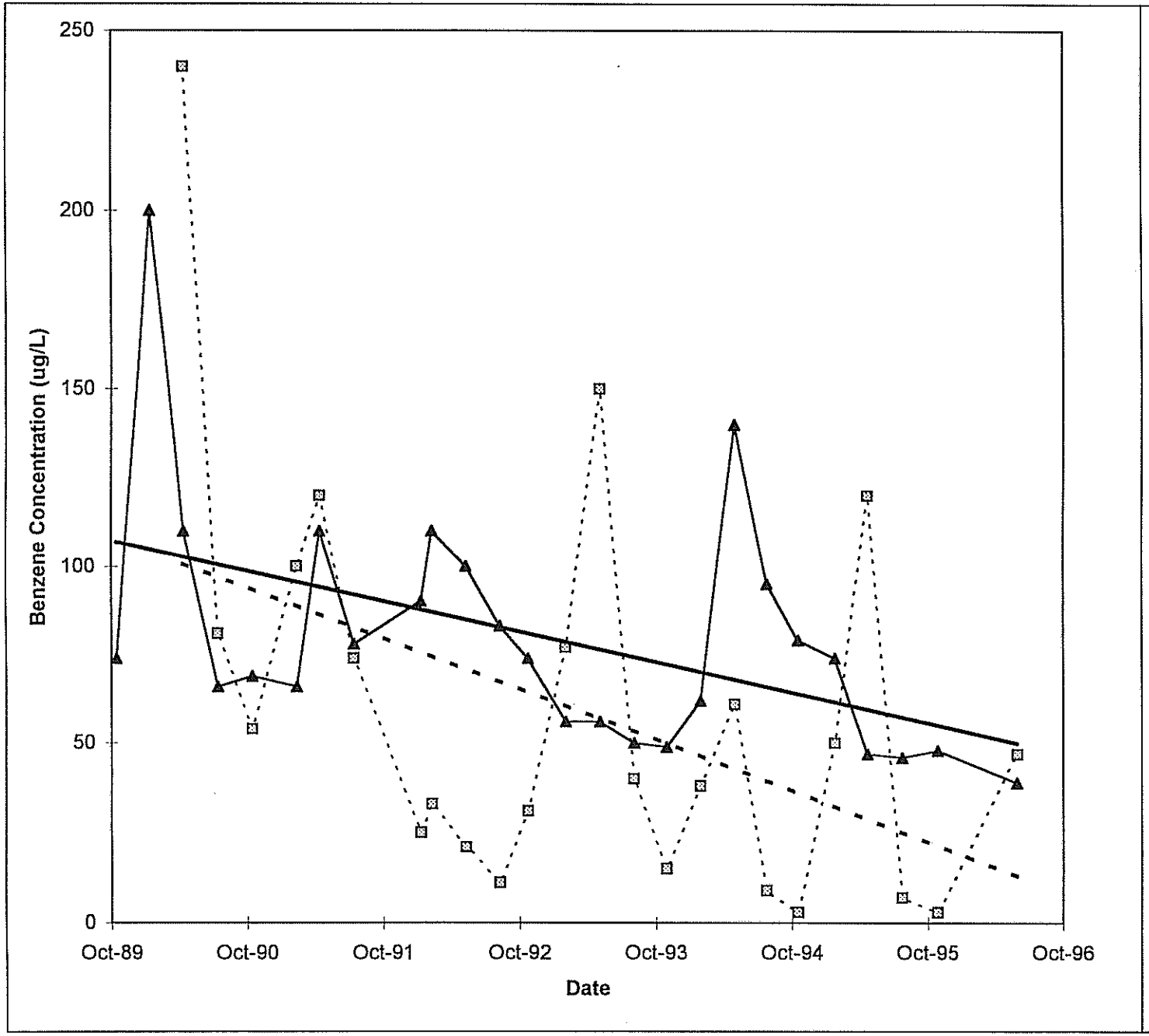
Notes:

1. All locations are approximate.
2. Base map digitized from Alta Land Survey Title Map.

Erler & Kalinowski, Inc.

Soil Boring Locations

6601/6603 Bay Street
Emeryville, CA
August 1996
EKI 950074.03
Figure 2



LEGEND

- MW-5
- MW-7
- MW-5 Regression
- MW-7 Regression

Notes:

1. June 1996 samples were collected by EKI. Samples were collected by PES Environmental Inc. from 1992 to 1995. Samples collected prior to 1992 were collected by Engineering Science.

Erler & Kalinowski, Inc.

Benzene Concentrations of Groundwater Samples Collected Downgradient of Former USTs

6601/6603 Bay Street
Emeryville, California
August 1996
EKI 950074.01
Figure 3

SB-1	
TEPH	820
TPPH	200
Benzene	<0.12
Toluene	<0.12
Ethylbenzene	0.29
Xylenes	2.8
MTBE	<0.62

SB-2	
TEPH	210
TPPH	1.1
Benzene	0.019
Toluene	<0.005
Ethylbenzene	<0.005
Xylenes	0.0092
MTBE	<0.025

SB-5	
TEPH	120
TPPH	7.3
Benzene	<0.005
Toluene	0.0062
Ethylbenzene	<0.005
Xylenes	<0.005
MTBE	<0.025

6707 Bay Street (Nady)

6601/6603 Bay Street
(Sybase)

Approximate Excavation Area

Bay Street

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6

MW-5 MW-7

1650 65th Street
(Emery Bay Plaza)

6501 Bay Street

SB-3	
TEPH	86
TPPH	<1.0
Benzene	<0.005
Toluene	0.0062
Ethylbenzene	<0.005
Xylenes	<0.005
MTBE	<0.025

SB-4	
TEPH	360
TPPH	4.2
Benzene	<0.005
Toluene	0.0094
Ethylbenzene	<0.005
Xylenes	0.015
MTBE	<0.025

SB-6	
TEPH	1,800
TPPH	2.5
Benzene	<0.005
Toluene	<0.005
Ethylbenzene	<0.005
Xylenes	0.026
MTBE	<0.025

N

0 50 100

(Approximate Scale in Feet)

LEGEND

- Property Boundary
- Sanitary Sewer Line
- Storm Drain Line
- Off-Site Monitoring Well Location
- Approximate Excavation Area
- Soil Boring Location

Abbreviations:

TEPH = Total Extractable Petroleum Hydrocarbons
TPPH = Total Purgeable Petroleum Hydrocarbons
MTBE = Methyl Tertiary Butyl Ether

Notes:

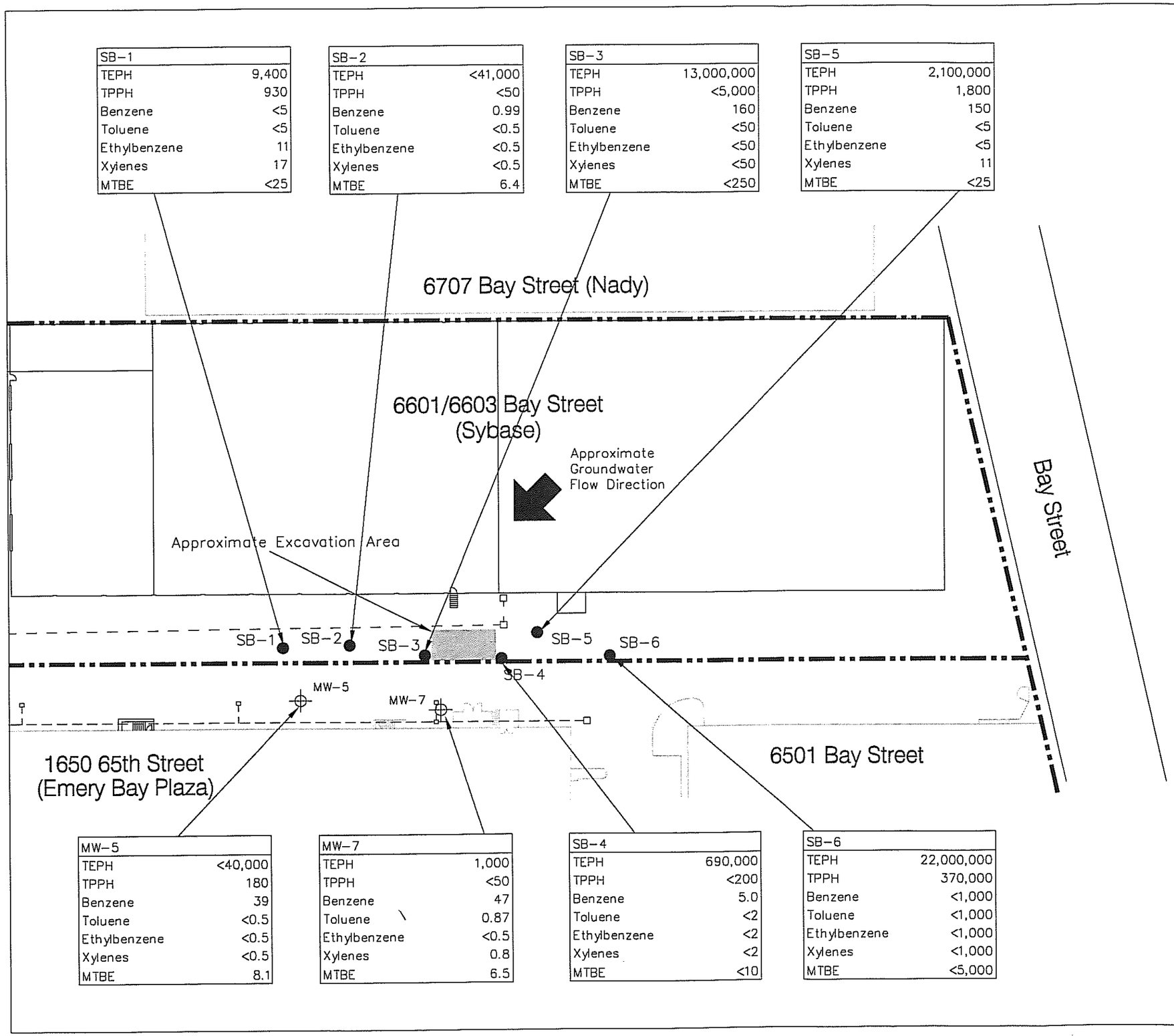
1. All locations are approximate.
2. Base map digitized from Alta Land Survey Title Map.

Erler & Kalinowski, Inc.

Concentrations of Petroleum Hydrocarbons in Soil Samples

6601/6603 Bay Street
Emeryville, CA
August 1996
EKI 950074.03
Figure 4

96 Aug 08 13:43:57 C:\ACADR13\WORKING\NADY\FIG4



N

0 50 100

(Approximate Scale in Feet)

LEGEND

- Property Boundary
- Sanitary Sewer Line
- Storm Drain Line
- Off-Site Monitoring Well Location
- Approximate Excavation Area
- Soil Boring Location

Abbreviations:

TEPH = Total Extractable Petroleum Hydrocarbons
TPPH = Total Purgeable Petroleum Hydrocarbons
MTBE = Methyl Tertiary Butyl Ether

Notes:

1. All locations are approximate.
2. Base map digitized from Alta Land Survey Title Map.

Erler & Kalinowski, Inc.

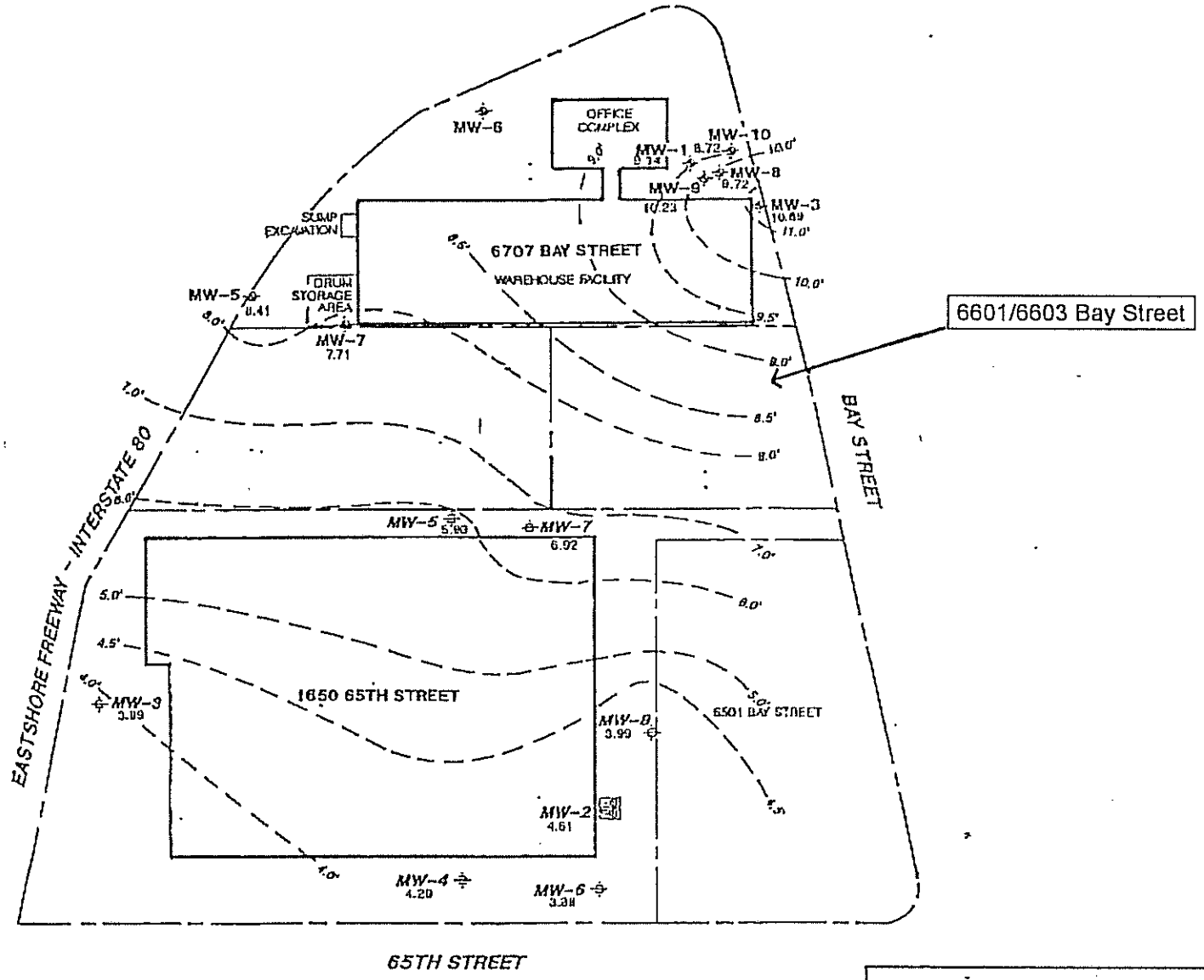
Concentrations of Petroleum Hydrocarbons in Groundwater Samples
6601/6603 Bay Street
Emeryville, CA
August 1996
EKI 950074.03
Figure 5

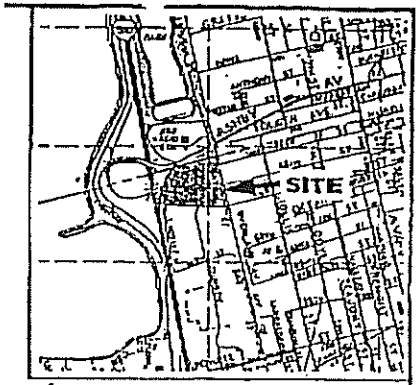
96 Aug 08 14:04:37 C:\ACADR13\WORKING\NADY\FIG5

APPENDIX A

Groundwater Potentiometric Surface in the Vicinity of
6601/6603 Bay Street

Obtained from Subsurface Consultants, Inc.,
Groundwater Monitoring, November 1995 Event,
dated 15 December 1995





VICINITY MAP

- MONITORING WELL BY SCI
- MONITORING WELL BY OTHERS
- GROUNDWATER EXTRACTION WELL BY OTHERS
- PROPERTY LINE
- EXISTING STRUCTURE
- GROUNDWATER ELEVATION CONTOUR (FEET) MSL - NOVEMBER 15, 1995

N

APPROXIMATE SCALE (feet)

0 100 200

SITE PLAN

Subsurface Consultants

6707 BAY STREET – EMERYVILLE, CA

JOB NUMBER	DATE	APPROVED
820.001	12/6/95	

PLATE 1

APPENDIX B

Permits

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 6601 and 6803 Bay Street
Emeryville, California

CLIENT
Name Sybase, Inc.
Address 6475 Christie Avenue Voice
City Emeryville, CA Zip 94608

APPLICANT
Name David Umezaki
Erler & Kalinowski, Inc. Fax (415)578-9131
Address 1730 So. Amphlett Blvd, Suite 320 Voice (415) 578-1172
City San Mateo, CA Zip 94402

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	X
Monitoring	___	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ✓
Cable ___ Other ___

DRILLER'S LICENSE NO. 512268 C-57
Spectrum Exploration

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 6 Maximum
Hole Diameter 8 in. Depth 10 ft.

ESTIMATED STARTING DATE 6/15/96
ESTIMATED COMPLETION DATE 6/15/96

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

APPLICANT'S SIGNATURE C. D — Date 6/11/96

FOR OFFICE USE

PERMIT NUMBER 96432
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
(1.) A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
(3.) Permit is void if project not begun within 90 days of approval date.

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

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 19 Jun 96
Wyman Hong

91992

APPENDIX C

Field Methods and Procedures

C.1 Soil Boring Installation

Six soil borings, SB-1 through SB-6, were drilled on 15 June 1996, using a CME-75 hollow stem auger rig. The borings were drilled to a total depth of 11 to 14.5 feet bgs using precleaned 6-inch outside diameter ("OD") hollow stem augers.

All downhole pieces of the drilling and soil sampling system were steam-cleaned prior to their use and between sample locations. Between sampling intervals, either a new clean split spoon sampler was used, or the sampler was cleaned using a brush and an Alconox® and potable water solution, then rinsed in potable and distilled water. The rinse water from steam-cleaning and the soil cuttings from drilling were contained in drums approved by the Department of Transportation ("DOT"). The drums were labeled and left on-site in an area designated by Sybase, Inc.

Upon completion of sampling at each boring location, the boreholes were grouted to just below ground surface using a cement/bentonite grout. The borings were later topped off to ground surface using a quick-set concrete.

Field screening for VOCs was performed at each boring location. Soil samples from discrete depths were placed in plastic zip-closure bags and the headspace was monitored using an Organic Vapor Meter ("OVM"). Breathing zones and open auger readings were also recorded. OVM readings are included in the Field Notes (Appendix D) and on the Boring Logs (Appendix E).

C.2 Soil Sampling

Soil samples were collected from each of the six soil borings using a modified California split-spoon sampler. The modified California split spoon sampler, containing three pre-cleaned stainless steel liners, was driven approximately 18 inches into the undisturbed soil ahead of the augers, then retrieved and disassembled. The sampler was driven using a hammer with a weight of 140 lb. and a drop of 30 inches. Blow counts for each six inches that the sampler was driven are noted on the boring logs. At two locations the driller noted that the sampler "fell" without utilizing the weight of the hammer. At SB-2 the sampler fell from 12 to 14 feet bgs and no soil sample was retained. At SB-4 the sampler fell from 10 to 10.5 feet bgs and was hammered the remaining twelve inches.

Soil samples were collected at five foot intervals beginning at an approximate depth of 4 feet bgs. One sample liner from each soil boring was retained for laboratory analysis. A total of 6 soil samples were collected for laboratory chemical analysis. Soil samples for laboratory analysis were collected from 4.5 to 5 feet bgs at borings SB-1, SB-2, SB-3, SB-4, and SB-6. In boring SB-5, the soil sample for laboratory analysis was collected from 5.5 to 6 feet bgs. Soil sample liners retained for laboratory chemical analysis were removed from the sampler with a clean knife. The ends of the stainless steel tube containing the sample were covered with Teflon sheets and capped with plastic end caps. A sample label that included a unique sample identification number, the sample depth, the time, and the date when the sample was collected was attached to each brass liner. The sample was then sealed in individual zip-lock plastic bags, and placed in a cooler with ice for temporary storage and transport to the laboratory. Chain-of-Custody forms were initiated in the field and included with the samples.

The remaining samples from the California split-spoon sampler were used for visual characterization of the soil, and logged using the Unified Soil Classification System and Munsell Rock Color Chart.

C.3 Grab Groundwater Sampling

After the soil borings were completed to total depth, a grab groundwater sample was collected. The grab groundwater samples were collected through the hollow stem augers with new disposable Teflon® bailers. Upon retrieval of the bailer, the groundwater samples were transferred to laboratory-supplied sample bottles. Each sample was labeled with a unique sample identification number, the time, and the date the sample was collected. The sample containers were placed in zip-closure plastic bags, and placed on ice in a cooler for temporary storage. A chain-of-custody record was initiated in the field.

Boring SB-4 was initially drilled to a depth of 10 feet bgs. Groundwater was slow to accumulate in the boring and the borehole was left open for approximately 3 hours. Groundwater that accumulated in the boring was collected in a new bailer and transferred to sample bottles. Boring SB-4 was then advanced to 14.5 feet bgs, but no additional groundwater entered the borehole. The groundwater samples collected from 10 feet bgs in boring SB-4 were submitted to the laboratory for analysis.

C.4 Monitoring Well Sampling

Groundwater samples were collected from two off-site, downgradient groundwater monitoring wells, MW-5 and MW-7. Groundwater samples were collected from well MW-5 on 15 June 1996, and from well MW-7 on 16 June 1996.

Prior to sampling, water levels were measured and the wells were purged using a hand bailer. Groundwater quality parameters were measured during purging (pH, temperature, conductivity, and turbidity). Purging was continued until a minimum of three casing volumes of groundwater were removed. All purge and sampling equipment was precleaned with Alconox® and de-ionized water prior to use.

Upon completion of purging at each well, groundwater samples were collected using a disposable Teflon® bailer, and transferred to the appropriate laboratory-supplied sample containers. Each sample was then labeled with a unique sample number and the date and time of collection, logged onto a chain-of-custody form, and placed on ice in a cooler for temporary storage and transport to the laboratory. One travel blank was included as a quality control measure.

C.5 Surveying

The six soil boring locations, the two existing monitoring wells, and three building corners were surveyed by MacLeod and Associates of Belmont, California. Because vehicles were parked over the monitoring wells, the pavement nearest to the wells was located for elevation purposes and marked with a spot of paint.

Coordinates were surveyed vertically, to the nearest 0.01 foot relative to the National Geodetic Vertical Datum of 1929, and horizontally, to the nearest 0.01 foot relative to the southeast corner of the 6601/6603 Bay Street Sybase building. The surveying took place on 29 June 1996. The surveyor's report is included in Appendix H.

APPENDIX D

Field Notes

Erler & Kalinowski, Inc.
Consulting Engineers and Scientists
1730 So. Amphlett Blvd., Suite 320
San Mateo, California 94402
(415) 578-1172
Fax (415) 578-9131

Daily Inspection Report

Job Name: Sybase
Date: 6-15-96 EKI Job No.: 950074.02 Sheet: 1 of 2

Supt. on Job Site: G.L. Clark
Weather: clouds, cool.
Contractors / Visitors to Site:

Work Hours: From 9 Am to 8 Pm Memos Issued:
Sampling, Testing: NOTE: SAMPLE NAMES INDICATE BOTTOM DEPTH OF SAMPLE
Attached Field Forms (C-o-C's, Purge Forms):
Work Report (Work done, Personnel / Equipment working) 9am arrived on site met Spectrum, met Dave (Subsurface locators) and Ron (Pacific Concrete), all areas cleared by locator although "metal" present almost site wide. Ron begins coring concrete. H & S Briefing, calibrated OVM 100 ppm = 100.6 setup over SB-1 while concrete cutter is at SB-5 concrete under asphalt too thick to drill-
10:15 move drill rig to SB-5 after corer - corer moves to SB-1, calibrated DO meter, 0 solution = 0.0
10:26 drillers stand by while concrete is removed-
11:00 resume drilling at SB-5
11:45 completed SB-5 to 10.5 feet. leave augers in for water to collect- no water now.
12:00 begin SB-1
12:50 collected groundwater sample from SB-1 - sheen on black water - DO = ~~0~~ at 20.4°C
1:00 set up over SB-2
drillers grouting SB-1
1:10 collected groundwater SB-5 floating product. DO = ~~0~~ at 20.3°C
1:10 drilling SB-2
1:45 completed SB-2 let sit for water, move to SB-3
2:00 used new augers at each hole - drillers steam clean augers.
2:15 resume drilling at SB-3
groundwater at SB-3, strong odor & sheen, let sit to get wate
2:50 move to SB-4, cement corer coring SB-6
3:30 collected groundwater from SB-3 DO = 2.9 at 20.0°C

Inspector: Gail F Clark

Job Title Sybase Job Number 950074.02

Date 6-15-96 Sheet 2/2

3:30 drillers begin SB-6
4:00 completed SB-6 - concrete cover finished, cleaning up.
4:05 cover left site.
Drillers pulling augers at SB-3
4:35 collected groundwater from SB-2 DO = 0 at 20.3°C no sheen, no odor
5:15 collected groundwater at SB-6 thick blackish brown floating product. DO = 3.0 at 20.4°C
5:45 move rig over SB-4 - not enough water for sampling drill additional 5 feet.
5:50 collected 3-40ml VOAs at SB-4 prior to addition drilling black bead floating in water (oily), odor. (also 1/2 amber liter) unable to collect more water sample approx 2 inches in bottom of hole at 14.5 ft. bgs.
6:10 drillers pull auger at SB-4
NOTE: groundwater samples collected with disposable Teflon bailers - new bailer each boring. Soil samplers and liners washed in Liquinox, water rinse then DI rinse.
6:22 opened MW-5 - replaced rusted shut exp. cap & lock used lock with key # P569
6:30 begin purging MW-5
7:20 collected samples MW5 2 amber & 3-40ml VOAs
Drillers cleaning & steam cleaning.
8:00 Drillers leave site - I leave also.

Gail J Clarke
Inspector

Erler & Kalinowski, Inc.

GROUNDWATER PURGE SAMPLE FORM

PROJECT NAME: SYBASE MW-5 DATE: 6-15-96

PROJECT NUMBER: 950074.02 WELL NUMBER: PERSONNEL: G.L Clark

WELL VOLUME CALCULATION:

Depth of Well (ft.)	Depth to Water (ft.)		Water Column (ft.)	Multiplier (below)	Casing Vol. (gallons)
18.0	6.20	=	11.8	* 0.64	= 7.5

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

No. of bailers prior to start of purge: 0

PURGE METHOD: hand bail

PURGE DEPTH: varying

START TIME: 6:30 PM END TIME: 7:10

TOTAL GALLONS PURGED: 24

INSTRUMENT CALIBRATION

Instrument	Field measure	Standard measure	
Conductivity			
pH	7	=	86.89
pH			
Turbidity			
Temperature			
Depth Probe #6			

SAMPLES:

Field I.D.	Time Collected	Containers & Preservation
MW5	7:20	3-40ml Voas and 2 amber liters

COMMENTS:
replaced cap & lock - well has "sewage" smell

Time	6:41	6:51	7:00 PM	7:05	7:10		
Volume Purged (gallons)	2	10	16	20	24		
Temperature (degrees F or C)	18.1	17.7	17.9	17.8	17.8		
pH	7.33	7.68	7.65	7.69	7.69		
Specific Conductivity (millimhos)	291	291	288	286	287		
Turbidity/Color (NTU)	clear foamy	17.00	15.88	15.70	14.79		
Color	—	—	—	—	—		
Depth to Water During purge (feet)	6.60	6.90	7.00	—	6.60		
Number of Casing Volumes removed	—	1.3	2.1	2.7	3.2		
Purge Rate (gallons/minute)	—	—	—	—	—		

Erler & Kalinowski, Inc.
Consulting Engineers and Scientists
1730 So. Amphlett Blvd., Suite 320
San Mateo, California 94402
(415) 578-1172
Fax (415) 578-3131

Daily Inspection Report

Job Name: SYBASE
Date: 6-16-96 EKI Job No.: 950074.02 Sheet: 1 of 1

Supt. on Job Site: G.L. Clark
Weather: clouds, cool
Contractors / Visitors to Site:

Work Hours: From 12:11 to _____ Memos Issued: _____
Sampling, Testing: MW-7
Attached Field Forms (C-o-C's, Purge Forms):
Work Report (Work done, Personnel / Equipment working) 12:11 arrived on site
set up over MW-7, decon sampling equip
calibrate equipment (see Purge + Sample Form)
12:28 begin purging MW-7
1:37 completed purging, wait for recharge
DRUM INVENTORY - (stored as directed inside trash area)
soil 6-15-96 SB1 - SB6
soil 6-15-96 SB1 - SB6
water 6-15-96 decon
water 6-15-96 decon + purge from MW5
water 6-16-96 purge MW7 (1/2 full)
PPE 6-15 and 16-96
total of six drums left on site
2:30 water level not fully recharged, collected groundwater.
with 12.7
decon equipment.
locked well with EKI cap + lock PS69 key.
3:00 left site

Inspector: Gail J Clark

Erler & Kalinowski, Inc.

