DEPARTMENT OF ECOLOGY
NWRO/TCP TANKS UNIT
INTERIM CLEANUP REPORT ☒
SITE CHARACTERIZATION ☐
FINAL CLEANUP REPORT ☐
OTHER ☐
AFFECTED MEDIA: SOIL ☒
OTHER GW ☐
INSPECTOR (INIT.) SB DATE 11/13/98

UST #: 484435
US Army Corp Engineers / Seattle
King / Seattle

ENTERED
LY 2-9-99

Underground Storage Tank Closure Report

Site Characterization Report
Federal Center South
4735 East Marginal Way South
Seattle, Washington

RECEIVED
OCT 06 1998
DEPT. OF ECOLOGY

Prepared For:

U.S. Army Corps of Engineers
4735 East Marginal Way South
Seattle, Washington

Prepared by:

Glacier Environmental Services, Inc.
12521 Evergreen Drive
Mukilteo, Washington

October, 1997

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Underground Storage Tank Closure
Federal Center South
Seattle, Washington

Summary

On September 25-27, 1997, Glacier Environmental Services, Inc. (Glacier), under contract to the U.S. Army Corps of Engineers (Corps), decommissioned one 2,000 gallon unleaded gasoline underground storage tank (UST) at the Seattle, Washington site under contract DACW67-97-M-0676. This report presents the UST closure and subsequent site check/characterization conducted under the direction of the Corps.

Upon removal of the UST and surrounding soil a visual inspection of the tank and surrounding soils was conducted. The tank appeared to be in good condition (no holes or excessive rust), however, evidence of petroleum contaminated soil (PCS) was detected (using field screen techniques). It is likely that the source of the contamination was from the product line. All soil removed during the decommissioning process was stockpiled and subsequently sampled. Laboratory results for the stockpile sample indicated that the soil was above the cleanup level and later transported to Regional Disposal Company for disposal. No soil removed from the excavation was used for backfill.

As the excavation appeared to be petroleum impacted on all four sidewalls, one excavation sidewall sample was collected from each wall. Laboratory analytical results indicated that the north and west sidewalls are below the cleanup level for this site. However, the analytical data indicated that the south and east sidewalls are above the action level. Also, as the concrete anchor pad was left in place, a bottom sample was not collected. Therefore, additional sampling is necessary to delineate any remaining PCS associated with the UST. However, based on field observations and laboratory analytical, it is likely that most of the impacted soil above the cleanup level was confined to soils in the immediate vicinity of the UST and have been removed. An Underground Storage Tank Closure Form is attached as Appendix D.

Prior to backfilling the excavation, the excavation was lined with 6 mil plastic sheeting. All imported soils used for backfill were placed inside the plastic sheeting (please refer to Appendix E - Color Photos). The excavation was than compacted using a backhoe mounted compactor up to 3 inches from grade. The excavation was than covered with asphalt forming a barrier impervious to rainfall. This barrier will greatly diminish the likelihood that any remaining contamination would migrate from its current location.

1.0 Site Description

The site is located at 4735 East Marginal Way South, Seattle, Washington. The tank was used to store unleaded gasoline for use in government vehicles. Site geology consists of fine grain sand (SP[1]), and site topography is generally flat.

1.1 Release Information/Site Characterization

Evidence of a release was noted during the decommissioning process and reported to the Washington State Department of Ecology. Laboratory analytical data for south and east excavation sidewall samples were above the MTCA Level A cleanup level (cleanup levels can be found in the footnote section of Tables 1 and 2).

1. Unified Soil Classification System (ASTM Designation D-2487).

1.2 Selection of Cleanup Standards

1.2.1 Soil

The cleanup action level at this site is considered routine (as defined in WAC 173-340-130) and involves only one hazardous substance (gasoline range hydrocarbons) in the soil. The Model Toxics Control Act (MTCA) Method A cleanup level was used for comparison with site soil .analytical results for all samples.

1.2.2 Groundwater

Groundwater was not contacted during any site activities.

1.3 Explanation of Remedial Actions Taken

1.3.1 Soils

UST Closure activities generated a soil stockpile of approximately 14 tons (10 yards). All impacted soil was transported to RDC for final disposal. Disposal documentation can be found in Appendix A.

1.3.2 UST

The UST and ancillary equipment were inerted and loaded directly on to Glacier vehicles for transport to Marine Vacuum Services, Inc. (Mar-Vac). The tank and equipment were cleaned at Mar-Vac's Seattle facility, and recycled to Seattle Iron and Metals. Disposal documentation for the UST and waste water can be found in Appendix B.

1.4 Sampling and Analysis

Prior to the collection of soil samples for laboratory analysis, field observations and field screening methods were used to determine if a release had occurred (including pan sheen testing and PID vapor headspace tests). Sample locations were selected based on these tests and in accordance with the Washington State Department of Ecology's Guidance for Site Checks and Site Assessments of Underground Storage Tanks.

Soil samples were collected from all four excavation sidewalls. All samples were collected using the backhoe under direction of the onsite site assessor. Soil samples were pulled from the middle of the bucket to avoid cross contamination from the sides of the backhoe bucket. No samples were collected from underneath the pump island or product lines (ancillary equipment), because they were located directly above the UST. Therefore, soils beneath the ancillary equipment were removed and stockpiled during the tank decommissioning. Upon conclusion of all excavation work, one stockpile sample (10 cubic yard stockpile) was collected using dedicated sample collection gear. Sample results are included in Appendix C and summarized in Table 1 and 2. All sample locations are detailed in Figure 2.

Table 1 - Summary of Sample Results for WTPH-G

Sample ID #	Sample Location	Parameter	Result[1]
MTPL-SW-E	East Sidewall 6' bg	WTPH-G	110 ppm
MTPL-SW-W	West Sidewall 6.5' bg	WTPH-G	11 ppm
MTPL-SW-N	North Sidewall 5' bg	WTPH-G	4.5 ppm
MTPL-SS-1	Stockpile Sample	WTPH-G	8,300 ppm
MTPL-SW-S	South Sidewall 6' bg	WTPH-G	120 ppm
MTPL-SS-1-D	Duplicate of MTPL-SS-1	WTPH-G	4,200 ppm

1. MTCA Level A Cleanup Level is 100 ppm.
bg - below grade
ppm - mg/kg

Table 2 - Summary of Sample Results for BTEX

Sample ID #	Benzene[1]	Tolulene[2]	Ethylbenzene[3]	m,p Xylene[4]	o-Xylene[4]
MTPL-SW-E	1.2 ppm	7.7 ppm	1.8 ppm	9.3 ppm	3.8 ppm
MTPL-SW-W	.11 ppm	.26 ppm	.18 ppm	.46 ppm	.21 ppm
MTPL-SW-N	.27 ppm	.18 ppm	.16 ppm	.32 ppm	.12 ppm
MTPL-SS-1	7.4 ppm	260 ppm	130 ppm	730 ppm	280 ppm
MTPL-SW-S	.37 ppm	3.7 ppm	1.3 ppm	8.2 ppm	3.9 ppm
MTPL-SS-1-D	2 ppm	84 ppm	49 ppm	250 ppm	110 ppm

1. MTCA Level A Cleanup Level is .5 ppm.
2. MTCA Level A Cleanup Level is ~~20 ppm~~. 40 ppm
3. MTCA Level A Cleanup Level is ~~40 ppm~~. 20 ppm
4. MTCA Level A Cleanup Level is 20 ppm.

Table 3 - Field Screen Results

Sample ID	Sample Location[1]	Result[2]
SW-N	North Sidewall	2,960 ppm
SW-S	South Sidewall	2,450 ppm
SW-E	East Sidewall	2,310 ppm
SW-W	West Sidewall	2,690 ppm
SS-1	Stockpile Sample	2,300 ppm

1. Sidewall samples were collected during the excavation of soils surrounding the UST in the vicinity of the subject sidewall and added to the stockpile. These samples were not taken directly from the sidewall after the removal of the tank.
2. Vapor headspace result using a Microtip PID.

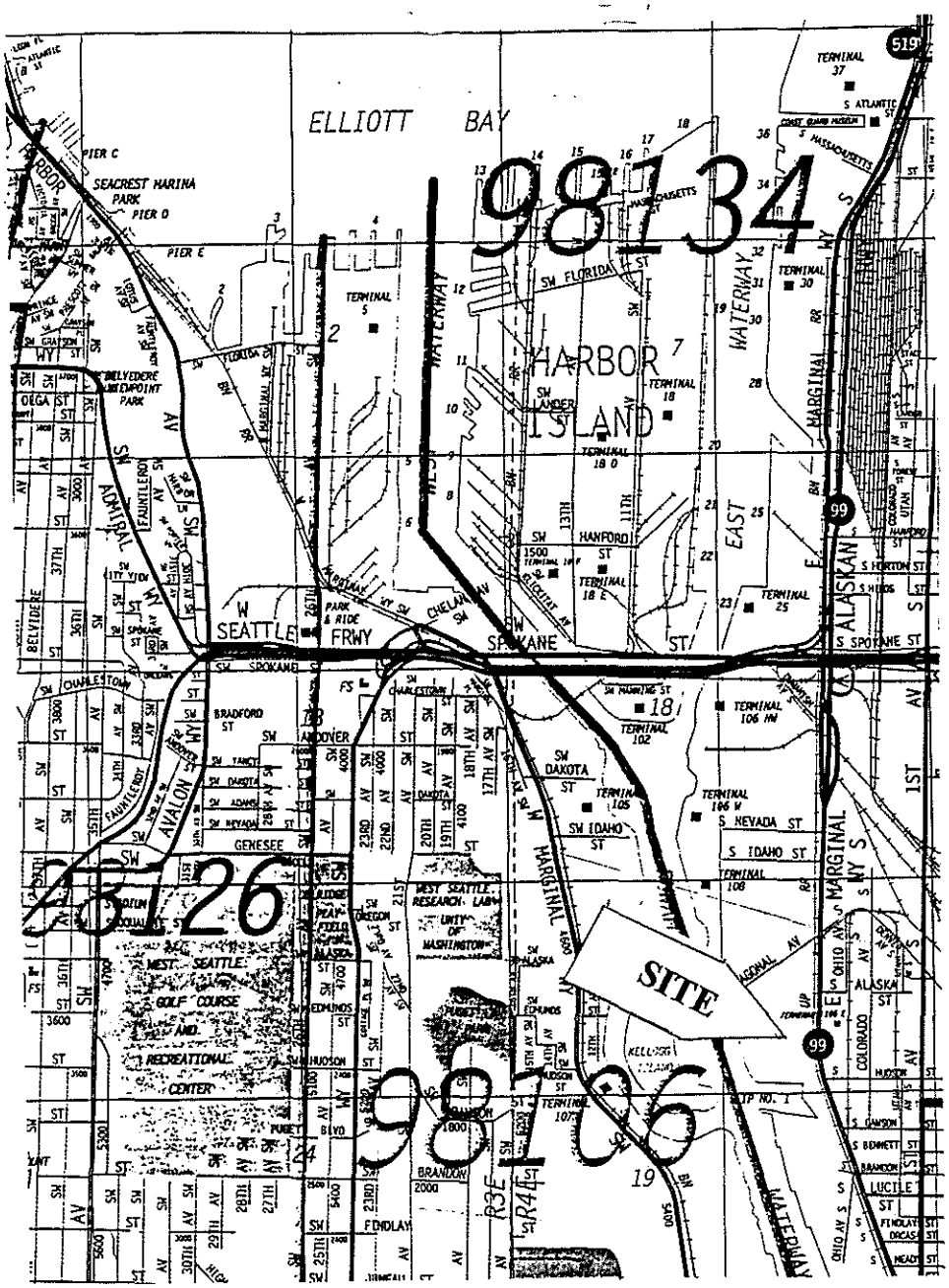
2.0 Groundwater Investigation

No groundwater investigation was conducted at this site. Ecology's publication #91-30, *Guidance for Remediation of Releases from Underground Storage Tanks*, was used as a basis to determine if a groundwater investigation was necessary.

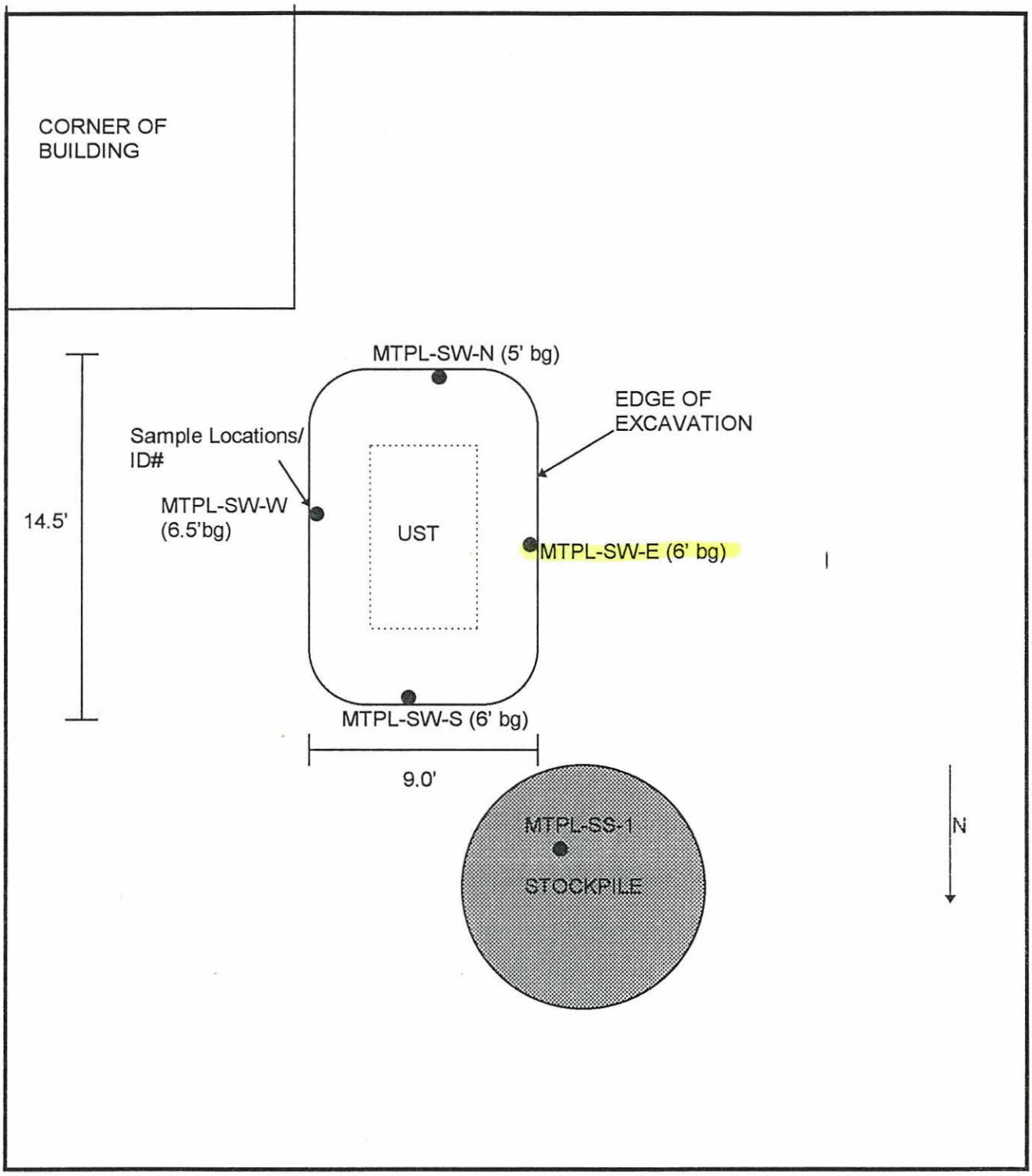
3.0 Conclusion

Site work consisted of the excavation and disposal of approximately 14 tons of contaminated soil, and the removal of one UST and associated ancillary equipment. Analysis of laboratory samples collected and field observations indicate that additional remedial activities may be necessary in the vicinity of the southern and eastern sidewall. We recommend that additional sampling be performed in the vicinity of the southern and eastern sidewall, and beneath the concrete anchor pad.

FIGURES



GLACIER ENVIRONMENTAL SERVICES, INC. 12521 Evergreen Drive, Suite A Mukilteo, WA 98275	DATE: 10/97 JOB #: 97-053	FIGURE 1 - Site Vicinity Map USCOE - Federal Center 4735 E. Marginal Way S. Seattle, Washington NOT TO SCALE



GLACIER ENVIRONMENTAL SERVICES, INC. 12521 Evergreen Drive, Suite A Mukilteo, WA 98275	DATE: 10/97 JOB #: 97-053	FIGURE 2 - Site Plan Map USCOE - Federal Center 4735 E. Marginal Way S. Seattle, Washington NOT TO SCALE

APPENDICES

APPENDIX A

RABANCO RECYCLING CO.

A DIVISION OF RABANCO COMPANIES
2733 3rd Avenue South
Seattle, Washington 98134
(206) 623-4080

TICKET NUMBER 747939

DATE: 10/08/97
TIME: 10:30:02

10249 - GLACIER ENVIRO SVC. Job:97-1368
GLACIER ENV
TRUCK #: 4 DUMP TRUCK
PLACE: A SEATTLE
PRODUCT: PCS-Seattle (T/S)

GROSS LBS:		51080.00
TARE LBS:		23820.00
NET LBS:		27260.00
NET TONS:		13.630
RATE PER TON:	$	0.00
AMOUNT:	$	0.00
REFUSE TAX 3.60%:		0.00
TOTAL AMOUNT:	$	0.00

X
CUSTOMER SIGNATURE
I HAVE READ AND AGREE TO THE CONDITIONS ON THE REVERSE SIDE.

Recycled

APPENDIX B

Marine Vacuum Service, Inc.
A WASHINGTON ENVIRONMENTAL COMPANY
MARINE AND INDUSTRIAL CLEANING
TANK REMOVAL

P.O. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

TANK DISPOSAL CERTIFICATE

DATE: November 04, 1997

CUSTOMER: GLACIER ENVIRONMENTAL

OWNER: FEDERAL CENTER SOUTH
Seattle WA

TANK SIZES: ONE 2,000 GALLON UST

LAST CONTENTS: Petroleum products

DATE CLEANED: 09-23-1997

Marine Vacuum Service Inc. certifies that the above mentioned tank has been cleaned in accordance with the industry standard and that all residual fuel, rinsate and sludge has been removed and disposed of in accordance with federal, state and local regulations. The above mentioned tank's have been disposed of by metal reclaiming.

Tom Myl

Marine Vacuum Service Inc. Representative

Marine Vacuum Service, Inc.
A WASHINGTON ENVIRONMENTAL COMPANY
MARINE AND INDUSTRIAL CLEANING
TANK REMOVAL

P.O. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

PRODUCT DISPOSAL CERTIFICATE

DATE: November 04, 1997

CUSTOMER: Glacier Environmental

OWNER: FEDERAL CENTER SOUTH
4735 E. Marginal Way
Seattle WA

PRODUCT: 350 gallons waste water and gasoline

DATE REMOVED: 09-23-97

Marine Vacuum Service Inc. certifies that the above mentioned products have been disposed of in accordance with federal, state and local regulations by Marine Vacuum Service Inc.

Marine Vacuum Service Inc. Representative

APPENDIX C

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

TRANSMITTAL MEMORANDUM

DATE: October 21, 1997

TO: Curt Lightle
Glacier
15858 25th Ave N.E.
Seattle, WA 98155

RECEIVED
NOV - 5 1997
GLACIER - MUKILTEO

PROJECT: Federal Center

REPORT NUMBER: 67737

Enclosed are the test results for six samples received at Sound Analytical Services on September 26, 1997.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Darla Powell
Project Manager

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 Pacific Hwy East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
e-mail: SoundL@aol.com

ANALYTICAL NARRATIVE

Client: Glacier

Date: October 31, 1997

Project: Federal Center

Lab No.: 67737

Delivered By: SAS Courier

Condition of samples upon receipt: Samples were received in good condition. Chain of custody was in order.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix
67737-1	MTP1-SW-E	09-24-97	solid
67737-2	MTP1-SW-W	09-24-97	solid
67737-3	MTP1-SW-N	09-24-97	solid
67737-4	MTP1-SS-1	09-24-97	solid
67737-5	MTP1-SW-S	09-24-97	solid
67737-6	MTP1-SS-1-D	09-24-97	solid

GASOLINE RANGE ORGANICS

Samples 67737-1 through 67737-6 were analyzed for gasoline range organics per State of Washington Method WTPH-G. The samples were extracted on 10-2-97. The extracts were analyzed on 10-4-97.

Low level gasoline range organics were detected in the method blank associated with this sample batch. Sample results were flagged "B1" or "B2" as appropriate.

Samples 67737-4 and 67737-6 required a dilution prior to analysis. Surrogate recoveries were not determined for these samples due to the required dilutions.

The percent recoveries and the relative percent difference value for gasoline range organics in the matrix spike/matrix spike duplicate analyses for sample 67737-1 were not calculated due to the high concentration of gasoline range organics present in the original sample.

All other quality control parameters were within acceptance limits.

BENZENE, ETHYLBENZENE, TOLUENE AND XYLENES (BTEX)

Samples 67737-1 through 67737-6 were analyzed for BTEX in accordance with EPA SW-846 Method 8020. The samples were extracted in accordance with EPA SW-846 Method 3050 on 10-2-97. The extracts were analyzed on 10-4-97.

The relative percent difference value for benzene in the duplicate analysis for sample 67737-1 was outside QC limits due to the non-homogenous sample matrix.

ANALYTICAL NARRATIVE

Client: Glacier | Date: October 31, 1997

Project: Federal Center | Lab No.: 67737

BENZENE, ETHYLBENZENE, TOLUENE AND XYLENES (BTEX), Continued
The percent recovery for toluene, m,p-xylene, and o-xylene and the relative percent difference value for these analytes in the matrix spike/matrix spike duplicate analyses for sample 67737-1 were not calculated due to the high concentrations of these analytes in the original sample.

Sample 67737-4 required a dilution prior to analysis. The surrogate recovery was not determined for the sample due to the required dilution.

Samples 67737-1, 67737-4 and 67737-6 required a secondary dilution prior to analyses due to the high concentrations of target analytes in the samples. Surrogate recoveries were not determined for these samples due to the required dilutions.

All reported analytes were confirmed as present using a second dissimilar column. When results between the two columns agreed within 50%, results are flagged "C" to indicate confirmation. When the relative percent difference between the two columns exceeded 50%, the lower concentrations are reported and are flagged "N".

All other quality control parameters were within acceptance limits.

port is issued solely for the use of the person or company to whom it is addressed. This laboratory accepts responsibility only for the due performance of analysis in accordance with
y acceptable practice. In no event shall Sound Analytical Services, Inc. or its employees be responsible for consequential or special damages in any kind or in any amount.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E
Lab ID:	67737-01
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	86.36
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	94		50	150

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Gasoline Range Organics(Toluene-Dodecane)	110	2.3	0.48	B2

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-W
Lab ID:	67737-02
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	88.13
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	85		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Gasoline Range Organics(Toluene-Dodecane)	11	2.3	0.47	B1

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-N
Lab ID:	67737-03
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	82.77
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	85		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Gasoline Range Organics(Toluene-Dodecane)	4.5	2.4	0.49	B1

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SS-1
Lab ID:	67737-04
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	89.53
Dilution Factor	200

Gasoline Range Organics by WSDOE Method WTPH-G

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	-	X8	50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Gasoline Range Organics(Toluene-Dodecane)	8300	450	92	B2

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-S
Lab ID:	67737-05
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	84.93
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	89		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Gasoline Range Organics(Toluene-Dodecane)	120	2.3	0.48	B2

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SS-1-D
Lab ID:	67737-06
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	87.69
Dilution Factor	50

Gasoline Range Organics by WSDOE Method WTPH-G

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	-	X8	50	150

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Gasoline Range Organics(Toluene-Dodecane)	4200	110	23	B2

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E
Lab ID:	67737-01
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/3/97
% Solids	86.36
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	82		50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	1.2	0.023	0.0042	N
Toluene	7.7	0.023	0.016	E
Ethylbenzene	1.8	0.023	0.0079	N
m,p-Xylene	9.3	0.046	0.03	N
o-Xylene	3.8	0.023	0.035	N

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E - dilution
Lab ID:	67737L01
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/8/97
% Solids	86.36
Dilution Factor	5

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	-	X8	50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	5	0.12	0.021	N
Toluene	29	0.12	0.081	C
Ethylbenzene	5.7	0.12	0.039	N
m,p-Xylene	28	0.23	0.15	N
o-Xylene	12	0.12	0.035	N

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-W
Lab ID:	67737-02
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	88.13
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	65		50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	0.11	0.023	0.0041	C
Toluene	0.26	0.023	0.016	C
Ethylbenzene	0.18	0.023	0.0077	C
m,p-Xylene	0.46	0.045	0.029	C
o-Xylene	0.21	0.023	0.014	C

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-N
Lab ID:	67737-03
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	82.77
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	111		50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	0.27	0.024	0.0043	C
Toluene	0.18	0.024	0.017	N
Ethylbenzene	0.16	0.024	0.0081	N
m,p-Xylene	0.32	0.048	0.03	N
o-Xylene	0.12	0.024	0.015	N

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SS-1
Lab ID:	67737-04
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	89.53
Dilution Factor	20

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	-	X8	50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	7.4	0.45	0.08	C
Toluene	260	0.45	0.31	E
Ethylbenzene	130	0.45	0.15	E
m,p-Xylene	730	0.89	0.57	E
o-Xylene	280	0.45	0.29	E

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SS-1 - dilution
Lab ID:	67737L04
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/8/97
% Solids	89.53
Dilution Factor	200

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	-	X8	50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	8.4	4.5	0.8	C
Toluene	220	4.5	3.1	C
Ethylbenzene	110	4.5	1.5	C
m,p-Xylene	550	8.9	5.7	C
o-Xylene	230	4.5	2.9	C

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-S
Lab ID:	67737-05
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	84.93
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	84		50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	0.37	0.023	0.0042	C
Toluene	3.7	0.023	0.016	C
Ethylbenzene	1.3	0.023	0.0079	C
m,p-Xylene	8.2	0.047	0.03	C
o-Xylene	3.9	0.023	0.015	C

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SS-1-D
Lab ID:	67737-06
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	87.69
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	84		50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	2	0.023	0.0041	C
Toluene	84	0.023	0.016	E
Ethylbenzene	49	0.023	0.0077	E
m,p-Xylene	250	0.045	0.029	E
o-Xylene	110	0.023	0.015	E

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SS-1-D - dilution
Lab ID:	67737L06
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/8/97
% Solids	87.69
Dilution Factor	100

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	-	X8	50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	2.7	2.3	0.41	C
Toluene	73	2.3	1.6	C
Ethylbenzene	48	2.3	0.77	C
m,p-Xylene	240	4.5	2.9	C
o-Xylene	110	2.3	1.5	C

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - GB1257
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	84		50	150

Sample results are on an as received basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Gasoline Range Organics(Toluene-Dodecane)	1.5	2	0.41	J

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	GB1257
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
QC Batch ID:	GB1257

Gasoline Range Organics by WSDOE Method WTPH-G

Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flag
Gasoline Range Organics(Tolu	1.5	27	22	77	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	
Lab ID:	SGB1257
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	89		50	150

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Gasoline Range Organics(Toluene-Dodecane)	22	2	0.41	B2

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID:	MTPL-SW-E
Lab ID:	67737-01
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
QC Batch ID:	GB1257

Gasoline Range Organics by WSDOE Method WTPH-G

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Gasoline Range Organics(Tolu	110	100	9.5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E - dup
Lab ID:	67737R01
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	86.36
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	88		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Gasoline Range Organics(Toluene-Dodecane)	100	2.3	0.48	B2

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	MTPL-SW-E
Lab ID:	67737-01
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
QC Batch ID:	GB1257

Gasoline Range Organics by WSDOE Method WTPH-G

Compound Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	MSD Result (mg/kg)	MSD % Rec.	RPD	Flag
Gasoline Range Organics(Tolu	110	30.9	77.5	NC	70.1	NC	NC	X7a

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E - ms
Lab ID:	67737S01
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	86.36
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	101		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Gasoline Range Organics(Toluene-Dodecane)	77	2.3	0.48	B2

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E - msd
Lab ID:	67737D01
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	86.36
Dilution Factor	1

Gasoline Range Organics by WSDOE Method WTPH-G

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	102		50	150

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Gasoline Range Organics(Toluene-Dodecane)	70	2.3	0.48	B2

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - GB1258
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/3/97
% Solids	
Dilution Factor	1

BTEX by USEPA Method 8020

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	82		50	125

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Benzene	ND	0.02	0.0036	
Toluene	ND	0.02	0.014	
Ethylbenzene	ND	0.02	0.0068	
m,p-Xylene	ND	0.04	0.026	
o-Xylene	ND	0.02	0.013	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID:	GB1258
Date Prepared:	10/2/97
Date Analyzed:	10/3/97
QC Batch ID:	GB1258

BTEX by USEPA Method 8020

Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flag
Benzene	ND	1	0.82	82	
Toluene	ND	1	0.81	81	
Ethylbenzene	ND	1	0.81	81	
m,p-Xylene	ND	2	1.6	79	
o-Xylene	ND	1	0.76	76	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	
Lab ID:	SGB1258
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/3/97
% Solids	
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	80		50	125

Sample results are on an as received basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	0.82	0.02	0.0036	
Toluene	0.81	0.02	0.014	
Ethylbenzene	0.81	0.02	0.0068	
m,p-Xylene	1.6	0.04	0.026	
o-Xylene	0.76	0.02	0.013	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID:	MTPL-SW-E
Lab ID:	67737-01
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
QC Batch ID:	GB1258

BTEX by USEPA Method 8020

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Benzene	1.2	2.7	77.0	N
Toluene	7.7	9.6	22.0	
Ethylbenzene	1.8	1.7	5.7	
m,p-Xylene	9.3	8	15.0	
o-Xylene	3.8	3.2	17.0	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E - dup
Lab ID:	67737R01
Date Received:	-
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	86.36
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	77		50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	2.7	0.023	0.0042	N
Toluene	9.6	0.023	0.016	E
Ethylbenzene	1.7	0.023	0.0079	C
m,p-Xylene	8	0.046	0.03	C
o-Xylene	3.2	0.023	0.035	C

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	MTPL-SW-E
Lab ID:	67737-01
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
QC Batch ID:	GB1258

BTEX by USEPA Method 8020

Compound Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	MSD Result (mg/kg)	MSD % Rec.	RPD	Flag
Benzene	1.2	1.16	2.2	89.6	1.72	48.5	60	
Toluene	7.7	1.16	9.16	NC	6.72	NC	NC	X7a
Ethylbenzene	1.8	1.16	2.57	67.9	2.14	31.3	74	
m,p-Xylene	9.3	2.31	10.8	NC	8.47	NC	NC	X7a
o-Xylene	3.8	1.16	4.27	NC	3.6	NC	NC	X7a

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E - ms
Lab ID:	67737S01
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	86.36
Dilution Factor	1

BTEX by USEPA Method 8020

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	68		50	125

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Benzene	2.2	0.023	0.0042	
Toluene	9.2	0.023	0.016	E
Ethylbenzene	2.6	0.023	0.0079	
m,p-Xylene	11	0.046	0.03	E
o-Xylene	4.3	0.023	0.035	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Glacier
Client ID:	MTPL-SW-E - msd
Lab ID:	67737D01
Date Received:	9/26/97
Date Prepared:	10/2/97
Date Analyzed:	10/4/97
% Solids	86.36
Dilution Factor	1

BTEX by USEPA Method 8020

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	69		50	125

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Benzene	1.7	0.023	0.0042	
Toluene	6.7	0.023	0.016	E
Ethylbenzene	2.1	0.023	0.0079	
m,p-Xylene	8.5	0.046	0.03	
o-Xylene	3.6	0.023	0.035	

DATA QUALIFIER DEFINITIONS

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C: Additional confirmation performed.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____ .

