Geochemistry of oil show intervals from

ARCO Alaska Inc. Fiord No. 3

ARCO Alaska Inc. Fiord No. 3A.

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LGC
GEOCHEMISTRY

Geochemistry of oil show intervals from Fiord-3 and 3A, Alaska

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Prepared for:
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Contents

Summary

List of Tables
List of Figures

Tables
Figures

Appendices

Appendix A *Molecular Parameter List*
Appendix B *Biomarker Identification*
Appendix C *Whole Oil GC Peak Areas*

List of Tables

Table No.

1	Lithology and Stratigraphy
2.1 - 2.8	Oil Analysis - Fiord-3
3.1 - 3.8	Oil Analysis - Fiord-3A

List of Figures

Figure No.

1.1-1.8	Whole Oil GC Chromatograms - Fiord-3
2.1-2.8	Whole Oil GC Chromatograms - Fiord-3A
3.1 - 3.24	Sterane and Triterpane Ion Chromatograms - Fiord-3
4.1 - 4.24	Sterane and Triterpane Ion Chromatograms - Fiord-3A
5.1 - 5.8	Aromatic Sterane Ion Chromatograms - Fiord-3
6.1 - 6.8	Aromatic Sterane Ion Chromatograms - Fiord-3A
7.1 - 7.8	Phenanthrene and Methyl Phenanthrene Ion Chromatograms - Fiord-3
8.1 - 8.8	Phenanthrene and Methyl Phenanthrene Ion Chromatograms - Fiord-3A
9.1 - 9.8	Biphenyl and Dibenzothiophene Ion Chromatograms -Fiord-3
10.1 - 10.8	Biphenyl and Dibenzothiophene Ion Chromatograms -Fiord-3A

Summary

Log evaluation had indicated that there were possible oil shows present in sand and silty sand intervals in the wells Fiord-3 and Fiord-3A, Alaska. Eight such intervals from each of these wells, encompassing the LBK 80, Kuparuk, Alpine and Nuiqsut sedimentary units, have been carefully picked, avoiding significant amounts of caved shale and the samples extracted with dichloromethane. The extracts have been characterised by whole oil GC, GC-MS and Total Soluble Extract isotope analysis.

The whole oil GC profiles show a general distribution over the range C12 to C36, but with co-elution with the lighter hydrocarbons of interfering components in some of the samples. Determined peak areas are reported in Appendix C

The data presented in this report augments that from other shows in Bergschrund-1, Fiord-1 and Fiord-2, characterised previously and reported in LGC report LFX/228/40.

TABLE 1

LITHOLOGY AND STRATIGRAPHY

COUNTRY: **Alaska**
WELL: **Fiord-3 and Fiord-3A**

DEPTH ~~m~~ feet	DEPTHRANGE ~~m~~	WELL	UNIT	LITHOLOGY	PICKED LITHOLOGY	SAMPLE TYPE
4020	3960	Fiord-3	LBK 80	Silty sand 90%:SH -dk gy 10%	Silty sands	Cut
4140	4020	Fiord-3	LBK 80	Silty sand 90%:SH -dk gy 10%	Silty sands	Cut
4740	4620	Fiord-3	LBK 80	Silty sand 100%	Silty sands	Cut
6240	6120	Fiord-3	LBK 80 Turb	Sand, lt-med brn 90%: SH- dk gy 10%:	Sands	Cut
6600	6570	Fiord-3	Kuparuk C	Sand, lt-med brn 80%:Sand - lt gy 10%: SH 10%	Sands	Cut
6750	6720	Fiord-3	Alpine	Silty sand, md-dk brn 60% sands lt brn 30%; SH 10%	Silty sands	Cut
6770	6750	Fiord-3	Alpine	Silty sand, md-dk brn 60%:sands, lt brn 30%:SH 10%	Silty sands	Cut
7020	6930	Fiord-3	Nuiqsut	Silty sand, lt-med brn 80%:SLST, dk gy 10% SH 10%	Silty sands	Cut
4800	4680	Fiord-3A	LBK 80	Sands, lt grey 90%: Silty sands, lt brn 10%	Bulked	Cut
8010	7980	Fiord-3A	LBK 80 Turb	Silty sands, med gy 60%:sands, lt gy 40%	Bulked	Cut
8100	8070	Fiord-3A	LBK 80 Turb	Silty sands, med gy 80%:sands, lt gy 20%	Bulked	Cut
8130	8100	Fiord-3A	LBK 80 Turb	Silty sands, med gy 60%: sands lt gy 40%	Bulked	Cut
8610	8580	Fiord-3A	Kuparuk C	Sands, med br 30%: SILTST. med gy 70%	Sands	Cut
8800	8770	Fiord-3A	Alpine	Sands, lt gy 60%: sands lt gy 10%: SH med gy 30%	Sands	Cut
8840	8800	Fiord-3A	Alpine	Sands, med brn 70%: sands lt gy 20%:SH dkgy 10%	Sands	Cut
9120	9030	Fiord-3A	Nuiqsut	Sands, med brn 80%: Sands lt gy 20%	Sands	Cut

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	4020
Sample name	

Extraction

TSE %wt 0.075

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

I1 :	0.55	S1 :	0.26	M2 :	0.66
I2 :	0.43	S2 :	0.39	M3 :	0.59
I3 :	0.85	S3 :	31:35:33	M4 :	51.56
I4 :	25	S4 :	27:34:38	M5 :	
I5 :	100:81:45:25:15:14	S5 :	31.99	A1 :	0.12
I6 :	0.36	S6 :		A2 :	0.18
I7 :	0.56	S7 :	48.23	A3 :	0.55
I8 :		S8 :	0.00	A4 :	0.29
I9 :		S9 :		A5 :	0.63
I10 :		S10 :		A6 :	0.99
I11 :	114.07			MDR :	2.84
I12 :	12.49			MBP :	15.11
I13 :	16.01				
I14 :	3.73				
I15 :	0.00				
I16 :	6.00				
I17 :	47.98				
I18 :	3.94				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :
Total Oil : 28.4
Aromatics :
Residue :
Asphaltenes
Kerogen :

STANDARD: NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	4140
Sample name	

Extraction

TSE %wt 0.041

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.54	S1 :	0.33	M2 :	0.67
H2 :	0.46	S2 :	0.41	M3 :	0.61
H3 :	0.87	S3 :	33:34:34	M4 :	55.48
H4 :	19	S4 :	29:33:38	M5 :	
H5 :	100:83:54:30:19:18	S5 :	32.64	A1 :	0.20
H6 :	0.33	S6 :		A2 :	0.27
H7 :	0.56	S7 :	49.44	A3 :	0.55
H8 :		S8 :		A4 :	0.30
H9 :		S9 :		A5 :	0.61
H10 :		S10 :		A6 :	0.86
H11 :	84.90			MDR :	2.79
H12 :	9.91			MBP :	13.14
H13 :	12.27				
H14 :	4.70				
H15 :	0.00				
H16 :	6.61				
H17 :	48.27				
H18 :	4.52				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :
Total Oil : -28.7
Aromatics :
Residue :
Asphaltenes
Kerogen :

STANDARD: NBS22 -29.8

Table 2.2

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	4740
Sample name	

Extraction

TSE %wt 0.319

HPLC

Saturates %wt
Aromatics %wt
Residues %wt

Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.57	S1 :	0.44	M2 :	0.74
H2 :	0.50	S2 :	0.51	M3 :	0.71
H3 :	0.89	S3 :	32:25:42	M4 :	72.93
H4 :	0	S4 :	31:26:41	M5 :	
H5 :	100:85:53:30:19:21	S5 :	35.29	A1 :	0.57
H6 :	0.31	S6 :		A2 :	0.65
H7 :	0.58	S7 :	43.21	A3 :	0.55
H8 :		S8 :	0.00	A4 :	0.31
H9 :		S9 :		A5 :	0.71
H10 :		S10 :		A6 :	0.86
H11 :	72.54			MDR :	2.62
H12 :	12.55			MBP :	13.63
H13 :	9.25				
H14 :	4.73				
H15 :	0.00				
H16 :	5.55				
H17 :	52.40				
H18 :	4.71				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-29.4
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Table 2.3

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	6240
Sample name	

Extraction

TSE %wt 0.094

HPLC

Saturates %wt
Aromatics %wt
Residues %wt

Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.54	S1 :	0.38	M2 :	0.61
H2 :	0.50	S2 :	0.47	M3 :	0.57
H3 :	0.86	S3 :	38:24:37	M4 :	63.03
H4 :	0	S4 :	33:28:38	M5 :	
H5 :	100:80:51:31:22:16	S5 :	45.60	A1 :	0.41
H6 :	0.38	S6 :		A2 :	0.40
H7 :	0.55	S7 :	50.17	A3 :	0.25
H8 :		S8 :	0.00	A4 :	0.12
H9 :		S9 :		A5 :	0.47
H10 :		S10 :		A6 :	0.83
H11 :	63.25			MDR :	2.63
H12 :	7.87			MBP :	11.17
H13 :	5.34				
H14 :	7.47				
H15 :	0.00				
H16 :	2.64				
H17 :	41.83				
H18 :	6.72				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-29.1
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	

STANDARD: NBS22 -29.8

Table 2.4

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	6600
Sample name	

Extraction

TSE %wt 0.083

HPLC

Saturates %wt
Aromatics %wt
Residues %wt

Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.50	S1 :	0.23	M2 :	0.74
H2 :	0.52	S2 :	0.29	M3 :	0.60
H3 :	0.70	S3 :	29:26:44	M4 :	77.11
H4 :	0	S4 :	30:30:38	M5 :	
H5 :	100:113:42:19:10:5	S5 :	40.61	A1 :	0.28
H6 :	0.10	S6 :		A2 :	0.29
H7 :	0.51	S7 :	40.05	A3 :	0.21
H8 :		S8 :	0.00	A4 :	0.06
H9 :		S9 :		A5 :	0.61
H10 :		S10 :		A6 :	1.36
H11 :	1.68			MDR :	1.31
H12 :	3.67			MBP :	8.45
H13 :	0.00				
H14 :	5.19				
H15 :	0.00				
H16 :	0.00				
H17 :	33.39				
H18 :	0.00				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-28.1
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	6750
Sample name	

Extraction

TSE %wt 0.165

HPLC

Saturates %wt
Aromatics %wt
Residues %wt

Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.55	S1 :	0.39	M2 :	0.67
H2 :	0.52	S2 :	0.47	M3 :	0.63
H3 :	0.84	S3 :	36:24:38	M4 :	63.74
H4 :	0	S4 :	34:29:36	M5 :	
H5 :	100:79:46:27:17:10	S5 :	38.40	A1 :	0.42
H6 :	0.37	S6 :		A2 :	0.43
H7 :	0.55	S7 :	48.97	A3 :	0.22
H8 :		S8 :	0.00	A4 :	0.10
H9 :		S9 :		A5 :	0.53
H10 :		S10 :		A6 :	1.00
H11 :	5.21			MDR :	1.66
H12 :	3.08			MBP :	8.54
H13 :	0.00				
H14 :	8.53				
H15 :	0.00				
H16 :	0.00				
H17 :	36.44				
H18 :	0.00				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-30.3
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	6770
Sample name	

Extraction

TSE %wt 0.086

HPLC

Saturates %wt
Aromatics %wt
Residues %wt

Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.57	S1 :	0.48	M2 :	0.70
H2 :	0.52	S2 :	0.44	M3 :	0.68
H3 :	0.84	S3 :	36:30:32	M4 :	59.49
H4 :	0	S4 :	33:28:37	M5 :	
H5 :	100:79:44:27:17:11	S5 :	31.54	A1 :	0.50
H6 :	0.34	S6 :		A2 :	0.51
H7 :	0.55	S7 :	52.57	A3 :	0.26
H8 :		S8 :	0.00	A4 :	0.12
H9 :		S9 :		A5 :	0.53
H10 :		S10 :		A6 :	0.91
H11 :	9.16			MDR :	2.08
H12 :	3.87			MBP :	8.30
H13 :	0.00				
H14 :	7.82				
H15 :	0.00				
H16 :	0.00				
H17 :	39.67				
H18 :	0.00				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :
Total Oil : -30.2
Aromatics :
Residue :
Asphaltenes
Kerogen :

STANDARD: NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	7020
Sample name	

Extraction

TSE %wt 0.061

HPLC

Saturates %wt
Aromatics %wt
Residues %wt

Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.57	S1 :	0.44	M2 :	0.71
H2 :	0.53	S2 :	0.42	M3 :	0.62
H3 :	0.78	S3 :	30:25:43	M4 :	71.59
H4 :	0	S4 :	30:27:41	M5 :	
H5 :	100:94:51:35:23:13	S5 :	34.99	A1 :	0.50
H6 :	0.18	S6 :		A2 :	0.52
H7 :	0.55	S7 :	41.50	A3 :	0.13
H8 :		S8 :	0.00	A4 :	0.05
H9 :		S9 :		A5 :	0.48
H10 :		S10 :		A6 :	0.86
H11 :	2.82			MDR :	1.30
H12 :	2.74			MBP :	5.92
H13 :	3.59				
H14 :	6.37				
H15 :	0.00				
H16 :	0.00				
H17 :	36.17				
H18 :	0.00				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :
Total Oil : -29.5
Aromatics :
Residue :
Asphaltenes
Kerogen :

STANDARD: NBS22 -29.8

Table 2.8

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	4800
Sample name	

Extraction

TSE %wt 0.075

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.56	S1 :	0.28	M2 :	0.67
H2 :	0.40	S2 :	0.38	M3 :	0.62
H3 :	0.84	S3 :	33:35:31	M4 :	53.72
H4 :	27	S4 :	27:34:38	M5 :	
H5 :	100:99:56:34:20:21	S5 :	27.06	A1 :	0.10
H6 :	0.36	S6 :		A2 :	0.15
H7 :	0.54	S7 :	51.79	A3 :	0.51
H8 :		S8 :	0.00	A4 :	0.27
H9 :		S9 :		A5 :	0.56
H10 :		S10 :		A6 :	0.92
H11 :	89.38			MDR :	2.75
H12 :	11.60			MBP :	8.97
H13 :	12.58				
H14 :	3.91				
H15 :	0.00				
H16 :	0.00				
H17 :	50.64				
H18 :	4.09				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :
Total Oil : -28.3
Aromatics :
Residue :
Asphaltenes
Kerogen :

STANDARD: NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	8010
Sample name	

Extraction

TSE %wt 0.089

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.45	S1 :	0.26	M2 :	0.71
H2 :	0.42	S2 :	0.37	M3 :	0.56
H3 :	0.81	S3 :	32:26:40	M4 :	47.59
H4 :	0	S4 :	33:31:35	M5 :	
H5 :	100:83:43:19:13:10	S5 :	48.26	A1 :	0.13
H6 :	0.33	S6 :		A2 :	0.15
H7 :	0.48	S7 :	44.76	A3 :	0.40
H8 :		S8 :	0.00	A4 :	0.13
H9 :		S9 :		A5 :	0.56
H10 :		S10 :		A6 :	1.69
H11 :	53.52			MDR :	2.63
H12 :	12.20			MBP :	11.42
H13 :	8.87				
H14 :	7.09				
H15 :	0.00				
H16 :	0.00				
H17 :	42.24				
H18 :	12.82				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :
Total Oil : -27.8
Aromatics :
Residue :
Asphaltenes
Kerogen :

STANDARD: NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	8100
Sample name	

Extraction

TSE %wt 0.108

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.44	S1 :	0.25	M2 :	0.75
H2 :	0.44	S2 :	0.35	M3 :	0.58
H3 :	0.80	S3 :	31:26:41	M4 :	49.68
H4 :	0	S4 :	33:31:35	M5 :	
H5 :	100:78:37:17:11:7	S5 :	49.21	A1 :	0.14
H6 :	0.29	S6 :		A2 :	0.16
H7 :	0.46	S7 :	43.24	A3 :	0.41
H8 :		S8 :	0.00	A4 :	0.15
H9 :		S9 :		A5 :	0.62
H10 :		S10 :		A6 :	1.54
H11 :	47.02			MDR :	2.48
H12 :	11.99			MBP :	9.78
H13 :	6.30				
H14 :	7.39				
H15 :	0.00				
H16 :	3.45				
H17 :	41.11				
H18 :	9.90				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-28.3
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Table 3.3

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	8130
Sample name	

Extraction

TSE %wt 0.111

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium.

