

# Kennedy/Jenks Consultants

## Engineers and Scientists

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19 November 1997

Mr. Robert C. Neal, P.E.  
Environmental Administrator  
Owens-Brockway Glass Containers  
6150 Stoneridge Mall Road, Suite 375  
Pleasanton, CA 94588-3242

Subject: Groundwater Monitoring  
Owens-Brockway Oakland Plant  
K/J 950007.10-N-06

Dear Mr. Neal:

### INTRODUCTION

Kennedy/Jenks Consultants is pleased to submit this report documenting the groundwater monitoring activities conducted during August and September 1997 at the Owens-Brockway plant located at 3600 Alameda Avenue, Oakland, California (the Site). The field activities were performed in accordance with our *Proposal for Environmental Consulting Services*, dated 10 June 1997 and Kennedy/Jenks' Standard Operating Guidelines. This work was conducted to satisfy the Alameda County Department of Environmental Health's (ACDEH) request to resume groundwater monitoring activities at the Site.

### BACKGROUND

The Oakland plant was constructed in 1936 and occupies a city block which is bounded by Alameda and Fruitvale Avenues and the Inner Harbor Channel. The plant includes a glass manufacturing operation, warehouses, and paved outdoor storage areas.

Historically, fuel oil (or furnace fuel) used to operate the plant was stored in large underground storage tanks (USTs) on the west side of the plant until the late 1980s. Soil containing petroleum hydrocarbons (PHCs) was encountered in July 1986 during construction of a fork lift ramp to the plant's basement.

As a result of this discovery, sixteen exploratory soil borings were advanced by Exceltech, Inc. during July 1986 in the vicinity of the ramp, the USTs and the former maintenance building. Eighteen groundwater monitoring wells were subsequently installed at the Site from July 1986 through December 1986, the deepest of which was advanced to approximately 32 feet below ground surface (bgs). The soil and groundwater samples collected in the vicinity of the USTs contained low boiling range (purgeable) PHCs and high boiling range (extractable) PHCs. In addition, benzene, toluene, ethylbenzene and total xylenes (BTEX) were detected in soil and groundwater samples. Several groundwater samples in the vicinity of the tanks and

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the maintenance shop contained detectable levels of halogenated volatile organic compounds (HVOCs). The results of these activities were documented in Exeltech's February 1987 report entitled *Soil and Groundwater Contamination Investigation*.

In September 1986, a 16,000-gallon fuel oil UST was removed, its source pipeline was capped, and 148 cubic yards of petroleum-impacted soil was excavated and disposed at Chemical Waste Management's Kettleman Hills Class I facility. A 36-inch diameter recovery well was installed in the tank excavation and equipped with a product recovery device. The original recovery well (R-1) was upgraded and a second recovery well (R-2) was installed near Monitoring Well MW-2 in 1989. The two recovery wells were operated for several months without collecting any PHCs. They are now inoperable.

Owens-Brockway also operated four USTs (one 350-gallon, two 8,000-gallon and one 12,000-gallon) located adjacent to the power building. These four USTs were removed and replaced with two USTs (gasoline and diesel) during 1986. According to Exeltech, visual evidence of releases from these tanks was noted during the removal activities. Three of the monitoring wells (MW-16, 17 and 18) were installed in the vicinity of these tanks.

The *September Quarterly Ground-Water Sampling Report*, prepared by Ensco Environmental Services in November 1988, reported that the monitoring well network at the Site was sampled six times between April 1987 and September 1988. The field measurements indicated that several wells contained separate-phase petroleum product.

Since the monitoring wells were initially installed, Wells MW-3 and MW-18 have been destroyed during construction activities at the plant.

Groundwater is tidally influenced and shallow groundwater is encountered between 9 and 13 feet bgs. Flow is generally southwest and west toward the Harbor Channel.

## FIELD ACTIVITIES

In a letter to Owens-Brockway dated 28 April 1997, ACDEH requested that Owens-Brockway resume groundwater monitoring at the Site. ACDEH requested that Wells MW-1, 2, 5, 6, 7, 8, 9, 10, 13, 15, and 17 be sampled and analyzed for total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd) and motor oil (TPHmo); benzene, toluene, ethylbenzene, and xylene (BTEX) compounds; and all wells except MW-13, 15, and 17 should be analyzed for halogenated volatile organic compounds (HVOCs) and polychlorinated biphenyls (PCBs).

The following activities were conducted by Kennedy/Jenks during August and September 1997 to meet the ACDEH's request.

### Product Thickness Monitoring

Prior to conducting groundwater sampling, the groundwater depth and petroleum product thickness in Wells MW-2, 5, 6, 7, 8, 9 and 17 were measured twice during the week of

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11 August 1997, and then once per week for three consecutive weeks beginning 26 August 1997. Following the thickness measurement in each well, the recoverable petroleum product from each well was removed with a bailer and contained in a 55-gallon drum for disposal to the oil-water separator associated with the plant. Wells MW-5, 6, 7, 9, and 17 were also cleaned by attaching absorbent pads to PVC pipe and swabbing the inside of the casings. Additionally, several well caps were replaced to secure the wellheads.

Results of the petroleum product monitoring and removal activities are summarized in Table 1. Only Wells MW-2 and MW-6 still have a measurable amount of separate-phase petroleum present.

### Groundwater Sampling and Analysis

Groundwater samples were collected on 16 September 1997 from Wells MW-1, 5, 7, 8, 9, 10, 13, 15, and 17. Wells MW-2 and MW-6 contained separate-phase petroleum product; therefore, groundwater samples were not collected from them, although a product sample was obtained from Well MW-2 and analyzed by gas chromatography techniques in order to compare the product sample to hydrocarbon fuel standards ("fingerprinting"). Prior to collecting the groundwater samples, the wells were purged by removing approximately three well volumes of water with a disposable bailer while monitoring the pH, specific conductivity, and temperature. The groundwater purge and sample forms are provided in Attachment A. Water samples were obtained with a disposable bailer. A duplicate sample, a field blank, and a trip blank were also collected for quality control purposes.

The samples were placed in a chilled container and transported to Curtis & Tompkins, Ltd. Analytical Laboratories for analysis. The samples were analyzed for the compounds requested by ACDEH. That is, samples collected from Wells MW-1, 5, 7, 8, 9, 10, 13, 15, and 17 were analyzed for purgeable and extractable petroleum hydrocarbons by EPA Method 8015 Modified and for BTEX by EPA Method 8020. As described above, no groundwater sample was collected from Wells MW-2 and MW-6 due to the presence of separate-phase petroleum. The product sample collected from Well MW-2 was "fingerprinted". The groundwater samples collected from Wells MW-1, 5, 7, 8, 9, and 10 were also analyzed for HVOCs by EPA Method 8260 and for PCBs by EPA Method 8080.

### ANALYTICAL RESULTS

No HVOCs or PCBs were detected in the samples analyzed. Results of the groundwater analyses for petroleum hydrocarbons are summarized in Table 2. Laboratory reports, chromatograms, and chain-of-custody forms are provided in Attachment B.

The chromatogram for the product sample collected from Wells MW-2 contained hydrocarbons in the C10 to C22 range; however, the pattern did not match the laboratory's diesel standard. Extractable PHCs (TPHd and TPHmo) were detected in groundwater in all the monitoring wells sampled on 16 September 1997. Purgeable PHCs (TPHg) were detected in the groundwater

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samples collected from Wells MW-7, 9, and 17. The analytical results typically did not match the gasoline, diesel, and motor oil standards.


#### CONCLUSIONS

- No HVOCs or PCBs were present in groundwater samples above laboratory reporting limits.
- Separate-phase PHCs are present in the vicinity of Wells MW-2 and MW-6.
- The fingerprint results of the product sample collected from Well MW-2 indicate the presence of high boiling range PHCs which is consistent with a release of fuel oil.
- PHCs were present in groundwater samples collected from wells in the vicinity of these former fuel oil tanks. The results did not match the laboratory's fuel standards which is likely due to the degraded nature of the PHCs present in the subsurface at the Site.
- The presence of gasoline-range and diesel-range hydrocarbons in the sample collected from Well MW-17, located downgradient of the fueling area on the east side of the plant, is consistent with the results of previous (1988) groundwater sampling events. However, BTEX was no longer present above the laboratory reporting limit of 0.5 µg/l.

Please call me at 415-243-2522 if you have any questions.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

  
Stephanie Stehling  
Project Manager

Enclosure  
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TABLE 1

Depth to Groundwater and Petroleum Product Thickness  
Owens-Brockway, Oakland, California  
K/J 950007.10

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Well	Date	Depth to Groundwater (feet below TOC) <sup>(a)</sup>	PHC <sup>(b)</sup> Thickness Before Bailing (feet)	PHC Volume Bailed (gallons)	Swabbed <sup>(c)</sup>
MW-2	8/12/97	15.15	3.33	4	
	8/14/97	12.58	0.79	2.5	
	8/26/97	11.58	0.50	4	
	9/2/97	11.29	0.13	4	
	9/9/97	11.50	0.08	3	
MW-5	8/12/97	11.81	Trace	0.3 <sup>(d)</sup>	
	8/14/97	11.91	None	2	
	8/26/97	11.42	None	1 <sup>(d)</sup>	
	9/2/97	10.50	None	2.5	X
	9/9/97	11.25	None	4	X
MW-6	8/12/97	13.96	0.21	1	
	8/14/97	13.91	0.13	2.5	
	8/26/97	13.58	0.13	4	
	9/2/97	8.91	0.25	4	
	9/9/97	10.91	0.08	4	X
MW-7	8/12/97	11.91	0.02	1	
	8/14/97	11.83	None	2	
	8/26/97	11.00	None	4	
	9/2/97	10.83	None	3	X
	9/9/97	11.58	None	2.5	X
MW-8	8/12/97	10.04	None	1 <sup>(d)</sup>	
MW-9	8/12/97	6.83	0.08	NR <sup>(e)</sup>	
	8/14/97	6.46	0.01	2	
	8/26/97	6.29	Trace	2.5	
	9/2/97	6.33	None	2.5	X
	9/9/97	6.58	None	3	X
MW-17	8/12/97	9.54	0.02	2	
	8/14/97	9.58	None	2	
	8/26/97	9.25	Trace	2	
	9/2/97	9.50	Trace	2.5	X
	9/9/97	9.58	None	2	X

**Notes:**

- (a) TOC = top of casing
- (b) PHC = petroleum hydrocarbon
- (c) "X" marked on date when well was swabbed
- (d) Estimated
- (e) NR = not recorded

TABLE 2  
 Analytical Results Summary<sup>(a)</sup>  
 16 September 1997  
 Owens-Brockway, Oakland, California  
 K/J 950007.10

Page 1 of 1

Monitoring Well	TPHg <sup>(b)</sup> (µg/l)	TPHd <sup>(c)</sup> (µg/l)	TPHmo <sup>(d)</sup> (µg/l)	m,p Xylenes (µg/l)
MW-1	<50	190 <sup>(e, f)</sup>	<300	<0.5
MW-D <sup>(g)</sup>	<50	210 <sup>(e, f)</sup>	<300	<0.5
MW-5	<50	7,500 <sup>(e, f)</sup>	4,100 <sup>(e, h)</sup>	<0.5
MW-7	850 <sup>(e)</sup>	26,000 <sup>(e, f)</sup>	11,000 <sup>(e, h)</sup>	<0.5
MW-8	<50	290 <sup>(e, f)</sup>	<300	<0.5
MW-9	6,000 <sup>(e)</sup>	19,000 <sup>(e, f)</sup>	9,000 <sup>(e, h)</sup>	18
MW-10	<50	1,300 <sup>(e, f)</sup>	<300	<0.5
MW-13	<50	120 <sup>(e, f)</sup>	<300	<0.5
MW-15	<50	890 <sup>(e, f)</sup>	380 <sup>(e, h)</sup>	<0.5
MW-17	1,900 <sup>(e, i)</sup>	110,000 <sup>(f)</sup>	9,600 <sup>(e, h)</sup>	<0.5

**Notes:**

- (a) Results only shown for samples with compounds detected above their laboratory reporting limits. Note that MW-6 was not sampled due to presence of separate-phase product; product sample from MW-2 was collected for hydrocarbon "fingerprint" analysis by EPA Method 8015 Modified.
- (b) Total petroleum hydrocarbons as gasoline (C7-C12) by EPA Method 8015 Modified.
- (c) Total petroleum hydrocarbons as diesel (C12-C22) by EPA Method 8015 Modified.
- (d) Total petroleum hydrocarbons as motor oil (C22-C50) by EPA Method 8015 Modified.
- (e) Chromatogram pattern does not resemble petroleum product standard.
- (f) Carbon range present in sample heavier than indicated standard.
- (g) MW-D is duplicate sample collected from Well MW-1.
- (h) Carbon range present in sample lighter than indicated standard.
- (i) Bromofluorobenzene surrogate outside of QC limits.

*HWOC's + PCB's results*

# ATTACHMENT A

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## GROUNDWATER PURGE AND SAMPLE POINTS

Groundwater Purge and Sample Form

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens - Brockway WELL NUMBER: MW-1  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss  
 STATIC WATER LEVEL (FT): 9.35 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: DEPTH PROBE PURGE METHOD: Disposable bailer  
 TIME START PURGE: 1200 PURGE DEPTH (FT) 15'  
 TIME END PURGE: 1222  
 TIME SAMPLED: 1224/1226  
 COMMENTS: pH meter checked @ 1150 / conductivity meter checked @ 1150

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
				2	4	6	
	29.00	9.35	19.65	0.16	0.64	1.44	3.14 (9)

118.1  
219.100  
9.35  
19.65  
117.90  
19.65  
314.40

TIME	1215	1219	1222				
VOLUME PURGED (GAL)	7	8	9				
PURGE RATE (GPM)	0.47	0.25	0.33				
TEMPERATURE (°F)	69.7	70.8	70.7				
pH	6.6	6.6	6.6				
SPECIFIC CONDUCTIVITY (uncorrected) <sup>µS</sup> / <del>cm</del>	700	650	630				
DISSOLVED OXYGEN (mg/L)	NM	NM	NM				
eH(MV)Pt-AgCl ref.	NM	NM	NM				
TURBIDITY/COLOR	Moderate						
ODOR	Hydrocarbon						
DEPTH OF PURGE INTAKE (FT)	15'	15'	15'				
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM				
NUMBER OF CASING VOLUMES REMOVED	2.23	2.55	2.87				
DEWATERED?	NO	NO	NO				



Groundwater Purge and Sample Form

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens-Brockway WELL NUMBER: MW-1  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 1224/1226 COMMENTS: None  
 DEPTH SAMPLED (FT): 26'  
 SAMPLING EQUIPMENT: Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
<u>MW 1</u>	<u>3</u>	<u>VOC Bival</u>	<u>HCl</u>	<u>No</u>	<u>40ml</u>	<u>moderate</u>	<u>Tan w/sheen</u>	<u>Yes</u>	<u>TPH<sub>3</sub></u> <u>BTEX/0010</u>	<u>None</u>
<u>↓</u>	<u>2</u>	<u>1L Bival Amber</u>			<u>1L</u>				<u>TPH diesel motor oil PCB</u>	
<u>MW 10</u>	<u>3</u>	<u>VOC Bival</u>			<u>40ml</u>				<u>TPH<sub>3</sub></u> <u>BTEX/0010</u>	<u>Duplicate sample</u>
<u>↓</u>	<u>2</u>	<u>1L Bival Amber</u>			<u>1L</u>				<u>TPH diesel motor oil PCB</u>	

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 9 Gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES NO  
 WELL CASING OK?: YES NO  
 COMMENTS: \_\_\_\_\_

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 75°-80°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16/97 Kennedy/Jenks Consultants

PROJECT NAME: Owens Brookway WELL NUMBER: MW-5  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss  
 STATIC WATER LEVEL (FT): 12.30 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: DEPTH PEGS <sup>SOLINST WATER LEVEL</sup> PURGE METHOD: Disposable bailer  
 TIME START PURGE: 1343 PURGE DEPTH (FT) 15'  
 TIME END PURGE: 1359  
 TIME SAMPLED: 1401  
 COMMENTS: None

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
				2	4	6	
	<u>28.50</u>	<u>12.30</u>	<u>16.20</u>	<u>0.16</u>	<u>0.64</u>	<u>1.44</u>	<u>2.59</u> (7.3)

28.50  
 12.30  
 (16.20)  
 16.20  
 .16  
 9720  
 (620)  
 25920

TIME	1353	1355	1359	X			
VOLUME PURGED (GAL)	<u>5.5</u>	<u>6.5</u>	<u>7.5</u>				
PURGE RATE (GPM)	<u>0.55</u>	<u>0.50</u>	<u>0.25</u>				
TEMPERATURE (°F)	<u>71.7</u>	<u>71.0</u>	<u>71.3</u>				
pH	<u>6.8</u>	<u>6.8</u>	<u>6.8</u>				
SPECIFIC CONDUCTIVITY (uncorrected) <sup>us</sup> <del>microhos</del> / cm	<u>660</u>	<u>670</u>	<u>670</u>				
DISSOLVED OXYGEN (mg/L)	<u>NM</u>	<u>NM</u>	<u>NM</u>				
eH(MV)Pt-AgCl ref.	<u>NM</u>	<u>NM</u>	<u>NM</u>				
TURBIDITY/COLOR	<u>Moderate tan w/ large oil drops</u> →						
ODOR	<u>Slight hydrocarbon</u> →						
DEPTH OF PURGE INTAKE (FT)	<u>15'</u>	<u>15'</u>	<u>15'</u>				
DEPTH TO WATER DURING PURGE (FT)	<u>NM</u>	<u>NM</u>	<u>NM</u>				
NUMBER OF CASING VOLUMES REMOVED	<u>2.12</u>	<u>2.51</u>	<u>2.90</u>				
DEWATERED?	<u>NO</u>	<u>NO</u>	<u>NO</u>				

**Groundwater Purge and Sample Form**

Date: 9/16/97

**Kennedy/Jenks Consultants**

PROJECT NAME: Owens-Brockway WELL NUMBER: MW-5  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 1401 COMMENTS: None  
 DEPTH SAMPLED (FT): 26'  
 SAMPLING EQUIPMENT: Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
<u>MW 5</u>	<u>3</u>	<u>UOC vial</u>	<u>HCl</u>	<u>No</u>	<u>40ml</u>	<u>Moderate</u>	<u>Tan w/ large oil drops</u>	<u>Yes</u>	<u>TPHs BTEX BOiO</u>	<u>None</u>
<u>↓</u>	<u>2</u>	<u>1L Amber</u>	<u>↓</u>	<u>↓</u>	<u>1L</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>TPH diesel TPH motor oil PCBs</u>	<u>↓</u>

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 7.5 Gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?:  YES NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?:  YES NO  
 WELL CASING OK?:  YES NO  
 COMMENTS: None

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 80°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens Brookway WELL NUMBER: MW-7  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss  
 STATIC WATER LEVEL (FT): 12.15 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: DEPTH PROBE <sup>SO INST WATER LEVEL</sup> PURGE METHOD: Disposable bailer  
 TIME START PURGE: 1433 PURGE DEPTH (FT) 15'  
 TIME END PURGE: 1446  
 TIME SAMPLED: 1440  
 COMMENTS: None

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
				2	4	6	
	23.50	12.15	11.35	0.16	0.64	1.44	1.8255

TIME	1438	1442	1446					
VOLUME PURGED (GAL)	3.5	4.5	5.5					
PURGE RATE (GPM)	0.70	0.25	0.25					
TEMPERATURE <sup>°C</sup> (°F)	73.8	73.0	73.0					
PH	6.2	6.2	6.2					
SPECIFIC CONDUCTIVITY (uncorrected) <sup>µS/cm</sup> <del>(microombs/cm)</del>	1070	1060	1080					
DISSOLVED OXYGEN (mg/L)	NM	NM	NM					
eH(MV)Pt-AgCl ref.	NM	NM	NM					
TURBIDITY/COLOR	Moderate							
ODOR	Hydrocarbon							
DEPTH OF PURGE INTAKE (FT)	15'	15'	15'					
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM					
NUMBER OF CASING VOLUMES REMOVED	1.92	2.47	3.02					
DEWATERED?	NO	NO	NO					