X2: Contaminant does not appear to be "typical" product. Further testing is suggested for identification.

X3: Identification and quantification of peaks was complicated by matrix interference; GC/MS confirmation is recommended.

X4: RPD for duplicates outside advisory QC limits. Sample was re-analyzed with similar results.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike was diluted out during analysis.

X6: Recovery of matrix spike was outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery of matrix spike outside advisory QC limits. Matrix interference is indicated by blank spike recovery data.

X7a: Recovery and/or RPD values for MS/MSD outside advisory QC limits due to high contaminant levels.

X8: Surrogate was diluted out during analysis.

X9: Surrogate recovery outside advisory QC limits due to matrix composition.

CHAIN OF CUSTODY

SOUND ANALYTICAL SERVICES, INC.
ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy. East
Tacoma, Washington 98424
(253) 922-2310 • FAX (253) 922-5047

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: Glacier
PROJECT NAME: Federal Center
CONTACT: Curt Lightle
PHONE NO: 355-2826

ANALYSIS REQUESTED:

LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	TCLP Extraction: 8 Metals	TCLP Extraction: Volatiles	TCLP Extraction: Semi-volatiles	TCLP Extraction: Pesticides & Herbicides	MTPH-G/BTEX
e7737-1	* MTPI-SW-E	9-24	1135	Soil	1														✓
2	MTPI-SW-W	9-24	1145																✓
3	MTPI-SW-N	9-24	1140																✓
4	MTPI-SS-1	9-24	1200																✓
5	MTPI-SW-S	9-24	1130																✓
6	MTPI-SS-1-D	9-24	1201																✓

	Signature	Printed Name	Firm	Time / Date
Relinquished By	[signature]	Curt Lightle	GES	8:00 / 9-26
Received By	Mary Curtis	Mary Curtis	SAS	12:30 9/26/97
Relinquished By				
Received By				
Relinquished By				
Received By				

SPECIAL INSTRUCTIONS/COMMENTS:

These samples will be disposed of 45 days after receipt.
Check this box to have samples returned ☐.

* MS-MSD

Corp Deliverable

SAS LAB NO. 6773

PAGE 1 OF 1

COOLER RECEIPT FORM

PROJECT: Federal Center W.O.# _____

COOLER RECEIVED ON 9/24/97 AND OPENED ON 9/24/97 BY MC

Mary Cuntes
(SIGNATURE)

Temperature upon receipt: cooler 6 °C
temp. blank 1 °C

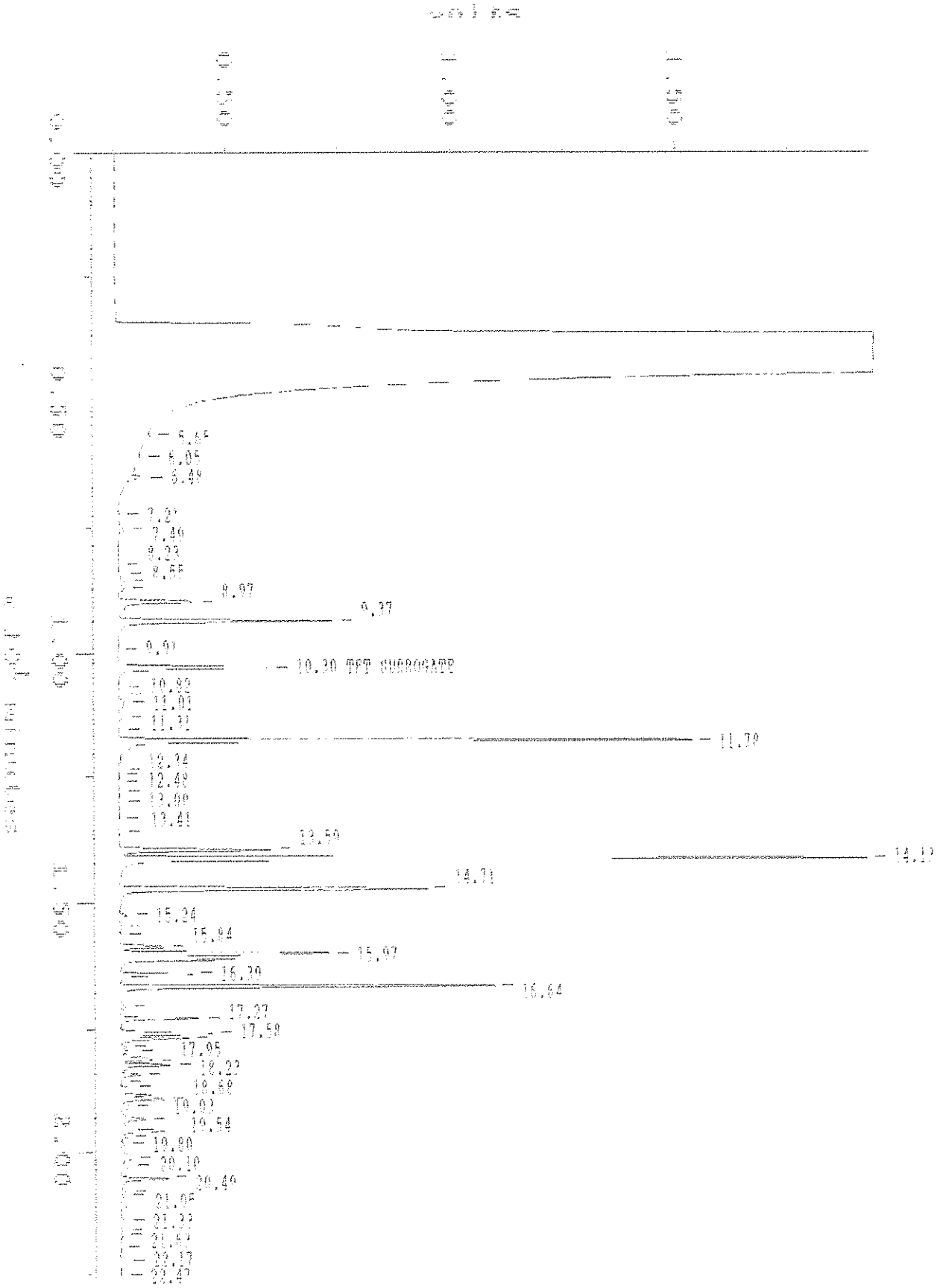
1. Were custody seals on outside of cooler and intact? YES N
   a. If YES, how many and where: 1 front
   b. Were signature and date correct? YES N
2. Were custody papers taped to lid inside cooler? YES N
3. Were custody papers properly filled out (ink, signed, etc)? YES N
4. Did you sign custody papers in the appropriate place? YES N
5. Did you attach shipper's packing slip to this form? N/A YES N
6. What kind of packing material was used? bubble wrap
7. Was sufficient ice used (if appropriate)? YES N
8. Were all bottles sealed in separate plastic bags? YES N
9. Did all bottles arrive in good condition (unbroken)? YES N
10. Were all bottle labels complete (no., date, signed, pres, etc)? YES N
11. Did all bottle labels and tags agree with custody papers? YES N
12. Were correct bottles used for the test indicated? YES N
13. If present, were VOA vials checked for absence of air bubbles and noted if found? YES N
14. Adequate volume of VOA vials received per sample? YES N
15. Was sufficient amount of sample sent in each bottle? YES N
16. Were correct preservatives used? YES N
17. Corrective action taken, if necessary:
    a. Name of person contacted: _____
    b. Date: _____

DATA QUALIFIER DEFINITIONS

TPH-G DATA PACKAGE

SAMPLE DATA

Sample: 67737 : 481957 Channel: PID Filename: C1497
Acquired: 04 OCT 97 4:20 Method: C:\MAX\DATA1\971003A Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:44:28

SAMPLE: 67737 1 GB1257
#20 in Method: BTEX/GAS
Acquired: 4 OCT 1997 4:20
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1407
Index: 5

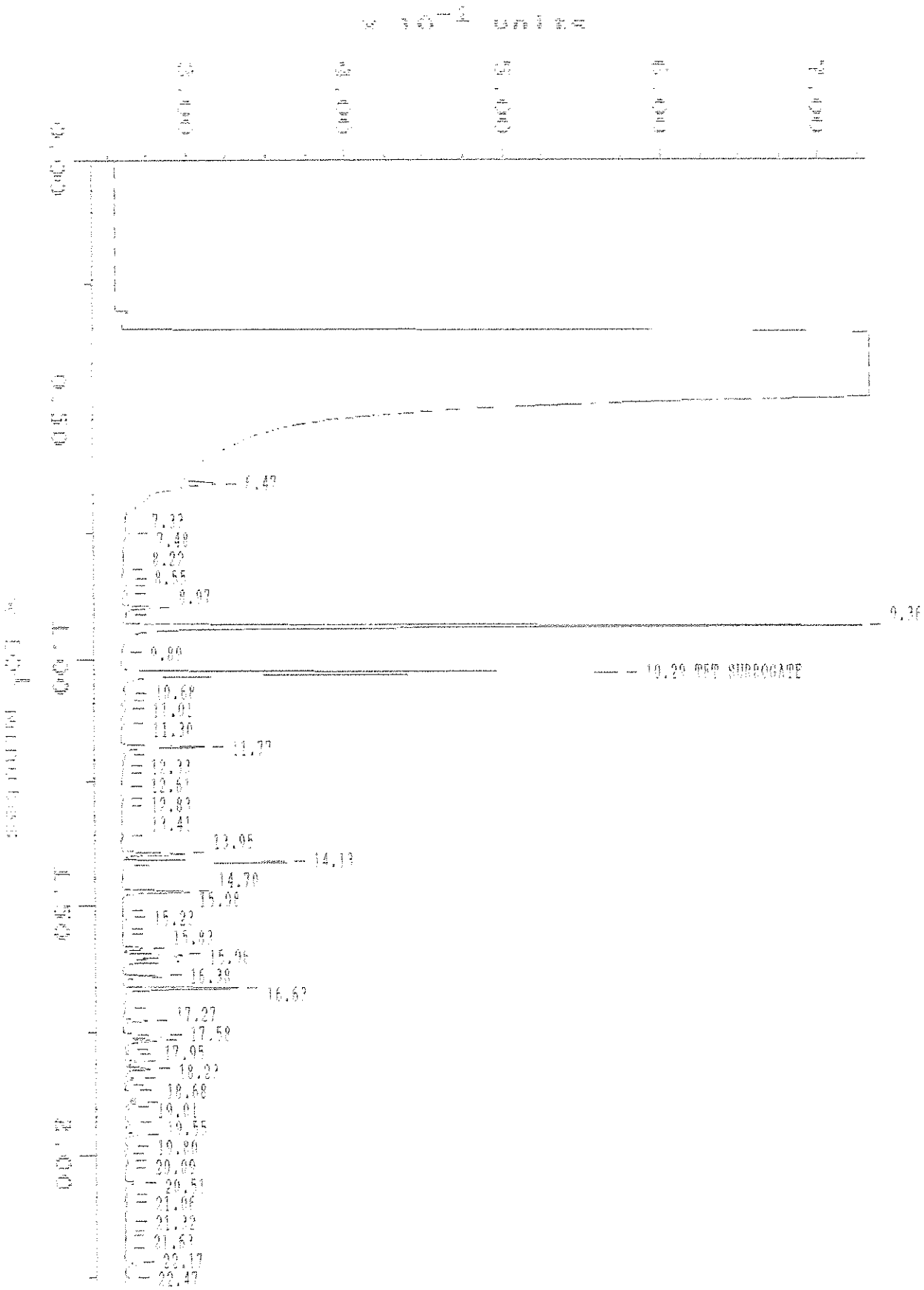
DETECTOR: FID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.300	1543880	1543879.7367	0.000	93.59	0.94	TFT SURROGATE
TOTAL	1543880			93.59	0.94	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	26420337	7026399.0000	0.000	2481.91	24.82	WA GASOLINE
TOTAL	26420337			2481.91	24.82	

Sample: 67737 2 SP1357 Channel: FID Filename: C1412
Acquired: 04 OCT 97 6:40 Method: C:\MAX\DATA\97100?A Operator: JWC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:17:35

SAMPLE: 67737 2 GR1257
#25 in Method: BTEX/GAS
Acquired: 4 OCT 1997 6:40
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/PID
Filename: C1412
Index: 10

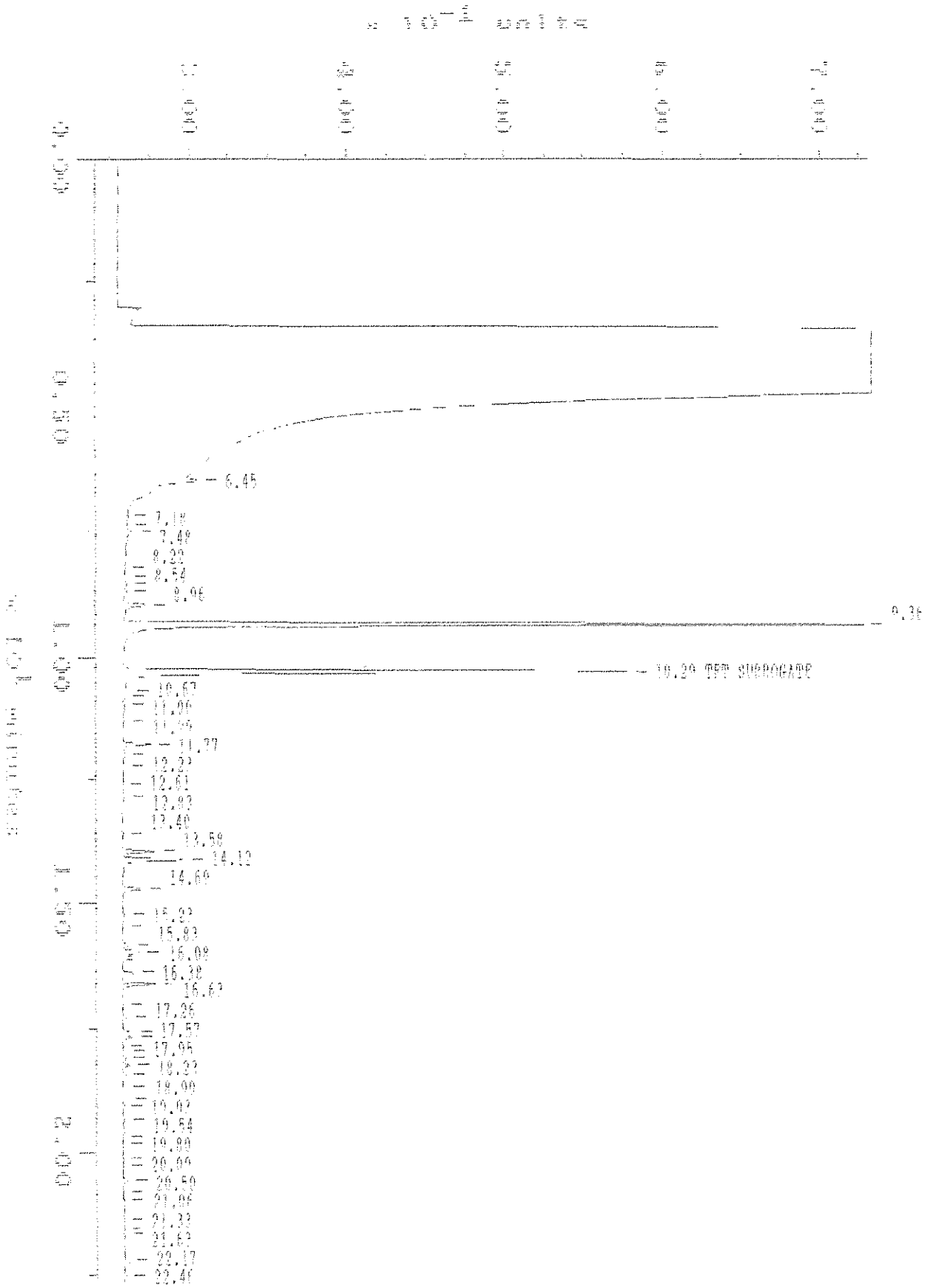
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.202	1398319	1398318.0202	0.000	84.77	0.85	TFT SURROGATE
TOTAL	1398319			84.77	0.85	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	2340961	585907.7500	0.000	239.84	2.40	WA GASOLINE
TOTAL	2340961			239.84	2.40	

Sample: 67737 3 GB1257 Channel: FID Filename: C1412
Acquired: 04 OCT 97 7:08 Method: C:\MAX\DATA1\971003A Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:19:00

SAMPLE: 67737 3 GB1257
#26 in Method: MTBX/GAS
Acquired: 4 OCT 1997 7:08
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: BMC

Type: UNKN
Instrument: 34 TII PID/FID
Filename: C1413
Index: 11

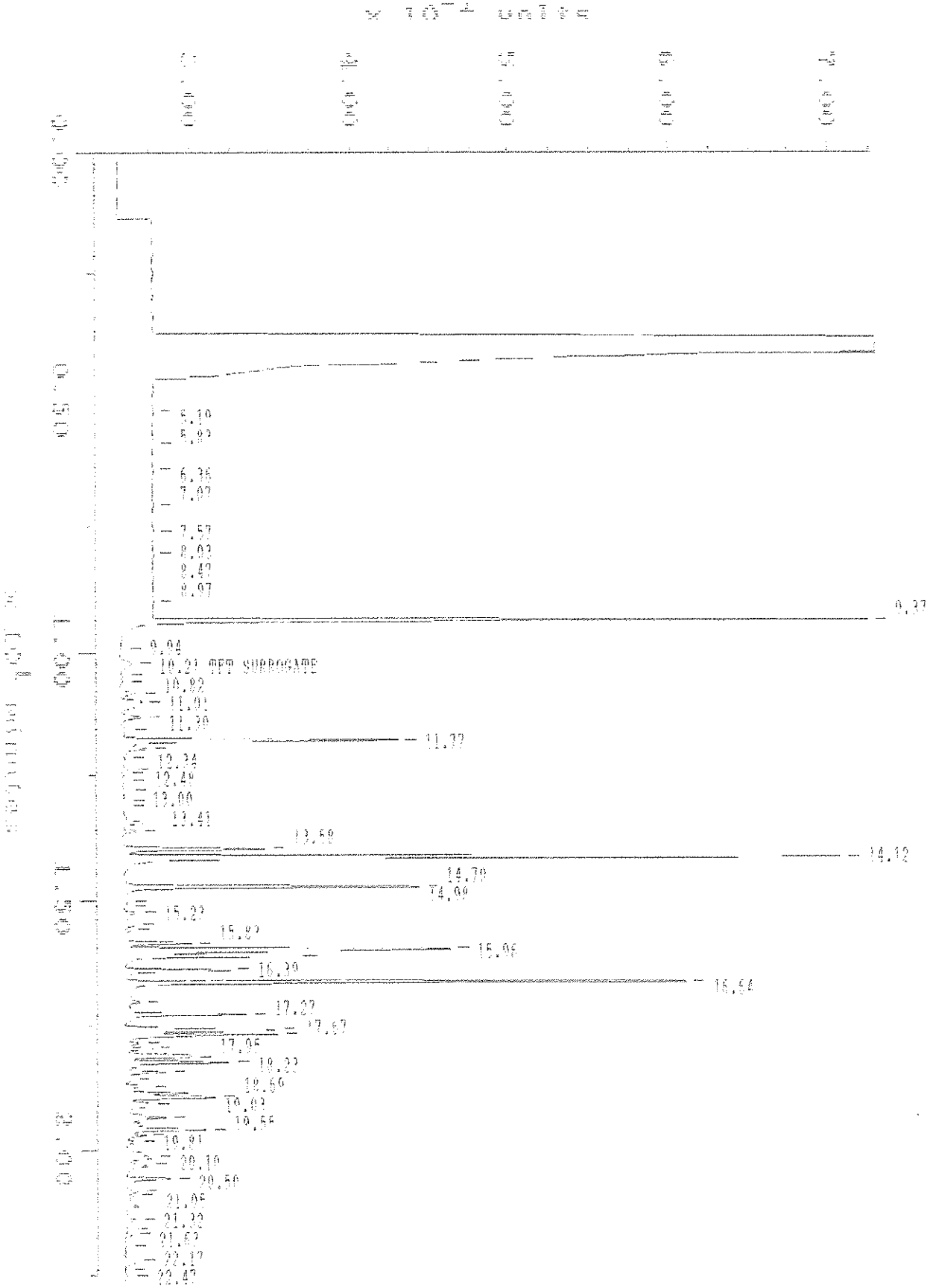
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.292	1402835	1402835.4569	0.000	85.04	0.85	TFT SURROGATE
TOTAL	1402835			85.04	0.85	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	732900	188351.8906	0.001	95.38	0.95	WA GASOLINE
TOTAL	732900			95.38	0.95	

Sample: 67737 4 1:200 Channel: FID Filename: C1414
Acquired: 04 OCT 97 7:35 Method: C:\MAX\DATA1\971003A Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1992 8:20:21

SAMPLE: 67737 4 1:200
#27 in Method: BTEX/GAS
Acquired: 4 OCT 1992 7:35
Rate: 2.0 points/sec
Duration: 22.502 minutes
Operator: HW

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1414
Index: 13

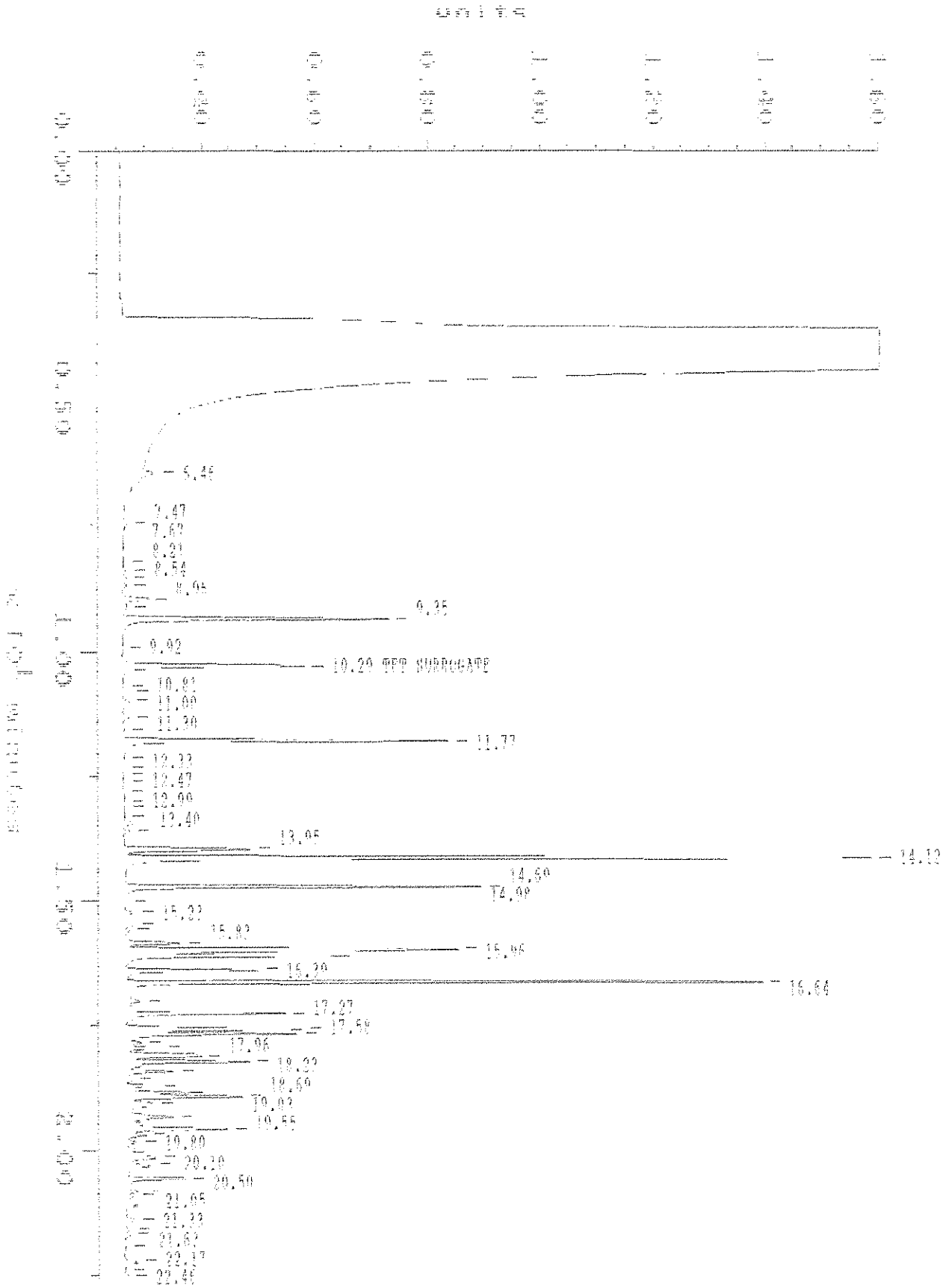
DETECTOR: FID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.288	65477	65476.9040	0.000	3.97	0.04	TFT SURROGATE
TOTAL	65477			3.97	0.04	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	10345255	2492967.0000	0.000	932.81	9.32	NA GASOLINE
TOTAL	10345255			932.81	9.32	

Sample: 67737 5 G81257 Channel: FID Filename: C1415
Acquired: 04 OCT 97 8:03 Method: C:\MAX\DATA1\971003A Operator: JMC



MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:49:24

SAMPLE: 67737 5 GB1257
#28 in Method: BTEX/GAS
Acquired: 4 OCT 1997 8:0[illegible]
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1415
Index: 13

DETECTOR: PID

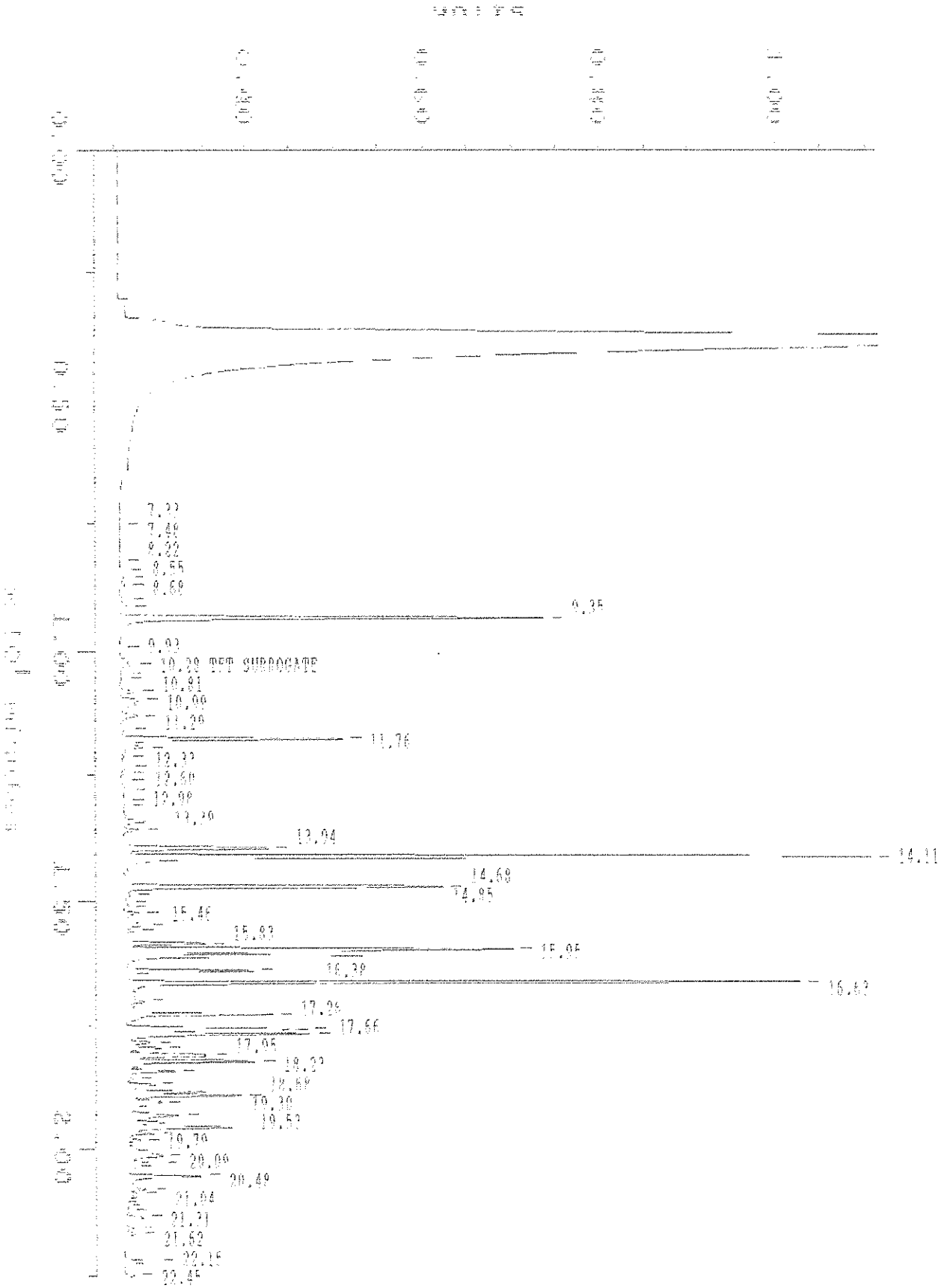
Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.292	1471041	1471041.0619	0.000	89.18	0.89	PFT SURROGATE
TOTAL	1471041			89.18	0.89	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	30146122	7573314.5000!	0.000	2671.99!	26.72!	WA GASOLINE
TOTAL	30146122			2671.99!	26.72!	