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.46	S1 :	0.23	M2 :	0.74
H2 :	0.44	S2 :	0.36	M3 :	0.43
H3 :	0.81	S3 :	35:24:40	M4 :	45.97
H4 :	0	S4 :	35:32:32	M5 :	
H5 :	100:77:35:16:11:7	S5 :	51.20	A1 :	0.15
H6 :	0.29	S6 :		A2 :	0.16
H7 :	0.47	S7 :	46.50	A3 :	0.50
H8 :		S8 :	0.00	A4 :	0.19
H9 :		S9 :		A5 :	0.63
H10 :		S10 :		A6 :	1.54
H11 :	65.79			MDR :	2.34
H12 :	12.11			MBP :	10.82
H13 :	6.89				
H14 :	8.33				
H15 :	0.00				
H16 :	0.37				
H17 :	40.56				
H18 :	8.19				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-28.5
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Table 3.4

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	8610
Sample name	

Extraction

TSE %wt	0.197

HPLC

Saturates %wt	
Aromatics %wt	
Residues %wt	
Asphaltenes (Micro Method) %wt	

Inspection Properties

API :	
Density @ 15 deg C	
Wax Content %wt	
Wax Melting Point deg C	
Pour Point deg C	
Viscocity cSt @ 20 deg C	
Total Acidity mg KOH/g	
Asphaltenes %wt (IP Method)	
Nitrogen ppm	
Sulphur %wt	
Nickel ppm	
Vanadium ppm	
Nickel/Vanadium	

Saturates GC

Pristane/Phytane	
Pristane/nC17	
Phytane/nC18	
CPI :	
ALKIND :	
R22 :	

Biomarker Ratios

H1 :	0.41	S1 :	0.20	M2 :	0.77
H2 :	0.50	S2 :	0.22	M3 :	0.63
H3 :	0.72	S3 :	33:31:35	M4 :	35.19
H4 :	0	S4 :	32:35:31	M5 :	
H5 :	100:98:40:24:13:8	S5 :	41.62	A1 :	0.28
H6 :	0.17	S6 :		A2 :	0.22
H7 :	0.43	S7 :	48.30	A3 :	0.20
H8 :		S8 :	0.00	A4 :	0.04
H9 :		S9 :		A5 :	1.04
H10 :		S10 :		A6 :	2.81
H11 :	13.59			MDR :	0.49
H12 :	3.66			MBP :	6.21
H13 :	0.00				
H14 :	7.45				
H15 :	0.00				
H16 :	0.00				
H17 :	39.26				
H18 :	0.00				

Light Hydrocarbons

MCH % :	
HER	
HXR	

Stable Carbon Isotopes

Saturates :	
Total Oil :	-28.8
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	8800
Sample name	

Extraction

TSE %wt 0.112

HPLC

Saturates %wt
Aromatics %wt
Residues %wt

Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.51	S1 :	0.25	M2 :	0.75
H2 :	0.52	S2 :	0.29	M3 :	0.63
H3 :	0.71	S3 :	36:27:36	M4 :	62.19
H4 :	0	S4 :	36:31:31	M5 :	
H5 :	100:108:34:16:8:2	S5 :	50.06	A1 :	0.26
H6 :	0.13	S6 :		A2 :	0.26
H7 :	0.50	S7 :	49.75	A3 :	0.31
H8 :		S8 :	0.00	A4 :	0.09
H9 :		S9 :		A5 :	0.75
H10 :		S10 :		A6 :	1.68
H11 :	40.32			MDR :	1.27
H12 :	7.45			MBP :	7.41
H13 :	0.00				
H14 :	5.65				
H15 :	0.00				
H16 :	0.00				
H17 :	21.24				
H18 :	0.00				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-28.7
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Table 3.6

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	8840
Sample name	

Extraction

TSE %wt 0.208

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.55	S1 :	0.34	M2 :	0.74
H2 :	0.52	S2 :	0.40	M3 :	0.71
H3 :	0.76	S3 :	38:26:35	M4 :	59.48
H4 :	0	S4 :	37:30:32	M5 :	
H5 :	100:91:35:17:10:3	S5 :	46.83	A1 :	0.32
H6 :	0.25	S6 :		A2 :	0.34
H7 :	0.53	S7 :	52.41	A3 :	0.41
H8 :		S8 :	0.00	A4 :	0.15
H9 :		S9 :		A5 :	0.67
H10 :		S10 :		A6 :	1.38
H11 :	41.75			MDR :	2.10
H12 :	9.04			MBP :	9.47
H13 :	0.00				
H14 :	7.02				
H15 :	0.00				
H16 :	0.00				
H17 :	25.63				
H18 :	0.00				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-29.7
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Sediment/Extract Analysis

Well name	Fiord-3A
Suite name	Fiord-3 and Fiord-3A extract study
Country Of Origin	Alaska
Depth (ft) :	9120
Sample name	

Extraction

TSE %wt 0.098

HPLC

Saturates %wt
Aromatics %wt
Residues %wt
Asphaltenes (Micro Method) %wt

Inspection Properties

API :
Density @ 15 deg C
Wax Content %wt
Wax Melting Point deg C
Pour Point deg C
Viscocity cSt @ 20 deg C
Total Acidity mg KOH/g
Asphaltenes %wt (IP Method)
Nitrogen ppm
Sulphur %wt
Nickel ppm
Vanadium ppm
Nickel/Vanadium

Saturates GC

Pristane/Phytane
Pristane/nC17
Phytane/nC18
CPI :
ALKIND :
R22 :

Biomarker Ratios

H1 :	0.52	S1 :	0.32	M2 :	0.76
H2 :	0.52	S2 :	0.34	M3 :	0.63
H3 :	0.75	S3 :	32:26:40	M4 :	68.44
H4 :	0	S4 :	32:30:37	M5 :	
H5 :	100:98:46:25:16:8	S5 :	40.73	A1 :	0.35
H6 :	0.16	S6 :		A2 :	0.36
H7 :	0.53	S7 :	44.56	A3 :	0.22
H8 :		S8 :	0.00	A4 :	0.07
H9 :		S9 :		A5 :	0.60
H10 :		S10 :		A6 :	1.21
H11 :	13.94			MDR :	1.26
H12 :	4.30			MBP :	7.10
H13 :	0.00				
H14 :	6.87				
H15 :	0.00				
H16 :	0.00				
H17 :	33.81				
H18 :	0.00				

Light Hydrocarbons

MCH % :
HER
HXR

Stable Carbon Isotopes

Saturates :	
Total Oil :	-28.5
Aromatics :	
Residue :	
Asphaltenes	
Kerogen :	
STANDARD:	NBS22 -29.8

Table 3.8

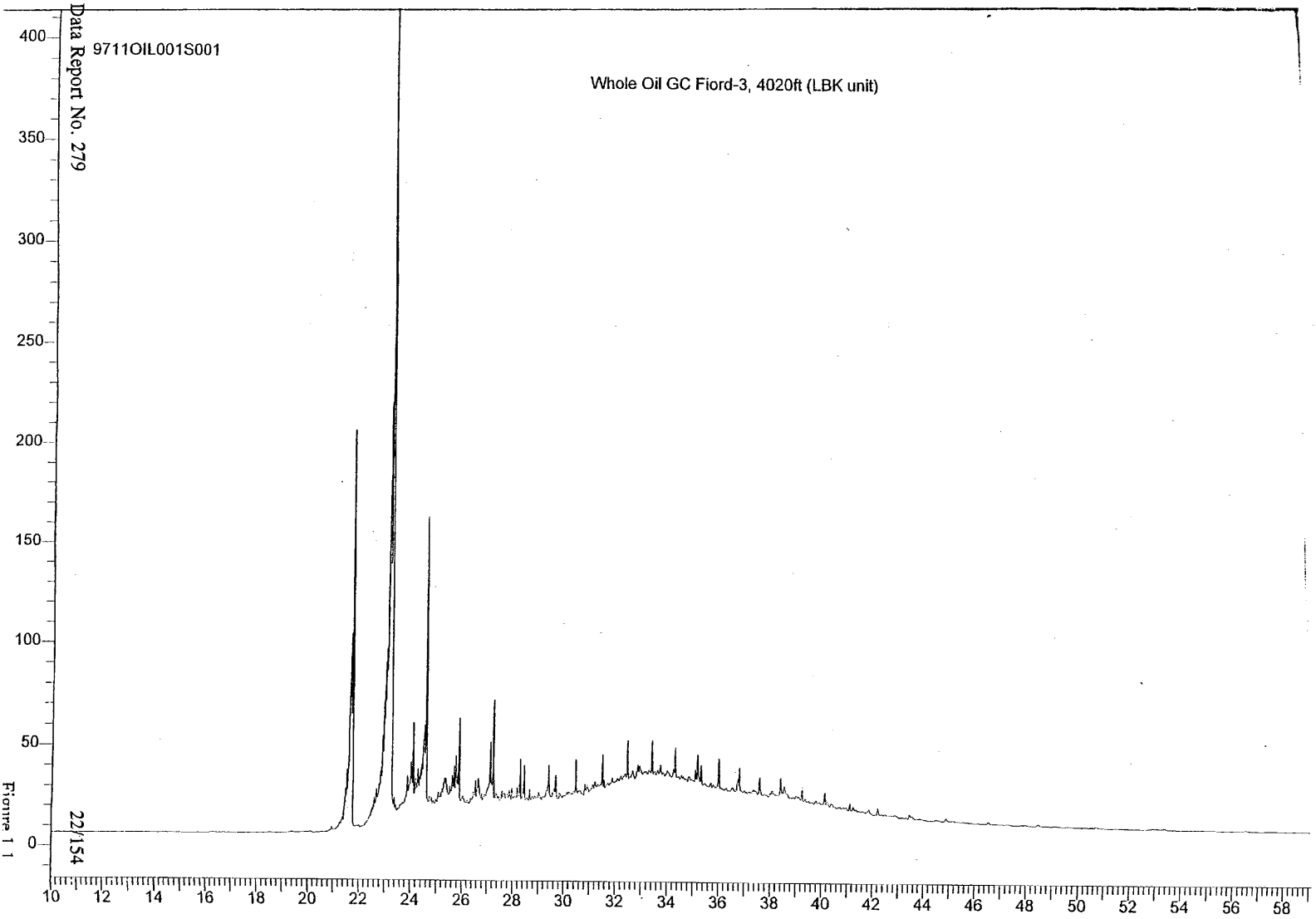
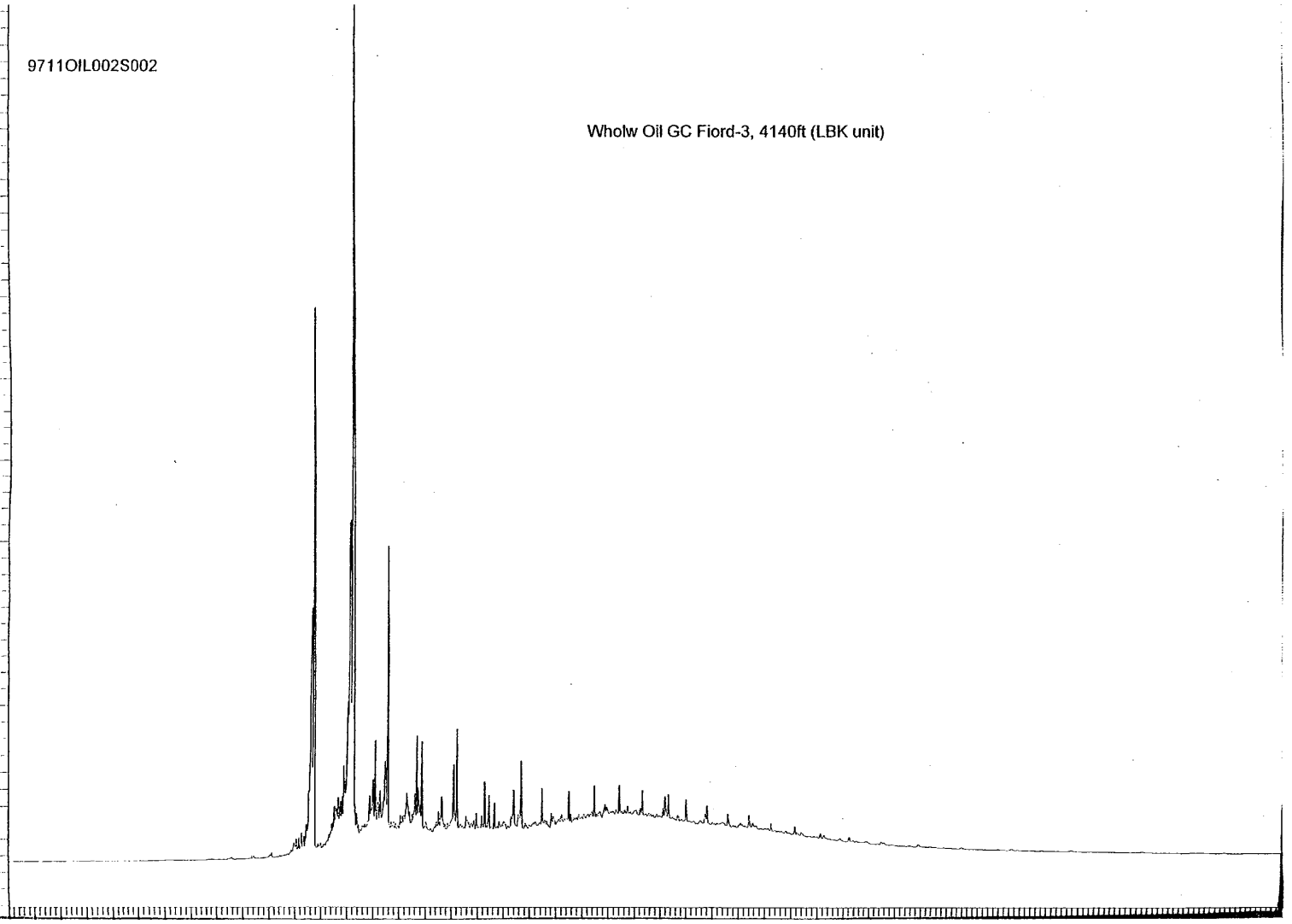

9711OIL001S001
Whole Oil GC Fiord-3, 4020ft (LBK unit)
400
350
300
250
200
150
100
50
0
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
52
54
56
58

Figure 1 1



GMC Data Report No. 279

Figure 1.2

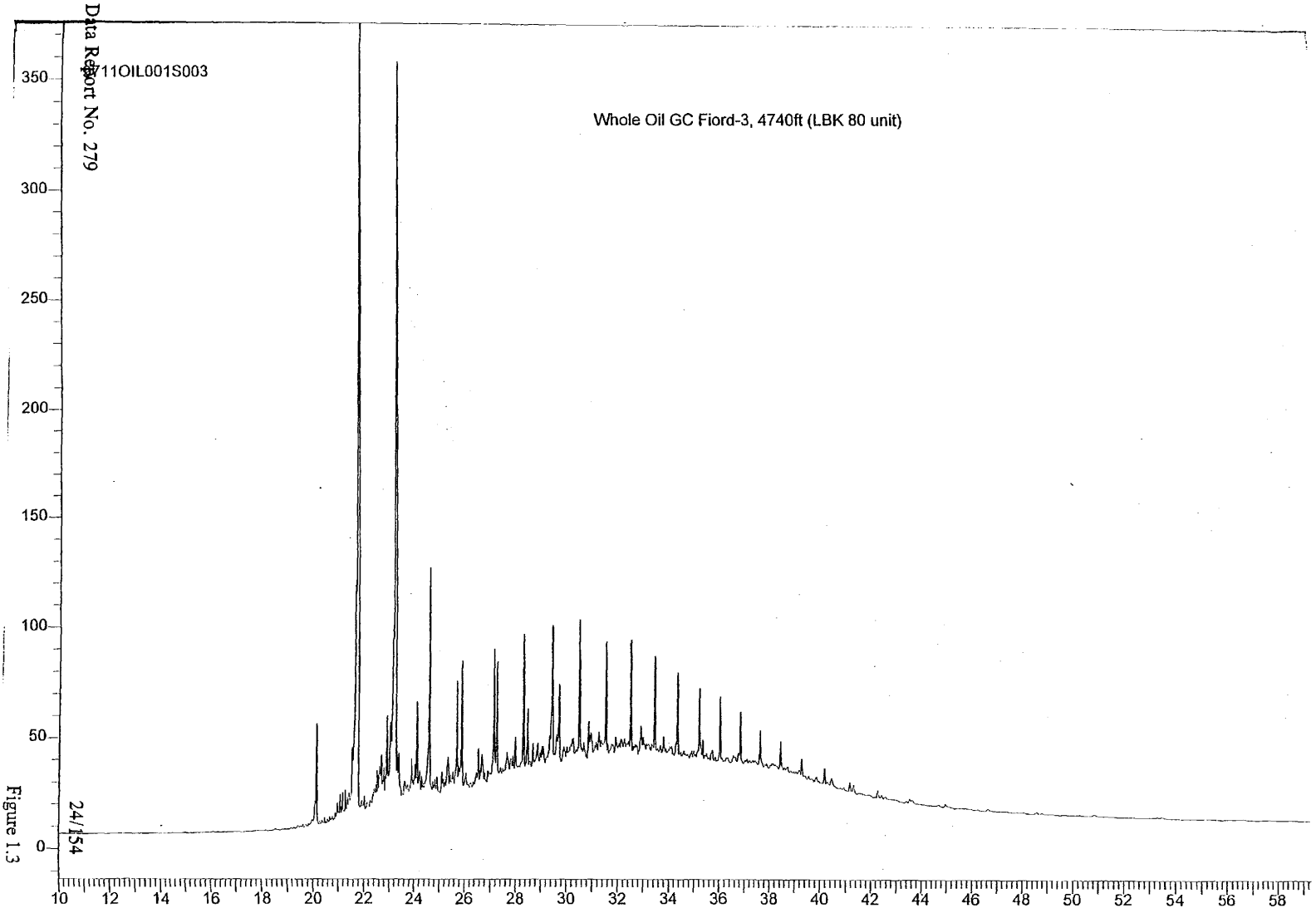

711OIL001S003
Whole Oil GC Fiord-3, 4740ft (LBK 80 unit)
350
300
250
200
150
100
50
0
10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58

