GETTLER-RYAN INC.

WELL INSTALLATION
AND QUARTERLY GROUNDWATER MONITORING REPORT
SECOND QUARTER 1997

for
Chevron/RMC Lonestar Facility CPS #206142
333 23rd Avenue
Oakland, California

Report No. 6338.01-1

Prepared for:

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September 10, 1997

TRANSMITTAL

TO: Mr. Barney Chan
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1131 Harbor Bay Parkway, #250
Alameda, CA 94502-6577

DATE: September 10, 1997
PROJECT #: 6338.01
SUBJECT: Well Installation and Quarterly Groundwater Monitoring Report Second Quarter 1997, Chevron/RMC Lonestar Facility CPS #206142, 333 23rd Avenue, Oakland, California.

FROM:
Barbara Sieminski
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WE ARE SENDING YOU:

COPIES	DATED	DESCRIPTION
1	9/10/97	Well Installation and Quarterly Groundwater Monitoring Report, Second Quarter 1997, Chevron/RMC Lonestar Facility CPS #206142, 333 23rd Avenue, Oakland, California.

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cc: **Mr. Bob Cochran**, Chevron Products Company
Mr. Greg Gurss, Gettler-Ryan, Inc
Mr. Kevin Graves, Regional Water Quality Control Board, San Francisco Bay Region (certified mail)

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GETTLER-RYAN INC.

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AND QUARTERLY GROUNDWATER MONITORING REPORT
SECOND QUARTER 1997

for
Chevron/RMC Lonestar Facility CPS #206142
333 23rd Avenue
Oakland, California

Report No. 6338.01-1

1.0 INTRODUCTION

This report summarizes the results of a well installation and the second quarter 1997 groundwater monitoring and sampling performed at RMC/Lonestar Facility CPS #206142, located at 333 23rd Avenue in Oakland, California. The well installation was performed at the request of Chevron Products Company (Chevron) to replace well MW-4. The scope of work included: obtaining the required drilling permit; drilling one on-site soil boring and installing a groundwater monitoring well in this boring; collecting soil samples for chemical analysis; developing the newly installed well; sampling the newly installed well in conjunction with the quarterly groundwater monitoring and sampling of preexisting site wells; surveying wellhead elevations of all site wells; arranging for Chevron's contractor to dispose of the waste materials; and preparing a report documenting the work.

2.0 SITE DESCRIPTION

2.1 General

The subject site is an active cement mixing plant located on the western corner of the intersection of 23rd Avenue and Kennedy Street in Oakland, California (Figure 1). The site facilities include a fueling station which is situated in the central portion of the site. Thirteen groundwater monitoring wells (MW-1 through MW-13) and two recovery wells (R-1 and R-2) have been installed at the site to evaluate soil and groundwater conditions beneath the site and to facilitate groundwater remediation. Groundwater monitoring wells MW-2, MW-3 and MW-6 were abandoned prior to December 1992. Currently, the groundwater monitoring and sampling program includes wells MW-1, MW-8, and MW-11. The well locations and existing site features are shown on Figure 2.

EXECUTIVE SUMMARY

Gettler-Ryan Inc. (GR) presents this report for well installation and second quarter 1997 groundwater monitoring and sampling at RMC Lonestar Facility CPS #206142 located at 333 23rd Avenue in Oakland, California. One on-site soil boring was drilled and groundwater monitoring well MW-14 was installed in this borings during this investigation. Quarterly groundwater monitoring and sampling of site wells including newly installed well MW-14 was performed on June 30, 1997.

Soil encountered in boring MW-14 consisted of clayey gravel with sand to 3 feet feet below ground surface (bgs), underlain by clay to sandy clay to approximately 17 bgs. Fine to medium sand was encountered beneath the clay layer and extended to the total depth explored of 21.5 feet bgs. Groundwater was encountered in boring MW-14 at a depth of approximately 8 feet bgs. Based on the groundwater monitoring data collected on June 30, 1997, shallow groundwater beneath the site appears to flow to the southwest at an approximate gradient of 0.04.

Based on the analytical results from soil samples collected from well MW-14, it appears that soil in the nothwestern portion of the site have not been impacted by petroleum hydrocarbons. Groundwater in the vicinity of well MW-14 contains a low concentration (86 parts per billion [ppb]) of unidentified hydrocarbons in the C9-C24 range. However, based on the EPA Method 8015 with silica gel cleanup analyses result (< 50 ppb), these hydrocarbons appear to be due to the presence of biogenic material.

Groundwater in the vicinity of wells MW-1 and MW-8 has been impacted by hydrocarbons at concentrations up to 1,700 ppb of Total Petroleum Hydrocarbons as gasoline (TPHg) and up to 5,300 ppb of weathered diesel (C9-C24). Groundwater in the vicinity of well MW-11 has not been impacted by TPHg, but has been slightly impacted by hydrocarbons in the C9-C24 range. Based on the EPA Method 8015 with silica gel cleanup analyses results, a portion of C9-C24 hydrocarbons in groundwater from wells MW-1 and MW-8 and all C9-C24 hydrocarbons in groundwater from well MW-11 are due to the presence of biogenic materials.

2.2 Geology and Hydrogeology

The subject site is situated at the western edge of the East Bay Plain, approximately 1¼ mile north of San Leandro Bay. The site is a relatively flat lot bordered to the west and southwest by Tidal Canal which separates Alameda Island from the East Bay Plain. The site elevation ranges from approximately 5 to 10 feet above mean sea level.

As mapped by Helley and others (1979), soil in the site vicinity consists of Holocene Bay Mud consisting of unconsolidated water-saturated dark plastic carbonaceous clay and silty clay overlying Pleistocene beach and dune sand deposits (Merrit Sand) consisting of loose, well sorted fine to medium sand. The nearest surface water is Tidal Canal. Based on the historical groundwater monitoring data the groundwater flow in the vicinity of the site is toward the southeast.

3.0 FIELD WORK

Field work was conducted in accordance with GR's Field Methods and Procedures (Appendix A) and the Site Safety Plan dated June 19, 1997. A drilling permit (#97373) was obtained from the Zone 7 Water Agency, and Underground Service Alert was notified prior to drilling at the site. A copy of the permit is included in Appendix B.

3.1 Drilling Activities

On June 20, 1997, a GR geologist observed Bay Area Exploration Services, Inc. (C57 #522125) drill one on-site soil boring and install groundwater monitoring well MW-14 in this boring at the location shown on Figure 2. The boring was drilled to a depth of 21.5 feet bgs using 8-inch hollow-stem augers driven by a truck-mounted CME-55 drill rig. Soil samples were collected every 5 feet. The GR geologist prepared a log of the boring and screened the soil samples in the field for the presence of volatile organic compounds. Field screening data are presented on the boring log (Appendix B).

Well MW-14 was constructed using 15 feet of 2-inch diameter, 0.010-inch machine-slotted Schedule 40 PVC screen. Lonestar #2/12 graded sand was placed in the well across the entire screen interval and extended approximately 1 foot above the top of the screen. The annular space in the well was then sealed with 1 foot of hydrated bentonite chips followed by neat cement. Well construction details are presented on the boring log in Appendix B.

Drill cuttings were placed on and covered with plastic sheeting and stored on-site pending disposal. After completion of drilling, four samples for disposal characterization were collected from the drill cuttings and submitted to the laboratory for compositing and analysis as sample SP(A-D)COMP. On July 2, 1997, the drill cuttings were removed from the site and transported to the BFI Landfill in Livermore by Integrated Wastestream Management (IWM).

3.2 Well Development and Sampling

On June 30, 1997, groundwater monitoring well MW-14 was developed by GR personnel using a vented surge block and hand-bailing. Depth to water was measured in the well prior to well development. Upon completion of well development, groundwater samples were collected from this well. Preexisting site groundwater monitoring wells MW-1, MW-8, and MW-11 were also monitored and sampled on that date. Water purged during well development and sampling was transported to McKittrick Waste Management by IWM. Groundwater monitoring data are presented in Table 1, and copies of the GR Well Development and Sampling Field Data Sheets are included in Appendix C.

3.3 Wellhead Survey

On July 3, 1997, wells MW-1, MW-5, MW-7 through MW-12, MW-14, R-1 and R-2 were surveyed relative to mean sea level by Virgil Chavez, a California licensed land surveyor (#6323). Wells MW-4 and MW-13 were not surveyed because these wells could not be found. A copy of the survey report is included in Appendix D, and the survey data is summarized in Table 1.

3.4 Laboratory Analysis

Samples were analyzed by Sequoia Analytical in Redwood City, California (ELAP #1210). One soil sample from boring MW-14 and groundwater samples were analyzed for TPHg, benzene, toluene, ethylbenzene and xylenes (BTEX), and Methyl t-Butyl Ether (MTBE) by Environmental Protection Agency (EPA) Methods 8015Mod/8020 and for Total Petroleum Hydrocarbons as diesel (TPHd) by EPA Method 8015 Mod. In addition, groundwater samples were analyzed for TPHd by EPA Method 8015 Mod with silica gel cleanup, for ferrous iron by EPA Method 6010, and for nitrate and sulfate by EPA Method 300.0. The composite sample from the drill cuttings was analyzed for TPHg, TPHd, and BTEX. Copies of the laboratory analytical reports and chain-of-custody records are included in Appendix E.

4.0 RESULTS

4.1 Subsurface Conditions

Soil encountered in boring MW-14 consisted of clayey gravel with sand to 3 feet bgs, underlain by clay to silty clay to approximately 17 feet bgs. Fine to medium sand was encountered beneath the clay layer and extended to the total depth explored of 21.5 feet bgs. Groundwater was encountered in boring MW-14 at a depth of approximately 8 feet bgs. Detailed descriptions of the subsurface materials encountered during drilling are presented on the boring log in Appendix B. Based on the groundwater monitoring data collected on June 30, 1997, shallow groundwater beneath the site appears to flow to the southwest at an approximate gradient of 0.04 (Figure 2).

4.2 Analytical Results

The soil sample collected from boring MW-14 at 6 feet bgs did not contain TPHg, TPHd, BTEX or MTBE. Soil chemical analytical data are summarized in Table 3.

The groundwater samples collected from wells MW-1 and MW-8 contained unidentified hydrocarbons in the C10-C12 range (200 ppb and 1,700 ppb, respectively) reported by the laboratory as TPHg. Hydrocarbons in the C9-C24 range (weathered diesel) were detected in these samples at concentrations of 950 ppb (600 ppb with silica gel cleanup) and 5,300 ppb (3,000 ppb with silica gel cleanup), respectively.

The groundwater samples collected from wells MW-11 and MW-14 did not contain TPHg. Unidentified hydrocarbons in the C9-C24 range were detected in these samples using EPA Method 8015 Mod without silica gel cleanup at concentrations of 71 ppb and 86 ppb, respectively, but TPHd were not detected in these samples using EPA Method 8015 with silica gel cleanup.

Benzene or MTBE were not detected in the groundwater samples collected from wells MW-1, MW-8, MW-11 or MW-14. Ferrous iron was detected in these samples at concentrations ranging from 0.015 parts per million (ppm) to 5.6 ppm. Sulfate was detected in these samples at concentrations ranging from 10 ppm to 140 ppm. Nitrate was detected in the groundwater sample collected from well MW-11 at a concentration of 350 ppm, and was not detected in the samples collected from other wells. Groundwater analytical data are summarized in Tables 1 and 2.

5.0 CONCLUSIONS

Based on the analytical results from soil samples collected from well MW-14, it appears that soil in the nothwestern portion of the site have not been impacted by petroleum hydrocarbons. Groundwater in the vicinity of well MW-14 contains a low concentration (86 parts per billion [ppb]) of unidentified hydrocarbons in the C9-C24 range. However, based on the EPA Method 8015 with silica gel cleanup analyses result (< 50 ppb), these hydrocarbons appear to be due to the presence of biogenic material.

Groundwater in the vicinity of wells MW-1 and MW-8 has been impacted by hydrocarbons at concentrations up to 1,700 ppb of TPHg and up to 5,300 ppb of weathered diesel (C9-C24). Groundwater in the vicinity of well MW-11 has not been impacted by TPHg, but has been slightly impacted by hydrocarbons in the C9-C24 range. Based on the EPA Method 8015 with silica gel cleanup analyses results, a portion of C9-C24 hydrocarbons in groundwater from wells MW-1 and MW-8 and all C9-C24 hydrocarbons in groundwater from well MW-11 appear to be due to the presence of biogenic materials.

The letter work plan requested by the Alameda County Health Care Services Agency (ACHCSA) during the meeting of Mr. Greg Gurss (GR) and Mr. Bob Cochran (Chevron) with Mr. Barney Chan (ACHCSA) on May 13, 1997, will be submitted by September 30, 1997.

6.0 REFERENCES

E. J. Helley and others, 1979, Flatland Deposits of the San Francisco Bay Region, California: U.S. Geological Survey Professional Paper 943.

Gettler-Ryan Inc., June 19, 1997, Site Safety Plan for Chevron/RMC Lonestar Facility CPS #206142, 333 23rd Avenue, Oakland, California, Job No. 6338.01.

Table 1. Water Level Data & Groundwater Analytical Results -Chevron/RMC Lonestar Facility CPS #206142, 333 - 23rd Avenue, Oakland, California

Well ID/ TOC*	Date	Depth to Water (ft)	GWE **	Product Thickness (ft)	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-Diesel ♦	MTBE
					<----------ppb---------->						
MW-1											
4.70	12/21/90	9.77	-3.41	2.07	---	---	---	---	---	---	---
	12/18/93	8.45	-3.73	0.03	---	---	---	---	---	---	---
	03/29/94	9.00	-3.94	0.45	---	---	---	---	---	---	---
	06/09/94	---	---	---	---	---	---	---	---	---	---
	10/04/94	8.71	-3.98	0.04	---	---	---	---	---	---	---
	12/20/94	8.38	-3.14	0.67	---	---	---	---	---	---	---
	03/28/95	7.79	-2.69	0.50	---	---	---	---	---	---	---
	06/30/95	---	---	---	---	---	---	---	---	---	---
	09/24/95	7.79	-2.69	0.50	---	---	---	---	---	---	---
	12/29/95	Well inaccessible		---	---	---	---	---	---	---	---
	03/24/96	7.68	-2.97	0.01	1,400[6]	<0.5	<0.5	<0.5	<0.5	59,000	---
	06/16/96	7.86	-3.16	---	<500	<5.0	<5.0	<5.0	<5.0	99,000	---
	12/08/96	8.38	-3.68	0.00[11]	280[10]	<0.5	<0.5	<0.5	<0.5	6,700/*5,100*	<5.0
10.16	**06/30/97**	**8.65**	**1.51**	**0.00**	**200[12]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	[13]950/*600*[13,14]	**<2.5**
MW-2	06/15/89	---	---	---	<200	<0.5	<0.5	<0.5	<0.5	---	---
	12/92	Well abandoned		---	---	---	---	---	---	---	---
MW-4											
---	05/28/87	---	---	---	---	<0.5	<0.5	<0.5	<0.2	<5.0	---
	06/15/89	---	---	---	<100	<0.2	<2.0	<2.0	<2.0	<0.2	---
	12/21/90	7.31	---	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/19/93	6.64	---	---	<50	<0.5	<0.5	<0.5	<1.5	<50	---
	06/16/93	8.01	---	---	210	32	27	2.8	19	<50	---
	12/18/93	7.35	---	---	79	0.5	1.2	0.5	1.1	100	---
	03/29/94	8.05	---	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/09/94	8.14	---	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	10/04/94	7.31	---	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	12/20/94	7.03	---	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/28/95	6.83	---	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/30/95	7.84	---	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	09/24/95	7.67	---	---	<50	<0.5	<0.5	<0.5	<0.5	110	---

Table 1. Water Level Data & Groundwater Analytical Results - Chevron/RMC Lonestar Facility CPS# 206142, 333 - 23rd Avenue, Oakland, *California (continued)*