! Result calculation based on peak response ratio outside of calibration range.

Sample: 57737 6 1:50 Channel: FID Filename: C14[illegible]
Acquired: 04 OCT 97 8:31 Method: C:\MAX\DATA1\971003A Operator: [illegible]



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MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:50:50

SAMPLE: 97737 6 1:50
H2O in Method: BTEX/GAS
Acquired: 4 OCT 1997 8:31
Rate: 2.0 points/sec
Duration: 22.502 minutes
Operator: JMC

Type: UNKN
Instrument: 24 III PID/FID
Filename: C1416
Index: 14

DETECTOR: PID

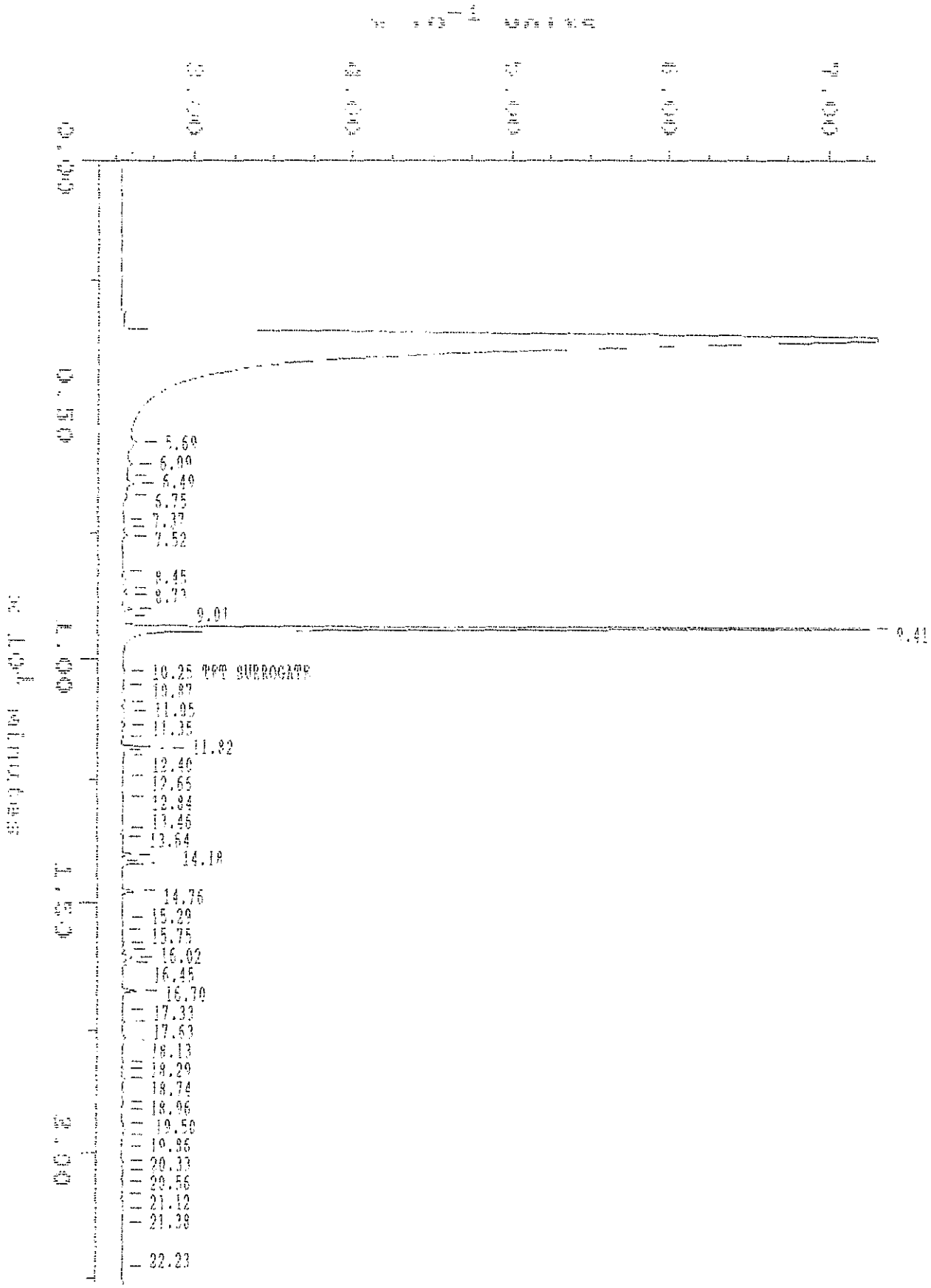
Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.275	115580	115588.9205	0.000	7.01	0.07	TFT SURROGATE
TOTAL	115580			7.01	0.07	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	22017697	5181943.5000	0.000	1840.86	18.41	WA GASOLINE
TOTAL	22017697			1840.86	18.41	

INITIAL CALIBRATION DATA

Sample: 50gsw 182 1 Channel: FID Filename: c1051
Acquired: 24 SEP 97 13:01 Method: C:\MAX\DATA1\970924 Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:02:23

SAMPLE: 50gas 182 1
812 in Method: WTBX/GAS
Acquired: 24 SEP 1997 12:01
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JHC

Type: STND
Instrument: 34 III PID/FID
Filename: cl051
Index: Disk

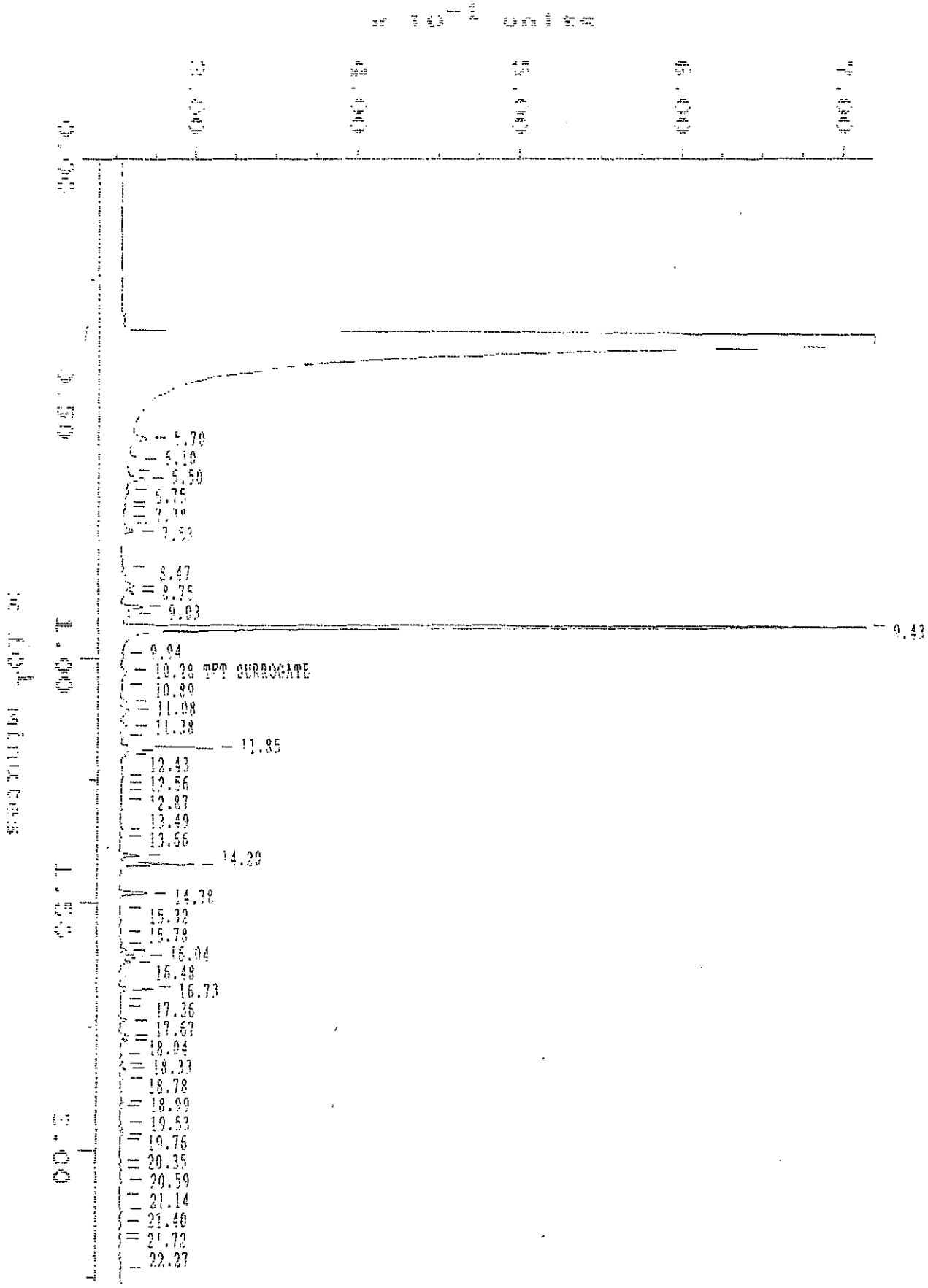
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.250	12437	12436.5110	Invalid	Invalid	Invalid	TFT SURROGATE
TOTAL	12437			0.00	0.00	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	390714	105136.6406	0.000	50.00	50.00	WA GASOLINE
TOTAL	390714			50.00	50.00	

Sample: 100GAS 182 2 Channel: PID Filename: c1052
Acquired: 24 SEP 97 13:29 Method: C:\MAX\DATA1\970924 Operator: JHC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:03:38

SAMPLE: 100GAS 182 2
413 in Method: BTEX/GAS
Acquired: 24 SEP 1997 13:29
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: STND
Instrument: 34 III PID/PID
Filename: c1052
Index: Disk

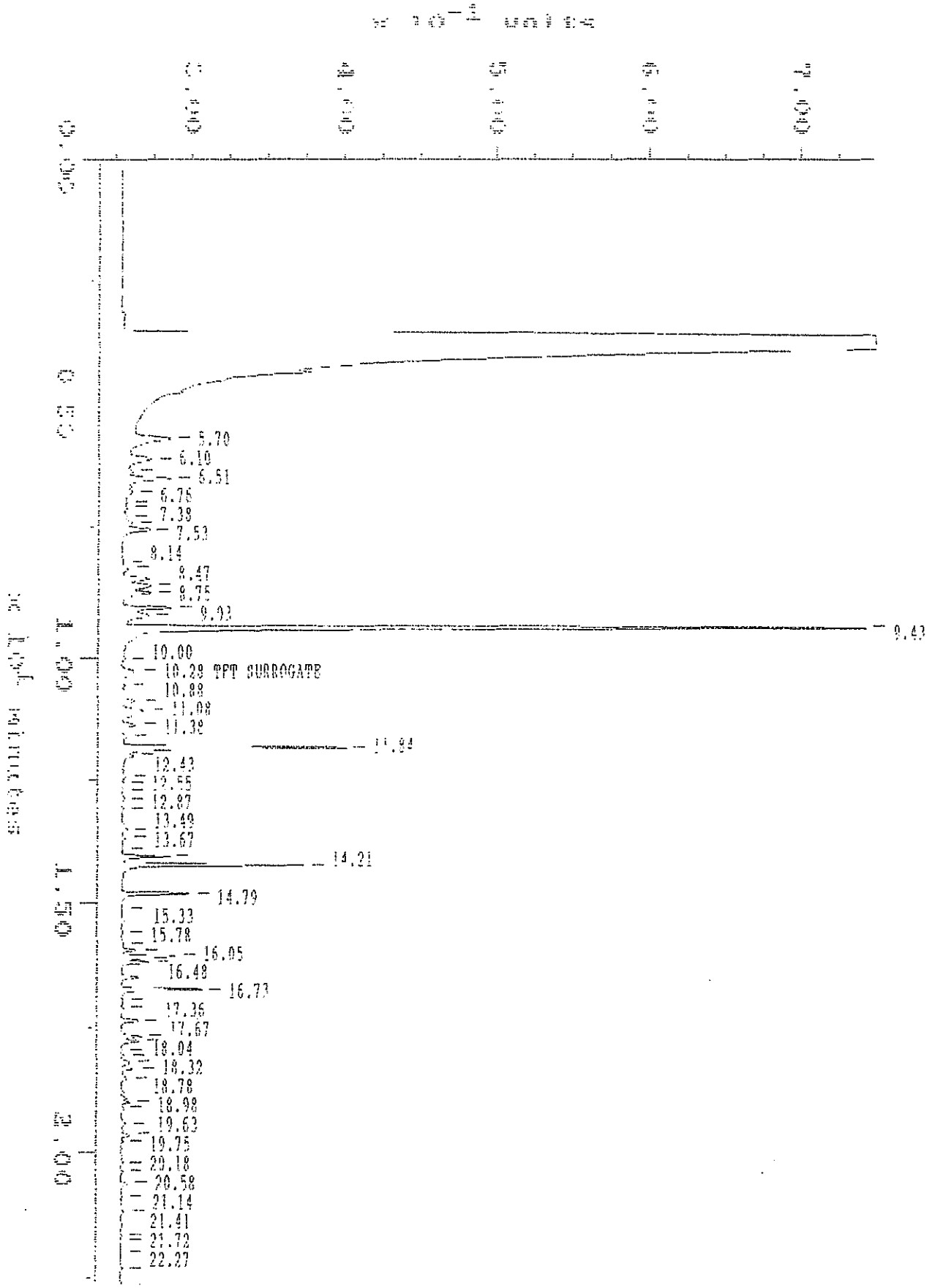
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.275	28622	28622.1546	Invalid	Invalid	Invalid	TFT SURROGATE
TOTAL	28622			0.00	0.00	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	845943	222314.6250	0.000	100.00	100.00	WA GASOLINE
TOTAL	845943			100.00	100.00	

Sample: 250GAS 182 3 Channel: FID Filename: c1053
Acquired: 24 SEP 97 13:58 Method: C:\MAX\DATA1\970924 Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:05:05

SAMPLE: 250GAS 192 ?
#14 in Method: BTEX/GAS
Acquired: 24 SEP 1997 13:58
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: STND
Instrument: 34 III PID/PID
Filename: c1053
Index: Disk

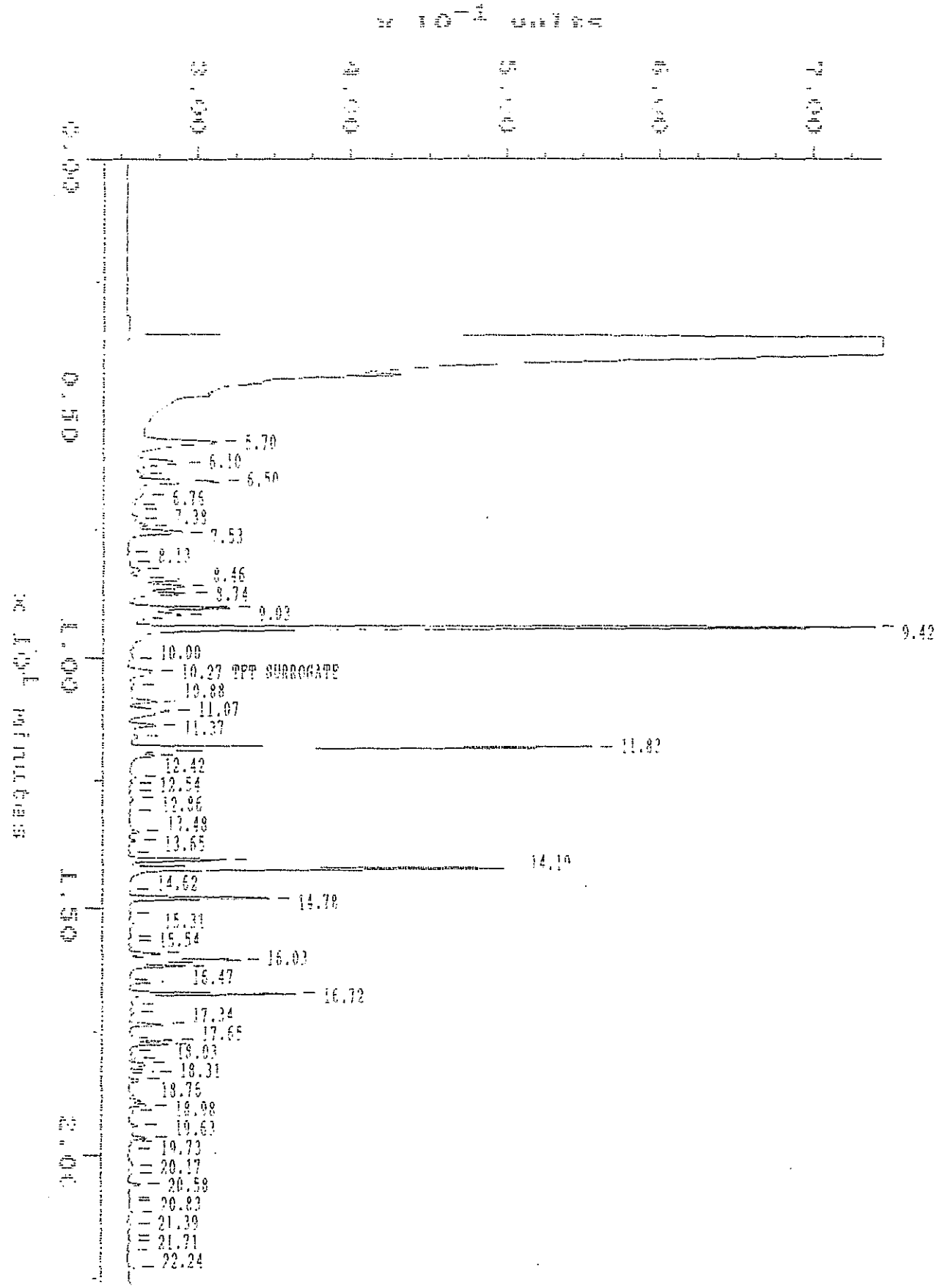
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.275	70176	70175.5380	Invalid	Invalid	Invalid	TFT SURROGATE
TOTAL	70176			0.00	0.00	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	2260922	580365.6875	0.000	250.00	250.00	WA GASOLINE
TOTAL	2260922			250.00	250.00	

Sample: 500 GAS 182 4 Channel: FID Filename: c1054
Acquired: 24 SEP 97 14:36 Method: C:\MAX\DATA1\970924 Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:06:33

SAMPLE: 500 GAS 182 4
#15 in Method: BTEX/GAS
Acquired: 24 SEP 1997 14:26
Rate: 3.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: STND
Instrument: 34 III PID/FID
Filename: c1054
Index: Disk

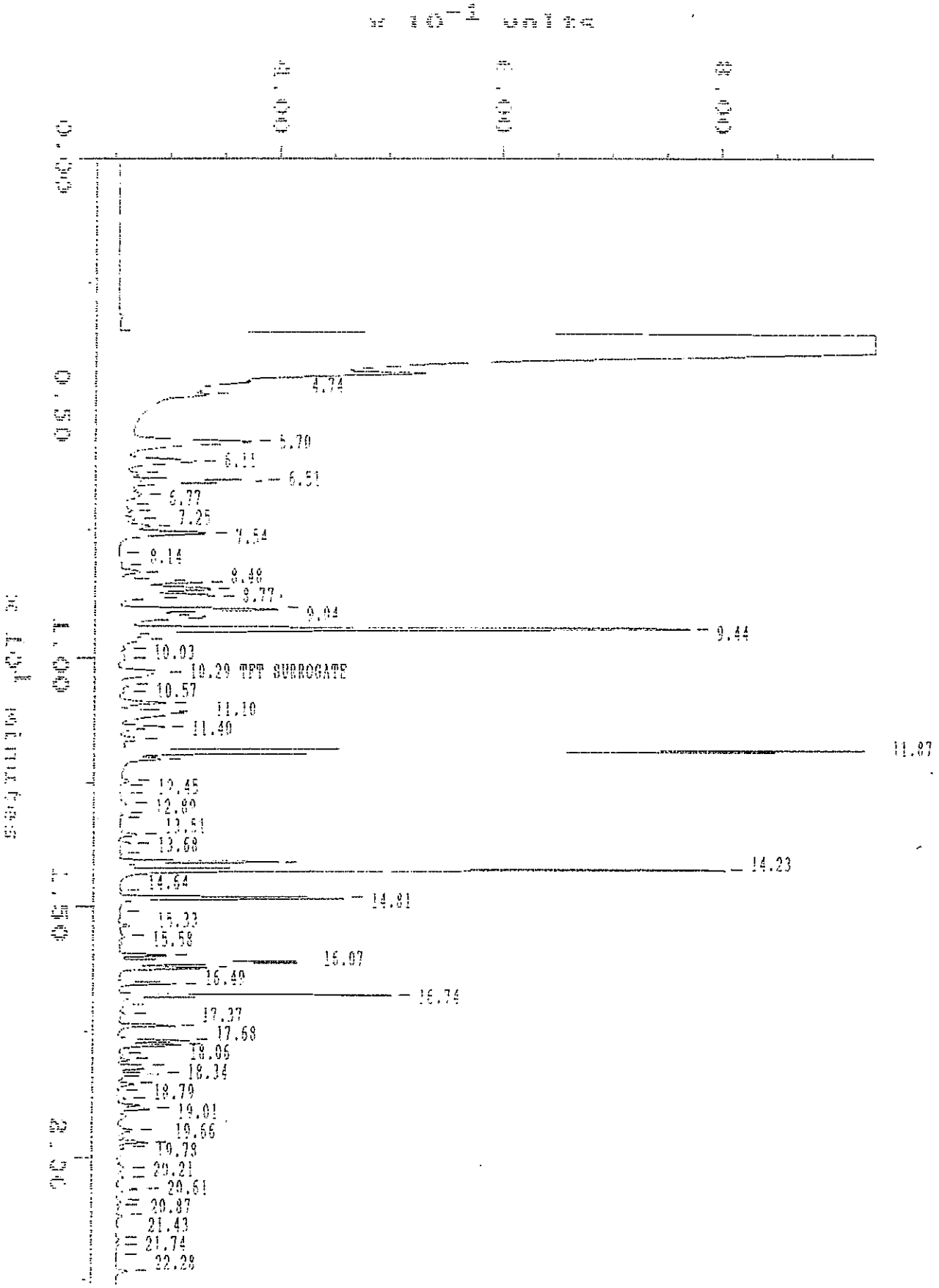
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.267	134804	134803.9797	Invalid	Invalid	Invalid	TFT SURROGATE
TOTAL	134804			0.00	0.00	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	4656170	1190082.0000	0.000	500.00	500.00	WA GASOLINE
TOTAL	4656170			500.00	500.00	

Sample: 1000GAS 182 5 Channel: FID Filename: c1055
Acquired: 24 SEP 97 14:55 Method: C:\MAX\DATA1\970924 Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:08:04

SAMPLE: 1000GAS 192 5
#16 in Method: BTEX/GAS
Acquired: 24 SEP 1997 14:55
Rate: 3.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: STND
Instrument: 14 III PID/FID
Filename: c1055
Index: Disk

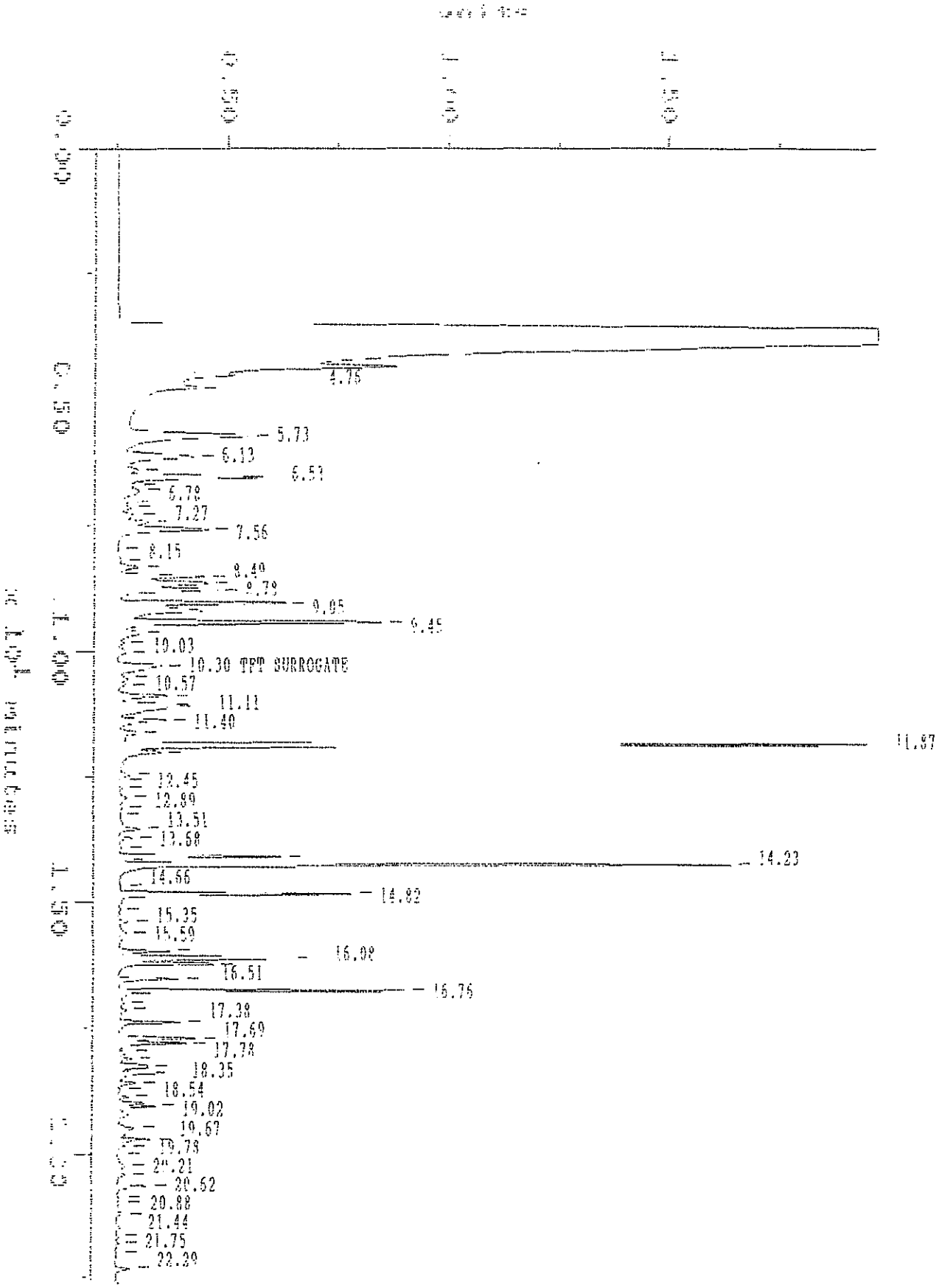
DETECTOR: FID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.292	306378	306377.7541	Invalid	Invalid	Invalid	TFT SURROGATE
TOTAL	306378			0.00	0.00	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	10209011	2656245.5000	0.000	1000.00	1000.00	WA GASOLINE
TOTAL	10209011			1000.00	1000.00	

Sample: 2500GAS 182 6 Channel: FID Filename: c1056
Acquired: 24 SEP 97 15:23 Method: C:\MAX\DATA1\970924 Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:09:34

SAMPLE: 2500GAS 182 5
217 in Method: BTEX/GAS
Acquired: 24 SEP 1997 15:32
Rate: 2.0 points/sec
Duration: 33.592 minutes
Operator: JMC

Type: STND
Instrument: 34 III PID/FID
Filename: c1055
Index: Disk

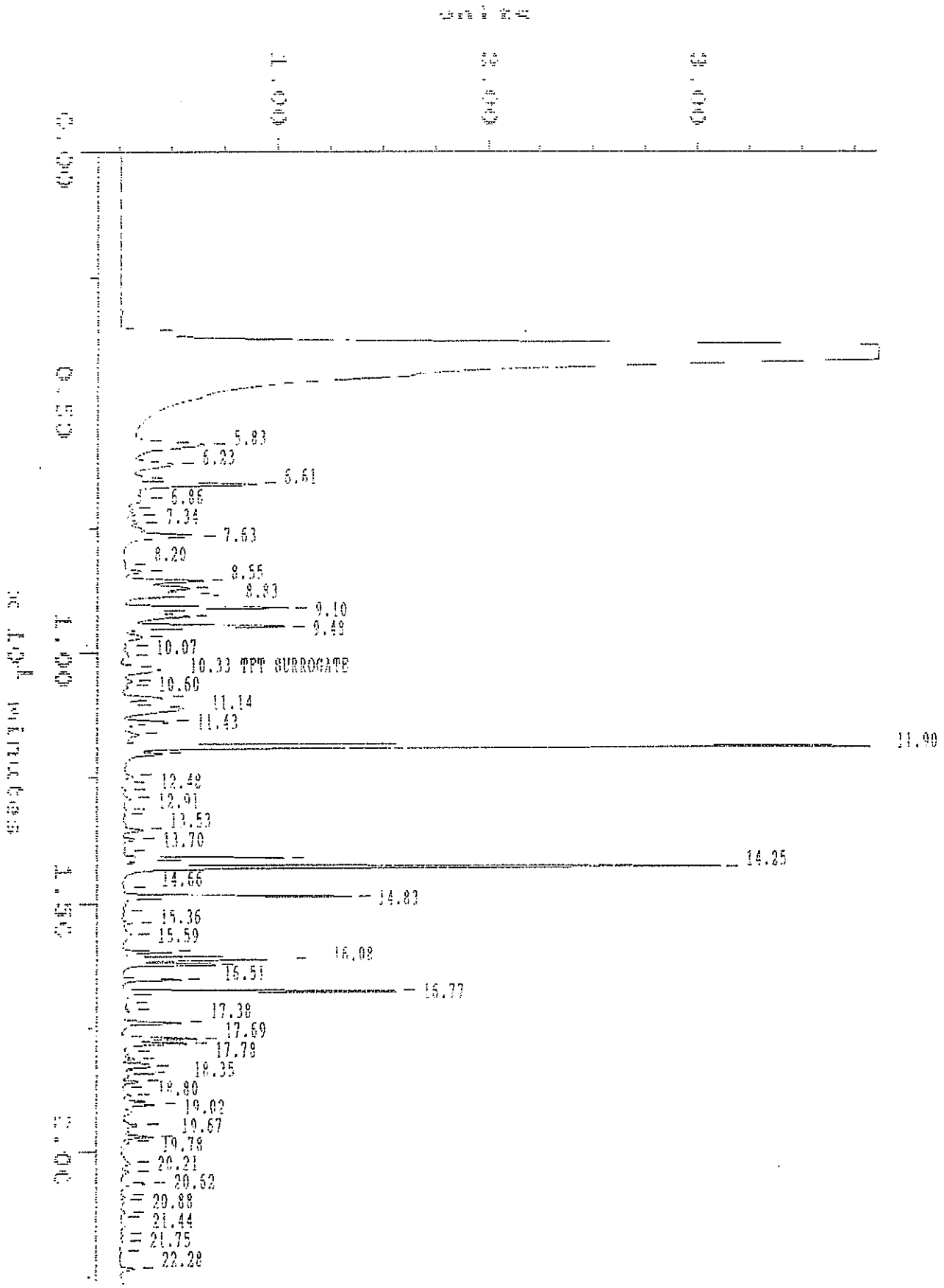
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.300	790706	790705.7975	Invalid	Invalid	Invalid	TFT SURROGATE
TOTAL	790706			0.00	0.00	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	27147518	6926415.5000	0.000	2500.00	2500.00	WA GASOLINE
TOTAL	27147518			2500.00	2500.00	