Figure 1.3

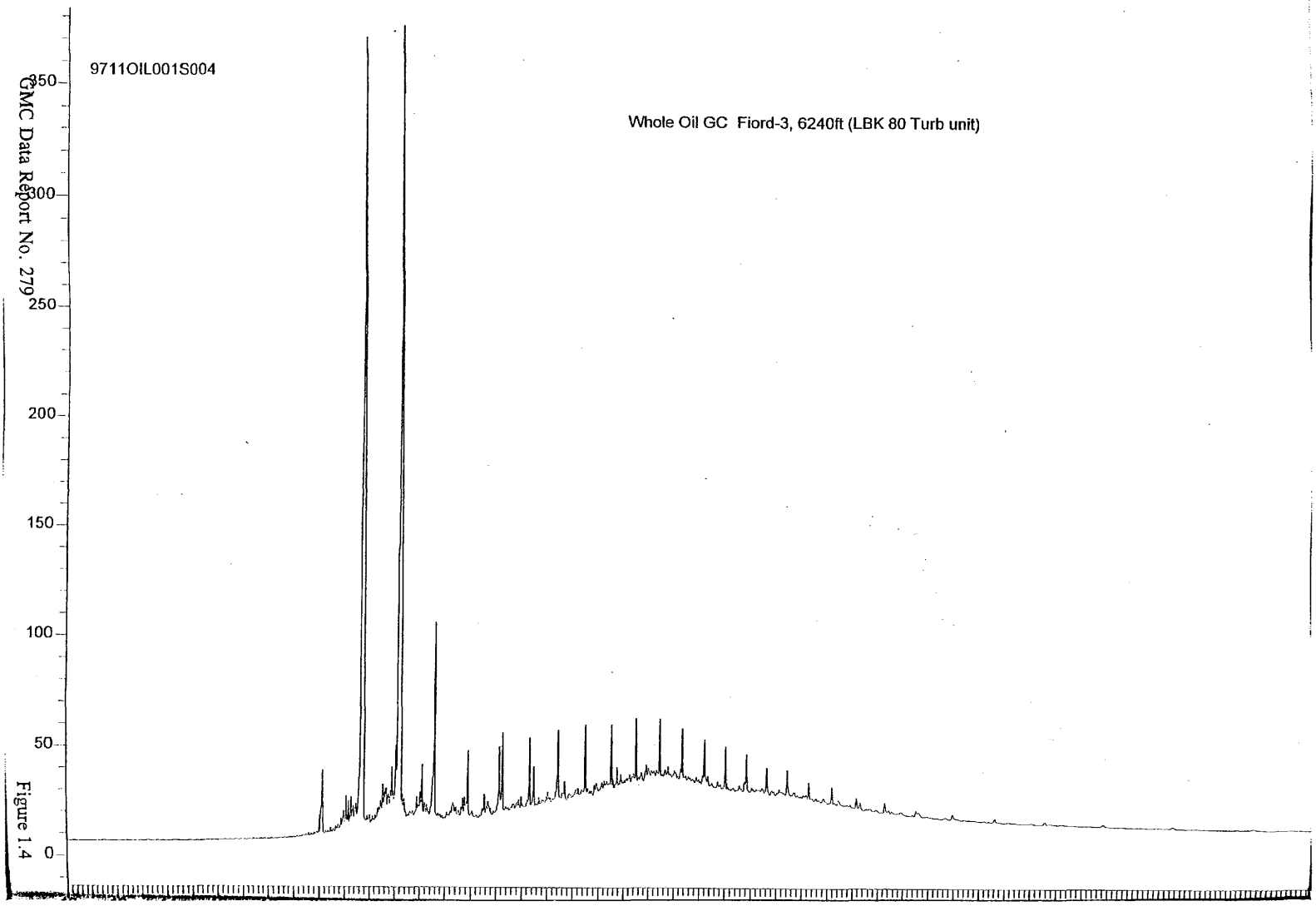
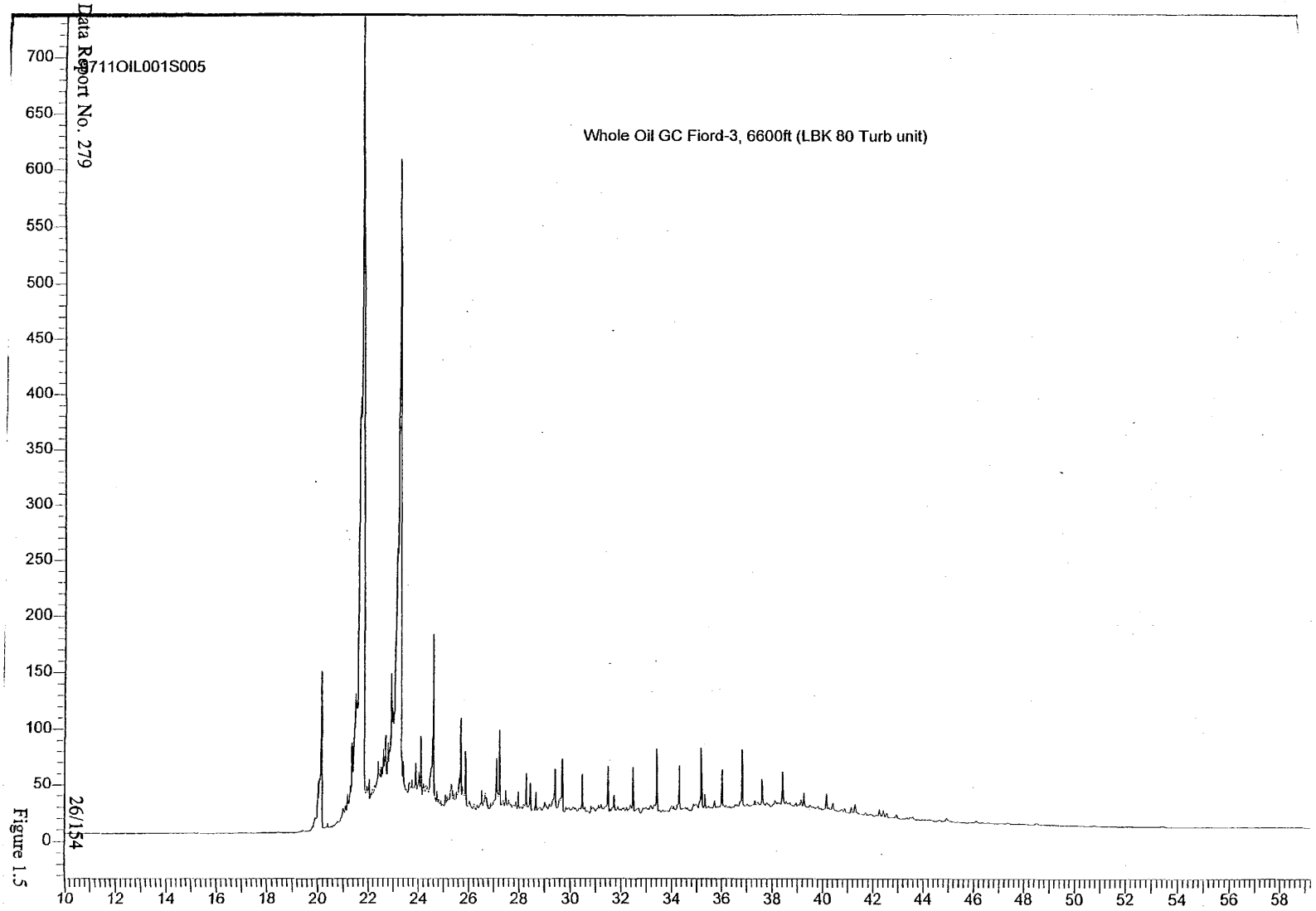

9711OIL001S004
Whole Oil GC Fiord-3, 6240ft (LBK 80 Turb unit)
350
300
250
200
150
100
50
0

Figure 1.4



GMC Data Report No. 279

26/154

Figure 1.5

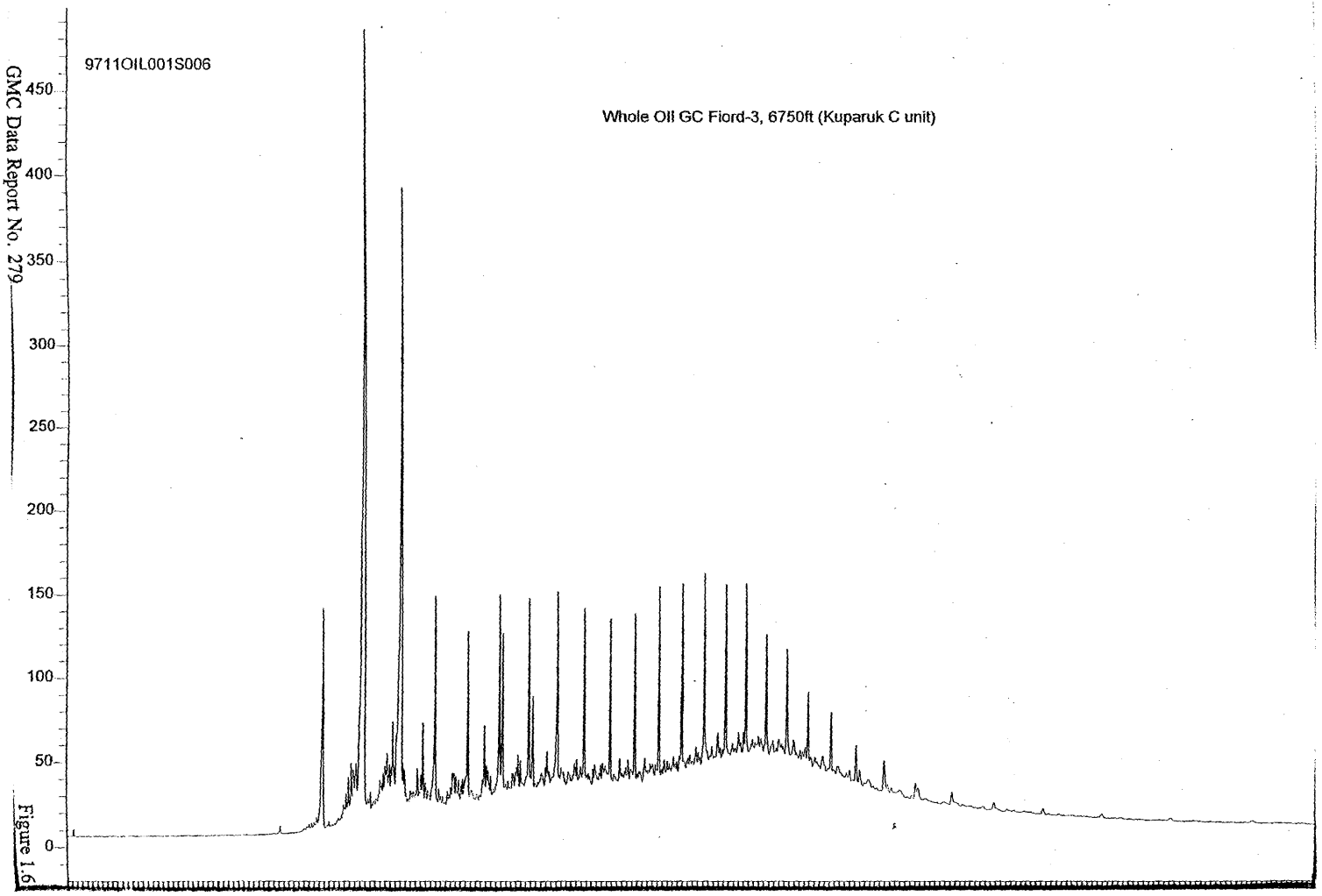
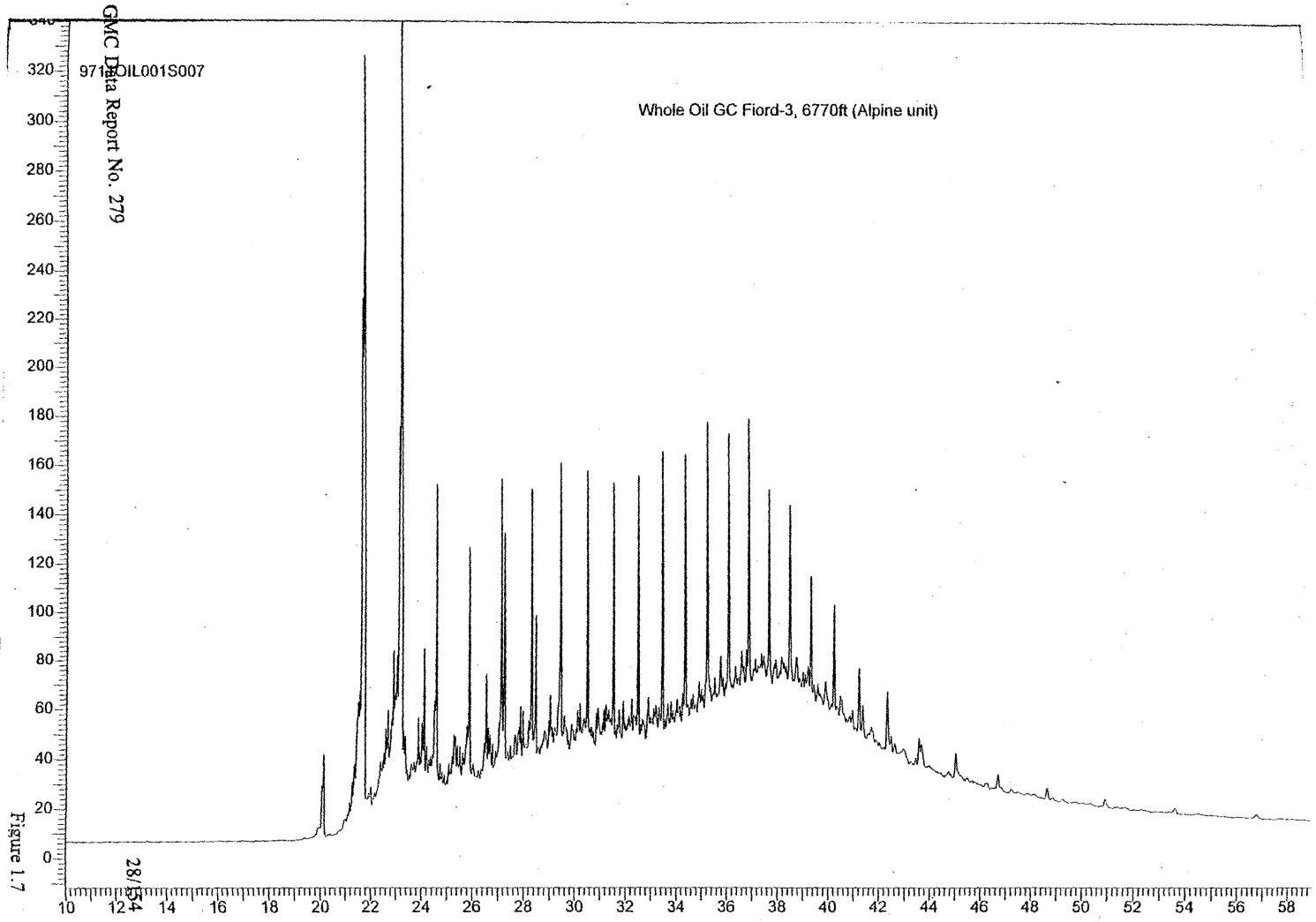

9711OIL001S006
Whole Oil GC Fiord-3, 6750ft (Kuparuk C unit)
450
400
350
300
250
200
150
100
50
0

Figure 1.6



GMC Data Report No. 279

Figure 1.7

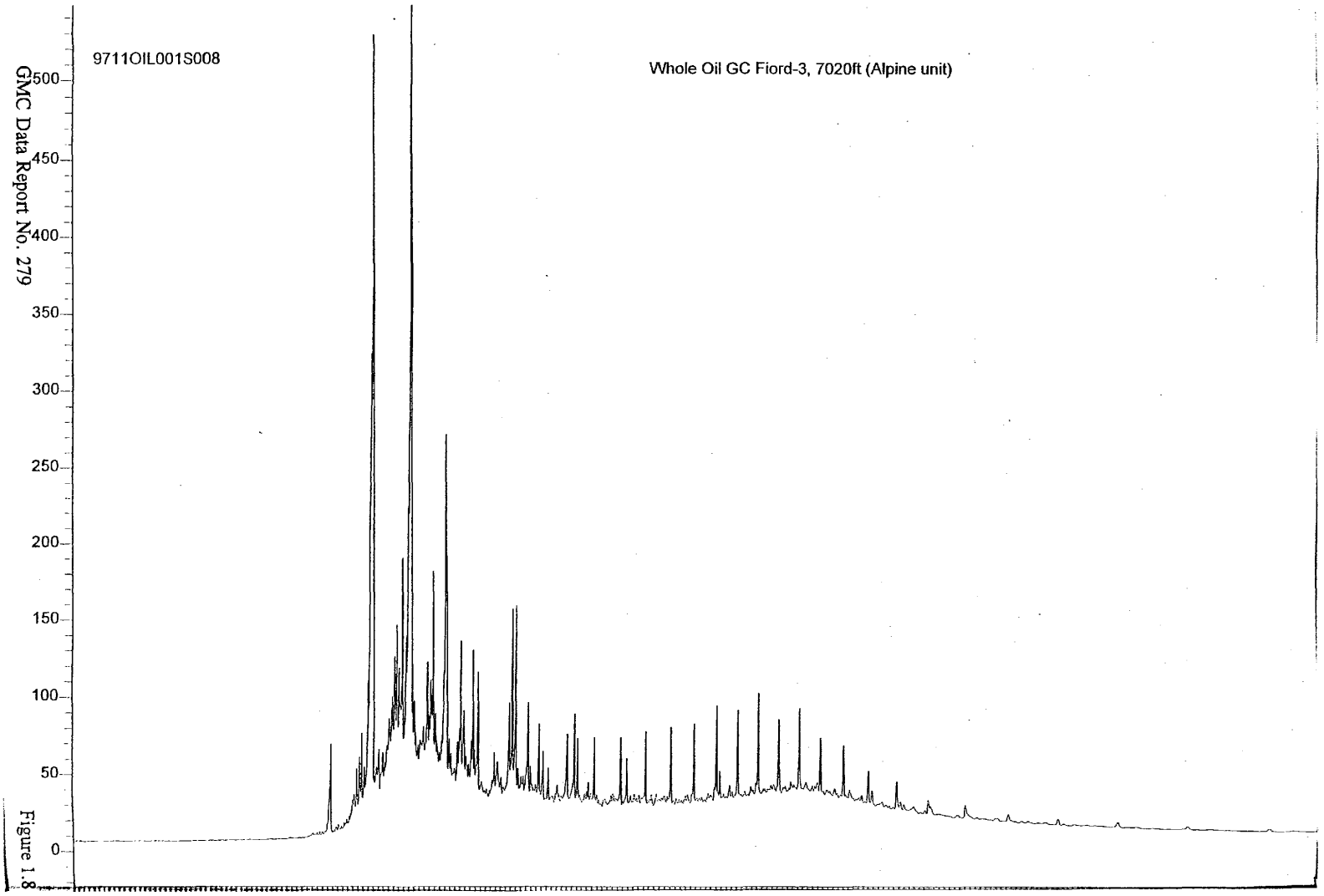
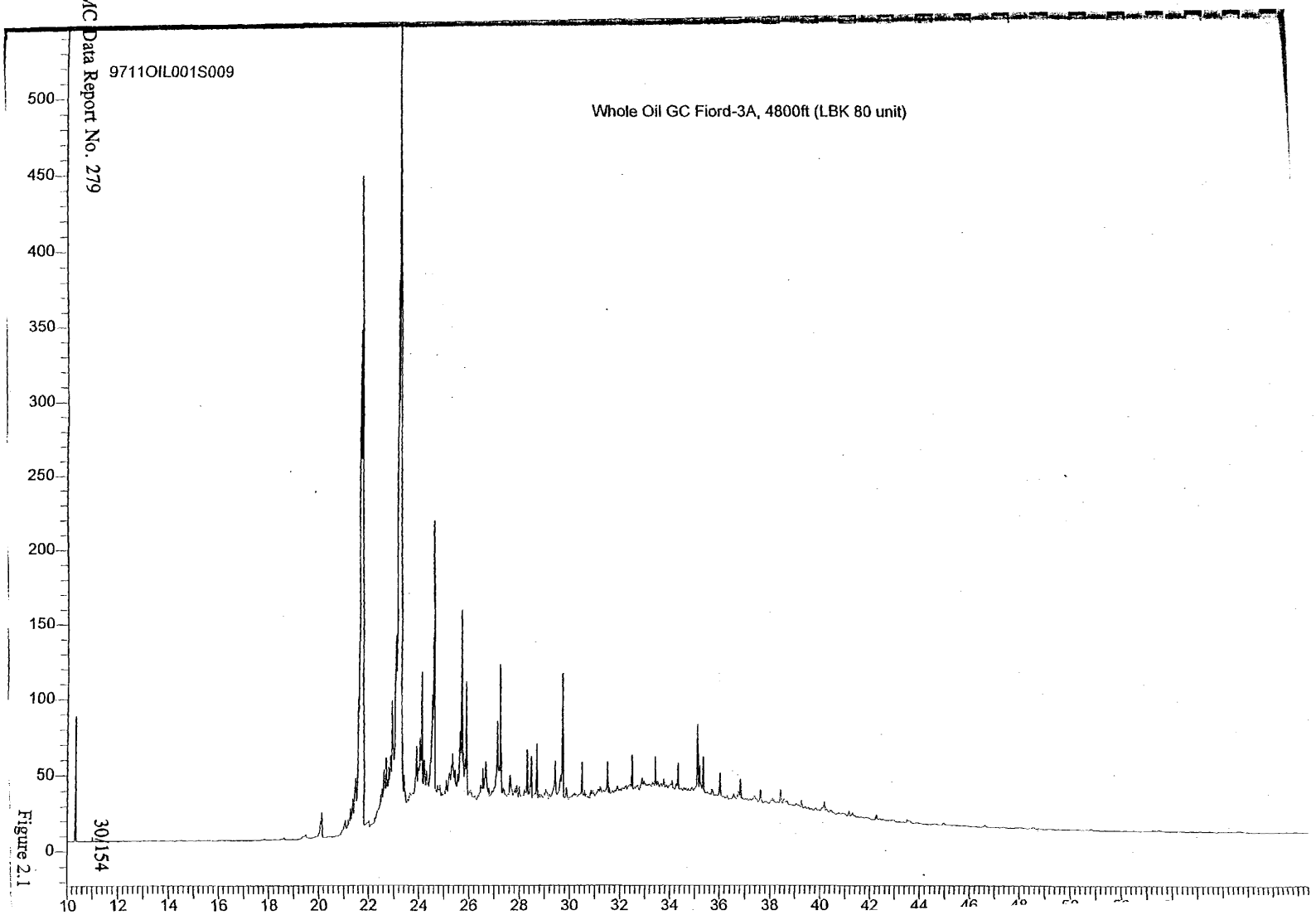