Well ID/ TOC*	Date	Depth to Water *(ft)*	GWE **	Product Thickness *(ft)*	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-Diesel ♦	MTBE
					<----------*ppb*---------->						
MW-4	12/29/95	Well not located		---	---	---	---	---	---	---	---
(cont)	03/24/96	7.41	---	---	<50	<0.5	<0.5	<0.5	<0.5	95	---
	06/16/96	Well not located		---	---	---	---	---	---	---	---
	12/08/96	Well not located		---	---	---	---	---	---	---	---
MW-5											
5.43	05/28/87	---	---	---	---	<0.5	<0.5	<0.5	<2.0	<5.0	---
	06/15/89	---	---	---	<100	<0.2	<2.0	<2.0	<2.0	---	---
	12/21/90	9.11	-3.68	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/16/93	9.12	-3.69	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	12/18/93	8.72	-3.29	---	<50	<0.5	<0.5	<0.5	<0.5	690	---
	03/29/94	9.00	-3.57	---	---	---	--	---	---	---	---
	06/09/94	9.36	-3.93	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	10/04/94	---	---	---	---	----	---	---	---	---	---
	12/20/94	8.10	-2.67	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/28/95	8.21	-2.78	---	---	---	---	---	---	---	---
	06/30/95	8.78	-3.35	---	<50	<0.5	<0.5	<0.5	<0.5	900	---
	09/24/95	8.40	-2.97	---	---	---	---	---	---	---	---
	12/29/95	8.39	-2.96	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/24/96	---	---	---	---	---	---	---	---	---	---
	06/16/96	8.58	-3.15	---	<50	<0.5	<0.5	<0.5	<50	---	---
	12/08/96	Discontinued		---	---	---	---	---	---	---	---
MW-7											
4.51	06/15/89	---	---	---	<100	<0.2	<2.0	<2.0	<2.0	---	---
	12/21/90	7.90	-3.38	0.01	---	---	---	---	---	---	---
	06/16/93	8.45	-3.94	---	<50	<0.5	0.9	<0.5	<0.5	<50	---
	12/18/93	8.01	-3.50	---	<50	<0.5	<0.5	<0.5	<0.5	240	---
	03/29/94	8.60	-4.09	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/09/94	8.61	-4.10	---	<50	<0.5	<0.5	<0.5	<0.5	130[2]	---
	10/04/94	7.82	-3.31	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	12/20/94	7.70	-3.19	---	<50	<0.5	<0.5	<0.5	<0.5	140	---

Table 1. Water Level Data & Groundwater Analytical Results - Chevron/RMC Lonestar Facility CPS# 206142, 333 - 23rd Avenue, Oakland, California (continued)

Well ID/ TOC*	Date	Depth to Water (ft)	GWE **	Product Thickness (ft)	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-Diesel ♦	MTBE
					<----------ppb---------->						
MW-7	03/28/95	7.67	-3.16	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
(cont)	06/30/95	8.33	-3.82	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	09/24/95	8.16	-3.65	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	12/29/95	7.51	-3.00	---	<50	<0.5	<0.5	<0.5	<0.5	230[4]	---
	03/24/96	7.69	-3.17	0.01	<50	<0.5	<0.5	<0.5	<0.5	81	---
	06/16/96	10.37	-5.86	---	<50	<0.5	<0.5	<0.5	<0.5	190	---
	12/08/96	Discontinued		---	---	---	---	---	---	---	---
MW-8											
4.93	12/21/90	8.53	-3.59	0.02	---	---	---	---	---	---	---
	12/18/93	---	---	---	---	---	---	---	---	---	---
	03/29/94	8.38	-3.46	---	---	---	---	---	---	---	---
	06/09/94	---	---	---	---	---	---	---	---	---	---
	12/20/94	7.58	-2.66	---	<2,500	120	100	<25	100	50,000	---
	03/28/95	7.08	-2.16	---	---	---	---	---	---	---	---
	06/30/95	8.09	-3.17	---	<50	<0.5	<0.5	<0.5	<0.5	14,000	---
	09/24/95	8.45	-3.53	---	---	---	---	---	---	---	---
	12/29/95	7.47	-2.55	---	520	<2.0	<2.0	<2.0	<2.0	25,000	---
	03/24/96	---	---	---	---	---	---	---	---	---	---
	06/16/96	7.99	-3.07	---	59[9]	<0.5	<0.5	<0.5	<0.5	9,400	---
	12/08/96	7.67	-2.74	0.00[11]	580[10]	<0.5	<0.5	<0.5	<0.5	16,000/*9,300*	<5.0
10.09	**06/30/97**	**11.65**	**-1.56**	**0.00**	**1,700[12]**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**[13]5,300/*3,000*[13,15]**	**<25**
MW-9											
4.42	05/28/87	---	---	---	---	<0.5	<0.5	<0.5	<2.0	<50	---
	06/15/89	---	---	---	<100	<0.2	<2.0	<2.0	<2.0	---	---
	12/21/90	7.86	---	Sheen	<50	<0.5	<0.5	<0.5	1.0	230	---
	06/16/93	8.34	-3.92	---	<50	<0.5	<0.5	<0.5	<1.5	<50	---
	12/18/93	7.91	-3.49	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/29/94	7.85	-3.43	---	---	---	---	---	---	---	---
	06/09/94	8.69	-4.27	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	10/04/94	---	---	---	---	---	---	---	---	---	---

Table 1. Water Level Data & Groundwater Analytical Results - Chevron/RMC Lonestar Facility CPS# 206142, 333 - 23rd Avenue, Oakland, California (continued)

Well ID/ TOC*	Date	Depth to Water (ft)	GWE **	Product Thickness (ft)	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-Diesel ♦	MTBE
					<----------ppb---------->						
MW-9	12/20/94	7.60	-3.18	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
(cont)	03/28/95	7.58	-3.16	---	---	---	---	---	---	---	---
	06/30/95	8.34	-3.92	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	09/24/95	8.21	-3.79	---	---	---	---	---	---	---	---
	12/29/95	7.48	-3.06	---	<50	<0.5	<0.5	<0.5	<0.5	600	---
	03/24/96	---	---	---	---	---	---	---	---	---	---
	06/16/96	8.25	-3.83	---	<50	<0.5	<0.5	<0.5	<0.5	810	---
	12/08/96	Discontinued		---	---	---	---	---	---	---	---
MW-10											
5.24	06/15/89	---	---	---	<100	<0.2	<2.0	<2.0	<2.0	---	---
	12/21/90	8.92	-3.68	---	<50	<0.5	<0.5	<0.5	<0.5	80	---
	06/16/93	8.97	-3.73	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	12/18/93	7.87	-2.63	---	51[1]	<0.5	<0.5	<0.5	<0.5	12,000	---
	03/29/94	9.20	-3.96	---	---	---	---	---	---	---	---
	06/09/94	9.31	-4.07	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	10/04/94	---	---	---	---	---	---	---	---	---	---
	12/20/94	8.30	-3.06	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/28/95	8.26	-3.02	---	---	---	---	---	---	---	---
	06/30/95	8.95	-3.71	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	09/24/95	8.87	-3.63	---	---	---	---	---	---	---	---
	12/29/95	8.03	-2.79	---	<50	<0.5	<0.5	<0.5	<0.5	1,800[5]	---
	03/24/96	---	---	---	---	---	---	---	---	---	---
	06/16/96	8.77	-3.53	---	<50	<0.5	<0.5	<0.5	<0.5	300	---
	12/08/96	Discontinued		---	---	---	---	---	---	---	---
MW-11											
4.37	08/21/87	---	---	---	---	<0.5	<0.5	<0.5	<2.0	<0.1	---
	06/21/89	---	---	---	<100	<0.2	<2.0	<2.0	<2.0	---	---
	12/21/90	8.59	---	Sheen	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/19/93	7.57	-3.20	---	<50	<0.5	<0.5	<0.5	<1.5	<50	---
	06/16/93	8.84	-4.47	---	<50	<0.5	<0.5	<0.5	<1.5	<50	---

Table 1. Water Level Data & Groundwater Analytical Results - Chevron/RMC Lonestar Facility CPS# 206142, 333 - 23rd Avenue, Oakland, California (continued)

Well ID/ TOC*	Date	Depth to Water (ft)	GWE **	Product Thickness (ft)	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-Diesel ♦	MTBE
					<----------ppb---------->						
MW-11	12/18/93	8.26	-3.89	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
(cont)	03/29/94	9.07	-4.70	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/09/94	9.14	-4.77	---	<50	<0.5	<0.5	<0.5	<0.5	150[2]	---
	10/04/94	7.94	-3.57	---	<50	<0.5	1.0	<0.5	<0.5	<50	---
	12/20/94	7.68	-3.31	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/28/95	6.90	-2.53	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/30/95	8.81	-4.44	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	09/24/95	8.80	-4.43	---	<50	<0.5	<0.5	<0.5	<0.5	110	---
	12/29/95	8.22	-3.85	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/24/96	8.46	-4.09	---	<50	<0.5	<0.5	<0.5	<0.5	80	---
	06/16/96	8.74	-4.37	---	<50	<0.5	<0.5	<0.5	<0.5	86[8]	---
	12/08/96	7.75	-3.38	0.00[11]	<50	<0.5	<0.5	<0.5	<0.5	<50	<5.0
6.71	**06/30/97**	**8.63**	**-1.92**	**0.00**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**[13]71/<50**	**<2.5**
MW-12											
---	08/21/87	---	---	---	---	<0.5	<0.5	<0.5	<2.0	<0.1	---
	12/18/93	---	---	---	---	---	---	---	---	---	---
	03/29/94	---	---	---	---	---	---	---	---	---	---
	06/09/94[3]	Well inaccessible		---	---	---	---	---	---	---	---
MW-13											
4.73	08/21/87	---	---	---	---	<0.5	<0.5	<0.5	<2.0	<0.1	---
	06/15/89	---	---	---	<100	<0.2	<2.0	<2.0	<2.0	---	---
	03/19/93	7.62	-2.89	---	<50	<0.5	<0.5	<0.5	<1.5	<50	---
	06/16/93	8.56	-3.83	---	<50	<0.5	<0.5	<0.5	<1.5	<50	---
	12/18/93	8.11	-3.38	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/29/94	8.65	-3.92	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/09/94	8.60	-3.87	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	10/04/94	8.31	-3.58	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	12/20/94	7.92	-3.19	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	03/28/95	7.78	-3.05	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/30/95	---	---	---	---	---	---	---	---	---	---

Table 1. Water Level Data & Groundwater Analytical Results - Chevron/RMC Lonestar Facility CPS# 206142, 333 - 23rd Avenue, Oakland, California (continued)

Well ID/ TOC*	Date	Depth to Water (ft)	GWE **	Product Thickness (ft)	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-Diesel ♦	MTBE
					<----------ppb---------->						
MW-13	09/24/95	8.34	-3.61	---	<50	<0.5	<0.5	<0.5	<0.5	180	---
(cont)	12/29/95	Well not located		---	---	---	---	---	---	---	---
	03/24/96[7]	7.74	-3.01	---	<50	<0.5	<0.5	<0.5	<0.5	<50	---
	06/16/96	8.07	-3.34		<50	<0.5	<0.5	<0.5	<0.5	57	---
	12/08/96	Discontinued		---	---	---	---	---	---	---	---
MW-14											
5.56	**06/30/97**	**7.48**	**-1.92**	**0.00**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**[13]86/*<50***	**<2.5**
TB	03/19/93	---	---	---	<50	<0.5	<0.5	<0.5	<1.5	---	---
	06/16/93	---	---	---	<50	<0.5	<0.5	<0.5	<1.5	---	---
	12/18/93	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
	03/29/94	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
FB	06/09/94	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
TB	12/20/94	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
	03/28/95	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
	06/30/95	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
	09/24/95	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
	12/29/95	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
	03/24/96	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
	06/16/96	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
TB-LB	12/08/96	---	---	---	<50	<0.5	<0.5	<0.5	<0.5	---	<5.0
	06/30/97	**---**	**---**	**---**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**---**	**<2.5**

Table 1. Water Level Data & Groundwater Analytical Results - Chevron/RMC Lonestar Facility CPS# 206142, 333 - 23rd Avenue, Oakland, California (continued)

EXPLANATION:

TOC = Top of Casing
(ft) = Feet
GWE = Groundwater Elevation
TPH-Gasoline = Total Petroleum Hydrocarbons as Gasoline
TPH-Diesel = Total Extractable Petroleum Hydrocarbons as Diesel
MTBE = Methyl tertiary-butyl ether
ppb = Parts per billion
ND = Not detected at detection limit
--- = Not Analyzed/Not Applicable/or (Data) Not Available

ANALYTICAL METHODS:

TPH-Gasoline by EPA Method 8015
BTEX & MTBE by EPA Method 8020
TPH-Diesel - Extraction by EPA Method 3510
TPH-Diesel silica-gel clean up by EPA (Modified) 3630

NOTES:

Water level elevation data and laboratory analytical results prior to December 8, 1996, were complied from Quarterly Groundwater Monitoring Reports prepared for Chevron by Geraghty & Miller, Inc.

* Elevations surveyed on 09/26/93 by Field Designs relative to City of Oakland Benchmark #3457 and corrected to Mean Sea Level (msl). (Benchmark datum is 2.998 feet off of msl.)

** Groundwater Elevation is corrected for the presence of separate-phase hydrocarbons and is calculated as follows: [(TOC-DTW) + (Product Thickness x 0.8)]. 0.8 is the assumed specific gravity of free-phase hydrocarbons.

*** Site surveyed by Virgil Chavez Land Surveying on 07/03/1997. The benchmark for the survey was a cut square in the northerly curb of East 7th Street, at the east return at the northeast corner of East 7th Street and Peterson Street. Benchmark elevation: 17.91 feet, msl.

♦ Analytical results are reported as follows: TPH as Diesel*TPH as Diesel w/silica-gel cleanup*.

Table 1. Water Level Data & Groundwater Analytical Results - Chevron/RMC Lonestar Facility CPS# 206142, 333 - 23rd Avenue, Oakland, California (continued)

NOTES(continued):

1 Laboratory reports that the chromatogram does not match typical gasoline pattern.
2 Laboratory reports that the chromatogram does not match typical diesel pattern; *lighter hydrocarbons present.*
3 MW-12 inaccessible due to the accumulation of silt, sand and gravel in the well casing.
4 Laboratory report indicates the presence of unidentified hydrocarbons >C16.
5 Laboratory report indicates the presence of diesel and unidentified hydrocarbons >C16.
6 Laboratory report indicates the presence of unidentified hydrocarbons >C8.
7 MW-13 also analyzed for Total Dissolved Solids (TDS) by USEPA Method 160.1. Laboratory reported a concentration of 1,600 mg/L.
8 Laboratory report indicates the presence of unidentified hydrocarbons >C18.
9 Laboratory report indicates the presence of unidentified hydrocarbons >C9.
10 Laboratory report indicates the hydrocarbons in the gasoline range do not match the gasoline standard pattern.
11 Sheen previously reported in error.
12 Laboratory report indicates unidentified hydrocarbons C10-C12.
13 Laboratory report indicates weathered diesel C9-C24.
14 Additional silica gel cleanup performed on sample. First result was 600[13] ppb; Second result reported in table.
15 Additional silica gel cleanup performed on sample. First result was 3,100[13] ppb; Second result reported in table.

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Table 2. Field Parameters/Analytical Results - Chevron\RMC Lonestar Facility CPS#206142, 333 - 23rd Avenue, Oakland, California

Well ID	Date	Oxidation Reduction Potential (mV)	Dissolved Oxygen	Nitrate	Sulfate	Ferrous Iron	Phosphate	Ammonia
			<----------mg/L---------->					
MW-1	11/09/95	---	0.90	---	---	---	---	---
	06/17/96	---	1.34	>5.0	---	---	2.0	>10
	12/08/96*	---	1.39	13	14	2.6	---	---
	06/30/97*[1]	**-16.5**	**1.00**	**<1.0**	**10**	**5.6**	**---**	**---**
MW-4	11/09/95	---	0.37	0.2	---	---	0	0.01
	06/16/96	Well not located	---	---	---	---	---	---
	12/08/96	Well not located	---	---	---	---	---	---
MW-5	11/09/95	---	0.85	0.1	---	---	1.5	0.1
	06/16/96	---	0.78	---	---	---	---	---
MW-7	11/09/95	---	0.42	---	---	---	---	---
	06/16/96[1]	---	OR	>5.0	---	---	4.0	>10
MW-8	11/09/95	---	0.95	---	---	---	---	---
	06/16/96	---	0.29	0	---	---	0.6	0.6
	12/08/96*	-35	0.51	<0.10	3.0	6.1	---	---
	06/30/97*[1]	**-50.2**	**9.50**	**<1.0**	**17**	**0.22**	**---**	**---**
MW-9	11/09/95	---	0.58	---	---	---	---	---
	06/16/96[1]	---	**14.66**	>5.0	---	---	>10	1.0
MW-10	11/09/95	---	1.49	---	---	---	---	---
	06/16/96	---	3.30	1.0	---	---	6.0	>10
MW-11	11/09/95	---	0.52	0.2	---	---	5.0	0.1
	06/16/96	---	0.25	---	---	---	---	---
	12/08/96*	165	0.31	340	99	<0.010	---	---
	06/30/97*[1]	**-20.0**	**2.99**	**350**	**140**	**0.015**	**---**	**---**
MW-13	11/09/95	Well not located	---	---	---	---	---	---
	06/16/96*	---	0.52	0.1	---	---	0.4	0.2
MW-14	**06/30/97***	**-31.2**	**4.56**	**<1.0**	**41**	**0.29**	**---**	**---**

Table 2. Field Parameters/Analytical Results - Chevron\RMC Lonestar Facility CPS#206142, 333 - 23rd Avenue, Oakland, California (continued)

Well ID	Date	Oxidation Reduction Potential (mV)	Dissolved Oxygen	Nitrate	Sulfate	Ferrous Iron	Phosphate	Ammonia
			<----------mg/L---------->					
R-2	11/09/95	---	0.44	0.6	---	---	0	0
A	11/09/95	---	0.42	1	---	---	0.00	4

EXPLANATIONS:

mV = Millivolts
mg/L = Miligrams per liter
--- = Not Measured/Not Analyzed
OR = Over-range of instrument

NOTES:

Data prior to December 8, 1996, was provided by Geraghty & Miller, Inc.