GROUNDWATER PURGE SAMPLE FORM

PROJECT NAME: SYBASE DATE: 6-16-96

PROJECT NUMBER: 950074.02 WELL NUMBER: MW-7 PERSONNEL: G.L. Clark

WELL VOLUME CALCULATION:

Depth of Well (ft.)		Depth to Water (ft.)		Water Column (ft.)		Multiplier (below)		Casing Vol. (gallons)
18.81	-	6.11	=	12.70	*		=	8.1

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

No. of bailers prior to start of purge: ~~0~~

PURGE METHOD: Hand bail

PURGE DEPTH: varying

START TIME: 12:28 END TIME: 1:37

TOTAL GALLONS PURGED: 26

INSTRUMENT CALIBRATION

Instrument	Field Standard measure	Standard measure
Conductivity	7.0	= 6.98
pH	4.0	= 4.10
pH		
Turbidity	0.02	= 0.02
Temperature		
Depth Probe	#6	

SAMPLES:

Field I.D.	Time Collected	Containers & Preservation	
MW7	2:30	3-40ml VOAs 2-amber liters	1:34 water 16.6

COMMENTS:

slightly foamy, slight "sewer" smell

wait for recharge

↓ wait for recharge

Time	12:34	12:42	12:50	12:58	1:11	1:20	1:37
Volume Purged (gallons)	4	8	12	16	20	24	26
Temperature (degrees F or C)	17.3	17.3	16.6	16.6	17.3	17.3	17.4
pH	7.82	8.08	8.22	8.58	8.74	8.39	8.85
Specific Conductivity (millimhos)	0.918	1.012	1.103	1.114	1.177	1.042	1.294
Turbidity/Color (NTU)	34.2	30.2	25.6	40.2	52.0	70.	58.8
Odor	—	—	—	—	—	—	—
Depth to Water during purge (feet)	—	10.7	11.5	14.5	16.0	17.7	17.4
Number of Casing Volumes removed	—	~1	1.5	1.9	2.5	2.9	3.2
Purge Rate (gallons/minute)	—	—	—	—	—	—	

APPENDIX E

Boring Logs

Boring & Well Construction Log

BORING LOCATION: 6601 and 6603 Bay Street, Emeryville, California				Boring/Well Name: SB-1	
DRILLING COMPANY: Spectrum Exploration, Inc.	DRILLER: Kevin Wilson			Project Name: Sybase	
DRILLING METHOD(S): Hollow Stem Auger (CME-75)	DRILL BIT AND SIZE: 6 inch O.D.			Project Number: 950074.02	
ISOLATION CASING	FROM	TO	FT	ELEVATION AND DATUM	TOTAL DEPTH: 11 Feet
BLANK CASING	FROM	TO	FT	DATE STARTED: 6/15/96	DATE COMPLETED: 6/15/96
PERFORATED CASING	FROM	TO	FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK	FROM	TO	FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.	
SEAL	FROM	TO	FT	SAMPLING METHODS: CA. Modified Split Spoon	WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite Grout	FROM: 0	TO: 11	FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			0					Asphalt (3.5 inches), Concrete (5.5 inches).	
			1				N3	GRAVELLY CLAY, dark gray (N3), gravel (<1 inch dia), stiff, damp.	
			2					SANDY CLAY, black (N1), fine grained sand (20-30%), silt (10-20%), minor gravel (<5%) (1/4 inch dia), loose, low plasticity, damp, slight petroleum odor.	OVM, S=2.3 ppm
	.5	8	3						
X	.5	13	4						
	.5	12	5					SILTY CLAY, black (N1), silt (20-30%), minor gravel (<2 inch dia), minor medium grained sand in pockets, moderate plasticity, brick fragments, green (Serpentinite) rock fragments, damp, odor.	OVM, A=0 ppm BZ=0 ppm S=315 ppm (at 5.5 feet)
			6		CL				
			7	Cement/ Bentonite Grout			N1		
			8						
			9						
	.5	5	10					same as above, saturated, sheen, odor.	
	.5	1							
	.5	2	11					Total Depth 11 feet.	
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION: 6601 and 6603 Bay Street, Emeryville, California		Boring/Well Name: SB-2	
DRILLING COMPANY: Spectrum Exploration, Inc.	DRILLER: Kevin Wilson	Project Name: Sybase	
DRILLING METHOD(S): Hollow Stem Auger (CME-75)	DRILL BIT AND SIZE: 6 inch O.D.	Project Number: 950074.02	
ISOLATION CASING	FROM TO FT	ELEVATION AND DATUM	TOTAL DEPTH: 13.5 Feet
BLANK CASING	FROM TO FT	DATE STARTED: 6/15/96	DATE COMPLETED: 6/15/96
PERFORATED CASING	FROM TO FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK	FROM TO FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.	
SEAL	FROM TO FT	SAMPLING METHODS: CA. Modified Split Spoon	WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite Grout	FROM: 0 TO: 13.5 FT		

SAMPLES Type Number	Recovery (feet)	Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			0					Asphalt (3.5 inches), Concrete (5.5 inches).	
			1		GC		N1	CLAYEY GRAVEL, black (N1), gravel (<1.5 inch dia).	
			2					GRAVELLY CLAY, olive gray (5Y 4/1) mottled with black (N1), gravel (<2 inch dia) (20-30%), brick fragments, pieces of metal, black solidified tar (?), minor sand in pockets, slightly damp.	
			3						
			4				5Y-		
X	.5	7							
	.5	9	5						OVM, S=1.1 ppm
	.5	9							
			6						
			7	Cement/Bentonite Grout	CL			SILTY CLAY, black (N1), silt (10-20%), moderate to high plasticity, soft, damp.	
			8						
			9						
			10				N1		
			11						
			12					damp.	Driller notes that Sampler "fell" from 12 to 13.5 Without hammering.
			13						
								Total Depth 13.5 feet.	
			14						
			15						
			16						
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION: 6601 and 6603 Bay Street, Emeryville, California		Boring/Well Name: SB-3
DRILLING COMPANY: Spectrum Exploration, Inc.	DRILLER: Kevin Wilson	Project Name: Sybase
DRILLING METHOD(S): Hollow Stem Auger (CME-75)	DRILL BIT AND SIZE: 6 inch O.D.	Project Number: 950074.02
ISOLATION CASING	FROM TO FT	ELEVATION AND DATUM / TOTAL DEPTH: 11.5 Feet
BLANK CASING	FROM TO FT	DATE STARTED: 6/15/96 / DATE COMPLETED: 6/15/96
PERFORATED CASING	FROM TO FT	DEPTH TO WATER
SIZE AND TYPE OF FILTER PACK	FROM TO FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.
SEAL	FROM TO FT	SAMPLING METHODS: CA. Modified Split Spoon / WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite Grout	FROM 0 TO 11.5 FT	

SAMPLES Type Number	Recovery (feet)	Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			1					Asphalt (4 inches), Concrete (6 inches).	
			2				10YR 4/2	GRAVELLY CLAY, dark yellow brown (10YR 4/2), gravel (<2 inch dia) (20-30%), loose, low plasticity, damp.	
			3					2 inch layer of gravel (<2.5 inch dia).	
	.5	7	4						
	.5	3						color change to grayish black (N2), brick fragments, wood pieces, wet.	OVM, S=1.1 ppm A=11 ppm, BZ=0 ppm
	.5	4	5						
			6		CL				
			7	Cement/ Bentonite Grout			N2		
			8						
			9						
	0	1/12	10					brick fragments, black sheen, odor.	Driller notes water. OVM, A=16 ppm BZ=1.1 ppm S=8.5 ppm
	.2	4							
	.5		11					Total Depth 11.5 feet.	
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION: 6601 and 6603 Bay Street, Emeryville, California		Boring/Well Name: SB-4	
DRILLING COMPANY: Spectrum Exploration, Inc.	DRILLER: Kevin Wilson	Project Name: Sybase	
DRILLING METHOD(S): Hollow Stem Auger (CME-75)	DRILL BIT AND SIZE: 6 inch O.D.	Project Number: 950074.02	
ISOLATION CASING	FROM TO FT	ELEVATION AND DATUM	TOTAL DEPTH: 14.5 Feet
BLANK CASING	FROM TO FT	DATE STARTED: 6/15/96	DATE COMPLETED: 6/15/96
PERFORATED CASING	FROM TO FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK	FROM TO FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.	
SEAL	FROM TO FT	SAMPLING METHODS: CA. Modified Split Spoon	WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite Grout	FROM 0 TO 14.5 FT		

SAMPLES Type Number	Recovery (feet)	Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			0					Asphalt (4 inches), Concrete (6 inches).	
			1					CLAYEY GRAVEL, black (N1), gravel (<1.5 inch dia).	
			2				5Y 2/1	SILTY CLAY WITH GRAVEL, olive black (5Y 2/10), silt (20-30%), gravel (<1 inch dia) (5-10%), minor fine grained sand, damp to moist, odor.	
			3						OVM, S=2.3 ppm BZ=0 ppm
	0	8	4						
	.5	3						becomes mottled with olive gray (5Y 4/1), fine grained sand in pockets increases, peaty wood pieces, moist to wet, odor.	
	.5	1	5						OVM, S=3.5 ppm
			6				5Y 2/1 and 5Y 4/1		
			7	Cement/ Bentonite Grout	CL				
			8						
			9						
			10				10YR 4/2	SANDY CLAY WITH GRAVEL, dark yellow brown (10YR 4/2), wet to saturated.	
	0								OVM, @=2.3 Driller notes that Sampler "fell" from 10 to 10.5 feet.
	.3	1	11					color change to medium dark gray (N4), saturated, odor.	
	.5	3	12				N4		
			13						
			14						
			15					Total Depth 14.5 feet.	
			16						
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION: 6601 and 6603 Bay Street, Emeryville, California		Boring/Well Name: SB-5	
DRILLING COMPANY: Spectrum Exploration, Inc.	DRILLER: Kevin Wilson	Project Name: Sybase	
DRILLING METHOD(S): Hollow Stem Auger (CME-75)	DRILL BIT AND SIZE: 6 inch O.D.	Project Number: 950074.02	
ISOLATION CASING	FROM TO FT	ELEVATION AND DATUM	TOTAL DEPTH: 10.5 Feet
BLANK CASING	FROM TO FT	DATE STARTED: 6/15/96	DATE COMPLETED: 6/15/96
PERFORATED CASING	FROM TO FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK	FROM TO FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.	
SEAL	FROM TO FT	SAMPLING METHODS: CA. Modified Split Spoon	WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite Grout	FROM: 0 TO: 10.5 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			0					Asphalt (8 inches), Concrete (6 inches).	
			1–2		CL			SILTY CLAY WITH GRAVEL, grayish black (N2), silt (15-25%), gravel (10-20%), subrounded (<1/2 inch dia), moderate to high plasticity, soft, damp, no odor.	OVM, S=0 ppm
			3–4		GP			GRAVEL, subrounded to rounded (<2 inch dia).	Driller notes gravel.
	.2	10	5					SILTY CLAY WITH GRAVEL, as above, concrete chunks (>2 inch dia), sheen, saturated, odor.	OVM, A=9.3 ppm BZ=0 ppm S=0 ppm
	.5	13	6				N2		
	.5	6	7	Cement/ Bentonite Grout	CL				OVM, S=5.8 ppm
			8–9						
			10					Total Depth 10.5 feet.	OVM, A=0 ppm BZ=0 ppm
			11–20						

Boring & Well Construction Log

BORING LOCATION: 6601 and 6603 Bay Street, Emeryville, California			Boring/Well Name: SB-6
DRILLING COMPANY: Spectrum Exploration, Inc.	DRILLER: Kevin Wilson		Project Name: Sybase
DRILLING METHOD(S): Hollow Stem Auger (CME-75)	DRILL BIT AND SIZE: 6 inch O.D.		Project Number: 950074.02
ISOLATION CASING	FROM TO FT	ELEVATION AND DATUM	TOTAL DEPTH: 11.5 Feet
BLANK CASING	FROM TO FT	DATE STARTED: 6/15/96	DATE COMPLETED: 6/15/96
PERFORATED CASING	FROM TO FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK	FROM TO FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.	
SEAL	FROM TO FT	SAMPLING METHODS: CA. Modified Split Spoon	WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite Grout	FROM 0 TO 11.5 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/6 In.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			1					Asphalt (4 inches), Concrete (6 inches).	
			2				5Y 3/2 and 5YR 2/1	GRAVELLY CLAY, grayish brown (5Y 3/2) mottled with brownish black (5YR 2/1), gravel (20-30%) (<3 inch dia).	
			3						
	.4	9	4					SILTY CLAY, grayish green (10GY 5/2), silt (10-20%), fine grained sand (5-10%), stiff, high plasticity, damp.	OVM, S=2.3 ppm
	.5	5	5						
	.5	4	6		CL		10GY 5/2		
			7	Cement/ Bentonite Grout					
			8						
			9						
	0	2/12	10				10YR 4/2	SANDY CLAY WITH GRAVEL, dark yellow brown (10YR 4/2), medium grained sand (20-30%), gravel (10-20%) (<1 inch dia), damp to moist.	OVM, A=1.1 ppm S=25.5 ppm
	0		11				N1	color changes to black (N1), strong odor, oily sheen, wet to saturated.	
	.4	3	12					Total Depth 11.5 feet.	
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

APPENDIX F

Surveyor's Report

MacLEOD AND ASSOCIATES, INC.
CIVIL ENGINEERING • LAND SURVEYING

July 2, 1996

Michelle King
Erler and Kalinowski, Inc.
1730 South Amphlett Blvd., Suite 320
San Mateo, CA 94402

RE: SYBASE - 6601/6603 BAY ST., EMERYVILLE, CA
Your Job # 950074.02; Our Job # 983-96

Dear Ms. King,

Per your request, we conducted a field survey at the above-referenced property on June 29, 1996 to determine the elevations and horizontal coordinates of monitoring wells, soil borings locations and building corners. These points were indicated on the site plan you sent to us on June 18, 1996.

During our site field survey, the monitoring wells were not accessible due to vehicles parked over them. Per instructions from your field representative, the pavement nearest to the wells was located for elevation purposes and marked with a spot of paint.

The results are attached.

Elevations of borings were taken at ground level. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Horizontal coordinates are referenced to an assumed local system. The southeast corner of the Sybase building was assumed as North 5000, East 5000 and the east face of this building was assumed as due North.

If you have any questions, please don't hesitate to call.

Sincerely,

Daniel G. MacLeod, P.E., P.L.S.

LICENSED LAND SURVEYOR
DANIEL G. MacLEOD
LIC. EXP. 12/31/97
No. 5304
STATE OF CALIFORNIA

930 TANKLAGE RD. • SAN CARLOS • CA 94070 • (415) 593-8580 • FAX (415) 593-8675

EKI Job ID : 950074.02
Our Job ID : 983-96
Job name : SYBASE 6601/6603 BAY STREET - EMERYVILLE, CALIFORNIA
Description : MONITORING WELL & BORING LOCATIONS
Field surveyor : TY HAMMOND AND ARTHUR SMITH
Computer operator : DAN MAC LEOD
Date printed : 2 JULY 1996 11:53am

Pt No.	Northing	Easting	Elev	Code
3	4519.49	5227.31	16.17	BENCHMARK
200	4934.28	4873.18	14.76	N.W. BLD COR - 6501 BAY ST.
201	4933.92	4814.66	13.51	N.E. BLD COR - 1650 65TH ST.
202	4969.05	4834.32	13.65	BORING - SB6
203	4980.66	4798.17	13.76	BORING - SB5
204	4968.03	4780.70	13.61	BORING - SB4
205	4969.63	4743.21	13.25	BORING - SB3
206	4974.82	4706.19	13.33	BORING - SB2
207	4973.70	4673.02	13.27	BORING - SB1
208	4948.42	4681.81	13.31	PAVEMENT NEAR MW-5
209	4943.78	4754.65	13.31	PAVEMENT NEAR MW-7
211	5000.00	5000.00	16.36	S.E. BLD COR - SYBASE
212	5086.41	5000.00	16.19	EAST BLD FACE - SYBASE

APPENDIX G

Laboratory Data Sheets

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Analytical Laboratory: Sequoia

Project Number: 950074.02

Date Sampled: 6-15-96

Project Name: SYBASE

Sampled By: G.L. Clark

Source of Samples: Soil borings

Report Results To: Michelle King

Location: Bay Street, Emeryville, CA

Phone Number: 415) 578-1172

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	TB#1	water	1-40ml Voas	5—	TPHg/BTEX/MTBE (8015/8020)	
	SB5-6	Soil	1 sl. st. liner	11:30	TPHg/BTEX/MTBE, TPHd	
	SB1-5	soil	1 sl. st liner	12:18	TPHg/BTEX/MTBE, TPHd	
	SB-1	water	3-40ml Voas	12:50	TPHg/BTEX/MTBE (8015/8020)	
	SB-1	water	1 amber liter	12:50	TPHd (8015)	
	SB-1	water	1 amber liter	12:50	PAHs (8100)	HOLD
	SB-5	water	3-40ml Voas	1:10	TPHg/BTEX/MTBE (8015/8020)	
	SB-5	water	1 amber liter	1:10	TPHd (8015) - FF	
	SB-5	water	1 amber liter	1:10	PAHs (8100)	HOLD
	SB#2-5	soil	1 sl. st. liner	1:27	TPHg/BTEX/MTBE, TPHd	

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
Gail L. Clark / Gail L Clark /EKI	6/17	1:45	Michelle K King / Michelle K King / EKI
Michelle K King / Michelle K King /EKI	6/18/96	12:15	Brett Von Tilman / Brett Von Tilman /EKI
[illegible]	[illegible]	[illegible]	[illegible]

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Analytical Laboratory: Sequoia

Project Number: 950074.02

Date Sampled: 6-15-96

Project Name: SYBASE

Sampled By: G.L. Clark

Source of Samples: Soil borings

Report Results To: Michelle King

Location: Emeryville

Phone Number: 415) 578-1172

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	SB3-5	Soil	1 sl. st. liner	2:25	TPHg/BTEX/MTBE, TPHd; PAHs (8100)	
	SB-3	water	3-40ml Voas	3:30	TPHg/BTEX/MTBE (8015/8020)	
	SB-3	water	1 amber liter	3:30	TPHd (8015) - FF	
	SB-3	water	1 amber liter	3:30	PAHs (8100)	HOLD
	SB4-5	Soil	1 st. st. liner	3:12	TPHg/BTEX/MTBE, TPHd; PAHs (8100)	
	SB6-5	soil	1 st. st. liner	3:45	TPHg/BTEX/MTBE, TPHd	
	SB-6	water	3-40ml Voas	5:15	TPHg/BTEX/MTBE (8015/8020)	
	SB-6	water	1 amber liter	5:15	TPHd (8015) FF	
	SB-6	water	1 amber liter	5:15	PAHs (8100) added PAHs 6/26	HOLD

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
Gail L. Clark / Gail L Clark /EKI	6/17	~~5~~ 945	Michelle King / Michelle King EKI
Michelle K. King / Michelle King EKI	6/17/96	12:15	Britt van Thaden BRITT VAN THADEN / EM
		2:55P	

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Analytical Laboratory: Sequoia

Project Number: 950074.02

Date Sampled: 6-15-96

Project Name: Sybase

Sampled By: G.L. Clark

Source of Samples: soil borings

Report Results To: Michelle King

Location: Emeryville

Phone Number: 415) 578-1172

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	SB-2 '	water	3-40ml Voas	4:35	TPHg/BTEX/MTBE (8015/8020)	
	SB-2 "	water	1 amber liter	4:35	TPHd (8015)	
	SB-2 "'	water	1 amber liter	4:35	PAHs (8100)	HOLD
	SB-4 "	water	3-40ml Voas	5:50	TPHg/BTEX/MTBE (8015/8020)	
	SB-4 "'	water	1 amber liter (1/2 full)	5:50	TPHd (8015)	
	MW5 "	water	3-40ml Voas	7:20 pm	TPHg/BTEX/MTBE/8015/8020	
	MW5 "'	water	1 amber liter	7:20	TPHd (8015)	
	MW5 "'	water	1 amber liter	7:20	PAHs (8100)	HOLD

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
Gail L. Clark / Gail L Clark / EKI	6/17	9:45	Michelle King Michelle King EKI
Michelle K King / Michelle K/K EKI	6/17	12:15	Britt Van Thaden BRITT VAN THADEN EKI
BRITT VAN THADEN Britt Van Thaden EKI	6/17/96	2:55P	M. Heid / Michael Reed / Sequoia

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 3, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

COPY

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: TB#1	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-01	Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB5-6	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: 8015Mod/8020	Analyzed: 06/19/96
Attention: Michelle King	Lab Number: 9606A14-02	Reported: 07/12/96

QC Batch Number: GC061996BTEXEXA
Instrument ID: GCHP 18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**7.3**
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	**0.0050**	**0.0062**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.021**
Chromatogram Pattern:		
Unidentified HC		**>C8**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	101

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB5-6	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-02	Reported: 07/12/96

QC Batch Number: GC0619960HBPEXB
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	10	120
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	265 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB1-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: 8015Mod/8020	Analyzed: 06/20/96
Attention: Michelle King	Lab Number: 9606A14-03	Reported: 07/12/96

QC Batch Number: GC061996BTEXEXA
Instrument ID: GCHP 18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**25**	**200**
Methyl t-Butyl Ether	0.62	N.D.
Benzene	0.12	N.D.
Toluene	0.12	N.D.
Ethyl Benzene	**0.12**	**0.29**
Xylenes (Total)	**0.12**	**2.8**
Chromatogram Pattern:		
Unidentified HC		C8-C12

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB1-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/21/96
Attention: Michelle King	Lab Number: 9606A14-03	Reported: 07/12/96

QC Batch Number: GC0619960HBPEXB
Instrument ID: GCHP19A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	20	820
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-1	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-04	Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**500**	**930**
Methyl t-Butyl Ether	25	N.D.
Benzene	5.0	N.D.
Toluene	5.0	N.D.
Ethyl Benzene	**5.0**	**11**
Xylenes (Total)	**5.0**	**17**
Chromatogram Pattern:		
Unidentified HC		**>C8**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	98

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-1	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/24/96
Attention: Michelle King	Lab Number: 9606A14-04	Reported: 07/12/96

QC Batch Number: GC0620960HBPEXZ
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	1000	9400
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	284 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Michelle King

Client Proj. ID: 950074.02/SYBASE
Sample Descript: SB-5
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9606A14-05

Sampled: 06/15/96
Received: 06/17/96

Analyzed: 06/25/96
Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	1800
Methyl t-Butyl Ether	25	N.D.
Benzene	5.0	150
Toluene	5.0	N.D.
Ethyl Benzene	5.0	N.D.
Xylenes (Total)	5.0	11
Chromatogram Pattern:		
Unidentified HC		>C11
Discrete Peak		C6-C7

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	92

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Michelle King

Client Proj. ID: 950074.02/SYBASE
Sample Descript: SB-5
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9606A14-05

Sampled: 06/15/96
Received: 06/17/96
Extracted: 06/20/96
Analyzed: 06/25/96
Reported: 07/12/96

QC Batch Number: GC0620960HBPEXB
Instrument ID: GCHP5B

Fuel Fingerprint

Analyte	Detection Limit mg/L	Sample Results mg/L
Extractable Hydrocarbons	81	2100
Chromatogram Pattern:		DIESEL

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	121

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB2-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: 8015Mod/8020	Analyzed: 06/20/96
Attention: Michelle King	Lab Number: 9606A14-06	Reported: 07/12/96

QC Batch Number: GC061996BTEXEXA
Instrument ID: GCHP 18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**1.1**
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.019**
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.0092**
Chromatogram Pattern:		
Weathered Gas		C8-C12

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB2-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-06	Reported: 07/12/96

QC Batch Number: GC0619960HBPEXB
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	20	210
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	727 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 3, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB3-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8100	Analyzed: 06/24/96
Attention: Michelle King	Lab Number: 9606A14-07	Reported: 07/12/96

QC Batch Number: GC0619968100EXB
Instrument ID: GCHP11

Polynuclear Aromatic Hydrocarbons (EPA 8100)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
Acenaphthene	5000	N.D.
Acenaphthylene	5000	N.D.
Anthracene	5000	N.D.
Benzo(a)anthracene	5000	N.D.
Benzo(a)pyrene	5000	N.D.
Benzo(b)fluoranthene	5000	N.D.
Benzo(g,h,i)perylene	5000	N.D.
Benzo(k)fluoranthene	5000	N.D.
Chrysene	5000	N.D.
Dibenzo(a,h)anthracene	5000	N.D.
Fluoranthene	5000	N.D.
Fluorene	5000	N.D.
Indeno(1,2,3-cd)pyrene	5000	N.D.
Naphthalene	5000	N.D.
Phenanthrene	5000	N.D.
Pyrene	5000	N.D.

Surrogates	Control Limits %		% Recovery
2-Fluorobiphenyl	50	150	56

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 3, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB3-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: 8015Mod/8020	Analyzed: 06/19/96
Attention: Michelle King	Lab Number: 9606A14-07	Reported: 07/12/96

QC Batch Number: GC061996BTEXEXA
Instrument ID: GCHP 18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 3, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB3-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/24/96
Attention: Michelle King	Lab Number: 9606A14-07	Reported: 07/12/96

QC Batch Number: GC0619960HBPEXB
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	10	86
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Michelle King

Client Proj. ID: 950074.02/SYBASE
Sample Descript: SB-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9606A14-08

Sampled: 06/15/96
Received: 06/17/96

Analyzed: 06/25/96
Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	N.D.
Methyl t-Butyl Ether	250	N.D.
Benzene	**50**	**160**
Toluene	50	N.D.
Ethyl Benzene	50	N.D.
Xylenes (Total)	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	97

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-3	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-08	Reported: 07/12/96

IC Batch Number: GC0620960HBPEXB
ıstrument ID: GCHP4A

Fuel Fingerprint

Analyte	Detection Limit mg/L	Sample Results mg/L
Extractable Hydrocarbons	560	13000
Chromatogram Pattern:		DIESEL+
Unidentified HC		C25-C36

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	157 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
roject Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB4-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8100	Analyzed: 06/24/96
Attention: Michelle King	Lab Number: 9606A14-09	Reported: 07/12/96

QC Batch Number: GC0619968100EXB
Instrument ID: GCHP11

Polynuclear Aromatic Hydrocarbons (EPA 8100)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
Acenaphthene	25000	N.D.
Acenaphthylene	25000	N.D.
Anthracene	25000	N.D.
Benzo(a)anthracene	25000	N.D.
Benzo(a)pyrene	25000	N.D.
Benzo(b)fluoranthene	25000	N.D.
Benzo(g,h,i)perylene	25000	N.D.
Benzo(k)fluoranthene	25000	N.D.
Chrysene	25000	N.D.
Dibenzo(a,h)anthracene	25000	N.D.
Fluoranthene	25000	N.D.
Fluorene	25000	N.D.
Indeno(1,2,3-cd)pyrene	25000	N.D.
Naphthalene	25000	N.D.
Phenanthrene	25000	N.D.
Pyrene	25000	N.D.

Surrogates	Control Limits %		% Recovery
2-Fluorobiphenyl	50	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB4-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: 8015Mod/8020	Analyzed: 06/19/96
Attention: Michelle King	Lab Number: 9606A14-09	Reported: 07/12/96

QC Batch Number: GC061996BTEXEXA
Instrument ID: GCHP 18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**4.2**
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	**0.0050**	**0.0094**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.015**
Chromatogram Pattern:		
Unidentified HC		**>C9**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB4-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-09	Reported: 07/12/96

QC Batch Number: GC0619960HBPEXB
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	50	360
Chromatogram Pattern: Unidentified HC		C10-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB6-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: 8015Mod/8020	Analyzed: 06/19/96
Attention: Michelle King	Lab Number: 9606A14-10	Reported: 07/12/96

QC Batch Number: GC061996BTEXEXA
Instrument ID: GCHP 18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**2.5**
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.026**
Chromatogram Pattern:		
Unidentified HC		**C8-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	95

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB6-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-10	Reported: 07/12/96

QC Batch Number: GC0619960HBPEXB
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	50	1800
Chromatogram Pattern:		
Unidentified HC		C9-C40

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-6	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-11	Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**100000**	**370000**
Methyl t-Butyl Ether	5000	N.D.
Benzene	1000	N.D.
Toluene	1000	N.D.
Ethyl Benzene	1000	N.D.
Xylenes (Total)	1000	N.D.
Chromatogram Pattern:		
Unidentified HC		**>C11**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	84

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-6	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/22/96
Attention: Michelle King	Lab Number: 9606A14-11	Reported: 07/12/96

QC Batch Number: GC0620960HBPEXB
Instrument ID: GCHP4A

Fuel Fingerprint

Analyte	Detection Limit mg/L	Sample Results mg/L
Extractable Hydrocarbons	2100	22000
Chromatogram Pattern:		DIESEL

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-6	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/28/96
	Analysis Method: EPA 8100	Analyzed: 06/29/96
Attention: Michelle King	Lab Number: 9606A14-11	Reported: 07/12/96

QC Batch Number: GC0628968100EXA
Instrument ID: GCHP11

Polynuclear Aromatic Hydrocarbons (EPA 8100)

Analyte	Detection Limit ug/L	Sample Results ug/L
Acenaphthene	**10000**	**42000**
Acenaphthylene	10000	N.D.
Anthracene	10000	N.D.
Benzo(a)anthracene	10000	N.D.
Benzo(a)pyrene	10000	N.D.
Benzo(b)fluoranthene	10000	N.D.
Benzo(g,h,i)perylene	10000	N.D.
Benzo(k)fluoranthene	10000	N.D.
Chrysene	10000	N.D.
Dibenzo(a,h)anthracene	10000	N.D.
Fluoranthene	10000	N.D.
Fluorene	**10000**	**96000**
Indeno(1,2,3-cd)pyrene	10000	N.D.
Naphthalene	10000	N.D.
Phenanthrene	10000	N.D.
Pyrene	10000	N.D.

Surrogates	Control Limits %		% Recovery
2-Fluorobiphenyl	50	150	1400 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-2	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/21/96
Attention: Michelle King	Lab Number: 9606A14-12	Reported: 07/12/96

QC Batch Number: GC0620960HBPEXB
nstrument ID: GCHP19A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/L	Sample Results mg/L
TEPH as Diesel	41	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	124

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-2	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-12	Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	**2.5**	**6.4**
Benzene	**0.50**	**0.99**
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	97

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-4	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/24/96
Attention: Michelle King	Lab Number: 9606A14-13	Reported: 07/12/96

QC Batch Number: GC0620960HBPEXB
nstrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/L	Sample Results mg/L
TEPH as Diesel	42	690
Chromatogram Pattern:		W-DIESEL

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	106

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: SB-4	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-13	Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	200	N.D.
Methyl t-Butyl Ether	10	N.D.
Benzene	**2.0**	**5.0**
Toluene	2.0	N.D.
Ethyl Benzene	2.0	N.D.
Xylenes (Total)	2.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: MW-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/24/96
Attention: Michelle King	Lab Number: 9606A14-14	Reported: 07/12/96

QC Batch Number: GC0620960HBPEXB
nstrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/L	Sample Results mg/L
TEPH as Diesel	40	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	123

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled: 06/15/96
1730 South Amphlett, Ste 320	Sample Descript: MW-5	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-14	Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**180**
Methyl t-Butyl Ether	**2.5**	**8.1**
Benzene	**0.50**	**39**
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Weathered Gas		C6-12

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	95

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/21/96
Attention: Michelle King	Lab Number: 9606A14-15	Reported: 07/12/96

QC Batch Number: GC0620960HBPEXZ
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	104

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A14-15	Reported: 07/12/96

QC Batch Number: GC062596BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	100

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/20/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/21/96
Attention: Michelle King	Lab Number: 9606A14-15	Reported: 07/12/96

QC Batch Number: GC0620960HBPEXB
Instrument ID: GCHP4A

Fuel Fingerprint

Analyte	Detection Limit mg/L	Sample Results mg/L
Extractable Hydrocarbons Chromatogram Pattern:	200	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	123

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/21/96
Attention: Michelle King	Lab Number: 9606A14-16	Reported: 07/12/96

QC Batch Number: GC0619960HBPEXB
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: 8015Mod/8020	Analyzed: 06/19/96
Attention: Michelle King	Lab Number: 9606A14-16	Reported: 07/12/96

QC Batch Number: GC061996BTEXEXA
nstrument ID: GCHP 18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/SYBASE	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix: SOLID	Extracted: 06/19/96
	Analysis Method: EPA 8100	Analyzed: 06/24/96
Attention: Michelle King	Lab Number: 9606A14-16	Reported: 07/12/96

QC Batch Number: GC0619968100EXB
Instrument ID: GCHP11

Polynuclear Aromatic Hydrocarbons (EPA 8100)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
Acenaphthene	250	N.D.
Acenaphthylene	250	N.D.
Anthracene	250	N.D.
Benzo(a)anthracene	250	N.D.
Benzo(a)pyrene	250	N.D.
Benzo(b)fluoranthene	250	N.D.
Benzo(g,h,i)perylene	250	N.D.
Benzo(k)fluoranthene	250	N.D.
Chrysene	250	N.D.
Dibenzo(a,h)anthracene	250	N.D.
Fluoranthene	250	N.D.
Fluorene	250	N.D.
Indeno(1,2,3-cd)pyrene	250	N.D.
Naphthalene	250	N.D.
Phenanthrene	250	N.D.
Pyrene	250	N.D.