Sample: 5000 GAS 182 7 Channel: PID Filename: c1057
Acquired: 24 SEP 97 15:52 Method: C:\MAX\DATA\970924 Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:11:00

SAMPLE: 5000 GAS 182 7
#19 in Method: BTEX/GAS
Acquired: 24 SEP 1997 15:52
Rate: 2.0 points/sec
Duration: 32.592 minutes
Operator: JMC

Type: STND
Instrument: 34 III FID/PID
Filename: c1057
Index: Disk

DETECTOR: FID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
19.333	1575704	1575704.1514	Invalid	Invalid	Invalid	TFT SURROGATE
TOTAL	1575704			0.00	0.00	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	55288273	14265573.0000	0.000	5000.00	5000.00	WA GASOLINE
TOTAL	55288273			5000.00	5000.00	

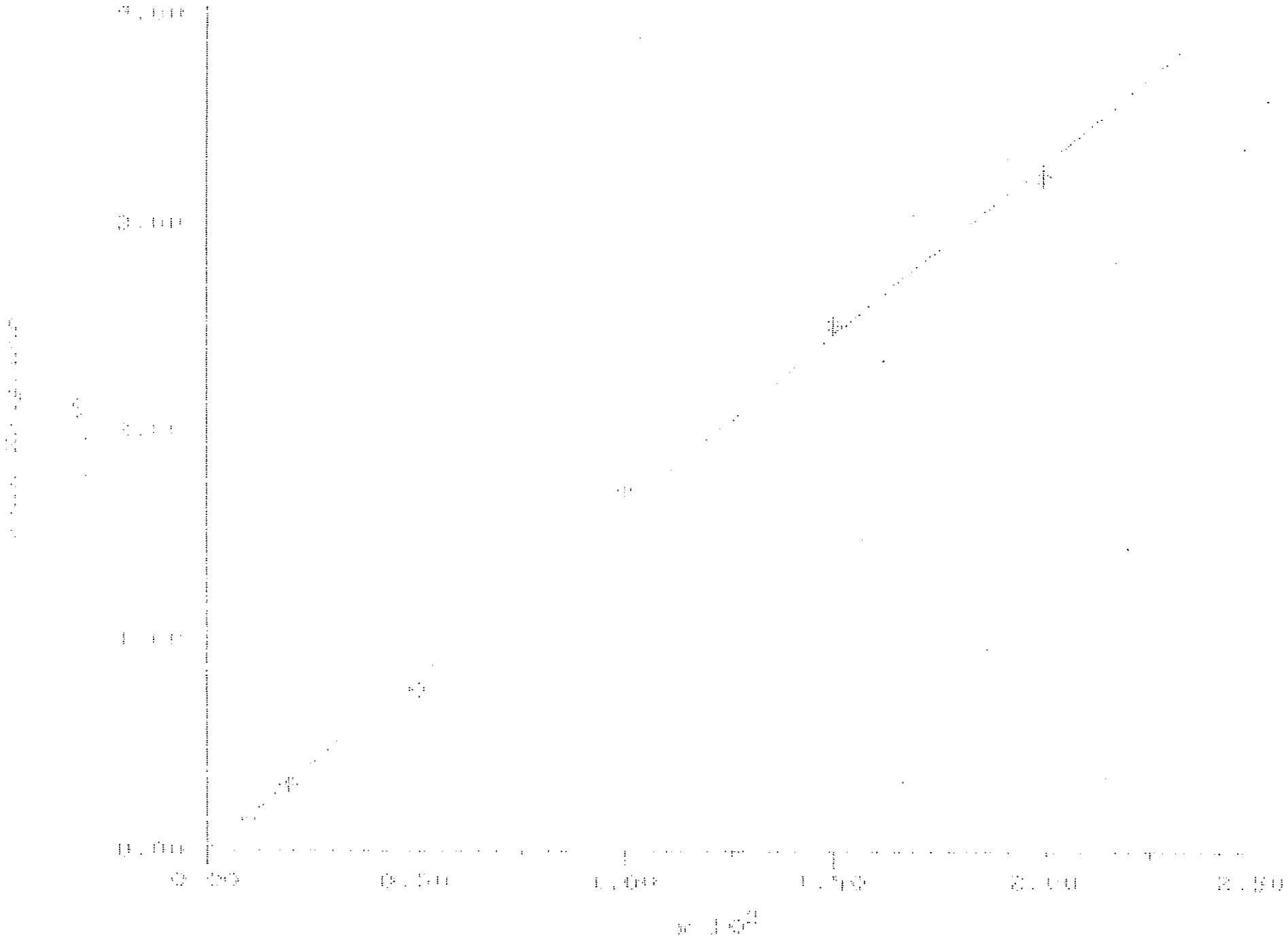
WA GASOLINE Calibration Report

Printed: 25 SEP 1997 4:16:21

Quant Basis: Weight
Rejection Tolerance: None
Internal Standard: None
Curve Type: Linear
Weighting: None
Forced Through Origin: No
Y axis Label: Response
Corr. Coef. (r): 0.9998572
Coef. of Determination (r^2): 0.9997144

Equation: Conc = 5.053103E+01 + 3.465563E-04 * R

Sample	File Name	Valid	Concentration	Response	Calc'd Concentration	% Deviation	Response Fac
50gas 182 1	c1051	Y	5.000000E+01	1.0513664E+05	8.718758E+01	4.27E+01	4.755715E 0
100GAS 182 2	c1052	Y	1.000000E+02	2.2231463E+05	1.280424E+02	2.10E+01	4.498130E 0
250GAS 182 3	c1053	Y	2.500000E+02	5.8035560E+05	2.538792E+02	1.54E+00	4.307629E 0
500 GAS 182 4	c1054	Y	5.000000E+02	1.1900820E+06	4.654606E+02	7.42E+00	4.201391E 0
1000GAS 182 5	c1055	Y	1.000000E+03	2.6562455E+06	9.766477E+02	2.39E+00	3.764712E 0
2500GAS 182 6	c1056	Y	2.500000E+03	6.9264155E+06	2.465469E+03	1.40E+00	3.609171E 0
5000 GAS 182 7	c1057	Y	5.000000E+03	1.4265573E+07	5.024313E+03	4.84E 01	3.504942E 0



TFT SURROGATE Calibration Report

Printed: 25 SEP 1997 3:59:13

Quant Basis: Area
Curve Type: Linear
Y axis Label: Response

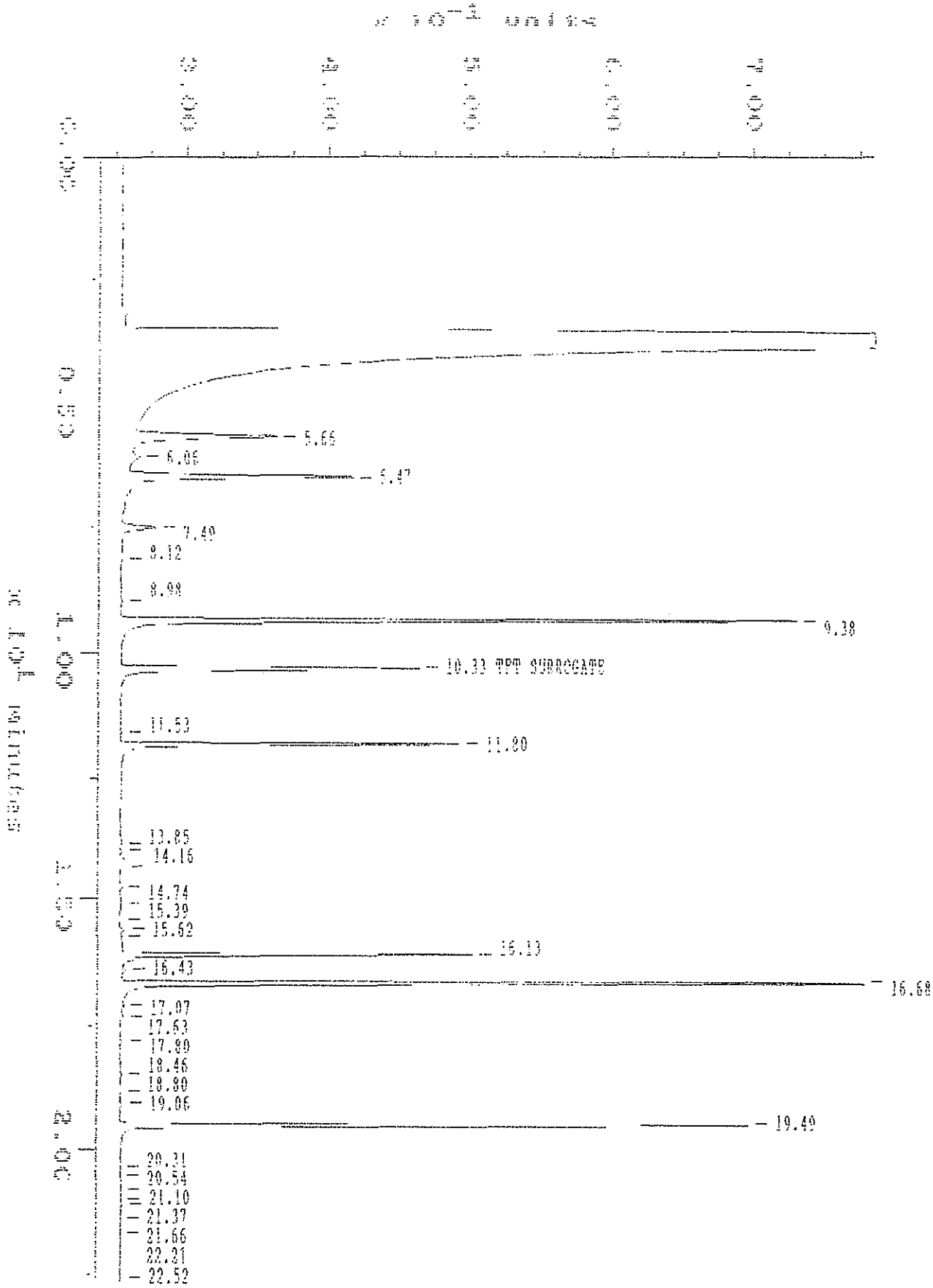
Rejection Tolerance: None
Weighting: None

Internal Standard: None
Forced Through Origin: Yes

Equation: Conc = 6.062170E-05 * R

Sample	File Name	Valid	Concentration	Response	Calc'd Concentration	% Deviation	Response Fact
0.5 8020 181 1	c1041	Y	1.000000E+01	1.4951202E+05	9.063686E+00	1.03E+01	6.688426E-05
1.0 8020 181 2	c1042	Y	2.000000E+01	3.1892959E+05	1.933408E+01	3.44E+00	6.270977E-05
2.0 8020 181 3	c1043	Y	5.000000E+01	7.5584231E+05	4.642673E+01	7.70E+00	6.528759E-05
5.0 8020 181 4	c1044	Y	1.000000E+02	1.7336371E+06	1.050962E+02	4.85E+00	5.768220E-05
10 8020 181 5	c1045	Y	1.500000E+02	2.5268462E+06	1.531819E+02	2.08E+00	5.936254E-05
20 8020 181 6	c1046	Y	2.000000E+02	3.2343515E+06	1.960722E+02	2.00E+00	6.183629E-05

Sample: [illegible] Channel: [illegible] Filename: [illegible]
Acquired: 24 SEP 97 [illegible] Method: [illegible] Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 25 SEP 1997 4:17:13

SAMPLE: rt std
Type: UNKN
ID in Method: BTEX/GAS
Instrument: 34 III PID/FID
Acquired: 24 SEP 1997 12:05
Filename: cl049
Rate: 2.0 points/sec
Index: Disk
Duration: 22.592 minutes
Operator: JMC

DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.325	918912	918912.4271	Invalid	Invalid	Invalid	PFB SURROGATE
TOTAL	918912			0.00	0.00	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.625	5223995	1484335.1250	0.000	0.00	0.00	WA GASOLINE
TOTAL	5223995			0.00	0.00	

WA GASOLINE Calibration Report

Printed: 25 SEP 1987 4:24:53

Quant Basis: Weight
Curve Type: Linear
Y axis Label: Response
Corr. Coef. (r): 0.9987158

Rejection Tolerance: None
Weighting: None
Coef. of Determination (r^2): 0.9974333

Internal Standard: None
Forced Through Origin: No

Equation: Conc = 2.548768E+01 + 2.728456E-05 * R

Sample	File Name	Valid	Concentration	Response	Calc'd Concentration	% Deviation	Response Fac
50gas 182 1	c1051	Y	5.000000E+01	1.951365[illegible]E+05	6.468734E+01	2.27E+01	4.755716E-0
100GAS 182 2	c1052	Y	1.000000E+02	2.2231452E+05	1.082766E+02	7.73E+00	4.4981305E-0
250GAS 182 3	c1053	Y	2.500000E+02	5.8035568E+05	2.410744E+02	3.36E+00	4.3076295E-0
500 GAS 182 4	c1054	Y	5.000000E+02	1.1900820E+06	4.692045E+02	5.56E+00	4.2013915E-0
1000GAS 182 5	c1055	Y	1.000000E+03	2.5562455E+06	1.015857E+03	1.56E+00	3.7647125E-0
2500GAS 182 6	c1056	N	2.500000E+03	5.9264155E+06	2.607971E+03	4.14E+00	3.6093715E-0
5000 GAS 182 7	c1057	N	5.000000E+03	1.4265523E+07	5.344344E+03	6.44E+00	3.5049425E-0

CONTINUING CALIBRATION DATA

GASOLINE CCAL

DATE 10-3-97

INSTRUMENT 3400-111

ANALYST SR

BATCH # GB1257 / GB1259

	FILENAME	STD #	CALC. VALUE	TRUE VALUE	%D
GASOLINE	~~01~~ C1392	0194-186-18	543	500	
GASOLINE	C1405	0194-186-20	538	500	
GASOLINE	C1418	0194-187-1	520	500	
GASOLINE	C1425	0194-187-2	518	500	
GASOLINE				500	
GASOLINE				500	
GASOLINE				500	
GASOLINE				500	
GASOLINE				500	
GASOLINE				500	

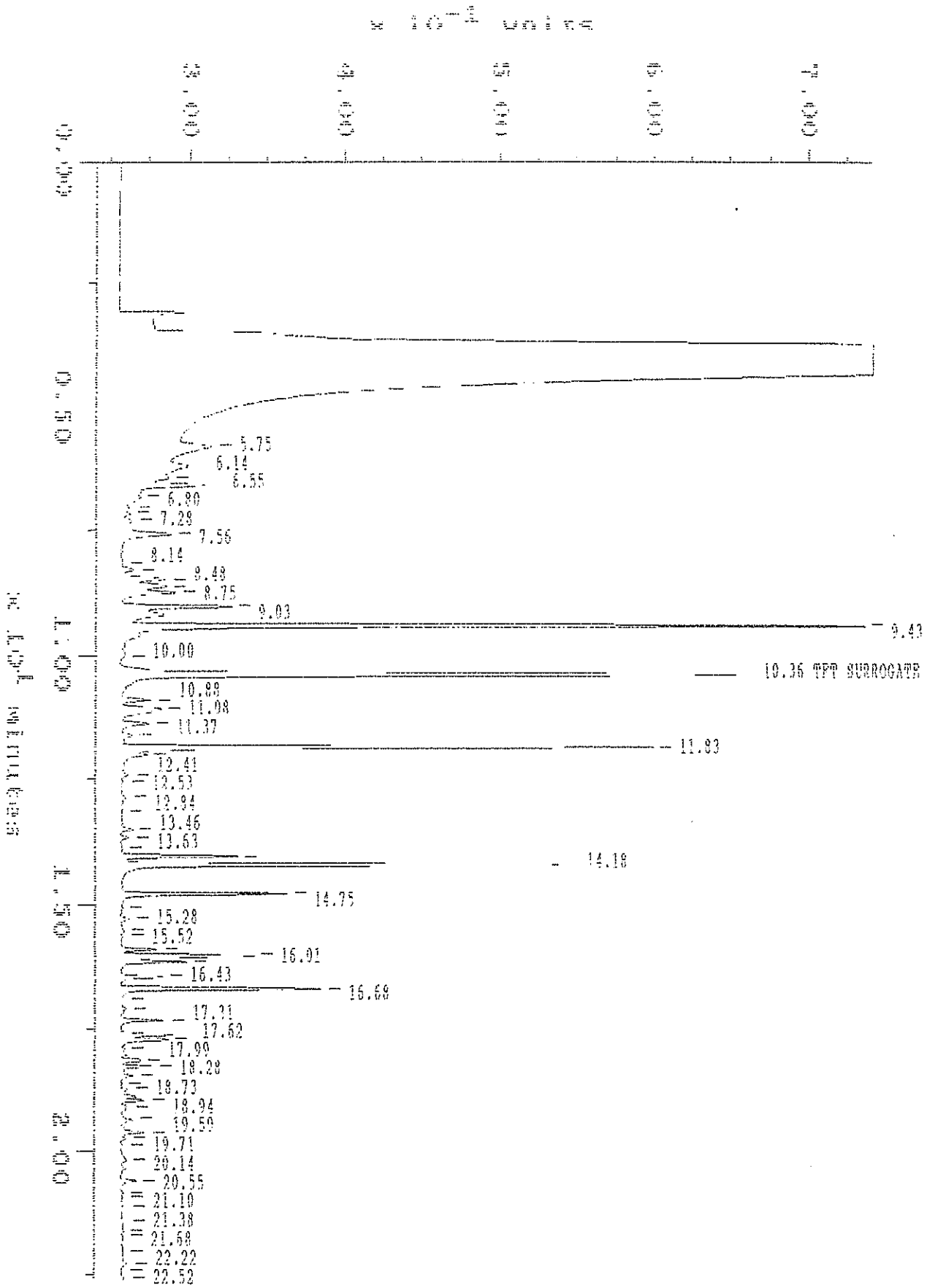
WTPH-G CCAL LIMITS +/- 15%

AK-GRO CCAL LIMITS +/- 25%

AK-101 CCAL LIMITS +/- 25%

HA GAS CCAL LIMITS +/- 15%

Sample: CCV G 186 18 Channel: PID Filename: C1392
Acquired: 03 OCT 97 21:20 Method: C:\MAX\DATA1\971003 Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 7:31:02

SAMPLE: CCV G 186 18
#40 in Method: BTEX/GAS
Acquired: 3 OCT 1997 21:20
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1392
Index: 6

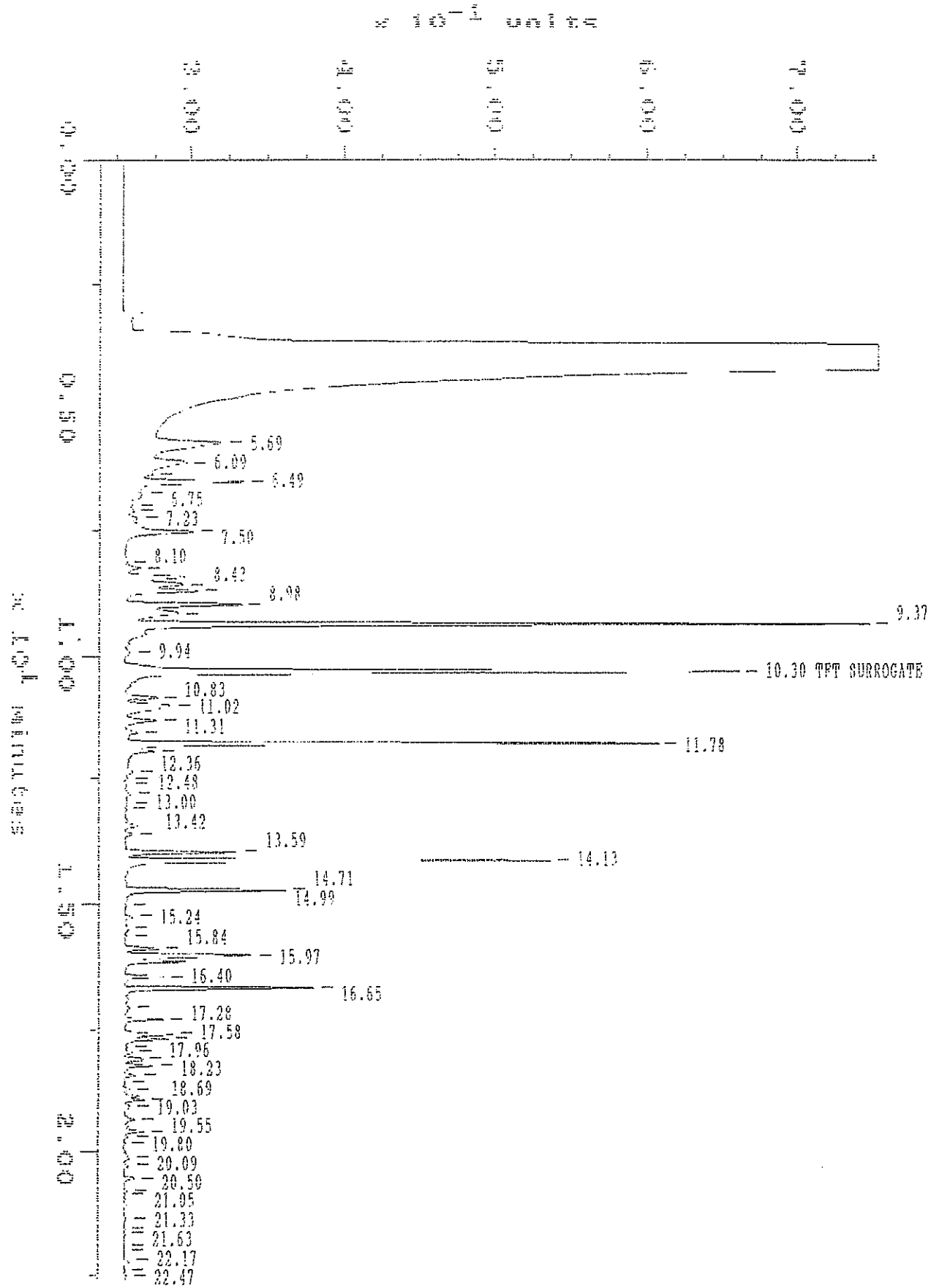
DETECTOR: FID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.358	1867367	1867367.3047	0.000	113.20	1.13	TFT SURROGATE
TOTAL	1867367			113.20	1.13	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	5719527	1418819.6250	0.000	542.50	5.43	WA GASOLINE
TOTAL	5719527			542.50	5.43	

Sample: CCV @ 186.29 Channel: PID Filename: C1405
Acquired: 04 OCT 92 3:24 Method: C:\MAX\DATA1\921003A Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:16:05

SAMPLE: CCV G 186 20
#18 in Method: BTEX/GAS
Acquired: 4 OCT 1997 3:24
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1405
Index: 3

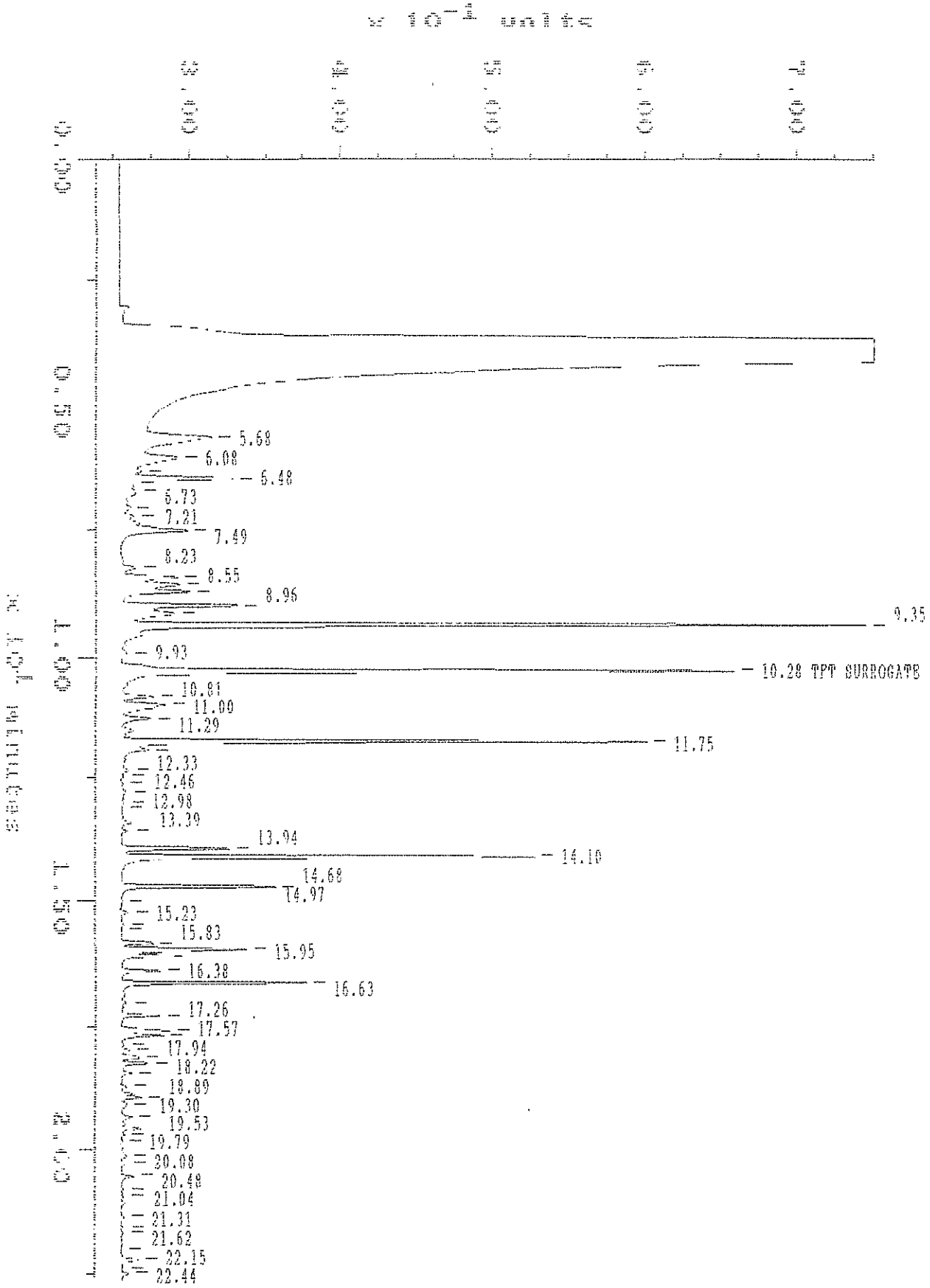
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.300	1941740	1941739.5072	0.000	117.71	1.18	TFT SURROGATE
TOTAL	1941740			117.71	1.18	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	5599960	1405949.7500	0.000	537.82	5.38	WA GASOLINE
TOTAL	5599960			537.82	5.38	

Sample: CCV G 187 1 Channel: FID Filename: C1418
Acquired: 04 OCT 97 9:27 Method: C:\MAX\DATA1\971003A Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:22:03

SAMPLE: CCV G 187 1
#31 in Method: BTEX/GAS
Acquired: 4 OCT 1997 9:27
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 ITI PID/FID
Filename: C1418
Index: 16

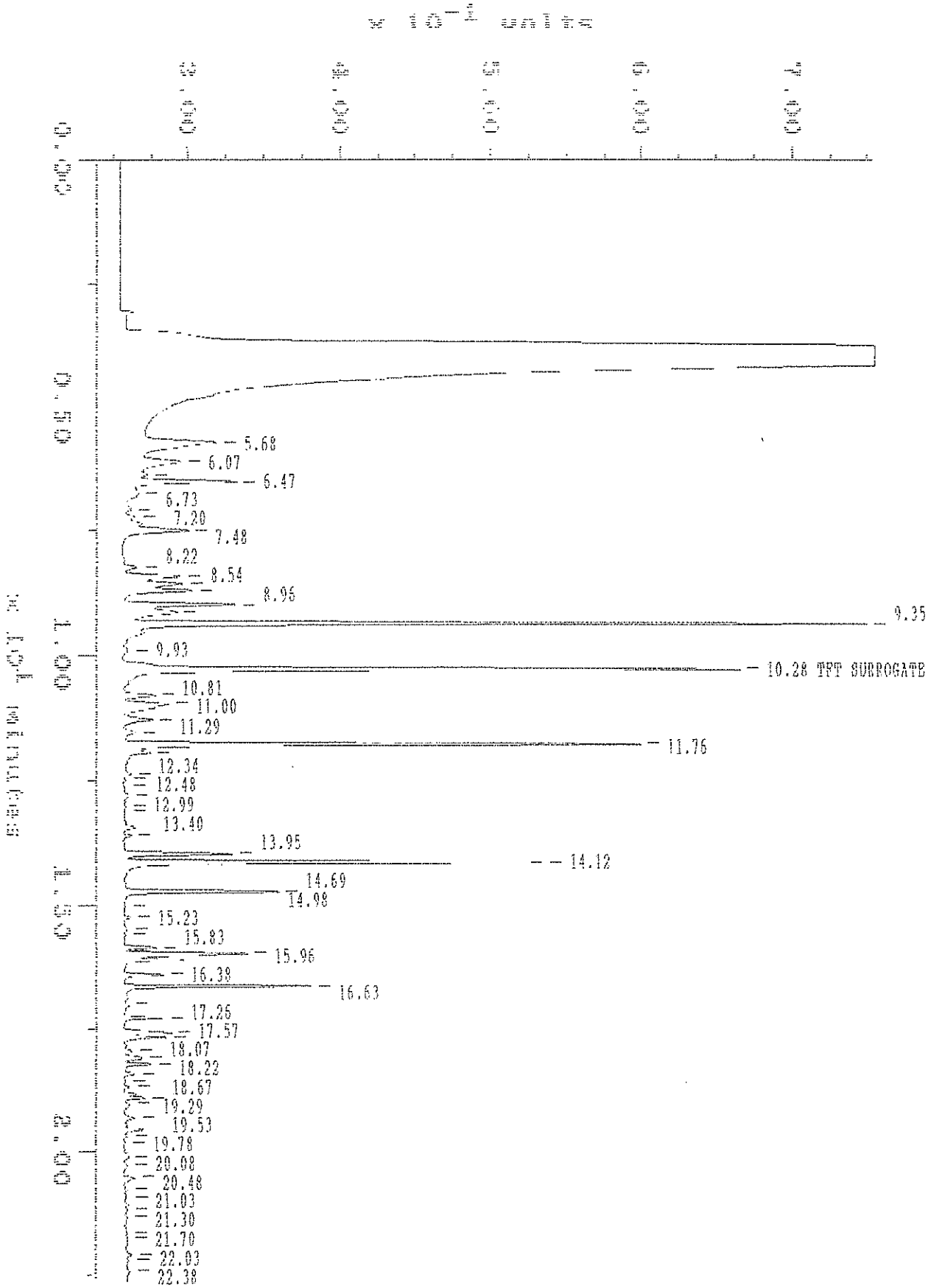
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.283	1911077	1911076.5892	0.000	115.85	1.16	TPT SURROGATE
TOTAL	1911077			115.85	1.16	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	5392364	1355962.8750	0.000	519.66	5.20	WA GASOLINE
TOTAL	5392364			519.66	5.20	