9711OIL001S008
Whole Oil GC Fiord-3, 7020ft (Alpine unit)
500
450
400
350
300
250
200
150
100
50
0

Figure 1.8



GMC Data Report No. 279

Figure 2.1

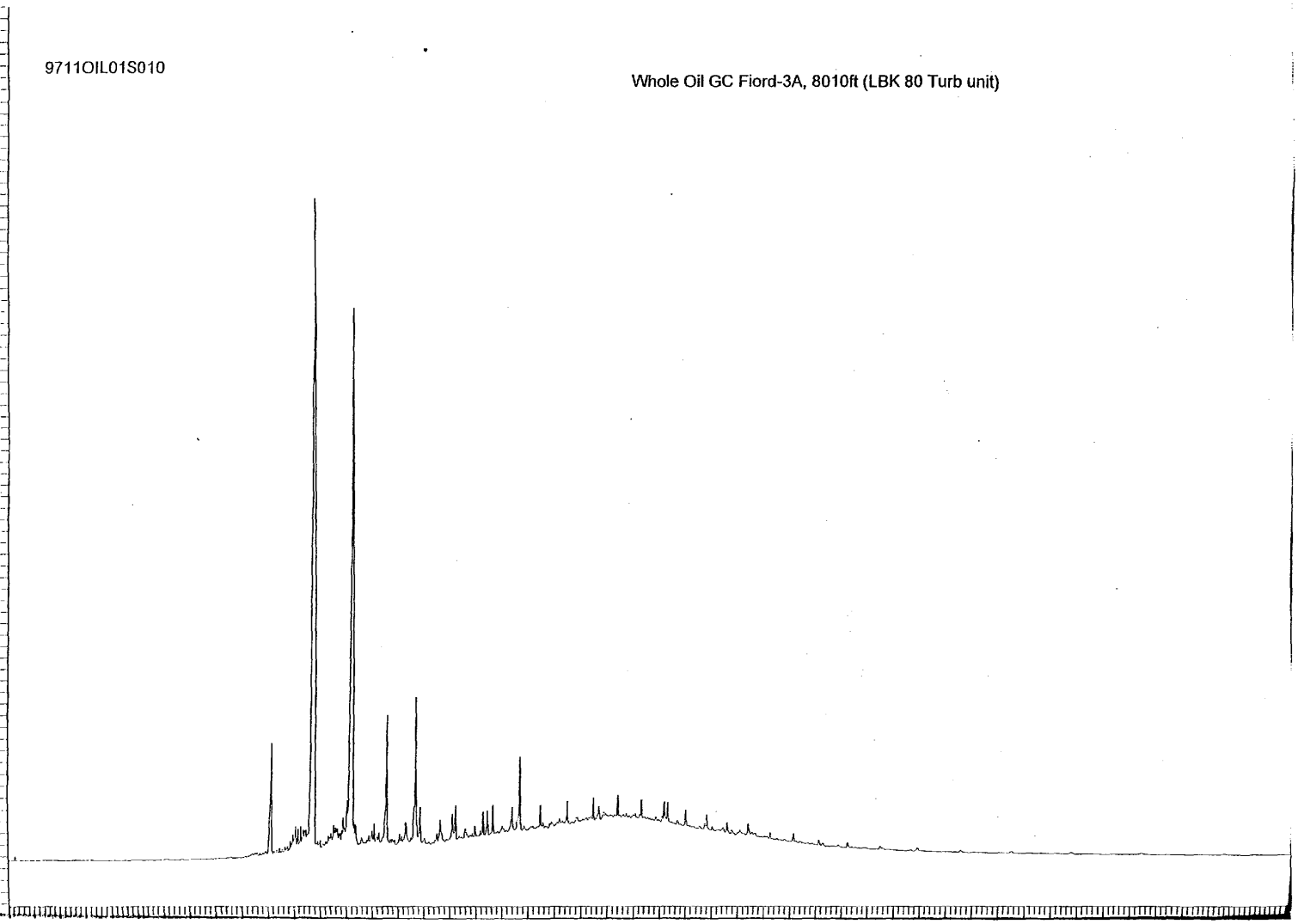

9711OIL01S010
Whole Oil GC Fiord-3A, 8010ft (LBK 80 Turb unit)
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0

Figure 2.2

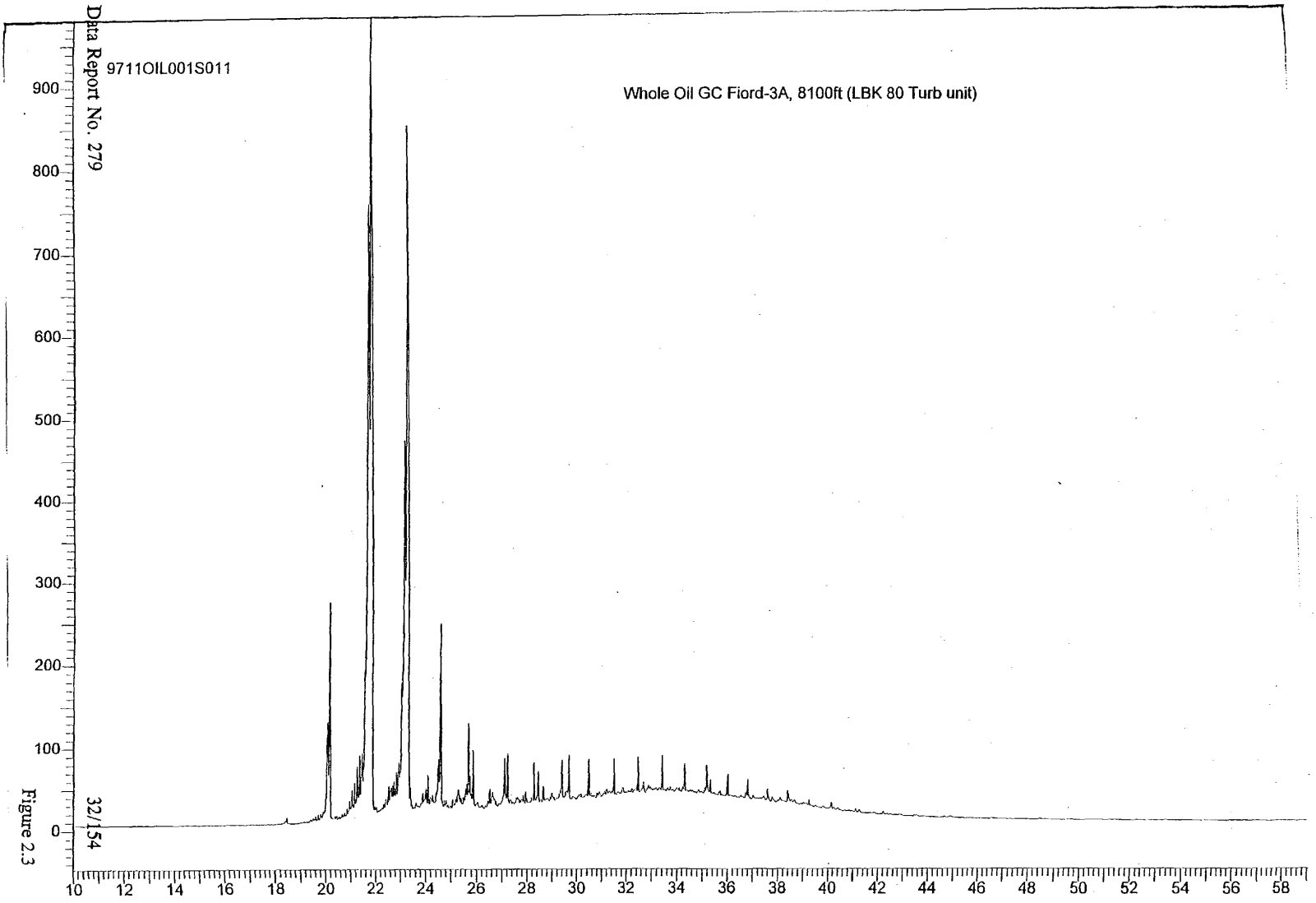

9711OIL001S011
Whole Oil GC Fiord-3A, 8100ft (LBK 80 Turb unit)
900
800
700
600
500
400
300
200
100
0
10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58

Figure 2.3

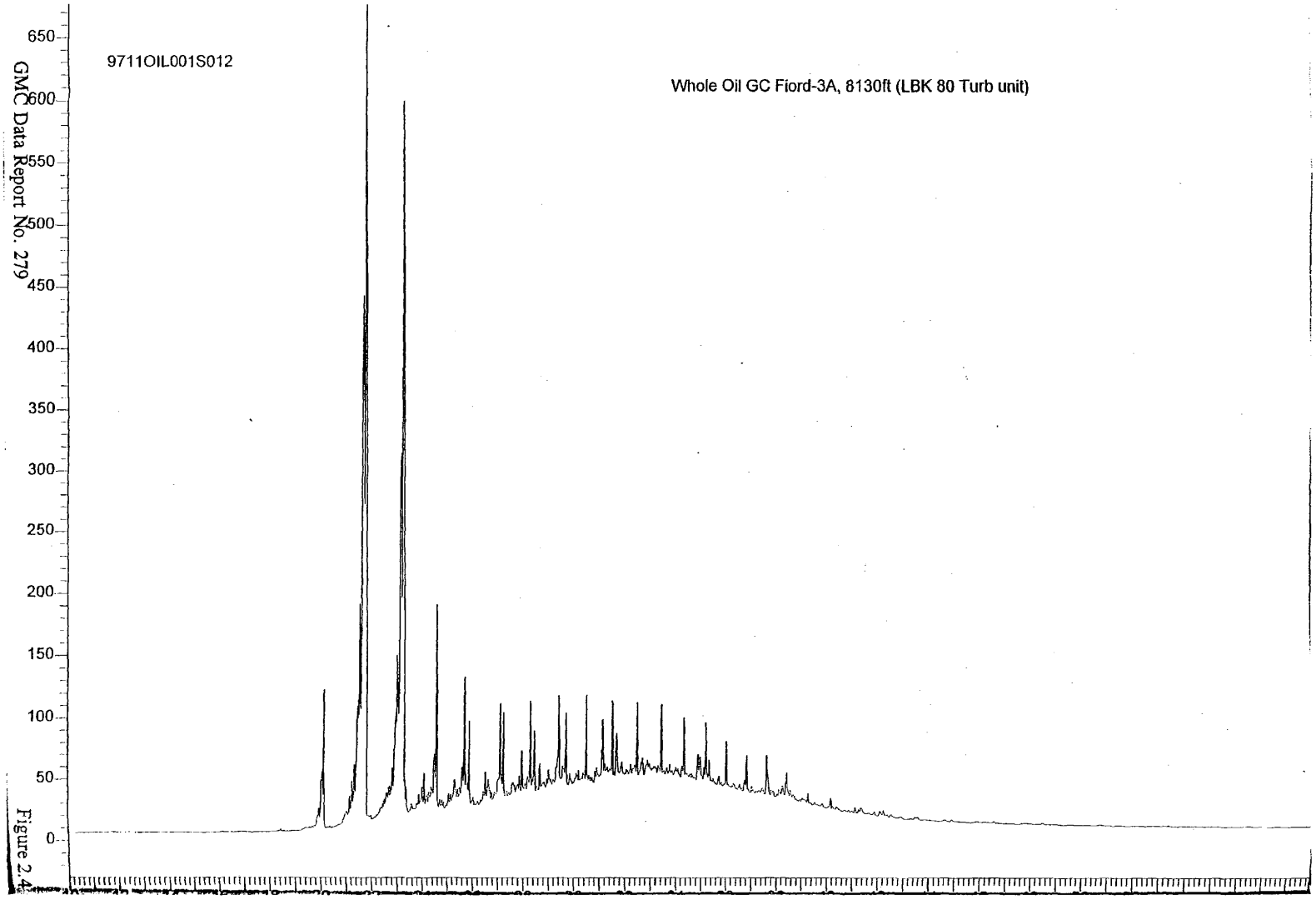
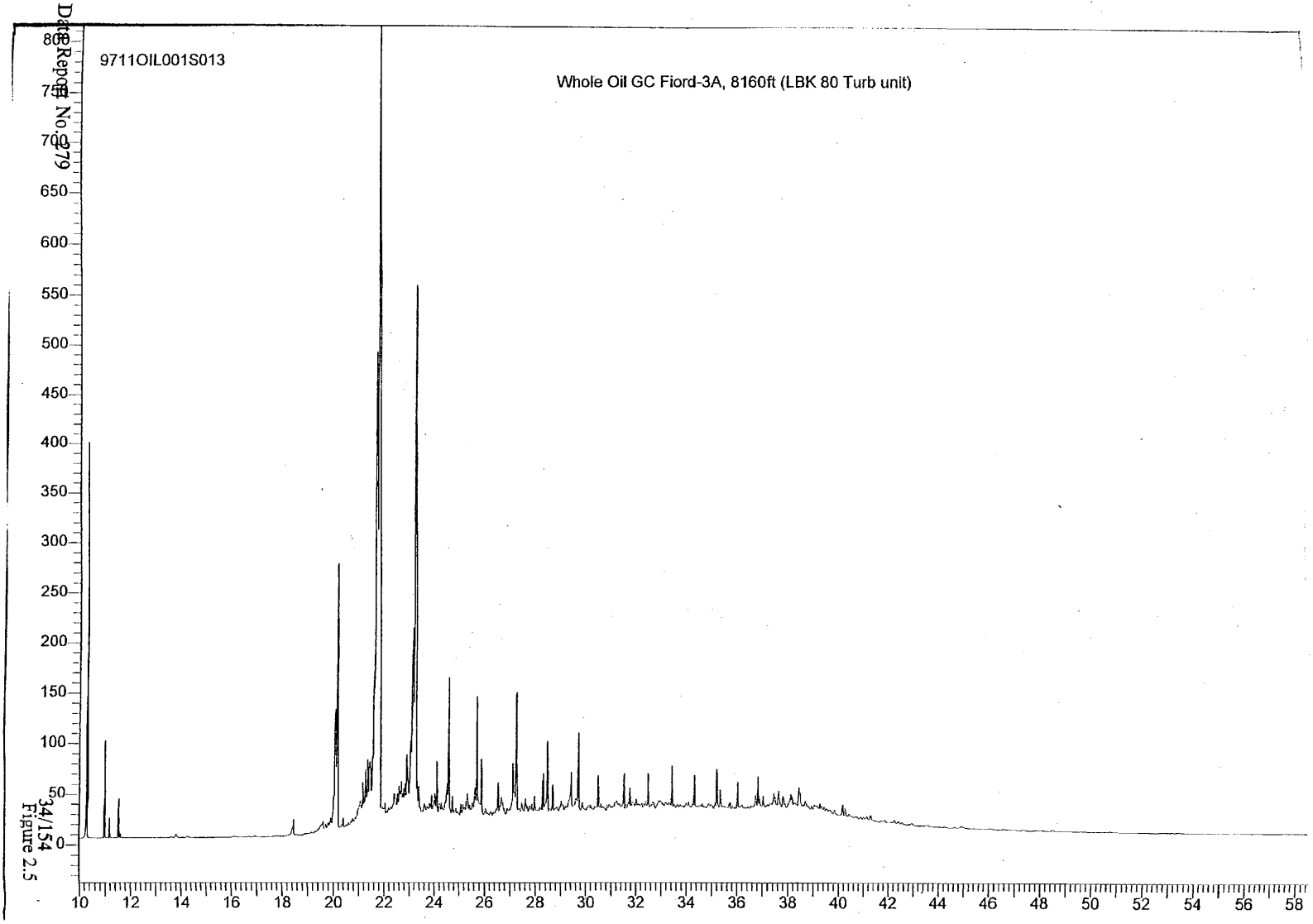

9711OIL001S012
Whole Oil GC Fiord-3A, 8130ft (LBK 80 Turb unit)
650
600
550
500
450
400
350
300
250
200
150
100
50
0

Figure 2.4


9711OIL001S013
Whole Oil GC Fiord-3A, 8160ft (LBK 80 Turb unit)
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
52
54
56
58