Surrogates	Control Limits %		% Recovery
2-Fluorobiphenyl	50	150	75

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402
Attention: Michelle King

Client Proj. ID: 950074.02/SYBASE
Lab Proj. ID: 9606A14

Received: 06/17/96
Reported: 07/12/96

LABORATORY NARRATIVE

8100 S Notes:

Sample #A14-07 - dirty and dark extract (20x dilution required).

Sample #A14-09 - very dirty and dark extract (100x dilution required); surrogate diluted out (no surrogate recovery reported).

8100 W :

Sample #A14-11 - presence of unknown hydrocarbons could possibly affect the level of detected compounds and thererfore reported results could be artificially high.
Confirmation results for this sample are as follow:
Acenaphthene - 12,000 ug/L
Fluorene - 25,000 ug/L
However, since calibration for confirmation column was outside of the QC limits, these results can not be used as quantitative results.

Sample #A14-11 - high surrogate recovery is caused by matrix interferences (presence of unknown hydrocarbons). Also, sample was run past-hold time per Michelle King 6/26/96.

Sample#	Specific Gravity
9606a14-5(SB-5)-TPHFFW	1.0070
9606a14-8(SB-3)-TPHFFW	1.3890
9606a14-11(SB-6)-TPHFFW	1.0318
9606a14-11(SB-6)-8100	1.0137
9606a14-12(SB-2)-TPHD	1.0286
9606a14-13(SB-4)-TPHD	1.0480
9606a14-14(MW-5)-TPHD	0.9967

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Project ID:	950074.02/SYBASE	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript:	BLK	
Attention: Michelle King	Work Order #:	9606A14 -11	Reported: Jul 3, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Naphthalene	Acenapthene	Pyrene
QC Batch#:	GC0628968100EXA	GC0619968100EXB	GC0619968100EXB
Analy. Method:	EPA 8100	EPA 8100	EPA 8100
Prep. Method:	EPA 3550	EPA 3550	EPA 3550
Analyst:	D. Nelson	D. Nelson	D. Nelson
MS/MSD #:	BLK062896-BLK	BLK062896-BLK	BLK062896-BLK
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	06/28/96	06/28/96	06/28/96
Analyzed Date:	06/28/96	06/28/96	06/28/96
Instrument I.D.#:	GCHP11	GCHP11	GCHP11
Conc. Spiked:	2500 ug/L	2500 ug/L	2500 ug/L
Result:	44000	43000	44000
MS % Recovery:	88	86	88
Dup. Result:	41000	40000	40000
MSD % Recov.:	82	80	80
RPD:	7.1	7.2	9.5
RPD Limit:	0-50	0-50	0-50
LCS #:			
Prepared Date:			
Analyzed Date:			
Instrument I.D.#:			
Conc. Spiked:			
LCS Result:			
LCS % Recov.:			
MS/MSD LCS Control Limits	30-120	30-120	30-120

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 9, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Project ID:	950074.02/SYBASE			
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID			
San Mateo, CA 94402	Sample Descript:	LCS			
Attention: Michelle King	Work Order #:	9606A14	-05, 08, 11, 12-14, 15C	Reported:	Jul 3, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0620960HBPEXB
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3580
Analyst:	J. Minkel
MS/MSD #:	9606A60-01-XSD
Sample Conc.:	
Prepared Date:	
Analyzed Date:	
Instrument I.D.#:	
Conc. Spiked:	
Result:	
MS % Recovery:	
Dup. Result:	
MSD % Recov.:	
RPD:	
RPD Limit:	

LCS #:	LCS062096-LCS
Prepared Date:	06/20/96
Analyzed Date:	06/21/96
Instrument I.D.#:	GCHP4B
Conc. Spiked:	25 mg/L
LCS Result:	24
LCS % Recov.:	96

MS/MSD	60-140
LCS	50-150
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

4000AU

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Analytical Laboratory: Sequoia

Project Number: 950074.02

Date Sampled: 6-16-96

Project Name: SYBASE

Sampled By: G.L. Clark

Source of Samples: monitoring well

Report Results To: Michelle King

Location: 6603 Bay St., Emeryville

Phone Number: 415) 578-1172

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
01	MW7	water	3-40ml Voas		TPHg/BTEX/MTBE (8015/8020)	
↓	MW7	water	1 amber liter		TPHd (8015)	
	MW7	water	1 amber liter		PAHs (8100)	HOLD

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
Gail L. Clark / Gail L Clark / EKI	6/17	9:45	Michelle K King / Michelle King EKI
Michelle K King / Michelle King EKI	6/17/96	12:15	Britt von Thaden Britt von Thaden EKI
Britt von Thaden Britt von Thaden	6/17/96	2:55P	M. Hein / Michael Hein / Sequoia

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/Sybase	Sampled: 06/16/96
1730 South Amphlett, Ste 320	Sample Descript: MW7	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/21/96
Attention: Michelle King	Lab Number: 9606A03-01	Reported: 07/02/96

QC Batch Number: GC0617960HBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	1000
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	115

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/Sybase	Sampled: 06/16/96
1730 South Amphlett, Ste 320	Sample Descript: MW7	Received: 06/17/96
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A03-01	Reported: 07/02/96

QC Batch Number: GC062596BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	**2.5**	**6.5**
Benzene	**0.50**	**47**
Toluene	**0.50**	**0.87**
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	**0.50**	**0.80**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/Sybase	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix:	Extracted: 06/19/96
	Analysis Method: EPA 8015 Mod	Analyzed: 06/21/96
Attention: Michelle King	Lab Number: 9606A03-02	Reported: 07/02/96

C Batch Number: GC0617960HBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	127

Analytes reported as N.D. were not present above the stated limit of detection.

EQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 950074.02/Sybase	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/17/96
San Mateo, CA 94402	Matrix:	
	Analysis Method: 8015Mod/8020	Analyzed: 06/25/96
Attention: Michelle King	Lab Number: 9606A03-02	Reported: 07/02/96

QC Batch Number: GC062596BTEX21A
nstrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 3, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.
1730 So. Amphlett Blvd., Suite 320
San Mateo, CA 94402
Attention: Michelle King

Client Project ID: 950074.02/Sybase
Matrix: LIQUID
Sample Descript: XSD
Work Order #: 9606A03 01, 02

Reported: Jun 25, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC062596BTEX21A	GC062596BTEX21A	GC062596BTEX21A	GC062596BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	9606587-03-XSD	9606587-03-XSD	9606587-03-XSD	9606587-03-XSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	06/25/96	06/25/96	06/25/96	06/25/96
Analyzed Date:	06/25/96	06/25/96	06/25/96	06/25/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 ug/L	10 ug/L	10 ug/L	30 ug/L
Result:	11	11	11	35
MS % Recovery:	110	110	110	117
Dup. Result:	10	10	9.9	30
MSD % Recov.:	100	100	99	100
RPD:	9.5	9.5	11	15
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	LCS062596-LCS	LCS062596-LCS	LCS062596-LCS	LCS062596-LCS
Prepared Date:	06/25/96	06/25/96	06/25/96	06/25/96
Analyzed Date:	06/25/96	06/25/96	06/25/96	06/25/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 ug/L	10 ug/L	10 ug/L	30 ug/L
LCS Result:	9.9	9.9	9.8	30
LCS % Recov.:	99	99	98	100
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Project ID:	950074.02/Sybase	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript:	XSD	
Attention: Michelle King	Work Order #:	9606A03 01, 02	Reported: Jun 25, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0617960HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	J. Minkel
MS/MSD #:	9606772-01-XSD
Sample Conc.:	N.D.
Prepared Date:	06/17/96
Analyzed Date:	06/17/96
Instrument I.D.#:	GCHP4A
Conc. Spiked:	1000 µg/L
Result:	950
MS % Recovery:	95
Dup. Result:	600
MSD % Recov.:	60
RPD:	45
RPD Limit:	0-50

LCS #:	LCS061796-LCS
Prepared Date:	06/17/96
Analyzed Date:	06/17/96
Instrument I.D.#:	GCHP4A
Conc. Spiked:	1000 µg/L
LCS Result:	850
LCS % Recov.:	85

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

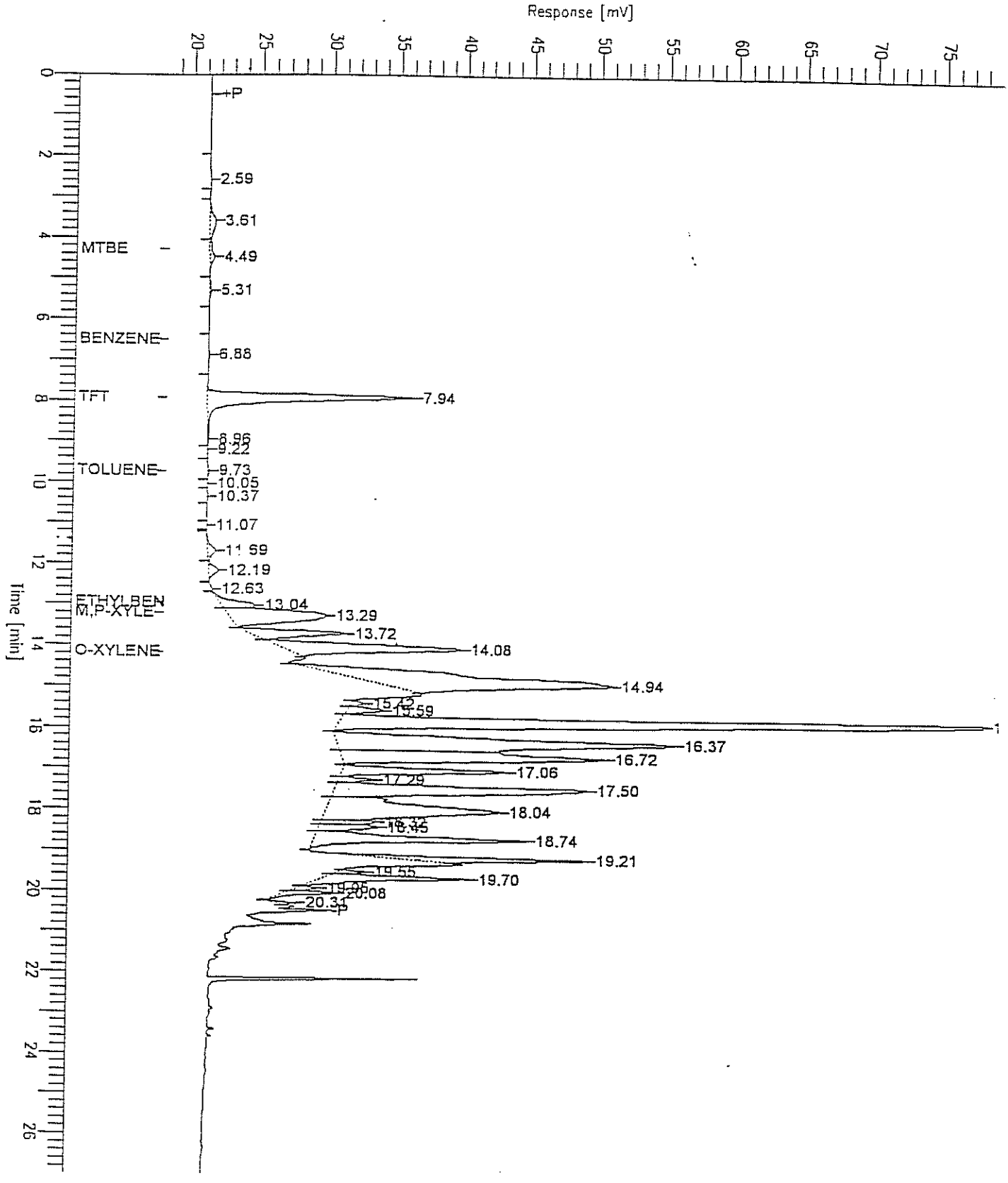
APPENDIX H

Laboratory Chromatograms

Chromatogram

Sample Name : GS9606A14-03RE
FileName : S:\GHP_18\0623\6205021.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 18 mV

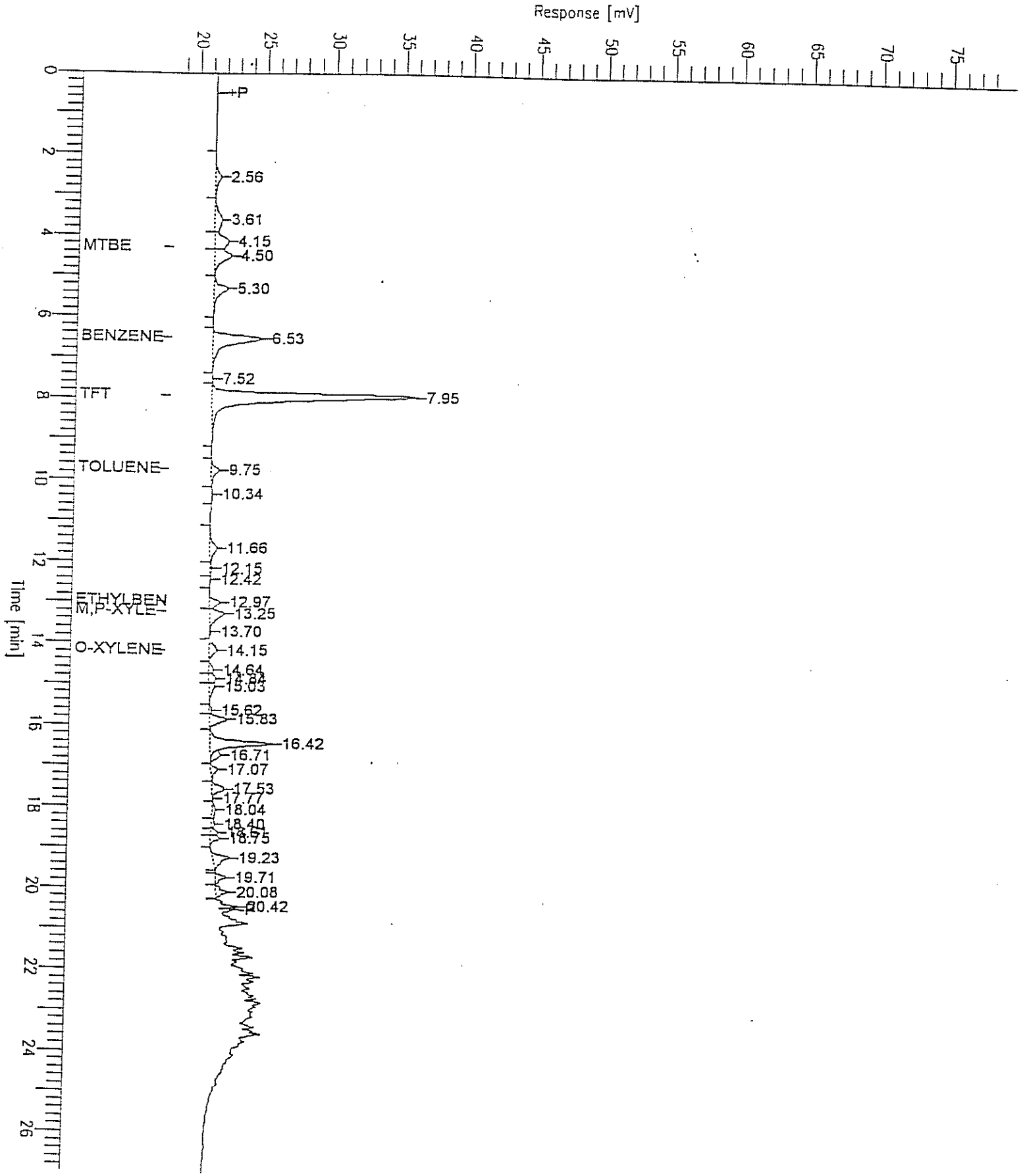
Sample #: SB1-5
Date : 6/21/96 00:23
Time of Injection: 6/20/96 23:53
Low Point : 18.20 mV High Point : 78.20 mV
Plot Scale: 60.0 mV



Chromatogram

Sample Name : GS9606A14-06RE
FileName : S:\GHP_18\0623\620B016.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 18 mV

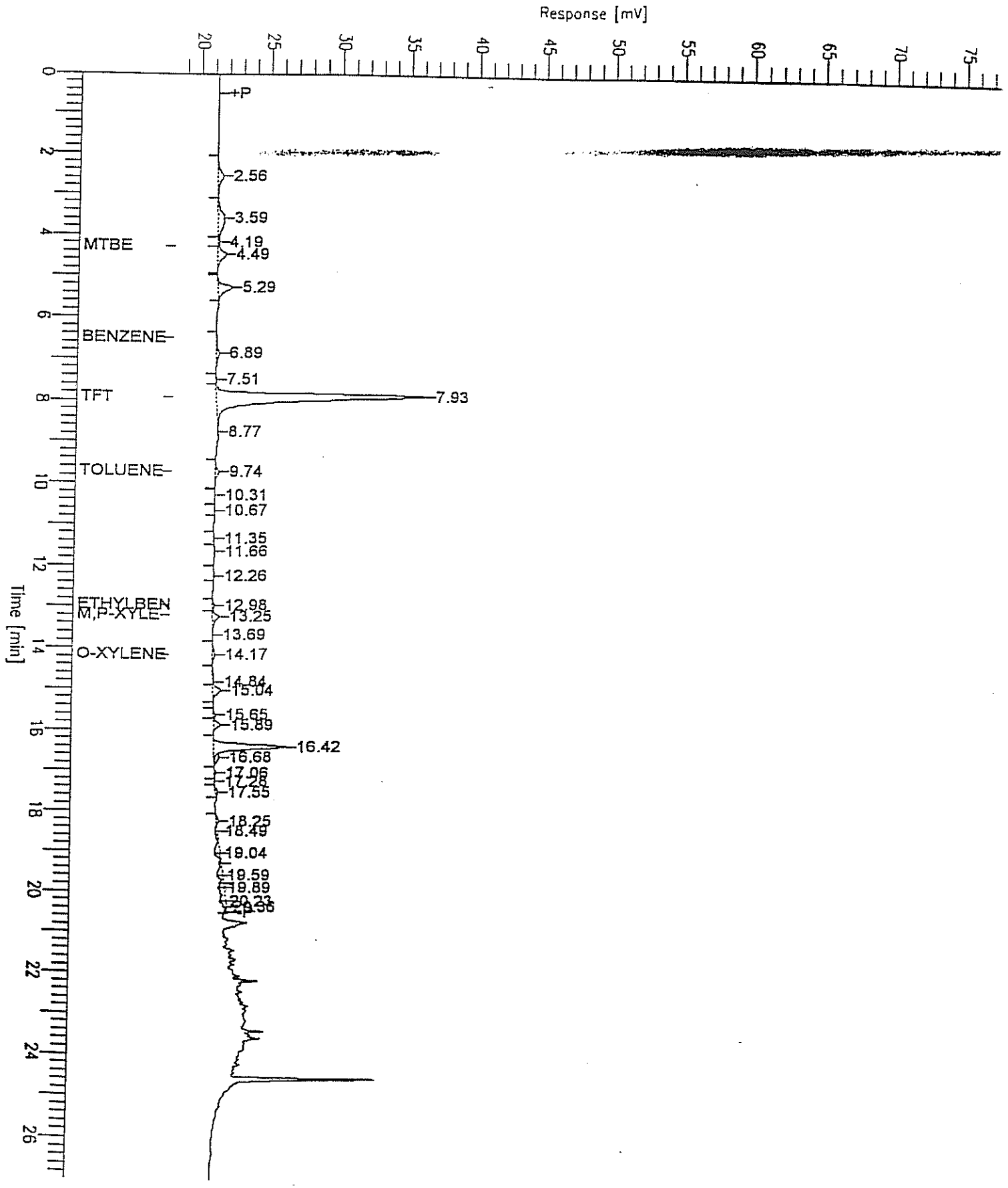
Sample #: SB2-5 Page 1 of 1
Date : 6/20/96 22:17
Time of Injection: 6/20/96 21:49
Low Point : 18.20 mV High Point : 78.20 mV
Plot Scale: 60.0 mV



Chromatogram

Sample Name : GS9606A14-07
FileName : S:\GHP_18\0623\619B015.raw
Method : TPH
Start Time : 0.00 min
Scale Factor: -1.0
End Time : 26.99 min
Plot Offset: 18 mV

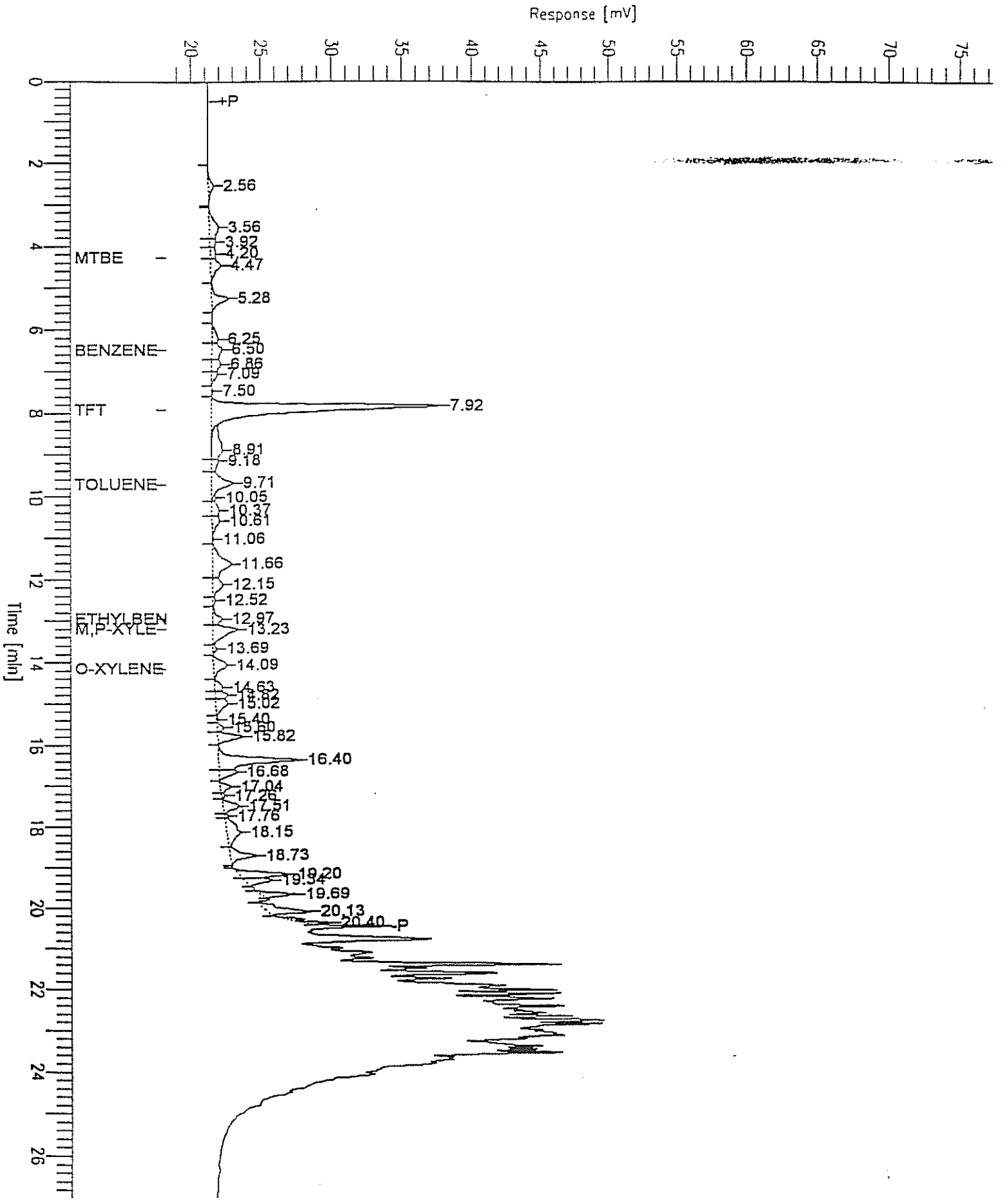
Sample #: SB3-5
Date : 6/19/96 22:56
Time of Injection: 6/19/96 22:28
Low Point : 18.20 mV
High Point : 78.20 mV
Plot Scale: 60.0 mV



Chromatogram

Sample Name : GS9606A14-09
FileName : S:\GHP_18\0623\619B016.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 18 mV

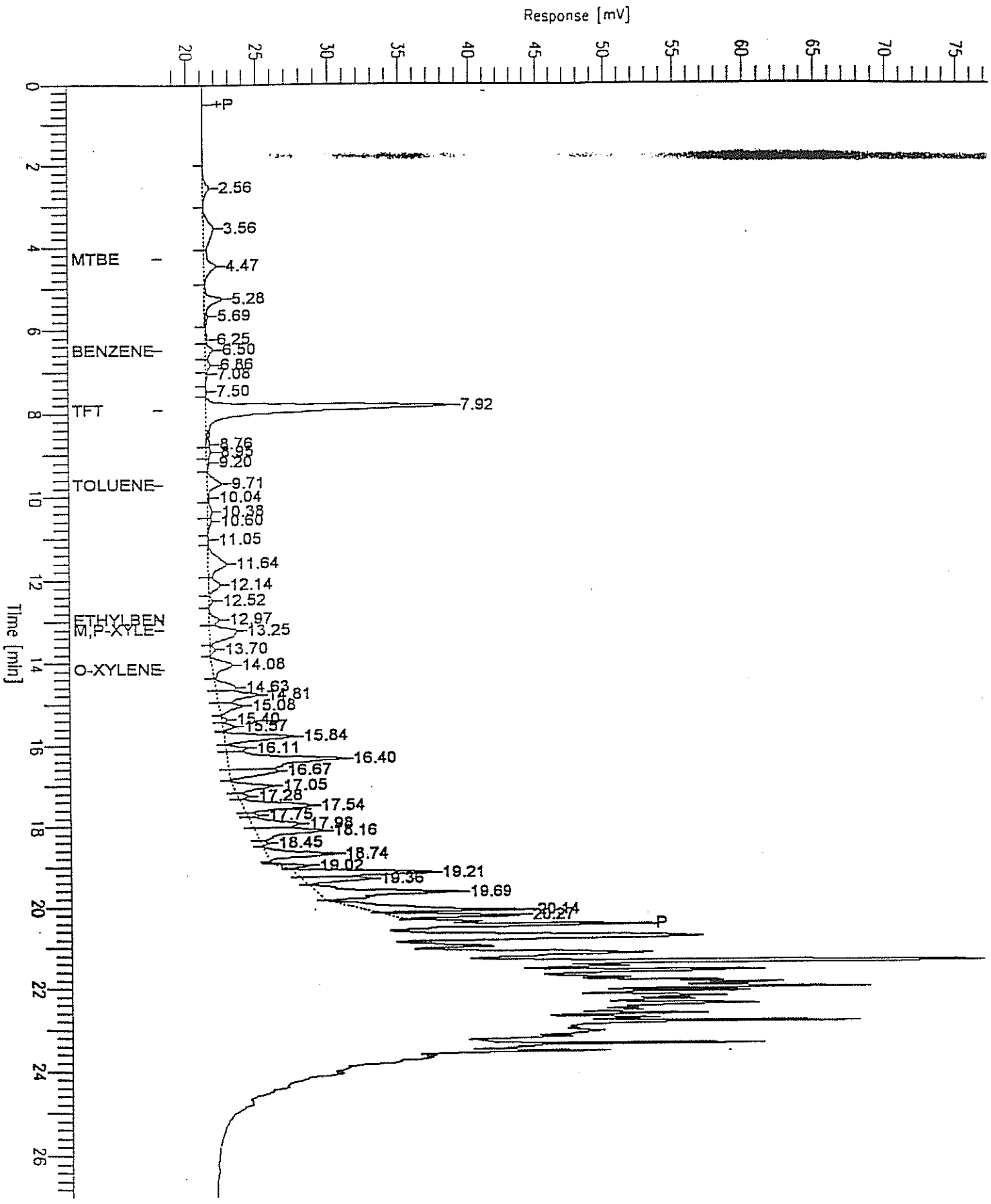
Sample #: SB4-5
Date : 6/19/96 23:32
Time of Injection: 6/19/96 23:04
Low Point : 18.21 mV High Point : 78.21 mV
Plot Scale: 60.0 mV



Chromatogram

Sample Name : GS9606A14-02
FileName : S:\GHP_18\0623\619B012.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 18 mV