* Measurement after purging. See actual field sheets for complete readings/measurements.

' ORC removed before field measurement recorded.

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Table 3. Soil Analytical Results - Chevron/RMC Lonestar Facility CPS #206142, 333 23rd Avenue, Oakland, California.

Sample ID	Depth (feet)	Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TPHd
			<----------ppm---------->						
MW14-6	6.0	06/20/97	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<1.0
SP(A-D)COMP	—	06/20/97	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	3.5[1]	

EXPLANATION:

TPHg = Total Petroleum Hydrocarbons as gasoline
MTBE = Methyl t-Butyl Ether
TPHd = Total Petroleum Hydrocarbons as diesel
ppm = *Parts per million*
— = Not analyzed/not applicable

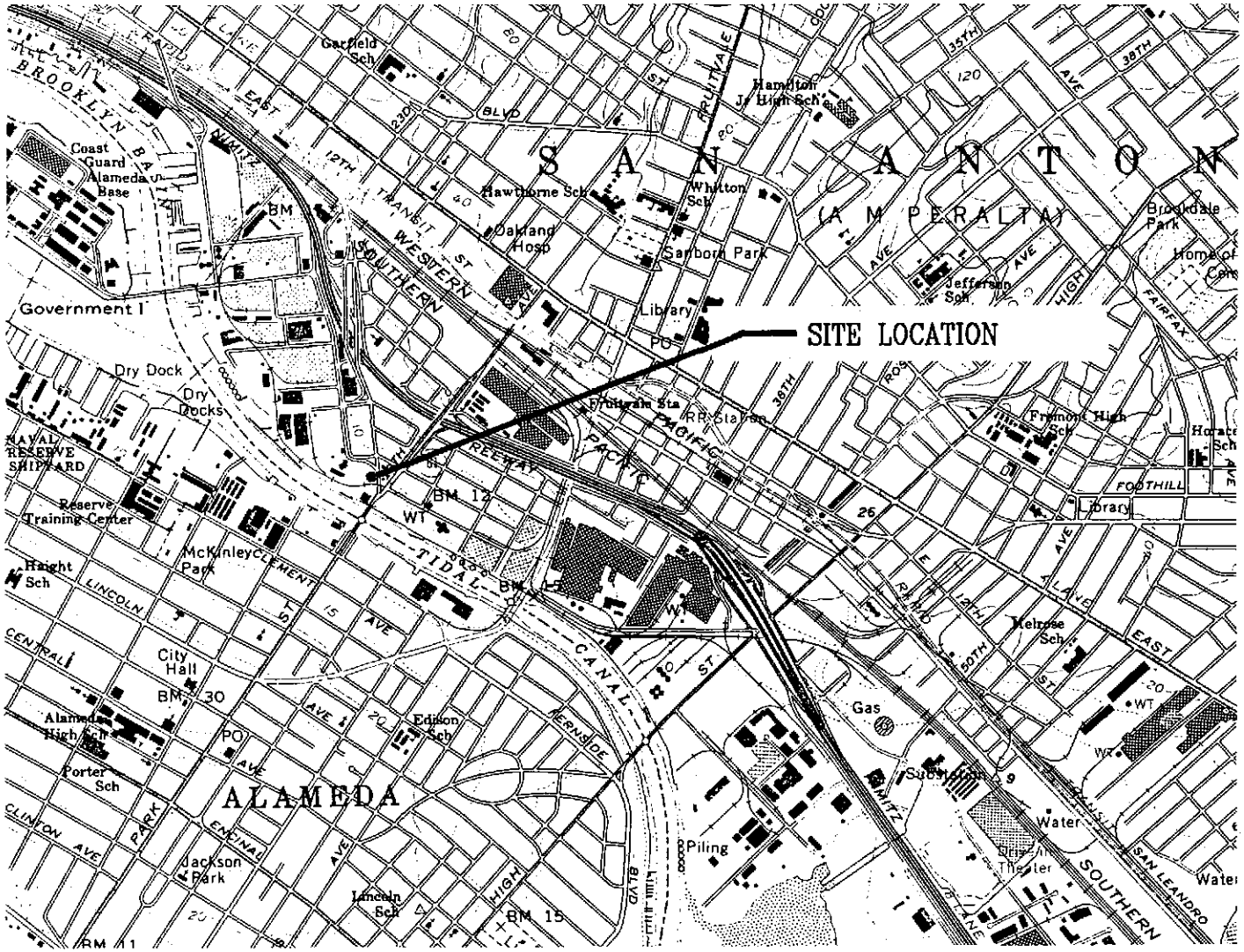
ANALYTICAL METHODS:

TPHg and TPHd = EPA Method 8015Mod
Benzene, toluene, ethylbenzene, xylenes, and MTBE = EPA Method 8020

ANALYTICAL LABORATORY:

Sequoia Analytical (ELAP #1210)

6338.01-1



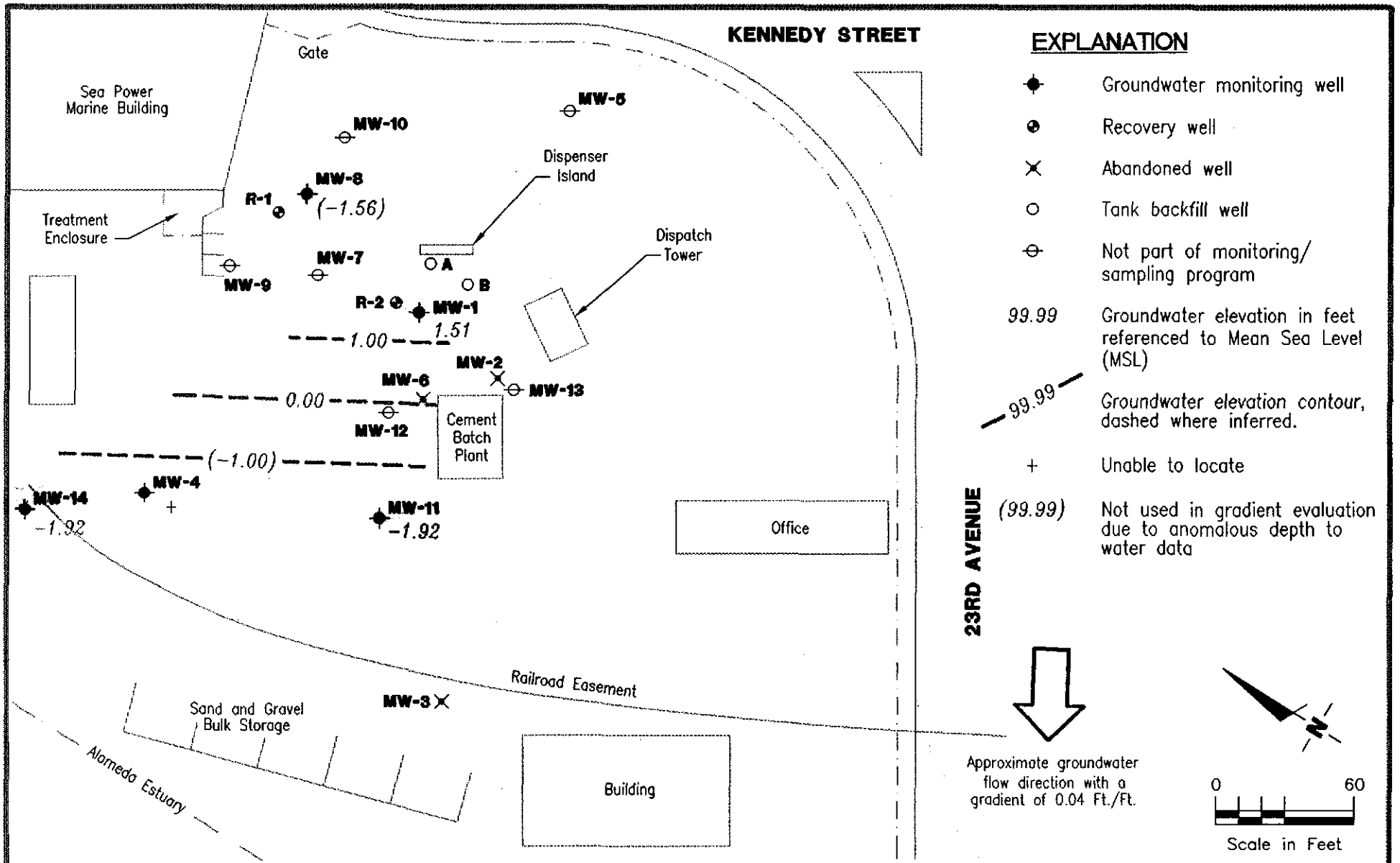
Base Map: USGS Topographic Map

Gettler - Ryan Inc.
6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

VICINITY MAP
Chevron/RCM Lonestar Facility CPS #206142
333 23rd Avenue
Oakland, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
6338		July, 1997	



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

POTENTIOMETRIC MAP
Chevron/RMC Lonestar Facility CPS #206142
333 23rd Avenue
Oakland, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
6338.01		July, 1997	

APPENDIX A

G-R FIELD METHODS AND PROCEDURES

GETTLER - RYAN
FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan, Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the of these plans contents prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Exploratory soil borings are drilled by a California-licensed well driller. A GR geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the exploratory soil boring with a split-barrel sampler or other appropriate sampling device fitted with clean brass or stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soil is described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based on:

a. depth relative to underground storage tanks and existing ground surface
b. depth relative to known or suspected groundwater
c. presence or absence of contaminant migration pathways
d. presence or absence of discoloration or staining
e. presence or absence of obvious gasoline hydrocarbon odors
f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

A PID is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing some soil from one of the sample tubes not retained for chemical analysis and immediately covering the end of the tube with a plastic cap. The PID probe is inserted into the headspace inside the tube through a hole in the plastic cap. Head-space screening results are recorded on the boring log.

Head-space screening procedures are performed and results recorded as reconnaissance data. GR does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.

Stockpile Sampling

Stockpile samples consist of four individual sample liners collected from each 100 cubic yards (yd^3) of stockpiled soil material. Four arbitrary points on the stockpiled material are chosen, and discrete soil sample is collected at each of these points. Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless steel or brass tube into the stockpiled material with a wooden mallet or hand driven soil sampling device. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, placed in the cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory borings with Schedule 40 polyvinyl Chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen which generally extends from the total well depth to a point above the groundwater. An appropriately-sized sorted sand is placed in the annular space adjacent to the entire screened interval. A bentonite transition seal is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on plastic sheeting or stored in drums depending on site conditions and regulatory requirements. Stockpile samples are collected and analyzed on the basis of one composite sample per 50 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Wellhead Survey

The top of the newly-installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL).

Well Development

The purpose of well development is to improve hydraulic communication between the well and surrounding aquifer. Prior to development, each well is monitored for the presence of separate-phase hydrocarbons and the depth-to-water is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Groundwater Monitoring and Sampling

Decontamination Procedures

All physical parameter measuring and sampling equipment are decontaminated prior to sample collection using Alconox or equivalent detergent followed by steam cleaning with deionized water. During field sampling, equipment placed in a well are decontaminated before purging or sampling the next well by cleaning with Alconox or equivalent detergent followed by steam cleaning with deionized water.

Water-Level Measurements

Prior to sampling each well, the static water level is measured using an electric sounder and/or calibrated portable oil-water interface probe. Both static water-level and separate-phase product thickness are measured to the nearest ± 0.01 foot. The presence of separate-phase product is confirmed using a clean, acrylic or polyvinylchloride (PVC) bailer, measured to the nearest ± 0.01 foot with a decimal scale tape. The monofilament line used to lower the bailer is replaced between borings with new line to preclude the possibility of cross-contamination. Field observations (e.g. product color, turbidity, water color, odors, etc.) are noted. Water-levels are measured in wells with known or suspected lowest dissolved chemical concentrations to the highest dissolved concentrations.

Sample Collection and Labeling

A temporary PVC screen is installed in the boring to facilitate a grab groundwater sample collection. Samples of groundwater are collected from the surface of the water in each well or boring using the teflon bailer or a pump. The water samples are then gently poured into laboratory-cleaned containers and sealed with teflon-lined caps, and inspected for air bubbles to check for headspace. The samples are then labeled by an adhesive label, noted in permanent ink, and promptly placed in an ice storage. A Chain-of-Custody Record is initiated and updated throughout handling of the samples, and accompanies the samples to the laboratory certified by the State of California for analyses requested.

APPENDIX B

WELL INSTALLATION PERMIT AND BORING LOG

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 Rmc Lonestar Facility
333 23rd Avenue
Oakland, CA

CLIENT
Name Chevron Products Company
Address P.O. Box 6004 Voice (510) 842-9655
City San Ramon, CA Zip 94583

APPLICANT
Name Gettler-Ryan Inc.
Greg Gurss Fax 916-631-1317
Address 3140 Gold Camp Dr. #240 Voice 916-631-1300
City Rancho Cordova, CA Zip 95670

TYPE OF PROJECT

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

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

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

DRILLER'S LICENSE NO. 522125

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 4 ft. Number 1 (MW-14)

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 6/18/97
ESTIMATED COMPLETION DATE 6/24/97

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

APPLICANT'S SIGNATURE Stephen J. Carter, RG Date 6/9/97

FOR OFFICE USE

PERMIT NUMBER 97373
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 18 Jun 97
Wyman Hong

91992

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS *LIQUID LIMIT GREATER THAN 50%*		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

LL	- Liquid Limit (%)
PI	- Plastic Index (%)
PID	- Volatile Vapors in ppm
MA	- Particle Size Analysis
2.5 YR 6/2	- Soil Color according to Munsell Soil Color Charts (1975 Edition)
5 GY 5/2	- GSA Rock Color Chart

☒	- No Soil Sample Recovered
■	- "Undisturbed" Sample
⊠	- Bulk or Classification Sample
▽	- First Encountered Ground Water Level
▼	- Piezometric Ground Water Level
Penetration	- Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 1 foot are indicated on the logs

Unified Soil Classification - ASTM D 2488-85 and Key to Test Data

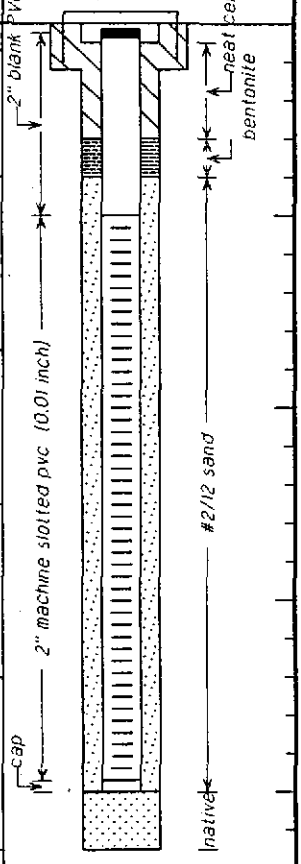
Gettler-Ryan, Inc.