23.8p  
 12.15  
 11.35  
 23  
 11.35  
 .16  
 6810  
 1135  
 18160  
 7.82  
 3  
 5.46

**Groundwater Purge and Sample Form**

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens - Brookway WELL NUMBER: MW-7  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 1448 COMMENTS: None  
 DEPTH SAMPLED (FT): 20'  
 SAMPLING EQUIPMENT: Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
<u>MW 7</u>	<u>3</u>	<u>VOC vial</u>	<u>HCl</u>	<u>No</u>	<u>40ml</u>	<u>moderate</u>	<u>Black w/Sheen</u>	<u>Yes</u>	<u>TPHs BTEX 8010</u>	<u>None</u>
<u>↓</u>	<u>2</u>	<u>IL Amber</u>	<u>↓</u>	<u>↓</u>	<u>IL</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>TPH diesel motor oil PCBs</u>	<u>↓</u>

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 5.5 Gallons COMMENTS: None  
 DISPOSAL METHOD: TO oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?:  YES NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?:  YES NO  
 WELL CASING OK?:  YES NO  
 COMMENTS: None

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 80°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16/97 Kennedy/Jenks Consultants

PROJECT NAME: Owens Brookway WELL NUMBER: MW-8  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss  
 STATIC WATER LEVEL (FT): 9.90 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: 30" INST WATER LEVEL DEPTH PROBE PURGE METHOD: Disposable bailer  
 TIME START PURGE: 1116 PURGE DEPTH (FT) 12'  
 TIME END PURGE: 1132  
 TIME SAMPLED: 1134  
 COMMENTS: None

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
				2	4	6	
	<u>28.50</u>	<u>9.90</u>	<u>18.60</u>	<u>0.16</u>	<u>0.64</u>	<u>1.44</u>	<u>2.98</u> (9)

17  
28.50  
9.90  
1860  
  
18.60  
16  
11160  
1860  
29760

TIME	1127	1130	1132				
VOLUME PURGED (GAL)	<u>7</u>	<u>8</u>	<u>9</u>				
PURGE RATE (GPM)	<u>0.64</u>	<u>0.33</u>	<u>0.50</u>				
TEMPERATURE (°C) (F°)	<u>69.6</u>	<u>67.9</u>	<u>68.3</u>				
pH	<u>7.0</u>	<u>6.9</u>	<u>6.9</u>				
SPECIFIC CONDUCTIVITY (uncorrected) (µS/cm)	<u>1430</u>	<u>1270</u>	<u>1200</u>				
DISSOLVED OXYGEN (mg/L)	<u>NM</u>	<u>NM</u>	<u>NM</u>				
eH(MV)Pt-AgCl ref.	<u>NM</u>	<u>NM</u>	<u>NM</u>				
TURBIDITY/COLOR	<u>Moderate Turbidity</u>						
ODOR	<u>Hydrocarbon</u>						
DEPTH OF PURGE INTAKE (FT)	<u>12'</u>	<u>12'</u>	<u>12'</u>				
DEPTH TO WATER DURING PURGE (FT)	<u>NM</u>	<u>NM</u>	<u>NM</u>				
NUMBER OF CASING VOLUMES REMOVED	<u>2.35</u>	<u>2.68</u>	<u>3.02</u>				
DEWATERED?	<u>NO</u>	<u>NO</u>	<u>NO</u>				

Groundwater Purge and Sample Form

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens-Brockway WELL NUMBER: MW-8  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 1134 COMMENTS: None  
 DEPTH SAMPLED (FT): 26'  
 SAMPLING EQUIPMENT: Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
<u>MW 8</u>	<u>3</u>	<u>VOL vial</u>	<u>HCl</u>	<u>NO</u>	<u>4.0ml</u>	<u>moderate</u>	<u>tan w/Sheen</u>	<u>Yes</u>	<u>TDHg BTX BOD</u>	<u>None</u>
<u>↓</u>	<u>2</u>	<u>1L Amber</u>	<u>↓</u>	<u>↓</u>	<u>1L</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>TDH diesel metals PCB</u>	<u>↓</u>

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 9 Gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?:  YES NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES  NO  
 WELL CASING OK?: YES  NO  
 COMMENTS: Christy box not water proof - flooded

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 80°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16/07

Kennedy/Jenks Consultants

PROJECT NAME: Owens - Brockway WELL NUMBER: MW-9  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

STATIC WATER LEVEL (FT): 6.62 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: SOLINST WATER LEVEL DEPTH PROBE PURGE METHOD: Disposable bailer  
 TIME START PURGE: 1036 PURGE DEPTH (FT) 10'  
 TIME END PURGE: 1054  
 TIME SAMPLED: 1056  
 COMMENTS: None

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
					2'	4'	6'	
	20.00	6.62	13.38		0.16	0.64	1.44	2.145

199  
20.100  
6.62  
13.38  
  
24  
13.38  
116  
8028  
1338  
21408

TIME	1045	1049	1054					
VOLUME PURGED (GAL)	4	5	6					
PURGE RATE (GPM)	0.44	0.25	0.20					
TEMPERATURE (°) F	73.8	73.9	73.5					
pH	6.7	6.7	6.7					
SPECIFIC CONDUCTIVITY (uncorrected) $\frac{\mu S}{cm}$	580	560	540					
DISSOLVED OXYGEN (mg/L)	NM	NM	NM					
eH(MV)Pt-AgCl ref.	NM	NM	NM					
TURBIDITY/COLOR	Moderate Gray/Pink w/Sheen →							
ODOR	Hydrocarbon →							
DEPTH OF PURGE INTAKE (FT)	10'	10'	10'					
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM					
NUMBER OF CASING VOLUMES REMOVED	1.87	2.34	2.80					
DEWATERED?	NO	NO	NO					



**Groundwater Purge and Sample Form**

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens - Brocteway WELL NUMBER: NW-9  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 1056 COMMENTS: None  
 DEPTH SAMPLED (FT): 17'  
 SAMPLING EQUIPMENT: Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
<u>NW 9</u>	<u>3</u>	<u>1cc vial</u>	<u>HCl</u>	<u>No</u>	<u>40ml</u>	<u>Moderate</u>	<u>Gray Brown w/ Green</u>	<u>Yes</u>	<u>TPH</u>	
	<u>2</u>	<u>1L Amber</u>			<u>1L</u>				<u>BTEX/8010</u>	
	<u>1</u>				<u>1L</u>				<u>TPH diesel motor oil</u>	<u>peBs</u>
									<u>soluble fraction</u>	

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 6 gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES  NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES  NO  
 WELL CASING OK?: YES  NO  
 COMMENTS: No Christy box; continually flooded

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 75°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens-Brockway WELL NUMBER: MW-10  
 PROJECT NUMBER: 950007.10 PERSONNEL: tc. Heiss  
 STATIC WATER LEVEL (FT): 10.27 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: DEPTH PROBE PURGE METHOD: Disposable bailer  
 TIME START PURGE: 1307 PURGE DEPTH (FT) 15'  
 TIME END PURGE: 1323  
 TIME SAMPLED: 1325  
 COMMENTS: None

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
				2	4	6	
	25.00	10.27	14.73	0.16	0.64	1.44	2.36 (7)

25.00  
 10.27  
 14.73  
 14.73  
 16  
 14.73  
 23.568  
 2.36  
 3  
 70.8

TIME	1319	1321	1323	X			
VOLUME PURGED (GAL)	5	6	7				
PURGE RATE (GPM)	0.45	0.33	0.50				
TEMPERATURE (°C) (F°)	76.8	75.7	76.0				
pH	6.3	6.3	6.3				
SPECIFIC CONDUCTIVITY (uncorrected) $\frac{\mu S}{cm}$	880	896	860				
DISSOLVED OXYGEN (mg/L)	NM	NM	NM				
eH(MV)Pt-AgCl ref.	NM	NM	NM				
TURBIDITY/COLOR	moderate green/yellow						
ODOR	Hydrocarbon						
DEPTH OF PURGE INTAKE (FT)	15'	15'	15'				
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM				
NUMBER OF CASING VOLUMES REMOVED	2.12	2.54	2.97				
DEWATERED?	NO	NO	NO				

**Groundwater Purge and Sample Form**

Date: 9/16/97

**Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brodway WELL NUMBER: MW-10  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 1325 COMMENTS: None  
 DEPTH SAMPLED (FT): 23'  
 SAMPLING EQUIPMENT: Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
<u>MW 10</u>	<u>3</u>	<u>UOC vial</u>	<u>HCl</u>	<u>No</u>	<u>40ml</u>	<u>Moderate</u>	<u>Gray w/sneen</u>	<u>Yes</u>	<u>TPHs BTX EPA 8010</u>	<u>None</u>
<u>↓</u>	<u>2</u>	<u>1L Amber</u>	<u>↓</u>	<u>↓</u>	<u>1L</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>TPH diesel TOH motor oil PCBs</u>	<u>↓</u>

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 7 Gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?:  YES NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?:  YES NO  
 WELL CASING OK?:  YES NO  
 COMMENTS: None

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 80°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens - Broadway WELL NUMBER: MW-13  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

STATIC WATER LEVEL (FT): 10.55 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: <sup>AGAINST WATER LEVEL</sup> DEPTH PROBE PURGE METHOD: Disposable bailer  
 TIME START PURGE: 917 PURGE DEPTH (FT) 12'  
 TIME END PURGE: 930  
 TIME SAMPLED: 932  
 COMMENTS: None

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
				2	4	6	
	25.00	10.55	14.45	0.16	0.64	1.44	2.31

49  
28100  
10.55  
14.45

14.45  
0.16  
8670  
1445  
23120

2.31  
3  
6.93

TIME	926	928	930				
VOLUME PURGED (GAL)	5	6	7				
PURGE RATE (GPM)	0.56	0.50	0.50				
TEMPERATURE (°) F	71.1	72.5	71.3				
pH	6.7	6.7	6.7				
SPECIFIC CONDUCTIVITY (micromhos/cm) <sup>MS</sup>	950	970	970				
DISSOLVED OXYGEN (mg/L)	NM	NM	NM				
eH(MV)Pt-AgCl ref.	NM	NM	NM				
TURBIDITY/COLOR	<del>None</del>	<del>None</del>	<del>None</del>				
ODOR	None	None	None				
DEPTH OF PURGE INTAKE (FT)	12'	12'	12'				
DEPTH TO WATER DURING PURGE (FT)	NM	NM	NM				
NUMBER OF CASING VOLUMES REMOVED	2.16	2.60	3.03				
DEWATERED?	NO	NO	NO				

**Groundwater Purge and Sample Form**

Date: 9/16/97

**Kennedy/Jenks Consultants**

PROJECT NAME: Owens Brockway WELL NUMBER: MW-13  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 932 COMMENTS: None  
 DEPTH SAMPLED (FT): 22'  
 SAMPLING EQUIPMENT: Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW 13	3	VOC vial	HCl	No	40ml	Moderate	Brown	Yes	TPHs BTEX	None
↓	2	1L Amber	↓	↓	12			↓	TPH diesel motor oil	↓

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 7 Gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?:  YES NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?:  YES NO  
 WELL CASING OK?:  YES NO  
 COMMENTS: None

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 75°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16

Kennedy/Jenks Consultants

PROJECT NAME: Owens - Broadway WELL NUMBER: MW-15  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss  
 STATIC WATER LEVEL (FT): 11.92 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: AGAINST WATER LEVEL DEPTH PRESS PURGE METHOD: Disposable bailer  
 TIME START PURGE: 950 PURGE DEPTH (FT) 15'  
 TIME END PURGE: 1004  
 TIME SAMPLED: 1006  
 COMMENTS: None

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	-	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
							2	4	6	
	<u>29.50</u>		<u>11.92</u>		<u>17.58</u>		<u>0.16</u>	<u>0.64</u>	<u>1.44</u>	<u>2.81</u> <u>(8.5)</u>

TIME	<u>958</u>	<u>1002</u>	<u>1004</u>						
VOLUME PURGED (GAL)	<u>6.5</u>	<u>7.5</u>	<u>8.5</u>						
PURGE RATE (GPM)	<u>0.81</u>	<u>0.25</u>	<u>0.50</u>						
TEMPERATURE (°) (°F)	<u>72.8</u>	<u>72.7</u>	<u>72.9</u>						
pH	<u>8.9</u>	<u>8.7</u>	<u>8.7</u>						
SPECIFIC CONDUCTIVITY (uncorrected) <sup>NS</sup> (microhos/cm)	<u>1020</u>	<u>1020</u>	<u>1020</u>						
DISSOLVED OXYGEN (mg/L)	<u>NM</u>	<u>NM</u>	<u>NM</u>						
eH(MV)Pt-AgCl ref.	<u>NM</u>	<u>NM</u>	<u>NM</u>						
TURBIDITY/COLOR	<u>Moderate Turb</u>								
ODOR	<u>None</u>								
DEPTH OF PURGE INTAKE (FT)	<u>15'</u>	<u>15'</u>	<u>15'</u>						
DEPTH TO WATER DURING PURGE (FT)	<u>NM</u>	<u>NM</u>	<u>NM</u>						
NUMBER OF CASING VOLUMES REMOVED	<u>2.31</u>	<u>2.67</u>	<u>3.02</u>						
DEWATERED?	<u>NO</u>	<u>NO</u>	<u>NO</u>						

$$\begin{array}{r} 29.50 \\ - 11.92 \\ \hline 17.58 \\ \times 0.16 \\ \hline 2.81 \end{array}$$
  

$$\begin{array}{r} 17.58 \\ + 1.16 \\ \hline 18.74 \\ - 1.28 \\ \hline 17.46 \\ + 0.28 \\ \hline 17.74 \end{array}$$
  

$$\begin{array}{r} 17.58 \\ + 1.16 \\ \hline 18.74 \\ - 1.28 \\ \hline 17.46 \\ + 0.28 \\ \hline 17.74 \end{array}$$
  

$$\begin{array}{r} 17.58 \\ + 1.16 \\ \hline 18.74 \\ - 1.28 \\ \hline 17.46 \\ + 0.28 \\ \hline 17.74 \end{array}$$

**Groundwater Purge and Sample Form**

Date: 9/16/97

**Kennedy/Jenks Consultants**

PROJECT NAME: Owens - Brockway WELL NUMBER: MW-15  
 PROJECT NUMBER: 950007, 10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 1006 COMMENTS: None  
 DEPTH SAMPLED (FT): 28'  
 SAMPLING EQUIPMENT: Disposable bailer w/ line

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
MW 15	3	VOC vial	Acc	No	40ml	moderate	Tan	Yes	TDHs BTEX	None
↓	2	IL Amber	↓	↓	12	↓	↓	↓	TDH dist motor oil	↓

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 8.5 gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES NO  
 INSIDE OF WELL HEAD AND OUTER CASING DRY?: YES NO  
 WELL CASING OK?: YES NO  
 COMMENTS: None

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 75°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

Groundwater Purge and Sample Form

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens Brockway WELL NUMBER: MW-17  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

STATIC WATER LEVEL (FT): 9.74 MEASURING POINT DESCRIPTION: TOP OF CASING  
 WATER LEVEL MEASUREMENT METHOD: SOLINST WATER LEVEL DEPTH PROBE PURGE METHOD: Disposable bailer  
 TIME START PURGE: 844 PURGE DEPTH (FT) 12'  
 TIME END PURGE: 857  
 TIME SAMPLED: 900  
 COMMENTS: pH meter calibrated @ 840 / conductivity meter checked @ 840

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	DEPTH TO WATER (FT)	WATER COLUMN (FT)	MULTIPLIER FOR CASING DIAMETER (IN)			CASING VOLUME (GAL)
				2	4	6	
	<u>24.50</u>	<u>9.74</u>	<u>14.76</u>	<u>0.16</u>	<u>0.64</u>	<u>1.44</u>	<u>2.36</u> (7)

113.4  
 214.56  
 9.74  
 14.76  
 14.3  
 14.76  
 1.16  
 88.56  
 14.76  
 236.16  
 2.36  
 3  
 7.08

TIME	851	854	857	X			
VOLUME PURGED (GAL)	<u>5</u>	<u>6</u>	<u>7</u>				
PURGE RATE (GPM)	<u>0.71</u>	<u>0.33</u>	<u>0.33</u>				
TEMPERATURE (F°)	<u>68.5</u>	<u>69.7</u>	<u>69.5</u>				
pH	<u>6.0</u>	<u>6.3</u>	<u>6.3</u>				
SPECIFIC CONDUCTIVITY (uncorrected) <sup>us</sup> <del>microhm-cm</del> / cm	<u>8500</u>	<u>8500</u>	<u>8500</u>				
DISSOLVED OXYGEN (mg/L)	<u>NM</u>	<u>NM</u>	<u>NM</u>				
eH(MV)Pt-AgCl ref.	<u>NM</u>	<u>NM</u>	<u>NM</u>				
TURBIDITY/COLOR	<u>Moderate Black w/ green</u> →						
ODOR	<u>Hydrocarbon</u> →						
DEPTH OF PURGE INTAKE (FT)	<u>12'</u>	<u>12'</u>	<u>12'</u>				
DEPTH TO WATER DURING PURGE (FT)	<u>NM</u>	<u>NM</u>	<u>NM</u>				
NUMBER OF CASING VOLUMES REMOVED	<u>2.12</u>	<u>2.54</u>	<u>2.97</u>				
DEWATERED?	<u>NO</u>	<u>NO</u>	<u>NO</u>				



**Groundwater Purge and Sample Form**

Date: 9/16/97

Kennedy/Jenks Consultants

PROJECT NAME: Owens Brookway WELL NUMBER: MW-17  
 PROJECT NUMBER: 950007.10 PERSONNEL: K. Heiss

SAMPLE DATA:  
 TIME SAMPLED: 900 COMMENTS: None  
 DEPTH SAMPLED (FT): 22'  
 SAMPLING EQUIPMENT: <sup>(NEW)</sup> Disposable bailer

SAMPLE NO.	NO. OF CONTAINERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
<u>MW-17</u>	<u>3</u>	<u>VOL Vial</u>	<u>HCl</u>	<u>No</u>	<u>40ml</u>	<u>moderate</u>	<u>Black w/Screen</u>	<u>Yes</u>	<u>TPHses BTEX</u>	<u>None</u>
<u>↓</u>	<u>2</u>	<u>1 LITER Amber</u>	<u>↓</u>	<u>↓</u>	<u>12</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>TPH motor oil TPH diesel</u>	<u>↓</u>

PURGE WATER DISPOSAL NOTES:  
 TOTAL DISCHARGE (GAL): 7 Gallons COMMENTS: None  
 DISPOSAL METHOD: To oil-water separator  
 DRUM DESIGNATION(S)/VOLUME PER (GAL): N/A

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):  
 WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES  NO   
 INSIDE OF WELL HEAD AND OUTER CASING DRY?:  YES  NO  
 WELL CASING OK?: YES  NO   
 COMMENTS: Needs new well box, no hinged cover, not watertight

GENERAL:  
 WEATHER CONDITIONS: Sunny  
 TEMPERATURE (SPECIFY °C OR °F): 70°F  
 PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? None

cc: Project Manager: \_\_\_\_\_  
 Job File: \_\_\_\_\_  
 Other: \_\_\_\_\_

## GROUNDWATER DEPTH MEASUREMENT LOG

PROJECT NAME:	Owens Brockway	DATE:	9/16/97
PROJECT NUMBER:	950007.10	TIME START:	732
PROJECT MANAGER:	Stephanie Stehling	TIME END:	812/1027

WELL NUMBER	TIME	GROUNDWATER DEPTH	TOTAL WELL DEPTH	MEASURING POINT DESCRIPTION	COMMENTS
MW-16	732	9.15	24.50	TOP OF CASING	Smashed well box
MW-17	734	9.74	24.50	↓	"
MW-13	738	10.55	25.00		OK
MW-15	743	11.42	29.50		OK
MW-2	747	11.88 <sup>#</sup>	30.00		1/2" of free product
MW-10	751	10.27	25.00		OK
MW-1	755	9.35	29.00		OK
MW-9	759	6.62	20.00		Smashed well box
MW-5	806	12.30	28.50		OK
MW-6	810	11.96 <del>11.96</del>	28.50		OK
MW-7	812	12.15	23.50		OK
MW-8	1027	9.90	28.50		Flooded

**ATTACHMENT B**

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**LABORATORY ANALYTICAL REPORTS**



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900


A N A L Y T I C A L   R E P O R T

Prepared for:

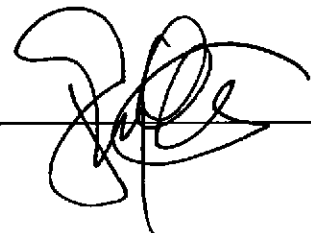
Kennedy/Jenks Consultants  
303 Second Street  
Marathon Plaza  
San Francisco, CA 94107

Date: 01-OCT-97  
Lab Job Number: 130645  
Project ID: 950007.10  
Location: Owens Brockway

Reviewed by:

  
\_\_\_\_\_

Reviewed by:

  
\_\_\_\_\_

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Curtis & Tompkins, Ltd.