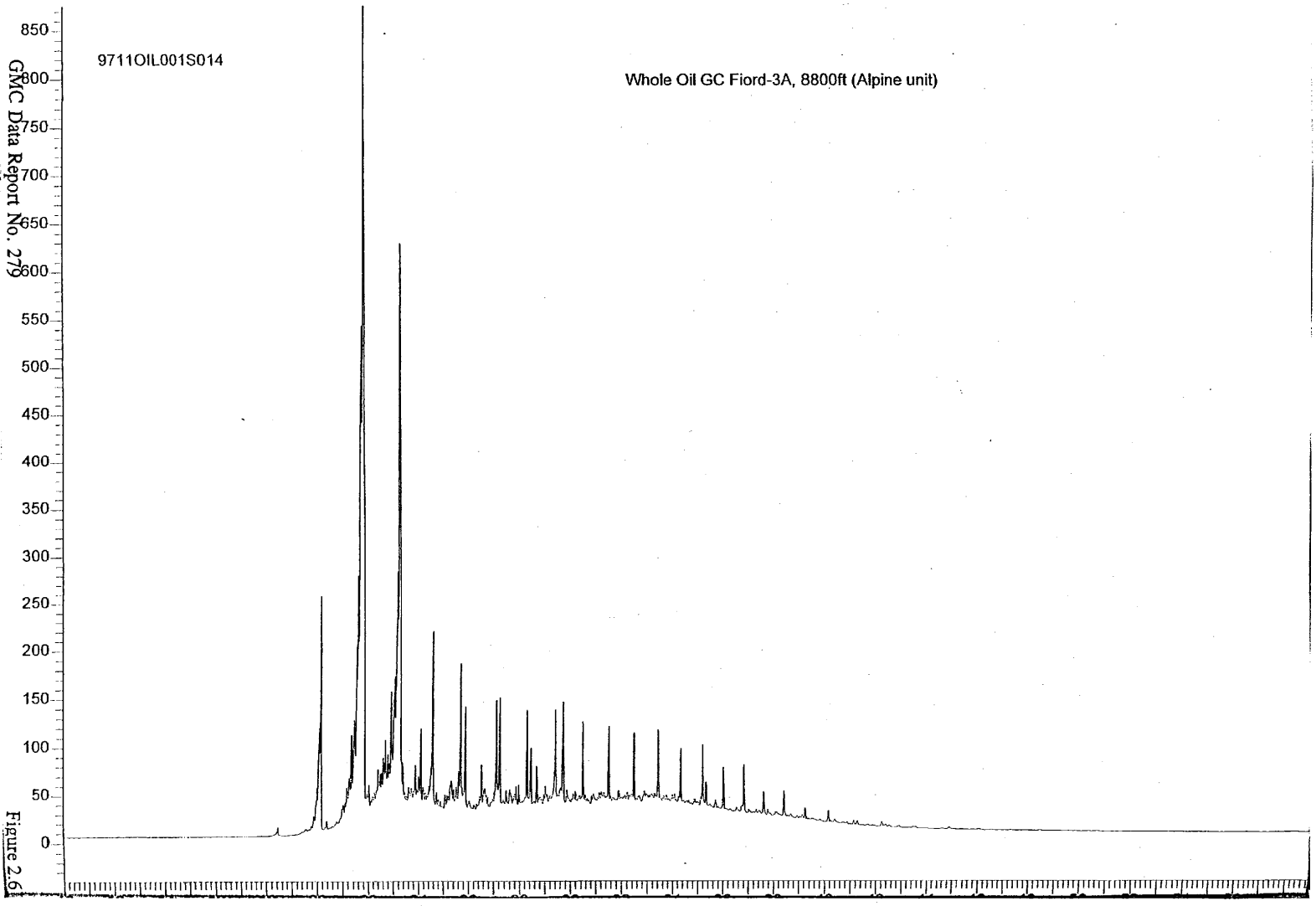
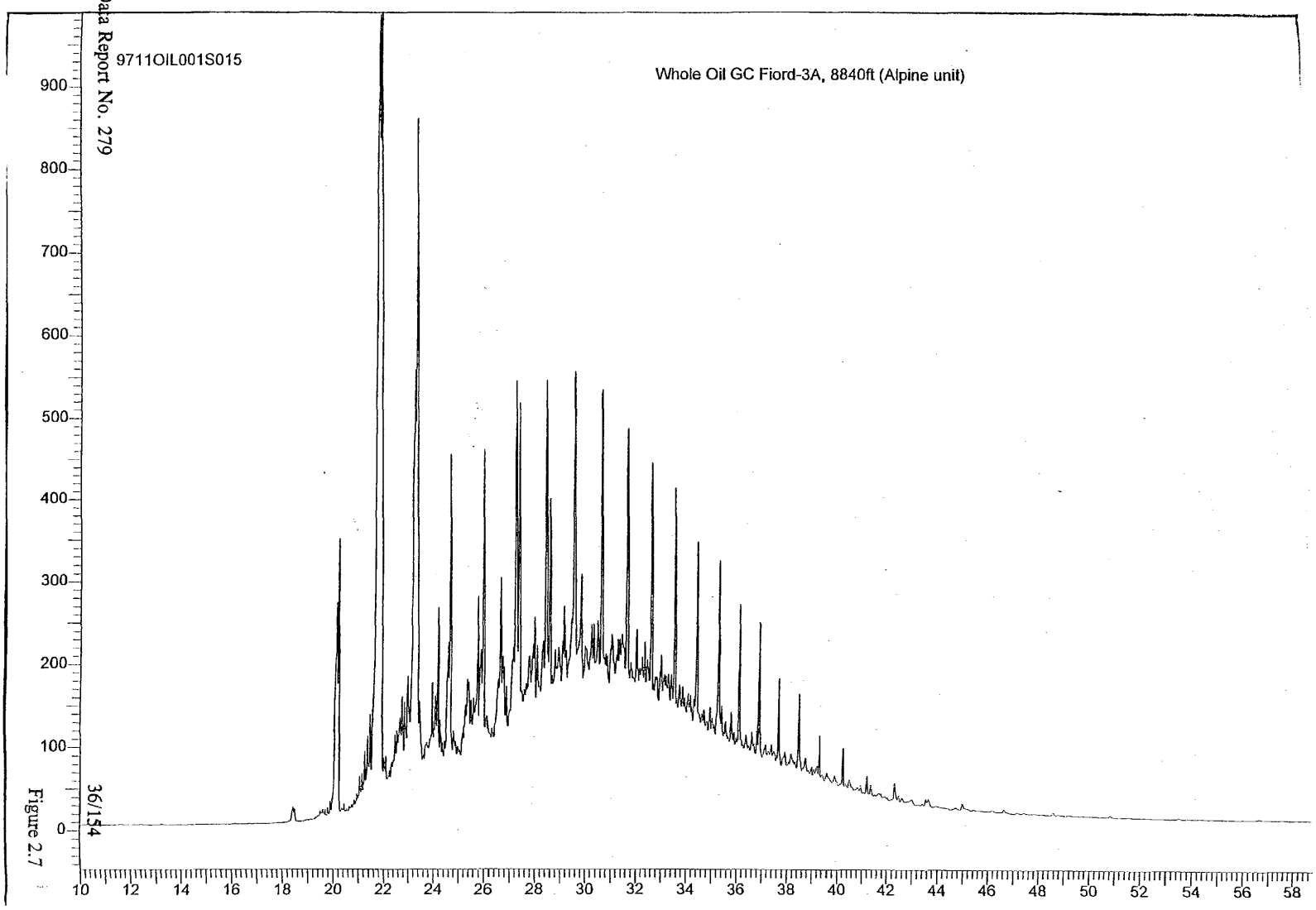

9711OIL001S014
Whole Oil GC Fiord-3A, 8800ft (Alpine unit)
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0

Figure 2.6



GMC Data Report No. 279

36/154

Figure 2.7

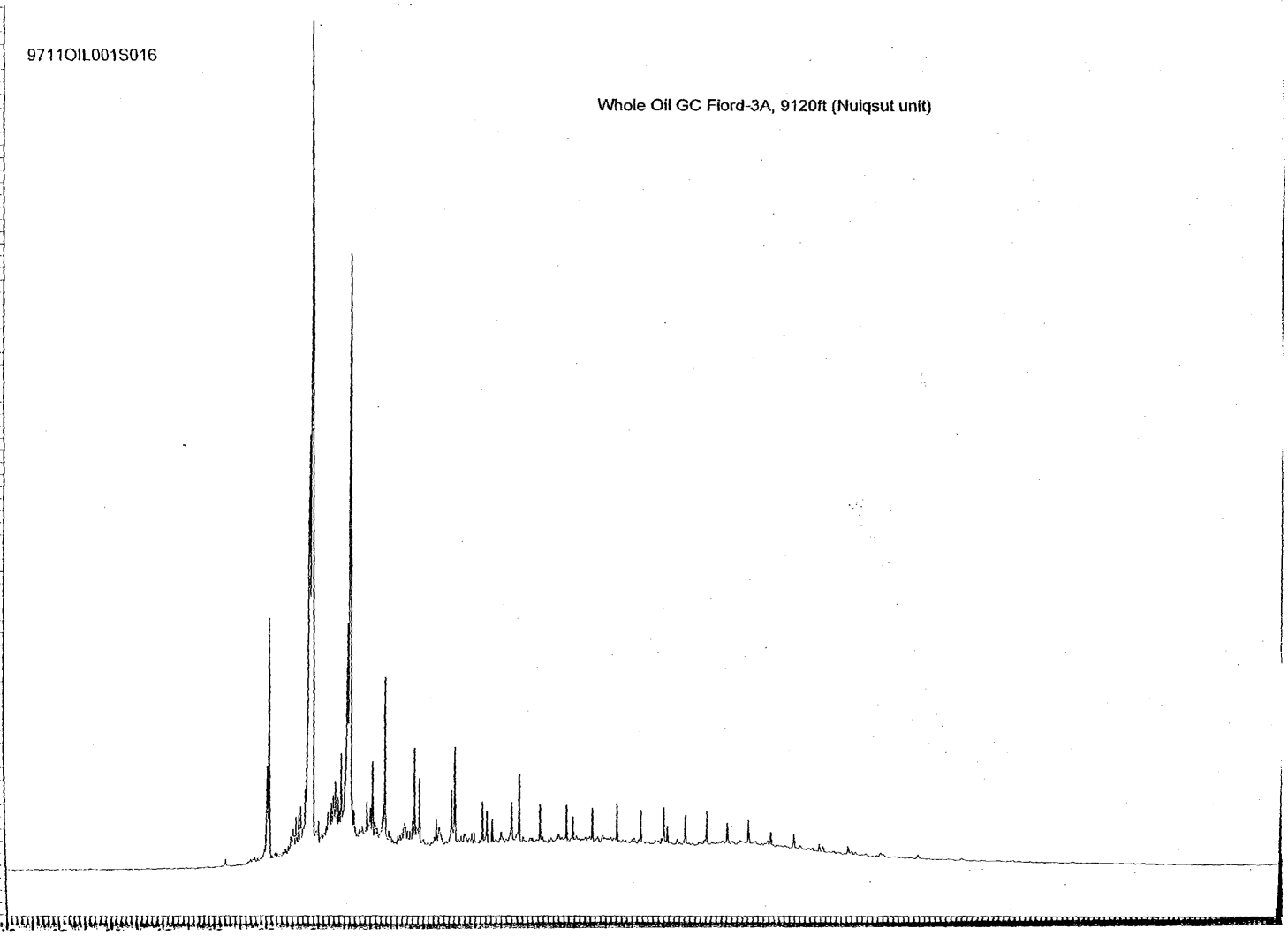

9711OIL001S016
Whole Oil GC Fiord-3A, 9120ft (Nuiqsut unit)
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0

Figure 2.8

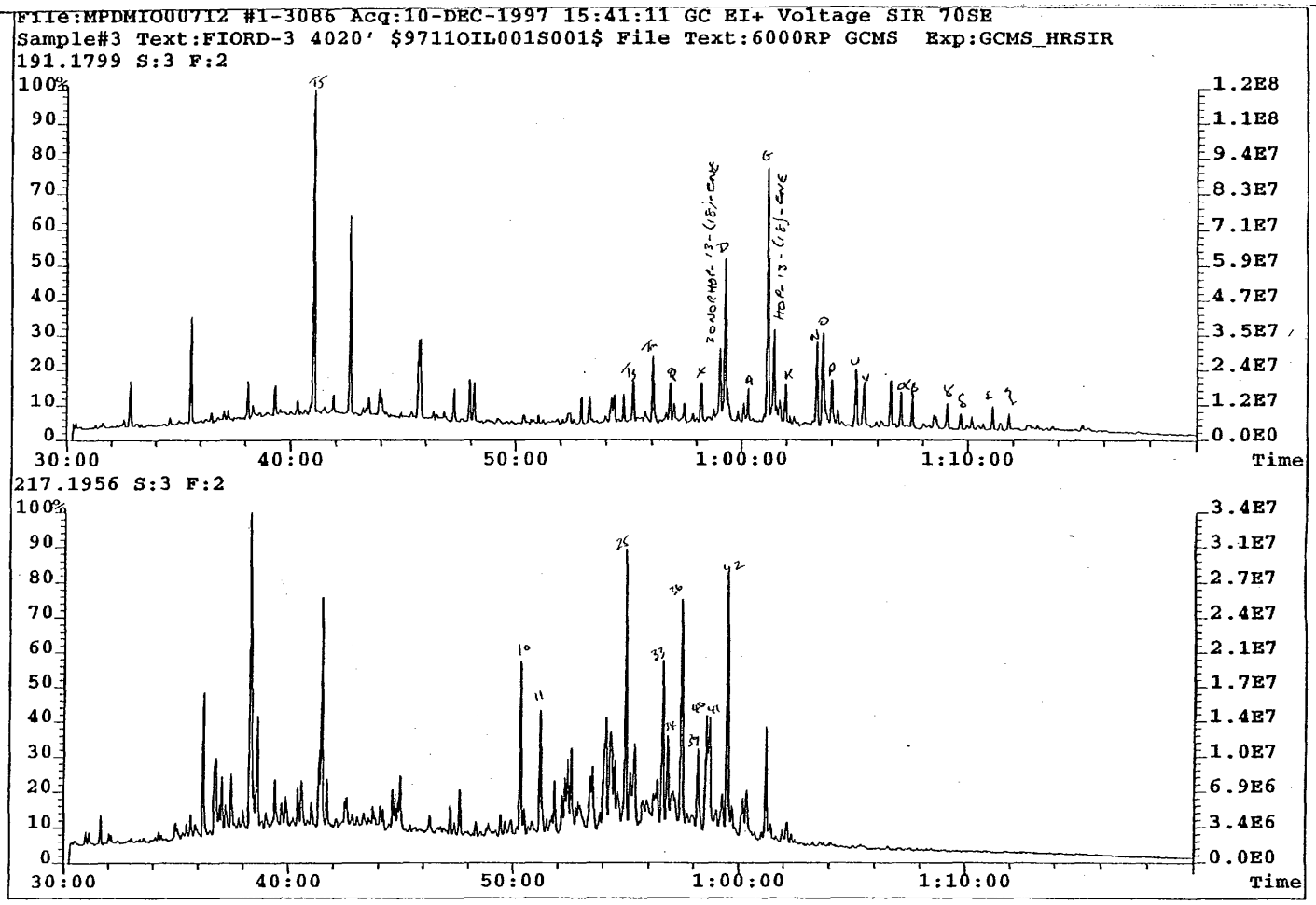

File:MPDMIOU0712 #1-3086 Acq:10-DEC-1997 15:41:11 GC EI+ Voltage SIR 70SE
Sample#3 Text:FIORD-3 4020' $9711OIL001S001$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:3 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
40:00
50:00
1:00:00
1:10:00
Time
1.2E8
1.1E8
9.4E7
8.3E7
7.1E7
5.9E7
4.7E7
3.5E7
2.4E7
1.2E7
0.0E0
217.1956 S:3 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
40:00
50:00
1:00:00
1:10:00
Time
3.4E7
3.1E7
2.7E7
2.4E7
2.1E7
1.7E7
1.4E7
1.0E7
6.9E6
3.4E6
0.0E0

Figure 3.1

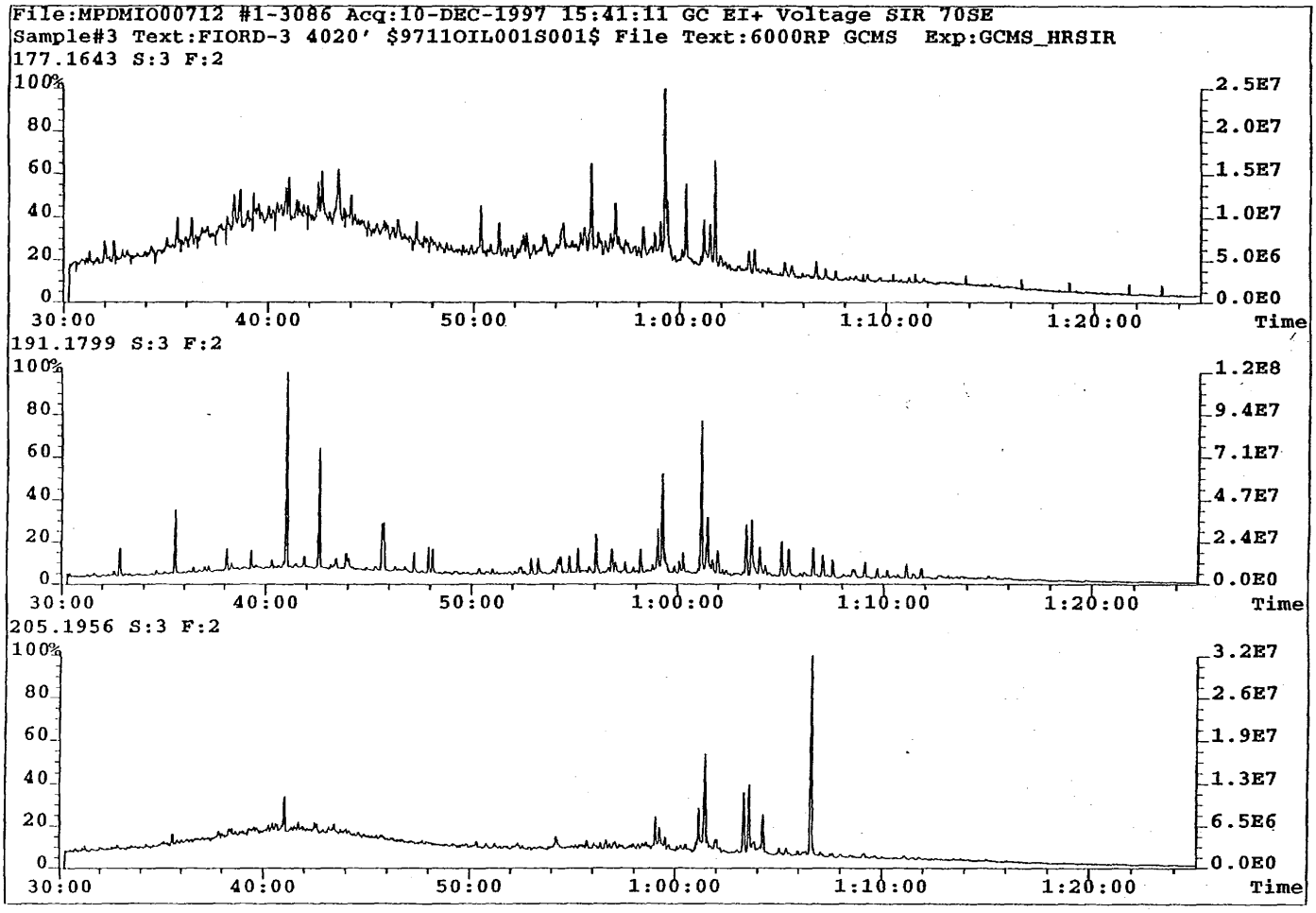

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 15:41:11 GC EI+ Voltage SIR 70SE
Sample#3 Text:FIORD-3 4020' $9711OIL001S001$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:3 F:2
100%
80
60
40
20
0
2.5E7
2.0E7
1.5E7
1.0E7
5.0E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:3 F:2
100%
80
60
40
20
0
1.2E8
9.4E7
7.1E7
4.7E7
2.4E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:3 F:2
100%
80
60
40
20
0
3.2E7
2.6E7
1.9E7
1.3E7
6.5E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.2