Log of Boring MW-14

PROJECT: *Chevron/RMC Lonestar Facility CPS #206142*	LOCATION: *333 23rd Avenue, Oakland, CA*
G-R PROJECT NO. : *6338.01*	SURFACE ELEVATION: *5.56 feet MSL*
DATE STARTED: *06/20/97*	WL (ft. bgs): *8.0* DATE: *06/20/97* TIME: *15:00*
DATE FINISHED: *06/20/97*	WL (ft. bgs): *8.0* DATE: *06/20/97* TIME: *16:20*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *21.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
0							PAVEMENT – concrete.
	28		MW14-3			GC	CLAYEY GRAVEL WITH SAND (GC) – very dark gray (5Y 3/1), moist, dense; 40% fine to coarse gravel, 30% clay, 30% fine to coarse sand.
5	41	11	MW14-6			CH	CLAY (CH) – black (5Y 2.5/1), moist, stiff, high plasticity; 100% clay ; Bay Mud. Color changes to gray (2.5Y 3/0), up to 5% fine to coarse sand at 6 feet.
10	43	8	MW14-11			CL	CLAY (CL) – pale brown (10YR 6/3), saturated, medium stiff, medium plasticity; 100% clay.
						CL	SANDY CLAY (CL) – light yellowish brown (2.5Y 6/4), saturated, medium stiff, low plasticity; 60% clay, 40% fine to coarse sand.
15	35	9	MW14-16			SP	SAND (SP) – light yellowish brown (2.5Y 6/4), saturated, dense; 100% fine to medium sand.
20	57	32	MW14-21				
25							(* = converted to equivalent standard penetration blows/ft.)
30							
35							

WELL DIAGRAM



JOB NUMBER: *6338.01*

APPENDIX C

WELL DEVELOPMENT AND SAMPLING FIELD DATA SHEETS

MONITORING WELL
OBSERVATION SUMMARY SHEET

CHEVRON #: RMC Lonestar G-R JOB #: 6338.85

LOCATION: 333 23rd Ave DATE: 6-30-97

CITY: Oakland CA TIME:

Well ID	Total Depth	Depth to Water	Product Thickness	TOB or TOC	Comments
MW-1	18.0	8.65	0	TOC	
MW-8	18.7	11.65			
MW-11	20.4	8.63			
MW-14	20.0	7.48			

Comments:

Sampler: Assistant:

Site: Chevron # [illegible] 333 23rd Ave Oakland CA

Job # 6338.81

Date: 6-30-97

Well	Time	Volume	pH	Conduct -ivity	Temp.	D-Ox.	Redox	Total Alkalinity
MW-14	1650	20						
		22	7.58	214	19.1	7.36	-33.7	250
		24	7.55	204	19.2	7.06	-32.0	200
		26	7.57	210	19.1	4.83	-31.0	225
		28	7.56	204	19.4	4.56	-31.2	200
MW-11	17:32	0						
	1734	2	7.36	286	19.8	2.27	-22.7	325
	1736	4	7.44	290	19.5	2.93	-25.0	30
	1738	6	7.45	293	20.0	3.00	-25.1	300
	1742	7	7.45	290	19.8	2.99	-25.0	350
MW-1	1800	0	ORC in well					
	1806	6.2	7.89	211	17.8	1.11	-49.3	350
	1812	12.5	7.29	180	17.8	1.05	-16.5	300
	1818	18.75	7.29	181	17.7	0.67	-16.5	325
	1824	19.0	7.29	188	17.7	1.00	-16.5	300
MW 8	1837	0	~~8.69~~	ORC in well				
	1840	4.8	7.85	~~8.69~~ 278	19.8	OR	-103.3	1400
	1843	9.6	~~7.80~~ 7.85	248	20.2	9.57	-49.8	1350
	1846	14.4	7.80	250	20.4	9.48	-50.1	1400
	1846	15.0	7.82	253	20.3	9.50	-50.2	1500

WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Cline DATE 6-30-97

ADDRESS 333 23rd Ave JOB # 6338.85

CITY E. Oakland CA SS# RMC Lonestar

Well ID MW-1 Well Condition Okay

Well Location Description

Well Diameter 2" - (4") in Hydrocarbon Thickness Ø

Total Depth 18' ft

Depth to Liquid 8.65 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.80
Factor	3" = 0.38		
(VF)	4" = 0.66		

# of casing Volume 3x 9.35 x 0.17 (0.66) x(VF) 6.17 #Estimated purge Volume 18.52 gal.

Purge Equipment Stack Sampling Equipment Bailer

Did well dewater No If yes, Time Volume

Starting Time 1800 Purging Flow Rate 1.02 gpm.

Sampling Time 1824

Time	pH	Conductivity	Temperature	Volume
1806	7.89	211	17.8	6.2
1812	7.79	180	17.8	12.5
1818	7.29	177	17.7	18.7
1824	7.29	178	17.7	19.00

Weather Conditions Clear & Breezy

Water Color: Clear Odor: None

Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
MW-1	3x40ml VOA	Y	HCl	SEQ	GasBTEX MTBE
	2x1Liter Amber		None		Diesel
	1x500ml Poly		HCl		Ferrous Iron
	1x1000ml Poly		None		Nitrate Sulfate

Comments

ORC in well 5 Block

I dropped it when reinstalling in well

WELL SAMPLING FIELD DATA SHEET

SAMPLER: F. Cline　　DATE: 6-30-97

ADDRESS: 333 23rd Ave　　JOB #: 6338.85

CITY: E. Oakland CA　　SS#: Civic Lonestane

Well ID: MW-8　　Well Condition: Okay

Well Location Description:

Well Diameter: 2" (4") in　　Hydrocarbon Thickness: -0-

Total Depth: 18.17 ft

Depth to Liquid: 11.65 ft

Volume Factor (VF)			
2" = 0.17	6" = 1.50	12" = 5.80
3" = 0.38		
4" = 0.66		

# of casing Volume: 3x 7.05 × 0.17 – (0.66) ×(VF) 4.7 #Estimated purge Volume 13.9 gal.

Purge Equipment: Stack　　Sampling Equipment: Bailer

Did well dewater: No　　If yes, Time: ___　　Volume: ___

Starting Time: 18:37　　Purging Flow Rate: 1.6 gpm.

Sampling Time: 1849

Time	pH	Conductivity	Temperature	Volume
1840	8.69	278	19.8	4.8
1843	7.85	248	20.2	9.6
1846	7.80	250	20.4	14.4
1849	7.52	253	20.3	15.0

Weather Conditions: Clear & Breezy

Water Color: Clear　　Odor: Mild.

Sediment Description: None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
MW-8	3x40ml VOA	Y	HCL	SEQ	Gas BTEX MTBE
	2x1liter Amber	|	None	|	Diesel
	1x500ml Poly	|	HCL	|	Ferrous Iron
	1x1000ml Poly	↓	None	↓	Nitrate Sulfate

Comments: ~~ORC in Well~~ 4" Block (5) Blocks

WELL SAMPLING FIELD DATA SHEET

SAMPLER: F. Cline DATE: 6-30-97

ADDRESS: 333 23rd Ave JOB #: 6338.85

CITY: Oakland CA SS#: EMC Lonestar

Well ID: MW-11 Well Condition: Okay

Well Location Description:

Well Diameter: (2") - 4" in Hydrocarbon Thickness: 0

Total Depth: 20.4 ft

Depth to Liquid: 8.63 ft

Volume Factor (VF)			
2" = 0.17	6" = 1.50	12" = 5.80
3" = 0.38		
4" = 0.66		

# of casing 3x Volume: 11.79 × (0.17) - 0.66 x(VF) 2.0 #Estimated purge Volume 6.0 gal.

Purge Equipment: Stack Sampling Equipment: Bailer

Did well dewater: No If yes, Time ___ Volume ___

Starting Time: 1732 Purging Flow Rate: 1 gpm.

Sampling Time: 1792

Time	pH	Conductivity	Temperature	Volume
1734	7.36	286	19.8	2
1736	7.44	290	19.5	4
1738	7.45	293	20.6	6
1748	7.45	290	19.8	7

Weather Conditions: Clear & Breezy

Water Color: Clear Odor:

Sediment Description: None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
MW-11	3x40ml VOA	Y	HCL	SEQ	Gas BTEX MTBE
↓	2x1liter Amber	↓	None	↓	Diesel
	1x500ml Poly		HCL		Ferrous Iron
	1x1000ml Poly		None		Nitrate Sulfate

Comments

SAMPLER	F. Cline	DATE	6-30-97
ADDRESS	333 23rd Ave	JOB #	6338.01
CITY	Oakland CA	SS#	BMC Lonestar

Well ID: MW-14   Well Condition: Okay

Well Location Description:

Well Diameter: 2" in   Hydrocarbon Thickness: 0

Total Depth: 20' ft

Depth to Liquid: 7.48 ft

Volume Factor (VF)			
2" = 0.17	6" = 1.50	12" = 5.80	
3" = 0.38			
4" = 0.66			

# of casing Volume: 12.62 x 0.17 x(VF) 2.12 #Estimated purge Volume ______ gal.

Purge Equipment: Stack/Bailer   Sampling Equipment: D. Bailer

Did well dewater: No   If yes, Time ______   Volume ______

Starting Time: 16:20   Purging Flow Rate: 1 gpm gpm.

Sampling Time: 16:58

Surge well for 15 minutes.

Time	pH	Conductivity	Temperature	Volume
16:32	7.71	259	19.0	2
1634	7.70	260	19.1	4
16:36	7.73	280	18.7	6 8
1638	7.82	292	18.7	8
16:40	7.60	216	18.5	10
1642	7.62	216	18.5	12
1644	7.62	215	18.7	14
1646	7.62	216	18.6	16
1648	7.63	217	18.6	18 20
1650	7.63	216	18.7	22 20
1652	7.66	214	19.1	24 22
1654	7.58	204	19.2	26 24
1656	7.55		19.1	26
1658	7.57	210	19.1	28
	~~7.56~~	204	19.4	

Weather Conditions: ______

Water Color: ______   Odor: ______

Sediment Description: ______

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
MW-14	3x40ml VOA	Y	HCL	SEQ	Gas BTXE MTBE
	2x1 liter Amber		None		Diesel
	1x500ml Poly		HCL		Ferrous Iron
	1x1000ml Poly		None		Nitrate Sulfate

Comments: Well development (monitor & sample w/ OM wells.)

Weather clear

Water color clear   Light silt   No Odor -

APPENDIX D

WELLHEAD SURVEY REPORT

Virgil Chavez Land Surveying
312 Georgia Street, Suite 200
Vallejo, California 94590
(707) 553-2476

July 17, 1997
Project No. 1104-69

Barbara Sieminski
Gettler-Ryan, Inc.
6747 Sierra Ct. Suite J
Dublin, Ca. 94568

Subject: Monitoring Well Survey
Chevron/RMC Lonestar Facility
333 23rd Avenue
Oakland, Ca.

Dear Barbara:

This is to confirm that we have proceeded at your request to survey the monitoring wells at the above referenced location. Our findings are shown in the tables below. The survey was performed on July 3, 1997. The benchmark for the survey was a cut square in the northerly curb of East 7th Street, at the east return at the northeast corner of East 7th Street and Peterson Street. Measurement locations were marked at the approximate north side of top of box. The second table is for top of casing locations, using the top of curb on the northerly side of 23rd Avenue, using the northeasterly top of rail (of the railroad tracks running through the site) as reference line.
Benchmark Elevation 17.91 feet, MSL.

Well No.	Rim Elevation	TOC Elevation
MW - 1	12.17'	10.16'
MW - 2	abandoned	
MW - 3	abandoned	
MW - 4	not found	
MW - 5	11.28'	11.11'
MW - 6	abandoned	
MW - 7	10.38'	10.15'
MW - 8	10.85'	10.09'
MW - 9	10.30'	10.13'
MW - 10	11.08'	10.91'
MW - 11	6.99'	6.71'
MW - 12	6.21' (conc.)	
MW - 13	not found	
MW - 14	6.03'	5.56'
R - 1	10.58'(NW Cor)	
R - 2	10.52'(NW Cor)	

Virgil Chavez Land Surveying
312 Georgia Street, Suite 200
Vallejo, California 94590
(707) 553-2476

July 17, 1997
Project No. 1104-69
Page 2

Monitoring Well Survey
Chevron/RMC Lonestar Facility
333 23rd Avenue
Oakland, Ca.

Well No.	Station	Offset
MW- 1	1+82.53	-216.44'(Lt.)
MW- 5	2+69.12	-151.92'(Lt.)
MW- 7	1+97.88	-260.29'(Lt.)
MW- 8	2+33.22	-265.47'(Lt.)
MW- 9	2+01.37	-298.40'(Lt.)
MW- 10	2+58.60	-249.63'(Lt.)
MW- 11	0+91.72	-232.93'(Lt.)
MW- 12	1+37.07	-227.7'+/-(Lt.)
MW- 14	0+96.57	-388.86'(Lt.)
R - 1	(NW Cor)2+25.47'	-276.56'(Lt.)
R - 2	(NW Cor)1+86.20'	-224.78'(Lt.)

Sincerely,

LICENSED LAND SURVEYOR
VIRGIL D. CHAVEZ
No. 6323
Exp. 12-31-98
STATE OF CALIFORNIA

Virgil D. Chavez, P.L.S. 6323

APPENDIX E

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

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

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Client Proj. ID: Chev. Lonestar Fac.CPS#206142
Lab Proj. ID: 9707004

Sampled: 06/30/97
Received: 07/01/97
Analyzed: see below

Attention: Deanna Harding

Reported: 07/14/97

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9707004-02				
Sample Desc : **LIQUID,MW-11**				
Ferrous Iron	**mg/L**	**07/02/97**	**0.010**	**0.015**
Nitrate as Nitrate	**mg/L**	**07/02/97**	**1.0**	**350**
Sulfate	**mg/L**	**07/02/97**	**1.0**	**140**
Lab No: 9707004-03				
Sample Desc : **LIQUID,MW-8**				
Ferrous Iron	**mg/L**	**07/02/97**	**0.010**	**0.22**
Nitrate as Nitrate	mg/L	07/02/97	1.0	N.D.
Sulfate	**mg/L**	**07/02/97**	**1.0**	**17**
Lab No: 9707004-04				
Sample Desc : **LIQUID,MW-1**				
Ferrous Iron	**mg/L**	**07/02/97**	**0.010**	**5.6**
Nitrate as Nitrate	mg/L	07/02/97	1.0	N.D.
Sulfate	**mg/L**	**07/02/97**	**1.0**	**10**
Lab No: 9707004-05				
Sample Desc : **LIQUID,MW-14**				
Ferrous Iron	**mg/L**	**07/02/97**	**0.010**	**0.29**
Nitrate as Nitrate	mg/L	07/02/97	1.0	N.D.
Sulfate	**mg/L**	**07/02/97**	**1.0**	**41**

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

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Deanna Harding

Client Proj. ID: Chev. Lonestar Fac.CPS#206142
Sample Descript: TBLB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9707004-01

Sampled: 06/30/97
Received: 07/01/97

Analyzed: 07/08/97
Reported: 07/14/97

QC Batch Number: GC070897BTEX17A
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	108

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

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Deanna Harding

Client Proj. ID: Chev. Lonestar Fac.CPS#206142
Sample Descript: MW-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9707004-04

Sampled: 06/30/97
Received: 07/01/97

Analyzed: 07/10/97
Reported: 07/14/97

QC Batch Number: GC071097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**200**
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:		
Unidentified HC		**C10-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	82

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

Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-1	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	*Lab Number: 9707004-04*	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	950
Chromatogram Pattern:	C9-C24	W-Diesel

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	86

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

Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-1	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-04	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	600
Chromatogram Pattern:	C9-C24	W-Diesel

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	72

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-1 SG#2	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/11/97
Attention: Deanna Harding	Lab Number: 9707004-07	Reported: 07/14/97

QC Batch Number: GC070797HBPEXSG
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	600
Chromatogram Pattern:	C9-C24	W-Diesel

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	73

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Deanna Harding

Client Proj. ID: Chev. Lonestar Fac.CPS#206142
Sample Descript: MW-8
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9707004-03

Sampled: 06/30/97
Received: 07/01/97

Analyzed: 07/10/97
Reported: 07/14/97

QC Batch Number: GC071097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	1700
Methyl t-Butyl Ether	25	N.D.
Benzene	5.0	N.D.
Toluene	5.0	N.D.
Ethyl Benzene	5.0	N.D.
Xylenes (Total)	5.0	N.D.
Chromatogram Pattern:		
Unidentified HC		C10-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

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-8	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-03	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**200**	**5300**
Chromatogram Pattern:	**C9-C24**	**W-Diesel**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	129

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-8	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-03	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**200**	**3100**
Chromatogram Pattern:	**C9-C24**	**W-Diesel**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	71

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-8 SG#2	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/11/97
Attention: Deanna Harding	Lab Number: 9707004-06	Reported: 07/14/97

QC Batch Number: GC070797HBPEXSG
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**100**	**3000**
Chromatogram Pattern:	**C9-C24**	**W-Diesel**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	84

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-11	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-02	Reported: 07/14/97

QC Batch Number: GC070897BTEX17A
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	98

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

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-11	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-02	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**50**	**71**
Chromatogram Pattern:	**C9-C24**	**Unid.-HC**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	86

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-11	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-02	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup

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	71

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

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-14	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-05	Reported: 07/14/97

QC Batch Number: GC070897BTEX17A
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

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-14	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-05	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	86
Chromatogram Pattern:	C9-C24	Unid.-HC

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	91

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

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chev. Lonestar Fac.CPS#206142	Sampled: 06/30/97
6747 Sierra Court Suite G	Sample Descript: MW-14	Received: 07/01/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 07/07/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/08/97
Attention: Deanna Harding	Lab Number: 9707004-05	Reported: 07/14/97

QC Batch Number: GC0707970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup

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	79

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

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568
Attention: Deanna Harding

Client Proj. ID: Chev. Lonestar Fac.CPS#206142
Lab Proj. ID: 9707004

Received: 07/01/97
Reported: 07/14/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 35 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

TPGBMW: Sample 9707004-03 was diluted 10-fold.