Laboratory Number: 130645  
Client: Kennedy/Jenks Consultants  
Site: Owens Brockway

Sample Date: 09/16/97  
Receipt Date: 09/16/97

FINGERPRINT - TVH

Client Sample I.D

Curtis & Tompkins I.D

MW-2

130645-012

On 09/24/97, the above sample was analyzed by EPA 8015M. The chromatogram for this sample was then compared to our Gasoline standard for TVH analysis. The chromatogram has heavier hydrocarbons than in the Gasoline standard area. The chromatograms of the sample and the Gasoline standard it was compared to are enclosed.

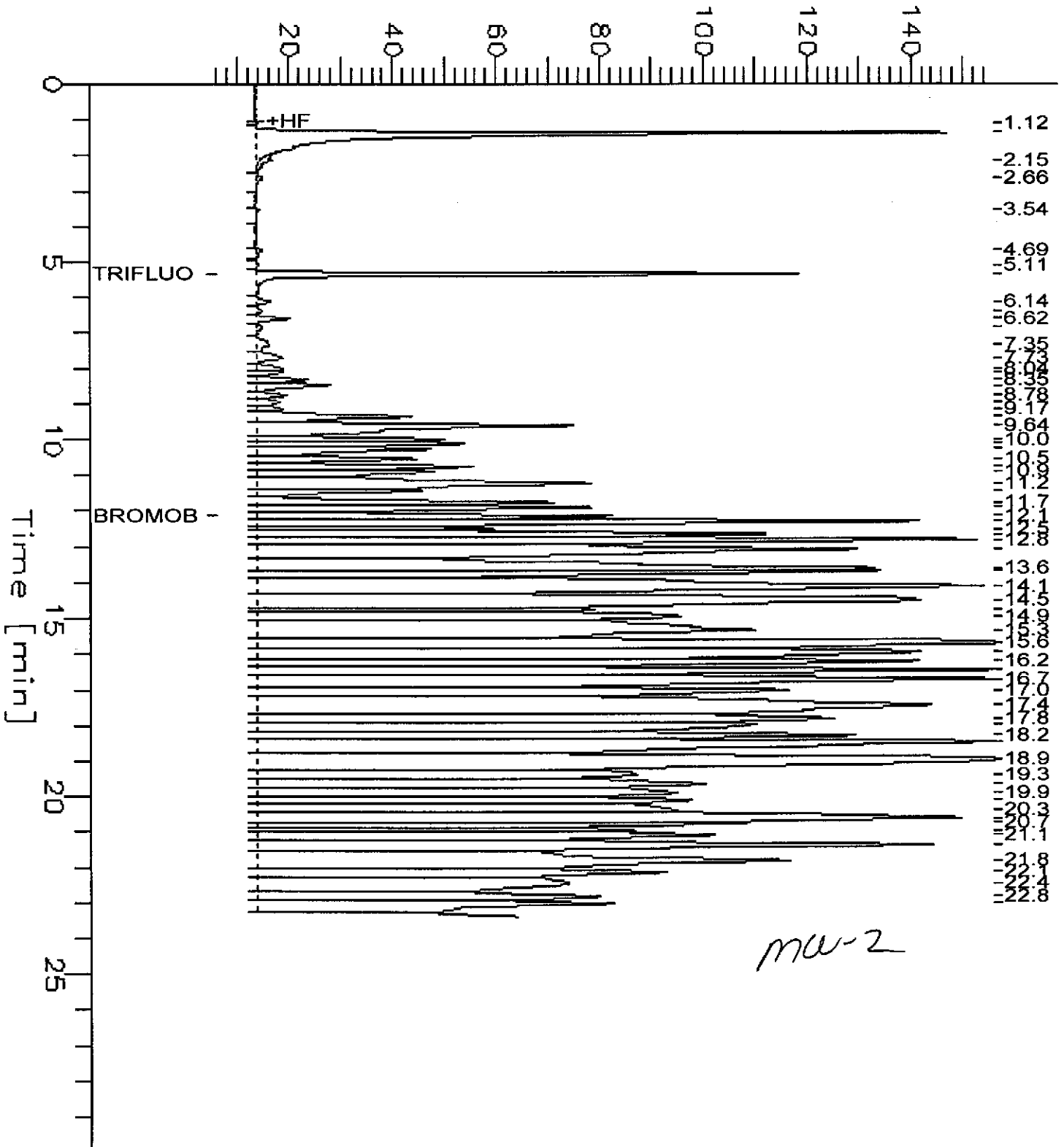
# GC05 RTX1 TVH Chromatogram

Sample Name : D,130645-012,36433  
 FileName : G:\GC05\DATA\266H020.RAW  
 Method :  
 Start Time : 0.00 min  
 Scale Factor: -1.0

End Time : 30.00 min  
 Plot Offset: 6 mV

Sample #: TVH-ENGRPR  
 Date : 9/24/97 05:35 PM  
 Time of Injection: 9/24/97 02:05 AM  
 Low Point : 5.94 mV  
 High Point : 155.94 mV  
 Plot Scale: 150.0 mV

## Response [mV]

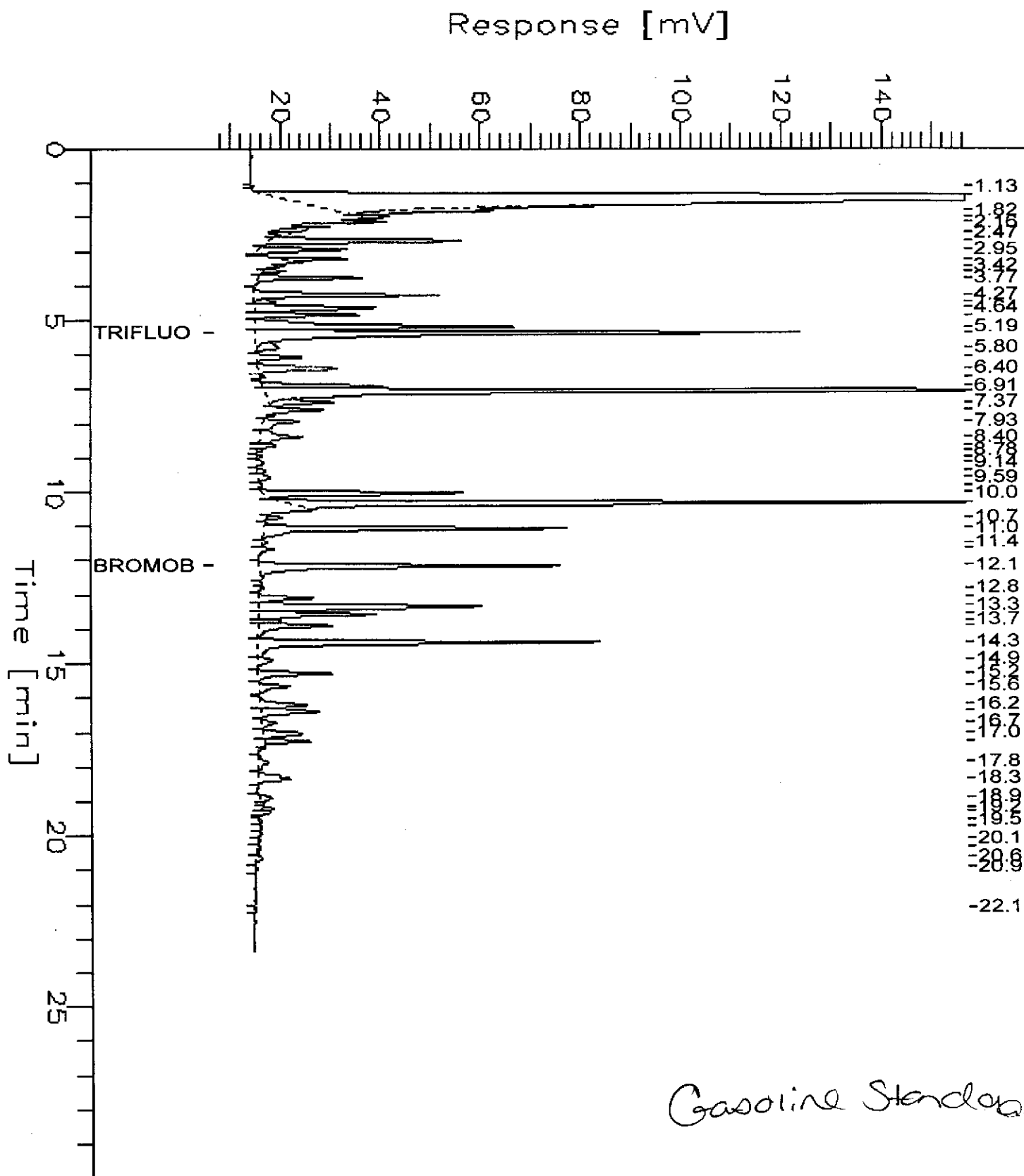


# GC05 RTX1 TVH Chromatogram

Sample Name : BS, QC54825, 97WS4392, 36432,  
 FileName : G:\GC05\DATA\265H032.raw  
 Method : G\_081297  
 Start Time : 0.00 min  
 Scale Factor: -1.0

End Time : 30.00 min  
 Plot Offset: 7 mV

Sample #: GAS  
 Date : 9/23/97 07:36 AM  
 Time of Injection: 9/23/97 07:12 AM  
 Low Point : 6.59 mV  
 Plot Scale: 150.0 mV  
 High Point : 156.59 mV





Curtis & Tompkins, Ltd.

Laboratory Number: 130645  
Client: Kennedy/Jenks Consultants  
Site: Owens Brockway

Sample Date: 09/16/97  
Receipt Date: 09/16/97

FINGERPRINT - TEH

Client Sample I.D

Curtis & Tompkins I.D

MW-2

130645-012

On 09/23/97, the above sample was analyzed by EPA 8015M. The chromatogram for this sample exhibits a peak pattern in the C10-C22 range. However, it does not resemble any of our standards for TEH analysis. The chromatograms of the sample and the Diesel standard it was compared to are enclosed.



# Chromatogram

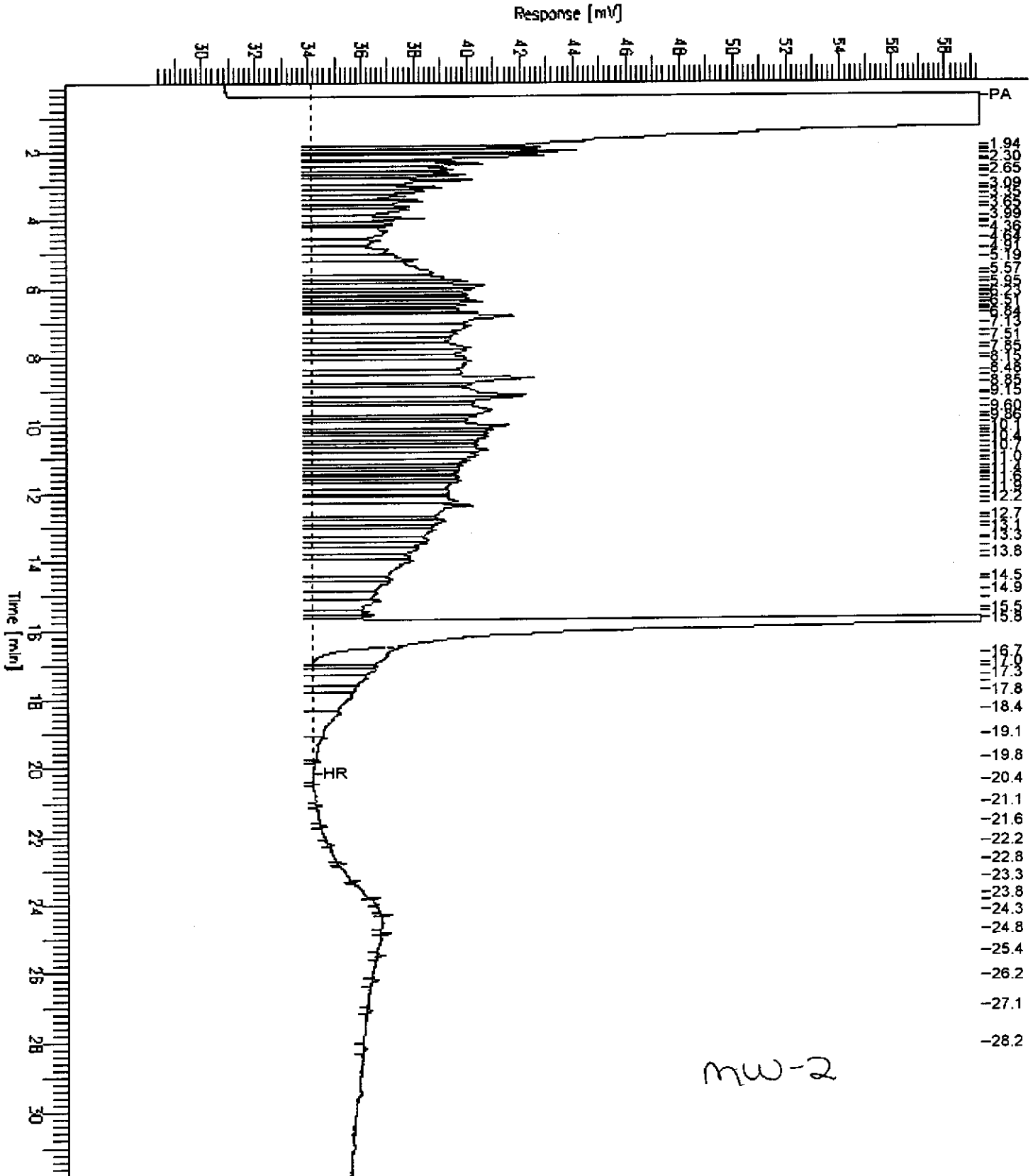
Sample Name : 130645-012,FP  
FileName : G:\GC13\CHA\265A012.RAW  
Method : ATEH260.MTH  
Start Time : 0.01 min  
Scale Factor: 0.0

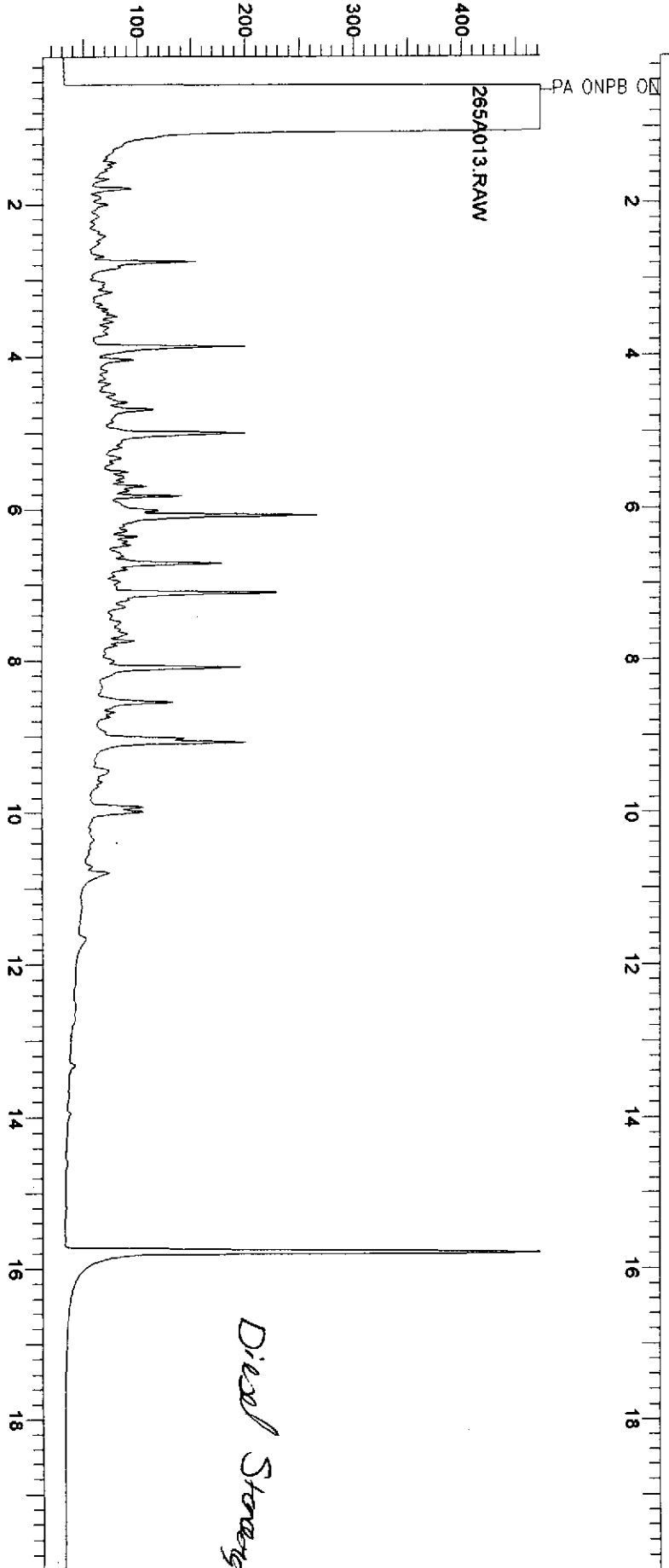
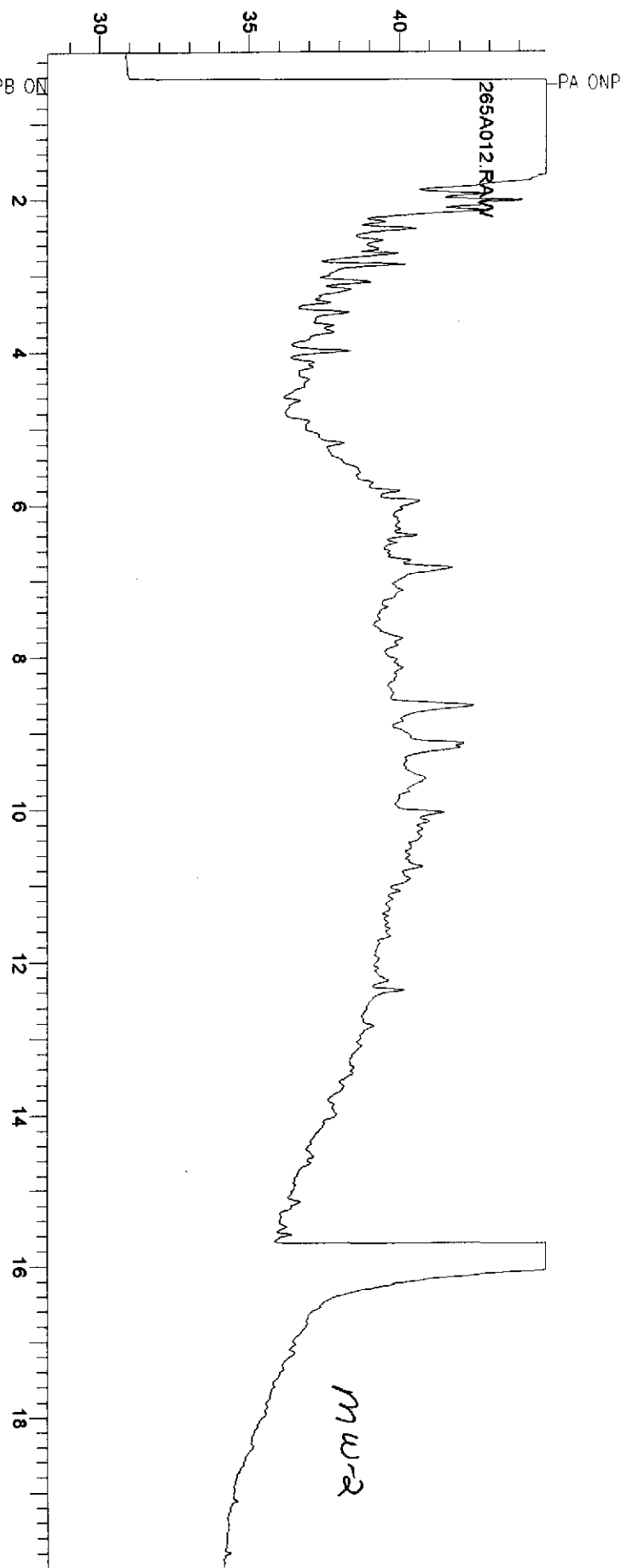
End Time : 31.91 min  
Plot Offset: 28 mV