Sample: CCV G 187 2 Channel: PID Filename: C1425
Acquired: 04 OCT 97 12:42 Method: C:\MAX\DATA1\971003A Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:27:53

SAMPLE: CCV G 187 2
#38 in Method: BTEX/GAS
Acquired: 4 OCT 1997 12:42
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JHC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1425
Index: 23

DETECTOR: FID

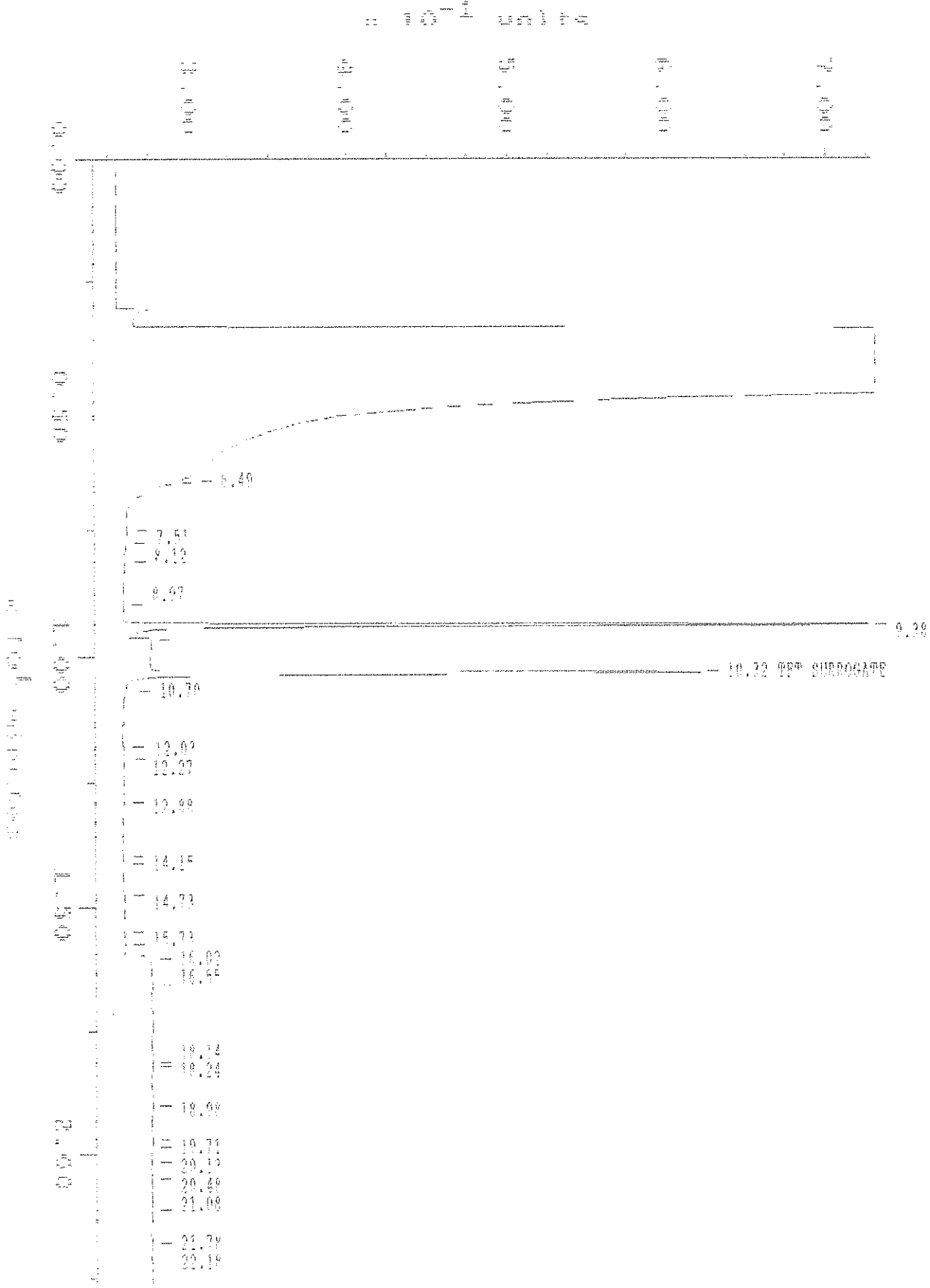
Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.283	1958985	1958984.7236	0.000	118.76	1.19	TFT SURROGATE
TOTAL	1958985			118.76	1.19	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	5213846	1351872.7500	0.000	518.17	5.18	WA GASOLINE
TOTAL	5213846			518.17	5.18	

METHOD BLANK DATA

Sample: MB GR1257 Channel: FID Filename: C1401
Acquired: 04 OCT 97 1:33 Method: C:\MAX\DATA\971003 Operator: JMC



MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:10:45

SAMPLE: MB GB1357
#49 in Method: PTBX/GAS
Acquired: 4 OCT 1997 1:37
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 24 III PID/FID
Filename: C1491
Index: 15

DETECTOR: FID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.317	1388422	1388422.4556	0.000	84.17	0.84	PFP SURROGATE
TOTAL	1388422			84.17	0.84	

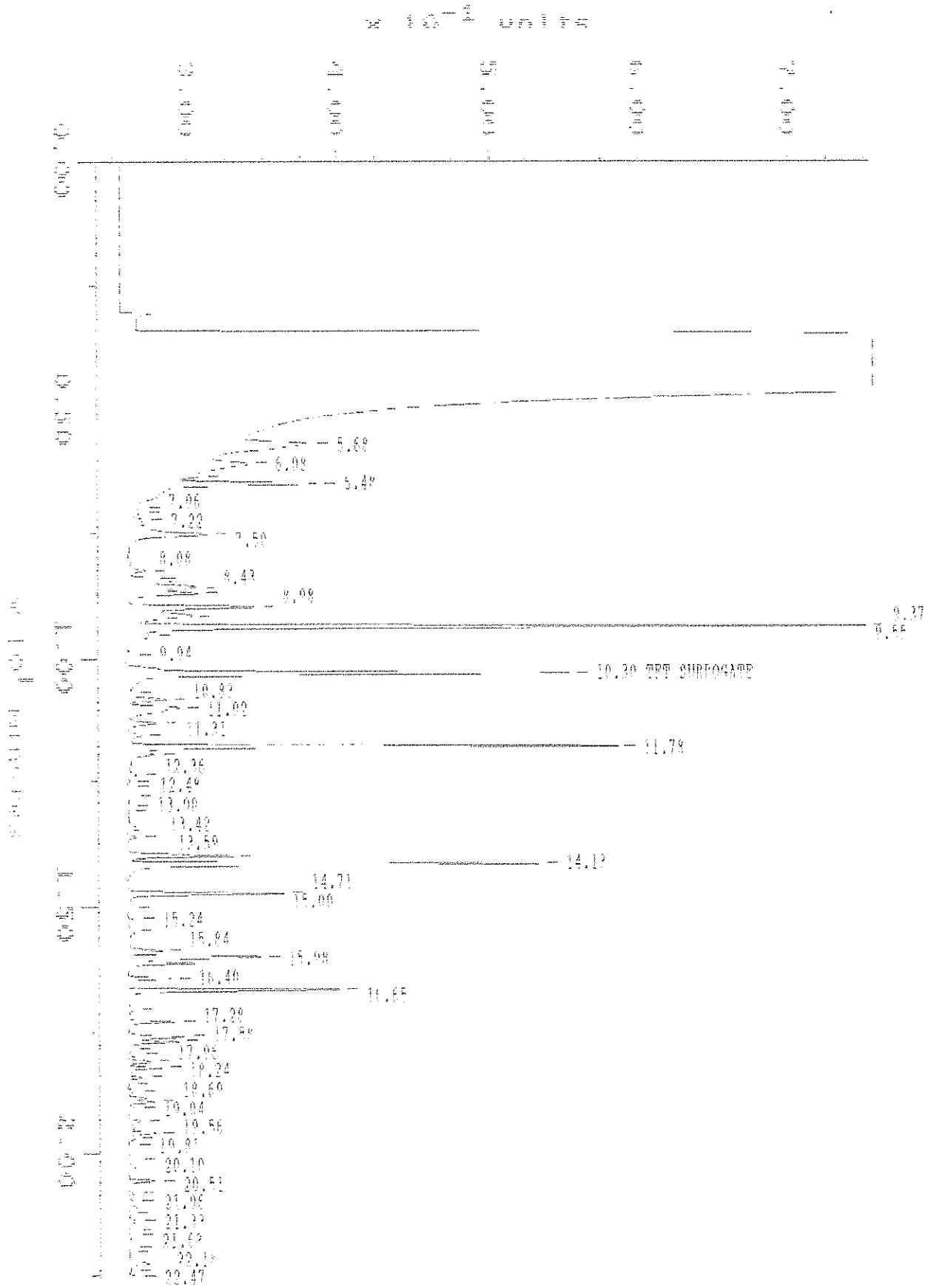
GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.416	441367	25973.130911	0.001	36.3811	0.3611	WA GASOLINE
TOTAL	441367			36.3811	0.3611	

!! Result calculation based on peak response more than 10% outside of calibration range.

BLANK SPIKE DATA

Sample: [illegible] Channel: FID Filename: [illegible]
Acquired: [illegible] 2:20 Method: [illegible] Operator: JMC



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MAXIMA 820 CUSTOM REPORT

Printed: 4 OCT 1992 9:15:40

SAMPLE: BS G 681357
#16 in Method: BTEX/GAS
Acquired: 4 OCT 1992 2:20
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 24 III PID/FID
Filename: C1402
Index: 1

DETECTOR: PID

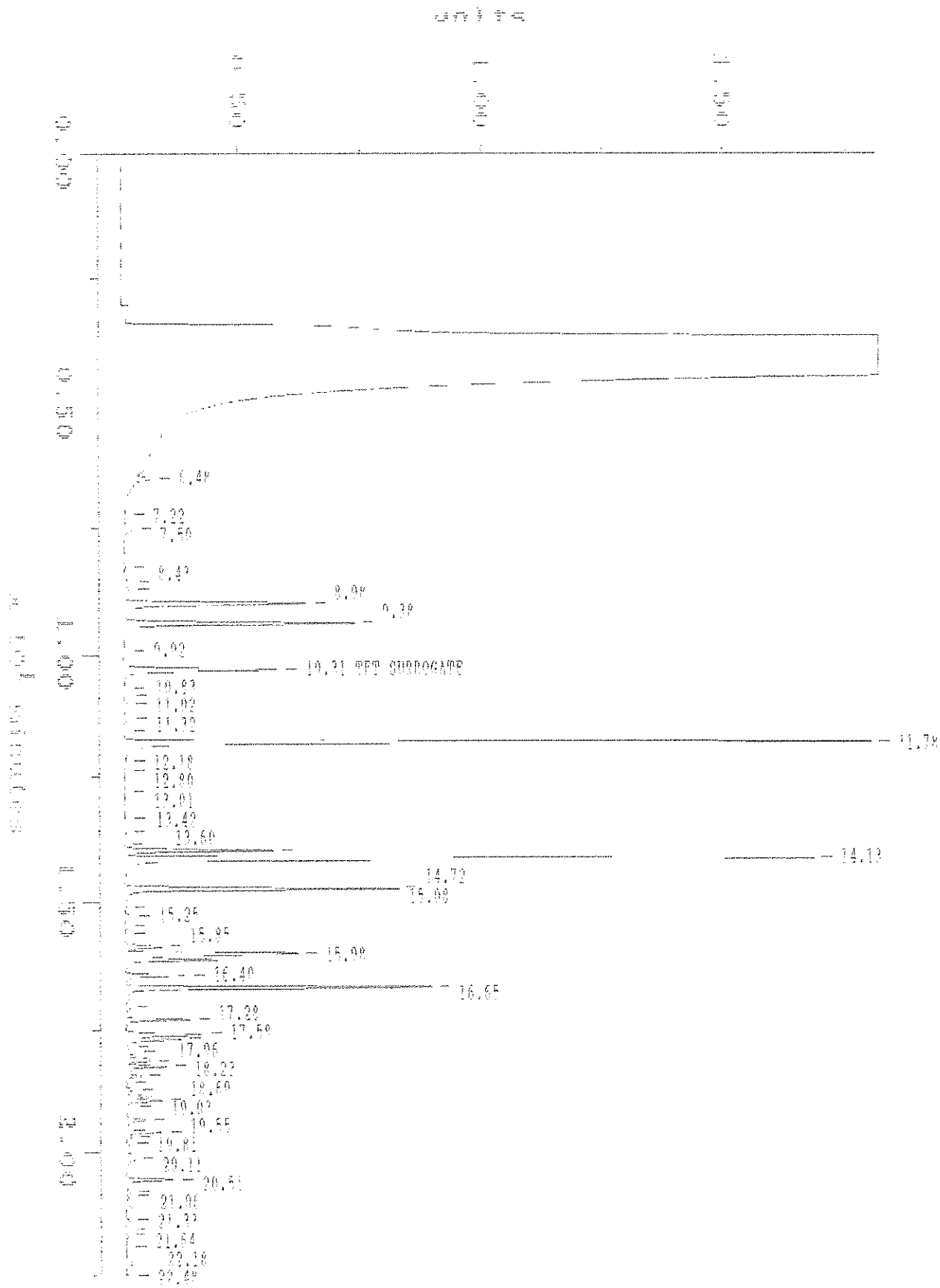
Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.300	1475767	1475766.5100	0.000	89.46	0.89	TEP SURROGATE
TOTAL	1475767			89.46	0.89	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	5607122	1424284.6250	0.000	549.12	5.49	NA GASOLINE
TOTAL	5607122			549.12	5.49	

DUPLICATE SAMPLE DATA

Sample: [illegible] Channel: PID Filename: C1408
Acquired: [illegible] 4:48 Method: C:\MAX\DATA\[illegible] Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 9:44:48

SAMPLE: 67737 1B
#21 in Method: BTEX/GAS
Acquired: 4 OCT 1997 4:49
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1408
Index: 6

DETECTOR: PID

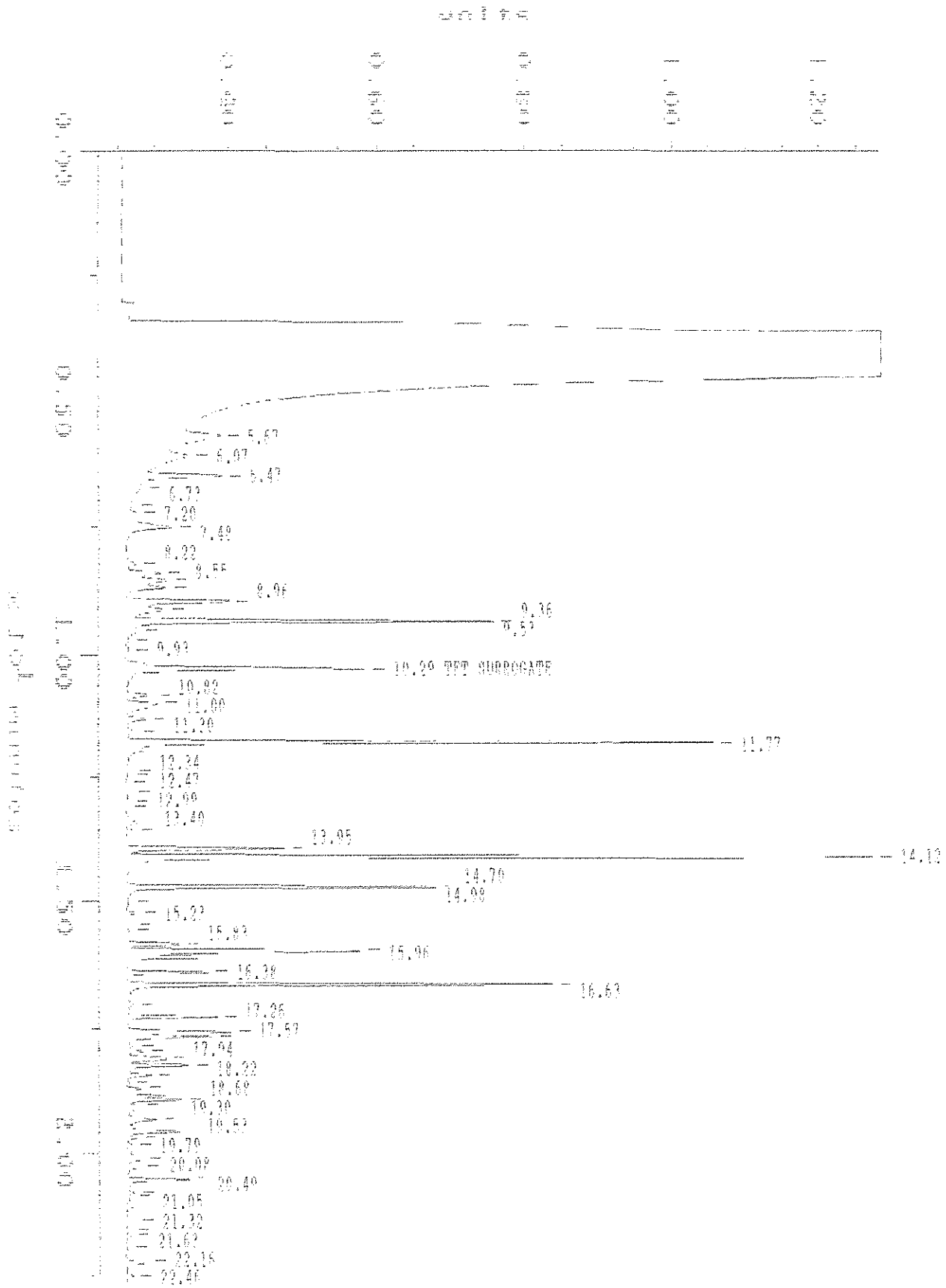
Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.208	1451370	1451370.3342	0.000	87.08	0.88	MTB SUBROGATE
TOTAL	1451370			87.08	0.88	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.459	23161613	6194422.5000	0.000	2192.75	21.93	BZ GASOLINE
TOTAL	23161613			2192.75	21.93	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE DATA

Sample: [illegible] Channel: [illegible] Filename: [illegible]
Acquired: [illegible] 5:16 Method: [illegible] Operator: [illegible]



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:45:22

SAMPLE: 67737 IMS
822 in Method: BTEX/GAS
Acquired: 4 OCT 1997 5:16
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1400
Index: 7

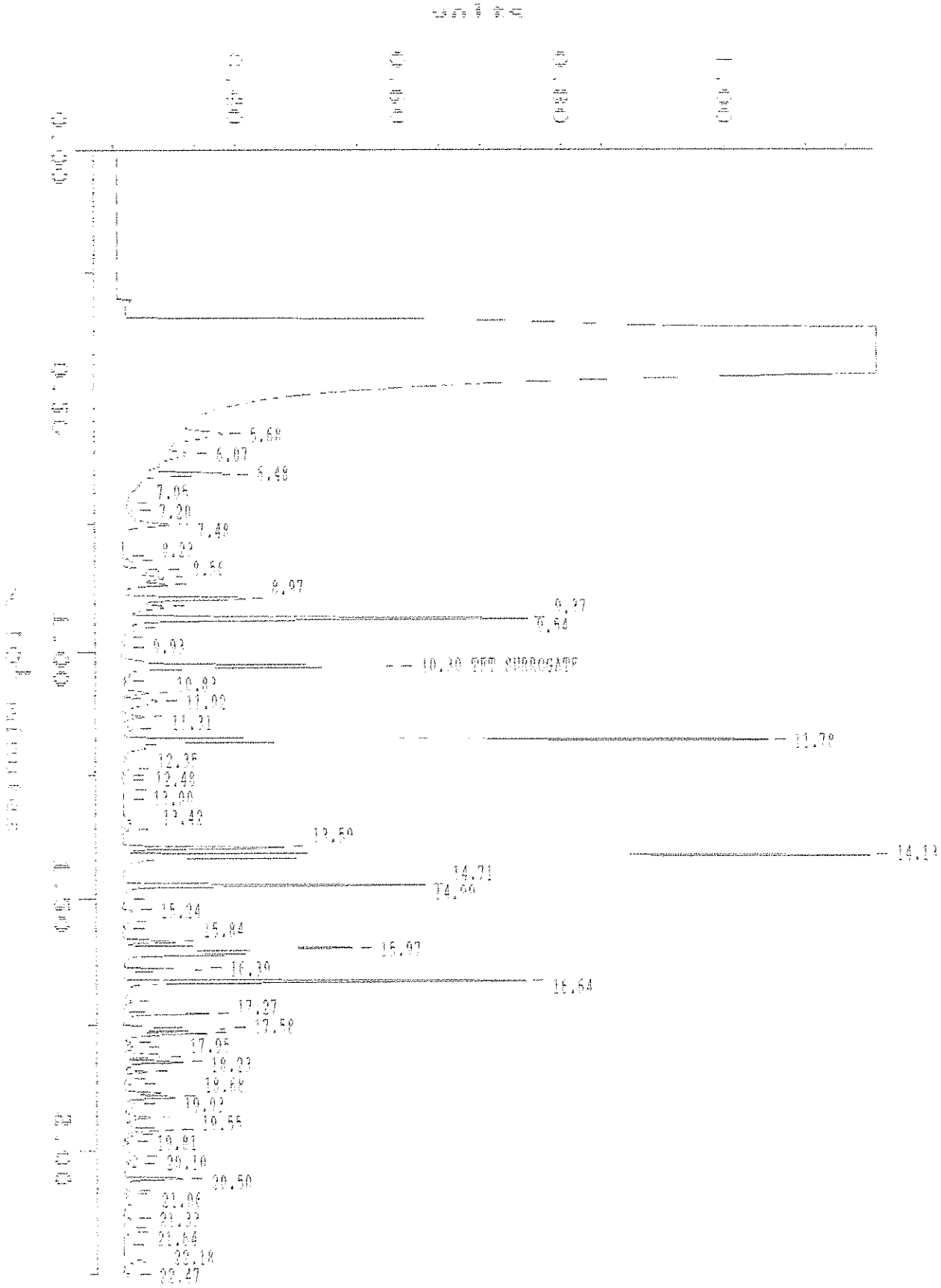
DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.292	1660106	1660106.4270	0.000	100.64	1.01	PPT SURROGATE
TOTAL	1660106			100.64	1.01	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	18100904	4702217.0000	0.000	1674.12	16.74	WA GASOLINE
TOTAL	18100904			1674.12	16.74	

Sample: 67737 1MSD Channel: FID Filename: C1410
Acquired: 04 OCT 97 5:44 Method: C:\MAX\DATA1\971003A Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 8:47:53

SAMPLE: 67737 IMSD
823 in Method: BTEX/GAS
Acquired: 4 OCT 1997 5:44
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/FID
Filename: C1410
Index: 8

DETECTOR: FID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.300	1684470	1684470.4252	0.000	102.12	1.02	TFT SURROGATE
TOTAL	1684470			102.12	1.02	

GROUP SUMMARY: FID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	16345738	4240080.5000	0.000	1513.50	15.14	WA GASOLINE
TOTAL	16345738			1513.50	15.14	

QUALITY CONTROL CHECK SAMPLE DATA

SOIL MATRIX LABORATORY CHECK SAMPLE FOR GASOLINE AND BTEX

DATE 10-3-97

INSTRUMENT 3400-111

ANALYST SN

BATCH # GB1257

BTEX LCS ERA #40009

FILENAME _____

	CALC. VALUE	TRUE VALUE	ACCEPTANCE RANGE
BENZENE		143	87-192
TOLUENE		348	250-452
ETHYL BENZENE		108	78-138
M,P,-XYLENE		160	117-206
O-XYLENE		201	147-259

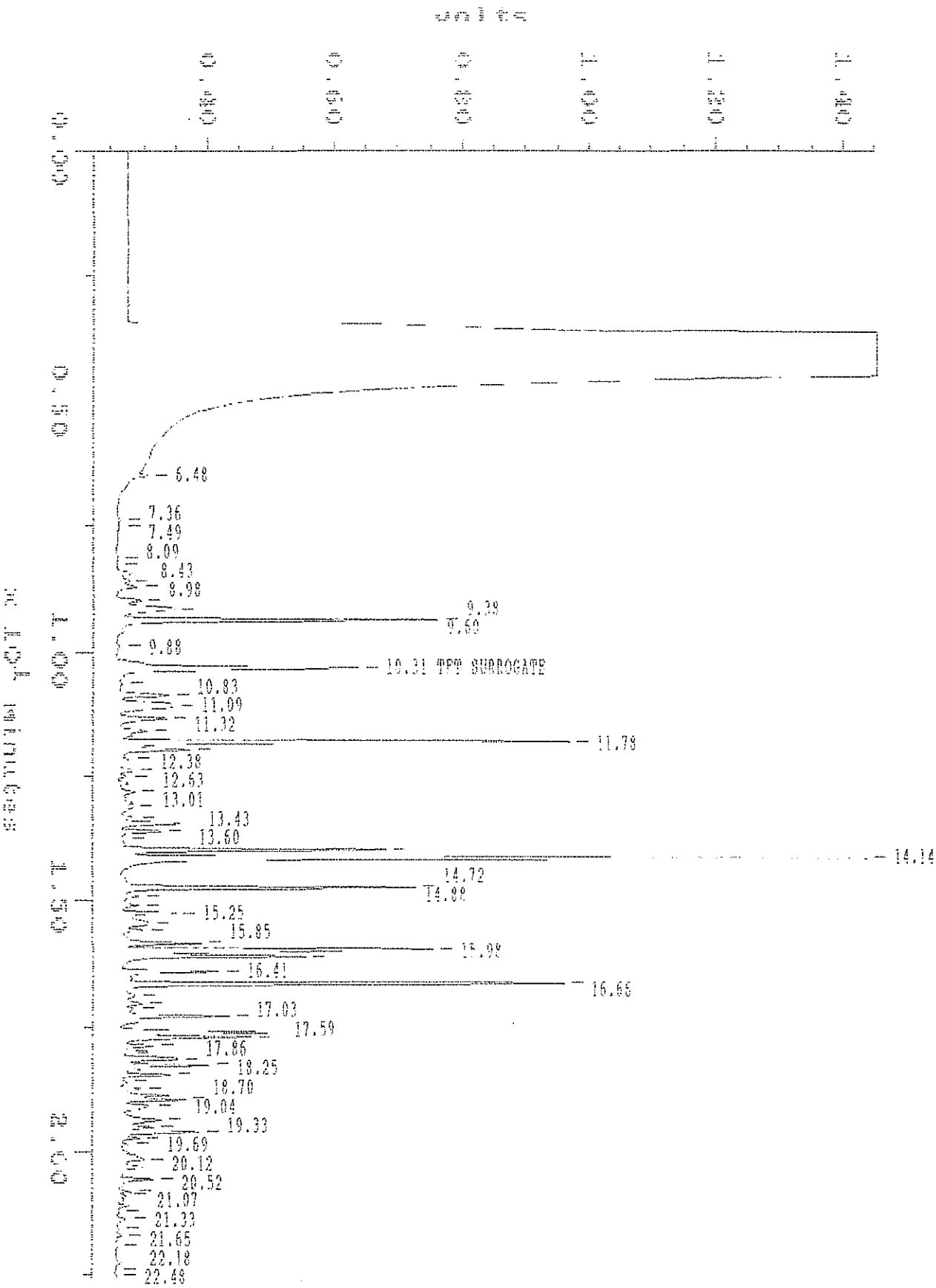
GASOLINE LCS ERA#40009

FILENAME Q 1402

	CALC. VALUE	TRUE VALUE	ACCEPTANCE RANGE
GASOLINE	1040	1280	497-1860

0.9680 g

Sample: LCS G GR1257 Channel: FID Filename: C1402
Acquired: 04 OCT 97 2:01 Method: C:\MAX\DATA\971003 Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 7:37:40

SAMPLE: LCS G GB1257
#50 in Method: BTEX/GAS
Acquired: 4 OCT 1997 2:01
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JMC

Type: UNKN
Instrument: 34 III PID/PID
Filename: C1402
Index: 16

DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.308	1949079	1949079.3242	0.000	118.16	1.18	TFT SURROGATE
TOTAL	1949079			118.16	1.18	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	31146708	7125397.50001	0.000	2516.671	25.171	NA GASOLINE
TOTAL	31146708			2516.671	25.171	

! Result calculation based on peak response ratio outside of calibration range.