TPHD: Sample 9707004-03 was diluted 4-fold.

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Chev. Lonestar Fac. CPS#206142
Matrix: Liquid
Work Order #: 9707004 -01, 02, 05
Reported: Jul 15, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC070897BTEX17A	GC070897BTEX17A	GC070897BTEX17A	GC070897BTEX17A	GC070897BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	9706G0101	9706G0101	9706G0101	9706G0101	9706G0101
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/8/97	7/8/97	7/8/97	7/8/97	7/8/97
Analyzed Date:	7/8/97	7/8/97	7/8/97	7/8/97	7/8/97
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.3	9.3	9.4	27	45
MS % Recovery:	93	93	94	90	75
Dup. Result:	9.9	9.8	9.9	29	49
MSD % Recov.:	99	98	99	97	82
RPD:	6.2	5.2	5.2	7.1	8.5
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK070897	BLK070897	BLK070897	BLK070897	BLK070897
Prepared Date:	7/8/97	7/8/97	7/8/97	7/8/97	7/8/97
Analyzed Date:	7/8/97	7/8/97	7/8/97	7/8/97	7/8/97
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.0	9.1	9.1	27	44
LCS % Recov.:	90	91	91	90	73
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	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

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Gettler Ryan/Geostrategies	Client Project ID:	Chev. Lonestar Fac. CPS#206142	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9707004-03, 04	Reported: Jul 15, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC071097BTEX02A	GC071097BTEX02A	GC071097BTEX02A	GC071097BTEX02A	GC071097BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	9706G5502	9706G5502	9706G5502	9706G5502	9706G5502
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/10/97	7/10/97	7/10/97	7/10/97	7/10/97
Analyzed Date:	7/10/97	7/10/97	7/10/97	7/10/97	7/10/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.9	9.5	9.7	29	60
MS % Recovery:	99	95	97	97	100
Dup. Result:	9.9	9.5	9.7	29	63
MSD % Recov.:	99	95	97	97	105
RPD:	0.0	0.0	0.0	0.0	4.9
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK071097	BLK071097	BLK071097	BLK071097	BLK071097
Prepared Date:	7/10/97	7/10/97	7/10/97	7/10/97	7/10/97
Analyzed Date:	7/10/97	7/10/97	7/10/97	7/10/97	7/10/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.1	7.6	7.8	23	49
LCS % Recov.:	81	76	78	77	82
MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
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

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Gettler Ryan/Geostrategies	Client Project ID:	Chev. Lonestar Fac. CPS#206142	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9707004-02-05	Reported: Jul 15, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0707970HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	B. Sullivan
MS/MSD #:	970700905
Sample Conc.:	700
Prepared Date:	7/7/97
Analyzed Date:	7/8/97
Instrument I.D.#:	GCHP4
Conc. Spiked:	1000 µg/L
Result:	1700
MS % Recovery:	100
Dup. Result:	1600
MSD % Recov.:	90
RPD:	6.1
RPD Limit:	0-50

LCS #:	BLK070797
Prepared Date:	7/7/97
Analyzed Date:	7/8/97
Instrument I.D.#:	GCHP4
Conc. Spiked:	1000 µg/L
LCS Result:	820
LCS % Recov.:	82

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

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

Gettler Ryan/Geostrategies	Client Project ID:	Chev. Lonestar Fac. CPS#206142	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9707004-02-05	Reported: Jul 15, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0707970HBPEXA SG
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	G. Fish
MS/MSD #:	BLK070797 SG
Sample Conc.:	N.D.
Prepared Date:	7/7/97
Analyzed Date:	7/8/97
Instrument I.D.#:	GCHP4A
Surr Result:	80
% Recovery:	80

LCS #:	BLK070797B SG
Prepared Date:	7/7/97
Analyzed Date:	7/8/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	1000 µg/L
LCS Result:	720
LCS % Recov.:	72

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

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SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies	Client Project ID:	Chev. Lonestar Fac. CPS#206142	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9707004-02-05	Reported: Jul 15, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Nitrate	Sulfate
QC Batch#:	IN0701973000ACB	IN0701973000ACB
Analy. Method:	EPA 300.0	EPA 300.0
Prep. Method:	N.A.	N.A.
Analyst:	S. Fong	S. Fong
MS/MSD #:	9706G3704	9706G3704
Sample Conc.:	N.D.	50
Prepared Date:	7/1/97	7/1/97
Analyzed Date:	7/2/97	7/2/97
Instrument I.D.#:	INIC2	INIC2
Conc. Spiked:	10 mg/L	10 mg/L
Result:	9.9	59
MS % Recovery:	99	90
Dup. Result:	9.7	56
MSD % Recov.:	97	60
RPD:	2.0	5.2
RPD Limit:	0-20	0-20

LCS #:	LCS070197	LCS070197
Prepared Date:	7/1/97	7/1/97
Analyzed Date:	7/2/97	7/2/97
Instrument I.D.#:	INIC2	INIC2
Conc. Spiked:	10 mg/L	10 mg/L
LCS Result:	10	9.5
LCS % Recov.:	100	95

MS/MSD	75-125	75-125
LCS	80-120	80-120
Control Limits		

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies	Client Project ID:	Chev. Lonestar Fac. CPS#206142	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9707004-02-05	Reported: Jul 15, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME0708976010MDA	ME0708976010MDA	ME0708976010MDA	ME0708976010MDA
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3010	EPA 3010	EPA 3010	EPA 3010
Analyst:	R. Butler	R. Butler	R. Butler	R. Butler
MS/MSD #:	9706F6201	9706F6201	9706F6201	9706F6201
Sample Conc.:	N.D.	N.D.	N.D.	0.37
Prepared Date:	7/8/97	7/8/97	7/8/97	7/8/97
Analyzed Date:	7/8/97	7/8/97	7/8/97	7/8/97
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	1.0	1.0	1.0	1.4
MS % Recovery:	100	100	100	100
Dup. Result:	1.0	1.0	1.0	1.4
MSD % Recov.:	100	100	100	100
RPD:	0.0	0.0	0.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20
LCS #:	BLK070897	BLK070897	BLK070897	BLK070897
Prepared Date:	7/8/97	7/8/97	7/8/97	7/8/97
Analyzed Date:	7/8/97	7/8/97	7/8/97	7/8/97
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	1.0	1.0	1.0	1.0
LCS % Recov.:	100	100	100	100
MS/MSD	80-120	80-120	80-120	80-120
LCS	80-120	80-120	80-120	80-120
Control Limits				

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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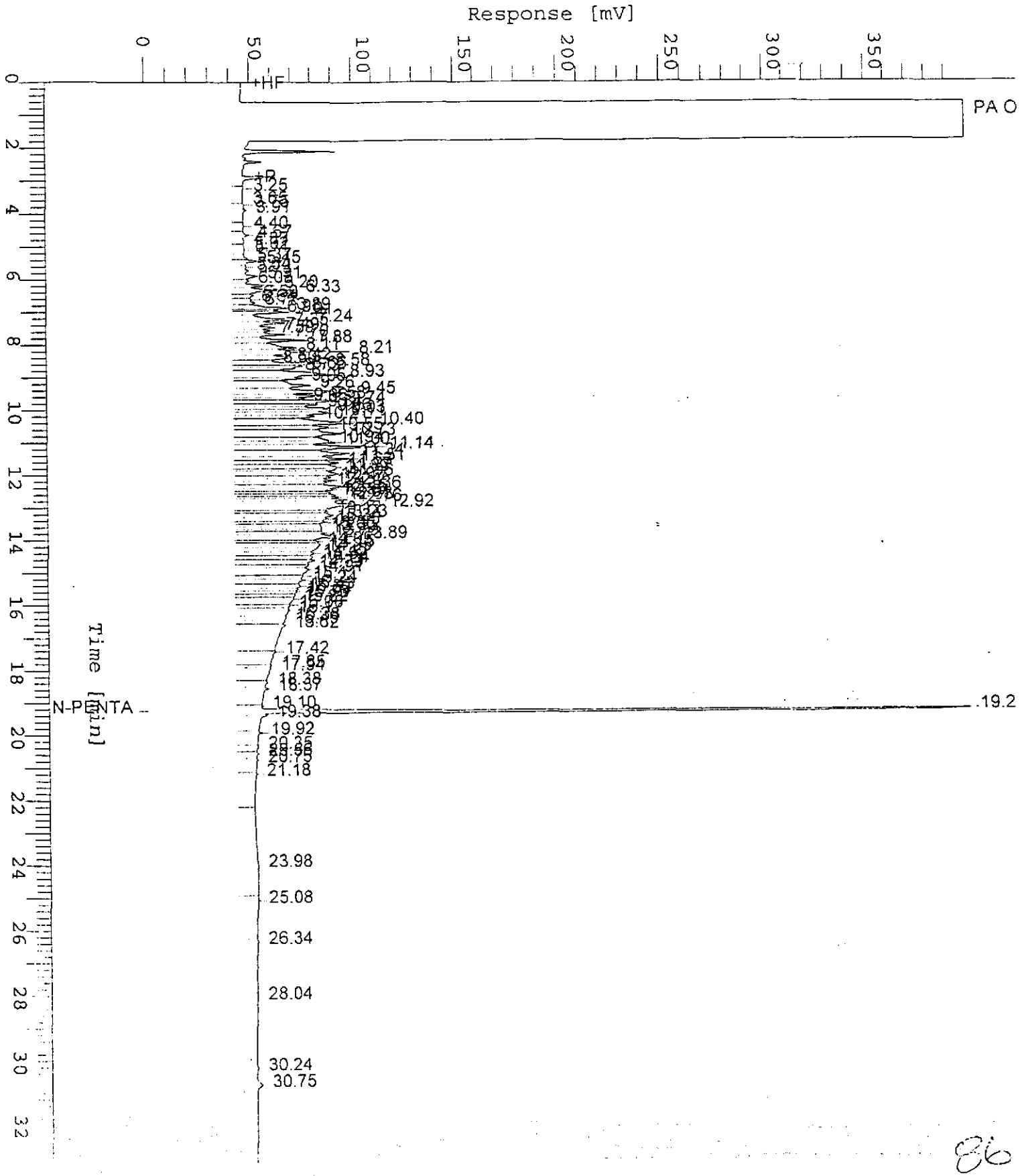
** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Chromatogram

Sample Name : DW9707004-4 (500:1)
FileName : S:\GHP_04\0713\707B027.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

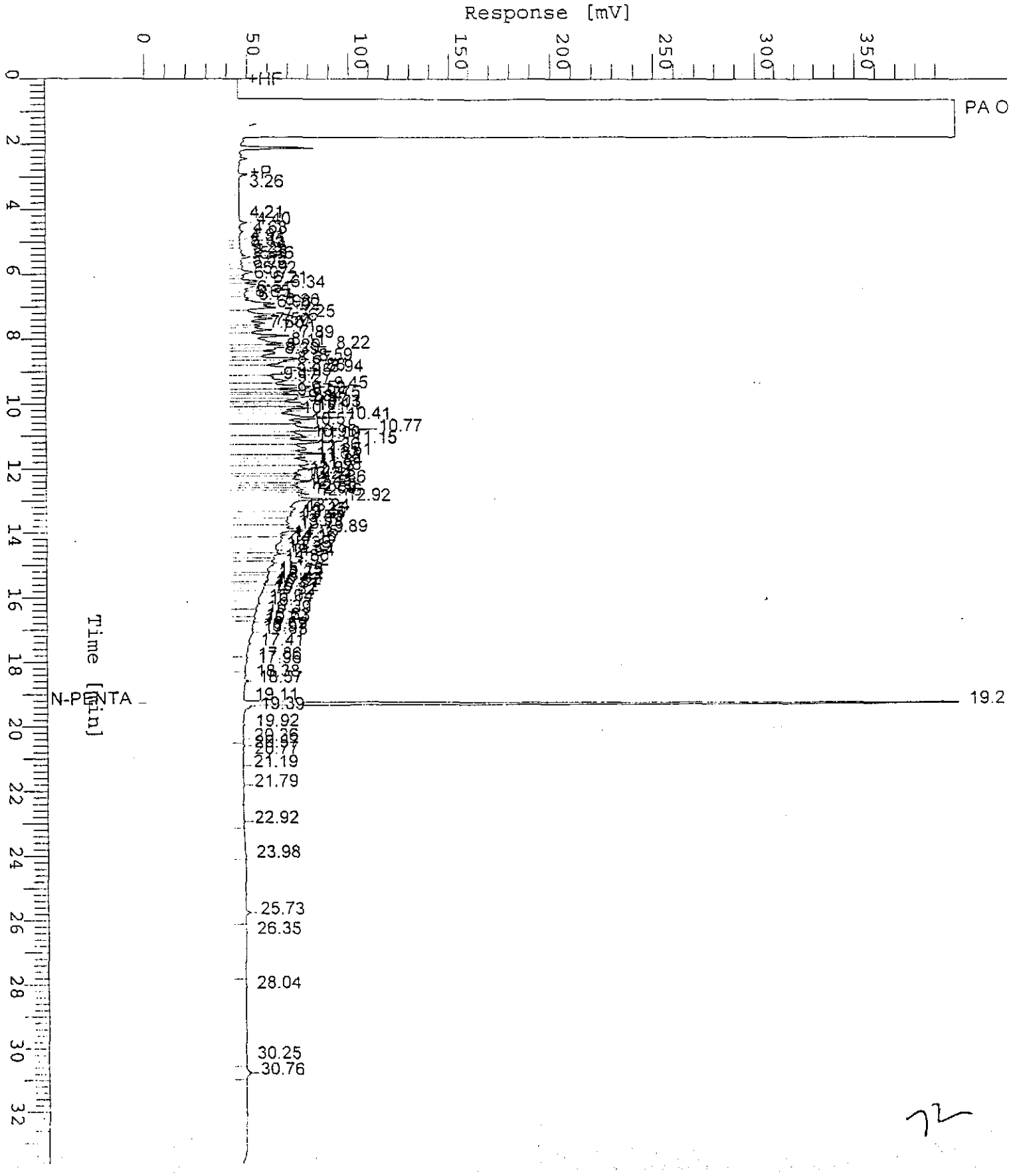
Sample #: MW-1 Page 1 of 1
Date : 7/8/97 03:03
Time of Injection: 7/8/97 02:29
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DW9707004-4 (500:1) SG
FileName : S:\GHP_04\0713\707B046.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-1 Page 1 of 1
Date : 7/8/97 17:49
Time of Injection: 7/8/97 17:15
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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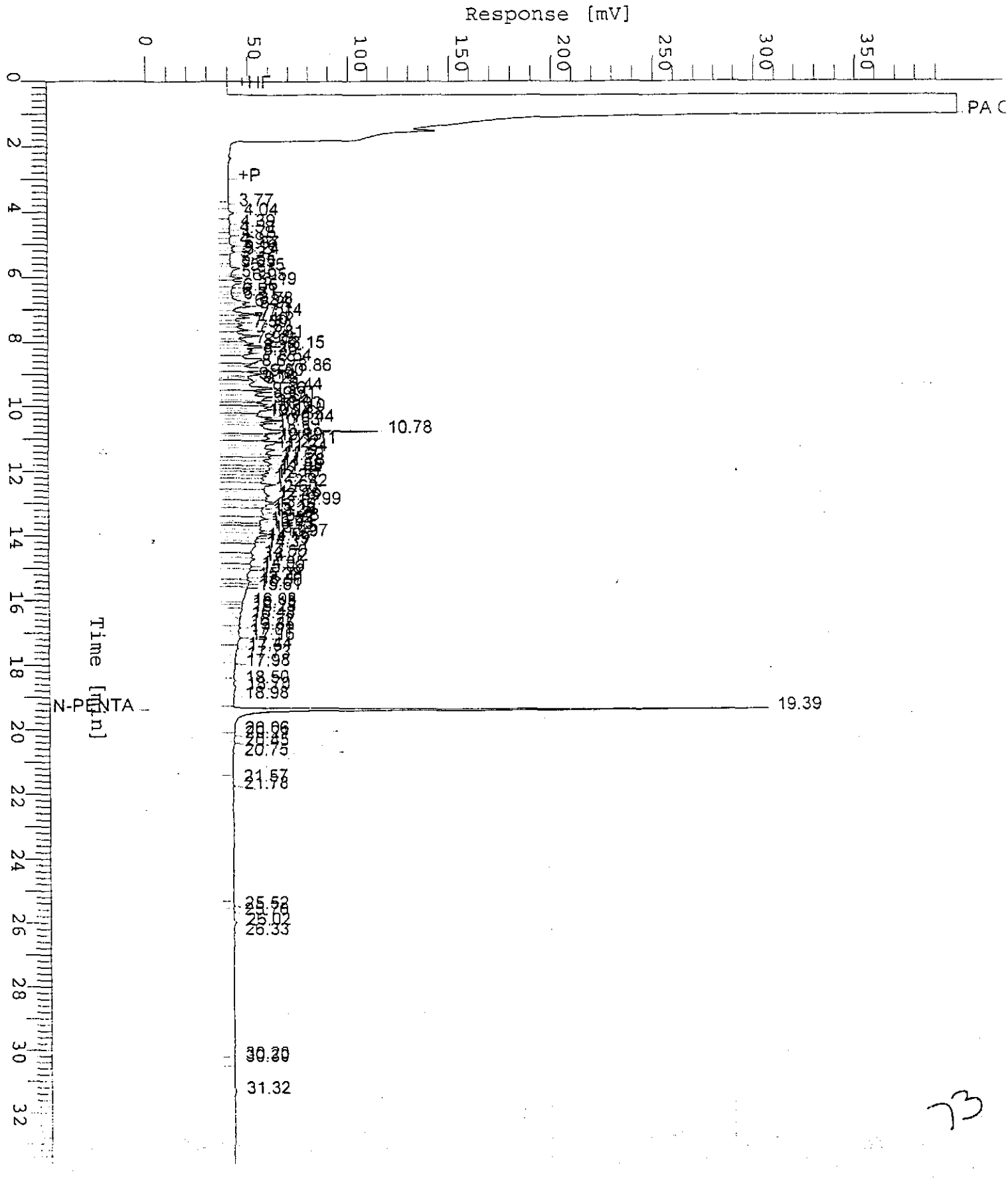
Chromatogram