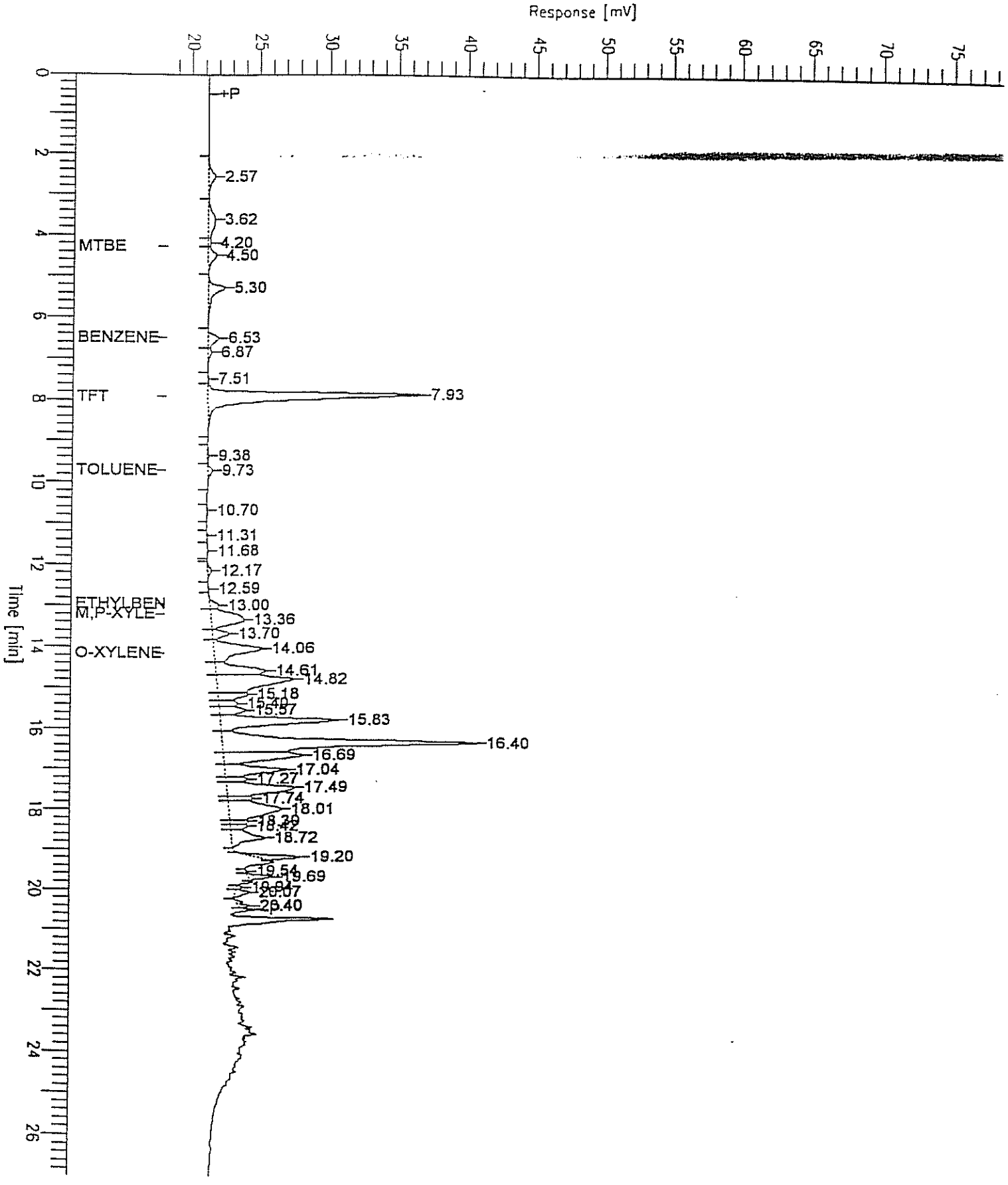
Sample #: SB5-6
Date : 6/19/96 21:10
Time of Injection: 6/19/96 20:41
Low Point : 18.18 mV High Point : 78.18 mV
Plot Scale: 60.0 mV



Chromatogram

Sample Name : GS9606A14-10
FileName : S:\GHP_18\0623\619B017.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 18 mV

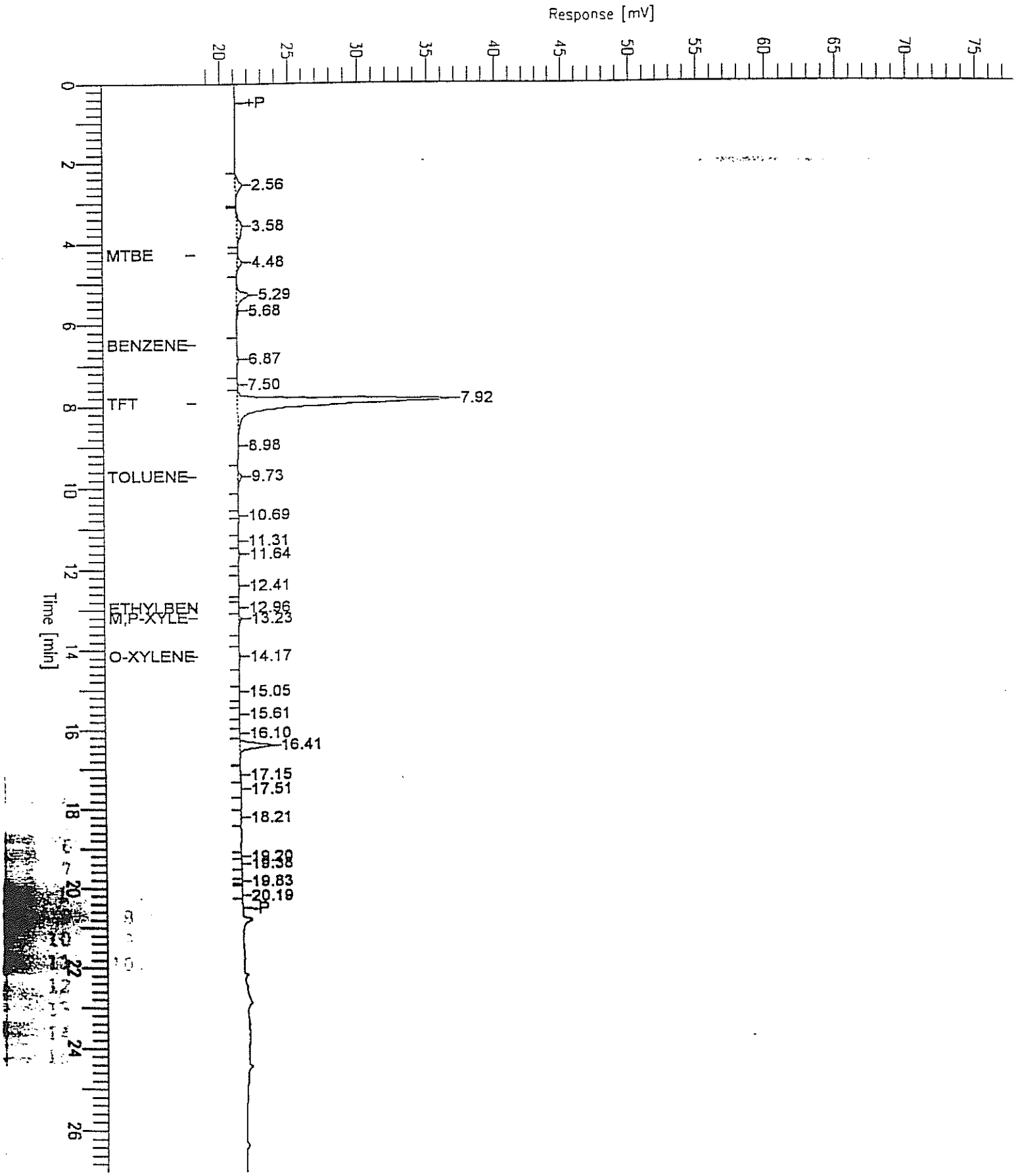
Sample #: SB6-5 6/20/96 Page 1 of 1
Date : 6/20/96 00:07
Time of Injection: 6/19/96 23:39
Low Point : 18.20 mV High Point : 78.20 mV
Plot Scale: 60.0 mV



Chromatogram

Sample Name : GSBLK061996A
FileName : S:\GHP_18\0623\619B007.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 18 mV

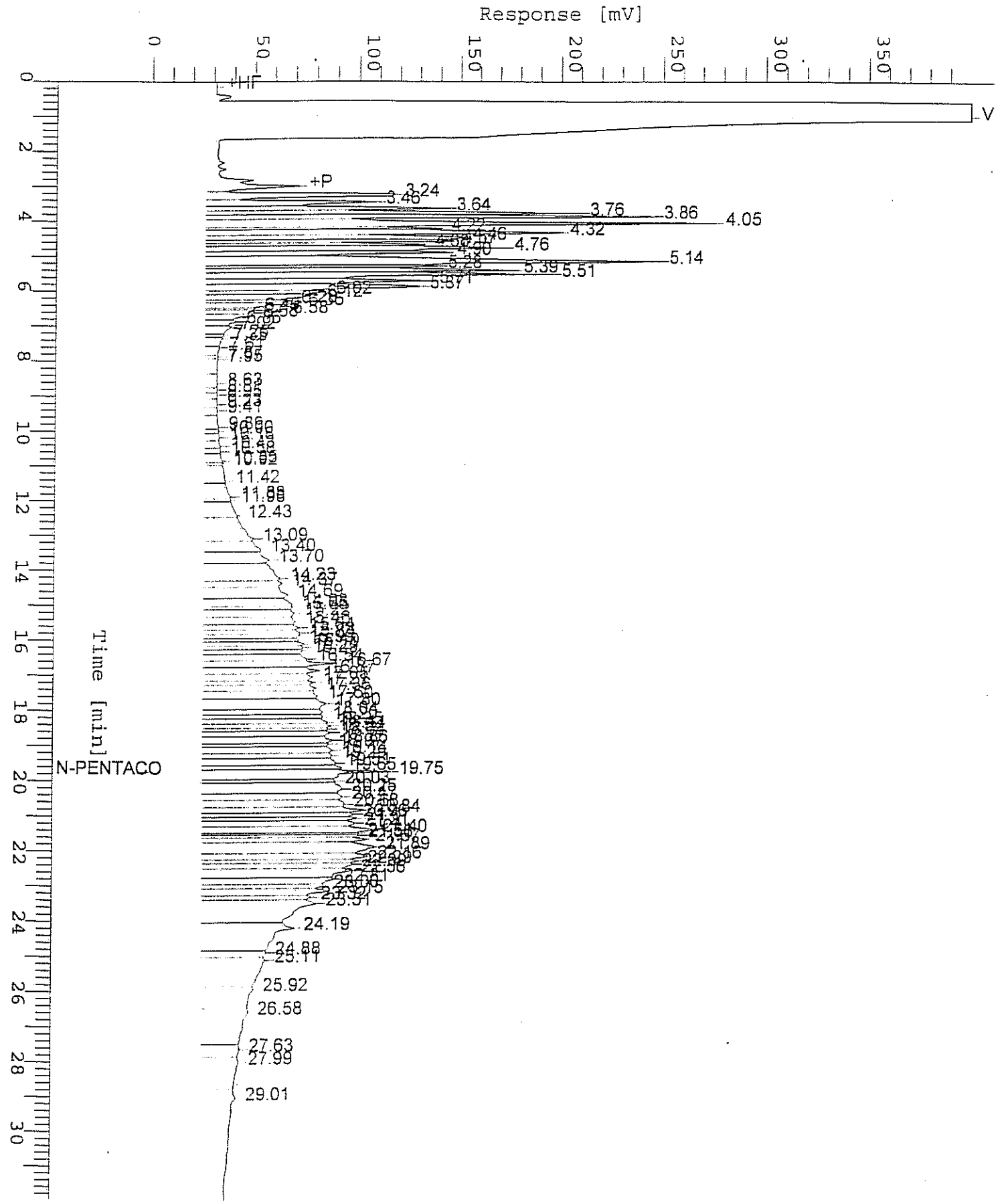
Sample #: METH BLK
Date : 6/19/96 17:42
Time of Injection: 6/19/96 17:15
Low Point : 18.16 mV High Point : 78.16 mV
Plot Scale: 60.0 mV



Chromatogram

Sample Name : DS9606A14-3 (20:1*20)
FileName : S:\GHP_19\0623\620A037.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

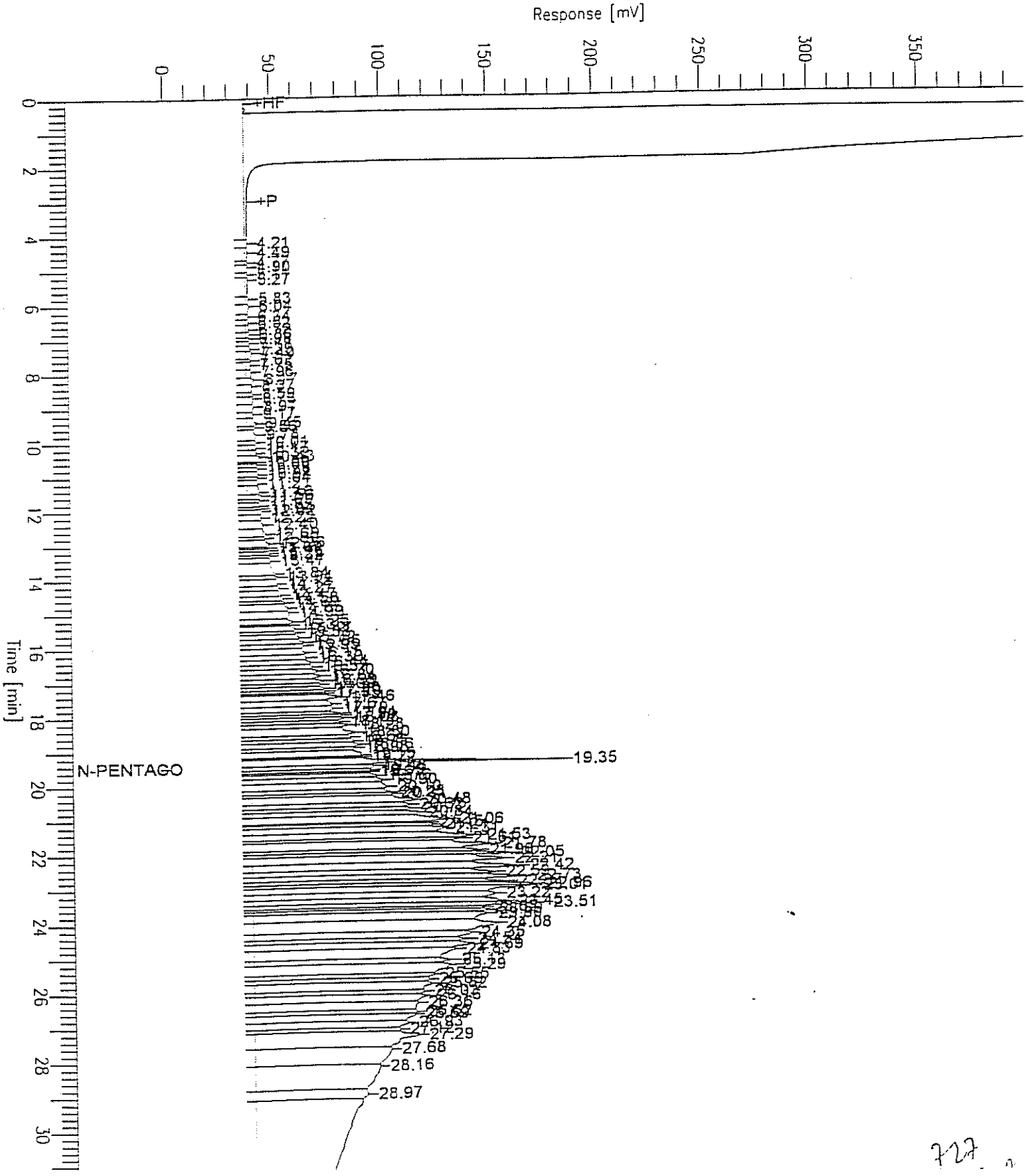
Sample #: SB1-5 Page 1 of 1
Date : 6/26/96 15:24
Time of Injection: 6/21/96 18:22
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-6 (20:1*20) RSI
FileName : S:\GHP_04\0623\622A048.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.66 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: SB2-5
Date : 6/25/96 01:52
Time of Injection: 6/25/96 01:17
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV

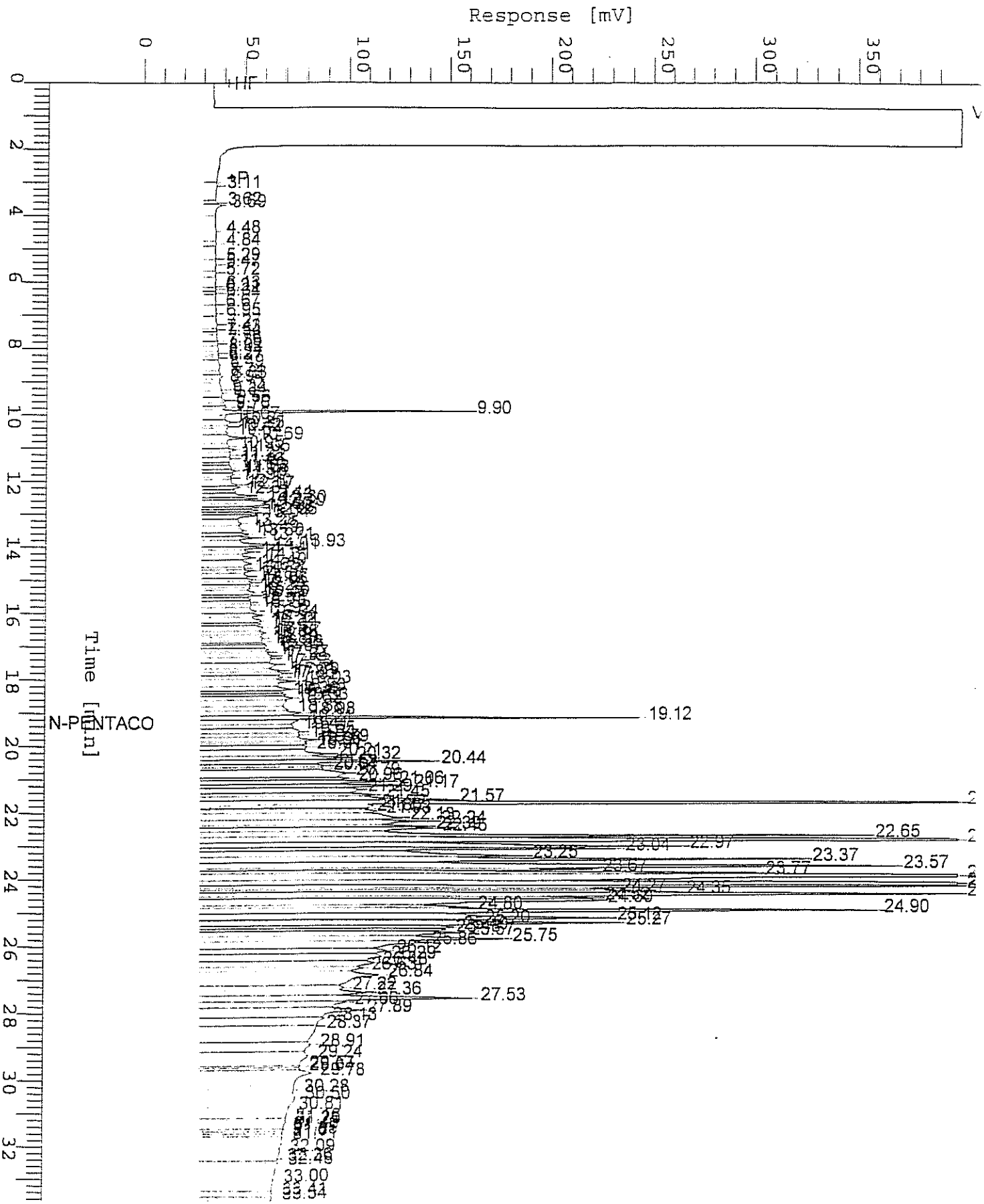


Chromatogram

3

Sample Name : DS9606A14-7 (20:1*10)RS1
FileName : S:\GHP_05\0630\624A013.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

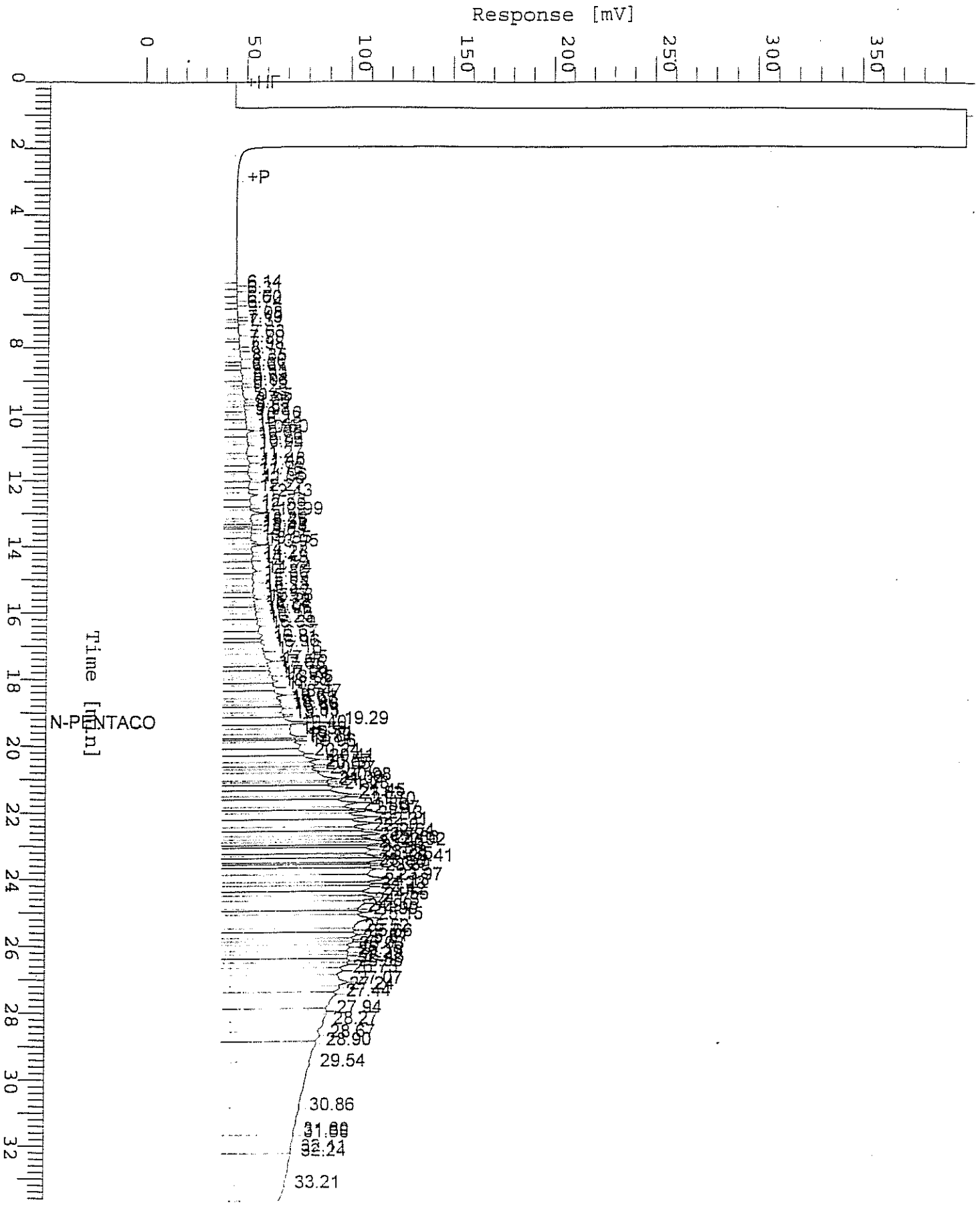
Sample #: SB5-6 Page 1 of 1
Date : 6/26/96 15:15
Time of Injection: 6/24/96 17:59
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-9 (20:1*50) RS2
FileName : S:\GHP_04\0630\625B009.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

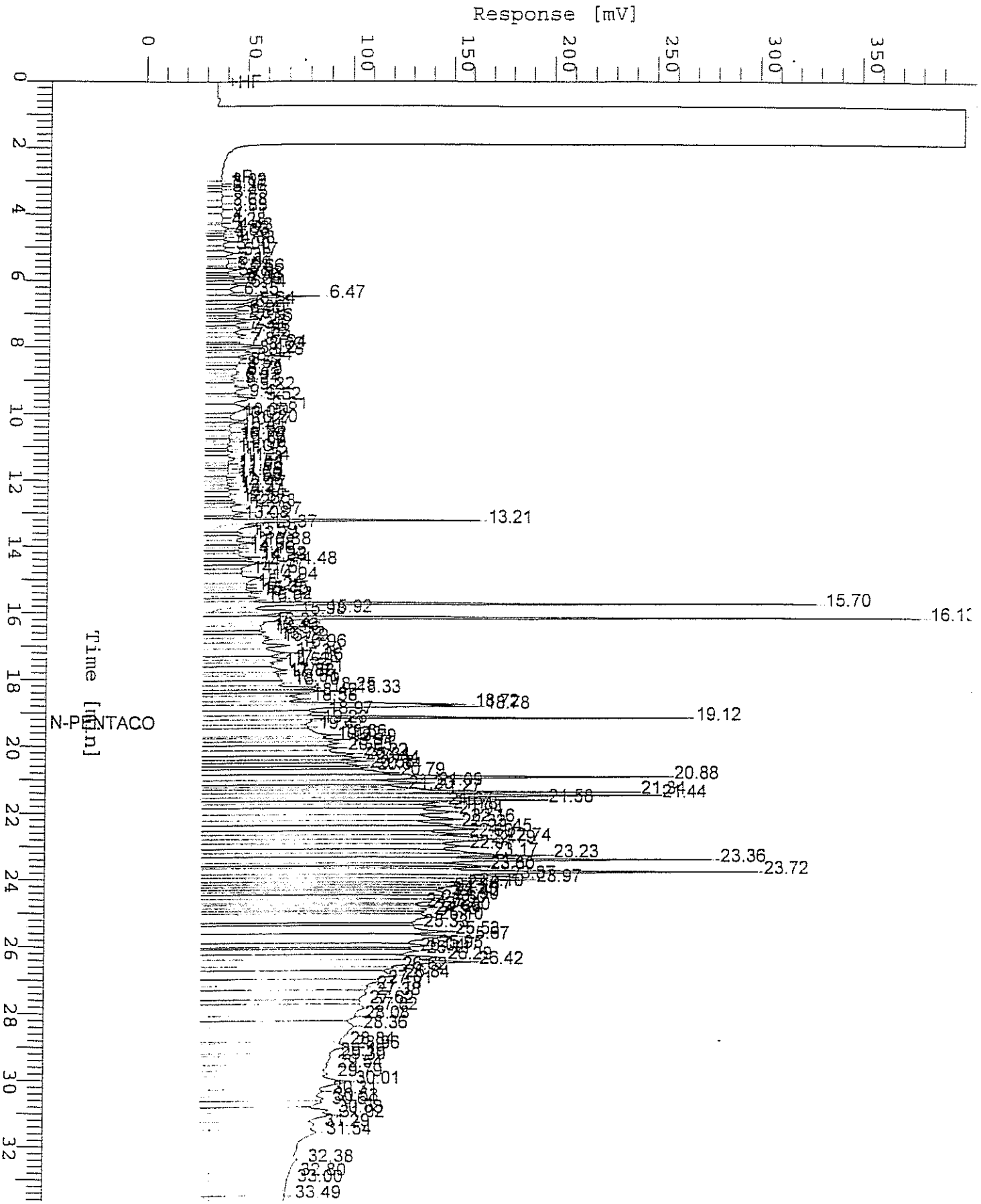
Sample #: SB4-5 Page 1 of 1
Date : 6/26/96 15:18
Time of Injection: 6/25/96 14:55
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-2 (20:1*10)RS1
FileName : S:\GHP_05\0630\624A031.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

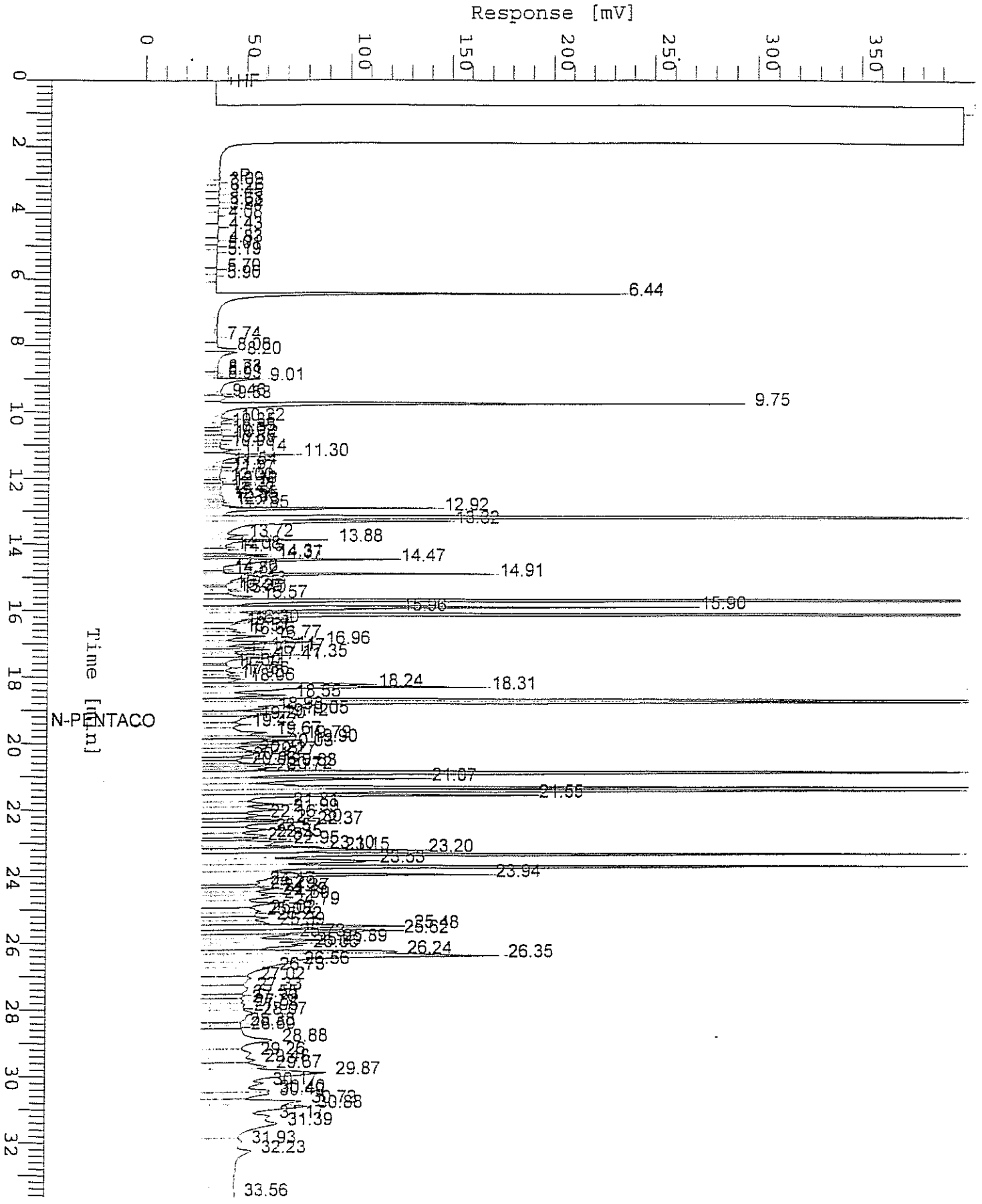
Sample #: SB5-6 Page 1 of 1
Date : 6/26/96 15:13
Time of Injection: 6/25/96 06:47
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-10 (20:1*50)RS1
FileName : S:\GHP_05\0630\624A030.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: SB6-5 Page 1 of 1
Date : 6/26/96 15:13
Time of Injection: 6/25/96 06:06
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV

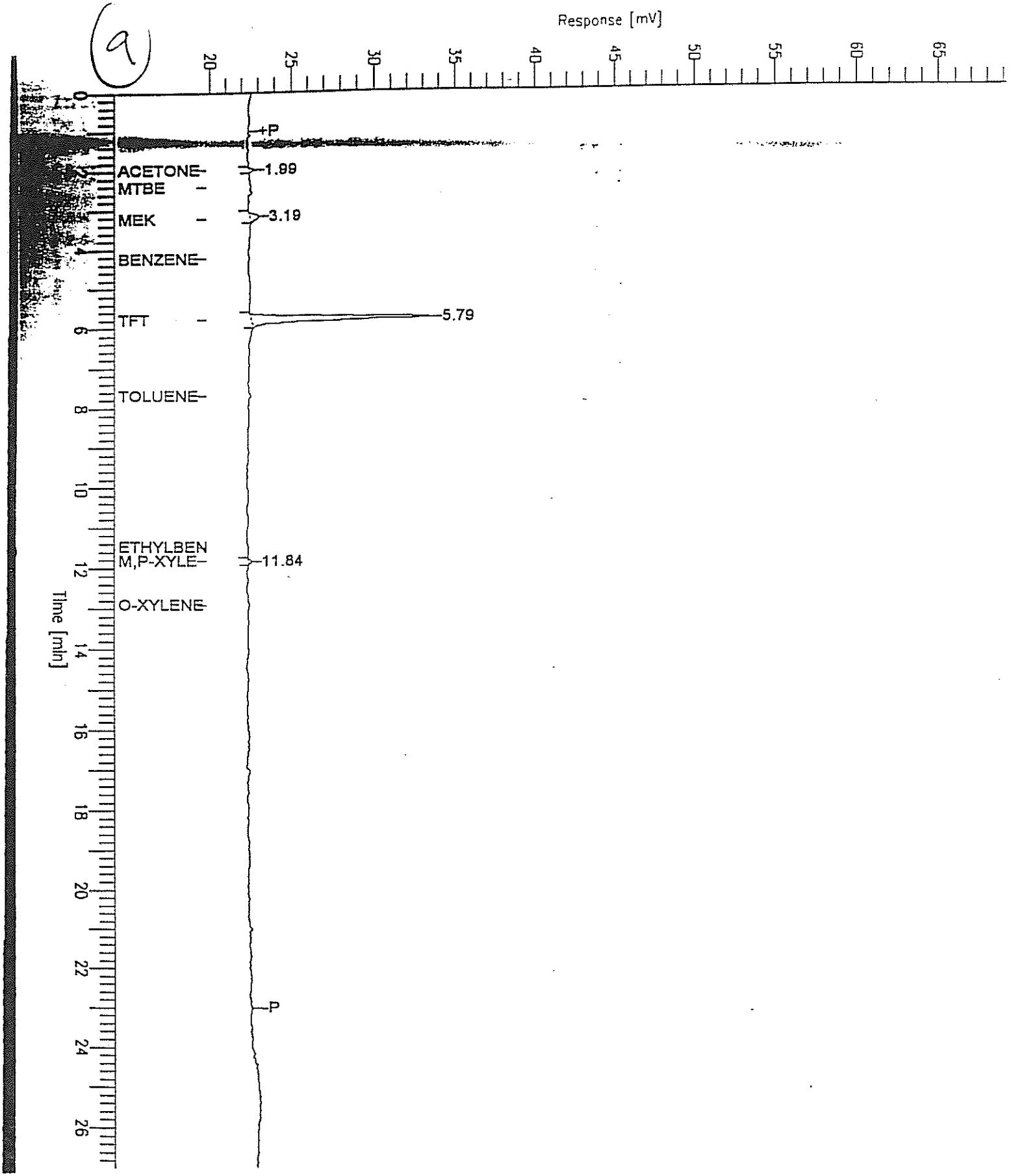


Chromatogram

Sample Name : GW9606A14-01A
FileName : S:\GHP_17\0630\625B009.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 20 mV

Sample #: TB #1
Date : 6/25/96 08:23
Time of Injection: 6/25/96 07:46
Low Point : 19.77 mV High Point : 69.77 mV
Plot Scale: 50.0 mV

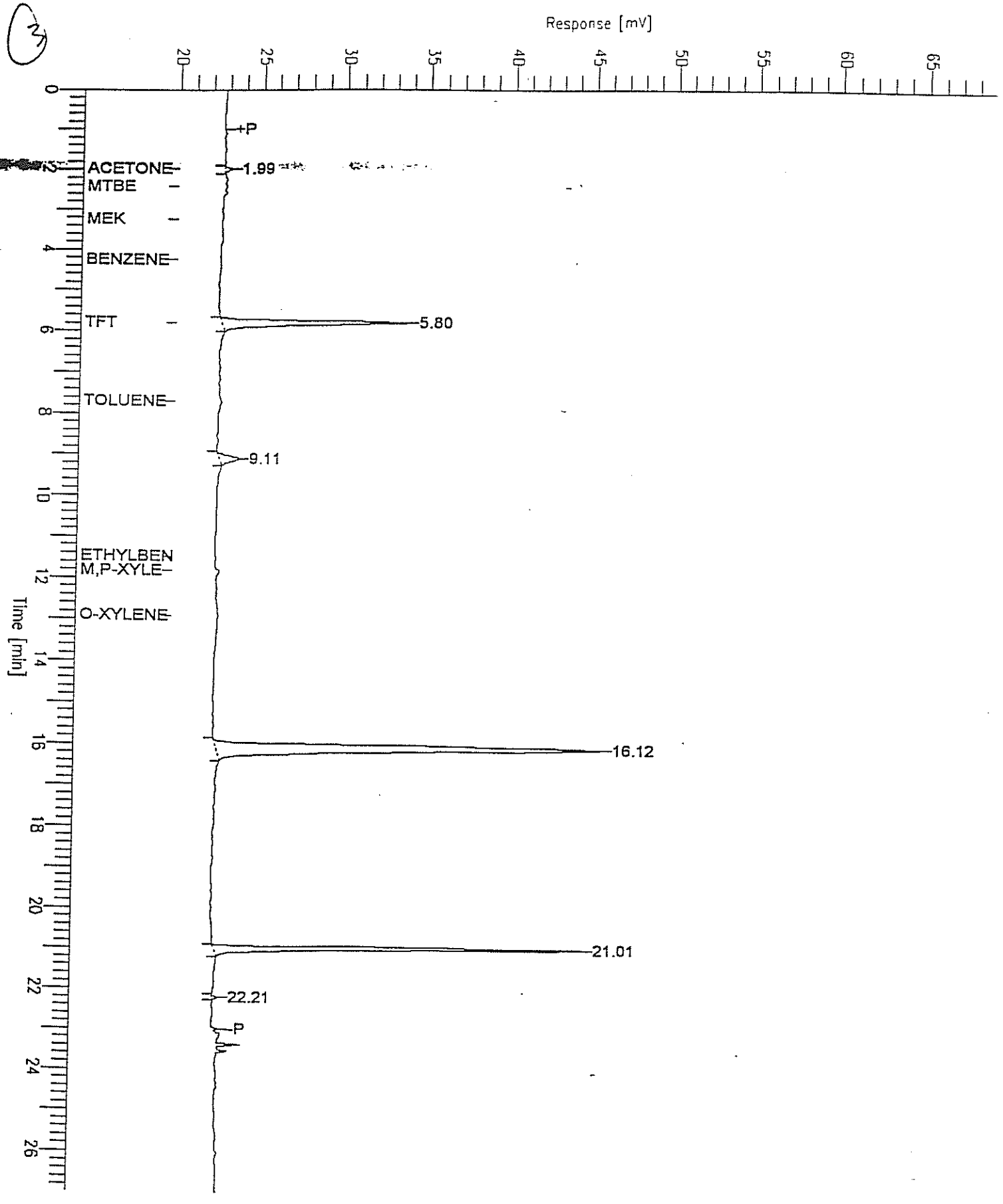
(a)



Chromatogram

Sample Name : GBLK062596A
FileName : S:\GHP_17\0630\624B039.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 20 mV

Sample #: METH BLK
Date : 6/25/96 06:39
Time of Injection: 6/25/96 03:22
Low Point : 19.93 mV High Point : 69.93 mV
Plot Scale: 50.0 mV

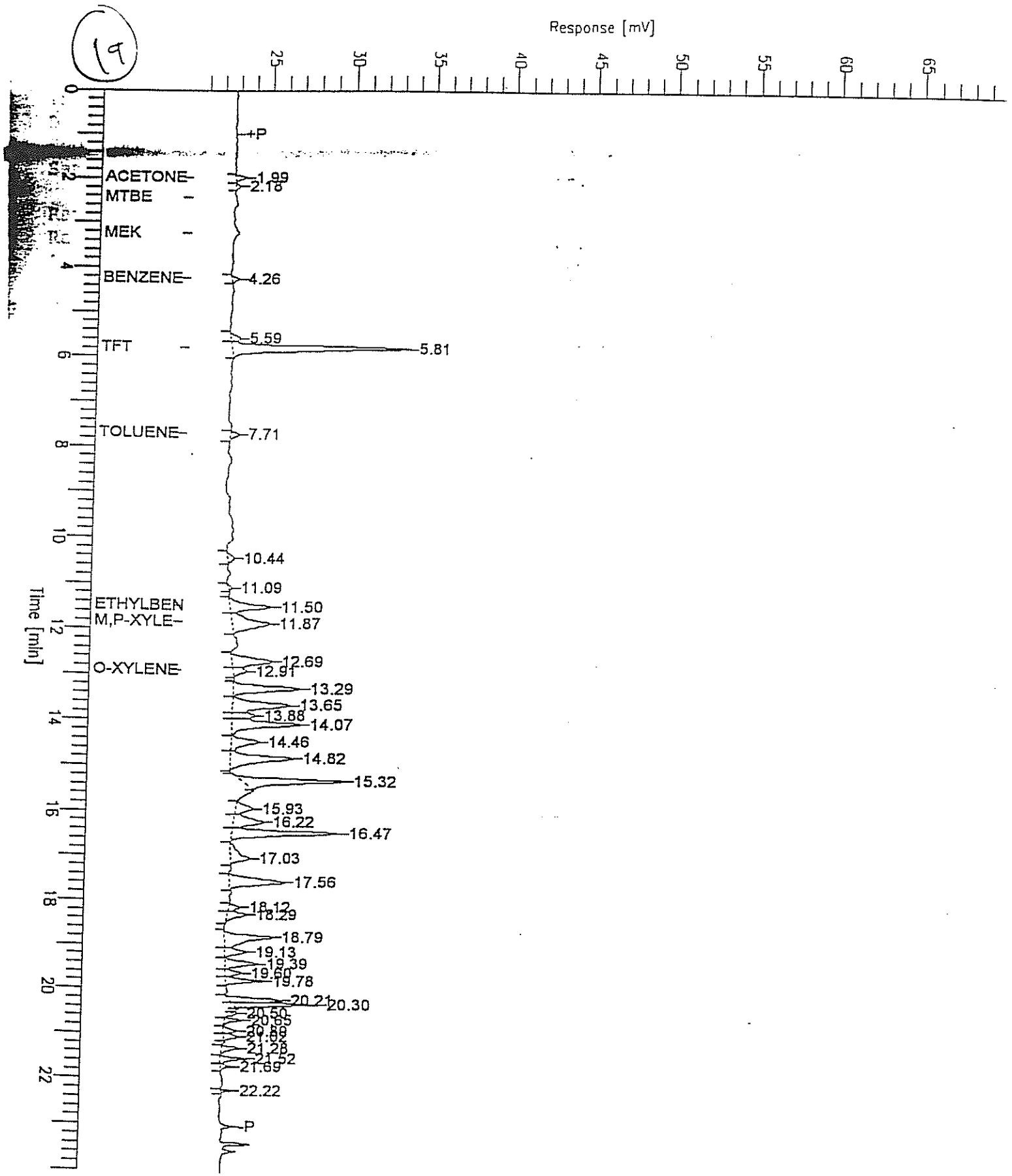


Chromatogram

Sample Name : GW9606A14-04A
FileName : S:\GHP_17\0630\625B019.raw
Method : TPH
Start Time : 0.00 min End Time : 24.03 min
Scale Factor: -1.0 Plot Offset: 20 mV

Sample #: SB-1
Date : 6/25/96 13:32
Time of Injection: 6/25/96 13:08
Low Point : 20.04 mV High Point : 70.04 mV
Plot Scale: 50.0 mV

19

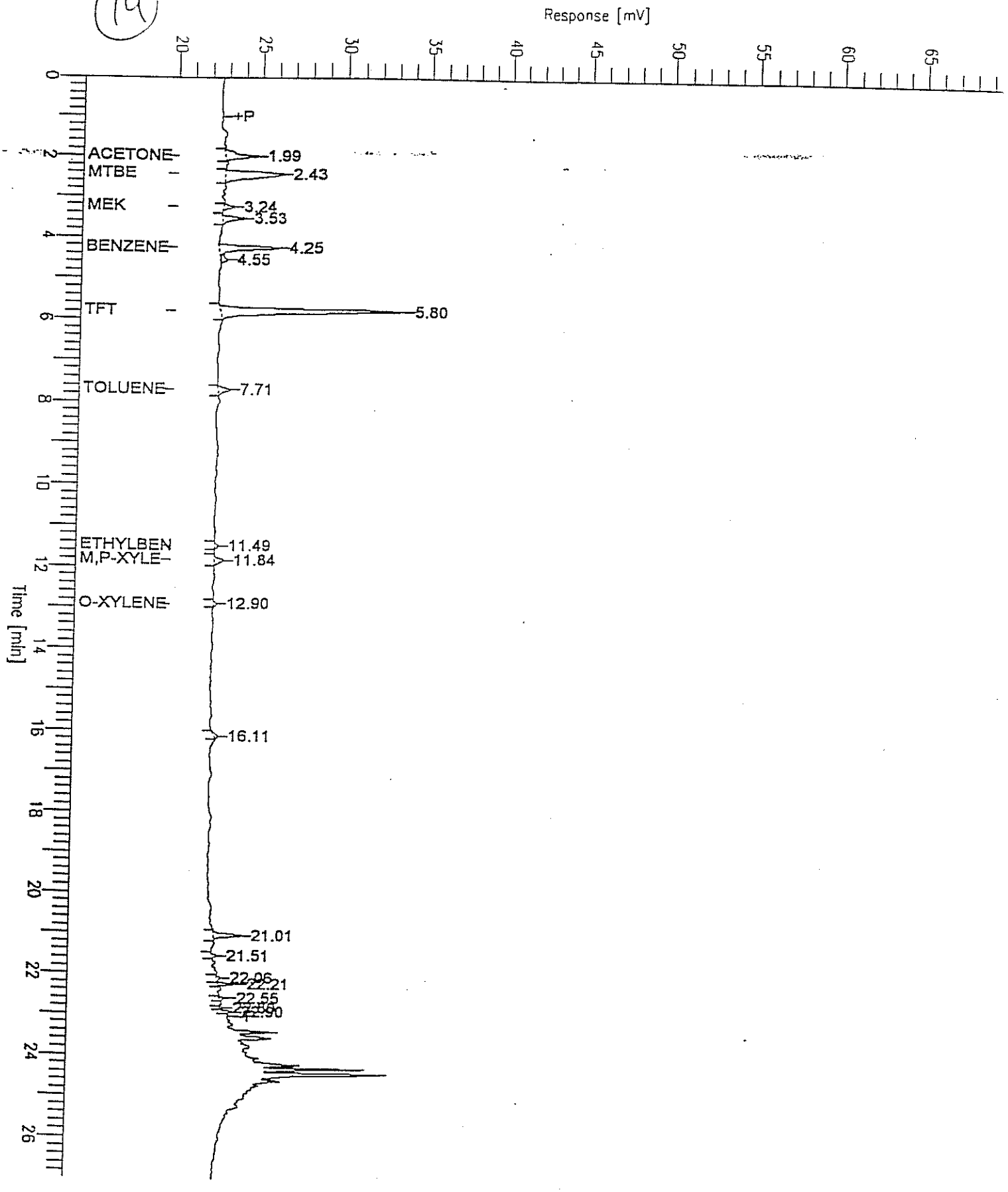


Chromatogram

Sample Name : GW9606A14-12B
FileName : S:\GHP_17\0630\625B014.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 20 mV

Sample #: SB-2
Date : 6/25/96 10:54
Time of Injection: 6/25/96 10:27
Low Point : 19.99 mV High Point : 69.99 mV
Plot Scale: 50.0 mV

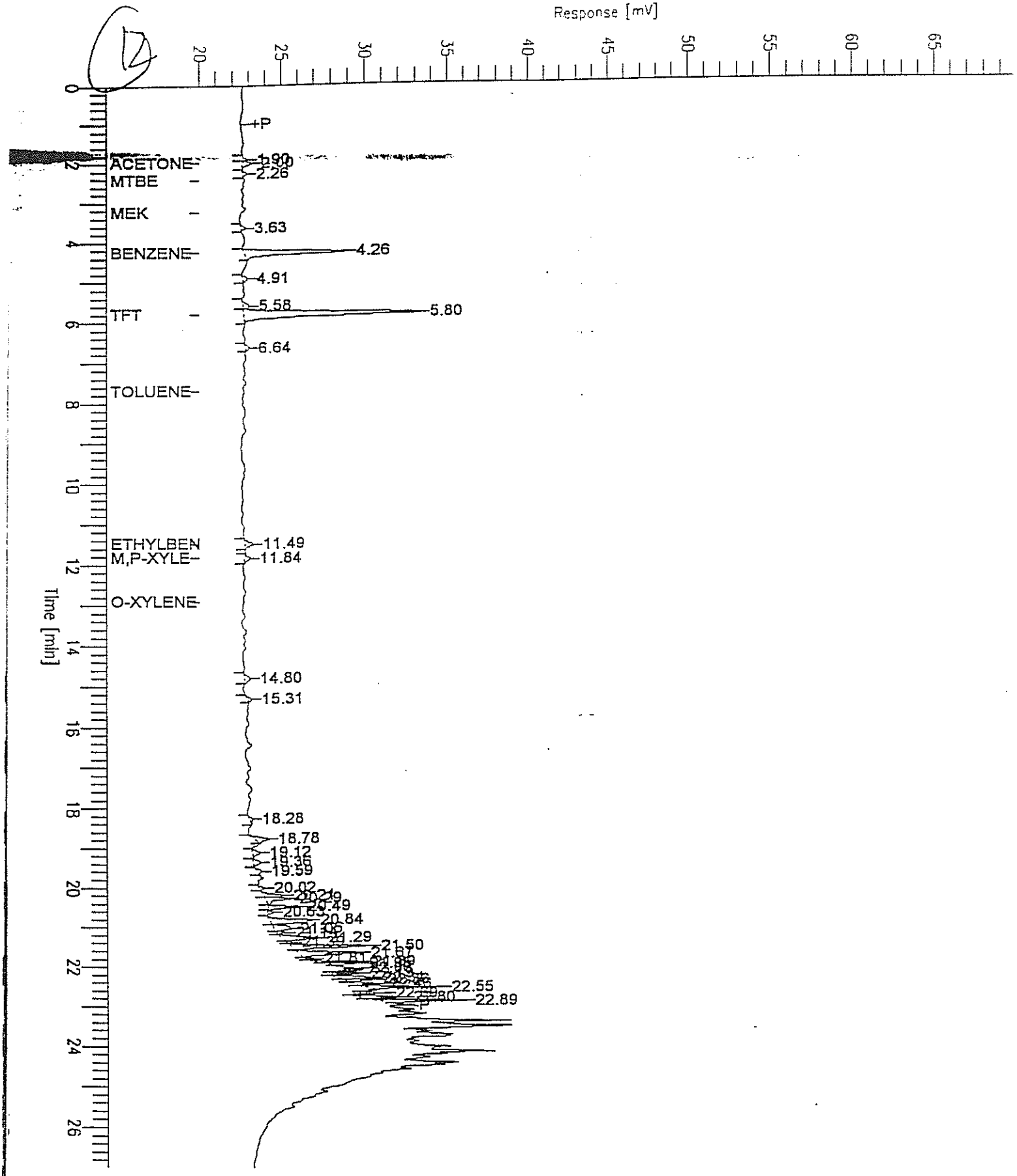
(12)



Chromatogram

Sample Name : GW9606A14-08A
FileName : S:\GHP_17\0630\625B012.raw
Method : TPH
Start Time : 0.00 min
Scale Factor: -1.0
End Time : 26.99 min
Plot Offset: 20 mV

Sample #: SB-3
Date : 6/25/96 09:50
Time of Injection: 6/25/96 09:23
Low Point : 19.96 mV
Plot Scale: 50.0 mV
High Point : 69.96 mV

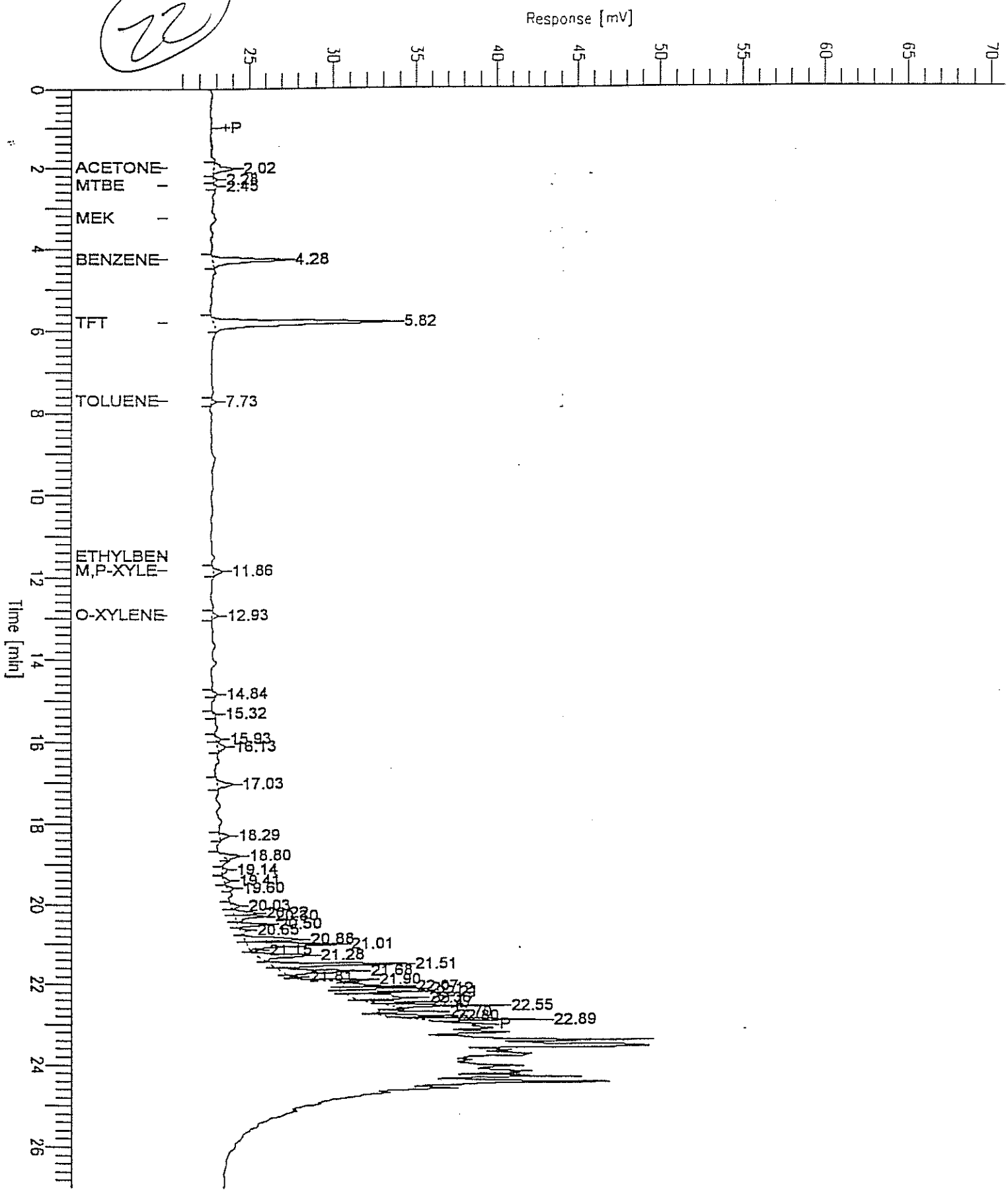


Chromatogram

Sample Name : GW9606A14-13B
FileName : S:\GHP_17\0630\625B022.raw
Method : TPH
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 26.99 min
Plot Offset: 20 mV

Sample #: SB-4
Date : 6/25/96 15:11
Time of Injection: 6/25/96 14:44
Low Point : 20.08 mV
High Point : 70.08 mV
Plot Scale: 50.0 mV



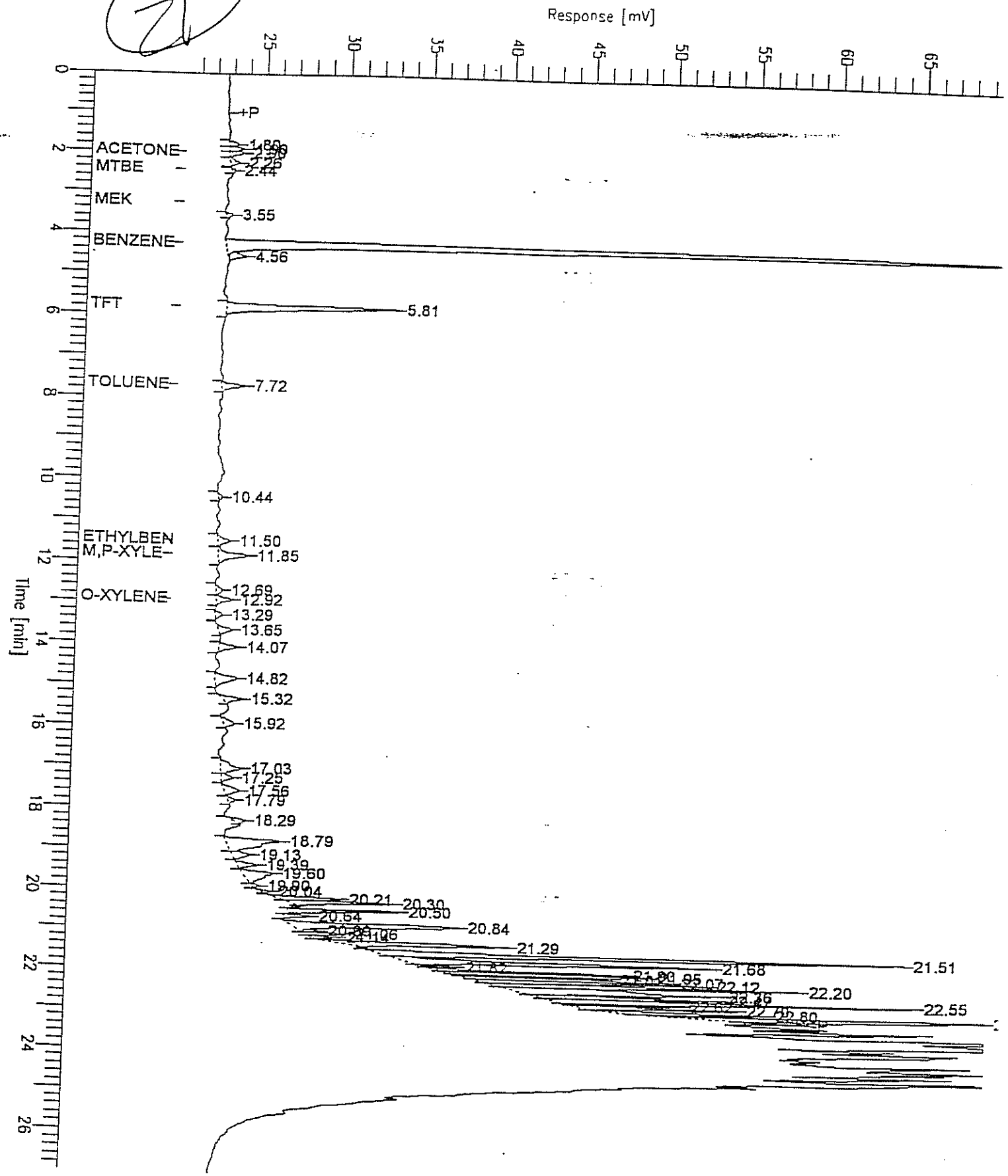
Chromatogram

Sample Name : GW9606A14-05B
FileName : S:\GHP_17\0630\625B021.raw
Method : TPH
Start Time : 0.00 min
Scale Factor: 1.0

End Time : 26.99 min
Plot Offset: 20 mV

Sample #: SB-5
Date : 6/25/96 14:39
Time of Injection: 6/25/96 14:11
Low Point : 20.08 mV
Plot Scale: 50.0 mV

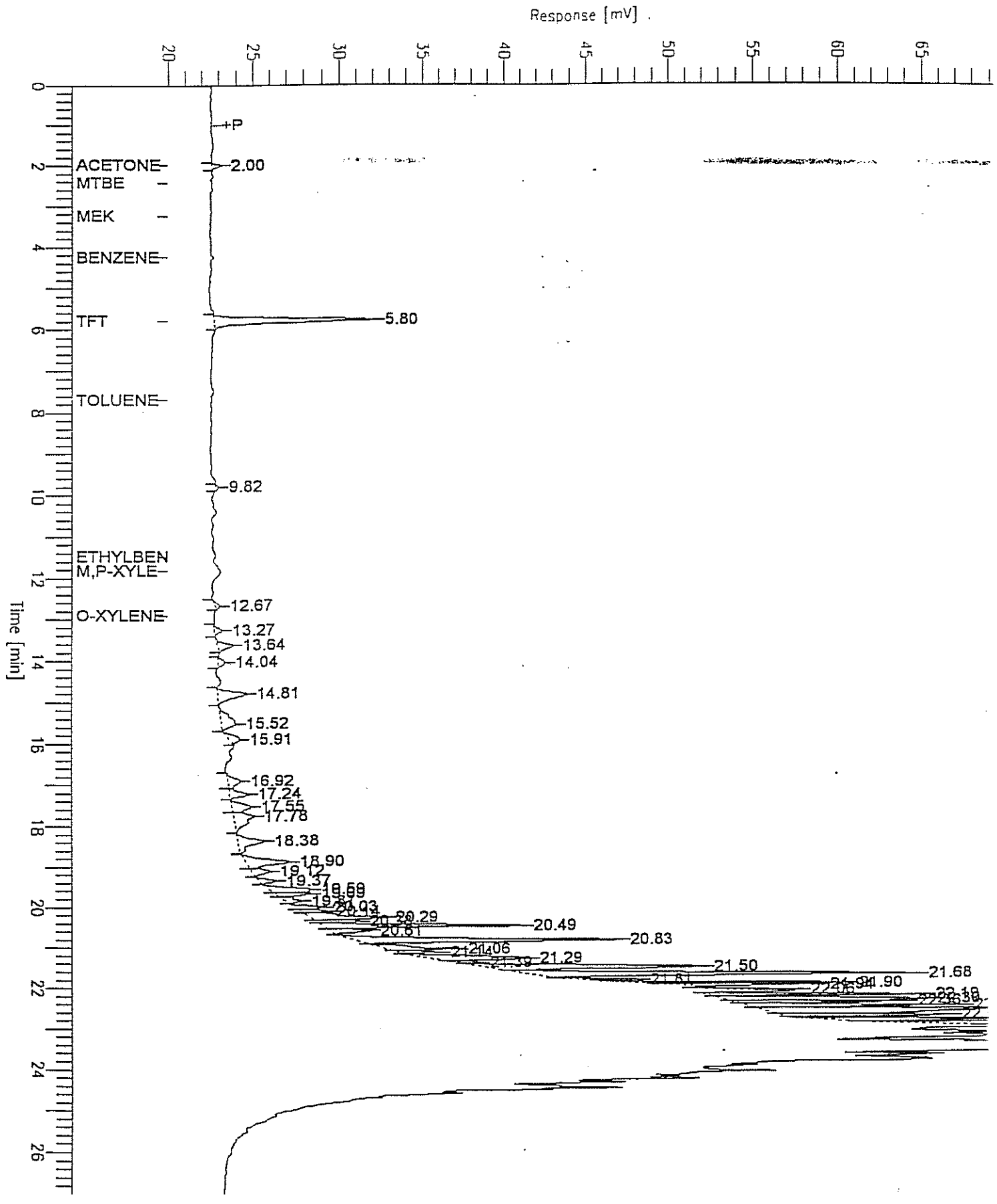
High Point : 70.08 mV



Chromatogram

Sample Name : GW9606A14-11A
FileName : S:\GHP_17\0630\625B013.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 20 mV