8020 AND GASOLINE INITIAL CALIBRATION VERIFICATION

DATE 10-3-97

INSTRUMENT 3400-III

ANALYST SR

BATCH # GB1257 / GB1259

FILENAME C1370

STD #. 0194-185-6

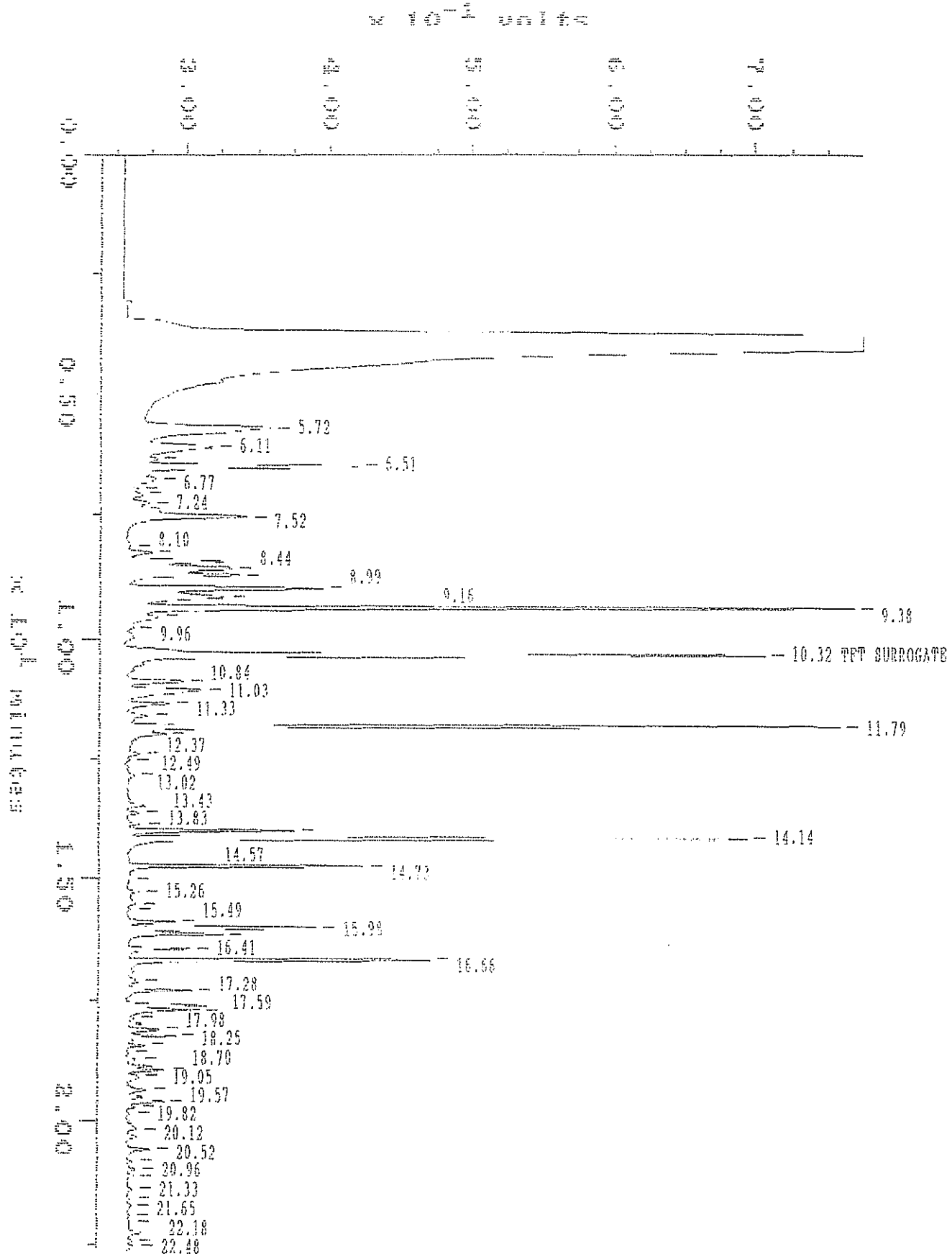
	CALC VALUE	TRUE VALUE	%D
BENZENE	36.5	40	8.8
TRIFLUOROTOLUENE	114	100	14
TOLUENE	40.7	40	1.8
CHLOROBENZENE	36.3	40	9.3
ETHYLBENZENE	37.6	40	6.0
M,P-XYLENE	76.3	80	4.6
O-XYLENE	37.4	40	6.5
1,3-DICHLOROBENZENE	38.0	40	5.0
1,4-DICHLOROBENZENE	38.8	40	3.0
1,2-DICHLOROBENZENE	39.5	40	1.3

FILENAME C1371

STD #. 0194-185-7

	CALC VALUE	TRUE VALUE	%D
GASOLINE	860	801	7.4

Sample: ICV G 185 7 Channel: FID Filename: C1371
Acquired: 03 OCT 97 9:22 Method: C:\MAX\DATA1\971003 Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 7:29:36

SAMPLE: ICV G 185 7
#19 in Method: BTEX/GAS
Acquired: 3 OCT 1997 9:22
Rate: 2.0 points/sec
Duration: 22.592 minutes
Operator: JHC

Type: UNKN
Instrument: 34 III PID/PID
Filename: C1371
Index: Disk

DETECTOR: PID

Retention Time (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Component Name
10.317	2244460	2244459.7217	0.000	136.06	1.36	TFT SURROGATE
TOTAL	2244460			136.06	1.36	

GROUP SUMMARY: PID

Group Center (minutes)	Peak Area	Peak Response	Response Factor	Solution Conc	Original Conc	Group Name
15.450	9599978	2293850.5000	0.000	860.46	8.60	NA GASOLINE
TOTAL	9599978			860.46	8.60	

LABORATORY WORKSHEETS

VOLATILE FUELS EXTRACTION LOG

Date: 10-2-97

Analyst:

Spike:SAS No.: 0194-176-19

Spike Amount(uL): 100ul

QC Batch ID: GB1258

Methanol Lot No.: 425

IS Std. No. : 0194-153-1

Surrogate Std No.: 0194-125-13

Instrument ID:

MATRIX:
Water:____ Soil: X TCLP:____ Other:____

ANAYSIS:
Gasoline:____ BTEX: X VPH:____ Other:____

Sample No.:	Sample Size(g/ml)	Extract Volume	Extract Used	Final Volume	Dilution	Comments
MB	10.0000	10ml	1.1ml	44ml		
BS-BTEX	1	↓	↓	↓		
67737-1	10.0036	↓	↓	↓		
-1 dup	10.0016	↓	↓	↓		
-1MS-BTEX	10.0045	↓	↓	↓		
-1MSD-BTEX	10.0062	↓	↓	↓		
-2	10.0324	↓	↓	↓		
-3	10.1642	↓	↓	↓		
-4	10.0153	↓	↓	↓		
-5	10.0770	↓	↓	↓		
67737-6	10.0400	↓	↓	↓		
LCS-B	10-	↓	↓	↓		

VOLATILE FUELS EXTRACTION LOG

Date: 10-2-97

Analyst: _____

Spike:SAS No.: 0194-172-17

Spike Amount(uL): 100 ul

QC Batch ID: GB1257

Methanol Lot No.: 425

IS Std. No. : 0194-153-1

Surrogate Std No.: 0194-125-13

Instrument ID: _____

MATRIX:
Water: ____ Soil: X TCLP: ____ Other: ____

ANAYSIS:
Gasoline: X BTEX: ____ VPH: ____ Other: ____

Sample No.:	Sample Size(g/ml)	Extract Volume	Extract Used	Final Volume	Dilution	Comments
MB	10.0000	10ml	1.1ml	44ml		
BS-G	1					
LCS-9	0.9910					
67737-1	10.0036					
-1 dup	10.0016					
-1MS-GAS	10.0068					GLACIER
-1MSD-GAS	10.0060					CORPS
-2	10.0324					WTPH-G
-3	10.1642					
-4	10.0153					
-5	10.0770					
67737-6	10.0400					
67802-1	10.0173					
-2	10.0154					WS-DOT
-3	10.0668					WTPH-G
67802-4	10.1850					

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	**Glacier**
Work Order Number	**67737**
Sample Number	**1**
Batch QC ID	**GB1257**
Client Sample ID	**MTPL-SW-E**
Date Received	**09-26-97**
Date Prepared	**10-02-97**
Date Analyzed	**10-04-97**
Sample matrix type	**solid**
QC sample type	**sample**

Related Blank: GB1257

Sample weight (g)	**10.0036**	=	0.01 kg	Calc. Factor	0.046301071
Extract volume (ml)	**10**	=	10 ml	Dry Weight	8.63910896 g
Dilution Factor		=	1	Units	mg/kg
% Solids	**86.36**	=	0.8636	Spike Factor	0.046301071
Medium Level	**medium**	=	1	Rep. Dil. Fact.	1
Report in PPM	**1**	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	93.59		94	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	2481.91		36.38	110	B2	2.3

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	1
Batch QC ID	GB1257
Client Sample ID	MTPL-SW-E
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	dup

Related Blank: GB1257

Sample weight (g)	10.0016	=	0.01 kg	Calc. Factor	0.04631033
Extract volume (ml)	10	=	10 ml	Dry Weight	8.63738176 g
Dilution Factor		=	1	Units	mg/kg
% Solids	86.36	=	0.8636	Spike Factor	0.04631033
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	88		88	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	2192.75		36.38	100	B2	2.3

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	1
Batch QC ID	GB1257
Client Sample ID	MTPL-SW-E
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	ms

Related Blank: GB1257

Sample weight (g)	10.0068	=	0.01001 kg	Calc. Factor	0.046286265
Extract volume (ml)	10	=	10 ml	Dry Weight	8.64187248 g
Dilution Factor		=	1	Units	mg/kg
% Solids	86.36	=	0.8636	Spike Factor	0.046286265
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	101		101	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	1674.12		36.38	77	B2	2.3

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	**Glacier**
Work Order Number	**67737**
Sample Number	**1**
Batch QC ID	**GB1257**
Client Sample ID	**MTPL-SW-E**
Date Received	**09-26-97**
Date Prepared	**10-02-97**
Date Analyzed	**10-04-97**
Sample matrix type	**solid**
QC sample type	**msd**

Related Blank: GB1257

Sample weight (g)	**10.006**	=	0.01001 kg	Calc. Factor	0.046289966
Extract volume (ml)	**10**	=	10 ml	Dry Weight	8.6411816 g
Dilution Factor		=	1	Units	mg/kg
% Solids	**86.36**	=	0.8636	Spike Factor	0.046289966
Medium Level	**medium**	=	1	Rep. Dil. Fact.	1
Report in PPM	**1**	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	102		102	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	1513.5		36.38	70	B2	2.3

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	2
Batch QC ID	GB1257
Client Sample ID	MTPL-SW-W
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	sample

Related Blank: GB1257

Sample weight (g)	10.0324	=	0.01003 kg	Calc. Factor	0.045240915
Extract volume (ml)	10	=	10 ml	Dry Weight	8.84155412 g
Dilution Factor		=	1	Units	mg/kg
% Solids	88.13	=	0.8813	Spike Factor	0.045240915
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	85		85	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	239.84		36.38	11	B1	2.3

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	3
Batch QC ID	GB1257
Client Sample ID	MTPL-SW-N
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	sample

Related Blank: GB1257

Sample weight (g)	10.1642	=	0.01016 kg	Calc. Factor	0.047545983
Extract volume (ml)	10	=	10 ml	Dry Weight	8.41290834 g
Dilution Factor		=	1	Units	mg/kg
% Solids	82.77	=	0.8277	Spike Factor	0.047545983
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	85		85	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	95.38		36.38	4.5	B1	2.4

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	4
Batch QC ID	GB1257
Client Sample ID	MTPL-SS-1
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	sample

Related Blank: GB1257

Sample weight (g)	10.0153	=	0.01002 kg	Calc. Factor	8.921901819
Extract volume (ml)	10	=	10 ml	Dry Weight	8.96669809 g
Dilution Factor	200	=	200	Units	mg/kg
% Solids	89.53	=	0.8953	Spike Factor	0.044609509
Medium Level	medium	=	1	Rep. Dil. Fact.	200
Report in PPM	1	=	0.001	Surr. Factor	200
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene		X8	-	-	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	932.81		36.38	8300	B2	450

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	5
Batch QC ID	GB1257
Client Sample ID	MTPL-SW-S
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	sample

Related Blank: GB1257

Sample weight (g)	10.077	=	0.01008 kg	Calc. Factor	0.046737729
Extract volume (ml)	10	=	10 ml	Dry Weight	8.5583961 g
Dilution Factor		=	1	Units	mg/kg
% Solids	84.93	=	0.8493	Spike Factor	0.046737729
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	89		89	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	2671.99		36.38	120	B2	2.3

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	6
Batch QC ID	GB1257
Client Sample ID	MTPL-SS-1-D
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	sample

Related Blank: GB1257

Sample weight (g)	10.04	=	0.01004 kg	Calc. Factor	2.271675074
Extract volume (ml)	10	=	10 ml	Dry Weight	8.804076 g
Dilution Factor	50	=	50	Units	mg/kg
% Solids	87.69	=	0.8769	Spike Factor	0.045433501
Medium Level	medium	=	1	Rep. Dil. Fact.	50
Report in PPM	1	=	0.001	Surr. Factor	50
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene		X8	-	-	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	1840.86		36.38	4200	B2	110

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: noblank
Batch QC ID	**gb1258**
Client Sample ID	
Date Received	
Date Prepared	**10-02-97**
Date Analyzed	**10-03-97**
Sample matrix type	**solid**
QC sample type	**blank**

Sample weight (g)	**10**	=	0.01 kg	Calc. Factor	0.04
Extract volume (ml)	**10**	=	10 ml	Dry Weight	10 g
Dilution Factor		=	1	Units	mg/kg
% Solids		=	1	Spike Factor	0.04
Medium Level	**medium**	=	1	Rep. Dil. Fact.	1
Report in PPM	**1**	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	Trifluorotoluene	82		82	OK	57	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

	Target Analytes	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	Related Blank: GB1258
Batch QC ID	GB1258
Client Sample ID	
Date Received	09-26-97
Date Prepared	10-02-97
Date Analyzed	10-03-97
Sample matrix type	solid
QC sample type	bs

Sample weight (g)	10	=	0.01 kg	Calc. Factor	0.04
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor		=	1	Units	mg/kg
% Solids		=	1	Spike Factor	0.04
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	80		80	OK	57	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Benzene	20.51			0.82		0.02
x	Toluene	20.31			0.81		0.02
x	Ethylbenzene	20.17			0.81		0.02
x	m,p-Xylene	39.52			1.6		0.04
x	o-Xylene	18.92			0.76		0.02

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier				
Work Order Number	67737				
Sample Number	1			Related Blank:	GB1258
Batch QC ID	GB1258				
Client Sample ID	MTPL-SW-E				
Date Received	09-26-97				
Date Prepared	10-02-97				
Date Analyzed	10-03-97				
Sample matrix type	solid				
QC sample type	sample				
Sample weight (g)	10.0036	=	0.01 kg	Calc. Factor	0.046301071
Extract volume (ml)	10	=	10 ml	Dry Weight	8.63910896 g
Dilution Factor		=	1	Units	mg/kg
% Solids	86.36	=	0.8636	Spike Factor	0.046301071
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	82		82	OK	57	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Benzene	25.09	N		1.2	N	0.023
x	Toluene	167.05	E		7.7	E	0.023
x	Ethylbenzene	38.47	N		1.8	N	0.023
x	m,p-Xylene	200.47	N		9.3	N	0.046
x	o-Xylene	82.63	N		3.8	N	0.023

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	
Work Order Number	
Sample Number	Related Blank: noblank
Batch QC ID	**gb1257**
Client Sample ID	
Date Received	
Date Prepared	**10-02-97**
Date Analyzed	**10-04-97**
Sample matrix type	**solid**
QC sample type	**blank**

Sample weight (g)	**10**	=	0.01 kg	Calc. Factor	0.04
Extract volume (ml)	**10**	=	10 ml	Dry Weight	10 g
Dilution Factor		=	1	Units	mg/kg
% Solids		=	1	Spike Factor	0.04
Medium Level	**medium**	=	1	Rep. Dil. Fact.	1
Report in PPM	**1**	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	**Quan Value**	**User Flags**	**% Rec.**	**Warning**	**Water Low**	**Water High**
x	Trifluorotoluene	84		84	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	**Target Analytes**	**Quan Value**	**User Flag**	**Blank**	**Calculated Amount**	**Total Flags**	**PQL**
x	Gasoline Range Organics(Tol	36.38			1.5	J	2

SOUND ANALYTICAL SERVICES, INC.

5a **Sample Information**

Client Name	Glacier
Work Order Number	67737
Sample Number	Related Blank: GB1257
Batch QC ID	GB1257
Client Sample ID	
Date Received	
Date Prepared	10-02-97
Date Analyzed	10-04-97
Sample matrix type	solid
QC sample type	bs

Sample weight (g)	10	=	0.01 kg	Calc. Factor	0.04
Extract volume (ml)	10	=	10 ml	Dry Weight	10 g
Dilution Factor		=	1	Units	mg/kg
% Solids		=	1	Spike Factor	0.04
Medium Level	medium	=	1	Rep. Dil. Fact.	1
Report in PPM	1	=	0.001	Surr. Factor	1
mg/kg Carbon		=	1		

	Surrogate	Quan Value	User Flags	% Rec.	Warning	Water Low	Water High
x	Trifluorotoluene	89		89	OK	50	150
				-	-		
				-	-		
				-	-		
				-	-		
				-	-		

x	Target Analytes	Quan Value	User Flag	Blank	Calculated Amount	Total Flags	PQL
x	Gasoline Range Organics(Tol	548.12		36.38	22	B2	2

8020 DATA PACKAGE

INITIAL CALIBRATION DATA

BETX %RSD

Date Analyzed: 10-Sep-97
Instrument: 3400-III
Analytical Column: DB-624

COMPOUND	0.5 ug/L	1 ug/L	2 ug/L	5 ug/L	10 ug/L	20 ug/L	50 ug/L	100 ug/L	Average RRF	Stdev.	%RSD
Benzene	0.0101	0.0098	0.0091	0.0106	0.0093	0.0108	0.0105	0.0101	0.0100	0.0006	5.6
Toluene	0.0112	0.0135	0.0090	0.0099	0.0086	0.0100	0.0099	0.0096	0.0102	0.0015	14.2
Chlorobenzene											
Ethylbenzene	0.0085	0.0093	0.0074	0.0082	0.0072	0.0082	0.0081	0.0077	0.0081	0.0006	7.6
meta & para-Xylene	0.0100	0.0119	0.0089	0.0097	0.0088	0.0101	0.0099	0.0095	0.0098	0.0009	9.1
ortho-Xylene	0.0082	0.0093	0.0071	0.0076	0.0071	0.0080	0.0078	0.0075	0.0078	0.0007	8.5
1,3-Dichlorobenzene											
1,4-Dichlorobenzene											
1,2-Dichlorobenzene											

CONTINUING CALIBRATION DATA

8020 AND GASOLINE INITIAL CALIBRATION VERIFICATION

DATE 10-3-97

INSTRUMENT 3400-11

ANALYST SIL

BATCH # GB1258/GB1261

FILENAME B16

STD #. 0194-186-13

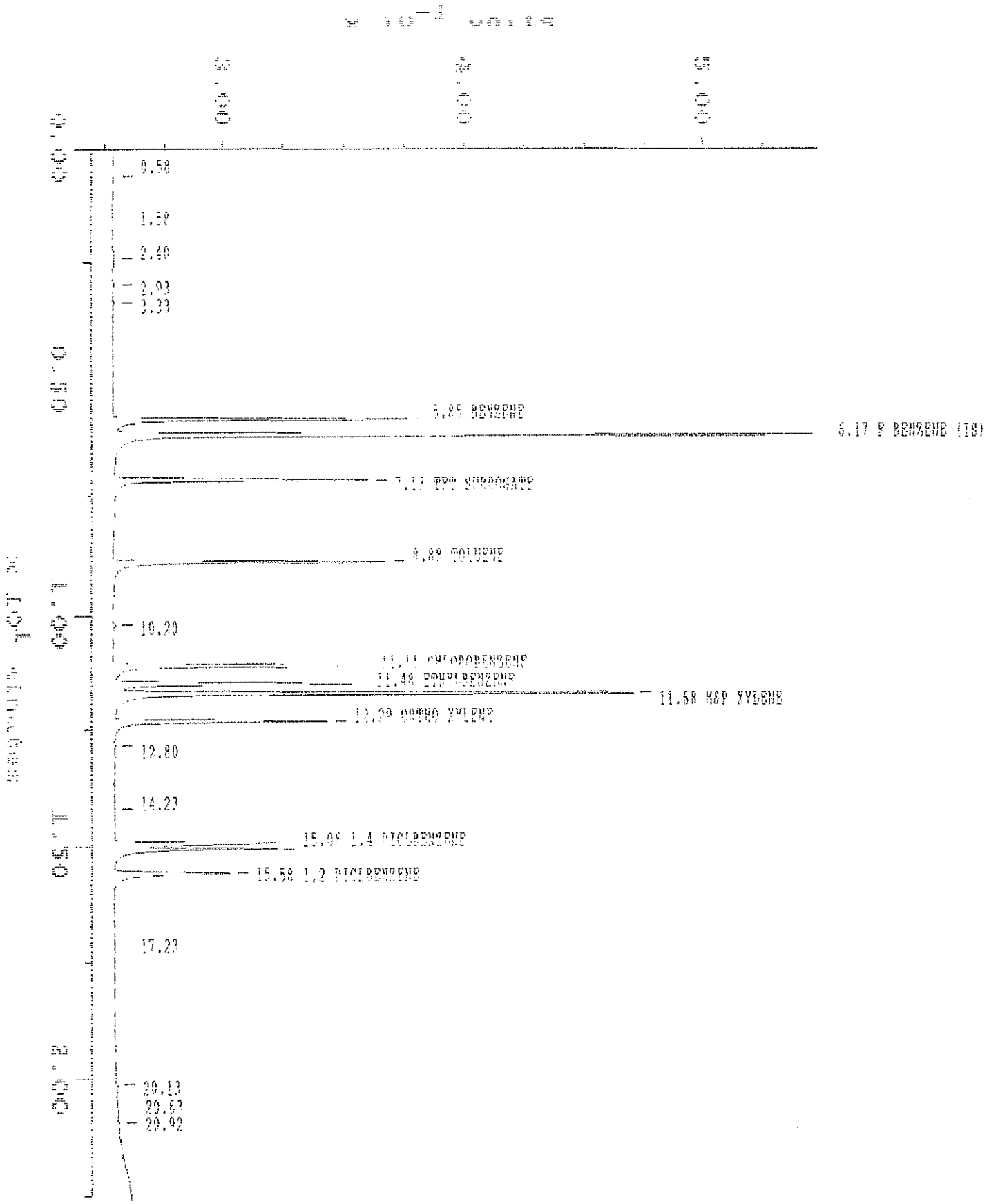
	CALC VALUE	TRUE VALUE	%D
BENZENE	39.1	40	2.3
TRIFLUOROTOLUENE	98.0	100	2.0
TOLUENE	39.7	40	0.8
CHLOROBENZENE	39.5	40	1.3
ETHYLBENZENE	39.7	40	0.8
M,P-XYLENE	79.1	80	1.1
O-XYLENE	39.3	40	1.8
1,3-DICHLOROBENZENE	40.6	40	1.5
1,4-DICHLOROBENZENE	40.2	40	0.5
1,2-DICHLOROBENZENE	39.7	40	0.8

FILENAME _____

STD #. _____

	CALC VALUE	TRUE VALUE	%D
GASOLINE		801	

Sample: JCV B 186 12 Channel: DB5 PID Filename: B16
Acquired: 03 OCT 97 21:20 Method: C:\MAX\DATA2\B971003 Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 10:49:51

SAMPLE: ICV B 186 13
#11 in Method: 8020/602 DUAL COLUMN
Acquired: 3 OCT 1997 21:20
Rate: 2.0 points/sec
Duration: 22.567 minutes
Operator: JMC

Type: UNKN
Instrument: 34 II PID/PID
Filename: B16
Index: 9

DETECTOR: DB5 PID

PK#	ID#	Retention Time (minutes)	Peak Area	Response Factor	Solution Conc	Original Conc	Component Name
6	2	5.850	485212	98.295	39.05	39.05	BENZENE
7	3	6.167	1221358#				F BENZENE (IS)
8	4	7.133	450010	265.989	98.00	98.00	TFT SURROGATE
9	5	8.883	466824	103.792	39.67	39.67	TOLUENE
11	6	11.108	416752	115.615	39.45	39.45	CHLOROBENZENE
12	7	11.483	377338	128.349	39.65	39.65	ETHYLBENZENE
13	8	11.683	930276	103.856	79.10	79.10	M&P XYLENE
14	9	12.292	362441	132.409	39.29	39.29	ORTHO XYLENE
18	10	14.933	275283	180.208	40.62	40.62	1,3 DICLBENZENE
19	11	15.058	343693	143.010	40.24	40.24	1,4 DICLBENZENE
20	12	15.575	242336	100.849	39.65	39.65	1,2 DICLBENZENE
TOTAL			4350164		494.74	494.74	

Value not included in TOTAL calculation.

8020 CONTINUING CALIBRATION SUMMARY

DATE 10-9-97

INSTRUMENT 3400-1

ANALYST SR

BATCH # GB1258/GB1261

FILENAME A673

STD #. 0194-188-15

	CALC VALUE	TRUE VALUE	%D
BENZENE	49.8	50	0.4
TRIFLUOROTOLUENE	103	100	3.0
TOLUENE	49.2	50	1.6
CHLOROBENZENE	48.5	50	3.0
ETHYLBENZENE	47.9	50	4.2
M,P-XYLENE	97.2	100	2.8
O-XYLENE	49.3	50	1.4
1,3-DICHLOROBENZENE	46.5	50	7.0
1,4-DICHLOROBENZENE	44.9	50	10
1,2-DICHLOROBENZENE	45.0	50	10

FILENAME A685

STD #. 0194-188-16

	CALC VALUE	TRUE VALUE	%D
BENZENE	50.5	50	1.0
TRIFLUOROTOLUENE	95.9	100	4.1
TOLUENE	50.1	50	0.2
CHLOROBENZENE	49.2	50	1.6
ETHYLBENZENE	48.9	50	2.2
M,P-XYLENE	98.5	100	1.5
O-XYLENE	50.1	50	0.2
1,3-DICHLOROBENZENE	46.4	50	5.2
1,4-DICHLOROBENZENE	44.8	50	10
1,2-DICHLOROBENZENE	43.8	50	12

FILENAME

STD #.

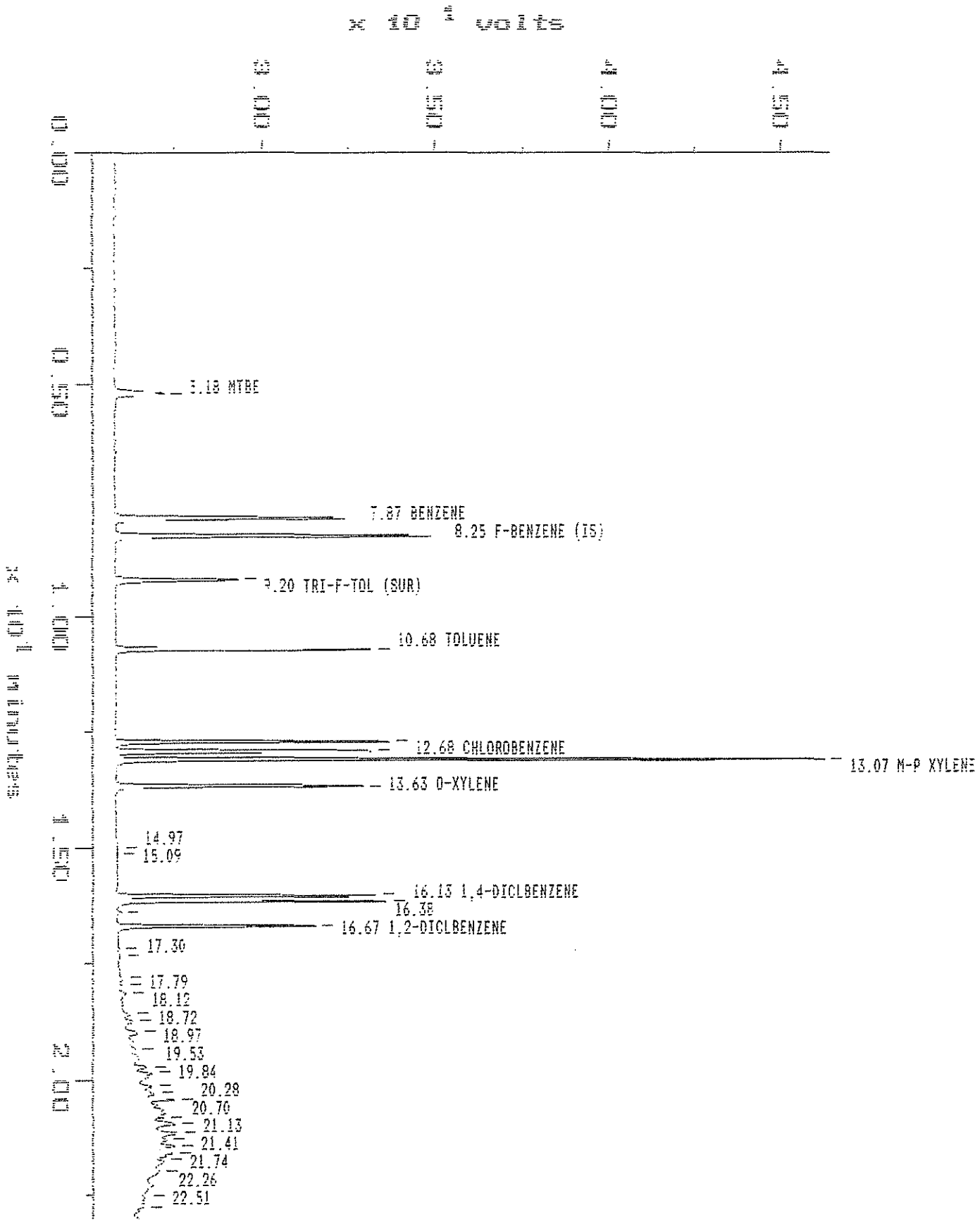
	CALC VALUE	TRUE VALUE	%D
BENZENE		50	
TRIFLUOROTOLUENE		100	
TOLUENE		50	
CHLOROBENZENE		50	
ETHYLBENZENE		50	
M,P-XYLENE		100	
O-XYLENE		50	
1,3-DICHLOROBENZENE		50	
1,4-DICHLOROBENZENE		50	
1,2-DICHLOROBENZENE		50	

FILENAME

STD #.