Sample Name : DW9707004-7 (500:1) SG2
FileName : S:\GHP_04\0713\711A015.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-1 Page 1 of 1
Date : 7/11/97 17:39
Time of Injection: 7/11/97 17:06
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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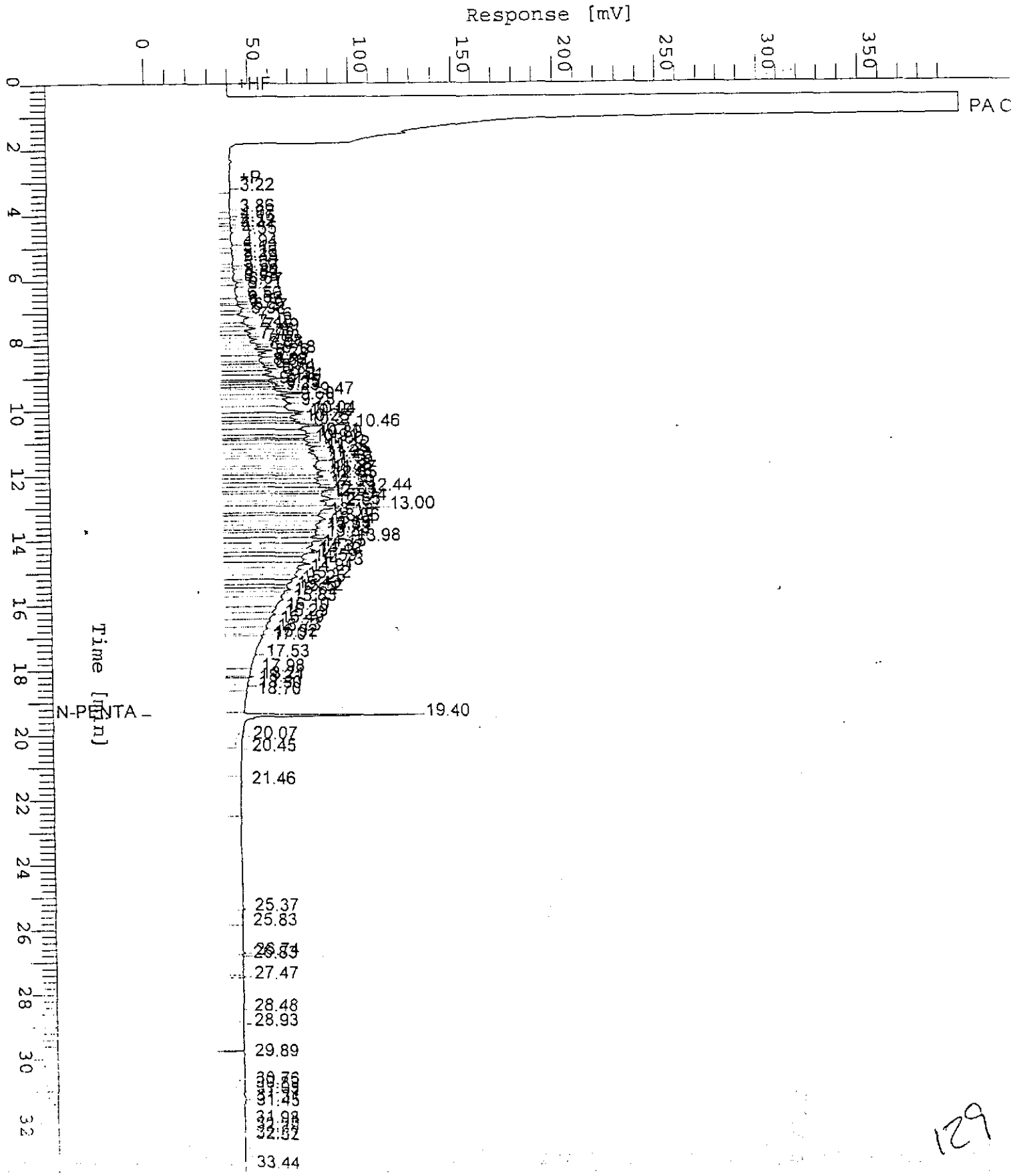
Chromatogram

Sample Name : DW9707004-3 (500:1*4) RS1
FileName : S:\GHP_04\0713\707A033.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

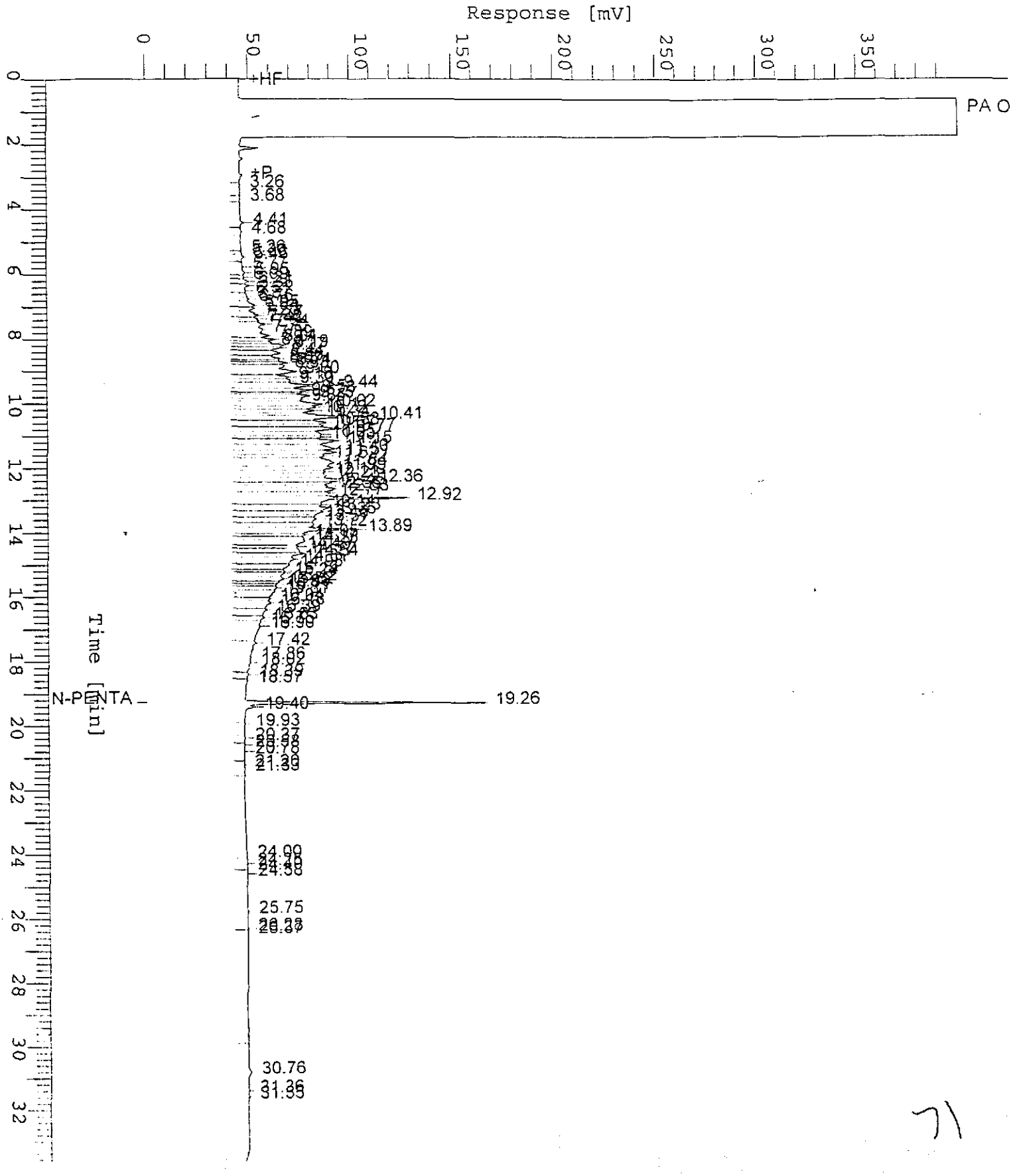
Sample #: MW-8 Page 1 of 1
Date : 7/8/97 08:30
Time of Injection: 7/8/97 07:58
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DW9707004-3 (500:1*4) SG
FileName : S:\GHP_04\0713\707B045.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-8 Page 1 of 1
Date : 7/8/97 17:07
Time of Injection: 7/8/97 16:34
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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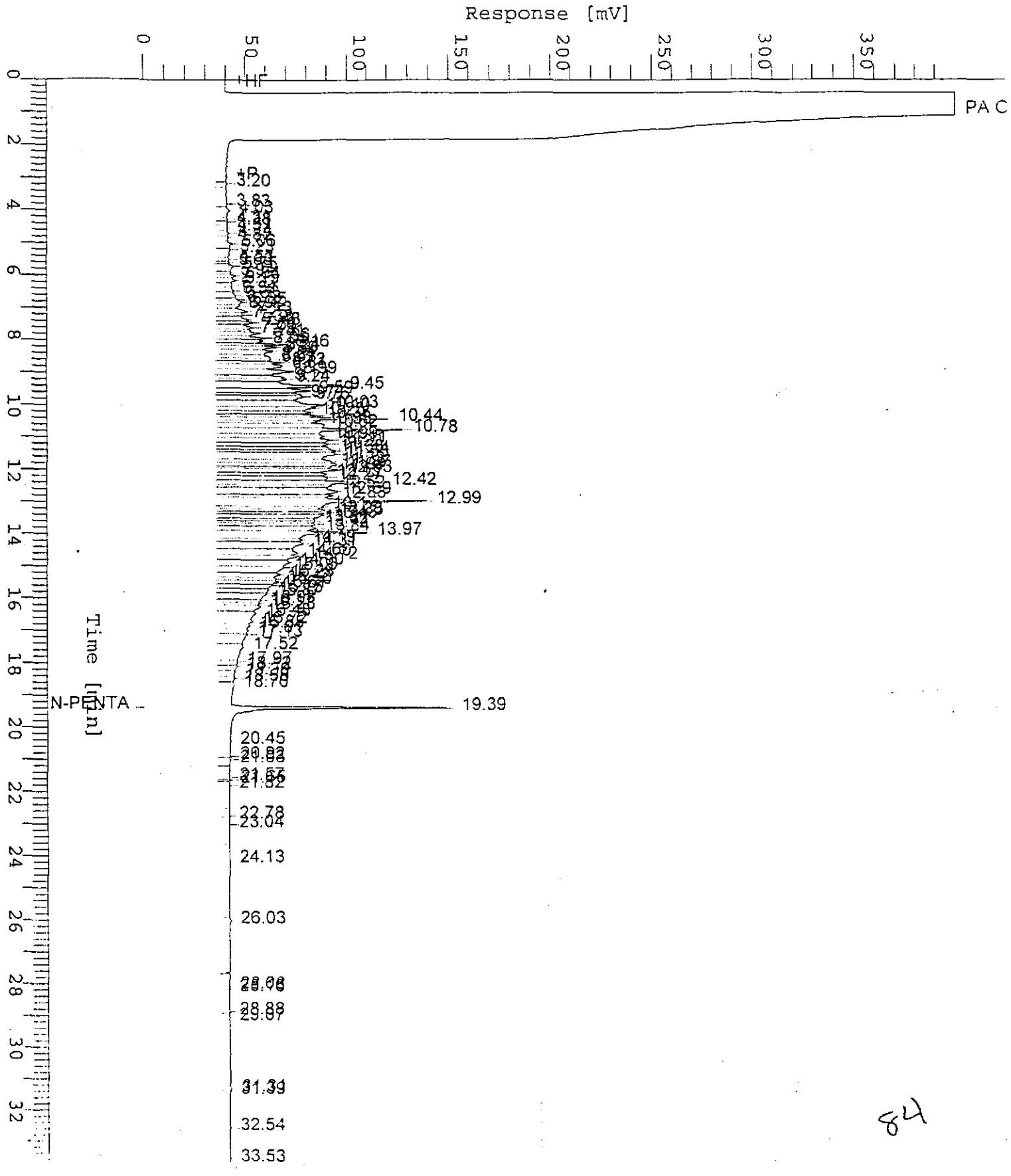
Chromatogram

Sample Name : DW9707004-6 (500:1*2) SG2
FileName : S:\GHP_04\0713\711A014.raw
Method : TPH04A
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 33.65 min
Plot Offset: 0 mV

Sample #: MW-8
Date : 7/11/97 16:58
Time of Injection: 7/11/97 16:24
Low Point : 0.00 mV
Plot Scale: 400.0 mV

High Point : 400.00 mV

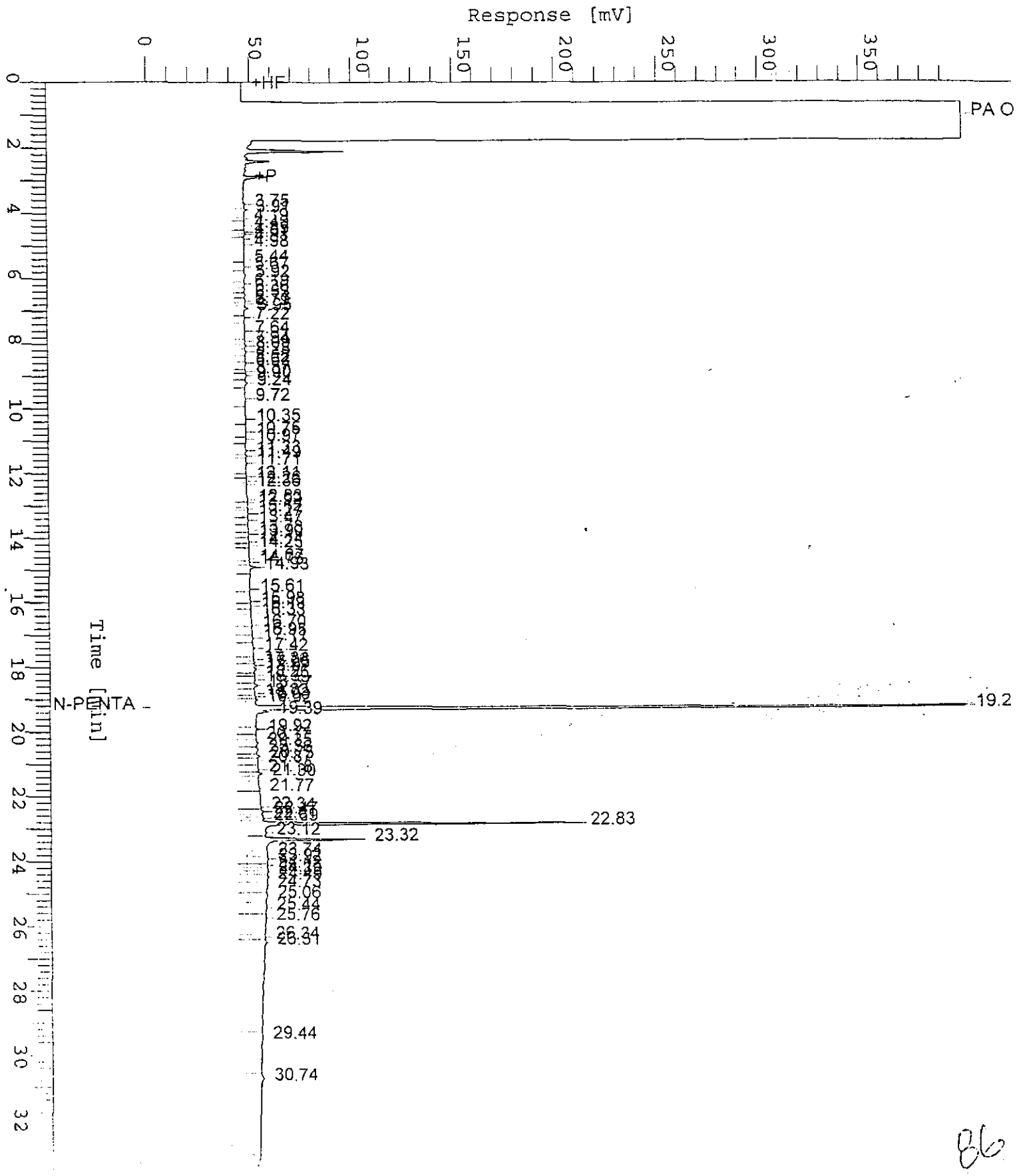


84

Chromatogram

Sample Name : DW9707004-2 (500:1)
FileName : S:\GHP_04\0713\707B025.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-11 Page 1 of 1
Date : 7/8/97 01:40
Time of Injection: 7/8/97 01:06
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV

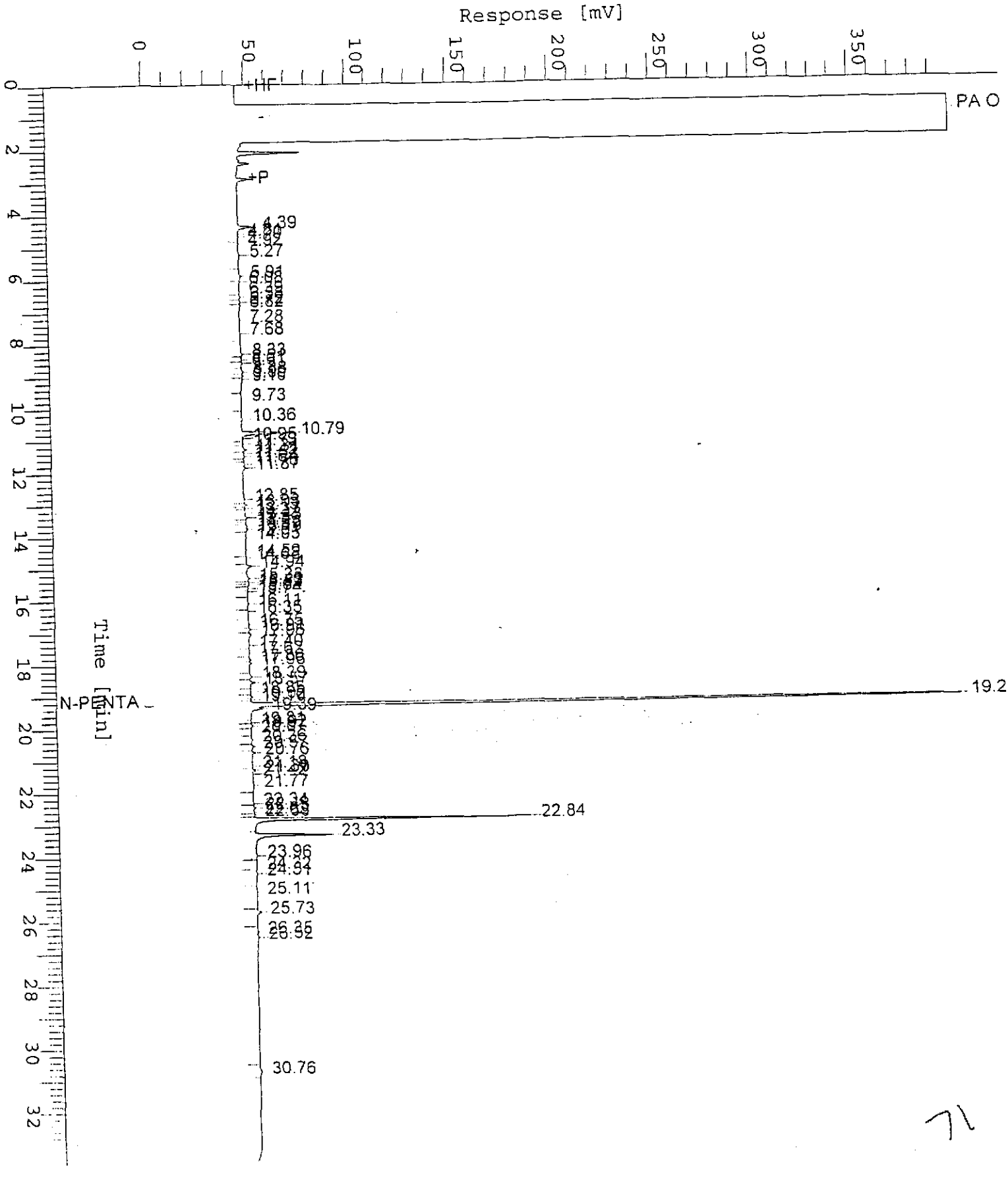


86

Chromatogram

mple Name : DW9707004-2 (500:1) SG
leName : S:\GHP_04\0713\707B044.raw
thod : TPH04A
art Time : 0.00 min End Time : 33.65 min
cale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-11
Date : 7/8/97 16:26
Time of Injection: 7/8/97 15:52
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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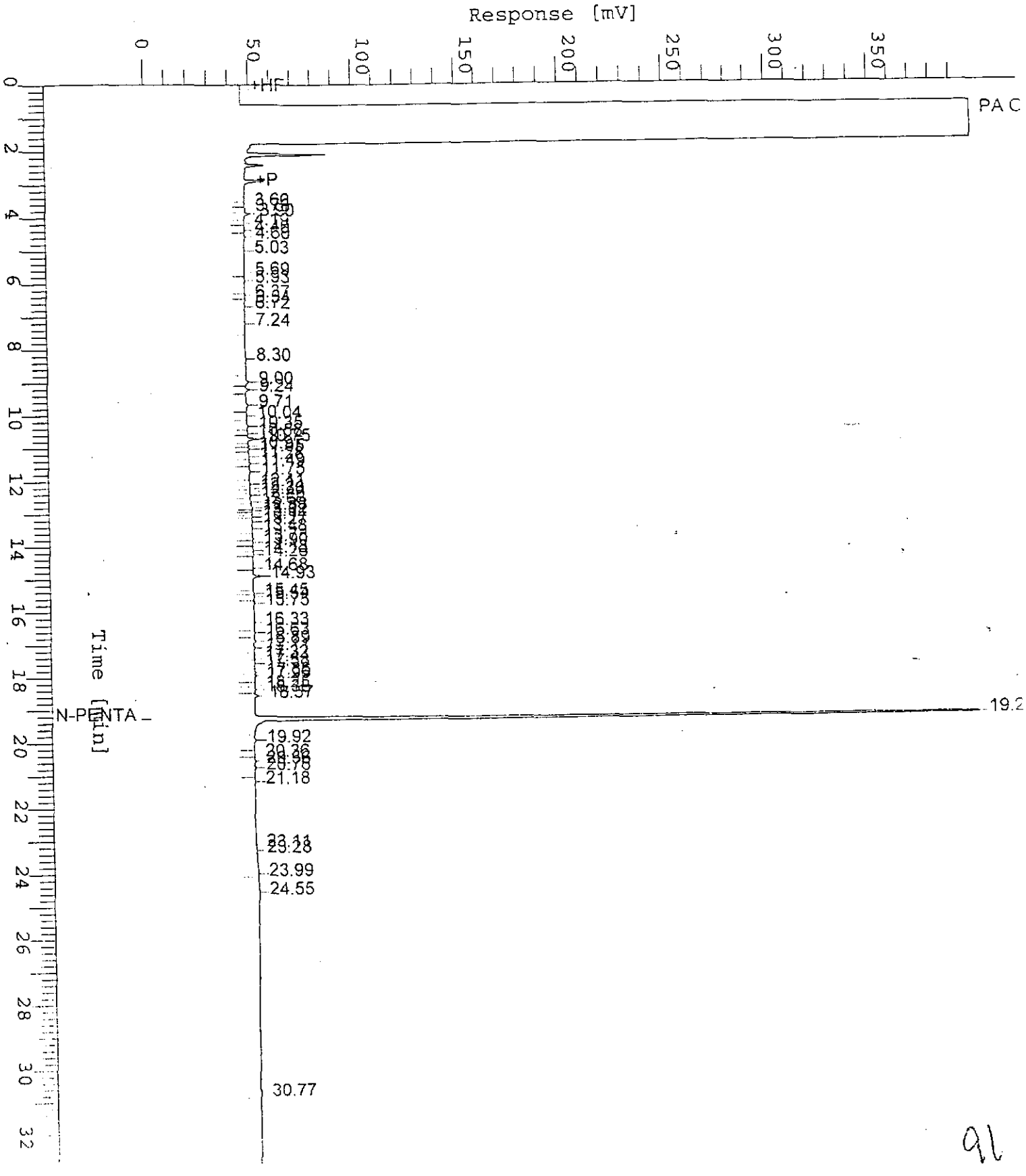
Chromatogram

Sample Name : DW9707004-5 (500:1)
FileName : S:\GHP_04\0713\707B028.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-14
Date : 7/8/97 03:44
Time of Injection: 7/8/97 03:10
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV

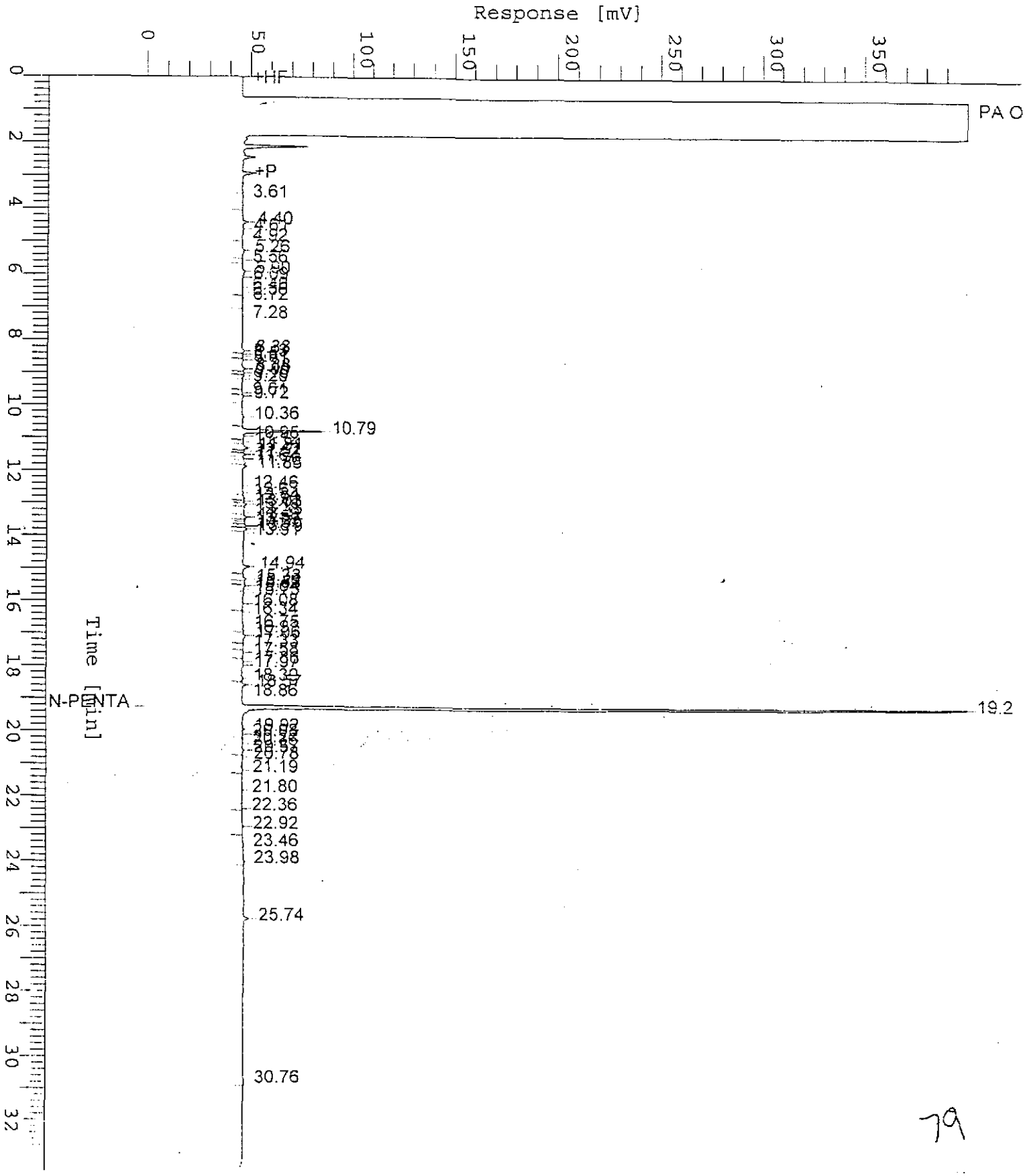


9L

Chromatogram

Sample Name : DW9707004-5 (500:1) SG
FileName : S:\GHP_04\0713\7078047.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-14
Date : 7/8/97 18:30
Time of Injection: 7/8/97 17:56
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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Fax copy of Lab Report and COC to Chevron Contact: ☐ No

Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: CHEVRON Lonestar Facility CPS #206142
Facility Address: 333 - 23rd Avenue, Oakland, CA
Consultant Project Number: 6338.85
Consultant Name: Gettler-Ryan
Address: 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name): Deanna Harding
(Phone) 551-7555 (Fax Number) 551-7888

Chevron Contact (Name): Mr. Robert Cochran
(Phone) (510) 842-9655
Laboratory Name: ~~[illegible]~~ SEQ Service Code: ZZ02790
Laboratory Service Order #~~[illegible]~~ 9X024596
Samples Collected by (Name): Frank Cline
Collection Date: ~~12/8/96~~ 6-30-97
Signature: [signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8015) (8020)	TPH Diesel (8015) *	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
TB-LB		2	W	TB	—	HCL	Y	X												
MW-11		5	↓	G	1745	HCL, silica	↓	X	X											
MW-8		5		↓	1819	↓		X	X											
MW-1		5			1829			X	X											
					—															
MW-14		5			1658	HCL silica		X	X											

Remarks: DO NOT BILL TB-LB ANALYSIS
Confirm highest hit of (8020)-MTBE by 8260.
page 1 of 2
* Perform silica-gel Clean-up on TPH diesel Samples. ~~Pls provide Without silica-gel Results to D. Harding~~ Additional silica-gel's may be run. Thank you DH

Mike Gregory Standard over 1000ppb run silica-gel clean-up! DH

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	G-R Inc.	7/1/97 0800	D. Harden	G-R Inc.	7/1/97
W. Harden	G-R	7/1/97 0930	[signature]	SEQ	7/1/97 0930
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted (circled)

Fax copy of Lab Report and COC to Chevron Contact: ☐ No

Chain-of-Custody-Record

CHEVRON

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: Lonestar Facility CPS #206142
Facility Address: 333 - 23rd Avenue, Oakland, CA
Consultant Project Number: 6338.85
Consultant Name: Gettler-Ryan
Address: 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name): Deanna Harding
(Phone): 551-7555 (Fax Number): 551-7888

Chevron Contact (Name): Mr. Robert Cochran
(Phone): (510) 842-9655
Laboratory Name: Sequoia
Laboratory Service Order #: 9024596 Service Code: ZZ02790
Samples Collected by (Name): Frank Cline
Collection Date: ~~12/8/96~~ 6-30-97
Signature:

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8020)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	Nitrate & Sulfate	Ferrous Iron			
								Analyses To Be Performed												
~~TB-LB~~																				
MW-11		2	W	G	1742	HCl None	Y									X	X			
MW-8		2			1849		Y									X	X			
MW-1		2			1824		Y									X	X			
MW-14		2		G	1635	HCl None	Y									X	X			

DO NOT BILL TB-LB ANALYSIS

page 2 of 2

Remarks

~~1-11-13~~

SAME DAY CHARGE

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G-R Inc.	~~7/1/97~~ 0800		G-R Inc.	~~7/1/97~~ 8:00
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G-R	7/1/97 1930		SEQ	7/1/97 9:30
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
	SEQ	7/1/97 1109			1113 7/1/97