Sample #: 645,12 FP  
Date : 9/23/97 09:49 AM  
Time of Injection: 9/23/97 12:33 AM  
Low Point : 28.36 mV  
Plot Scale: 31.0 mV

Page 1 of 1

High Point : 59.34 mV







TVH-Total Volatile Hydrocarbons

Client: Kennedy/Jenks Consultants	Analysis Method: TVH
Project#: 950007.10	Prep Method: EPA 5030
Location: Owens Brockway	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-001	MW-17	36494	09/16/97	09/26/97	09/26/97	
130645-002	MW-13	36494	09/16/97	09/26/97	09/26/97	
130645-003	MW-15	36494	09/16/97	09/26/97	09/26/97	
130645-004	MW-9	36537	09/16/97	09/30/97	09/30/97	

Matrix: Water

Analyte	Units	130645-001	130645-002	130645-003	130645-004
Diln Fac:		1	1	1	2
Gasoline C7-C12	ug/L	1900 Y	<50	<50	6000 Y
Surrogate					
Bromofluorobenzene	%REC	142 *	108	109	118

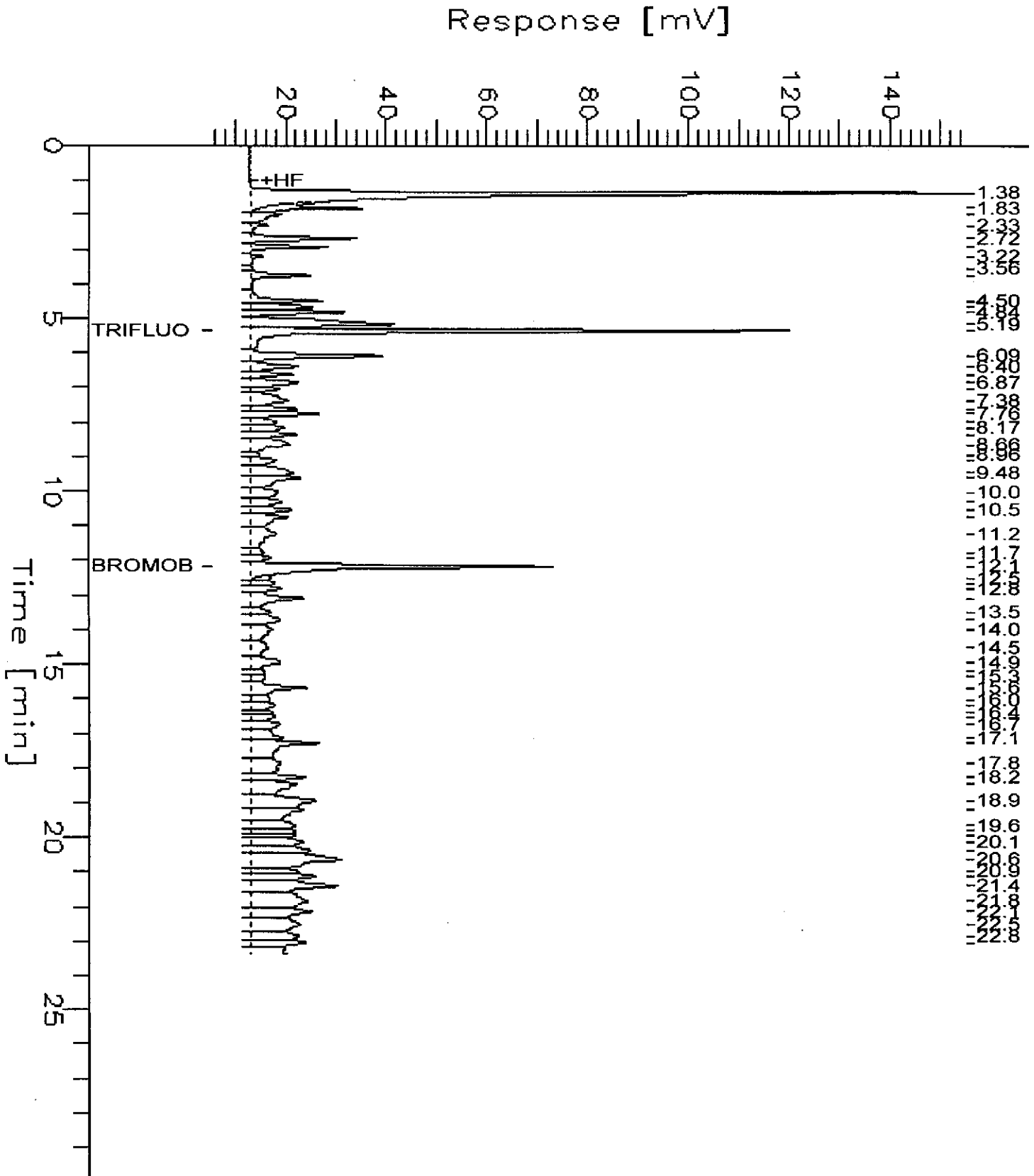
\* Values outside of QC limits

Y: Sample exhibits fuel pattern which does not resemble standard

# GC05 RTX1 TVH Chromatogram

Sample Name : MSS,130645-001,36494, *MW-17*  
 FileName : G:\GC05\DATA\268H027.RAW  
 Method :  
 Start Time : 0.00 min      End Time : 30.00 min  
 Scale Factor: -1.0      Plot Offset: 5 mV

Sample #:  
 Date : 9/29/97 12:29 PM      Page 1 of 1  
 Time of Injection: 9/26/97 03:28 AM  
 Low Point : 5.21 mV      High Point : 155.21 mV  
 Plot Scale: 150.0 mV

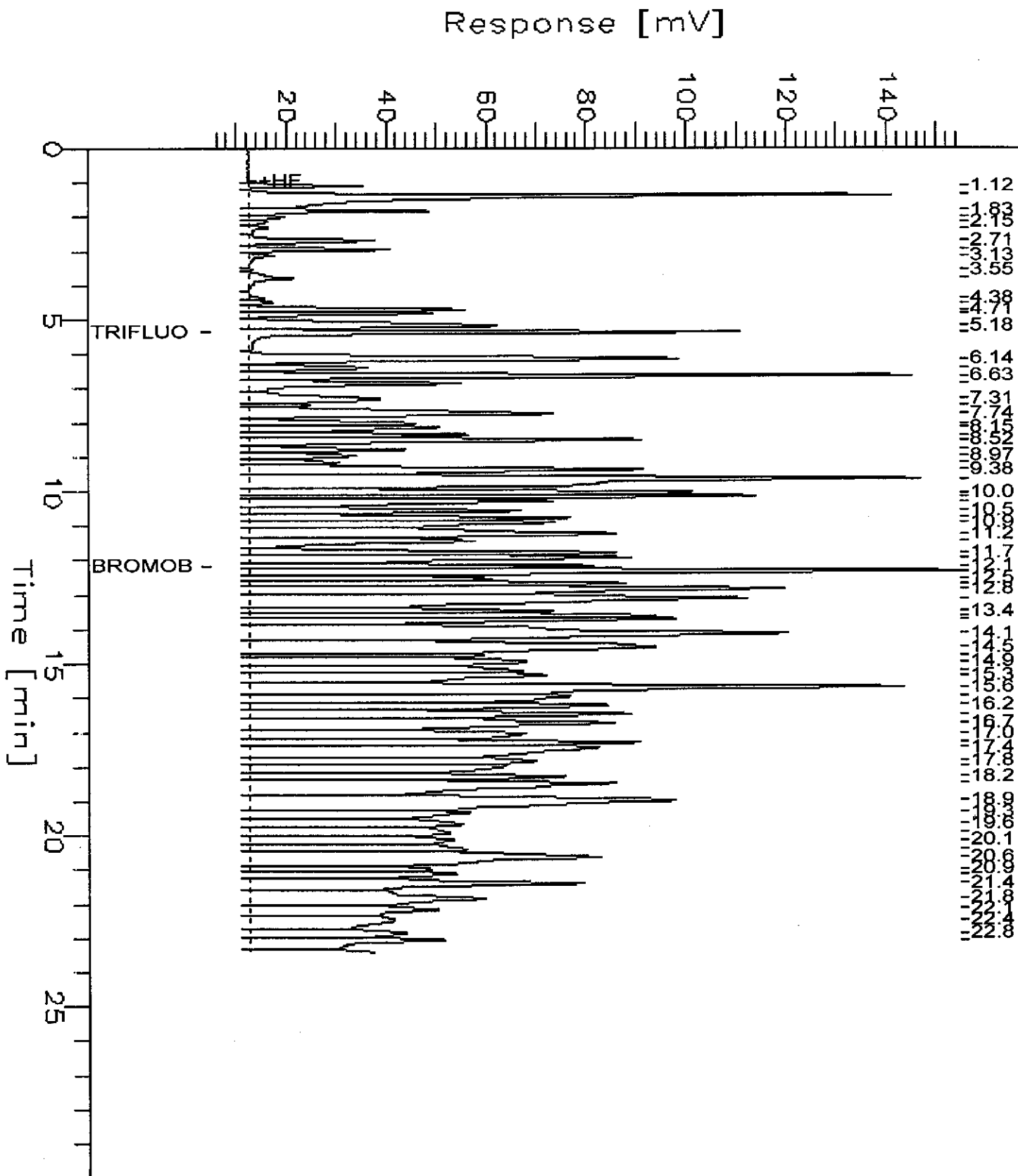


# GC05 RTX1 TVH Chromatogram

Sample Name : RR,130645-004,36537 MW-9  
 FileName : G:\GC05\DATA\272H049.RAW  
 Method :  
 Start Time : 0.00 min  
 Scale Factor : -1.0

End Time : 30.00 min  
 Plot Offset: 5 mV

Sample #: Page 1 of 1  
 Date : 10/1/97 09:26 AM  
 Time of Injection: 9/30/97 05:35 PM  
 Low Point : 4.83 mV High Point : 154.83 mV  
 Plot Scale: 150.0 mV



BTXE

Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

Analysis Method: EPA 8020A  
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-001	MW-17	36494	09/16/97	09/26/97	09/26/97	
130645-002	MW-13	36494	09/16/97	09/26/97	09/26/97	
130645-003	MW-15	36494	09/16/97	09/26/97	09/26/97	
130645-004	MW-9	36537	09/16/97	09/30/97	09/30/97	

Matrix: Water

Analyte	Units	130645-001	130645-002	130645-003	130645-004
Diln Fac:		1	1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5	<13
Toluene	ug/L	<0.5	<0.5	<0.5	<13
Ethylbenzene	ug/L	<0.5	<0.5	<0.5	<13
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5	18
o-Xylene	ug/L	<0.5	<0.5	<0.5	<13
Surrogate					
Trifluorotoluene	%REC	92	88	88	87
Bromofluorobenzene	%REC	104	94	97	94



TVH-Total Volatile Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: TVH  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-005	MW-8	36494	09/16/97	09/26/97	09/26/97	
130645-006	MW-1	36494	09/16/97	09/26/97	09/26/97	
130645-007	MW-D	36494	09/16/97	09/26/97	09/26/97	
130645-008	MW-FB	36494	09/16/97	09/26/97	09/26/97	

Matrix: Water

Analyte	Units	130645-005	130645-006	130645-007	130645-008
Diln Fac:		1	1	1	1
Gasoline C7-C12	ug/L	<50	<50	<50	<50
Surrogate					
Bromofluorobenzene	%REC	107	108	107	108



BTXE

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8020A  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-005	MW-8	36494	09/16/97	09/26/97	09/26/97	
130645-006	MW-1	36494	09/16/97	09/26/97	09/26/97	
130645-007	MW-D	36494	09/16/97	09/26/97	09/26/97	
130645-008	MW-FB	36494	09/16/97	09/26/97	09/26/97	

Matrix: Water

Analyte	Units	130645-005	130645-006	130645-007	130645-008
Diln Fac:		1	1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5	<0.5
Surrogate					
Trifluorotoluene	%REC	87	87	88	88
Bromofluorobenzene	%REC	93	95	96	98





## TVH-Total Volatile Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: TVH  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-009	MW-10	36494	09/16/97	09/26/97	09/26/97	
130645-010	MW-5	36494	09/16/97	09/26/97	09/26/97	
130645-011	MW-7	36494	09/16/97	09/26/97	09/26/97	

Matrix: Water

Analyte	Units	130645-009	130645-010	130645-011
Diln Fac:		1	1	1
Gasoline C7-C12	ug/L	<50	<50	850 Y
Surrogate				
Bromofluorobenzene	%REC	108	108	116

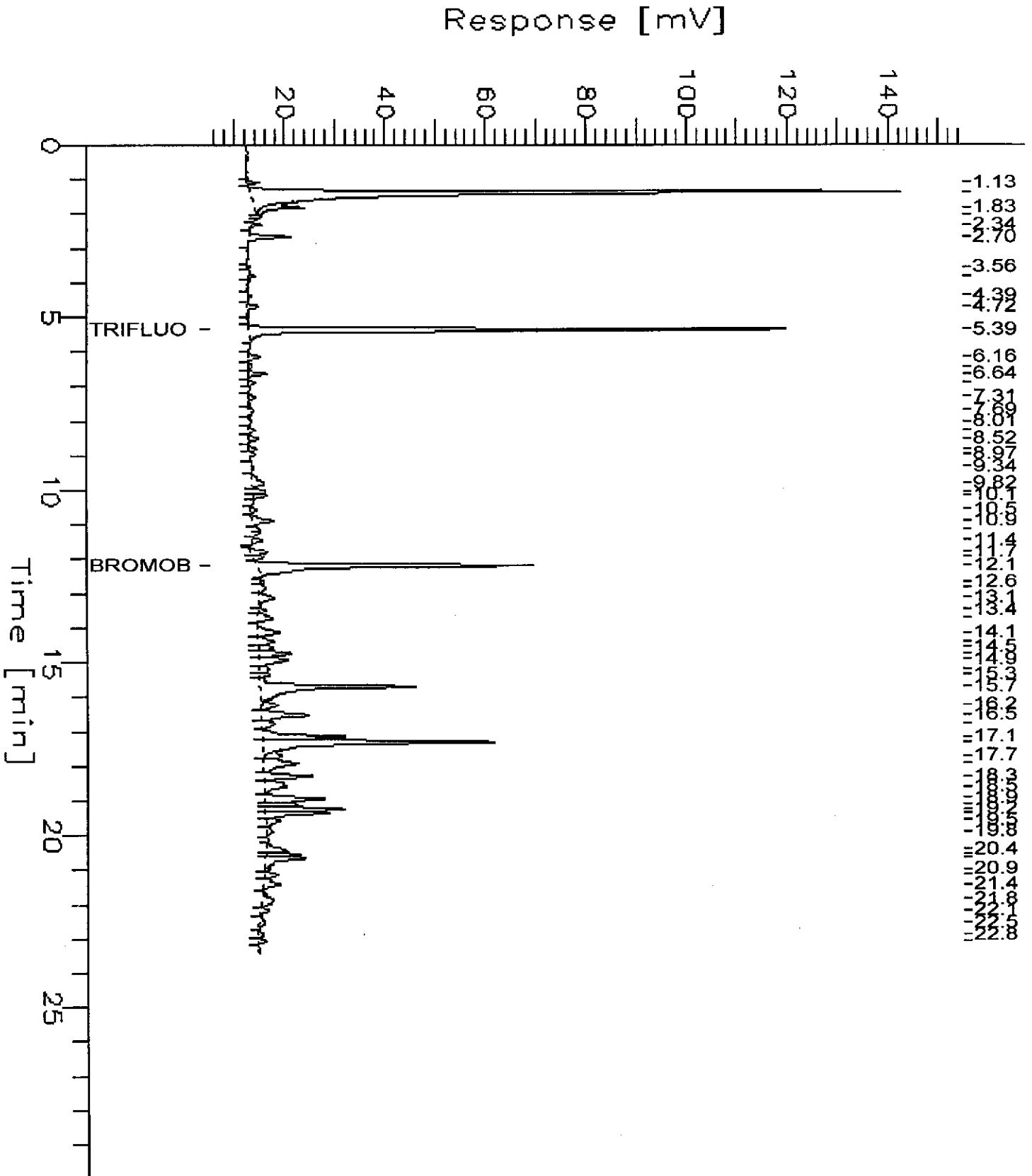
Y: Sample exhibits fuel pattern which does not resemble standard

# GC05 RTX1 TVH Chromatogram

Sample Name : S\_130645-011,36494, *MW-7*  
 FileName : G:\GC05\DATA\268H042.raw  
 Method : G\_081297  
 Start Time : 0.00 min  
 Scale Factor: -1.0

End Time : 30.00 min  
 Plot Offset: 5 mV

Sample #: Page 1 of 1  
 Date : 9/26/97 12:46 PM  
 Time of Injection: 9/26/97 12:20 PM  
 Low Point : 4.92 mV High Point : 154.92 mV  
 Plot Scale: 150.0 mV



## BTXE

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8020A  
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-009	MW-10	36494	09/16/97	09/26/97	09/26/97	
130645-010	MW-5	36494	09/16/97	09/26/97	09/26/97	
130645-011	MW-7	36494	09/16/97	09/26/97	09/26/97	
130645-013	TRAVEL BLANK	36494	09/16/97	09/26/97	09/26/97	

Matrix: Water

Analyte	Units	130645-009	130645-010	130645-011	130645-013
Diln Fac:		1	1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5	<0.5
Surrogate					
Trifluorotoluene	%REC	90	90	92	88
Bromofluorobenzene	%REC	97	96	101	97

Lab #: 130645

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: TVH  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 36494  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/25/97  
Analysis Date: 09/25/97

MB Lab ID: QC55042

Analyte	Result		
Gasoline C7-C12	<50		
Surrogate	%Rec	Recovery Limits	
Bromofluorobenzene	102	70-122	