Sample #: SB-6
Date : 6/25/96 10:23
Time of Injection: 6/25/96 09:55
Low Point : 19.92 mV High Point : 69.92 mV
Plot Scale: 50.0 mV

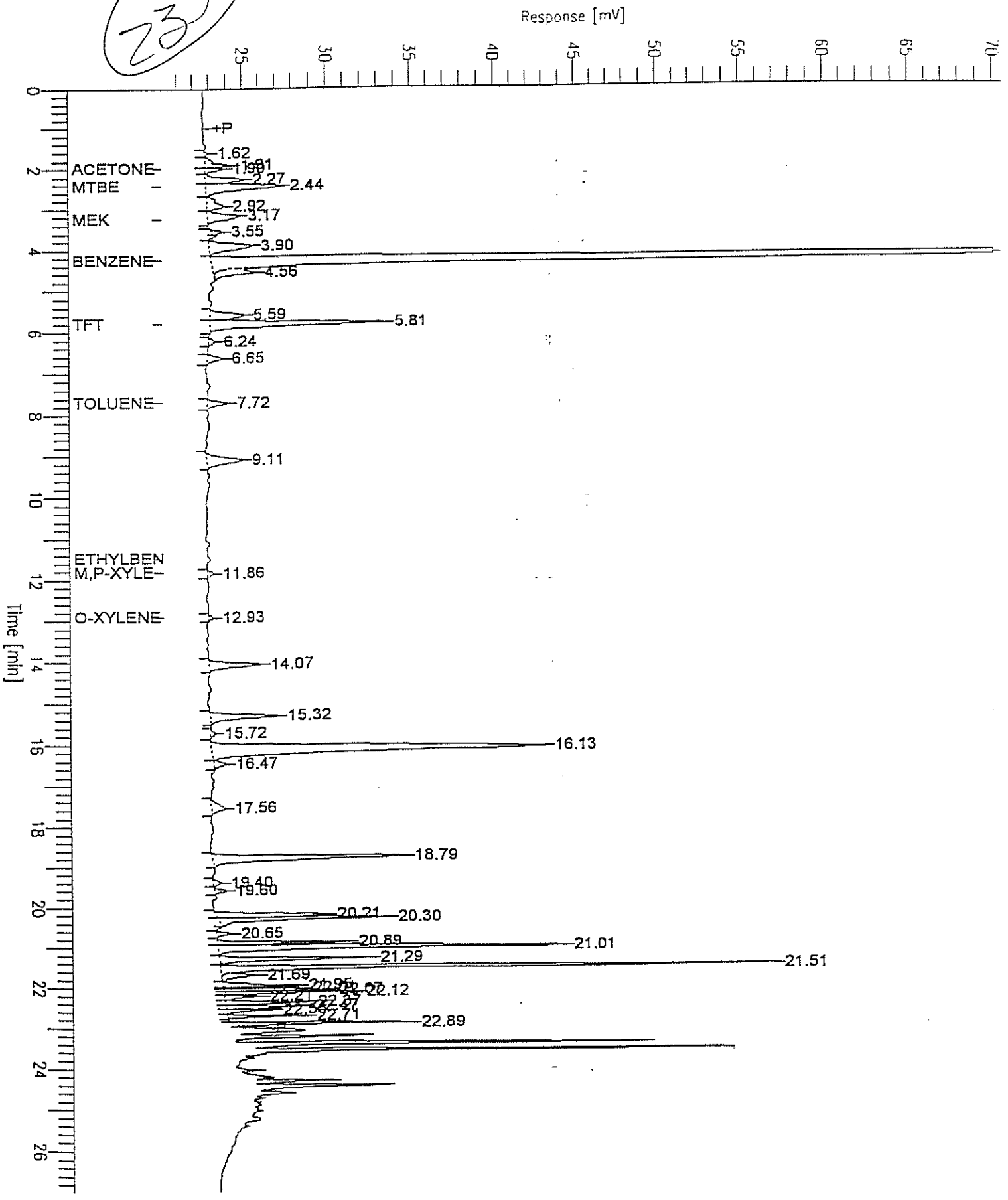


Chromatogram

Sample Name : GW9606A14-14B
FileName : S:\GHP_17\0630\625B023.raw
Method : TPH
Start Time : 0.00 min End Time : 26.99 min
Scale Factor: -1.0 Plot Offset: 20 mV

Sample #: MW5
Date : 6/25/96 15:44
Time of Injection: 6/25/96 15:16
Low Point : 20.07 mV High Point : 70.07 mV
Plot Scale: 50.0 mV

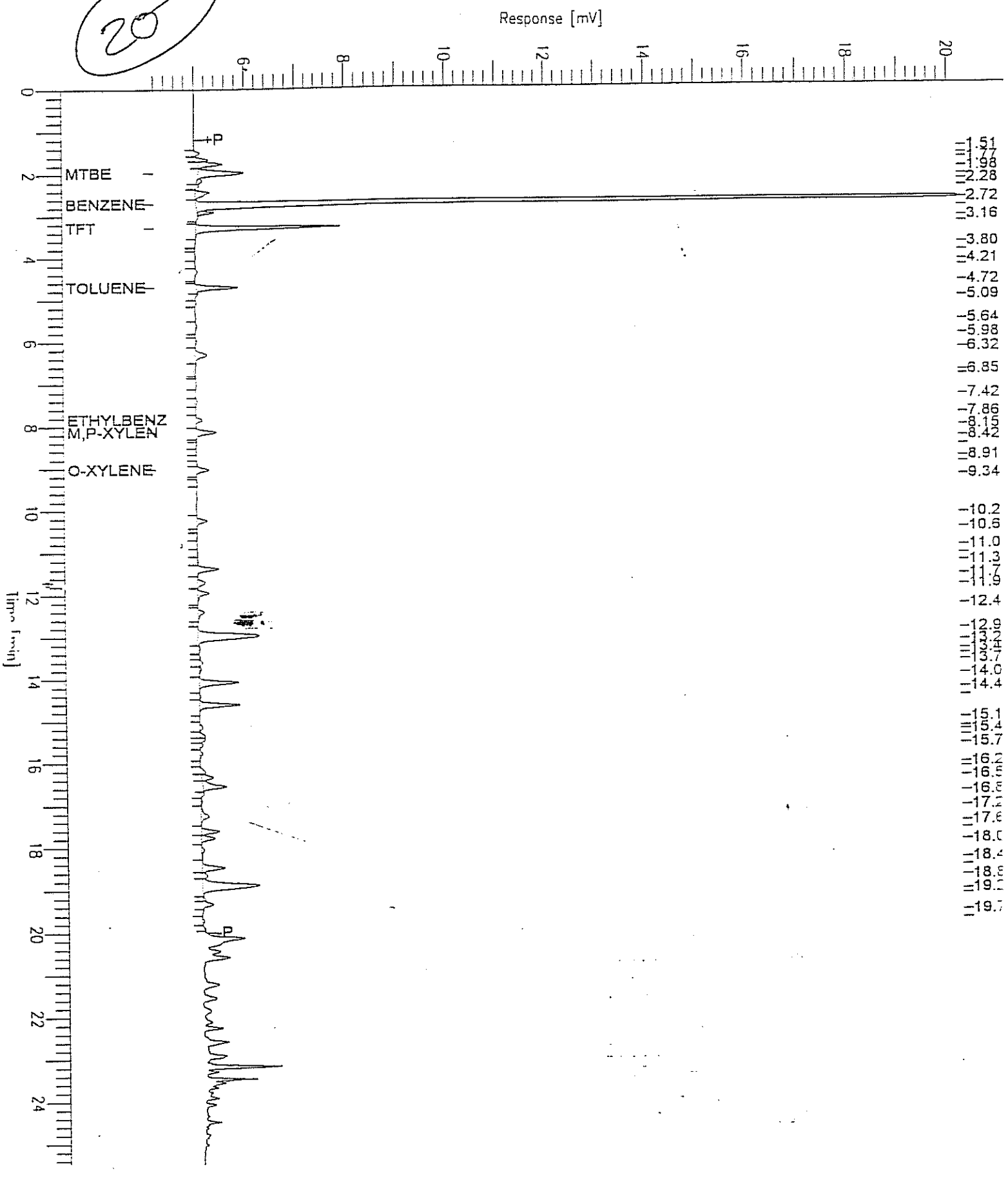
23



Chromatogram

: ple Name : GW9606A03-01B
: eName : S:\GHP_21\0630\625B020.raw
: hod : TPH_A
Start Time : 0.00 min End Time : 25.49 min
Scale Factor: -1.0 Plot Offset: 4 mV

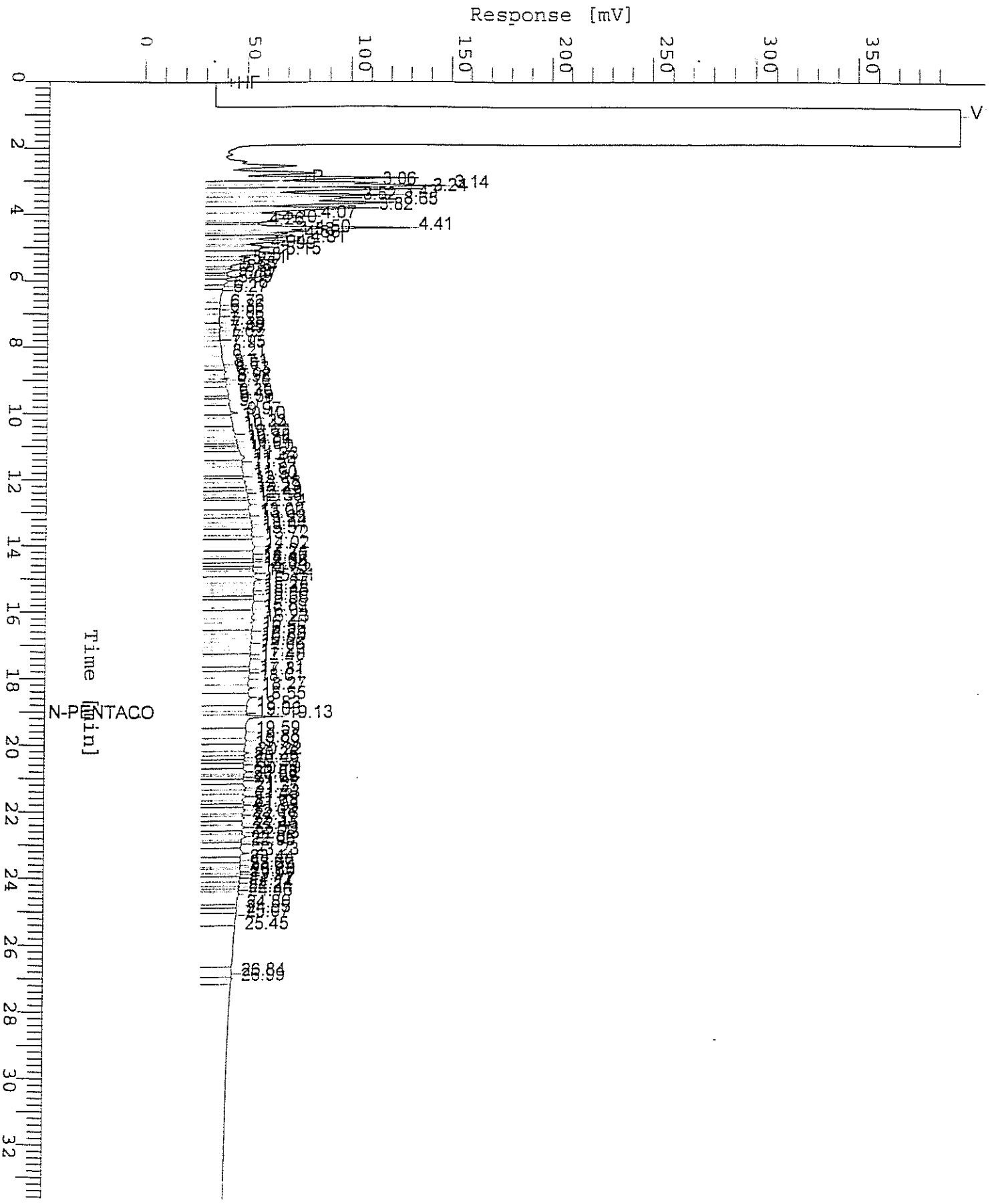
Sample #: MW7 Page 1 of 1
Date : 6/25/96 15:40
Time of Injection: 6/25/96 15:14
Low Point : 4.19 mV High Point : 20.19 mV
Plot Scale: 16.0 mV



Chromatogram

Sample Name : DW9606A14-4 (500:1*20)RS1
FileName : S:\GHP_05\0630\624A012.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

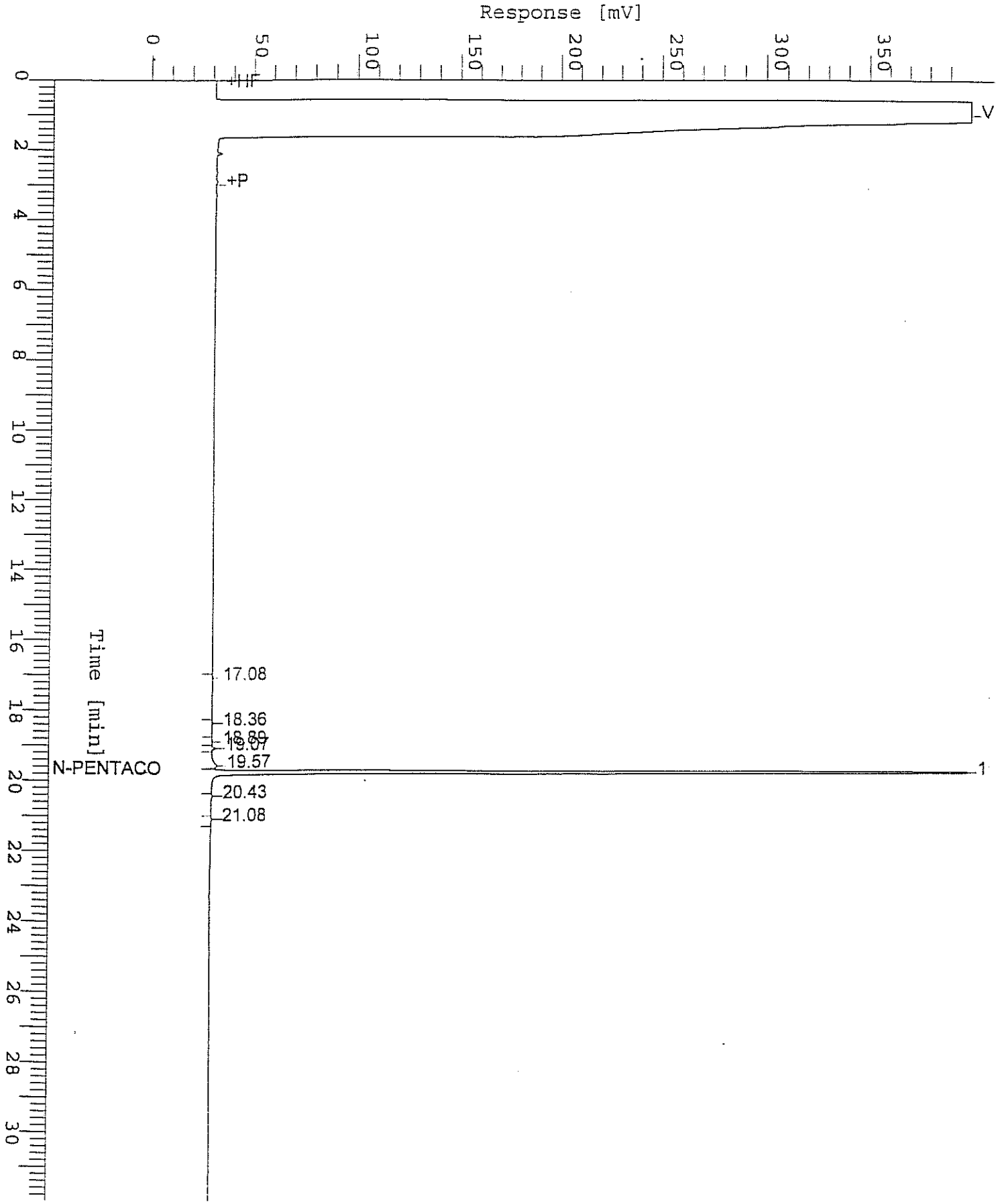
Sample #: SB-1 Page 1 of 1
Date : 6/26/96 15:15
Time of Injection: 6/24/96 17:18
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-12 (5:10)
FileName : S:\GHP_19\0623\620A031.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

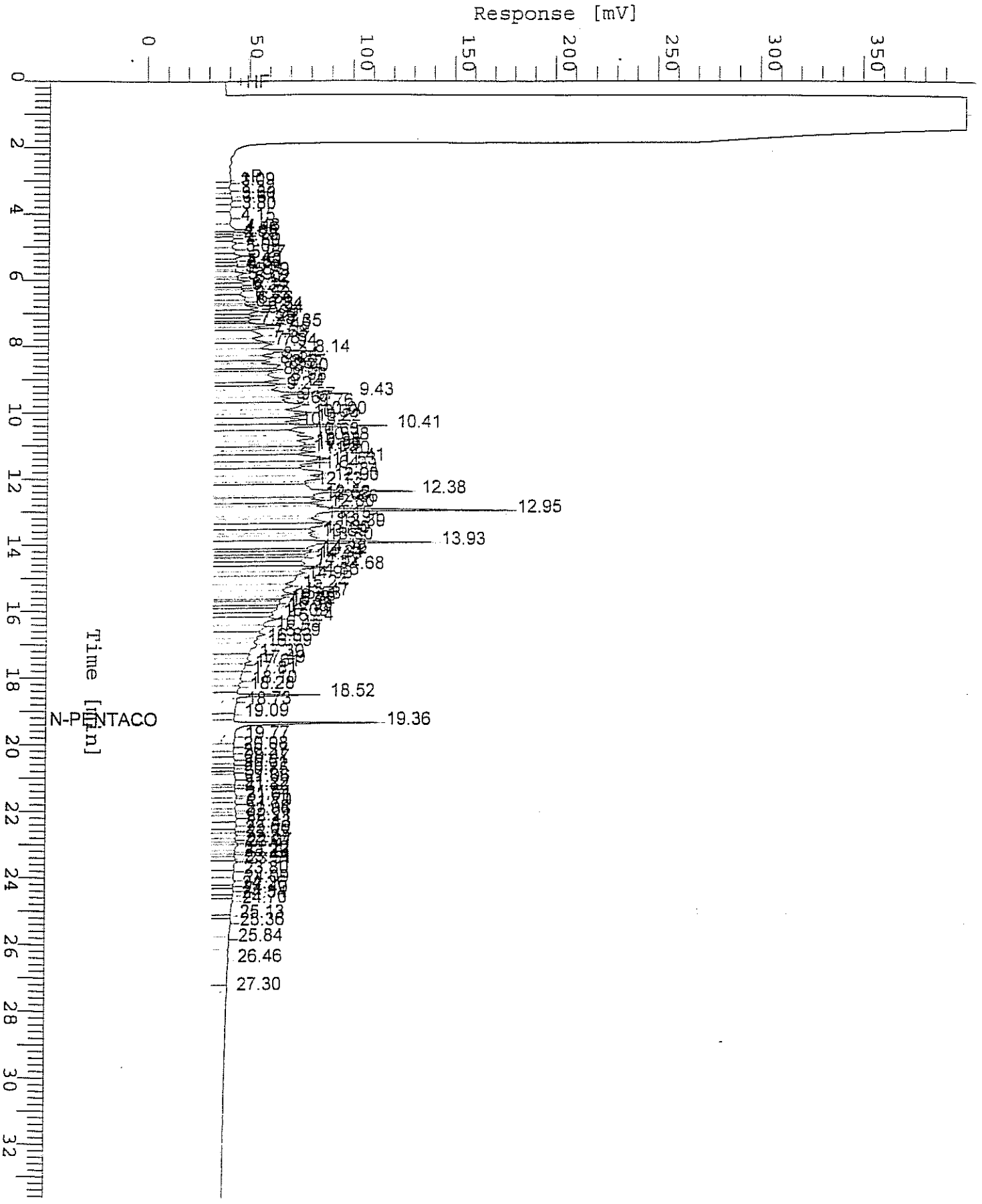
Sample #: SB-2 Page 1 of 1
Date : 6/26/96 15:23
Time of Injection: 6/21/96 14:25
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-8 (5:10*10)
FileName : S:\GHP_04\0630\625A015.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

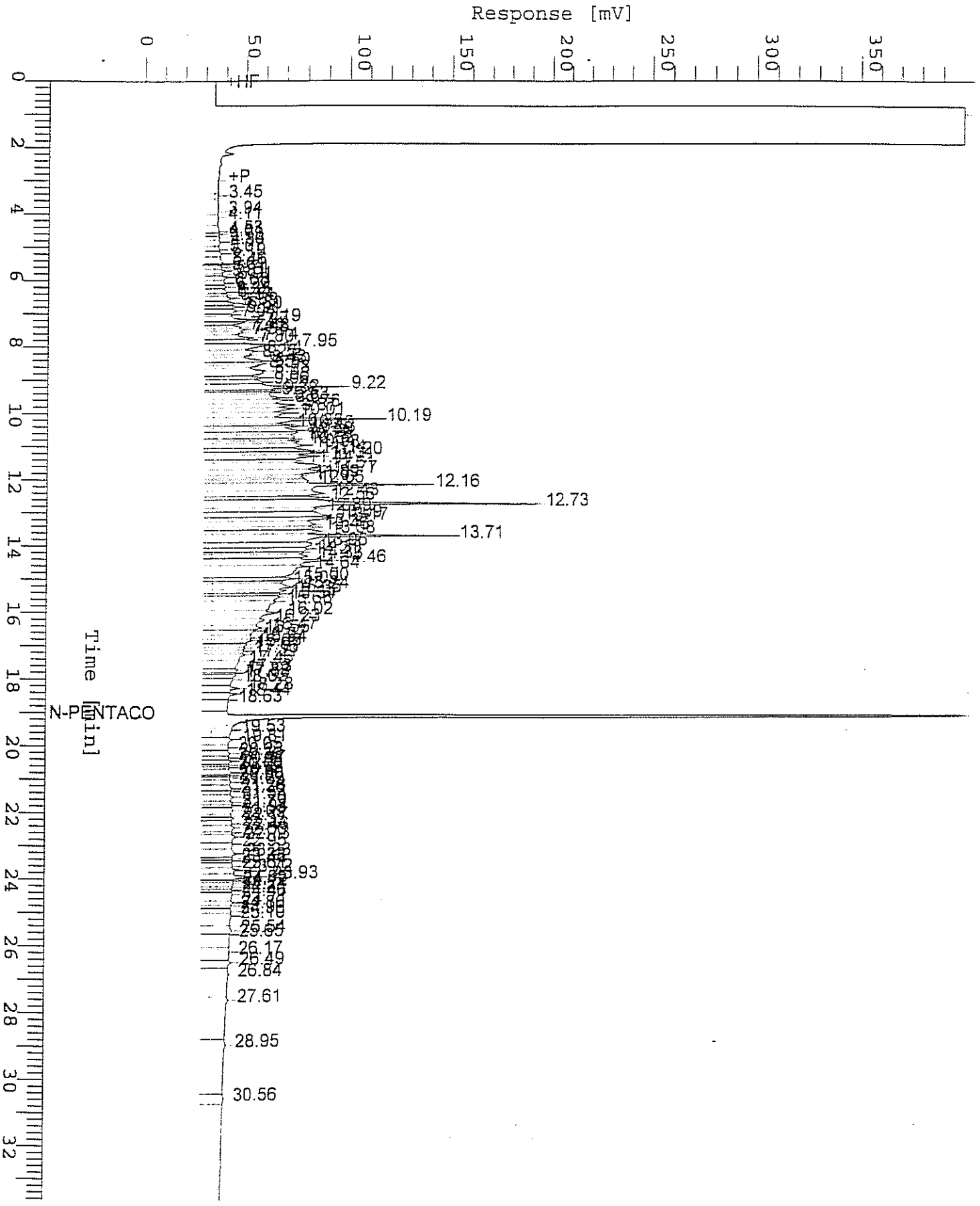
Sample #: SB-3 Page 1 of 1
Date : 6/26/96 15:17
Time of Injection: 6/25/96 19:01
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-13 (5:10)RS2
FileName : S:\GHP_05\0630\624A011.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

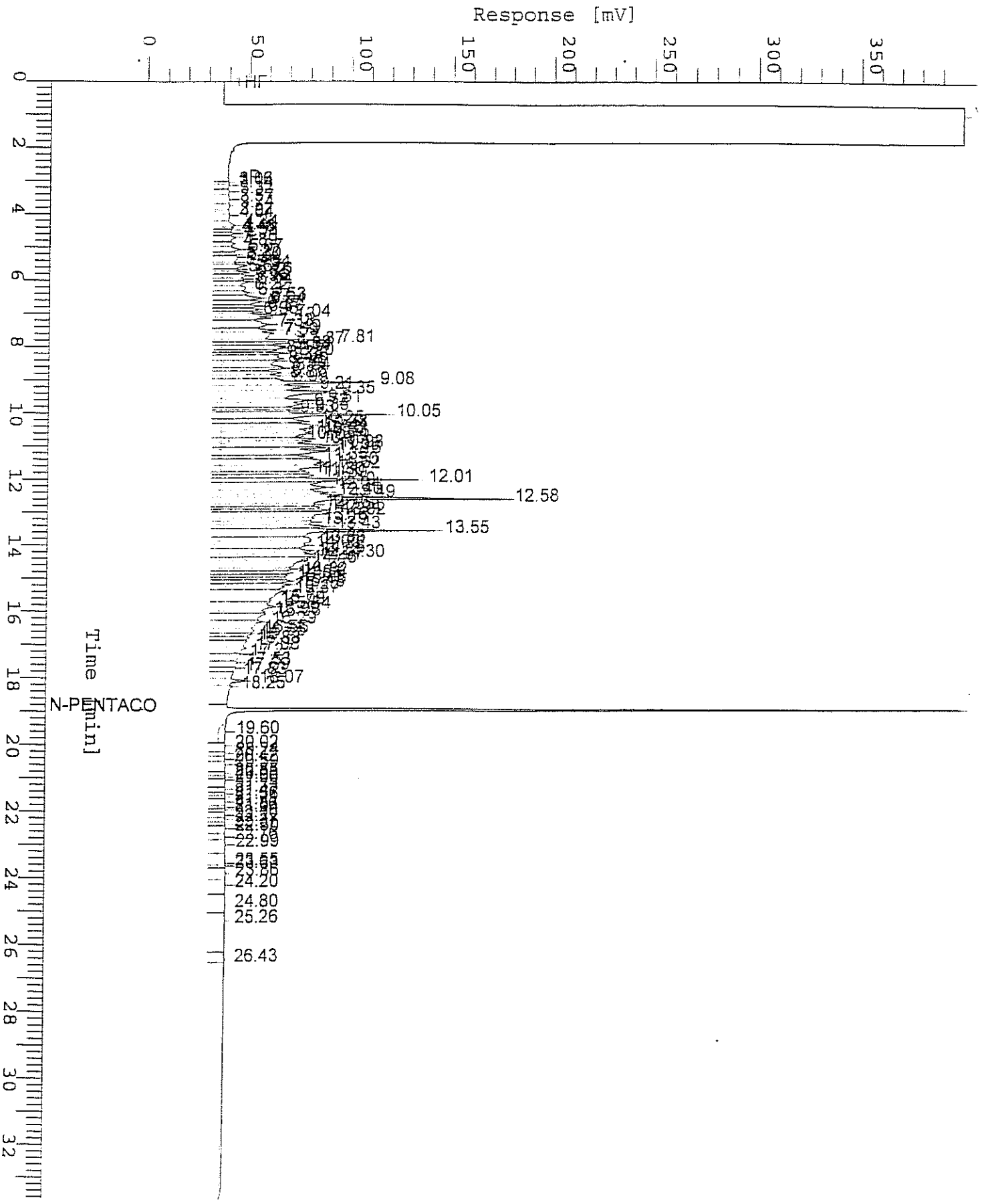
Sample #: SB-4 Page 1 of 1
Date : 6/26/96 15:14
Time of Injection: 6/24/96 16:37
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-5 (5:10*2) RS2
FileName : S:\GHP_05\0630\624B037.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