Turn Around Time (Circle Choice)

24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron RMC Lonestar/Oakland	Sampled: 06/20/97
6747 Sierra Court Suite G	Sample Descript: SP (A-D) COMP	Received: 06/23/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/24/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/24/97
Attention: Barbara Sieminiski	Lab Number: 9706B57-01	Reported: 06/25/97

QC Batch Number: GC062497BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	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	95
4-Bromofluorobenzene	60	140	71

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
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron RMC Lonestar/Oakland	Sampled: 06/20/97
6747 Sierra Court Suite G	Sample Descript: SP (A-D) COMP	Received: 06/23/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/23/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/24/97
Attention: Barbara Sieminiski	Lab Number: 9706B57-01	Reported: 06/25/97

QC Batch Number: GC0623970HBPEXD
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	3.5
Chromatogram Pattern:	C9-C24	W-Diesel

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	90

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

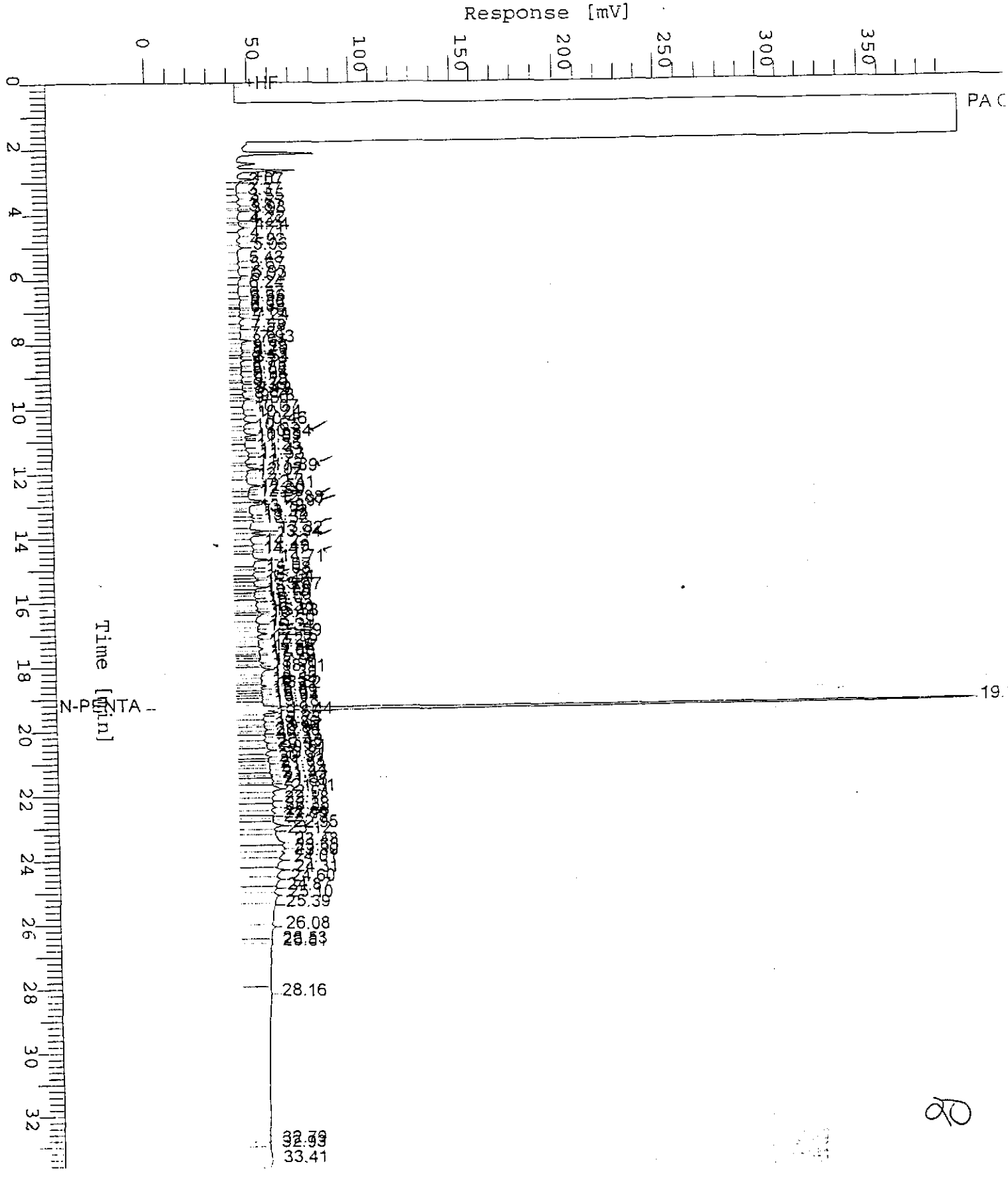
SEQUOIA ANALYTICAL - ELAP #1210

Mike Grégory
Project Manager

Chromatogram

Sample Name : DS9706B57-1 (20:1)
FileName : S:\GHP_04\0629\623B029.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: SP-D
Date : 6/24/97 16:48
Time of Injection: 6/24/97 16:14
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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

Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Barbara Sieminski

Client Project ID: Chevron RMC Lonestar / Oakland
Matrix: SOLID
Work Order #: 9706B57 -01
Reported: Jun 26, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC062497BTEXEXA	GC062497BTEXEXA	GC062497BTEXEXA	GC062497BTEXEXA	GC062497BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9706A4101	9706A4101	9706A4101	9706A4101	9706A4101
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/24/97	6/24/97	6/24/97	6/24/97	6/24/97
Analyzed Date:	6/24/97	6/24/97	6/24/97	6/24/97	6/24/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.17	0.18	0.18	0.54	1.1
MS % Recovery:	85	90	90	87	78
Dup. Result:	0.17	0.17	0.17	0.52	1.1
MSD % Recov.:	85	85	85	83	78
RPD:	0.0	5.7	5.7	3.8	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK062497	BLK062497	BLK062497	BLK062497	BLK062497
Prepared Date:	6/24/97	6/24/97	6/24/97	6/24/97	6/24/97
Analyzed Date:	6/24/97	6/24/97	6/24/97	6/24/97	6/24/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.20	0.20	0.21	0.62	1.3
LCS % Recov.:	100	100	105	103	108
MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
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

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron RMC Lonestar / Oakland	
6747 Sierra Court, Ste J	Matrix:	Solid	
Dublin, CA 94568			
Attention: Barbara Sieminski	Work Order #:	9706B57-01	Reported: Jun 26, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	*GC0623970HBPEXD*
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3550
Analyst:	B. Sullivan
MS/MSD #:	9706B8403
Sample Conc.:	3.7
Prepared Date:	6/23/97
Analyzed Date:	6/24/97
Instrument I.D.#:	GCHP4
Conc. Spiked:	25 mg/Kg
Result:	26
MS % Recovery:	89
Dup. Result:	26
MSD % Recov.:	89
RPD:	0.0
RPD Limit:	0-50

LCS #:	BLK062397
Prepared Date:	6/23/97
Analyzed Date:	6/24/97
Instrument I.D.#:	GCHP4
Conc. Spiked:	25 mg/Kg
LCS Result:	21
LCS % Recov.:	84

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

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568
Attention: Barbara Sieminiski

Client Proj. ID: Chevron RMC Lonestar/Oakland
Lab Proj. ID: 9706B57

Received: 06/23/97
Reported: 06/25/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 7 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: RMC LONESTAR
Facility Address: 333 3rd Avenue, Oakland
Consultant Project Number: 6338.01
Consultant Name: Gettler-Ryan
Address: 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name): Barbara Sieminski
(Phone): 510 551-7555 (Fax Number): 510 551-7888

Chevron Contact (Name): Bob Cochran
(Phone): (510) 842-9655
Laboratory Name: Sequoia
Laboratory Release Number:
Samples Collected by (Name): Barbara Sieminski
Collection Date: 06/20/97
Signature: Barbara Sieminski

DO NOT BILL TB-LB ANALYSIS

97060857

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed: TPH Gas + BTEX (8015) (8020)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
SP-A		1	S	G	16:10		Yes	X	X											
SP-B		1			16:12			X	X											
SP-C		1			16:14			X	X											
SP-D		1			16:16			X	X											

JUN 23 11 52

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Barbara Sieminski	G-R	06/23/97 10:25		Sequoia	6/23/97 10:30
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
		6/23/97			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
			L.R. Cardenas		6-23-97 1152

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

COC-3.DWG/03.91/MCH

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Barbara Sieminski

Client Proj. ID: Chevron RMC Lonestar, Oakland
Sample Descript: MW14-6
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9706C52-01

Sampled: 06/20/97
Received: 06/23/97
Extracted: 06/27/97
Analyzed: 06/28/97
Reported: 07/01/97

QC Batch Number: GC062797BTEXEXA
Instrument ID: GCHP07

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	80
4-Bromofluorobenzene	60	140	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

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron RMC Lonestar, Oakland	Sampled: 06/20/97
6747 Sierra Court Suite G	Sample Descript: MW14-6	Received: 06/23/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/26/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/27/97
Attention: Barbara Sieminski	Lab Number: 9706C52-01	Reported: 07/01/97

QC Batch Number: GC0626970HBPEXA
Instrument ID: GCHP19A

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	82

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

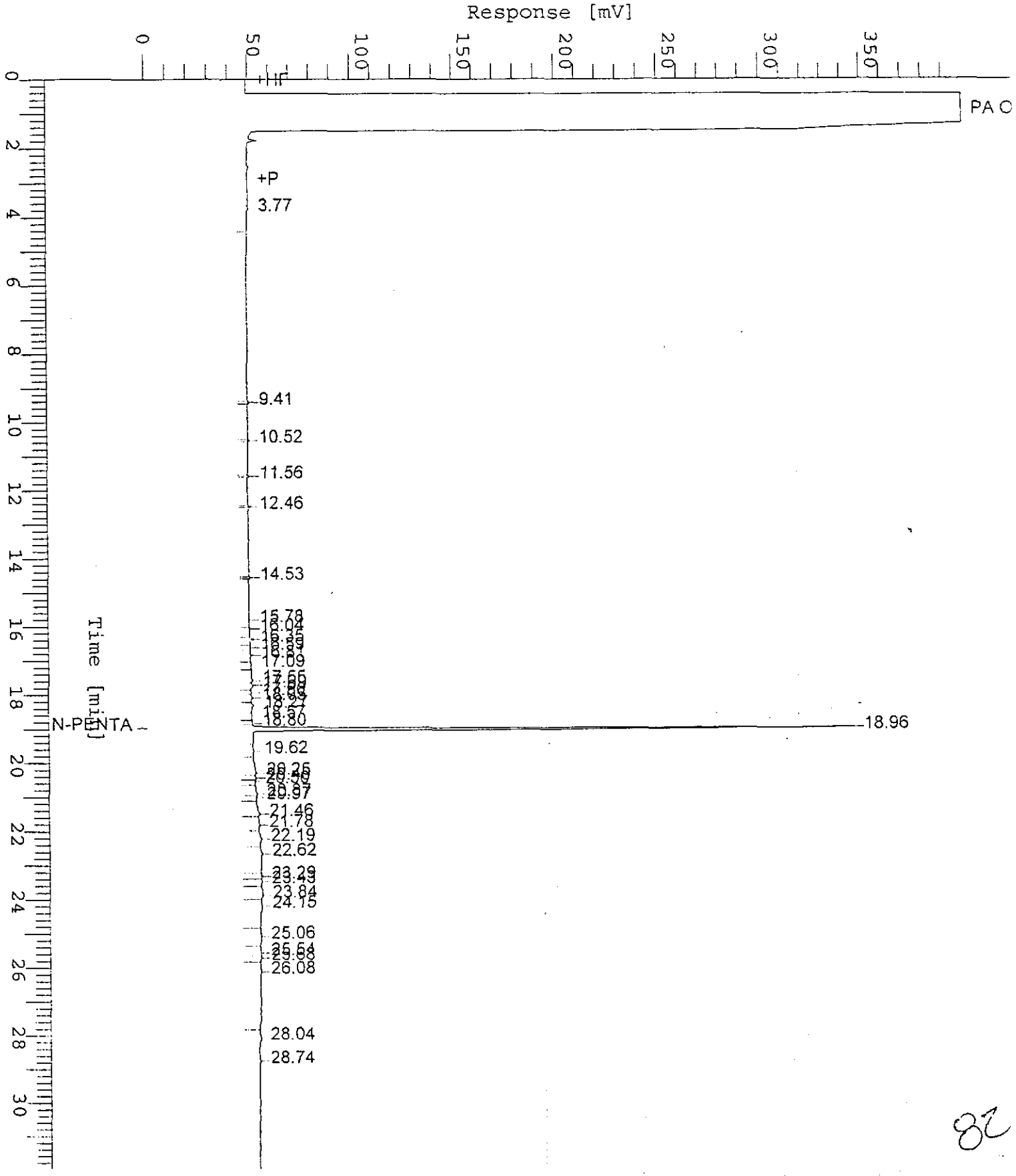
SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Chromatogram

Sample Name : DS9706C52-1 (20:1)
FileName : S:\GHP_19\0629\627A011.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW14-6 Page 1 of 1
Date : 6/27/97 19:07
Time of Injection: 6/27/97 18:35
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron RMC Lonestar, Oakland	
6747 Sierra Court, Ste J	Matrix:	Solid	
Dublin, CA 94568			
Attention: Barbara Sieminski	Work Order #:	9706C52 -01	Reported: Jul 3, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0626970HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3550
Analyst:	B. Sullivan
MS/MSD #:	970691301
Sample Conc.:	97
Prepared Date:	6/26/97
Analyzed Date:	6/27/97
Instrument I.D.#:	GCHP19
Conc. Spiked:	25 mg/Kg
Result:	120
MS % Recovery:	92
Dup. Result:	160
MSD % Recov.:	252
RPD:	28
RPD Limit:	*0-50*

LCS #:	BLK062697
Prepared Date:	6/26/97
Analyzed Date:	6/27/97
Instrument I.D.#:	GCHP19
Conc. Spiked:	25 mg/Kg
LCS Result:	20
LCS % Recov.:	80

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

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron RMC Lonestar, Oakland	
6747 Sierra Court, Ste J	Matrix:	Solid	
Dublin, CA 94568			
Attention: Barbara Sieminski	Work Order #:	9706C52-01	Reported: Jul 3, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC062797BTEXEXA	GC062797BTEXEXA	GC062797BTEXEXA	GC062797BTEXEXA	GC062797BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9706C5604	9706C5604	9706C5604	9706C5604	9706C5604
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/27/97	6/27/97	6/27/97	6/27/97	6/27/97
Analyzed Date:	6/27/97	6/27/97	6/27/97	6/27/97	6/27/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.13	0.16	0.18	0.53	1.1
MS % Recovery:	65	80	85	75	92
Dup. Result:	0.14	0.16	0.18	0.54	1.1
MSD % Recov.:	70	80	85	77	92
RPD:	7.4	0.0	0.0	1.9	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK062797	BLK062797	BLK062797	BLK062797	BLK062797
Prepared Date:	6/27/97	6/27/97	6/27/97	6/27/97	6/27/97
Analyzed Date:	6/27/97	6/27/97	6/27/97	6/27/97	6/27/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.16	0.19	0.21	0.63	1.3
LCS % Recov.:	80	95	105	105	108
MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568
Attention: Barbara Sieminski

Client Proj. ID: Chevron RMC Lonestar, Oakland
Lab Proj. ID: 9706C52

Received: 06/23/97
Reported: 07/01/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 7 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Fax copy of Lab Report and COC to Chevron Contact: ☑ No

Chain-of-Custody Rec

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: 9-RMC LONESTAR
Facility Address: 333 3rd Avenue, Oakland
Consultant Project Number: 6338.01
Consultant Name: Gettler-Ryan
Address: 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name): Barbara Sieminski
(Phone): 510 551-7555 (Fax Number): 510 551-7888

Chevron Contact (Name): Bob Cochran
(Phone): (510) 842-9655
Laboratory Name: Sequoia
Laboratory Release Number:
Samples Collected by (Name): Barbara Sieminski
Collection Date: 06/20/97
Signature: B Sieminski

9706052

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)						DO NOT BILL TB-LB ANALY Remarks
MW14-3		1	S	G	14:30		Yes														hold
MW14-6	1	1		D	14:50	1		X	X												
MW14-11		1			15:00																hold
MW14-16		1			15:10																hold
MW14-21		1			15:20																hold

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Barbara Sieminski	G-R	06/23/97 10:30		Sequoia	6/23/97 10:30
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
		6/23/97			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
					6-23-97 1151

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

COC-3.DWG/03 91/HCH