	CALC VALUE	TRUE VALUE	%D
BENZENE		50	
TRIFLUOROTOLUENE		100	
TOLUENE		50	
CHLOROBENZENE		50	
ETHYLBENZENE		50	
M,P-XYLENE		100	
O-XYLENE		50	
1,3-DICHLOROBENZENE		50	
1,4-DICHLOROBENZENE		50	
1,2-DICHLOROBENZENE		50	

Sample: CCV-B 188-15 Channel: PID Filename: A675
Acquired: 09-OCT-97 11:30 Method: C:\DATA1\250\A971008 Operator: JMC
Comments: VARIAN 3400-I



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MAXIMA 820 CUSTOM REPORT

Printed: 10-OCT-1997 8:48:40

SAMPLE: CCV-B 188-15
#43 in Method: TPH/BTEX
Acquired: 9-OCT-1997 11:30
Rate: 2.0 points/sec
Duration: 23.000 minutes
Operator: JMC

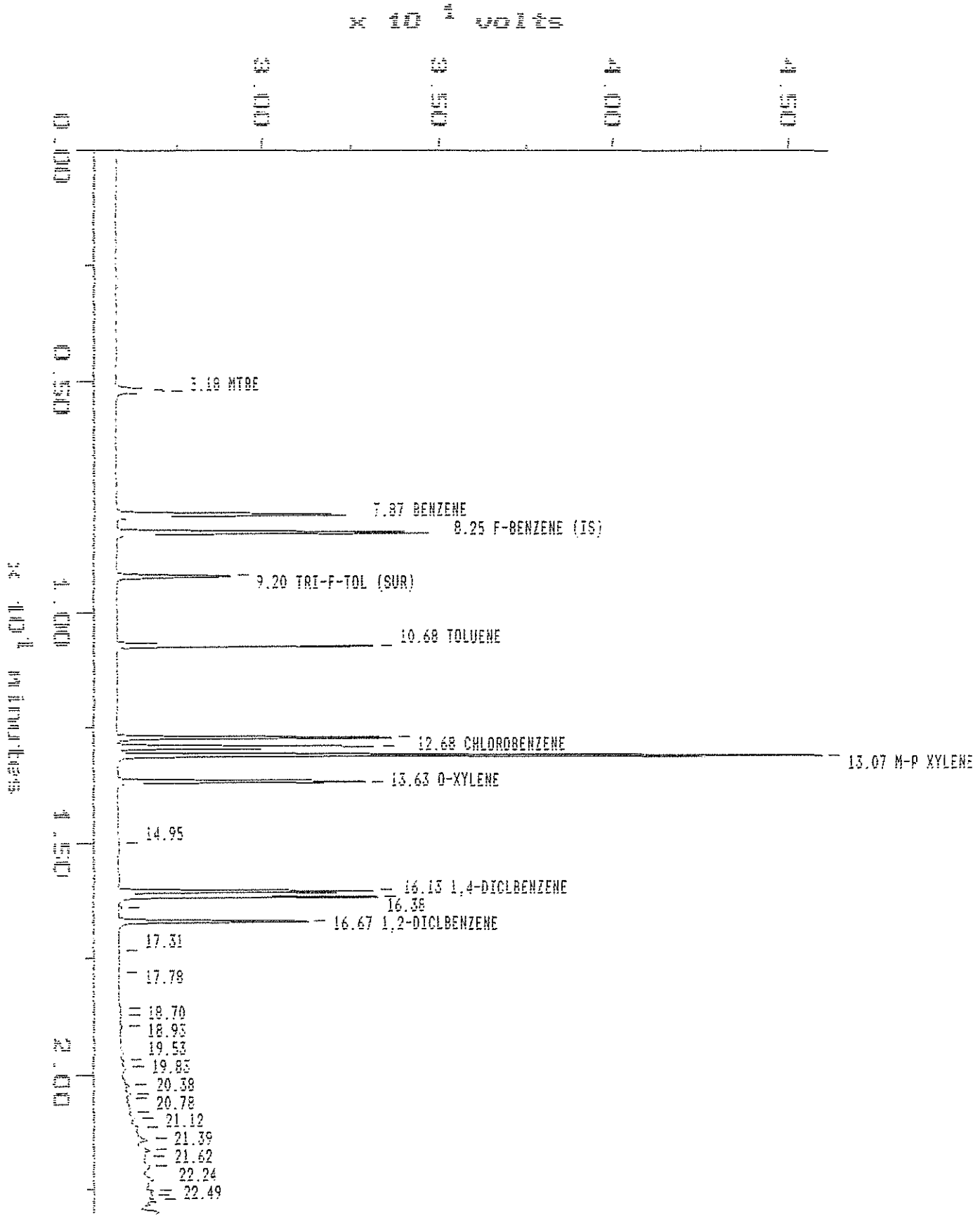
Type: UNKN
Instrument: 3400-1
Filename: A673
Index: 29

DETECTOR: PID

PK#	ID#	Retention Time (minutes)	Type	Peak Area	Area Percent	Response Factor	Solution Conc	Original Conc	Component Name
1	1	5.175	BB	88766	3.05	203.603	49.374	0.494	MTBE
2	2	7.867	BP	275335	9.46	66.143	49.753	0.498	BENZENE
3	4	8.250	PB	366041#					F-BENZENE (IS)
4	5	9.200	BB	150408	5.17	250.743	103.032	1.030	TRI-F-TOL (SUR)
5	7	10.683	BB	266116	9.15	67.623	49.163	0.492	TOLUENE
6	8	12.683	BP	262106	9.01	67.749	48.512	0.485	CHLOROBENZENE
7	9	12.892	PP	256836	8.83	68.306	47.927	0.479	ETHYL BENZENE
8	10	13.067	PP	692011	23.78	51.423	97.217	0.972	M-P XYLENE
9	11	13.633	PB	244377	8.40	73.885	49.327	0.493	O-XYLENE
12	12	16.008	BP	238249	8.19	71.512	46.546	0.465	1,3-DICLBENZENE
13	13	16.133	PP	249766	8.58	65.871	44.947	0.449	1,4-DICLBENZENE
15	14	16.667	PP	185762	6.38	88.725	45.027	0.450	1,2-DICLBENZENE
TOTAL				2909732			630.825	6.308	

Value not included in TOTAL calculation.

Sample: CCV-B 188-16 Channel: PID Filename: A685
Acquired: 09-OCT-97 16:57 Method: C:\DATA1\250\A971008 Operator: JMC
Comments: VARIAN 3400-I



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 10-OCT-1997 8:55:47

SAMPLE: CCV-B 188-16
#55 in Method: TPH/BTEX
Acquired: 9-OCT-1997 16:57
Rate: 2.0 points/sec
Duration: 23.000 minutes
Operator: JMC

Type: UNKN
Instrument: 3400-1
Filename: A685
Index: 41

DETECTOR: PID

PK#	ID#	Retention Time (minutes)	Type	Peak Area	Area Percent	Response Factor	Solution Conc	Original Conc	Component Name
1	1	5.175	BB	88357	3.08	203.603	50.116	0.501	MTBE
2	2	7.867	BP	273855	9.55	66.143	50.461	0.505	BENZENE
3	4	8.250	PB	358965#					F-BENZENE (IS)
4	5	9.200	BB	137263	4.79	250.743	95.880	0.959	TRI-F-TOL (SUR)
5	7	10.683	BB	266026	9.28	67.623	50.115	0.501	TOLUENE
6	8	12.683	BP	260662	9.09	67.749	49.196	0.492	CHLOROBENZENE
7	9	12.892	PP	256979	8.96	68.306	48.899	0.489	ETHYL BENZENE
8	10	13.067	PP	687407	23.97	51.423	98.473	0.985	M-P XYLENE
9	11	13.633	PB	243381	8.49	73.885	50.095	0.501	O-XYLENE
11	12	16.008	BP	232664	8.11	71.512	46.350	0.464	1,3-DICLBENZENE
12	13	16.133	PP	244289	8.52	65.871	44.828	0.448	1,4-DICLBENZENE
14	14	16.667	PP	177180	6.18	88.725	43.793	0.438	1,2-DICLBENZENE
TOTAL				2868063			628.206	6.282	

Value not included in TOTAL calculation.

SOIL MATRIX LABORATORY CHECK SAMPLE FOR GASOLINE AND BTEX

DATE 10-3-97

INSTRUMENT 3400-11

ANALYST SM

BATCH # GB1258

BTEX LCS ERA #96027

FILENAME B17

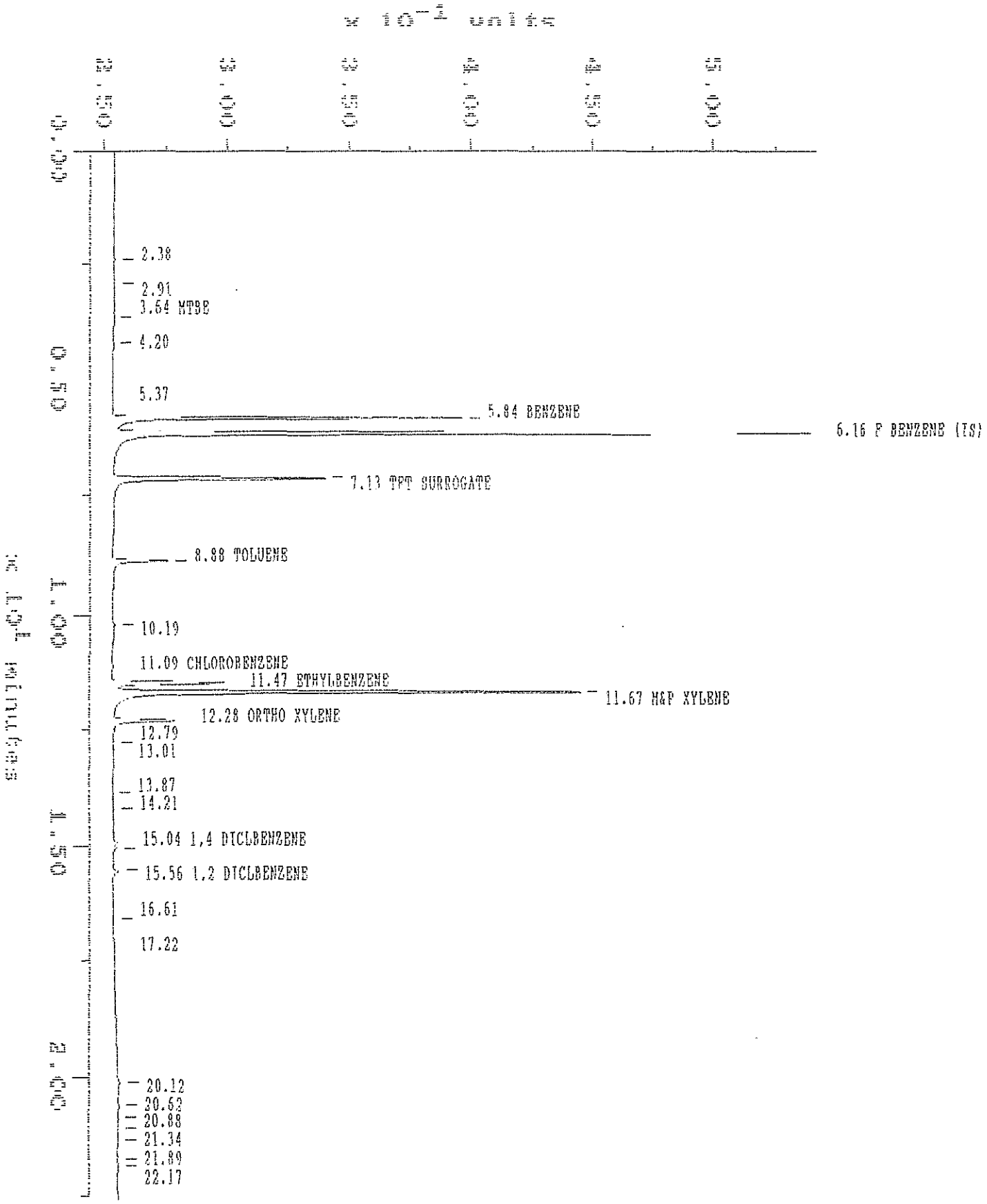
	CALC. VALUE	TRUE VALUE	ACCEPTANCE RANGE
BENZENE	46.4	55.9	21-84
TOLUENE	8.4	10.2	4.8-15
ETHYL BENZENE	19.8	23.8	8.8-39
M,P,-XYLENE	73.8	89.1	
O-XYLENE	13.8	15.1	
TOTAL XYLENES	87.6	104.2	45.7-142

GASOLINE LCS ERA#40009

FILENAME

	CALC. VALUE	TRUE VALUE	ACCEPTANCE RANGE
GASOLINE		1280	497-1860

Sample: LCS B GB1258 Channel: DB5 PID Filename: B17
Acquired: 03 OCT 97 21:48 Method: C:\MAX\DATA2\B971003 Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 10:50:00

SAMPLE: LCS B GB1258
#12 in Method: 8020/602 DUAL COLUMN
Acquired: 3 OCT 1997 21:48
Rate: 2.0 points/sec
Duration: 22.567 minutes
Operator: JHC

Type: UNKN
Instrument: 34 II PID/PID
Filename: B17
Index: 10

DETECTOR: DB5 PID

PK#	ID#	Retention Time (minutes)	Peak Area	Response Factor	Solution Conc	Original Conc	Component Name
3	1	3.642	927	Invalid	Invalid	Invalid	MTBE
6	2	5.842	558224	98.295	46.43	46.43	BENZENE
7	3	6.158	1181795#				F BENZENE (IS)
8	4	7.125	364206	268.640	82.79	82.79	TPT SURROGATE
9	5	8.875	95856	103.792	8.42	8.42	TOLUENE
11	6	11.092	23596	115.615	2.32	2.32	CHLOROBENZENE
12	7	11.467	181996	128.349	19.77	19.77	ETHYLBENZENE
13	8	11.667	839860	103.856	73.81	73.81	M&P XYLENE
14	9	12.275	123265	132.409	13.81	13.81	ORTHO XYLENE
19	10	14.917	6688	Invalid	Invalid	Invalid	1,3 DICLBENZENE
20	11	15.042	9644	52.897	0.43	0.43	1,4 DICLBENZENE
21	12	15.558	11549	43.843	0.43	0.43	1,2 DICLBENZENE
TOTAL			2215911		248.20	248.20	

Value not included in TOTAL calculation.

QUALITY CONTROL SUMMARY WORKSHEETS

8020 CONTINUING CALIBRATION SUMMARY

DATE 10-4-97

INSTRUMENT 3400-11

ANALYST SK

BATCH # GB1258/GB1261

FILENAME B30

STD #. 0194-186-14

	CALC VALUE	TRUE VALUE	%D
BENZENE	54.1	50	8.2
TRIFLUOROTOLUENE	97.9	100	2.1
TOLUENE	52.7	50	5.4
CHLOROBENZENE	54.0	50	8.0
ETHYLBENZENE	54.0	50	8.0
M,P-XYLENE	107	100	7.0
O-XYLENE	53.5	50	7.0
1,3-DICHLOROBENZENE	51.5	50	3.0
1,4-DICHLOROBENZENE	50.1	50	0.2
1,2-DICHLOROBENZENE	48.8	50	2.4

FILENAME B48

STD #. 0194-186-15

	CALC VALUE	TRUE VALUE	%D
BENZENE	54.4	50	8.8
TRIFLUOROTOLUENE	93.9	100	6.1
TOLUENE	54.0	50	8.0
CHLOROBENZENE	55.1	50	10
ETHYLBENZENE	54.1	50	8.2
M,P-XYLENE	107	100	7.0
O-XYLENE	54.3	50	8.6
1,3-DICHLOROBENZENE	53.4	50	6.8
1,4-DICHLOROBENZENE	51.7	50	3.4
1,2-DICHLOROBENZENE	52.4	50	4.8

FILENAME B62

STD #. 0194-186-16

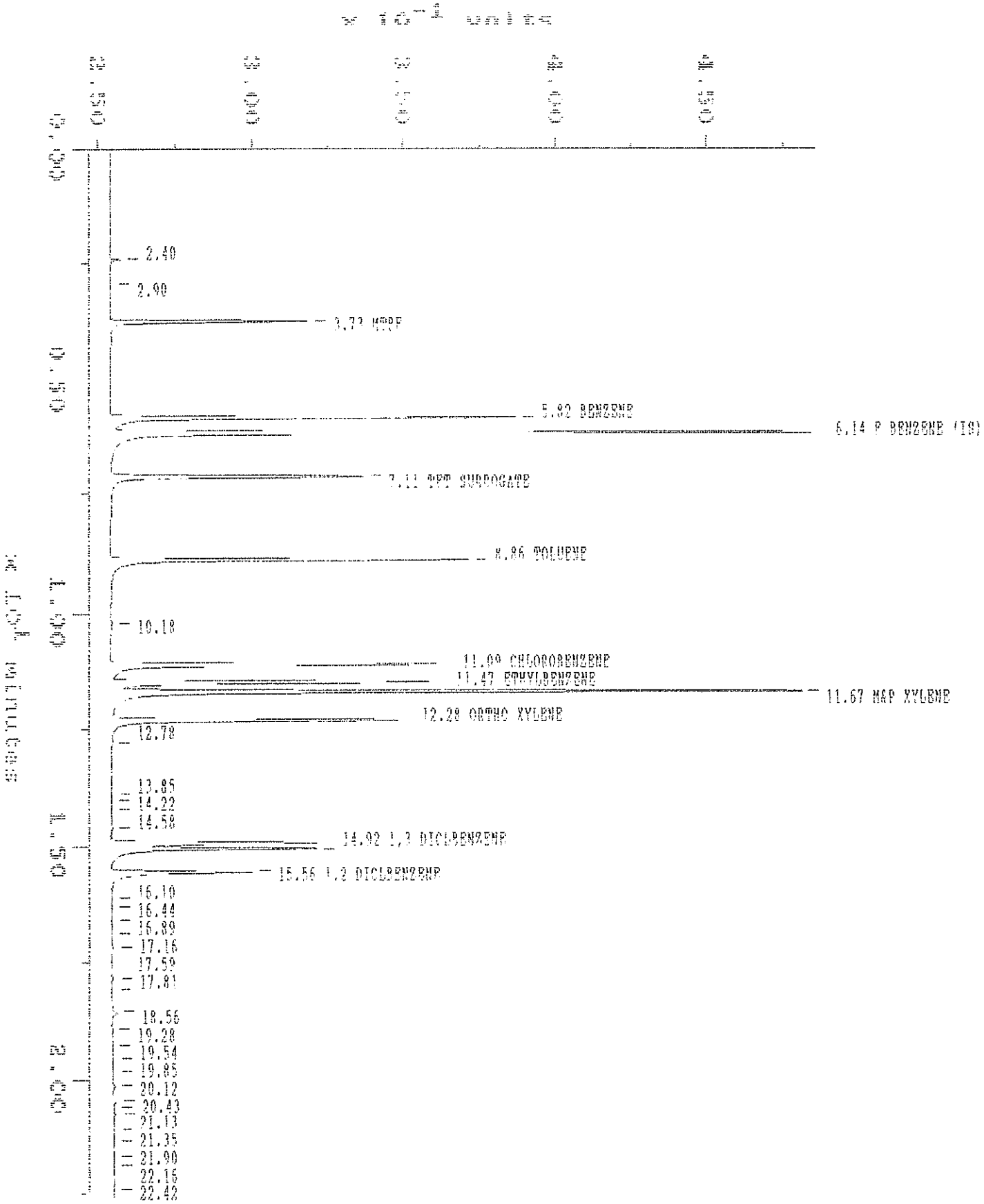
	CALC VALUE	TRUE VALUE	%D
BENZENE	55.1	50	10
TRIFLUOROTOLUENE	96.6	100	3.4
TOLUENE	54.3	50	8.6
CHLOROBENZENE	54.0	50	8.0
ETHYLBENZENE	53.1	50	6.2
M,P-XYLENE	104	100	4.0
O-XYLENE	53.4	50	6.8
1,3-DICHLOROBENZENE	50.5	50	1.0
1,4-DICHLOROBENZENE	49.8	50	0.4
1,2-DICHLOROBENZENE	53.6	50	7.2

FILENAME

STD #.

	CALC VALUE	TRUE VALUE	%D
BENZENE		50	
TRIFLUOROTOLUENE		100	
TOLUENE		50	
CHLOROBENZENE		50	
ETHYLBENZENE		50	
M,P-XYLENE		100	
O-XYLENE		50	
1,3-DICHLOROBENZENE		50	
1,4-DICHLOROBENZENE		50	
1,2-DICHLOROBENZENE		50	

Sample: CCV 9 196 14 Channel: 985 PID Filename: 830
Acquired: 04 OCT 97 3:43 Method: C:\MAX\DAMA2\3971003 Operator: JHC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 5 OCT 1997 11:04:17

SAMPLE: CCV B 186 14
#25 in Method: 8020/602 DUAL COLUMN
Acquired: 4 OCT 1997 3:43
Rate: 2.0 points/sec
Duration: 22.567 minutes
Operator: JMC

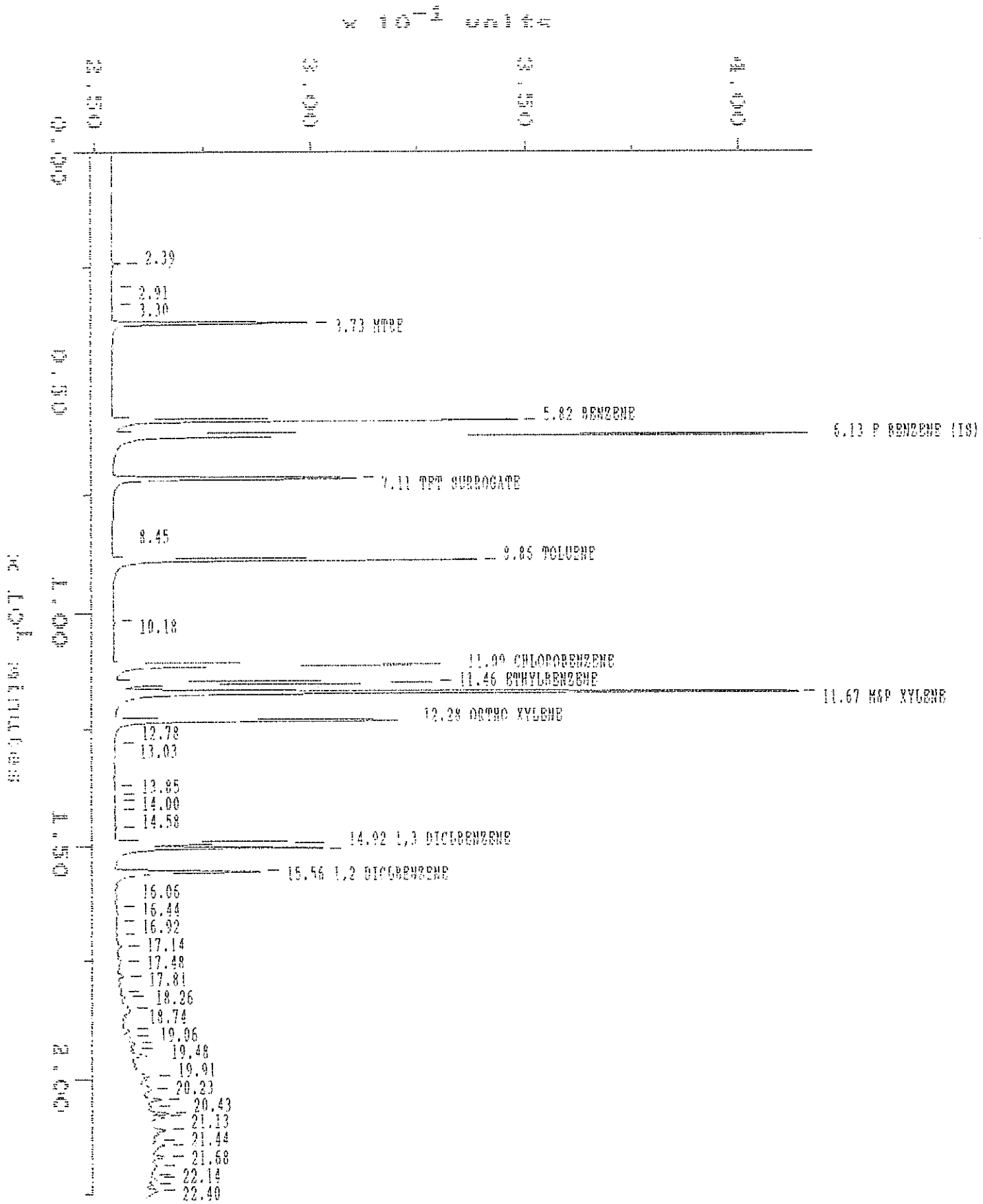
Type: UNKN
Instrument: 34 II PID/PID
Filename: B30
Index: 23

DETECTOR: DB5 PID

PK#	ID#	Retention Time (minutes)	Peak Area	Response Factor	Solution Conc	Original Conc	Component Name
3	1	3.725	217586	239.091	54.40	54.40	MTBE
4	2	5.817	526657	98.295	54.13	54.13	BENZENE
5	3	6.142	956351#				P BENZENE (IS)
6	4	7.108	352094	266.000	97.93	97.93	TFT SURROGATE
7	5	8.858	485556	103.792	52.70	52.70	TOLUENE
9	6	11.092	446740	115.615	54.01	54.01	CHLOROBENZENE
10	7	11.467	402111	128.349	53.97	53.97	ETHYLBENZENE
11	8	11.667	984005	103.856	106.86	106.86	M&P XYLENE
12	9	12.275	386161	132.409	53.46	53.46	ORTHO XYLENE
18	10	14.917	271845	181.322	51.51	51.51	1,3 DICLBENZENE
19	11	15.042	333948	143.523	50.12	50.12	1,4 DICLBENZENE
20	12	15.558	231796	201.315	48.79	48.79	1,2 DICLBENZENE
TOTAL			4638500		677.88	677.88	

Value not included in TOTAL calculation.

Sample: CCV B 186 15 Channel: 885 PID Filename: 948
Acquired: 04 OCT 97 11:54 Method: C:\MAX\DATA2\B971003 Operator: JHC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 6 OCT 1997 11:20:58

SAMPLE: CCV B 186 15
#43 in Method: 8020/602 DUAL COLUMN
Acquired: 4 OCT 1997 11:54
Rate: 2.0 points/sec
Duration: 22.567 minutes
Operator: JMC

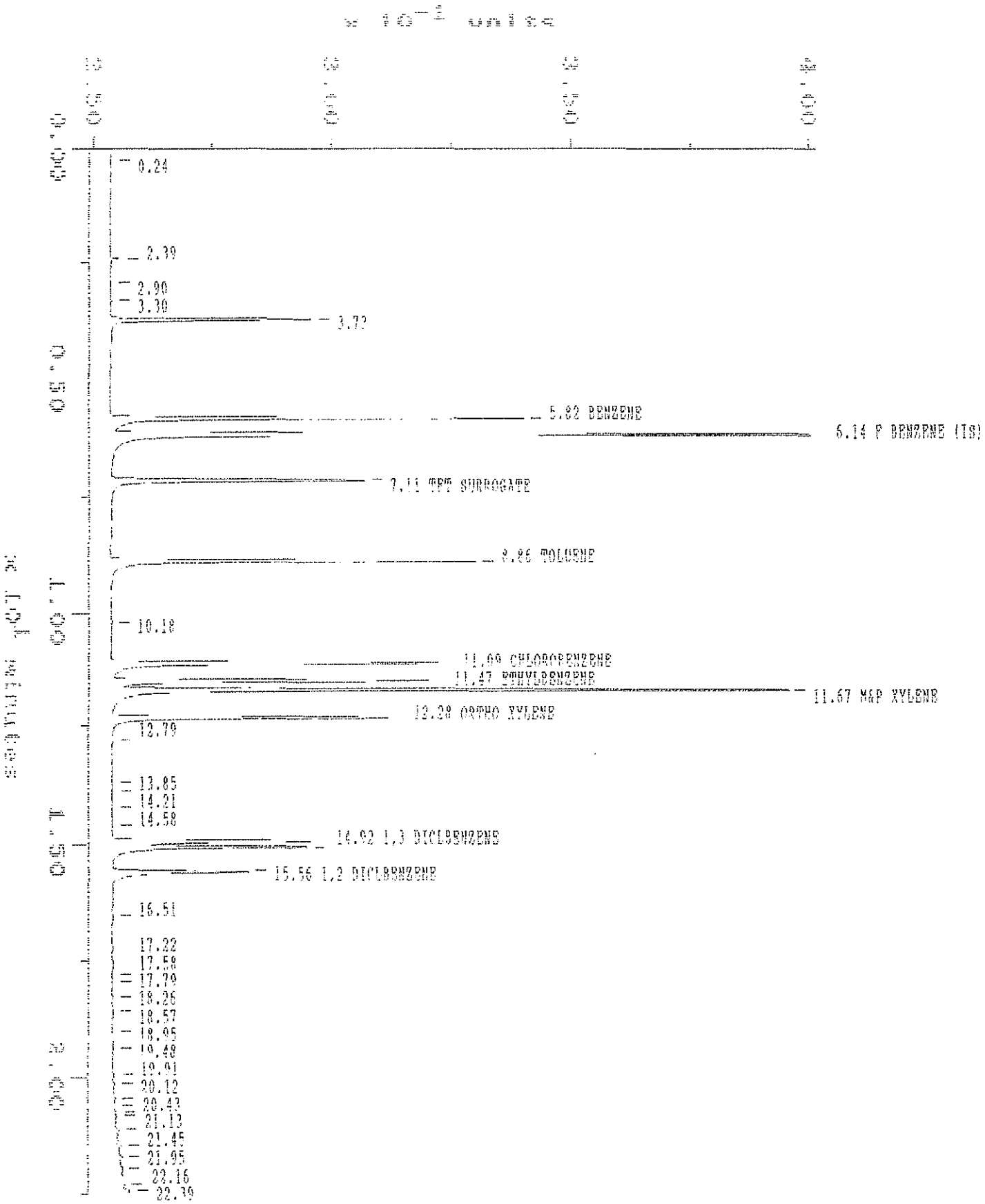
Type: UNKN
Instrument: 34 II PID/PID
Filename: B48
Index: 41

DETECTOR: DB5 PID

PK#	ID#	Retention Time (minutes)	Peak Area	Response Factor	Solution Conc	Original Conc	Component Name
4	1	3.725	151938	239.026	53.66	53.66	MTBE
5	2	5.817	374577	98.295	54.41	54.41	BENZENE
6	3	6.133	6767394				P BENZENE (IS)
7	4	7.108	238428	266.610	93.93	93.93	TPT SURROGATE
9	5	8.858	352202	103.792	54.02	54.02	TOLUENE
11	6	11.092	322202	115.615	55.05	55.05	CHLOROBENZENE
12	7	11.458	285383	128.340	54.12	54.12	ETHYLBENZENE
13	8	11.667	696284	103.856	106.86	106.86	M&P XYLENE
14	9	12.275	277686	132.400	54.33	54.33	ORTHO XYLENE
22	10	14.917	199345	181.358	53.42	53.42	1,3 DICLBENZENE
23	11	15.042	243655	143.599	51.70	51.70	1,4 DICLBENZENE
24	12	15.558	175784	201.758	52.41	52.41	1,2 DICLBENZENE
TOTAL			3317483		683.91	683.91	

Value not included in TOTAL calculation.