Lab #: 130645

BATCH QC REPORT

BTXE

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8020A  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 36494  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/25/97  
Analysis Date: 09/25/97

MB Lab ID: QC55042

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	84		58-130
Bromofluorobenzene	87		62-131

Lab #: 130645

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: TVH  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 36537  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/29/97  
Analysis Date: 09/29/97

MB Lab ID: QC55187

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Bromofluorobenzene	109	70-122

Lab #: 130645

BATCH QC REPORT

BTXE

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8020A  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 36537  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/29/97  
Analysis Date: 09/29/97

MB Lab ID: QC55187

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	87		58-130
Bromofluorobenzene	95		62-131

Lab #: 130645

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: TVH  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water  
Batch#: 36494  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/25/97  
Analysis Date: 09/25/97

LCS Lab ID: QC55040

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1980	2000	99	80-120
Surrogate	%Rec	Limits		
Bromofluorobenzene	119	70-122		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 130645

BATCH QC REPORT

BTXE

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8020A  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water  
Batch#: 36494  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/25/97  
Analysis Date: 09/25/97

LCS Lab ID: QC55041

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	17	20	85	80-120
Toluene	17.06	20	85	80-120
Ethylbenzene	18.29	20	91	80-120
m,p-Xylenes	35.24	40	88	80-120
o-Xylene	18.15	20	91	80-120

Surrogate	%Rec	Limits
Trifluorotoluene	85	58-130
Bromofluorobenzene	94	62-131

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

Lab #: 130645

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: TVH  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water  
Batch#: 36537  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/29/97  
Analysis Date: 09/29/97

LCS Lab ID: QC55185

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	2056	2000	103	80-120
Surrogate	%Rec	Limits		
Bromofluorobenzene	139*	70-122		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 130645

BATCH QC REPORT

BTXE

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8020A  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water  
Batch#: 36537  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/29/97  
Analysis Date: 09/29/97

LCS Lab ID: QC55186

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	17.53	20	88	80-120
Toluene	18.08	20	90	80-120
Ethylbenzene	19.68	20	98	80-120
m,p-Xylenes	36.83	40	92	80-120
o-Xylene	19.14	20	96	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	107	58-130		
Bromofluorobenzene	124	62-131		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

Lab #: 130645

## BATCH QC REPORT

Curtis & Tompkins Ltd.  
Page 1 of 1

## BTXE

Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

Analysis Method: EPA 8020A  
 Prep Method: EPA 5030

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: MW-17  
 Lab ID: 130645-001  
 Matrix: Water  
 Batch#: 36494  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 09/16/97  
 Received Date: 09/16/97  
 Prep Date: 09/30/97  
 Analysis Date: 09/30/97

MS Lab ID: QC55043

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5	17.49	87	75-125
Toluene	20	<0.5	18.73	94	75-125
Ethylbenzene	20	<0.5	24.68	123	75-125
m,p-Xylenes	40	<0.5	41.01	103	75-125
o-Xylene	20	<0.5	24.88	124	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	91	58-130			
Bromofluorobenzene	103	62-131			

MSD Lab ID: QC55044

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	17.8	89	75-125	2	20
Toluene	20	18.53	93	75-125	1	20
Ethylbenzene	20	22.53	113	75-125	9	20
m,p-Xylenes	40	39.96	100	75-125	3	20
o-Xylene	20	23	115	75-125	8	20
Surrogate	%Rec	Limits				
Trifluorotoluene	91	58-130				
Bromofluorobenzene	103	62-131				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Lab #: 130645

BATCH QC REPORT

BTXE

Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

Analysis Method: EPA 8020A  
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
 Lab ID: 130726-003  
 Matrix: Water  
 Batch#: 36537  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 09/22/97  
 Received Date: 09/23/97  
 Prep Date: 09/30/97  
 Analysis Date: 09/30/97

MS Lab ID: QC55188

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5	17.39	87	75-125
Toluene	20	<0.5	16.81	84	75-125
Ethylbenzene	20	<0.5	18.68	93	75-125
m,p-Xylenes	40	<0.5	34.22	86	75-125
o-Xylene	20	<0.5	19	95	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	89	58-130			
Bromofluorobenzene	100	62-131			

MSD Lab ID: QC55189

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	17.96	90	75-125	3	20
Toluene	20	17.25	86	75-125	3	20
Ethylbenzene	20	19.11	96	75-125	2	20
m,p-Xylenes	40	34.59	86	75-125	1	20
o-Xylene	20	19.09	95	75-125	0	20
Surrogate	%Rec	Limits				
Trifluorotoluene	87	58-130				
Bromofluorobenzene	97	62-131				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



## TEH-Tot Ext Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-001	MW-17	36404	09/16/97	09/19/97	09/25/97	
130645-002	MW-13	36404	09/16/97	09/19/97	09/24/97	
130645-003	MW-15	36404	09/16/97	09/19/97	09/24/97	
130645-004	MW-9	36404	09/16/97	09/19/97	09/24/97	

Matrix: Water

Analyte	Units	130645-001	130645-002	130645-003	130645-004
Diln Fac:		10	1	1	1
Diesel C12-C22	ug/L	110000 H	120 YH	890 YH	19000 YH
Motor Oil C22-C50	ug/L	9600 YL	<300	380 YL	9000 YL
Surrogate					
Hexacosane	%REC	DO	88	90	82

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

# GC15 Channel B TEH

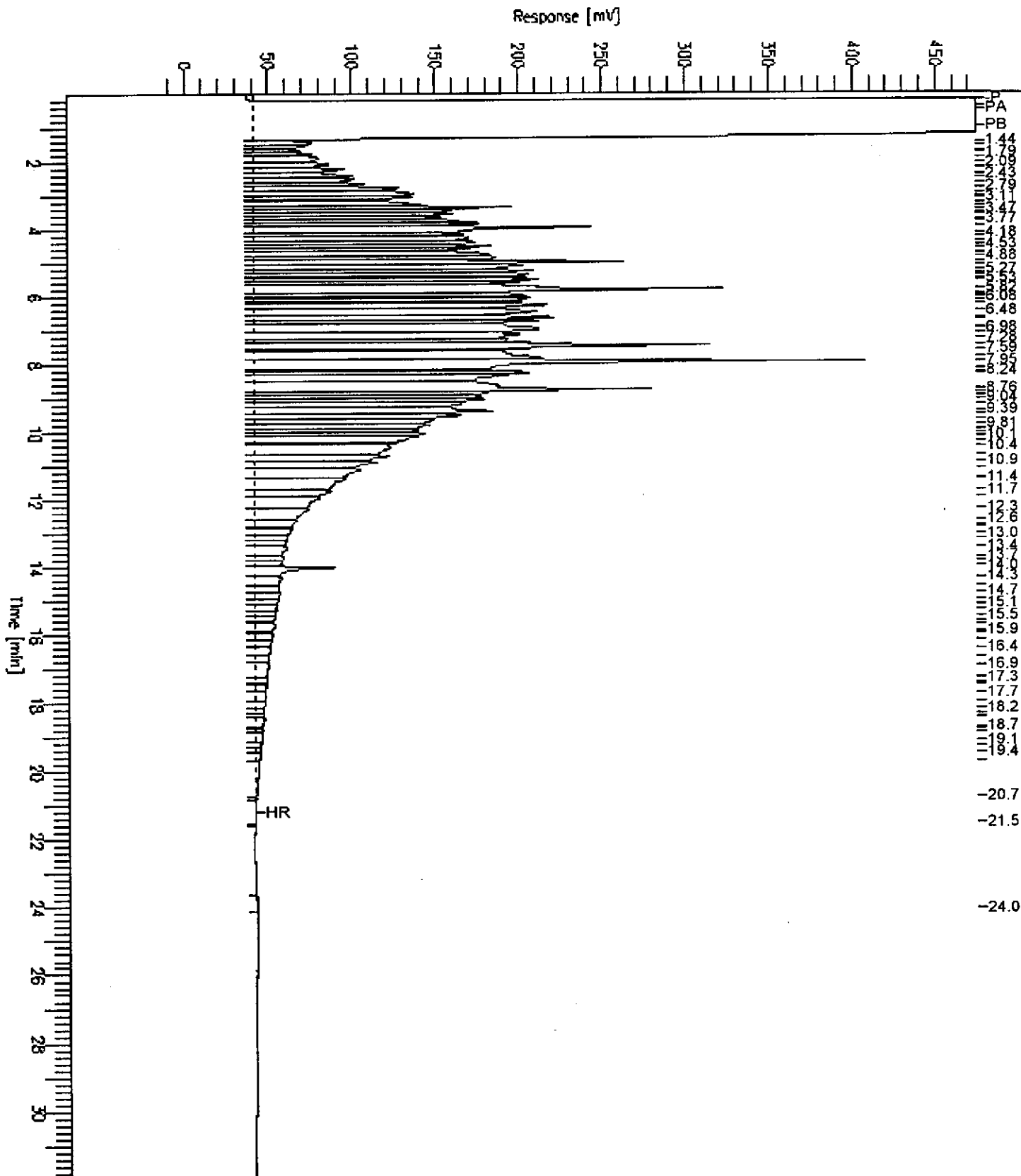
Sample Name : 130645-001,36404  
FileName : G:\GC15\CHB\267B037.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min  
Scale Factor: 0.0

MW-17

End Time : 31.91 min  
Plot Offset: -15 mV

Sample #: 36404  
Date : 9/26/97 09:52 AM  
Time of Injection: 9/25/97 04:47 PM  
Low Point : -14.97 mV  
Plot Scale: 489.8 mV  
High Point : 474.80 mV

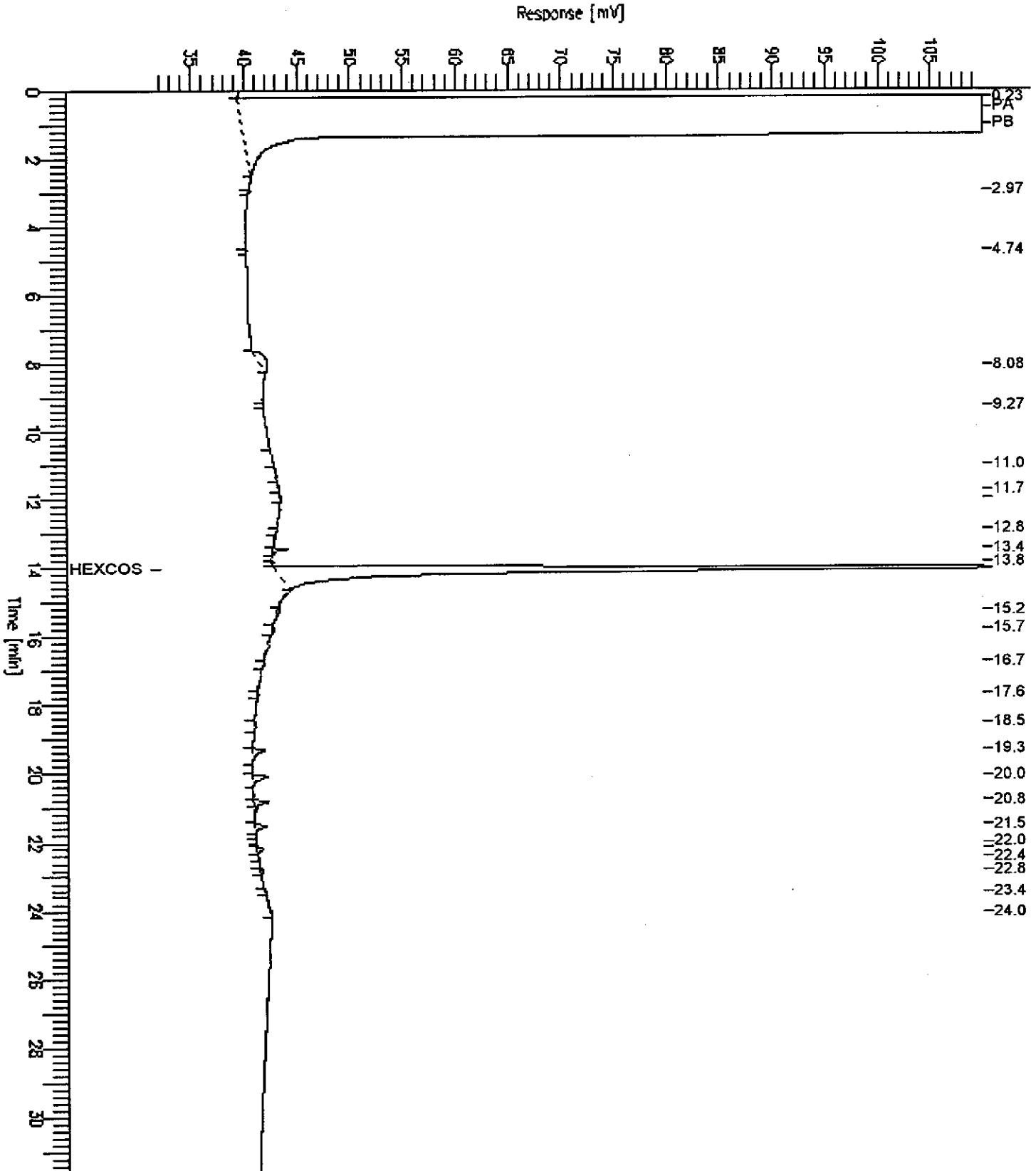
Page 1 of 1



# GC15 Channel B Surrogate

Sample Name : 130645-002,36404 MW-13  
FileName : G:\GC15\CHB\267B008.raw  
Method : SINGL  
Start Time : 0.00 min End Time : 31.90 min  
Scale Factor: 0.0 Plot Offset: 32 mV

Sample #: 36404 Page 1 of 1  
Date : 9/24/97 08:28 PM  
Time of Injection: 9/24/97 07:56 PM  
Low Point : 32.00 mV High Point : 110.00 mV  
Plot Scale: 78.0 mV

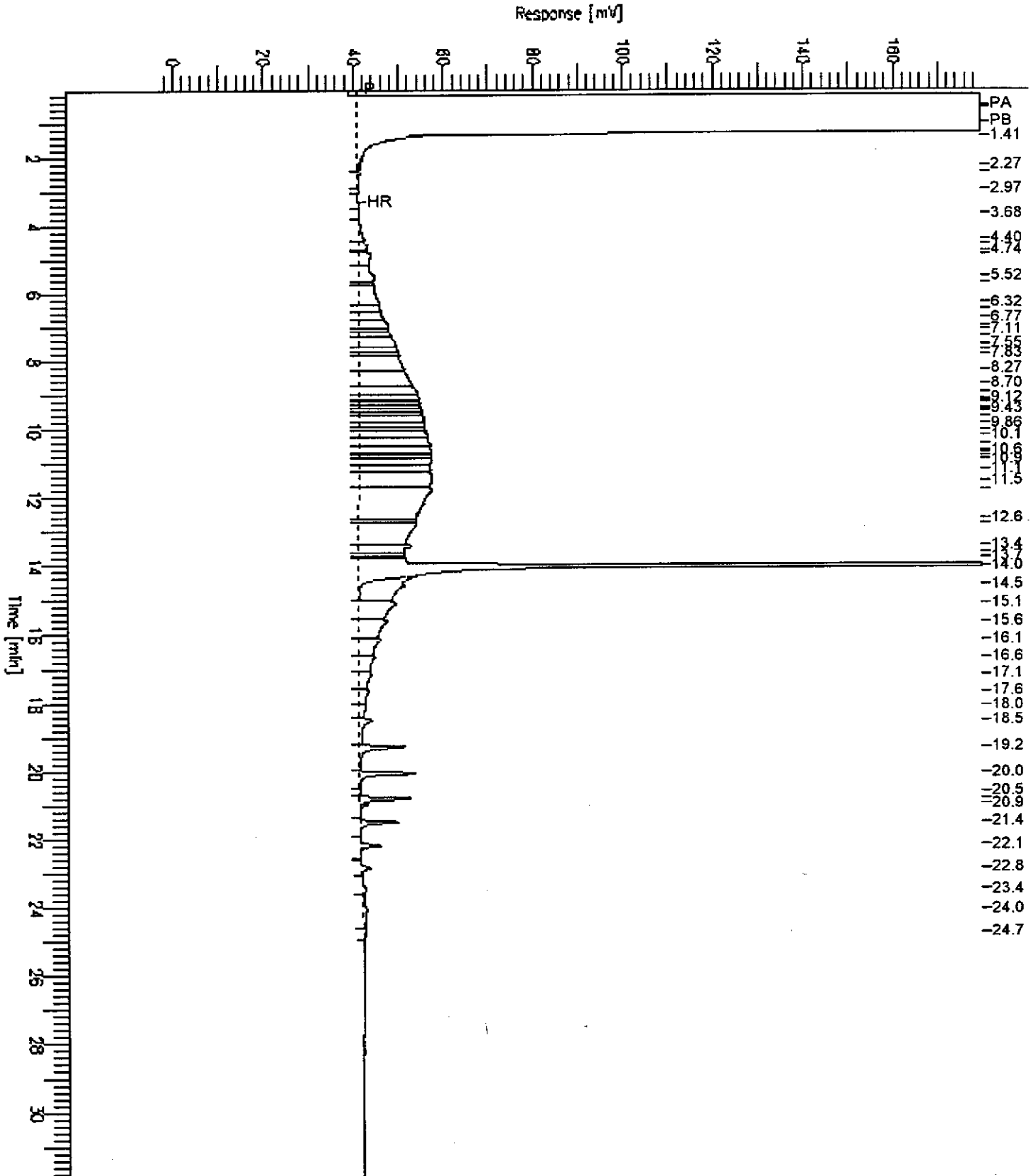




# GC15 Channel B TEH

Sample Name : 130645-003,36404 *MW-15*  
File Name : G:\GC15\CHB\267B009.RAW  
Method : B265TEH.MTH  
Start Time : 0.07 min End Time : 31.91 min  
Scale Factor: 0.0 Plot Offset: -3 mV

Sample #: 36404 Page 1 of 1  
Date : 9/25/97 11:38 AM  
Time of Injection: 9/24/97 08:39 PM  
Low Point : -3.06 mV High Point : 179.63 mV  
Plot Scale: 182.7 mV