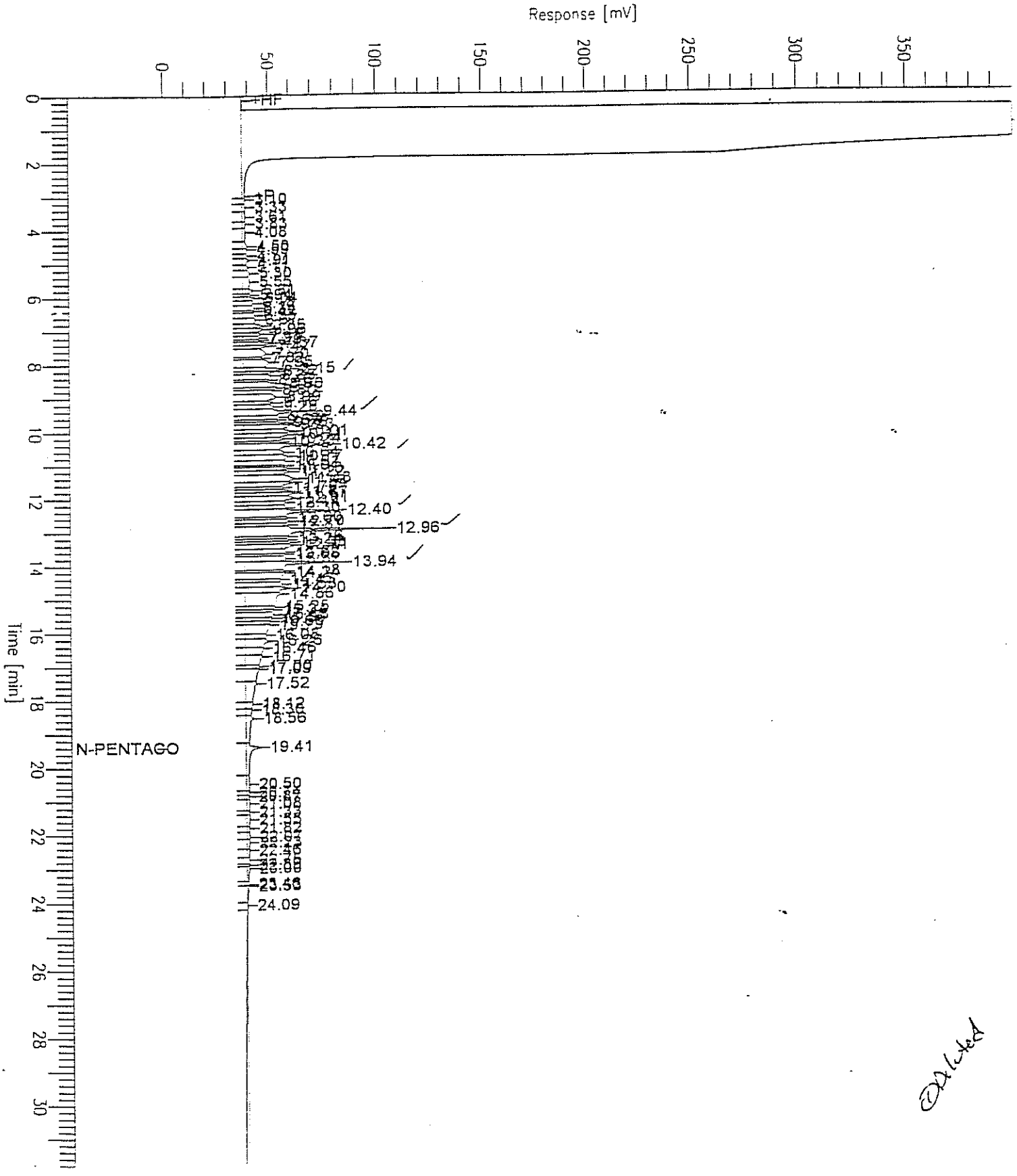
Sample #: SB-5 Page 1 of 1
Date : 6/26/96 15:16
Time of Injection: 6/25/96 10:54
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-11 (5:10*50)
FileName : S:\GHP_04\0623\622A011.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

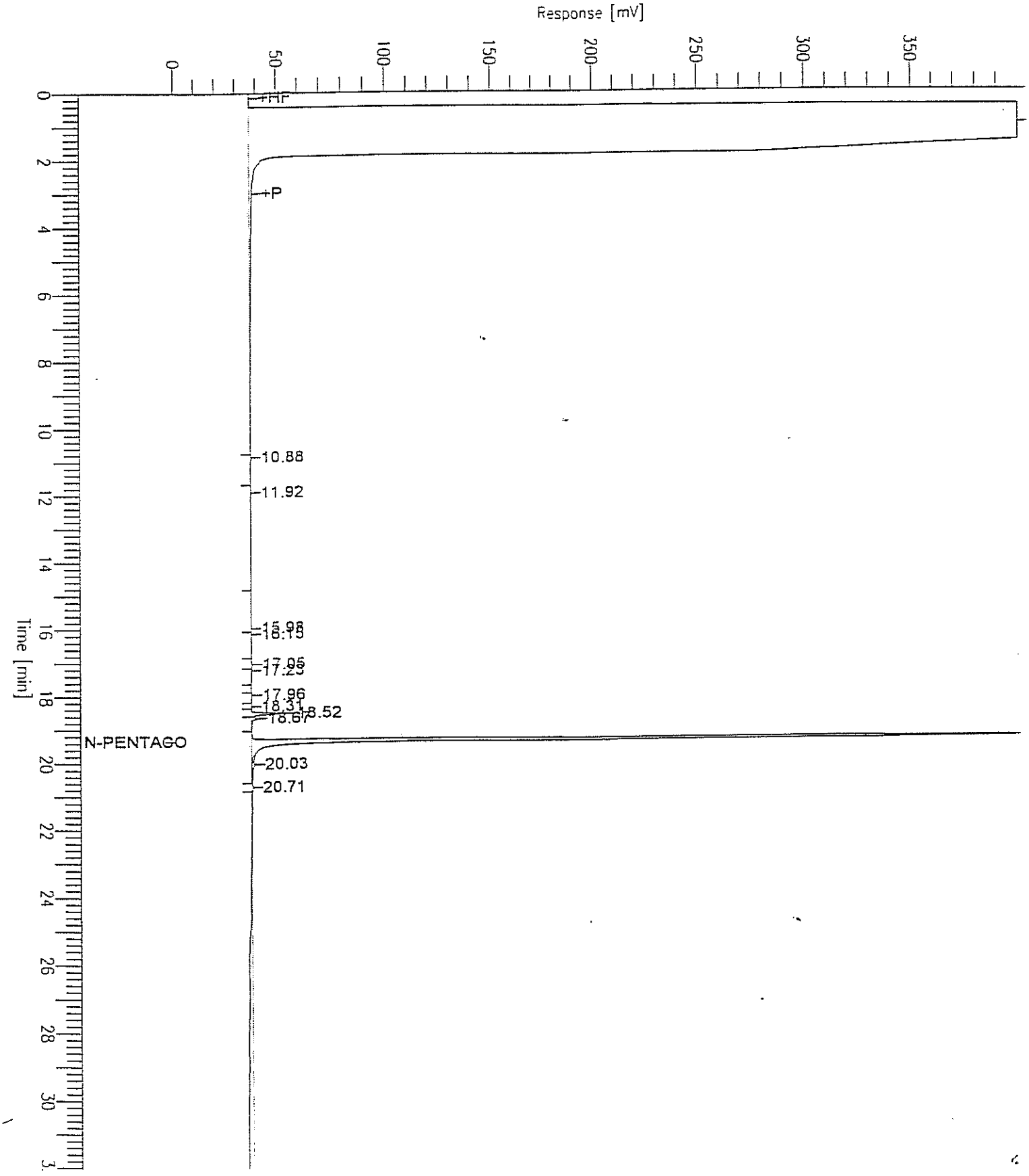
Sample #: SB-6
Date : 6/22/96 17:08
Time of Injection: 6/22/96 16:33
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9606A14-14 (5:10) RS1
FileName : S:\GHP_04\0623\622A040.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-5 Page 1 of 1
Date : 6/24/96 22:02
Time of Injection: 6/24/96 21:25
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



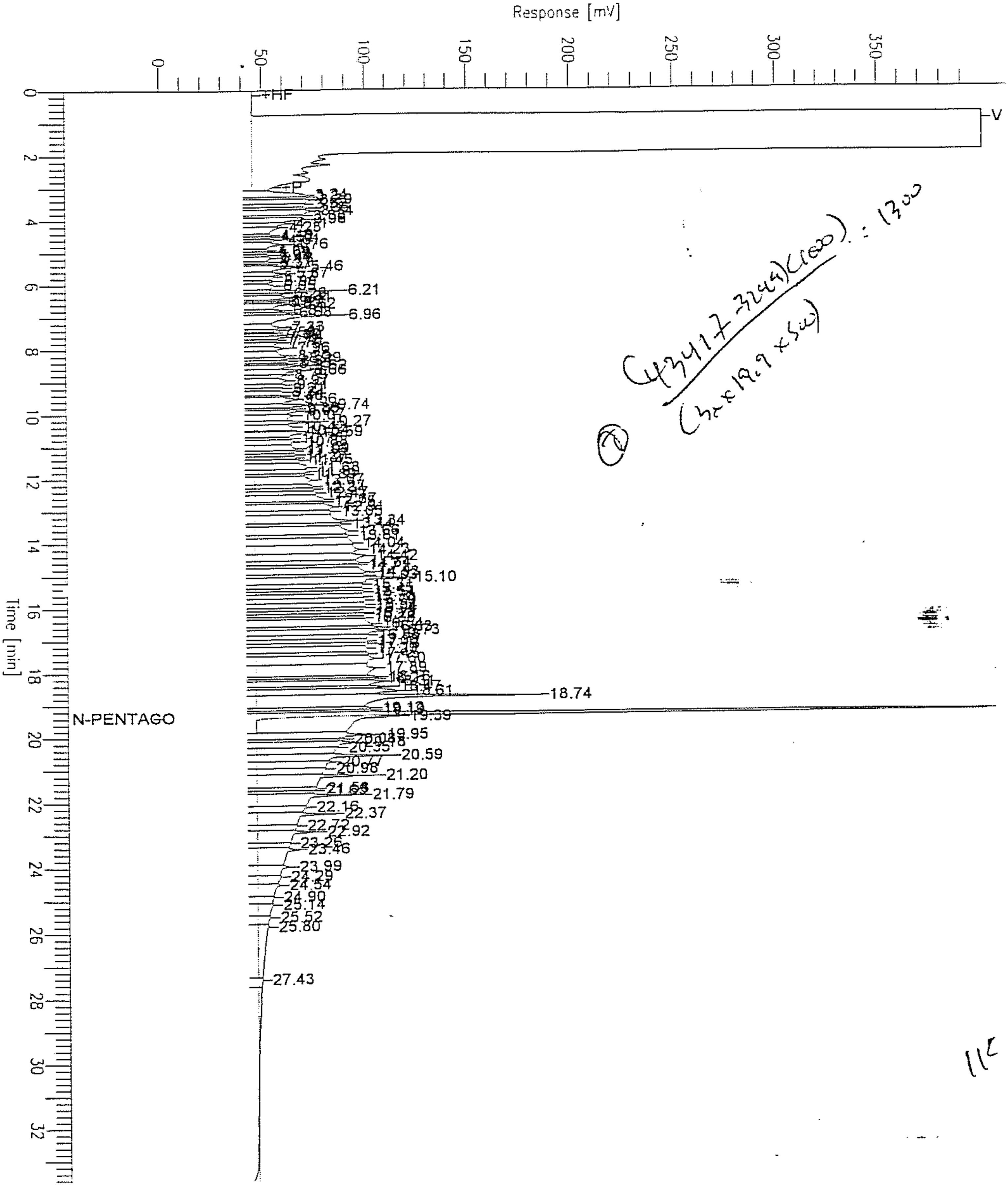
Chromatogram

Sample Name : DW9606A03-1 (500:1)
FileName : S:\GHP_04\0623\620B043.raw
Method : TPH04A
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 33.65 min
Plot Offset: 0 mV

Sample #: MW7
Date : 6/21/96 20:35
Time of Injection: 6/21/96 20:00
Low Point : 0.00 mV
Plot Scale: 400.0 mV

High Point : 400.00 mV



(4341 7 - 3244)(100) / (3 x 19.9 x 5w) : 1300

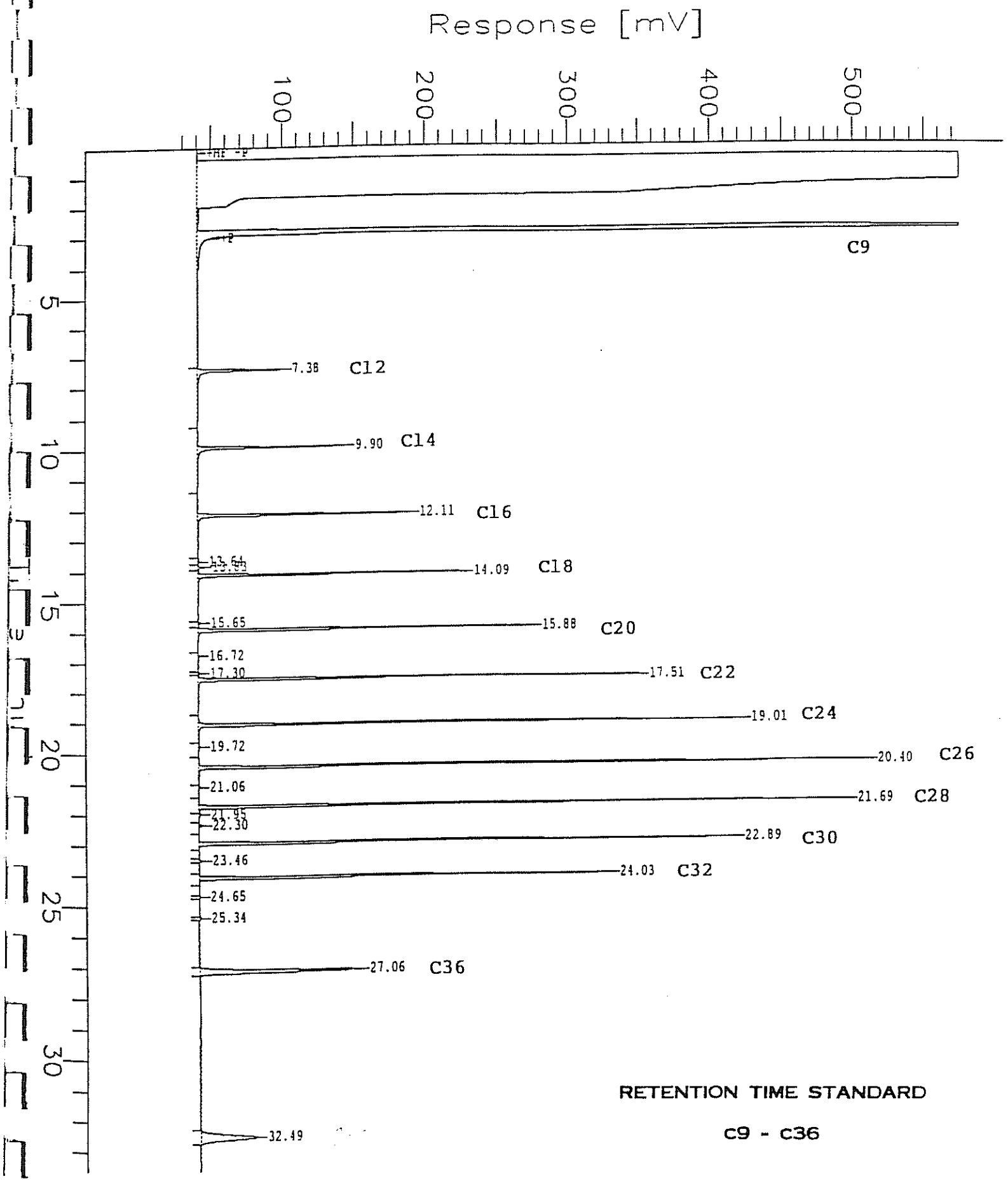
115

e Name : RETENTION TIME STD
eName : S:\GHP_04\0205\205A002.raw
thod : ML1A
: Time : 0.01 min
: Factor: 0.0

End Time : 33.67 min
Plot Offset: 25 mV

Sample #: C9-C60
Date : 2/7/95 09:02
Time of Injection: 2/5/95 17:17
Low Point : 25.00 mV
Plot Scale: 549.9 mV

High Point : 574.92 mV



RETENTION TIME STANDARD

C9 - C36

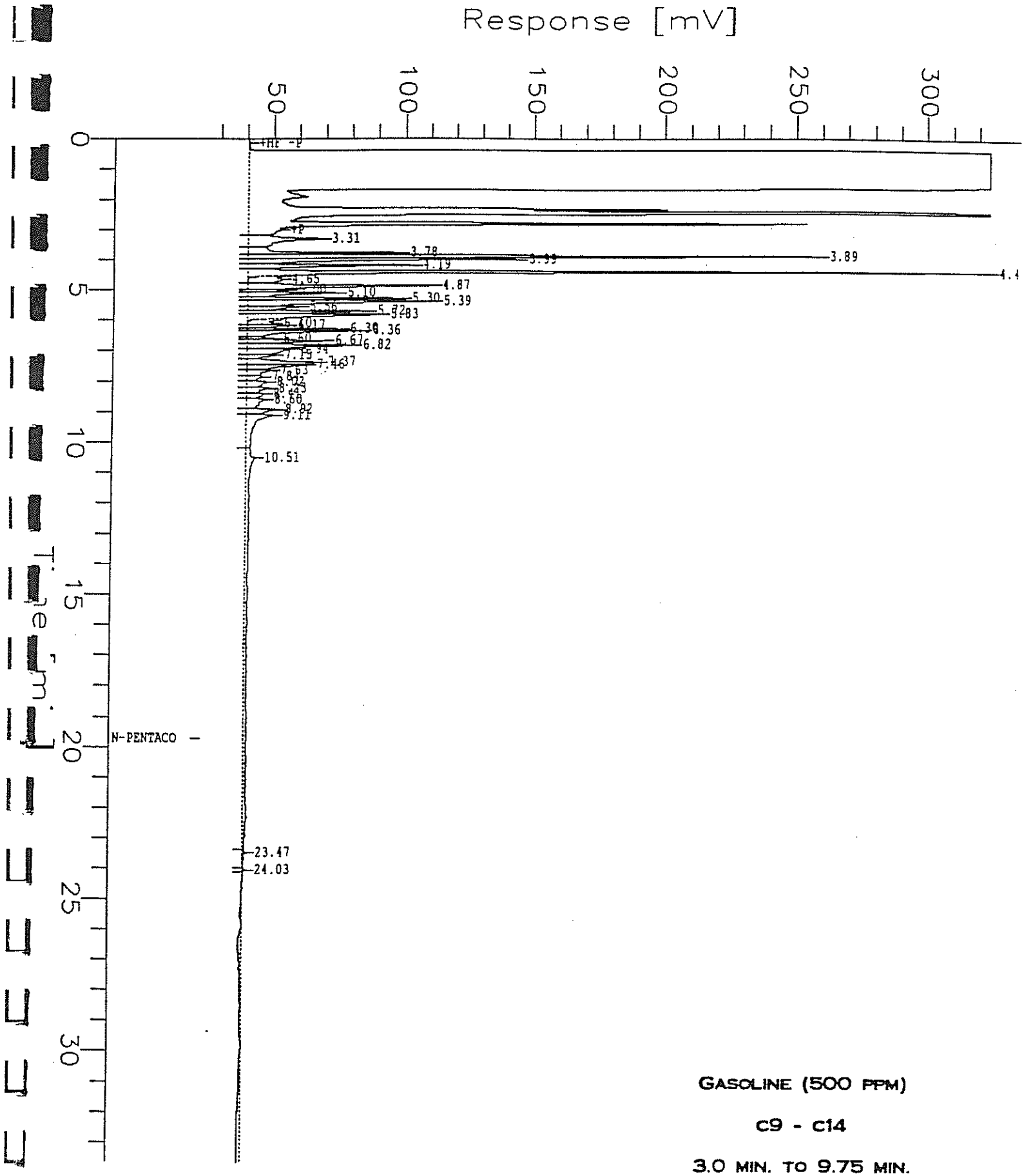
Chromatogram

Sample Name : GSTD020495 (500 PPM)
File Name : s:\ghp_04\0205\205A012.raw
Method : ML1A.ins
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 33.67 min
Plot Offset: 24 mV

Sample #: GASOLINE
Date : 2/6/95 07:30
Time of Injection: 2/6/95 00:05
Low Point : 23.95 mV
Plot Scale: 300.0 mV

High Point : 323.95 mV



GASOLINE (500 PPM)

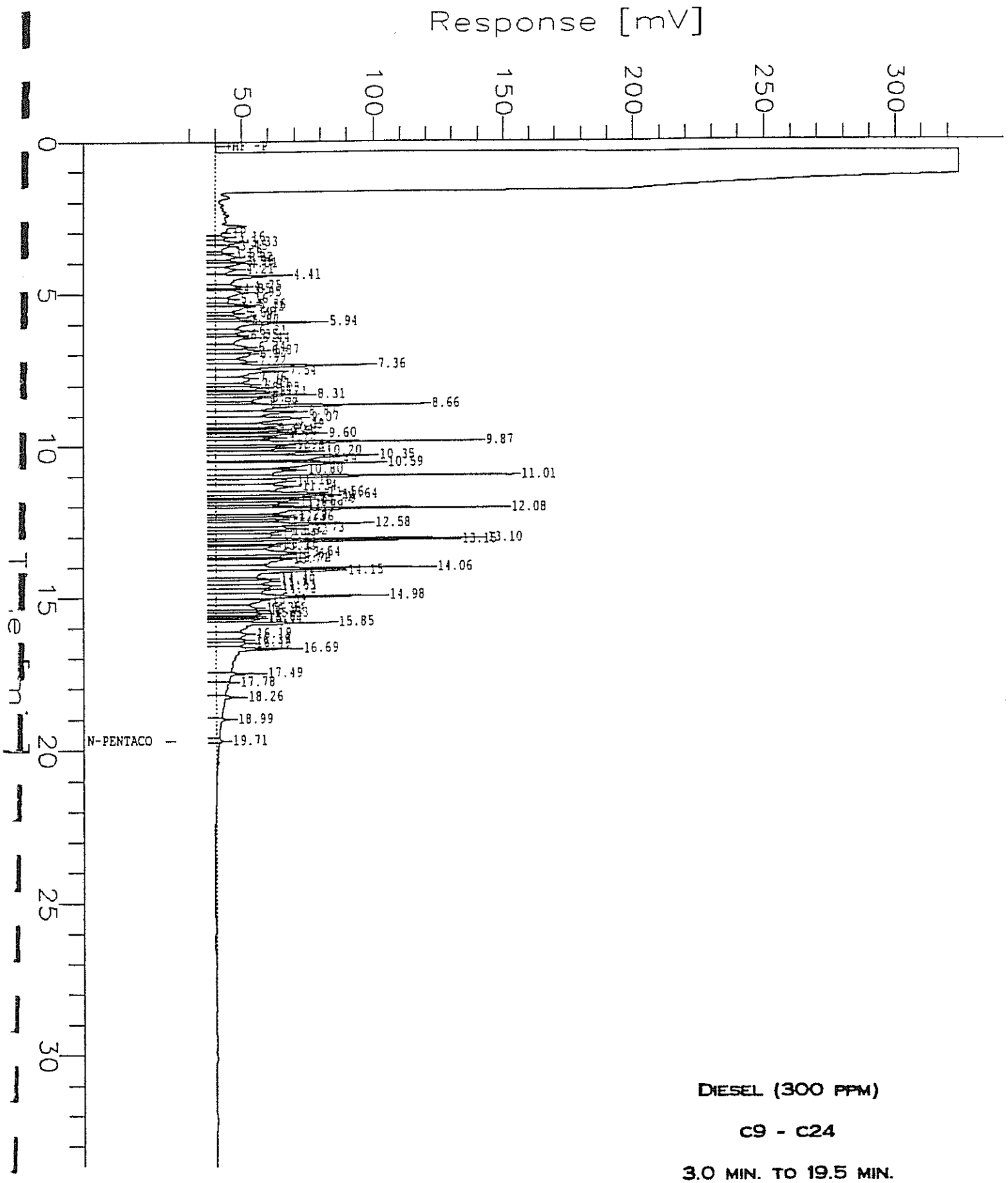
C9 - C14

3.0 MIN. TO 9.75 MIN.

Chromatogram

ample Name : DSTD020995 (300 PPM)
j'eName : s:\ghp_04\0212\211A002.raw
od : ML1A.ins
t Time : 0.00 min End Time : 33.67 min
e Factor: -1.0 Plot Offset: 24 mV

Sample #: DIESEL
Date : 2/11/95 19:38
Time of Injection: 2/11/95 13:01
Low Point : 24.30 mV High Point : 324.30 mV
Plot Scale: 300.0 mV



DIESEL (300 PPM)

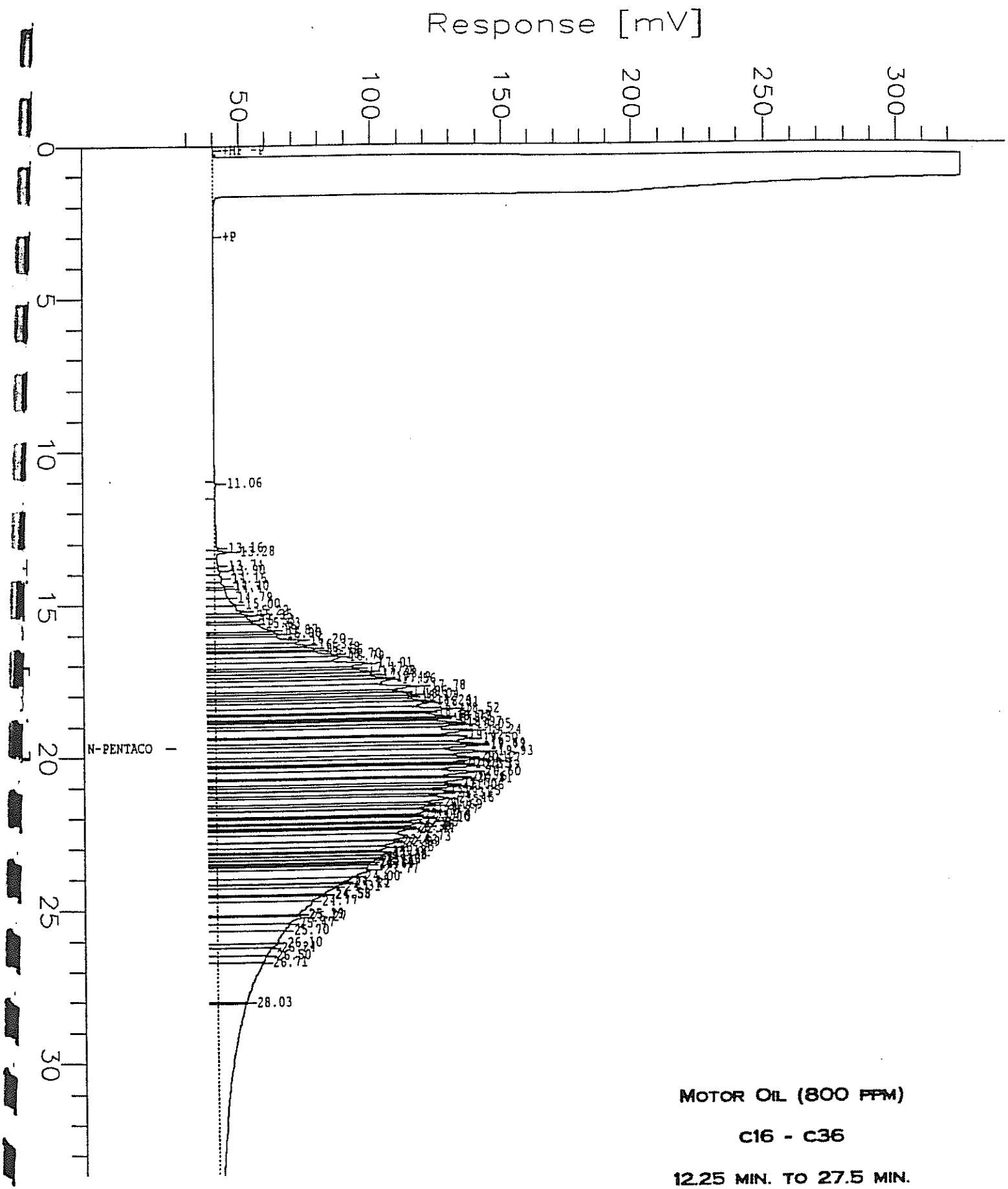
C9 - C24

3.0 MIN. TO 19.5 MIN.

Chromatogram

Name : M2STD021395 (800 PPM)
Name : s:\ghp_04\0219\213A007.raw
od : ML1A.ins
t Time : 0.00 min End Time : 33.67 min
e Factor: -1.0 Plot Offset: 25 mV

Sample #: MOTOR OIL
Date : 2/13/95 13:57
Time of Injection: 2/13/95 13:28
Low Point : 24.93 mV High Point : 324.93 mV
Plot Scale: 300.0 mV



MOTOR OIL (800 PPM)

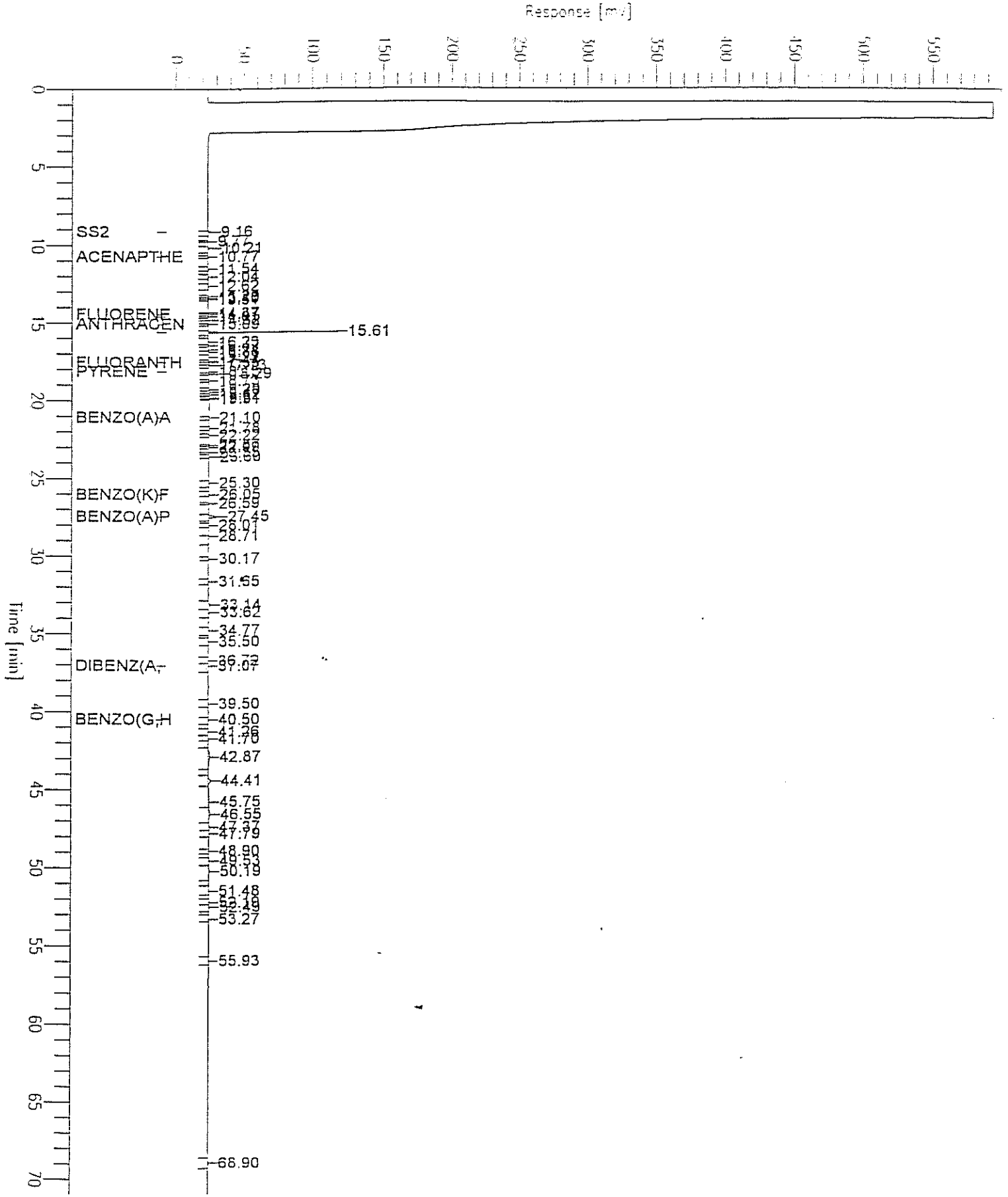
C16 - C36

12.25 MIN. TO 27.5 MIN.

Chromatogram

Sample Name : S9606A1407
FileName : S:\GCHP_11\630\B624008.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -7 mV