Sample: CCV B 186 16 Channel: 085 PID Filename: R62
Acquired: 04 OCT 97 18:16 Method: C:\MAX\DATA2\R971003A Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 8 OCT 1997 9:19:29

SAMPLE: CCV B 186 16
#15 in Method: 8020/602 DUAL COLUMN
Acquired: 4 OCT 1997 18:15
Rate: 2.0 points/sec
Duration: 22.567 minutes
Operator: JMC

Type: UNKN
Instrument: 34 II PID/PID
Filename: 962
Index: 7

DETECTOR: DB5 PID

PK#	ID#	Retention Time (minutes)	Peak Area	Response Factor	Solution Conc	Original Conc	Component Name
6	1	5.817	344960	98.295	55.05	55.05	BENZENE
7	2	6.142	615956#				P BENZENE (IS)
8	3	7.108	226998	262.286	96.62	96.62	TPT SURROGATE
9	4	8.858	322096	103.792	54.28	54.28	TOLUENE
11	5	11.092	287908	115.615	54.04	54.04	CHLOROBENZENE
12	6	11.467	254691	128.349	53.07	53.07	ETHYLBENZENE
13	7	11.667	617682	103.856	104.15	104.15	M&P XYLENE
14	8	12.275	248699	132.499	53.44	53.44	ORTHO XYLENE
20	9	14.917	171792	181.148	50.52	50.52	1,3 DICLBENZENE
21	10	15.042	213866	142.520	49.83	49.83	1,4 DICLBENZENE
22	11	15.558	163451	291.898	53.57	53.57	1,2 DICLBENZENE
TOTAL:			3851954		624.57	624.57	

Value not included in TOTAL calculation.

8020 AND GASOLINE INITIAL CALIBRATION VERIFICATION

DATE 10-8-97

INSTRUMENT 3400-11

ANALYST SIL

BATCH # GB1258/GB1264

FILENAME B64

STD #. 0194-188-3

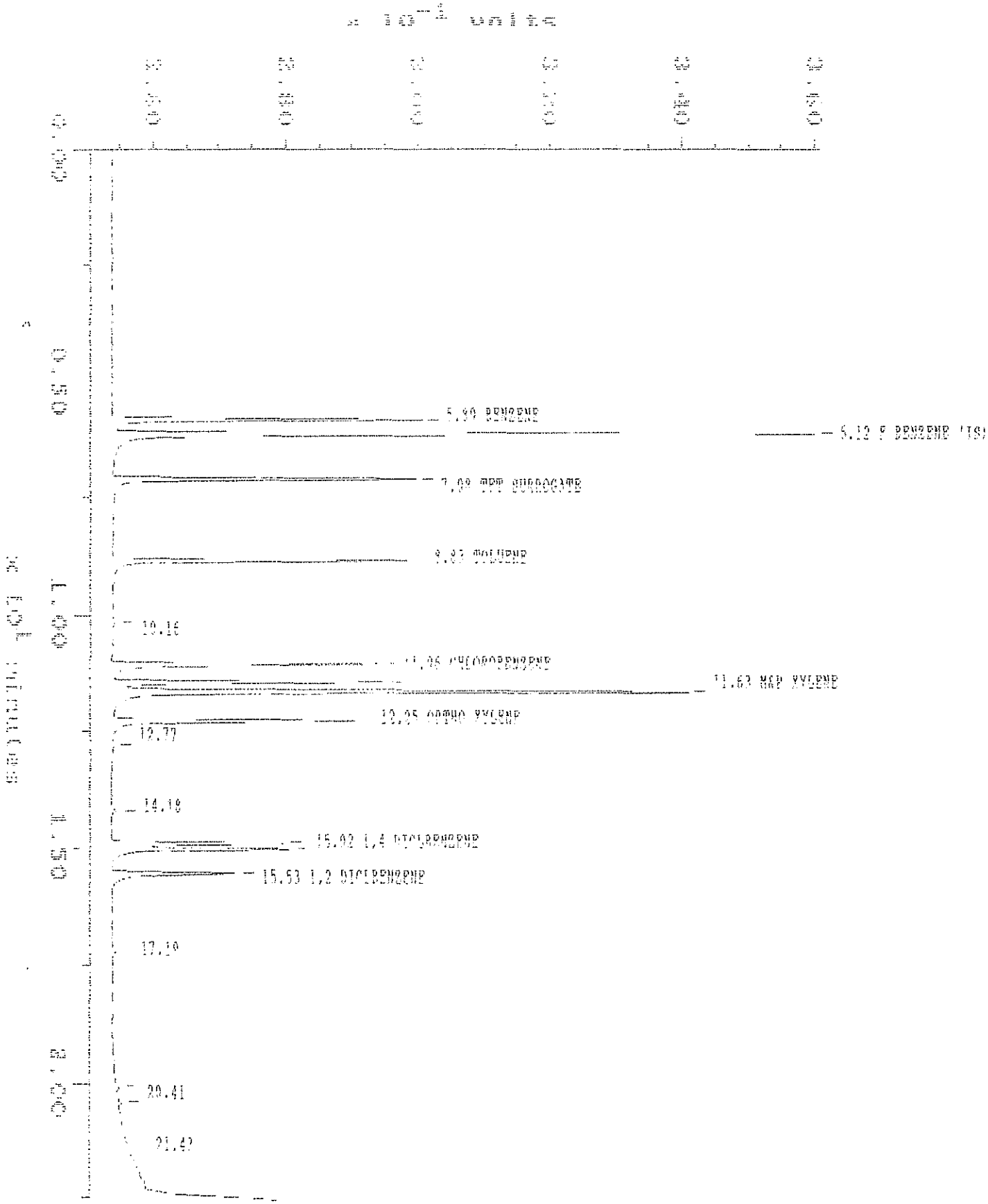
	CALC VALUE	TRUE VALUE	%D
BENZENE	40.8	40	2.0
TRIFLUOROTOLUENE	100	100	0.0
TOLUENE	41.8	40	4.8
CHLOROBENZENE	43.8	40	9.6
ETHYLBENZENE	44.5	40	11
M,P-XYLENE	89.3	80	12
O-XYLENE	44.6	40	12
1,3-DICHLOROBENZENE	43.5	40	8.8
1,4-DICHLOROBENZENE	44.0	40	10
1,2-DICHLOROBENZENE	41.5	40	3.8

FILENAME _____

STD #. _____

	CALC VALUE	TRUE VALUE	%D
GASOLINE		801	

Sample: ICV B 188 3 Channel: 085 PID Filename: 864
Acquired: 08 OCT 97 14:22 Method: C:\MAX\DAMA2\B971008 Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 8 OCT 1997 1:54:44

SAMPLE: ICV B 188 2
#10 in Method: 8020/602 DUAL COLUMN
Acquired: 8 OCT 1997 14:22
Rate: 2.0 points/sec
Duration: 22.567 minutes
Operator: JMC

Type: UNKN
Instrument: 34 II PID/PID
Filename: B64
Index: Disk

DETECTOR: DB5 PID

PK#	ID#	Retention Time (minutes)	Peak Area	Response Factor	Solution Conc	Original Conc	Component Name
1	1	5.800	183865	99.295	40.78	40.78	BENZENE
2	2	6.117	442239#				P BENZENE (IS)
3	3	7.083	185394	240.240	100.48	100.48	TFT SURROGATE
4	4	8.833	178717	193.792	41.85	41.85	TOLUENE
5	5	11.058	167849	115.615	43.78	43.78	CHLOROBENZENE
7	6	11.433	153778	198.340	44.53	44.53	ETHYLBENZENE
8	7	11.633	381028	193.856	89.28	89.28	M&P XYLENE
9	8	12.250	149287	132.400	44.60	44.60	ORTHO XYLENE
12	9	14.883	106988	180.529	43.54	43.54	1,3 DICLBENZENE
13	10	15.017	136023	143.274	43.96	43.96	1,4 DICLBENZENE
14	11	15.533	91972	200.263	41.54	41.54	1,2 DICLBENZENE
TOTAL			1724739		534.34	534.34	

Value not included in TOTAL calculation.

8020 CONTINUING CALIBRATION SUMMARY

)ATE 10-8-97

NSTRUMENT 3400-11

NALYST SIL

ATCH # GB1258/GB1264

ILENAME B74

TD #. 0194-188-4

	CALC VALUE	TRUE VALUE	%D
ENZENE	58.3	50	16.6
RIFLUOROTOLUENE	97.4	100	2.6
OLUENE	55.3	50	10.6
HLOROBENZENE	57.2	50	14.4
THYLBENZENE	57.2	50	14.4
,P-XYLENE	112.6	100	12.6
-XYLENE	55.2	50	10.4
,3-DICHLOROBENZENE	54.3	50	8.6
,4-DICHLOROBENZENE	52.0	50	4.0
,2-DICHLOROBENZENE	48.6	50	2.8

FILENAME

STD #.

	CALC VALUE	TRUE VALUE	%D
BENZENE		50	
TRIFLUOROTOLUENE		100	
TOLUENE		50	
CHLOROBENZENE		50	
ETHYLBENZENE		50	
M,P-XYLENE		100	
O-XYLENE		50	
1,3-DICHLOROBENZENE		50	
1,4-DICHLOROBENZENE		50	
1,2-DICHLOROBENZENE		50	

ILENAME

TD #.

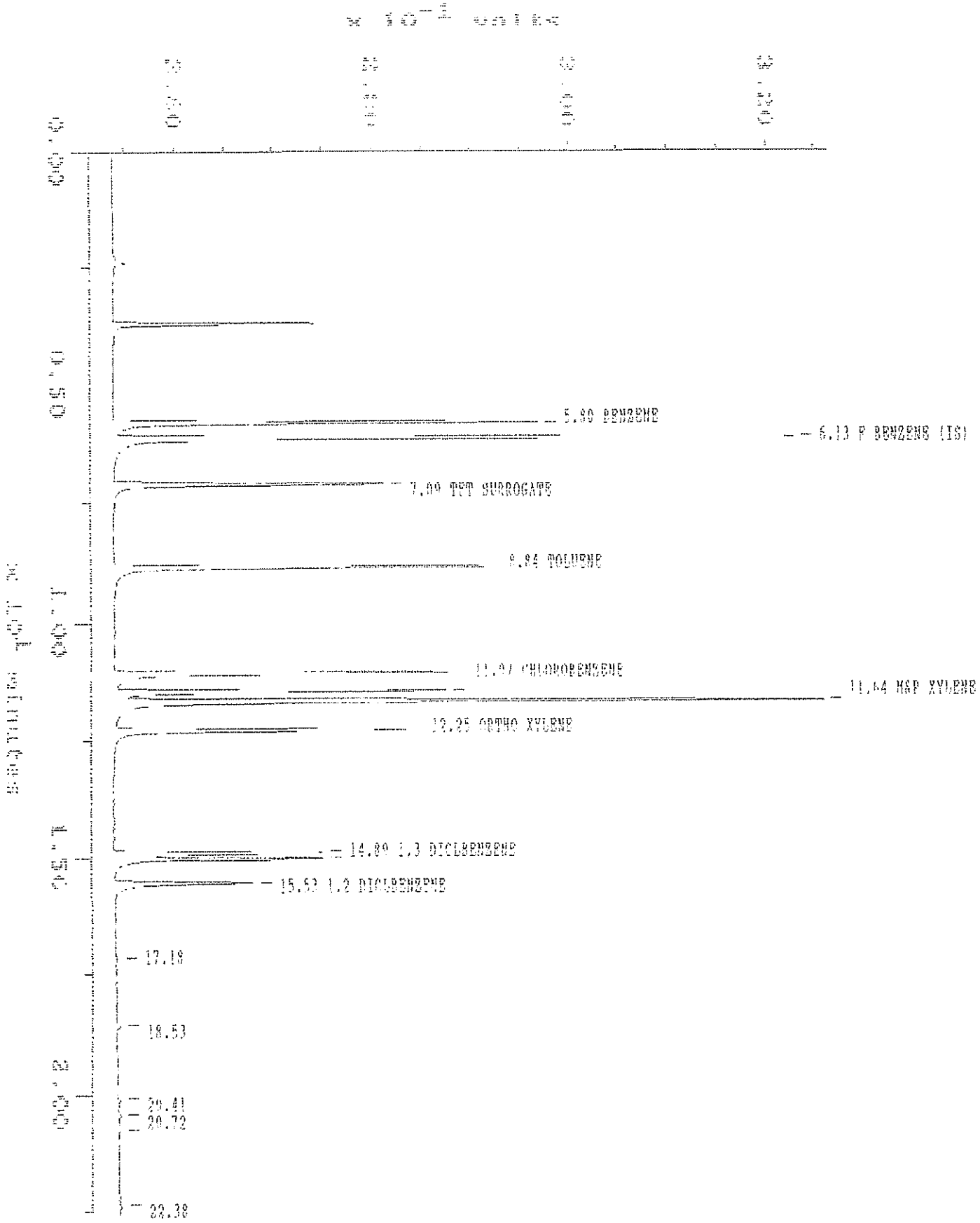
	CALC VALUE	TRUE VALUE	%D
ENZENE		50	
RIFLUOROTOLUENE		100	
OLUENE		50	
HLOROBENZENE		50	
THYLBENZENE		50	
,P-XYLENE		100	
-XYLENE		50	
3-DICHLOROBENZENE		50	
4-DICHLOROBENZENE		50	
2-DICHLOROBENZENE		50	

FILENAME

STD #.

	CALC VALUE	TRUE VALUE	%D
BENZENE		50	
TRIFLUOROTOLUENE		100	
TOLUENE		50	
CHLOROBENZENE		50	
ETHYLBENZENE		50	
M,P-XYLENE		100	
O-XYLENE		50	
1,3-DICHLOROBENZENE		50	
1,4-DICHLOROBENZENE		50	
1,2-DICHLOROBENZENE		50	

Sample: CCV 8 188 4 Channel: DB5 PID Filename: 874
Acquired: 08 OCT 97 18:53 Method: C:\MAX\DATA2\R97J008 Operator: JMC



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 9 OCT 1997 2:02:32

SAMPLE: CCV B 188 4
#20 in Method: 8020/602 DUAL COLUMN
Acquired: 8 OCT 1997 18:53
Rate: 2.0 points/sec
Duration: 22.567 minutes
Operator: JMC

Type: UNKN
Instrument: 34 II PID/PID
Filename: B74
Index: 10

DETECTOR: DB5 PID

PK#	ID#	Retention Time (minutes)	Peak Area	Response Factor	Solution Conc	Original Conc	Component Name
1	1	5.800	169002	98.295	58.26	58.26	BENZENE
2	2	6.125	285150#				F BENZENE (IS)
3	3	7.092	107911	257.382	97.40	97.40	TFT SURROGATE
4	4	8.842	151975	103.792	55.32	55.32	TOLUENE
5	5	11.067	141108	115.515	57.21	57.21	CHLOROBENZENE
6	6	11.442	127144	128.249	57.23	57.23	ETHYLBENZENE
7	7	11.642	309057	103.856	112.56	112.56	M&P XYLENE
8	8	12.250	118817	132.409	55.17	55.17	ORTHO XYLENE
9	9	14.892	85282	181.415	54.26	54.26	1,3 DICLBENZENE
10	10	15.017	103146	143.608	51.95	51.95	1,4 DICLBENZENE
11	11	15.533	68821	201.287	48.58	48.58	1,2 DICLBENZENE
TOTAL			1382264		647.94	647.94	

Value not included in TOTAL calculation.

8020 AND GASOLINE INITIAL CALIBRATION VERIFICATION

DATE 10-9-97

INSTRUMENT 3400-I

ANALYST SM

BATCH # GB1258 / GB1261

FILENAME 0194-188-14

STD #. 0659

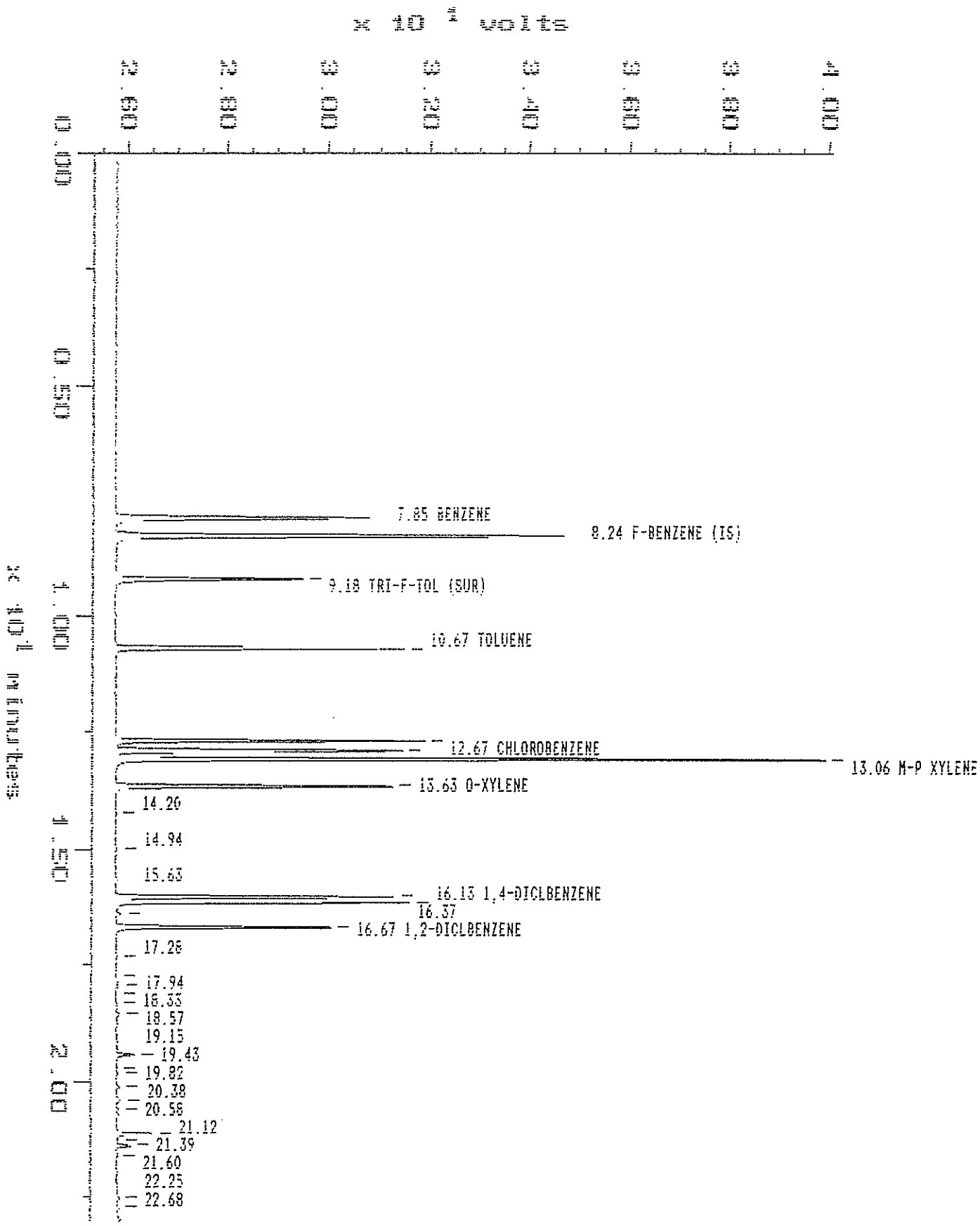
	CALC VALUE	TRUE VALUE	%D
BENZENE	37.9	40	5.3
TRIFLUOROTOLUENE	107	100	7.0
TOLUENE	37.5	40	6.3
CHLOROBENZENE	37.3	40	6.8
ETHYLBENZENE	36.3	40	9.3
M,P-XYLENE	70.3	80	12
O-XYLENE	37.7	40	5.8
1,3-DICHLOROBENZENE	34.4	40	14
1,4-DICHLOROBENZENE	33.9	40	15
1,2-DICHLOROBENZENE	34.3	40	14

FILENAME _____

STD #. _____

	CALC VALUE	TRUE VALUE	%D
GASOLINE		801	

Sample: ICV-8 188-14 Channel: PID Filename: A659
Acquired: 09-OCT-97 5:13 Method: C:\DATA1\250\A971008 Operator: JMC
Comments: VARIAN 3400-I



MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 10-OCT-1997 8:40:37

SAMPLE: ICV-B 188-14
#29 in Method: TPH/BTEX
Acquired: 9-OCT-1997 5:13
Rate: 2.0 points/sec
Duration: 23.000 minutes
Operator: JMC

Type: UNKN
Instrument: 3400-1
Filename: A659
Index: 15

DETECTOR: PID

PK#	ID#	Retention Time (minutes)	Type	Peak Area	Area Percent	Response Factor	Solution Conc	Original Conc	Component Name
1	2	7.850	BP	210358	9.72	66.143	37.885	0.379	BENZENE
2	4	8.242	PB	367267#					F-BENZENE (IS)
3	5	9.183	BB	157273	7.26	250.743	107.375	1.074	TRI-F-TOL (SUR)
4	7	10.667	BB	203481	9.40	67.623	37.466	0.375	TOLUENE
5	8	12.667	BP	202021	9.33	67.749	37.266	0.373	CHLOROBENZENE
6	9	12.875	PP	195422	9.03	68.306	36.345	0.363	ETHYL BENZENE
7	10	13.058	PP	501794	23.18	51.423	70.259	0.703	M-P XYLENE
8	11	13.625	PP	187191	8.65	73.885	37.658	0.377	O-XYLENE
12	12	16.008	BP	176798	8.17	71.512	34.425	0.344	1,3-DICLBENZENE
13	13	16.125	PP	188938	8.73	65.871	33.887	0.339	1,4-DICLBENZENE
15	14	16.667	PB	141895	6.55	88.725	34.279	0.343	1,2-DICLBENZENE
TOTAL				2165172			466.845	4.668	

Value not included in TOTAL calculation.

SOIL MATRIX LABORATORY CHECK SAMPLE FOR GASOLINE AND BTEX

DATE 10-9-97

INSTRUMENT 3100-I

ANALYST SR

BATCH # GB1258

BTEX LCS ERA #96027

FILENAME A661

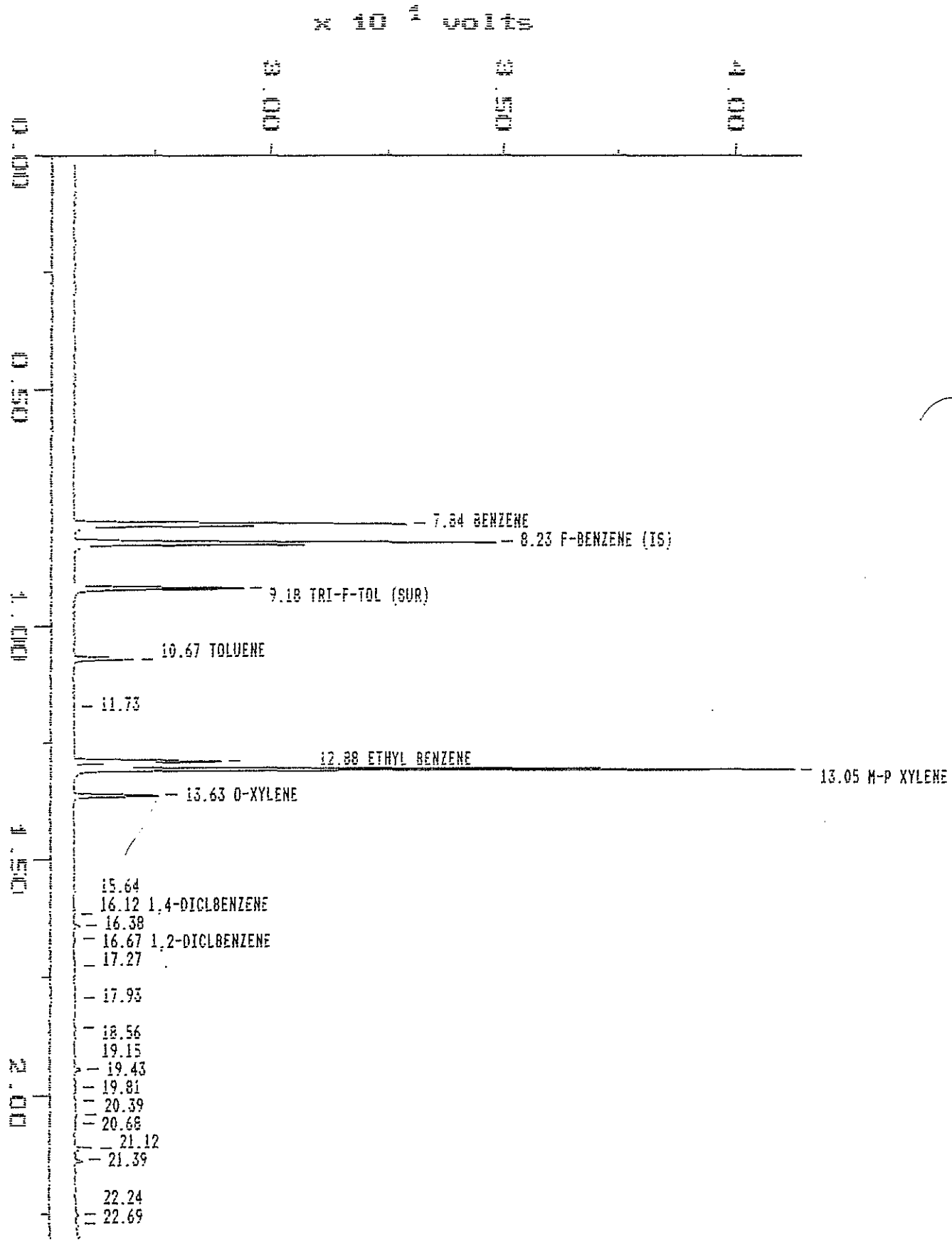
	CALC. VALUE	TRUE VALUE	ACCEPTANCE RANGE
BENZENE	SR 10-14-97 ~~66.1~~ 53.2	55.9	21-84
TOLUENE	8.6	10.2	4.8-15
ETHYL BENZENE	20.1	23.8	8.8-39
M,P,-XYLENE	75.8	89.1	
O-XYLENE	12.8	15.1	-
TOTAL XYLENES	88.6	104.2	45.7-142

GASOLINE LCS ERA#40009

FILENAME

	CALC. VALUE	TRUE VALUE	ACCEPTANCE RANGE
GASOLINE		1280	497-1860

Sample: LCS-8 GB1257 Channel: PID Filename: A661
Acquired: 09-OCT-97 6:08 Method: C:\DATA1\250\A971008 Operator: JMC
Comments: VARIAN 3400-I



XIMA (c)1990 Dynamic Solutions, Division of Millipore

MAXIMA 820 CUSTOM REPORT

Printed: 10-OCT-1997 8:41:20

SAMPLE: LCS-B GB1257
#31 in Method: TPH/BTEX
Acquired: 9-OCT-1997 6:08
Rate: 2.0 points/sec
Duration: 23.000 minutes
Operator: JMC

Type: UNKN
Instrument: 3400-1
Filename: A661
Index: 17

DETECTOR: PID

PK#	ID#	Retention Time (minutes)	Type	Peak Area	Area Percent	Response Factor	Solution Conc	Original Conc	Component Name
1	2	7.842	BP	298715	24.40	66.143	53.218	0.532	BENZENE
2	4	8.225	PB	371267#					F-BENZENE (IS)
3	5	9.183	BB	155172	12.67	250.743	104.799	1.048	TRI-F-TOL (SUR)
4	7	10.667	BB	47226	3.86	67.623	8.602	0.086	TOLUENE
6	9	12.875	BP	109185	8.92	68.306	20.088	0.201	ETHYL BENZENE
7	10	13.050	PP	547112	44.68	51.423	75.779	0.758	M-P XYLENE
8	11	13.625	PB	64222	5.25	73.885	12.781	0.128	O-XYLENE
10	13	16.117	PP	1012	0.08	65.871	0.180	0.002	1,4-DICLBENZENE
12	14	16.667	PB	1738	0.14	88.725	0.415	0.004	1,2-DICLBENZENE
OTAL				1224382			275.860	2.759	

Value not included in TOTAL calculation.

APPENDIX D

UNDERGROUND STORAGE TANK
Closure and Site Assessment Notice

See back of form for instructions

FOR OFFICE USE ONLY
Site ID #: _____
Owner ID #: _____

ease ✓ the appropriate box(es)

☐ Temporary Tank Closure ☐ Change-In-Service ☒ Permanent Tank Closure ☒ Site Check/Site Assessment

Site Information

ID Number 10052
vailable from Ecology if the tanks are registered)
/Business Name Federal Center South
Address 4735 E. Marginal Way
Street
State Seattle, WA
Code 98106 Telephone (206) 764-3491
ier's Signature Miriam Ramsey for Corps of Engineers

Owner Information

(This form will be returned to this address)

UST Owner/Operator Federal Government
Mailing Address 4735 E. Marginal Way
Street
P.O. Box
City/State Seattle, WA
Zip Code 98106 Telephone (206) 764-3491

Tank Closure/Change-In-Service Company

ice Company Glacier Environmental Services, Inc.
fied Supervisor Curt Lightle Decommissioning Certification No. 98269
ervisor's Signature
ess 12521 Evergreen Drive, Suite A
Street P.O. Box
Mukilteo WA 98275 Telephone (425) 355-2826
City State Zip Code

Site Check/Site Assessor

fied Site Assessor Curt Lightle
ress Street 12521 Evergreen Drive, Suite A P.O. Box
City Mukilteo State WA Zip Code 98275 Telephone (425) 355-2826

Tank Information

Tank ID	Closure Date	Closure Method	Tank Capacity	Substance Stored
ank 1	9-25-97	Removal	2,000 gal	Gasoline

Contamination Present at the Time of Closure

☒ Yes ☐ No ☐ Unknown

Check unknown if no obvious contamination was observed and sample results have not yet been received from analytical lab.

☒ Yes ☐ No

If contamination is present, has the release been reported to the appropriate regional office?

ceive this document in an alternative format, contact the TOXICS CLEANUP PROGRAM at 1-800-826-7716 (voice) OR (360) 407-6008 (TDD).

APPENDIX E