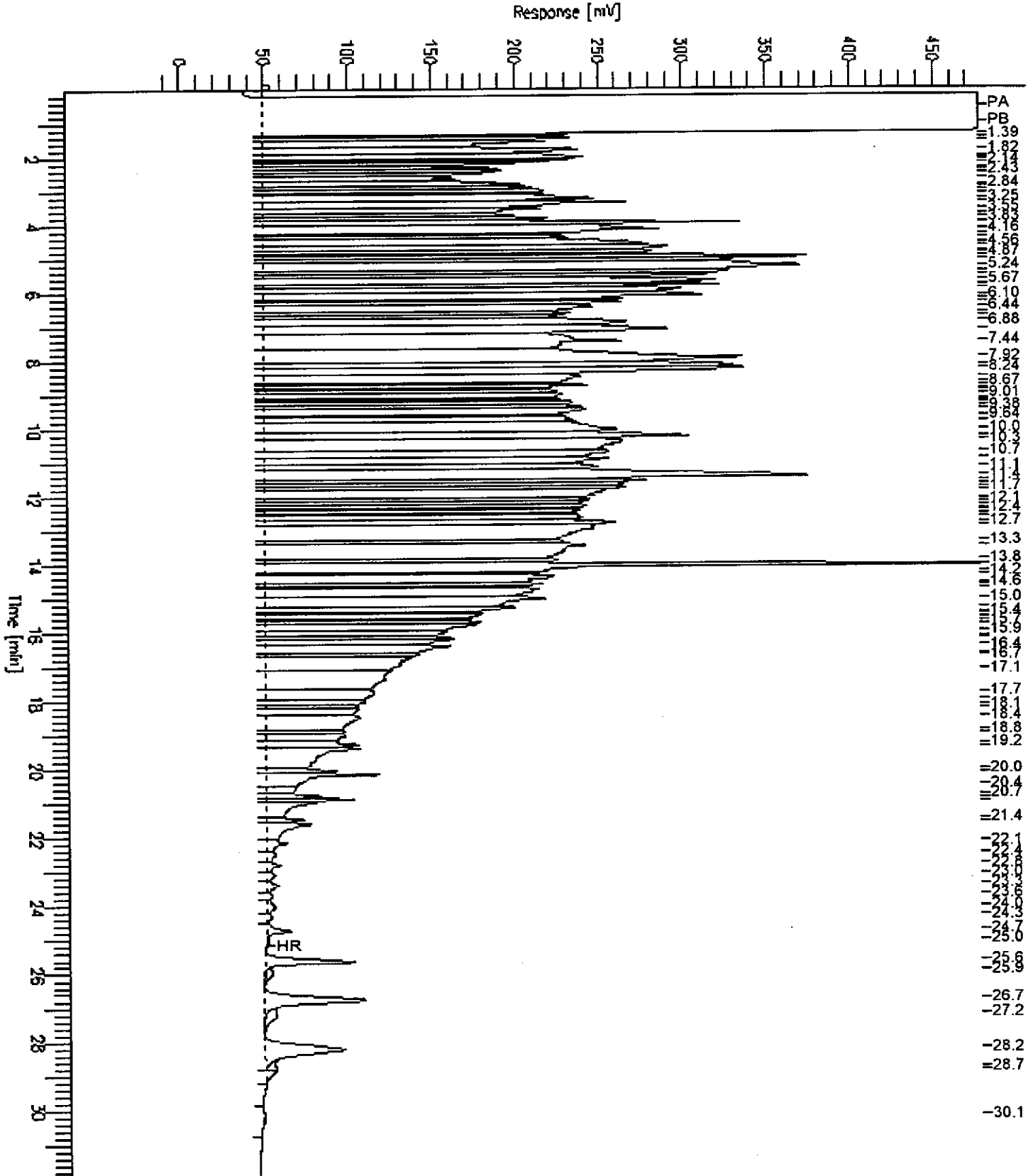


# GC15 Channel B TEH

Sample Name : 130645-004,36404 *MW-9*  
FileName : G:\GC15\CHB\267B010.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min  
Scale Factor: 0.0

Sample #: 36404  
Date : 9/25/97 11:39 AM  
Time of Injection: 9/24/97 09:22 PM  
Low Point : -12.92 mV  
Plot Scale: 490.9 mV

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## TEH-Tot Ext Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-005	MW-8	36404	09/16/97	09/19/97	09/24/97	
130645-006	MW-1	36404	09/16/97	09/19/97	09/24/97	
130645-007	MW-D	36404	09/16/97	09/19/97	09/24/97	
130645-008	MW-FB	36404	09/16/97	09/19/97	09/25/97	

Matrix: Water

Analyte	Units	130645-005	130645-006	130645-007	130645-008
Diln Fac:		1	1	1	1
Diesel C12-C22	ug/L	290 YH	190 YH	210 YH	<50
Motor Oil C22-C50	ug/L	<300	<300	<300	<300
Surrogate					
Hexacosane	%REC	98	98	94	95

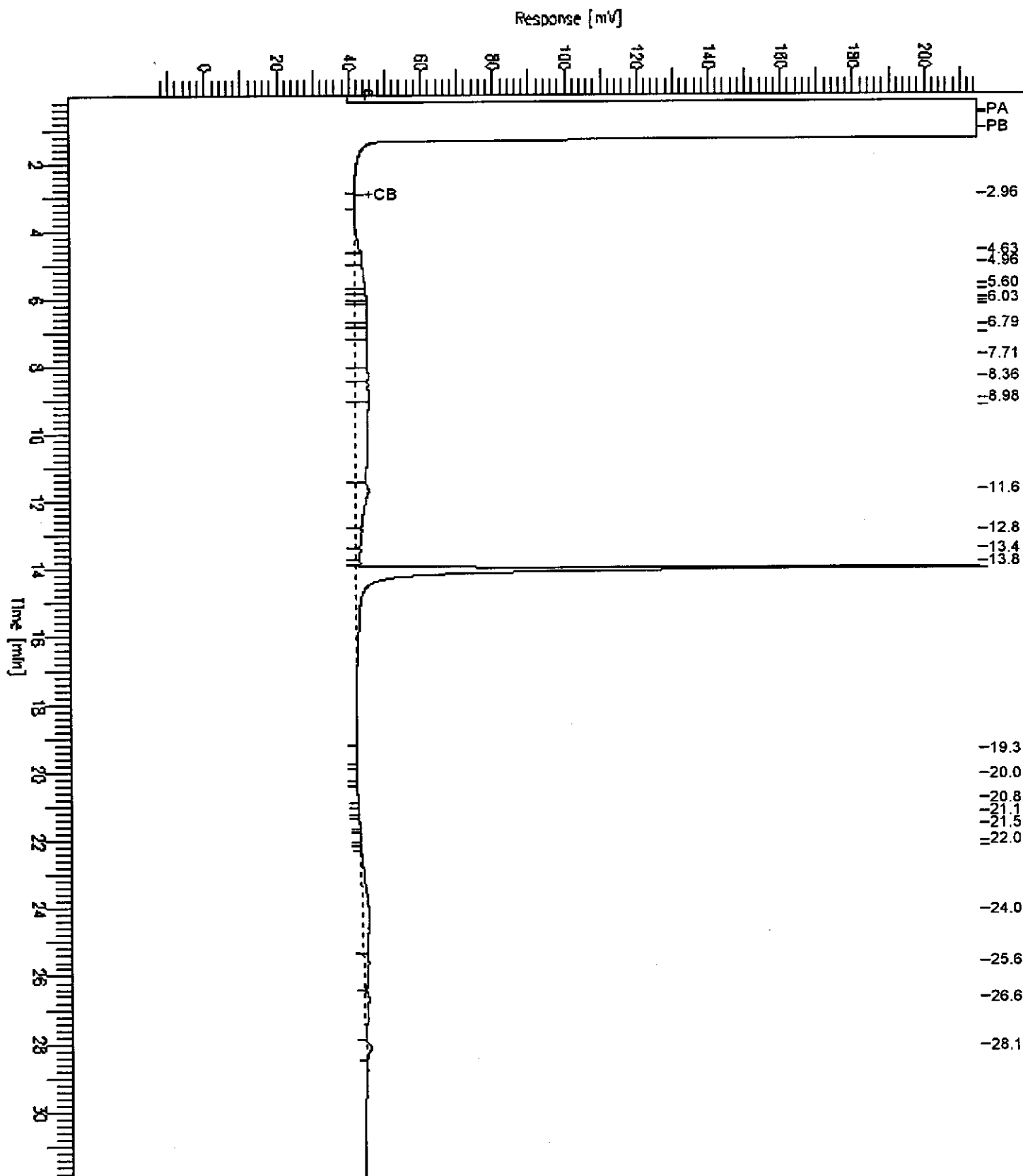
Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

# GC15 Channel B TEH

Sample Name : 130645-005,36404 MW-8  
FileName : G:\GC15\CHB\267B011.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min End Time : 31.91 min  
Scale Factor: 0.0 Plot Offset: -12 mV

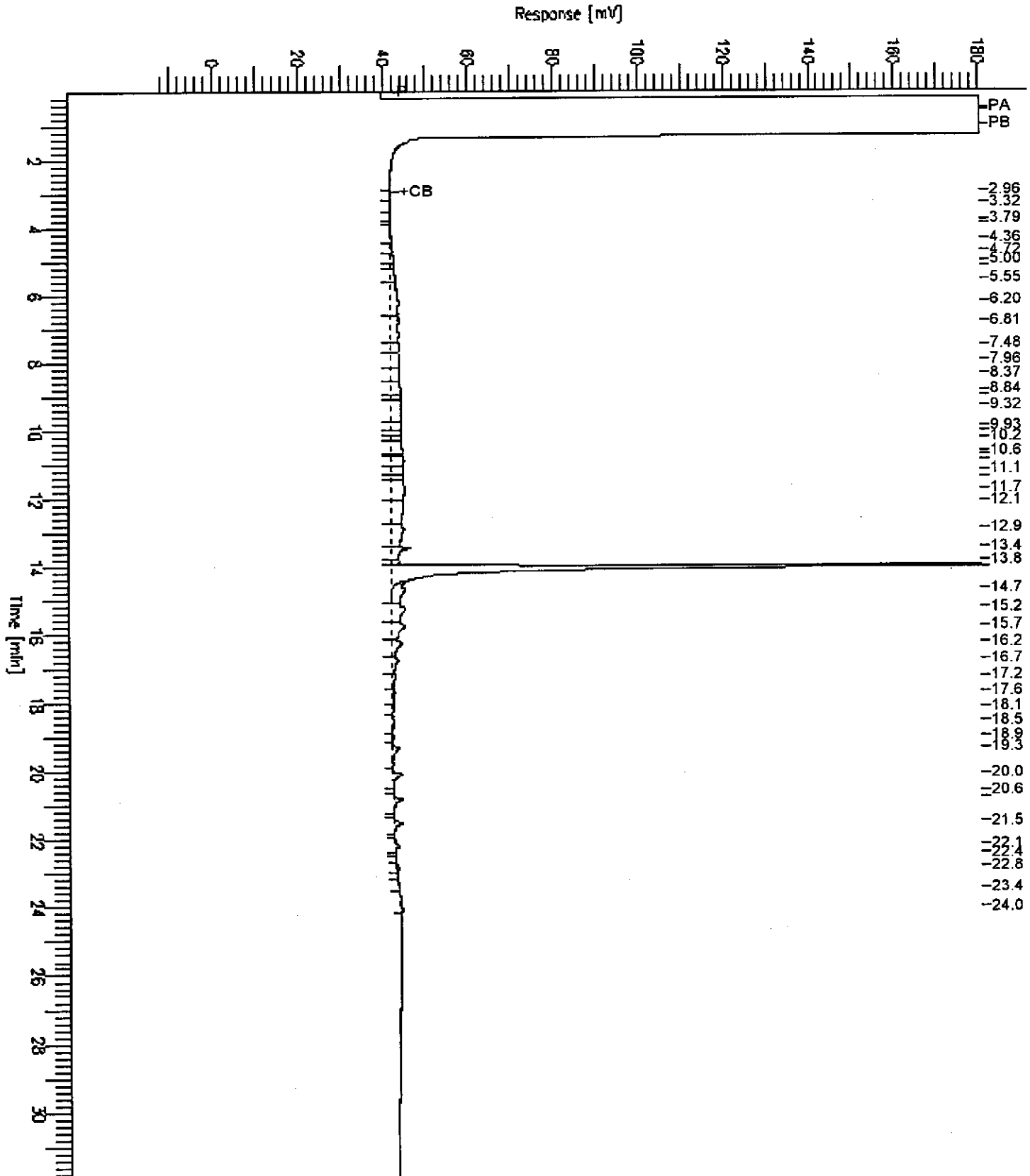
Sample #: 36404 Page 1 of 1  
Date : 9/25/97 11:40 AM  
Time of Injection: 9/24/97 10:05 PM  
Low Point : -12.08 mV High Point : 214.86 mV  
Plot Scale: 226.9 mV



# GC15 Channel B TEH

Sample Name : 130645-006,36404 MW-1  
FileName : G:\GC15\CHB\267B012.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min  
Scale Factor: 0.0

Sample #: 36404  
Date : 9/25/97 11:42 AM  
Time of Injection: 9/24/97 10:48 PM  
Low Point : -12.09 mV  
Plot Scale: 192.5 mV



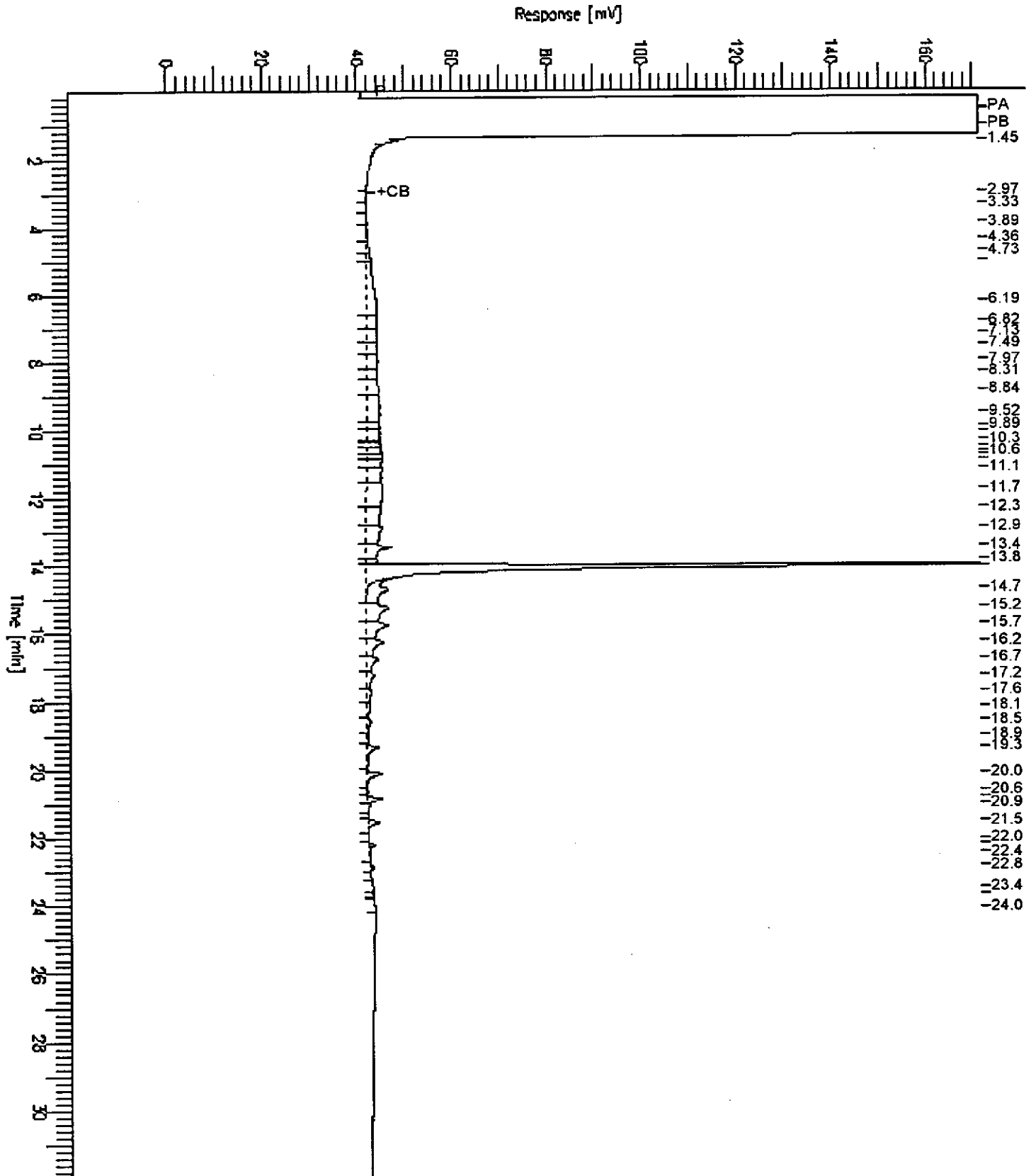
# GC15 Channel B TEH

Sample Name : 130645-007,36404 **MW-D**  
 FileName : G:\GC15\CHB\267B013.RAW  
 Method : B265TEH.MTH  
 Start Time : 0.01 min  
 Scale Factor: 0.0

End Time : 31.91 min  
 Plot Offset: -1 mV

Sample #: 36404  
 Date : 9/25/97 11:42 AM  
 Time of Injection: 9/24/97 11:30 PM  
 Low Point : -1.28 mV  
 Plot Scale: 172.6 mV

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## TEH-Tot Ext Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
130645-009	MW-10	36404	09/16/97	09/19/97	09/25/97	
130645-010	MW-5	36404	09/16/97	09/19/97	09/25/97	
130645-011	MW-7	36404	09/16/97	09/19/97	09/25/97	

Matrix: Water

Analyte	Units	130645-009	130645-010	130645-011
Diln Fac:		1	1	2
Diesel C12-C22	ug/L	1300 YH	7500 YH	26000 YH
Motor Oil C22-C50	ug/L	<300	4100 YL	11000 YL
Surrogate				
Hexacosane	%REC	89	75	86

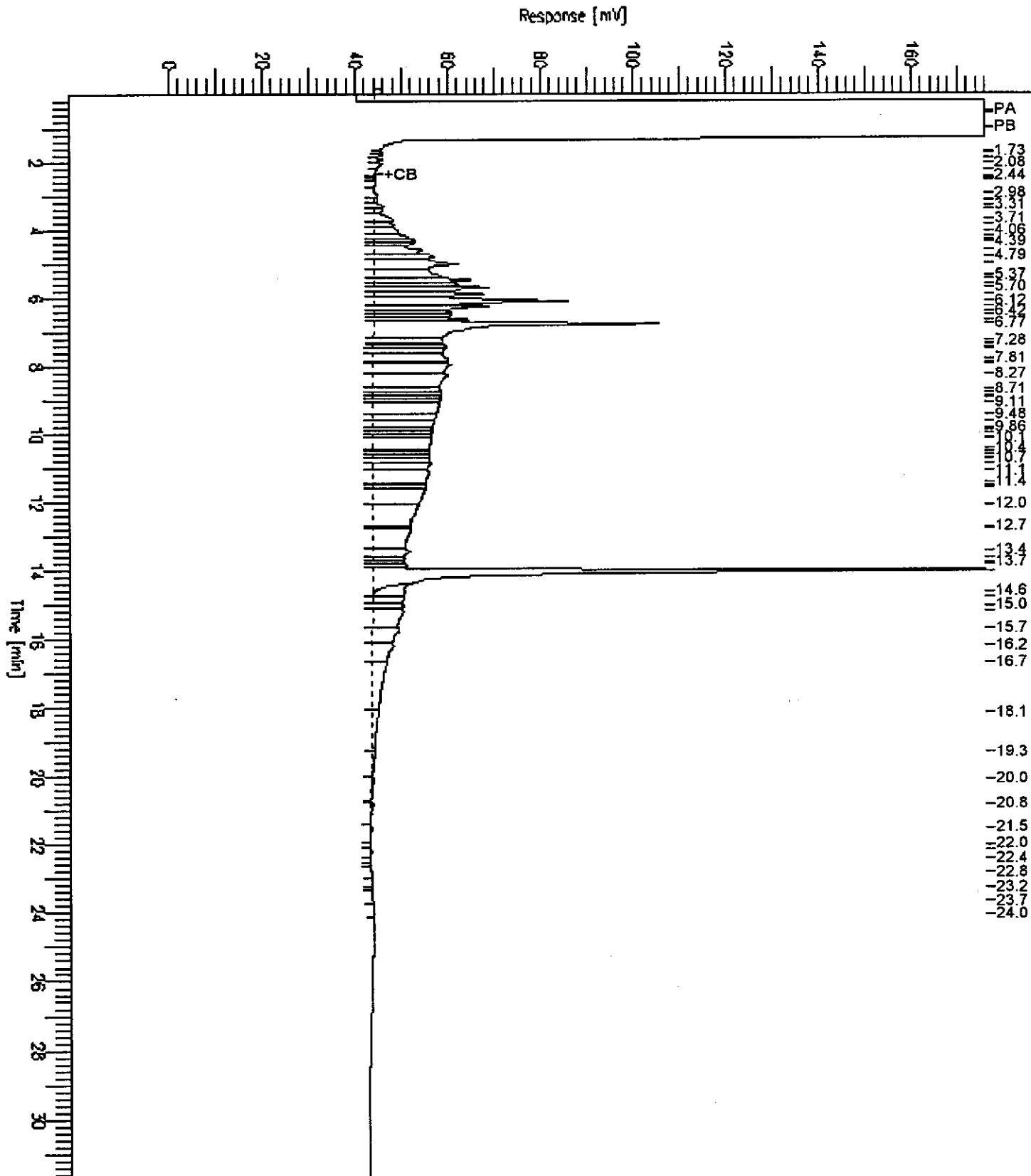
Y: Sample exhibits fuel pattern which does not resemble standard  
H: Heavier hydrocarbons than indicated standard  
L: Lighter hydrocarbons than indicated standard