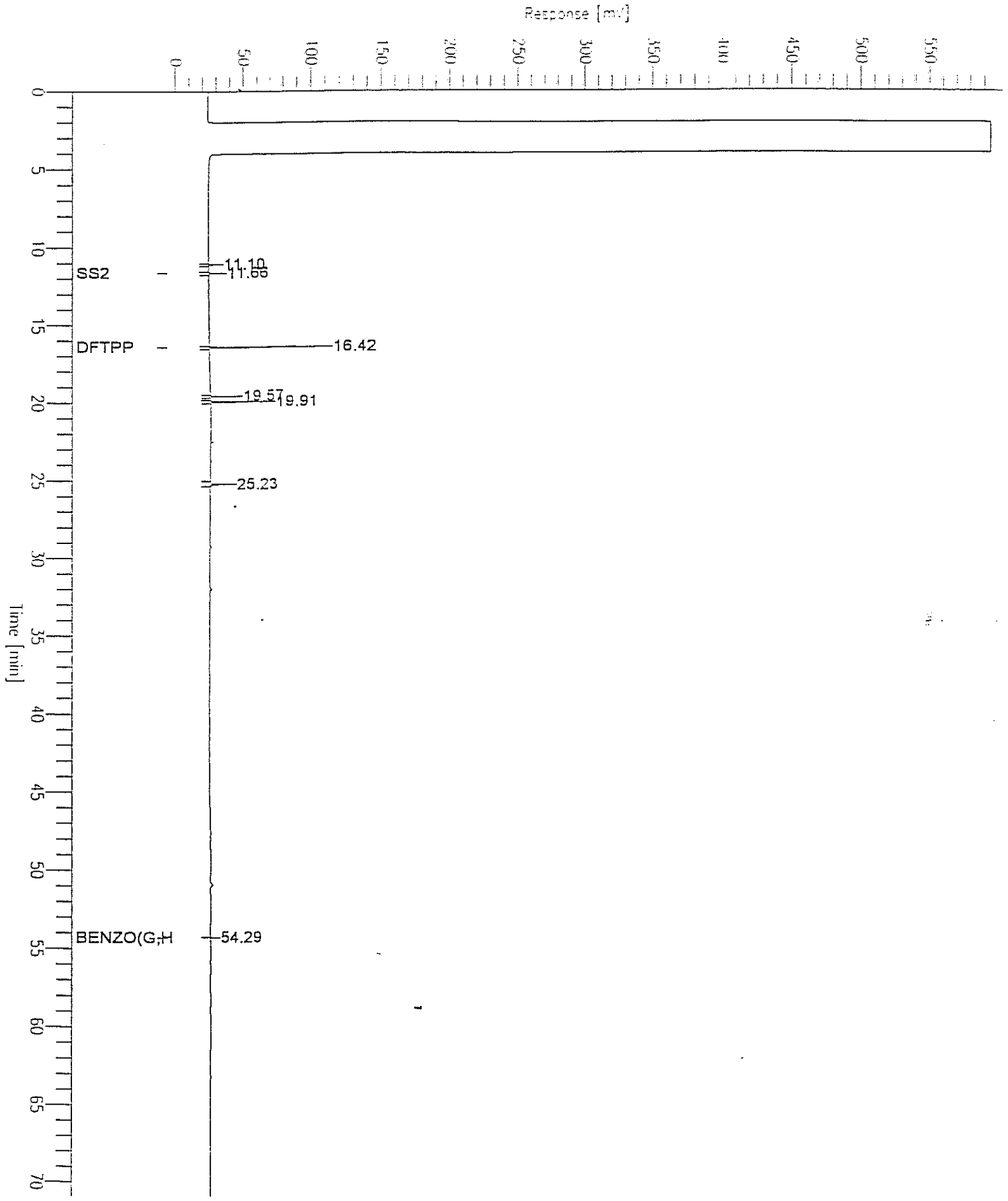
Sample #: EKI
Date : 6/24/96 19:29
Time of Injection: 6/24/96 18:17
Low Point : -6.82 mV High Point : 593.18 mV
Plot Scale: 600.0 mV



Chromatogram

Sample Name : S9606A1407
FileName : S:\GCHP_11\630\A624008.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -6 mV

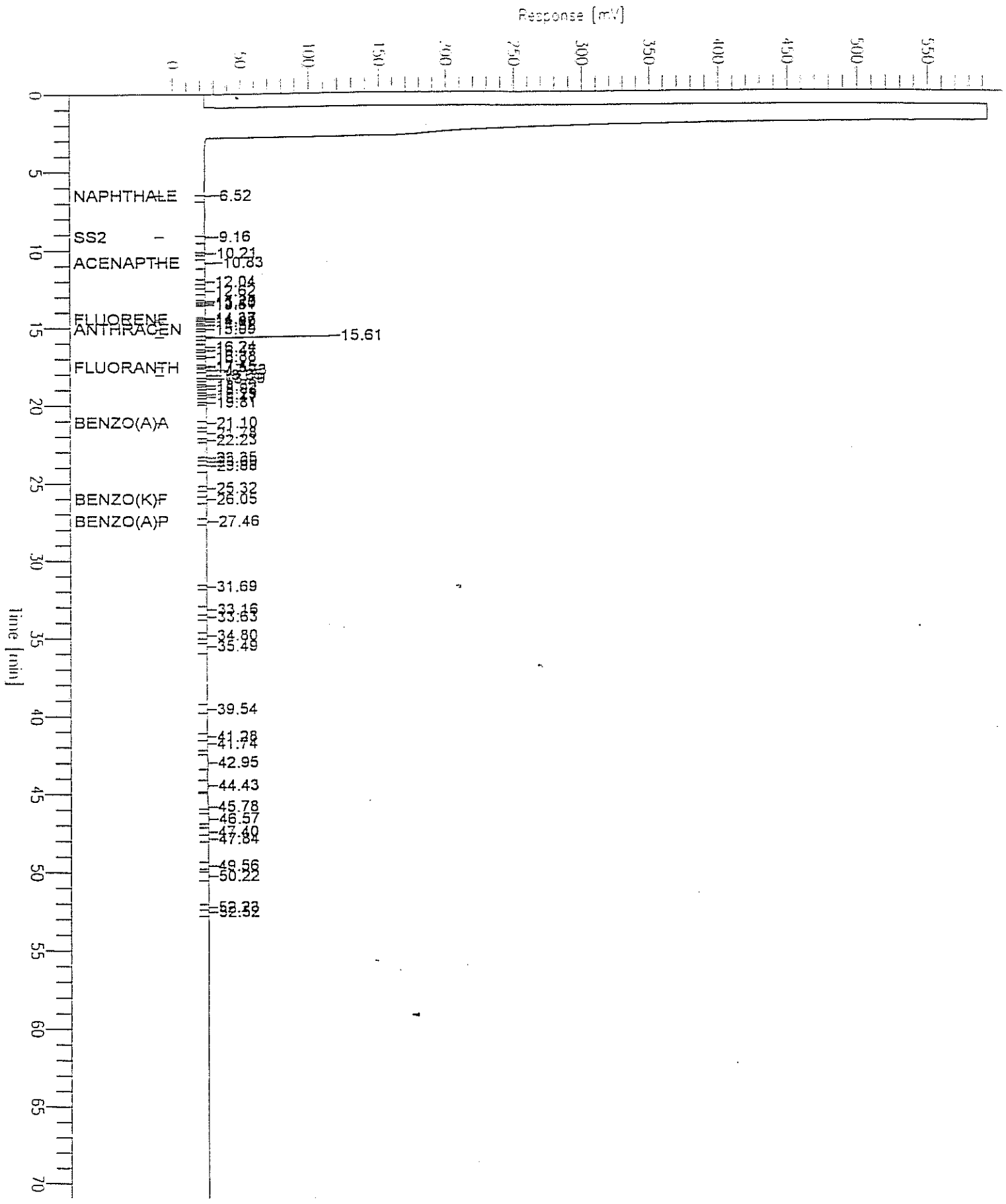
Sample #: EKI
Date : 6/24/96 19:29
Time of Injection: 6/24/96 18:17
Low Point : -6.07 mV High Point : 593.93 mV
Plot Scale: 600.0 mV



Chromatogram

Sample Name : S9606A1407MS
FileName : S:\GCHP_11\633\B624009.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -7 mV

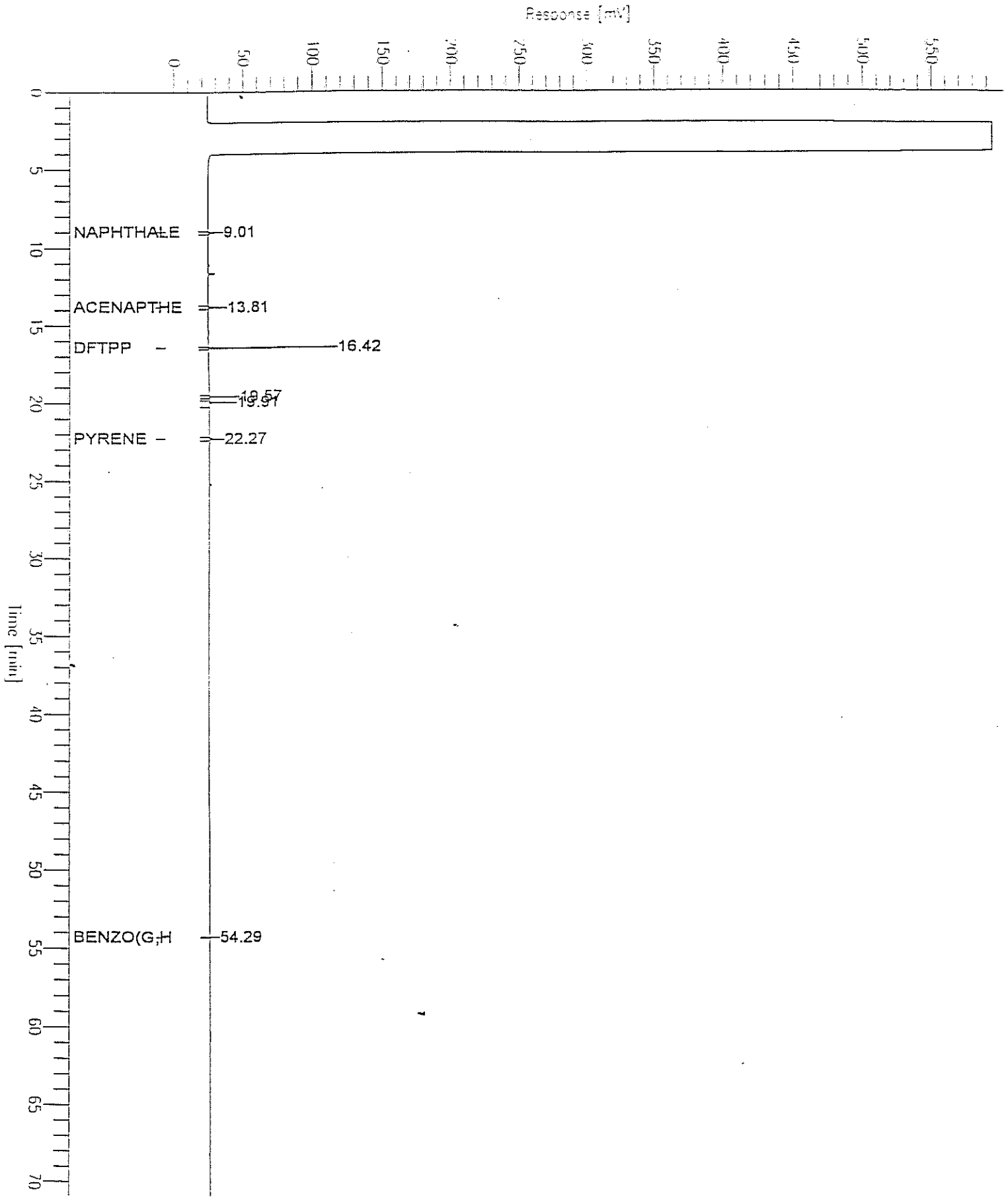
Sample #: EKI
Date : 6/24/96 20:46
Time of Injection: 6/24/96 19:34
Low Point : -6.82 mV High Point : 593.18 mV
Plot Scale: 600.0 mV



Chromatogram

Sample Name : S9606A1407MS
FileName : S:\GCHP_11\630\A624009.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -6 mV

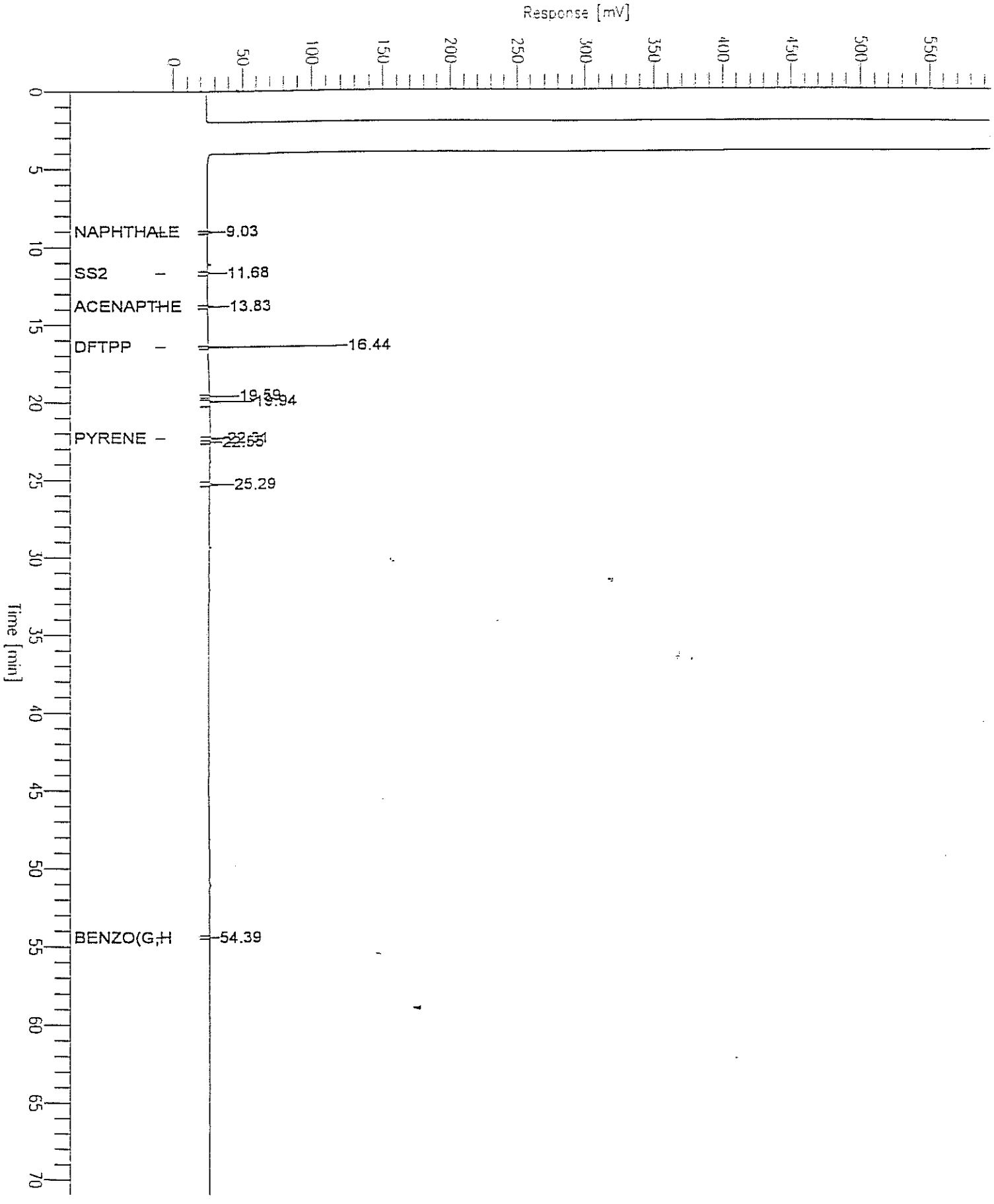
Sample #: EKI
Date : 6/24/96 20:46
Time of Injection: 6/24/96 19:34
Low Point : -6.06 mV High Point : 593.94 mV
Plot Scale: 600.0 mV



Chromatogram

Sample Name : S9606A1407MSD
FileName : S:\GCHP_11\630\A624010.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -6 mV

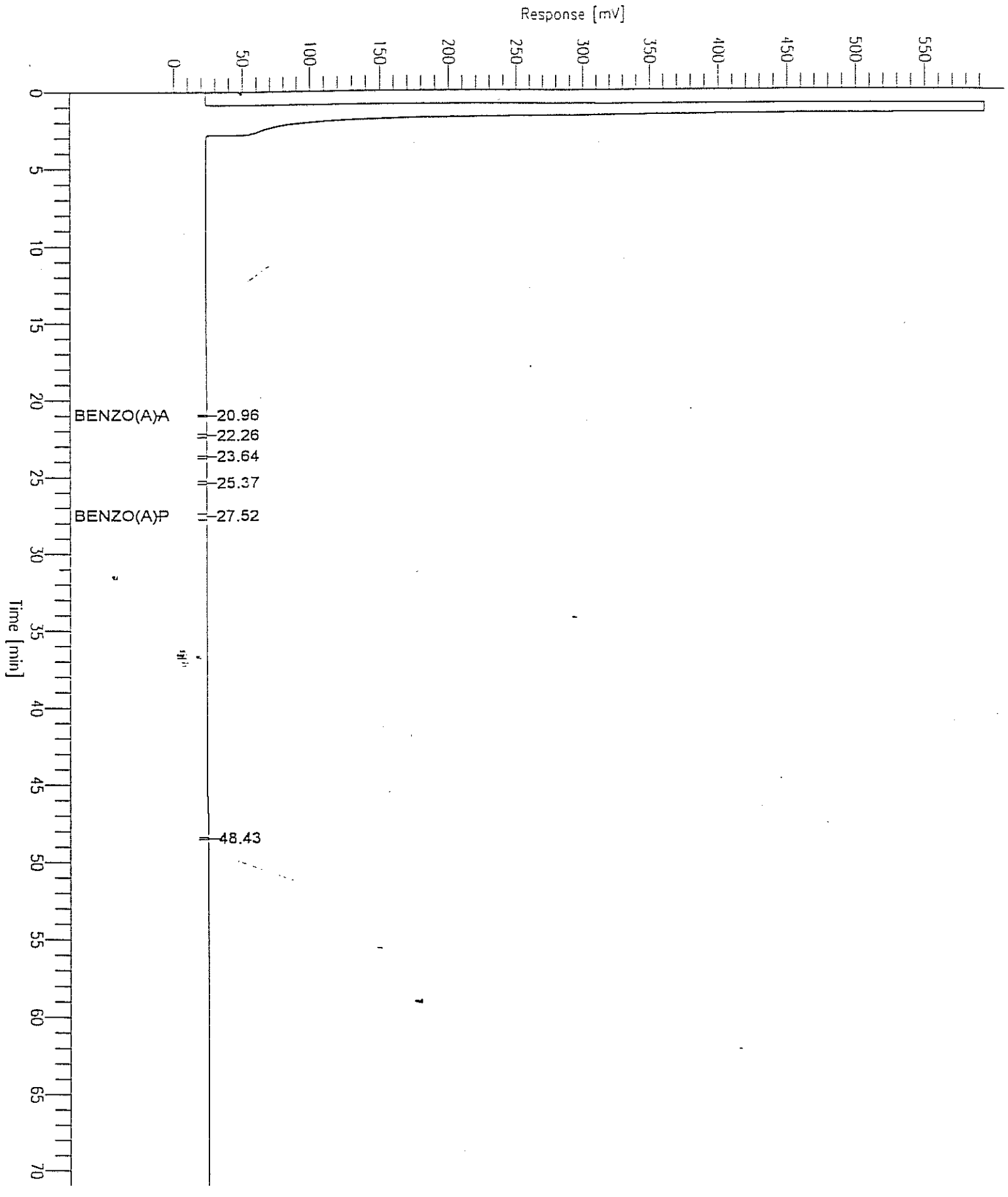
Sample #: EKI
Date : 6/24/96 23:26
Time of Injection: 6/24/96 22:15
Low Point : -6.14 mV High Point : 593.86 mV
Plot Scale: 600.0 mV



Chromatogram

Sample Name : S9606A1407MSD
FileName : S:\GCHP_11\630\B624010.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -7 mV

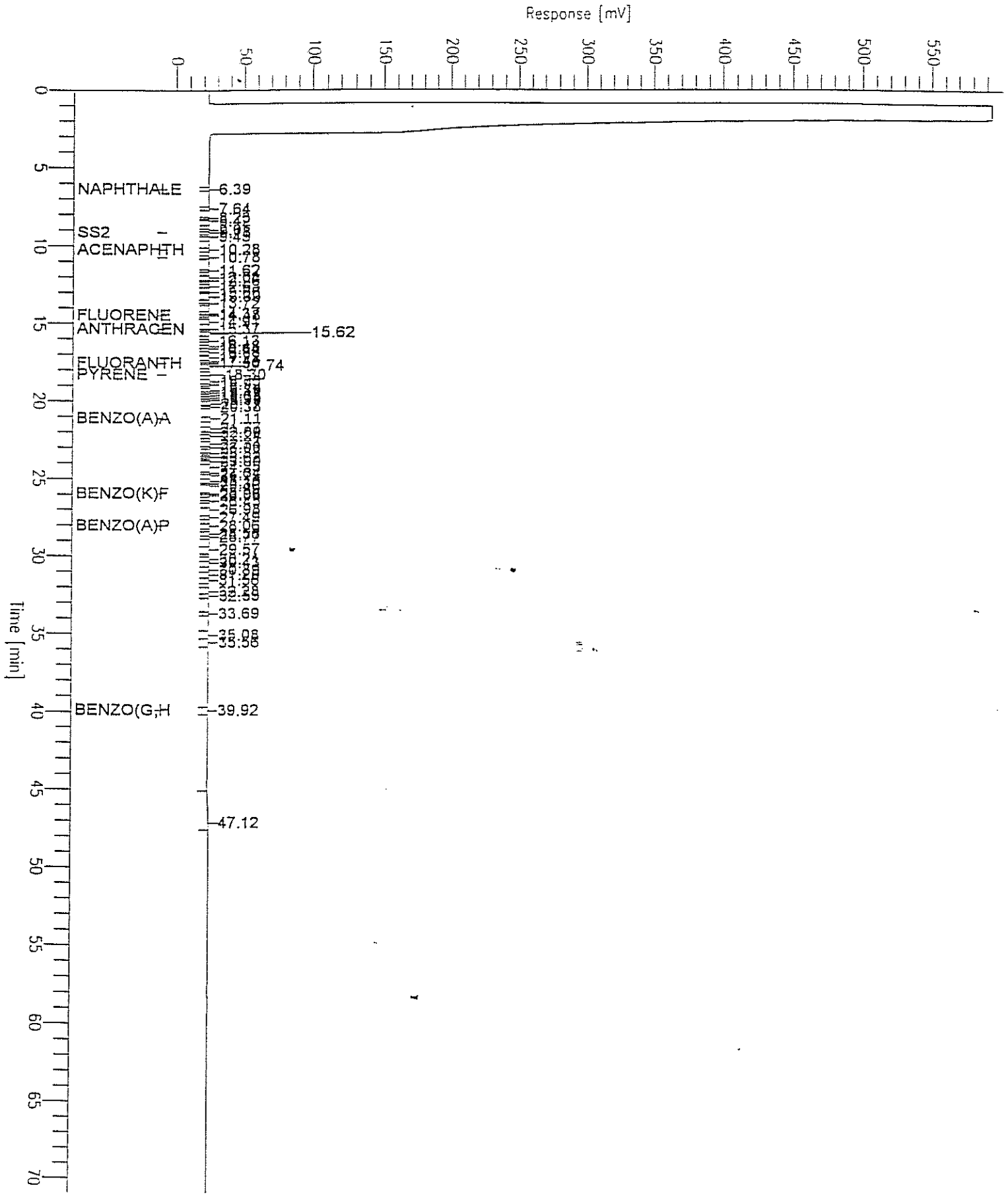
Sample #: EKI
Date : 6/24/96 23:27
Time of Injection: 6/24/96 22:15
Low Point : -6.84 mV High Point : 593.16 mV
Plot Scale: 600.0 mV



Chromatogram

Sample Name : S9606A1409
FileName : S:\GCHP_11\630\B624011.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -7 mV

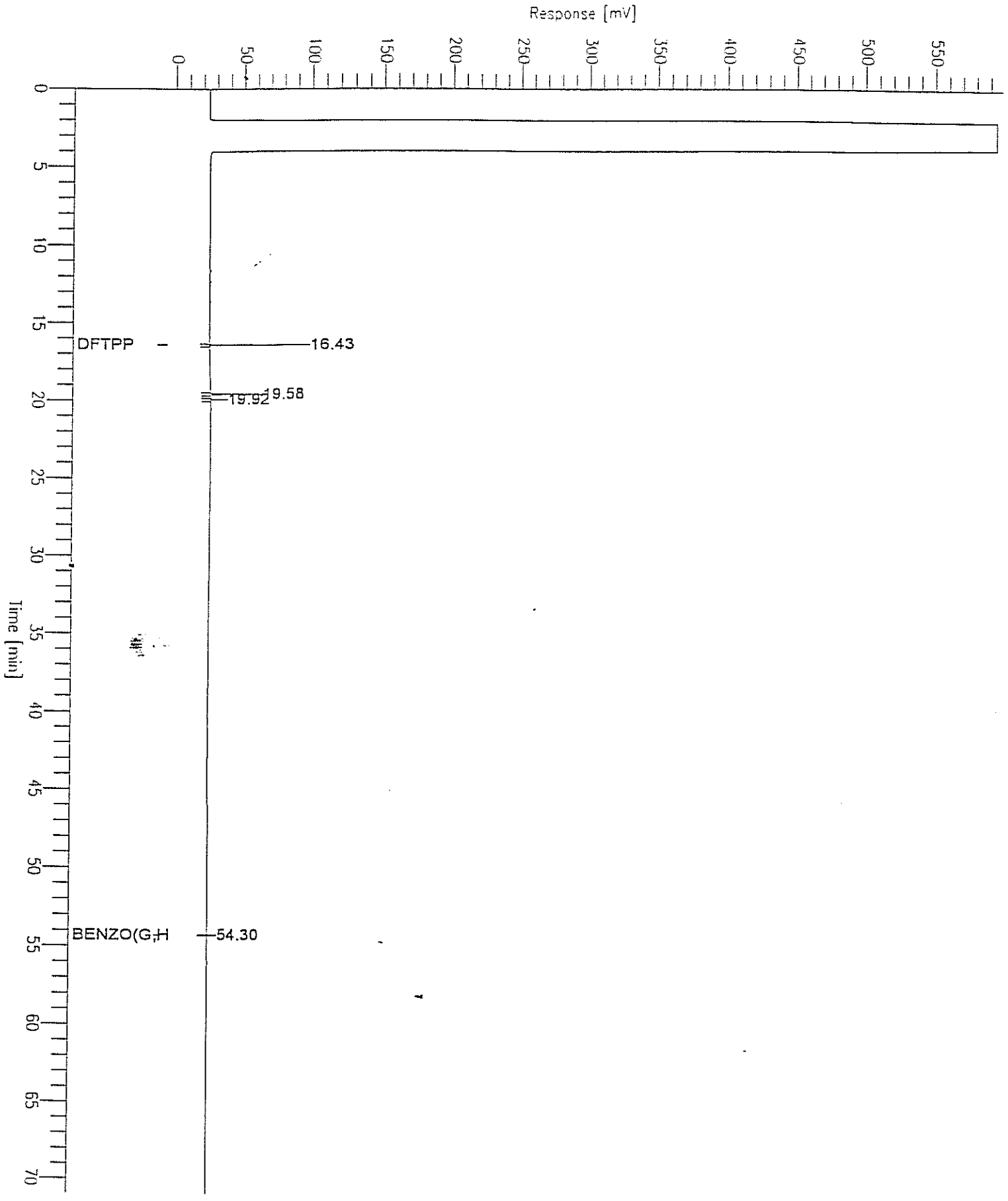
Sample #: EKI
Date : 6/25/96 00:44
Time of Injection: 6/24/96 23:32
Low Point : -6.78 mV High Point : 593.22 mV
Plot Scale: 600.0 mV



Chromatogram

Sample Name : S9606A1409
File Name : S:\GCHP_11\630\A624011.raw
Method : 8100XD
Start Time : 0.00 min End Time : 70.99 min
Scale Factor: -1.0 Plot Offset: -6 mV

Sample #: EKI
Date : 6/25/96 00:44
Time of Injection: 6/24/96 23:32
Low Point : -6.06 mV High Point : 593.94 mV
Plot Scale: 600.0 mV



Chromatogram

me : H9606A1411E
: S:\GCHP_11\630\B628014.raw
: 8100XD
t Time : 0.00 min End Time : 70.99 min
le Factor: -1.0 Plot Offset: -7 mV

Sample #: EKI
Date : 6/29/96 03:53
Time of Injection: 6/29/96 02:41
Low Point : -6.63 mV High Point : 593.38 mV
Plot Scale: 600.0 mV