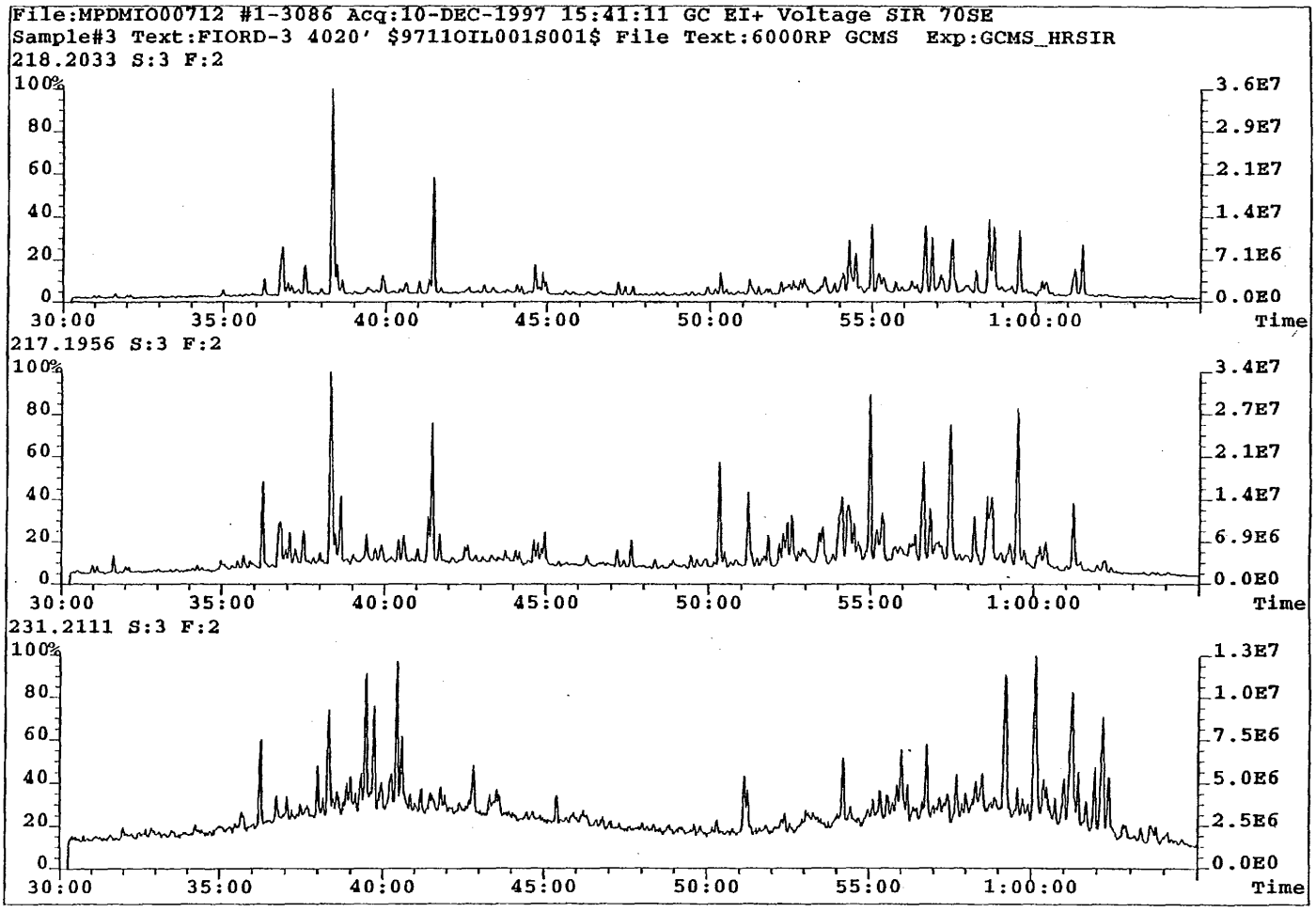

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 15:41:11 GC EI+ Voltage SIR 70SE
Sample#3 Text:FIORD-3 4020' $9711OIL001S001$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:3 F:2
100%
80
60
40
20
0
3.6E7
2.9E7
2.1E7
1.4E7
7.1E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:3 F:2
100%
80
60
40
20
0
3.4E7
2.7E7
2.1E7
1.4E7
6.9E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:3 F:2
100%
80
60
40
20
0
1.3E7
1.0E7
7.5E6
5.0E6
2.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 3.3

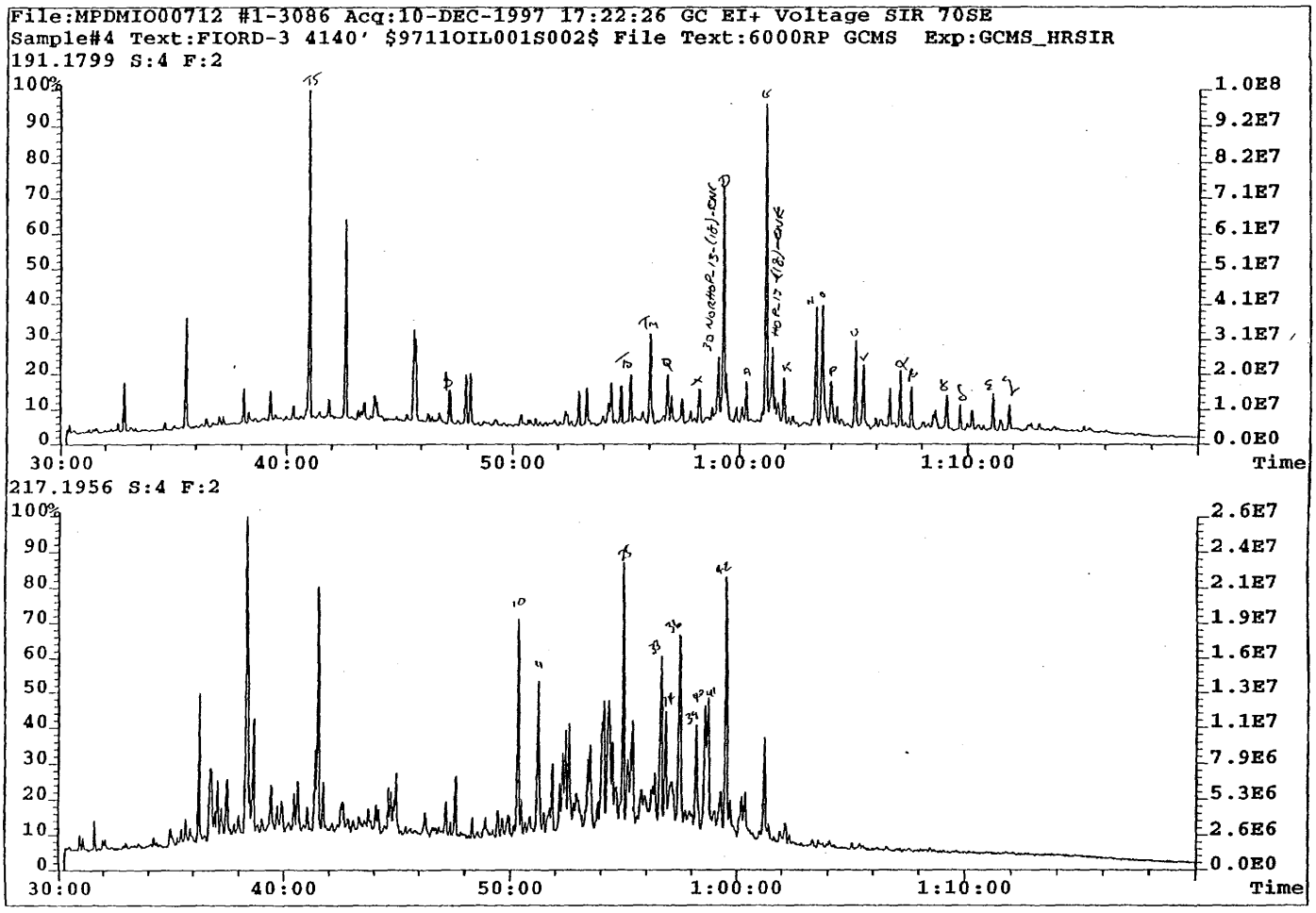

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 17:22:26 GC EI+ Voltage SIR 70SE
Sample#4 Text:FIORD-3 4140' $9711OIL001S002$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:4 F:2
100%
90
80
70
60
50
40
30
20
10
0
1.0E8
9.2E7
8.2E7
7.1E7
6.1E7
5.1E7
4.1E7
3.1E7
2.0E7
1.0E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
Time
217.1956 S:4 F:2
100%
90
80
70
60
50
40
30
20
10
0
2.6E7
2.4E7
2.1E7
1.9E7
1.6E7
1.3E7
1.1E7
7.9E6
5.3E6
2.6E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
Time

Figure 3.4

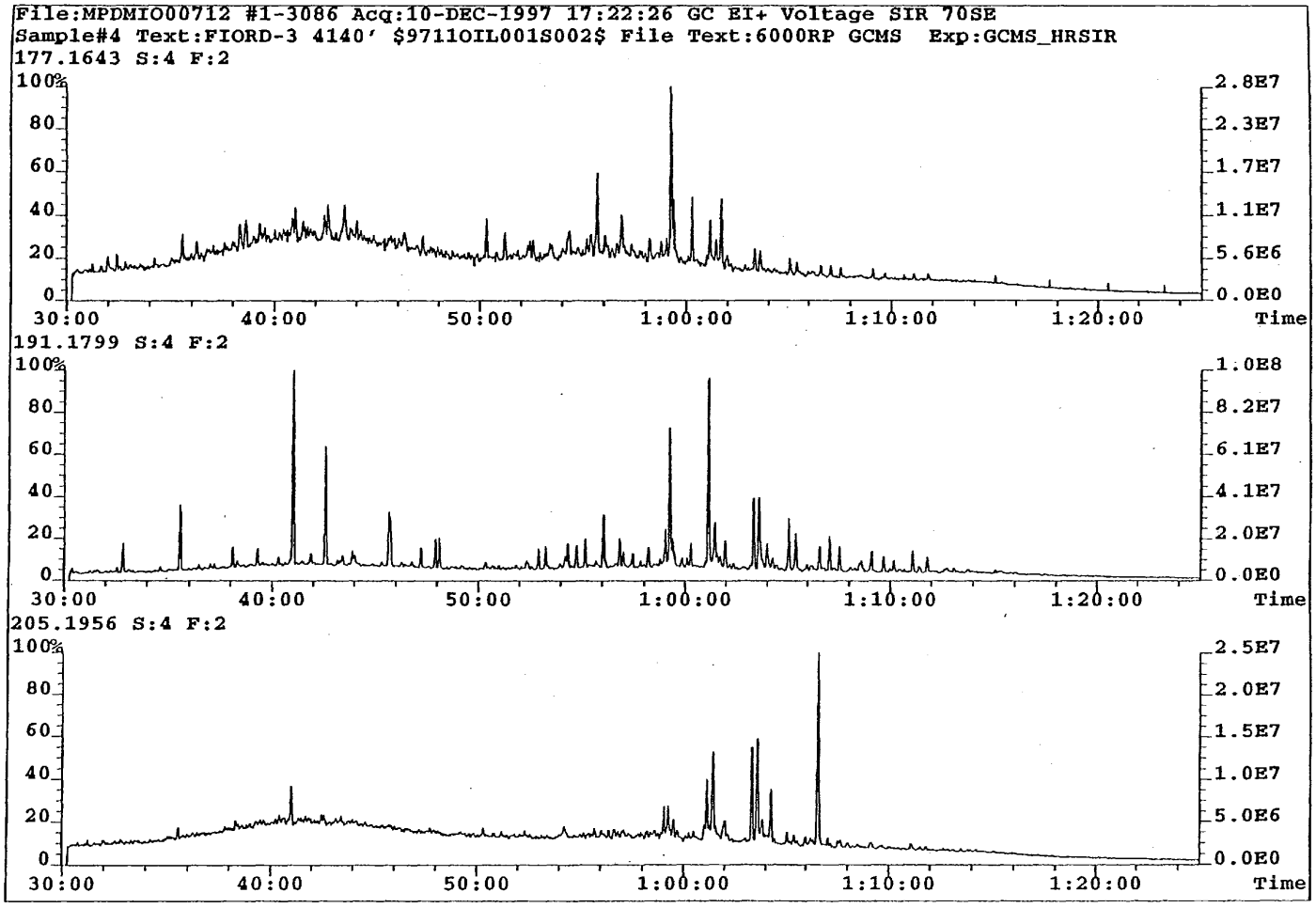

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 17:22:26 GC EI+ Voltage SIR 70SE
Sample#4 Text:FIORD-3 4140' $9711OIL001S002$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:4 F:2
100%
80
60
40
20
0
2.8E7
2.3E7
1.7E7
1.1E7
5.6E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:4 F:2
100%
80
60
40
20
0
1.0E8
8.2E7
6.1E7
4.1E7
2.0E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:4 F:2
100%
80
60
40
20
0
2.5E7
2.0E7
1.5E7
1.0E7
5.0E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.5

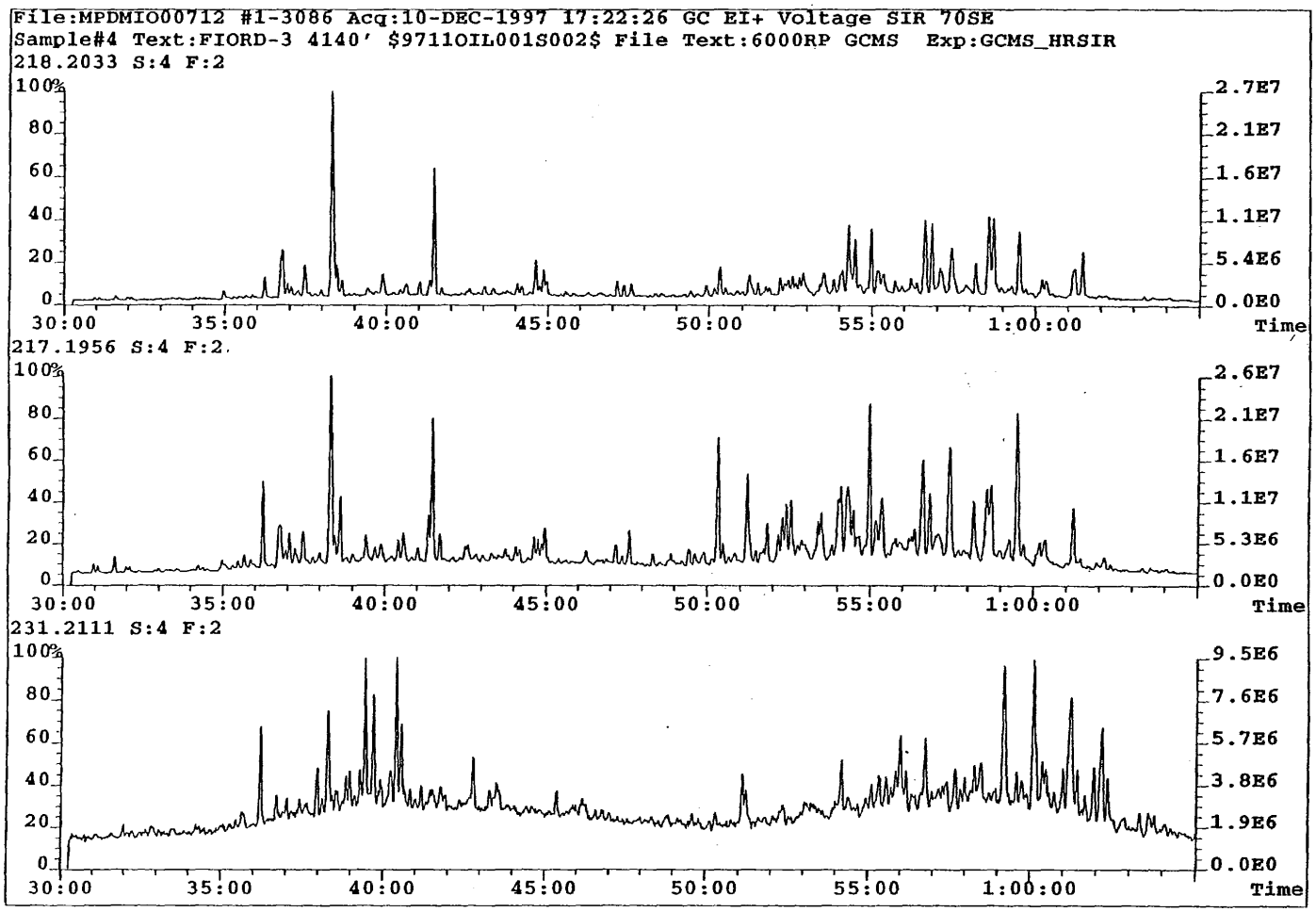

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 17:22:26 GC EI+ Voltage SIR 70SE
Sample#4 Text:FIORD-3 4140' $9711OIL001S002$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:4 F:2
100%
80
60
40
20
0
2.7E7
2.1E7
1.6E7
1.1E7
5.4E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:4 F:2
2.6E7
2.1E7
1.6E7
1.1E7
5.3E6
0.0E0
231.2111 S:4 F:2
9.5E6
7.6E6
5.7E6
3.8E6
1.9E6
0.0E0