# GC15 Channel B TEH

Sample Name : 130645-009,36404 **Mp-10**  
 FileName : G:\GC15\CHB\267B015.RAW  
 Method : B265TEH.MTH  
 Start Time : 0.01 min  
 Scale Factor: 0.0

End Time : 31.91 min  
 Plot Offset: -2 mV

Page 1 of 1  
 Sample #: 36404  
 Date : 9/25/97 11:44 AM  
 Time of Injection: 9/25/97 12:56 AM  
 Low Point : -1.56 mV  
 High Point : 176.06 mV  
 Plot Scale: 177.6 mV





# GC15 Channel B TEH

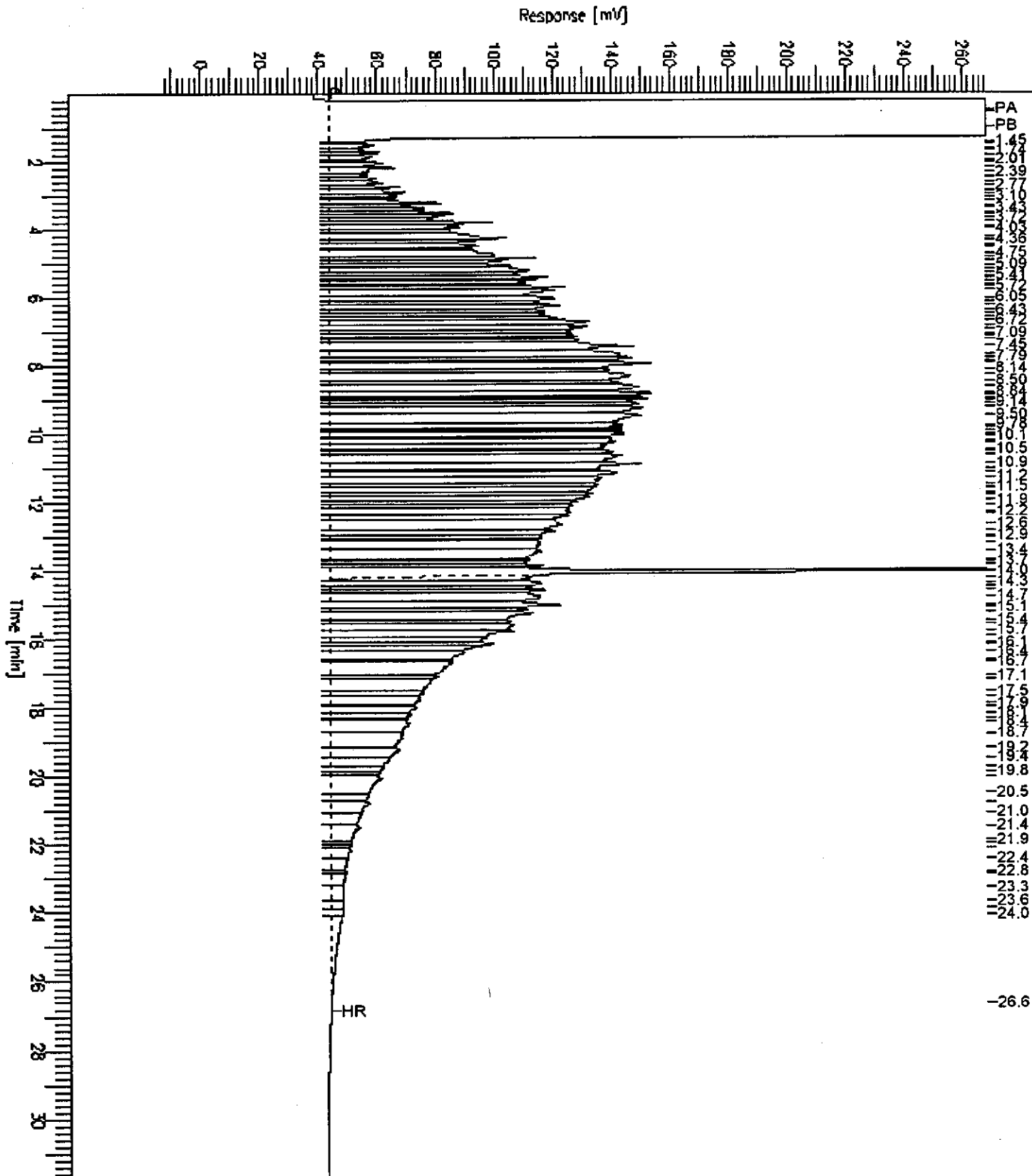
Sample Name : 130645-010,36404 **MW-5**  
FileName : G:\GC15\CHB\2678021.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min  
Scale Factor: 0.0

End Time : 31.91 min  
Plot Offset: -13 mV

Sample #: 36404  
Date : 9/25/97 11:45 AM  
Time of Injection: 9/25/97 05:14 AM  
Low Point : -13.24 mV  
Plot Scale: 281.6 mV

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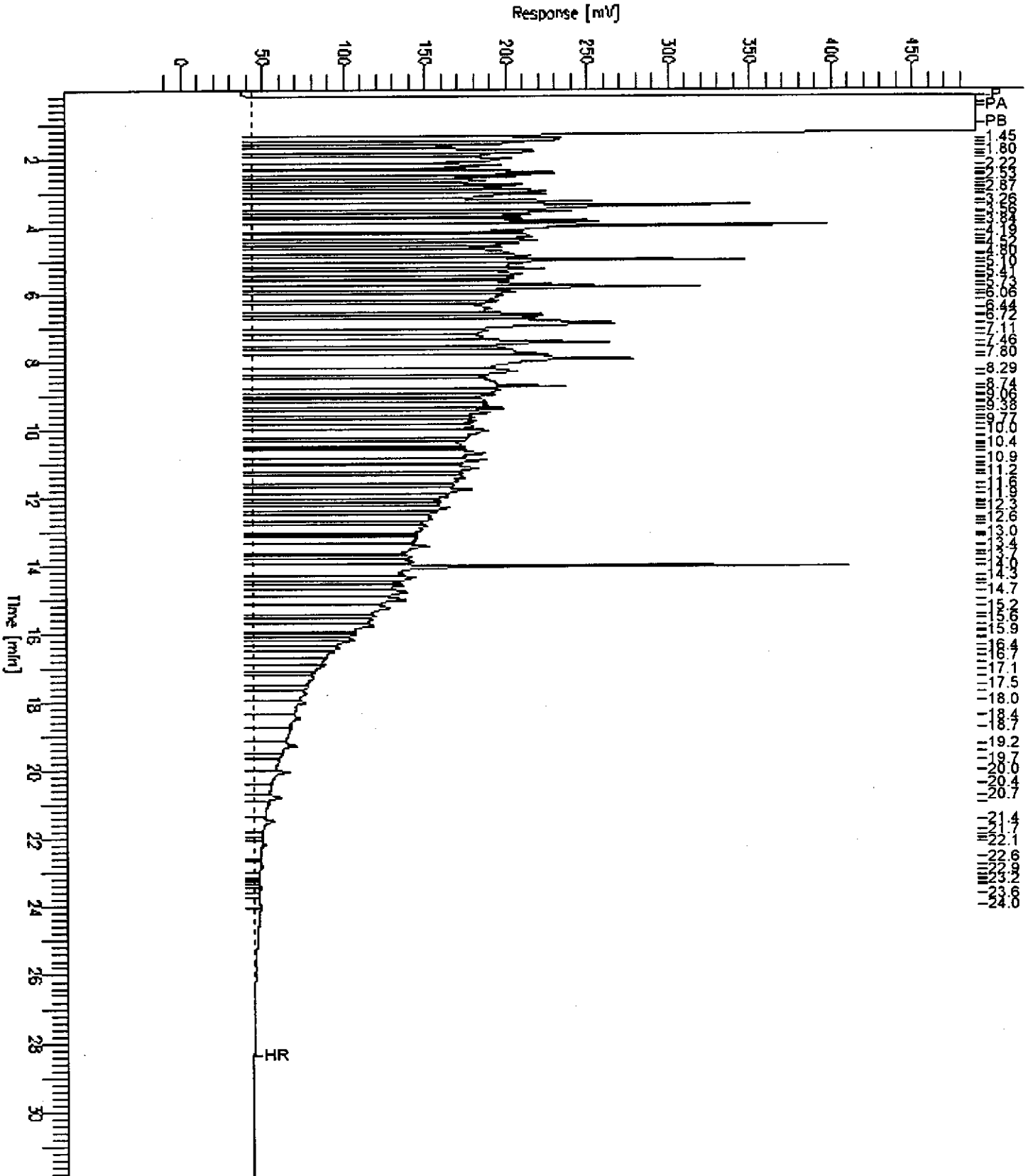
High Point : 268.35 mV



# GC15 Channel B TEH

Sample Name : 130645-011,36404 **MW-1**  
FileName : G:\GC15\CHB\267B038.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min End Time : 31.91 min  
Scale Factor: 0.0 Plot Offset: -15 mV

Sample #: 36404 Page 1 of 1  
Date : 9/26/97 09:53 AM  
Time of Injection: 9/25/97 05:30 PM  
Low Point : -14.72 mV High Point : 489.87 mV  
Plot Scale: 504.6 mV



# GC15 Channel B TEH

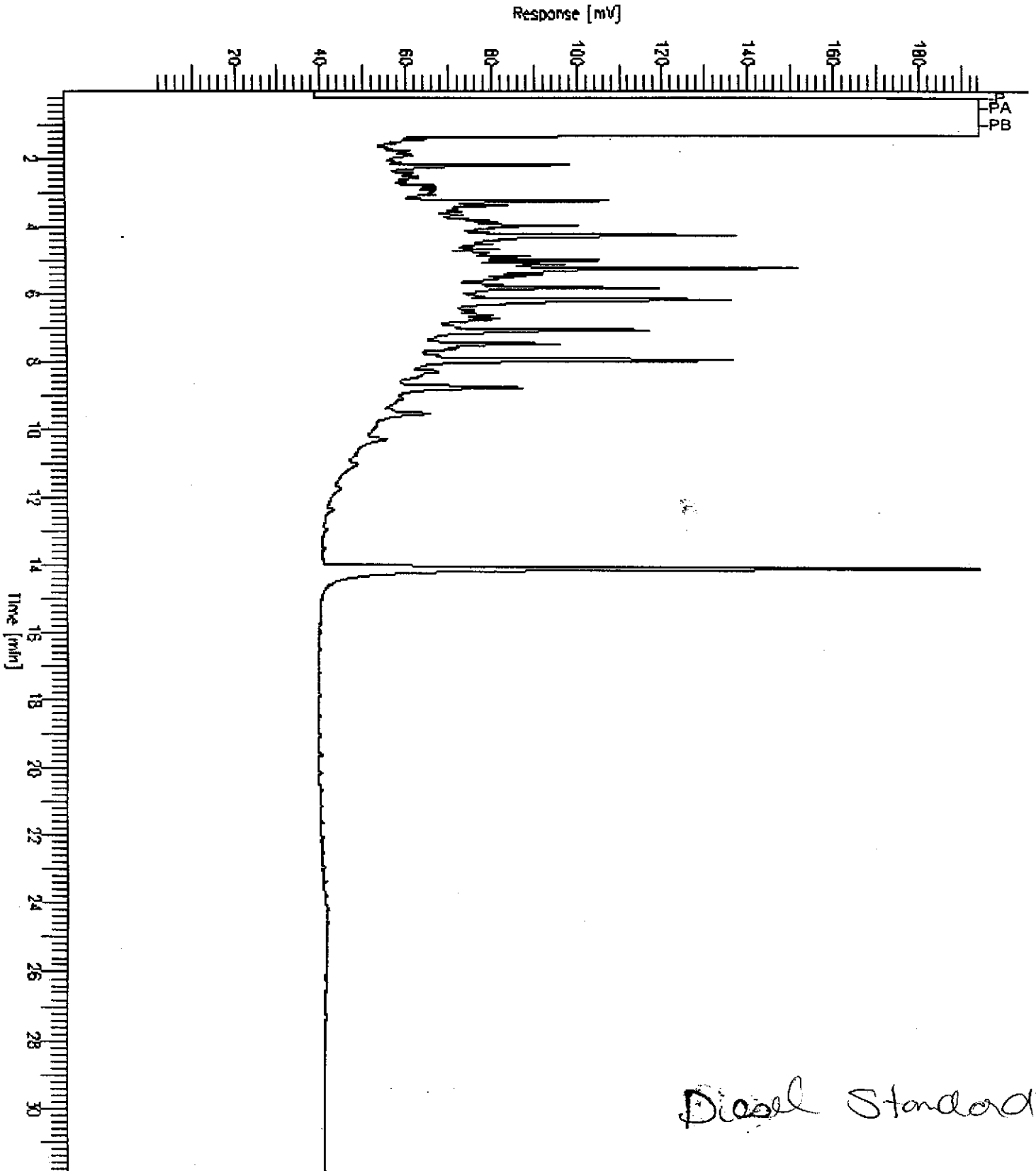
Sample Name : CCV, 97W54704, DS  
File Name : G:\GC15\CHB\267B002.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset : 2 mV

Sample #: 500MG/L  
Date : 9/29/97 11:15 AM  
Time of Injection: 9/24/97  
Low Point : 1.61 mV  
Plot Scale: 192.6 mV

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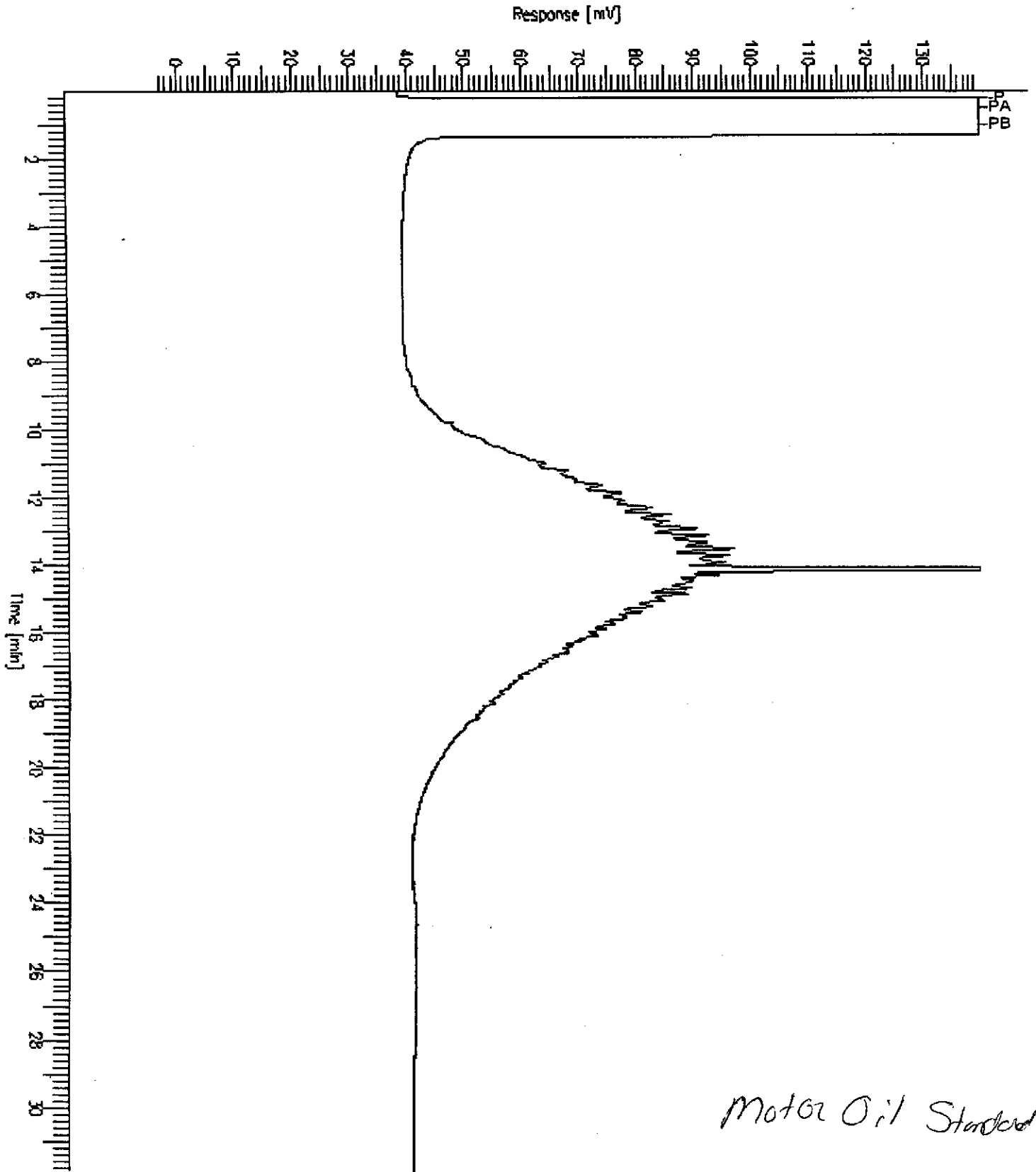
03:38 PM  
High Point : 194.24 mV



# GC15 Channel B TEH

Sample Name : CCV, 97WS4536, MO  
FileName : G:\GC15\CHB\267B004.RAW  
Method : B265TEH.MTH  
Start Time : 0.01 min  
Scale Factor : 0.0  
End Time : 31.91 min  
Plot Offset : -3 mV

Sample #: 500MG/L  
Date : 9/29/97 11:16 AM  
Time of Injection: 9/24/97 05:04 PM  
Low Point : -3.30 mV  
High Point : 139.86 mV  
Plot Scale: 143.2 mV



Lab #: 130645

BATCH QC REPORT



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TEH-Tot Ext Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water  
Batch#: 36404  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/19/97  
Analysis Date: 09/24/97

MB Lab ID: QC54736

Analyte	Result
Diesel C12-C22	<50
Motor Oil C22-C50	<300

Surrogate	%Rec	Recovery Limits
Hexacosane	93	60-140

Lab #: 130645

BATCH QC REPORT



Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
Batch#: 36404  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/19/97  
Analysis Date: 09/25/97

BS Lab ID: QC54737

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1800	73	60-140
Surrogate	%Rec	Limits		
Hexacosane	91	60-140		

BSD Lab ID: QC54738

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	1908	78	60-140	6	35
Surrogate	%Rec	Limits				
Hexacosane	97	60-140				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-8  
Lab ID: 130645-005  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	78	60-150
Decachlorobiphenyl	52	30-130



PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-1  
Lab ID: 130645-006  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	80	60-150
Decachlorobiphenyl	48	30-130





PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-D  
Lab ID: 130645-007  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

*(dewi ?)*

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	82	60-150
Decachlorobiphenyl	48	30-130



PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-FB ✓ 7. *free product*  
Lab ID: 130645-008  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

*2 or 6 ?*

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	90	60-150
Decachlorobiphenyl	73	30-130



PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-9  
Lab ID: 130645-004  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	48*	60-150
Decachlorobiphenyl	37	30-130

\* Values outside of QC limits



PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-10  
Lab ID: 130645-009  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	60	60-150
Decachlorobiphenyl	43	30-130



PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-5  
Lab ID: 130645-010  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	88	60-150
Decachlorobiphenyl	54	30-130



PCBs

Client: Kennedy/Jenks Consultants  
Project#: 950007.10  
Location: Owens Brockway

Analysis Method: PCB  
Prep Method: EPA 3520  
Cleanup Method: EPA acid

Field ID: MW-7  
Lab ID: 130645-011  
Matrix: Water  
Batch#: 36429  
Units: ug/L  
Diln Fac: 1

Sampled: 09/16/97  
Received: 09/16/97  
Extracted: 09/22/97  
Analyzed: 09/26/97

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	60	60-150
Decachlorobiphenyl	49	30-130

Lab #: 130645

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
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Polychlorinated Biphenyls

Client: Kennedy/Jenks Consultants	Analysis Method: PCB
Project#: 950007.10	Prep Method: EPA 3520
Location: Owens Brockway	Cleanup Method: EPA acid

METHOD BLANK

Matrix: Water	Prep Date: 09/22/97
Batch#: 36429	Analysis Date: 09/25/97
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC54813

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Rec	Recovery Limits
TCMX	65	60-150
Decachlorobiphenyl	54	30-130

Lab #: 130645

BATCH QC REPORT

Polychlorinated Biphenyls			
Client: Kennedy/Jenks Consultants	Analysis Method: PCB		
Project#: 950007.10	Prep Method: EPA 3520		
Location: Owens Brockway	Cleanup Method: EPA acid		
BLANK SPIKE/BLANK SPIKE DUPLICATE			
Matrix: Water	Prep Date: 09/22/97		
Batch#: 36429	Analysis Date: 09/25/97		
Units: ug/L			
Diln Fac: 1			

BS Lab ID: QC54814

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	6.67	4.3	87	50-128
Surrogate	%Rec	Limits		
TCMX	67	60-150		
Decachlorobiphenyl	53	30-130		

BSD Lab ID: QC54815

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	6.67	4.6	91	50-128	5	20
Surrogate	%Rec	Limits				
TCMX	70	60-150				
Decachlorobiphenyl	52	30-130				

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 RPD: 0 out of 1 outside limits  
 Spike Recovery: 0 out of 2 outside limits



Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

 Field ID: MW-9  
 Lab ID: 130645-004  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Sampled: 09/16/97  
 Received: 09/16/97  
 Extracted: 09/17/97  
 Analyzed: 09/17/97

Analyte	Result	Reporting Limit
Chloromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl Chloride	ND	0.5
Chloroethane	ND	1.0
Methylene Chloride	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
Freon 113	ND	5.0
1,2-Dichloroethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
Bromodichloromethane	ND	0.5
1,2-Dichloropropane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
Trichloroethene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
Dibromochloromethane	ND	0.5
Bromoform	ND	0.5
Tetrachloroethene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
Chlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
Surrogate	%Recovery	Recovery Limits
Toluene-d8	99	92-107
Bromofluorobenzene	101	80-121
1,2-Dichloroethane-d4	103	87-121

Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

 Field ID: MW-8  
 Lab ID: 130645-005  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Sampled: 09/16/97  
 Received: 09/16/97  
 Extracted: 09/17/97  
 Analyzed: 09/17/97

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Recovery	Recovery Limits
Toluene-d8	99	92-107
Bromofluorobenzene	96	80-121
1,2-Dichloroethane-d4	88	87-121

Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

 Field ID: MW-1  
 Lab ID: 130645-006  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Sampled: 09/16/97  
 Received: 09/16/97  
 Extracted: 09/17/97  
 Analyzed: 09/17/97

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Recovery	Recovery Limits
Toluene-d8	97	92-107
Bromofluorobenzene	95	80-121
1,2-Dichloroethane-d4	89	87-121

Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

 Field ID: MW-D  
 Lab ID: 130645-007  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Sampled: 09/16/97  
 Received: 09/16/97  
 Extracted: 09/18/97  
 Analyzed: 09/18/97

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Recovery	Recovery Limits
Toluene-d8	98	92-107
Bromofluorobenzene	101	80-121
1,2-Dichloroethane-d4	97	87-121

Halogenated Volatile Organics  
 EPA 8010 Analyte List

Client: Kennedy/Jenks Consultants	Analysis Method: EPA 8260
Project#: 950007.10	Prep Method: EPA 5030
Location: Owens Brockway	

Field ID: MW-FB	Sampled: 09/16/97
Lab ID: 130645-008	Received: 09/16/97
Matrix: Water	Extracted: 09/18/97
Batch#: 36332	Analyzed: 09/18/97
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Recovery	Recovery Limits
Toluene-d8	97	92-107
Bromofluorobenzene	101	80-121
1,2-Dichloroethane-d4	97	87-121

Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

 Field ID: MW-10  
 Lab ID: 130645-009  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Sampled: 09/16/97  
 Received: 09/16/97  
 Extracted: 09/18/97  
 Analyzed: 09/18/97

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Recovery	Recovery Limits
Toluene-d8	98	92-107
Bromofluorobenzene	101	80-121
1,2-Dichloroethane-d4	99	87-121

**Halogenated Volatile Organics  
EPA 8010 Analyte List**

Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

Analysis Method: EPA 8260  
 Prep Method: EPA 5030

Field ID: MW-5  
 Lab ID: 130645-010  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

Sampled: 09/16/97  
 Received: 09/16/97  
 Extracted: 09/18/97  
 Analyzed: 09/18/97

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Recovery	Recovery Limits
Toluene-d8	99	92-107
Bromofluorobenzene	101	80-121
1,2-Dichloroethane-d4	101	87-121

Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

 Field ID: MW-7  
 Lab ID: 130645-011  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Sampled: 09/16/97  
 Received: 09/16/97  
 Extracted: 09/18/97  
 Analyzed: 09/18/97

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Recovery	Recovery Limits
Toluene-d8	97	92-107
Bromofluorobenzene	99	80-121
1,2-Dichloroethane-d4	101	87-121





Lab #: 130645

## BATCH QC REPORT



Curtis &amp; Jenks Inc.

 Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

## METHOD BLANK

 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Prep Date: 09/17/97  
 Analysis Date: 09/17/97

MB Lab ID: QC54460

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Rec	Recovery Limits
Toluene-d8	99	92-107
Bromofluorobenzene	103	80-121
1,2-Dichloroethane-d4	103	87-121

Lab #: 130645

BATCH QC REPORT


 Halogenated Volatile Organics  
 EPA 8010 Analyte List

 Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

 Analysis Method: EPA 8260  
 Prep Method: EPA 5030

## METHOD BLANK

 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

 Prep Date: 09/17/97  
 Analysis Date: 09/17/97

MB Lab ID: QC54488

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Rec	Recovery Limits
Toluene-d8	97	92-107
Bromofluorobenzene	94	80-121
1,2-Dichloroethane-d4	87	87-121



## Halogenated Volatile Organics

Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

Analysis Method: EPA 8260  
 Prep Method: EPA 5030

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: MW-9  
 Lab ID: 130645-004  
 Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 09/16/97  
 Received Date: 09/16/97  
 Prep Date: 09/17/97  
 Analysis Date: 09/17/97

MS Lab ID: QC54485

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<1	44.13	88	65-135
Trichloroethene	50	4	46.93	86	77-109
Chlorobenzene	50	<1	49.84	100	82-115
Surrogate	%Rec	Limits			
Toluene-d8	96	92-107			
Bromofluorobenzene	98	80-121			
1,2-Dichloroethane-d4	90	87-121			

MSD Lab ID: QC54486

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	41.88	84	65-135	5	14
Trichloroethene	50	46.18	84	77-109	2	6
Chlorobenzene	50	49.55	99	82-115	1	4
Surrogate	%Rec	Limits				
Toluene-d8	97	92-107				
Bromofluorobenzene	96	80-121				
1,2-Dichloroethane-d4	85*	87-121				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits



## Halogenated Volatile Organics

Client: Kennedy/Jenks Consultants  
 Project#: 950007.10  
 Location: Owens Brockway

Analysis Method: EPA 8260  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 36332  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 09/17/97  
 Analysis Date: 09/17/97

LCS Lab ID: QC54459

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	49.03	50	98	73-141
Trichloroethene	49.44	50	99	84-113
Chlorobenzene	50.85	50	102	87-117
Surrogate	%Rec	Limits		
Toluene-d8	98	92-107		
Bromofluorobenzene	99	80-121		
1,2-Dichloroethane-d4	99	87-121		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits

**KENNEDY/JENKS CONSULTANTS**

**CHAIN-OF-CUSTODY ANALYSIS REQUEST**

- 200 New Blinn Rd., #118, Bakersfield, CA 93308
- 530 South 336th St., Federal Way, WA 98003
- 17310 Red Hill Ave., #220, Irvine, CA 92714
- 2181 East Bayshore Rd., #200, Palo Alto, CA 94303

- 5190 Neil Road, #300, Reno, NV 89502
- 3338 Bradshaw Rd., #140, Sacramento, CA 95827
- 603 Second St., San Francisco, CA 94107
- 1000 Hill Rd., #200, Ventura, CA 93003

1/2

HAZARDOUS: Analyte Compounds  
9/16/97 Report To Stephanie Stehling  
 No. of Samples Queens Broadway Company Kennedy/Jenks  
 Operator Name K. Heiss Address 303 Second St.  
(415) 243-2156 San Francisco, CA  
 Lot No. 950007, 10 Phone (415) 243-2156 94107

(5) ANALYSES REQUESTED						
TPH gas / DIESEL	TPH diesel	TPH motor oil	EPA 9010	PCBs	Soluble fraction	
X	X	X				
X	X	X	X	X	X	
X	X	X	X	X	X	
X	X	X	X	X	X	
X	X	X	X	X	X	
X	X	X	X	X	X	
X	X	X	X	X	X	
X	X	X	X	X	X	
X	X	X	X	X	X	

Lab Destination Curtis & Tompkins  
 Address \_\_\_\_\_  
 Phone (510) 486-0900  
 Carrier/Way Bill No. \_\_\_\_\_

(1) ID No.	(1) Client ID No.	COLLECTION		(2) Type	(3) Depth	(3) Comp.	(4) Pres.	Turn-around	(5) ANALYSES REQUESTED						Comment/Conditions (Container type, container number, etc.)
		Date	Time						TPH gas / DIESEL	TPH diesel	TPH motor oil	EPA 9010	PCBs	Soluble fraction	
	MW-17	9/16	900	W	-	-	AS WA	STAND	X	X	X				3X VOC <sup>w</sup> /HCl; 2X LITER GLASS
	MW-13		932		-	-			X	X	X				
	MW-15		1006		-	-			X	X	X				2X VOC <sup>w</sup> /HCl; 3X LITER GLASS
	MW-9		1056		-	-			X	X	X	X	X	X	
	MW-8		1134		-	-			X	X	X	X	X	X	2X VOC <sup>w</sup> /HCl; 2X LITER GLASS
	MW-1		1224		-	-			X	X	X	X	X	X	
	MW-D		1226		-	-			X	X	X	X	X	X	
	MW-FB		1300		-	-			X	X	X	X	X	X	
	MW-10		1325		-	-			X	X	X	X	X	X	
	MW-5		1401		-	-			X	X	X	X	X	X	

Write only one sample number in each space.  
 Specify type of sample(s): Water (W), Solid (S), or Indicate type.  
 Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.  
 Indicate preservation of sample.  
 Write each analysis requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY:				SAMPLE RECEIVED BY:					
Print Name	Signature	Company	Date	Time	Print Name	Signature	Company	Date	Time
Kurt Heiss	<i>[Signature]</i>	K/J	9/16	16:00	J. GUERRERO	<i>[Signature]</i>	CURTIS TOMPKINS	9/16/97	9:15

SEP-19-97 FRI 11:41 AM KENNEDY/JENKS, NCIS-SF FAX NO. 415 543 8061 P. 2

**JEDY/JENKS CONSULTANTS**

**CHAIN-OF-CUSTODY ANALYSIS REQUEST**

- 200 New Blinn Rd., #115, Bakersfield, CA 93309
- 630 South 390th St., Federal Way, WA 98003
- 17310 Red Hill Ave., #220, Irvine, CA 92714
- 2181 East Bayshore Rd., #200, Palo Alto, CA 94303

- 6190 Neil Road, #300, Reno, NV 89502
- 3338 Bradshaw Rd., #140, Sacramento, CA 95827
- 2203 Second St., San Francisco, CA 94107
- 1000 Hill Rd., #200, Venture, CA 93003

(2/2)

VISIBLE HAZARDS: Analyte Compounds  
9/16/97  
 Report To Stephanie Stehling  
 Name of Samples Owens-Brockway Company Kennedy/Jenks  
 Client Name K. Heiss Address 303 Second St.  
(415) 243-2150 San Francisco, CA 94107  
 Job No. 950007.10 Phone (415) 243-2150

**(5) ANALYSES REQUESTED**

TPH <sup>gas</sup> / BTEX	TPH <sup>di. br.</sup>	TPH <sup>met. oil</sup>	EPA 9010	PCBs	BOD5 / Dissolved	BTEX
X	X	X	X	X	X	X

Lab Destination Curtis Tompkins  
 Address \_\_\_\_\_  
 Phone (510) 486-0900  
 Carrier/Way Bill No. \_\_\_\_\_

(1) ID No.	(11) Client ID No.	COLLECTION		(2) Type	(3) Depth	(3) Comp.	(4) Pres.	Turn-around	(5) ANALYSES REQUESTED						Comment/Conditions <small>(e.g., container type, container number, etc.)</small>	
		Date	Time						TPH <sup>gas</sup> / BTEX	TPH <sup>di. br.</sup>	TPH <sup>met. oil</sup>	EPA 9010	PCBs	BOD5 / Dissolved		BTEX
	MW-7	9/16	1449	W	-	-	AS WRD	STAND	X	X	X	X	X	X	X	4 x VOC, 2 x LITER GLASS
	MW-2	↓	1000	↓	-	-	↓	↓								1 x VOC
	Three Blanks	-	-	↓	-	-	↓	↓								2 x VOC / 1 cc

Write only one sample number in each space.  
 Specify type of sample(s): Water (W), Solid (S), or Indicate type.  
 Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.  
 Preservation of sample.  
 Write each analyses requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY:				SAMPLE RECEIVED BY:					
Print Name	Signature	Company	Date	Time	Print Name	Signature	Company	Date	Time
Kurt Heiss	<i>[Signature]</i>	K/J	9/16	16:00	J. GUERRERO	<i>[Signature]</i>	CURTIS TOMPKINS	9-16-97	4:10

SEP-19-97 FRI 11:42 AM KENNEDY/JENKS, NCIS-SF FAX NO. 415 543 8061 P. 3

KENNEDY/JENKS CONSULTANTS

130645

1/2

SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

- 200 New Stine Rd., #115, Bakersfield, CA 93309
- 530 South 336th St., Federal Way, WA 98003
- 17310 Red Hill Ave., #220, Irvine, CA 92714
- 2191 East Bayshore Rd., #200, Palo Alto, CA 94303

- 5190 Neil Road, #300, Reno, NV 89602
- 3336 Bradshaw Rd., #140, Sacramento, CA 95827
- 303 Second St., San Francisco, CA 94107
- 1000 Hill Rd., #200, Ventura, CA 93003

POSSIBLE HAZARDS: Analyte Compounds

Date 9/16/97 Report To Stephanie Stehling

Source of Samples Owens Brockway Company Kennedy/Jenks

Sampler Name K. Heiss Address 303 Second St

Phone (415) 243-2150 San Francisco, CA

Project No. 950007.10 Phone (415) 243-2150 94107

(5) ANALYSES REQUESTED

TPH gas/BTEX  
 TPH diesel  
 TPH motor oil  
 EPA 9010  
 PCBs  
 Soluble fraction  
 dw 9/16/97

Lab Destination Curtis & Tompkins

Address \_\_\_\_\_

Phone (510) 486-0900

Carrier/Way Bill No. \_\_\_\_\_

(1) Lab ID No.	(1) Client ID No.	COLLECTION		(2) Type	Depth	(3) Comp.	(4) Pres.	Turn-around	TPH gas/BTEX	TPH diesel	TPH motor oil	EPA 9010	PCBs	Soluble fraction		Comment/Conditions (Container type, container number, etc.)
		Date	Time													
-1	MW-17	9/16	900	W	-	-	AS WD	STAND	X	X	X					3X VOC <sup>u</sup> /HCl; 2X LITER GLASS
-2	MW-13		932		-	-			X	X	X					
-3	MW-15		1006		-	-			X	X	X					
-4	MW-9-		1056		-	-			X	X	X	X	X			4X VOC <sup>u</sup> /HCl; 3X LITER GLASS
-5	MW-8		1134		-	-			X	X	X	X	X			4X VOC <sup>u</sup> /HCl; 2X LITER GLASS
-6	MW-1		1224		-	-			X	X	X	X	X			
-7	MW-D		1226		-	-			X	X	X	X	X			
-8	MW-FB		1300		-	-			X	X	X	X	X			
-9	MW-10		1325		-	-			X	X	X	X	X			
-10	MW-5		1401		-	-			X	X	X	X	X			

- (1) Write only one sample number in each space.
- (2) Specify type of sample(s): Water (W), Solid (S), or indicate type
- (3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.
- (4) Preservation of sample.
- (5) Write each analyses requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY:					SAMPLE RECEIVED BY:				
Print Name	Signature	Company	Date	Time	Print Name	Signature	Company	Date	Time
Kurt Heiss		K/J	9/16	16 <sup>10</sup>	J. GUERRERO		CURTIS+TOMPKIN	9/16/97	4:16



KENNEDY/JENKS CONSULTANTS

130645

SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

- 200 New Stine Rd., #115, Bakersfield, CA 93308
- 530 South 338th St., Federal Way, WA 98003
- 17310 Red Hill Ave., #220, Irvine, CA 92714
- 2191 East Bayshore Rd., #200, Palo Alto, CA 94303

- 5180 Neil Road, #300, Reno, NV 89502
- 3336 Bradshaw Rd., #140, Sacramento, CA 95827
- 303 Second St., San Francisco, CA 94107
- 1000 Hill Rd., #200, Venture, CA 93003

2/2

POSSIBLE HAZARDS: Analyte Compounds

Date 9/16/97 Report To Stephanie Stehling

Source of Samples Owens-Brockway Company Kennedy/Jenks

Sampler Name K. Heiss Address 303 Second St.

Phone (415) 243-2150 San Francisco, CA 94107

Project No. 950007.10 Phone (415) 243-2150

(5) ANALYSES REQUESTED

TPH gas/BTEX  
TPH diesel  
TPH motor oil  
EPA 8010  
PCAs  
8015 fingerprint  
BTEX

Lab Destination Curtis Tompkins

Address \_\_\_\_\_

Phone (510) 486-0900

Carrier/Way Bill No. \_\_\_\_\_

(1) Lab ID No.	(1) Client ID No.	COLLECTION		(2) Type	(2) Depth	(3) Comp.	(4) Pres.	Turn-around	(5)							Comment/Conditions (Container type, container number, etc.)
		Date	Time						TPH gas/BTEX	TPH diesel	TPH motor oil	EPA 8010	PCAs	8015 fingerprint	BTEX	
-11	MW-7	9/16	1440	W	-	-	AS WN	STAND	X	X	X	X	X	X		4XUOC <sup>w/HEI</sup> , 2X LITER GLASS
-12	MW-2	9/16	1600	W	-	-	AS WN	STAND					X			1XUOC
-13	Travel Blank	-	-	W	-	-	AS WN	STAND			X		X			2XUOC <sup>w/HEI</sup>

- (1) Write only one sample number in each space.
- (2) Specify type of sample(s): Water (W), Solid (S), or indicate type.
- (3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.
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SAMPLE RELINQUISHED BY:					SAMPLE RECEIVED BY:				
Print Name	Signature	Company	Date	Time	Print Name	Signature	Company	Date	Time
Kurt Heiss	<i>[Signature]</i>	K/J	9/16	16:00	J. GUERRERO	<i>[Signature]</i>	CURTIS-TOMPKINS	9/16/97	9:10