Figure 3.6

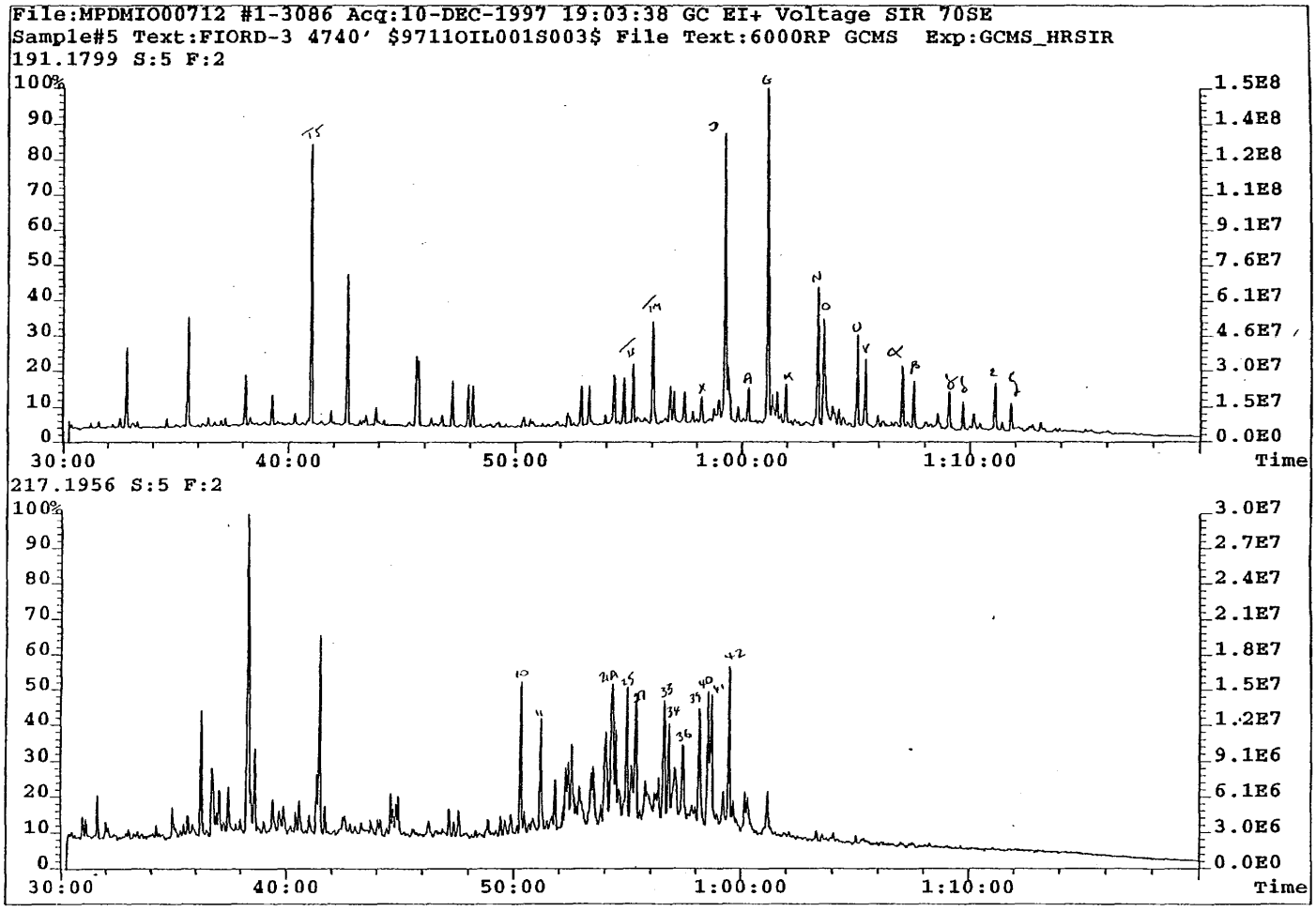

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 19:03:38 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3 4740' $97110IL001S003$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:5 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
40:00
50:00
1:00:00
1:10:00
Time
1.5E8
1.4E8
1.2E8
1.1E8
9.1E7
7.6E7
6.1E7
4.6E7
3.0E7
1.5E7
0.0E0
217.1956 S:5 F:2
3.0E7
2.7E7
2.4E7
2.1E7
1.8E7
1.5E7
1.2E7
9.1E6
6.1E6
3.0E6
0.0E0

Figure 3.7

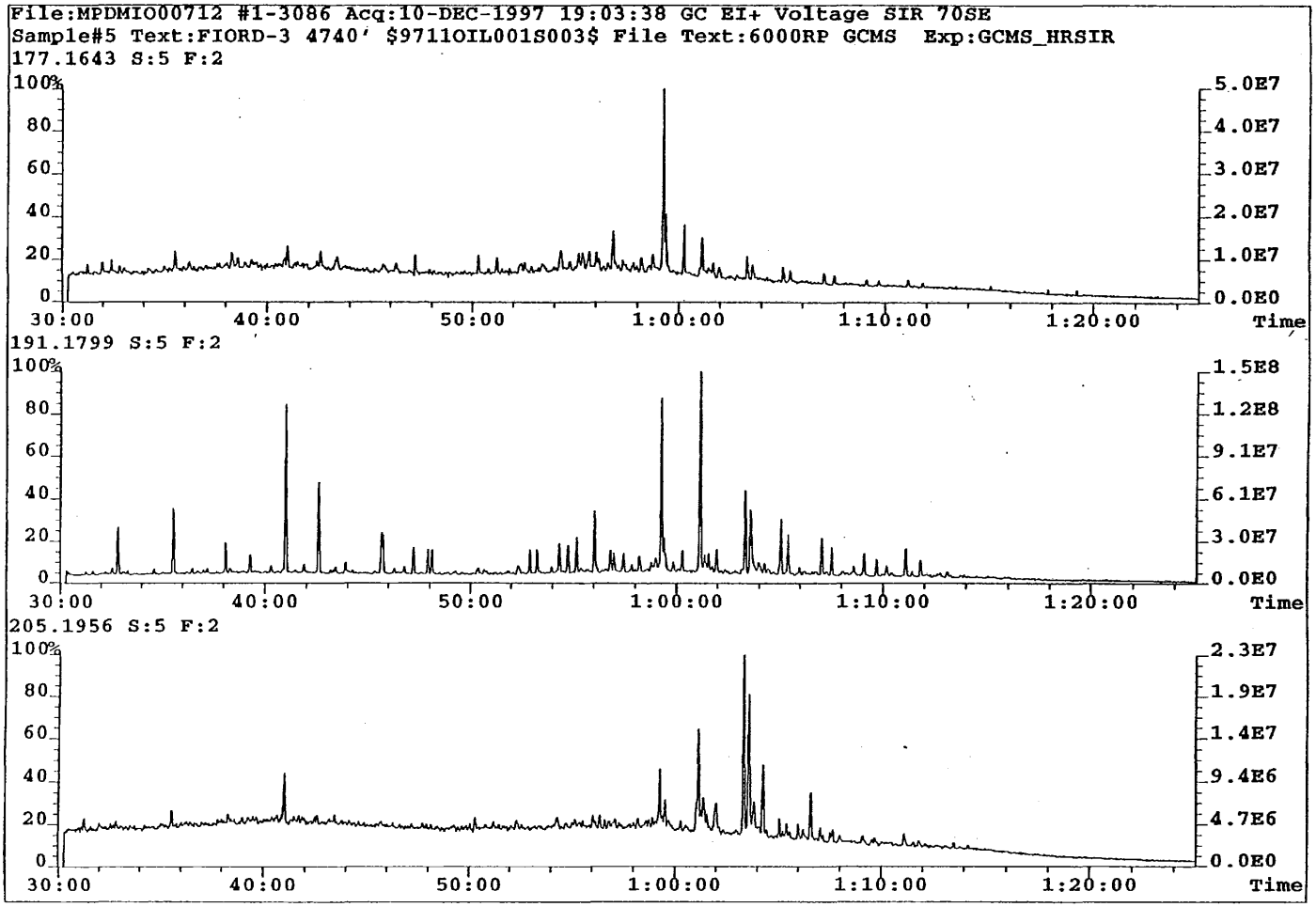

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 19:03:38 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3 4740' $9711OIL001S003$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:5 F:2
100%
80
60
40
20
0
5.0E7
4.0E7
3.0E7
2.0E7
1.0E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:5 F:2
100%
80
60
40
20
0
1.5E8
1.2E8
9.1E7
6.1E7
3.0E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:5 F:2
100%
80
60
40
20
0
2.3E7
1.9E7
1.4E7
9.4E6
4.7E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.8

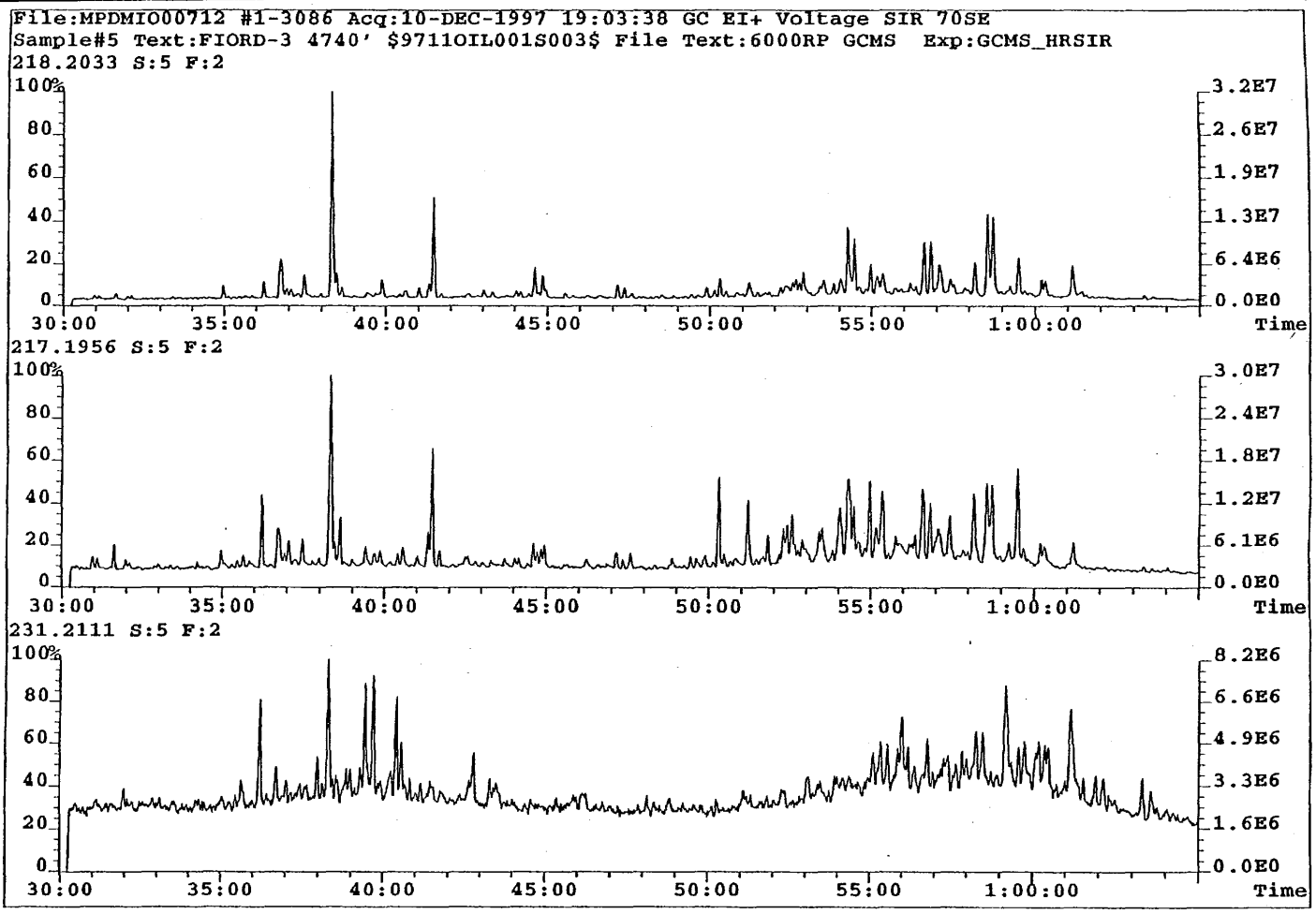

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 19:03:38 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3 4740' $9711OIL001S003$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:5 F:2
100%
80
60
40
20
0
3.2E7
2.6E7
1.9E7
1.3E7
6.4E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:5 F:2
100%
80
60
40
20
0
3.0E7
2.4E7
1.8E7
1.2E7
6.1E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:5 F:2
100%
80
60
40
20
0
8.2E6
6.6E6
4.9E6
3.3E6
1.6E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 3.9

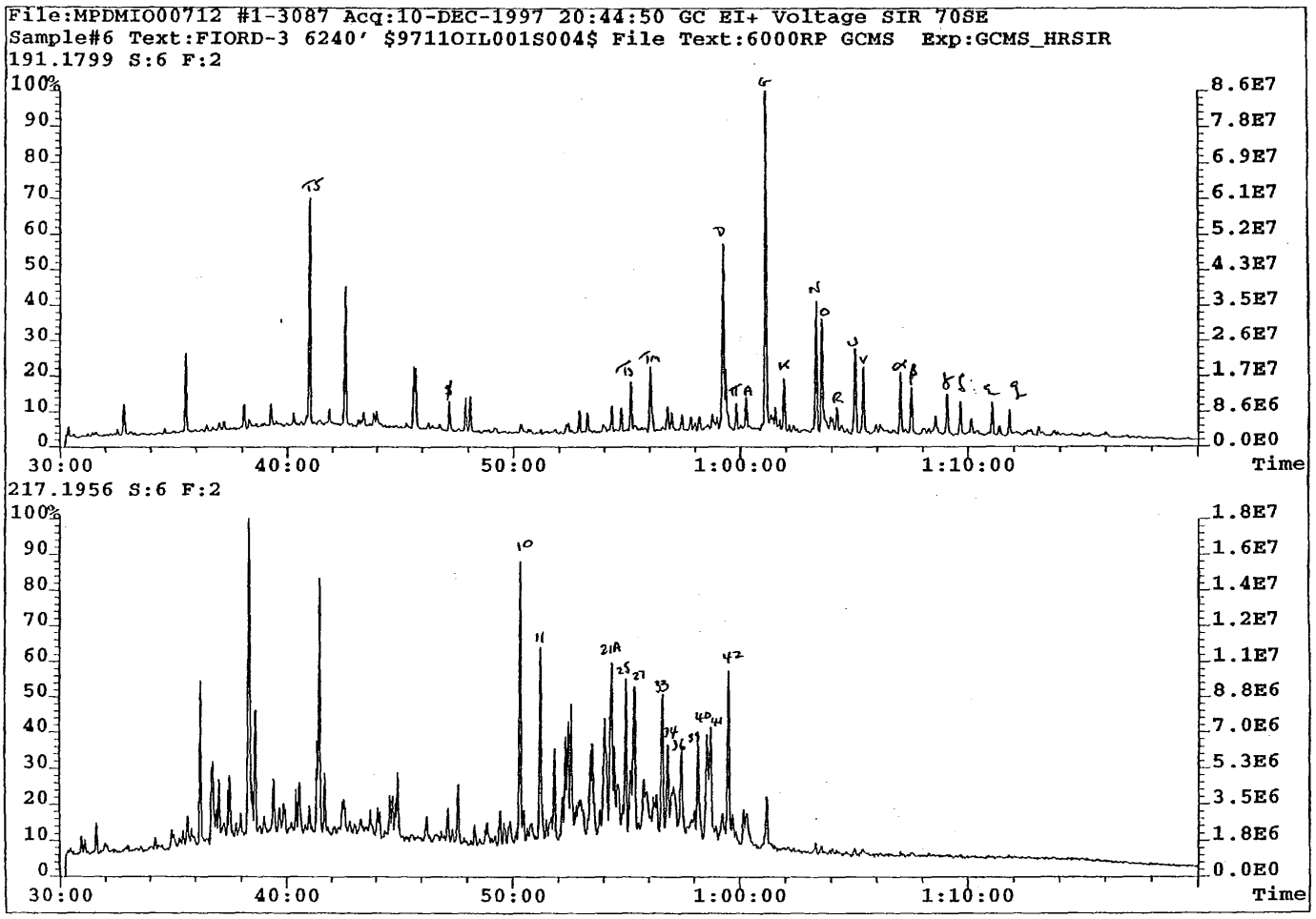

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 20:44:50 GC EI+ Voltage SIR 70SE
Sample#6 Text:FIORD-3 6240' $9711OIL001S004$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:6 F:2
100%
90
80
70
60
50
40
30
20
10
0
8.6E7
7.8E7
6.9E7
6.1E7
5.2E7
4.3E7
3.5E7
2.6E7
1.7E7
8.6E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
Time
217.1956 S:6 F:2
1.8E7
1.6E7
1.4E7
1.2E7
1.1E7
8.8E6
7.0E6
5.3E6
3.5E6
1.8E6
0.0E0

Figure 3.10

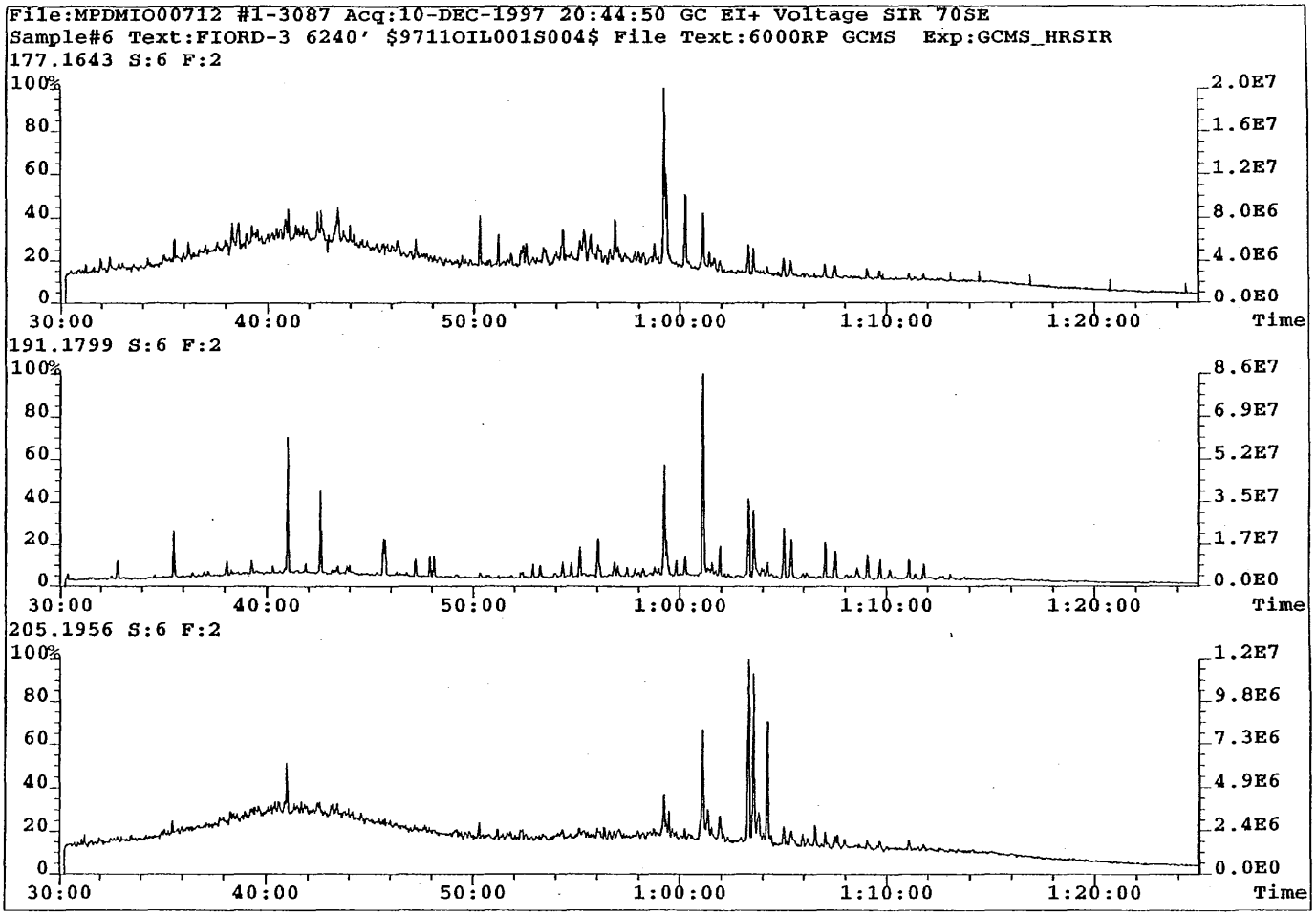

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 20:44:50 GC EI+ Voltage SIR 70SE
Sample#6 Text:FIORD-3 6240' $9711OIL001S004$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:6 F:2
100%
80
60
40
20
0
2.0E7
1.6E7
1.2E7
8.0E6
4.0E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:6 F:2
100%
80
60
40
20
0
8.6E7
6.9E7
5.2E7
3.5E7
1.7E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:6 F:2
100%
80
60
40
20
0
1.2E7
9.8E6
7.3E6
4.9E6
2.4E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.11

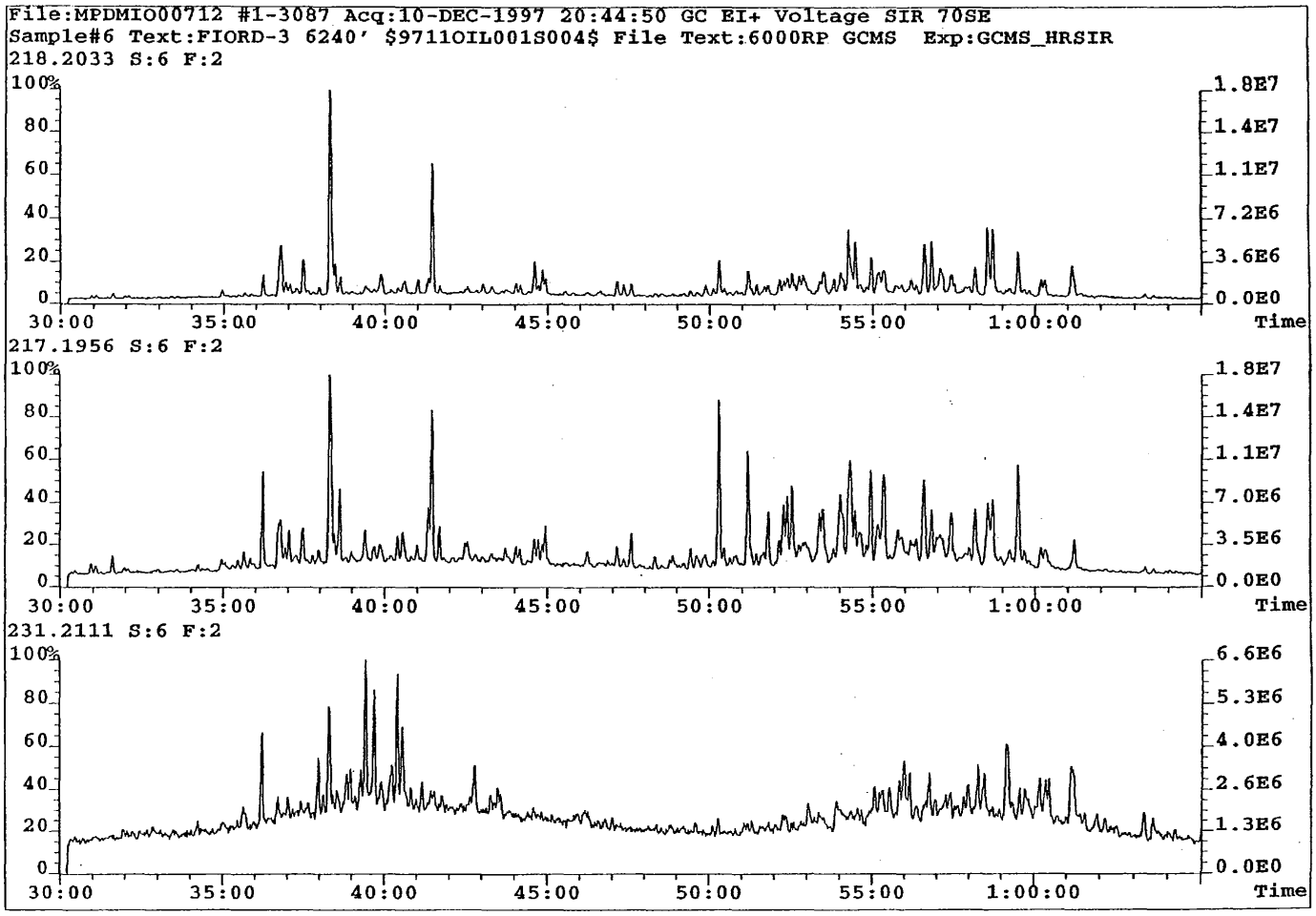

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 20:44:50 GC EI+ Voltage SIR 70SE
Sample#6 Text:FIORD-3 6240' $9711OIL001S004$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:6 F:2
100%
80
60
40
20
0
1.8E7
1.4E7
1.1E7
7.2E6
3.6E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:6 F:2
100%
80
60
40
20
0
1.8E7
1.4E7
1.1E7
7.0E6
3.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:6 F:2
100%
80
60
40
20
0
6.6E6
5.3E6
4.0E6
2.6E6
1.3E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 3.12

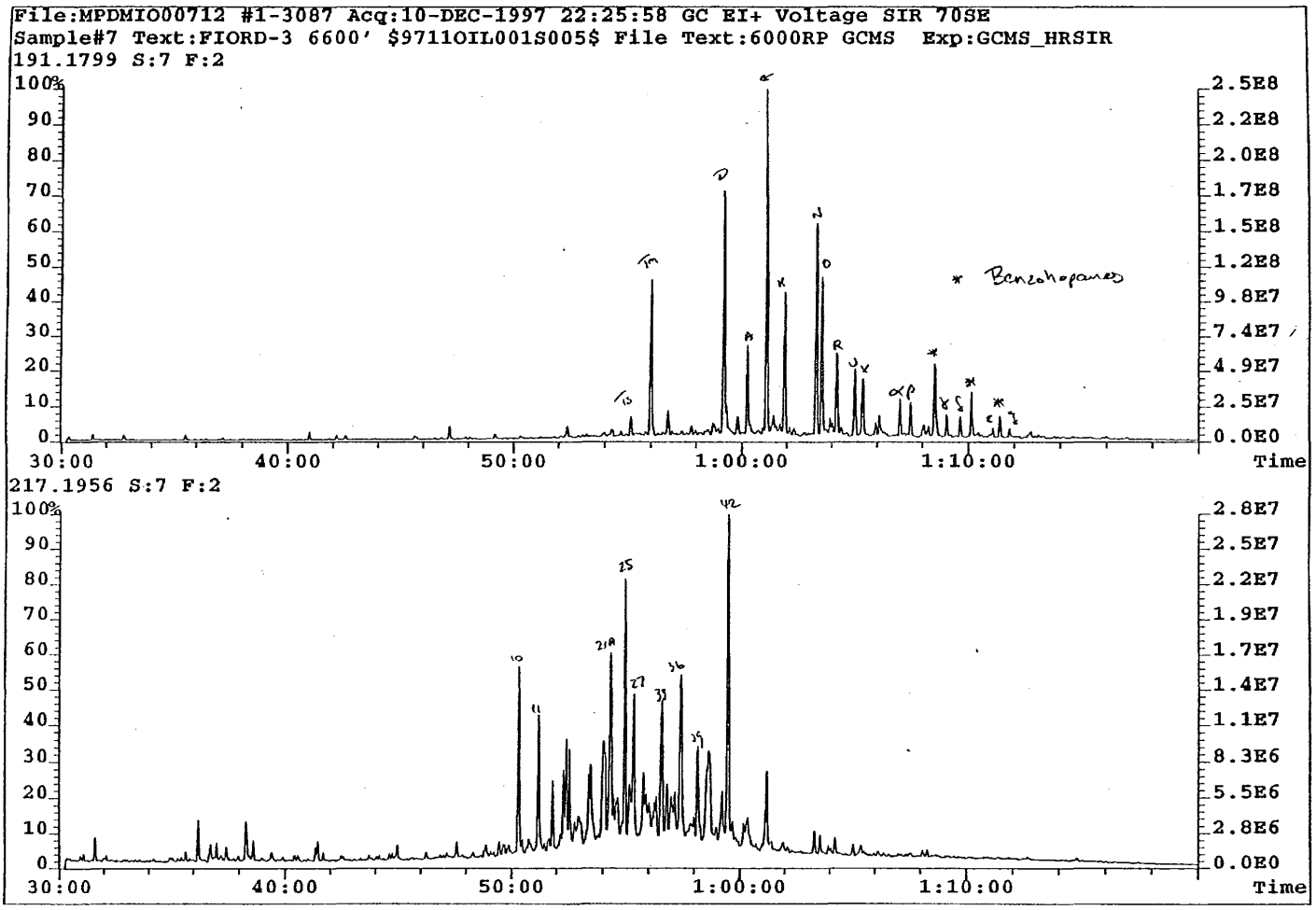

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 22:25:58 GC EI+ Voltage SIR 70SE
Sample#7 Text:FIORD-3 6600' $9711OIL001S005$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:7 F:2
* Benzohopanes
Time
217.1956 S:7 F:2
Time

Figure 3.13

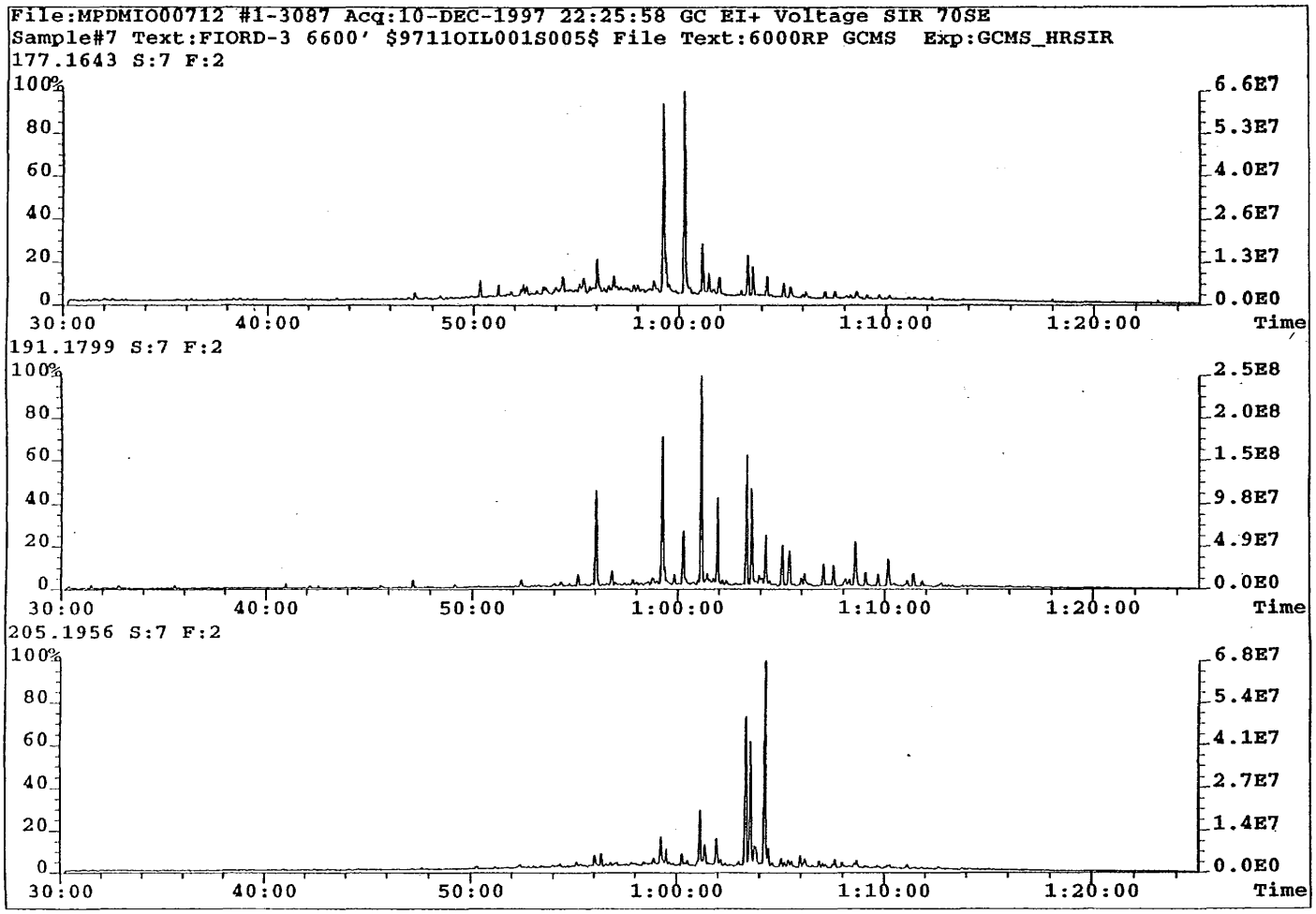

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 22:25:58 GC EI+ Voltage SIR 70SE
Sample#7 Text:FIORD-3 6600' $9711OIL001S005$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:7 F:2
100%
80
60
40
20
0
6.6E7
5.3E7
4.0E7
2.6E7
1.3E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:7 F:2
100%
80
60
40
20
0
2.5E8
2.0E8
1.5E8
9.8E7
4.9E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:7 F:2
100%
80
60
40
20
0
6.8E7
5.4E7
4.1E7
2.7E7
1.4E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.14

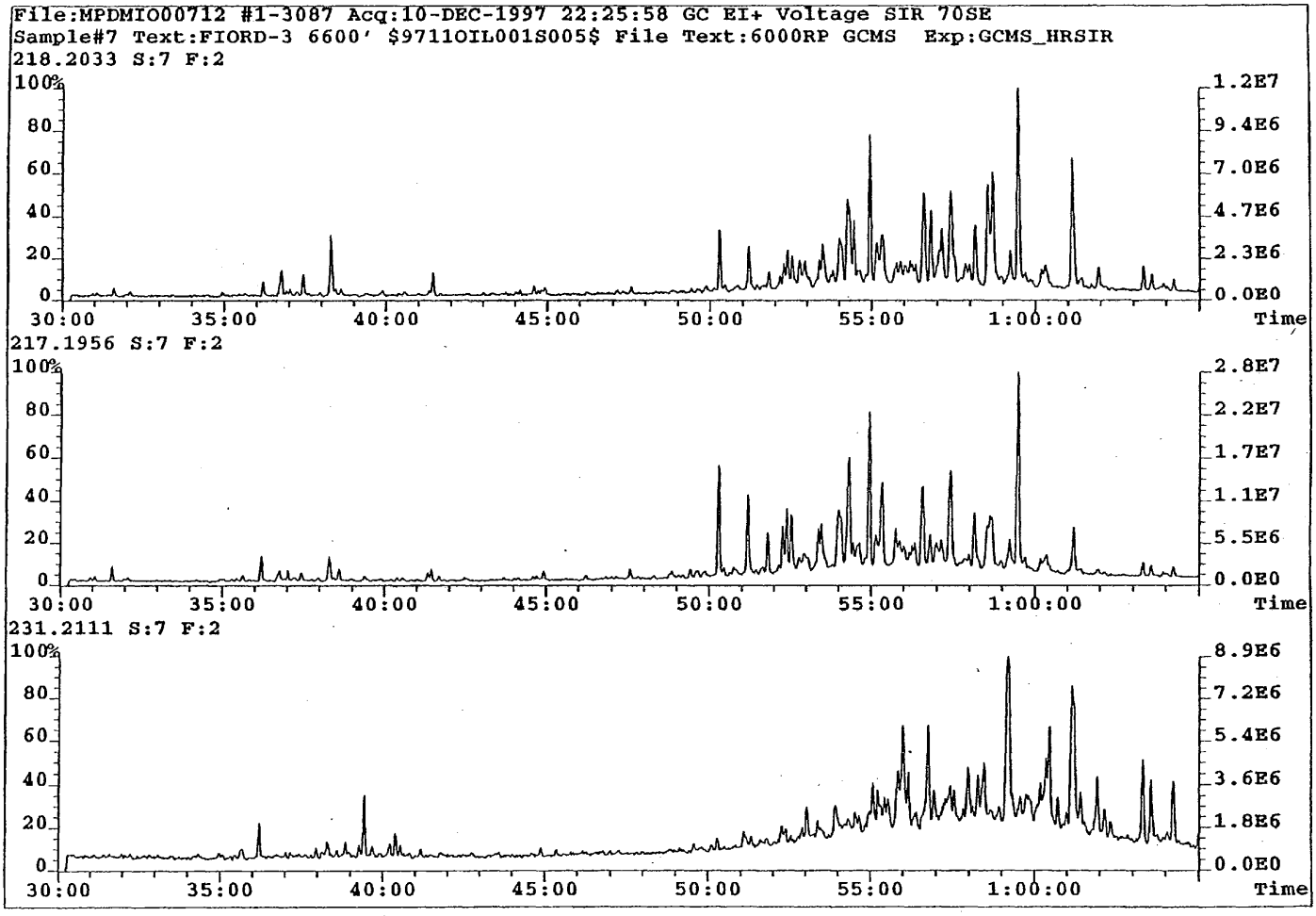

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 22:25:58 GC EI+ Voltage SIR 70SE
Sample#7 Text:FIORD-3 6600' $9711OIL001S005$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:7 F:2
100%
80
60
40
20
0
1.2E7
9.4E6
7.0E6
4.7E6
2.3E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:7 F:2
2.8E7
2.2E7
1.7E7
1.1E7
5.5E6
0.0E0
231.2111 S:7 F:2
8.9E6
7.2E6
5.4E6
3.6E6
1.8E6
0.0E0

Figure 3.15

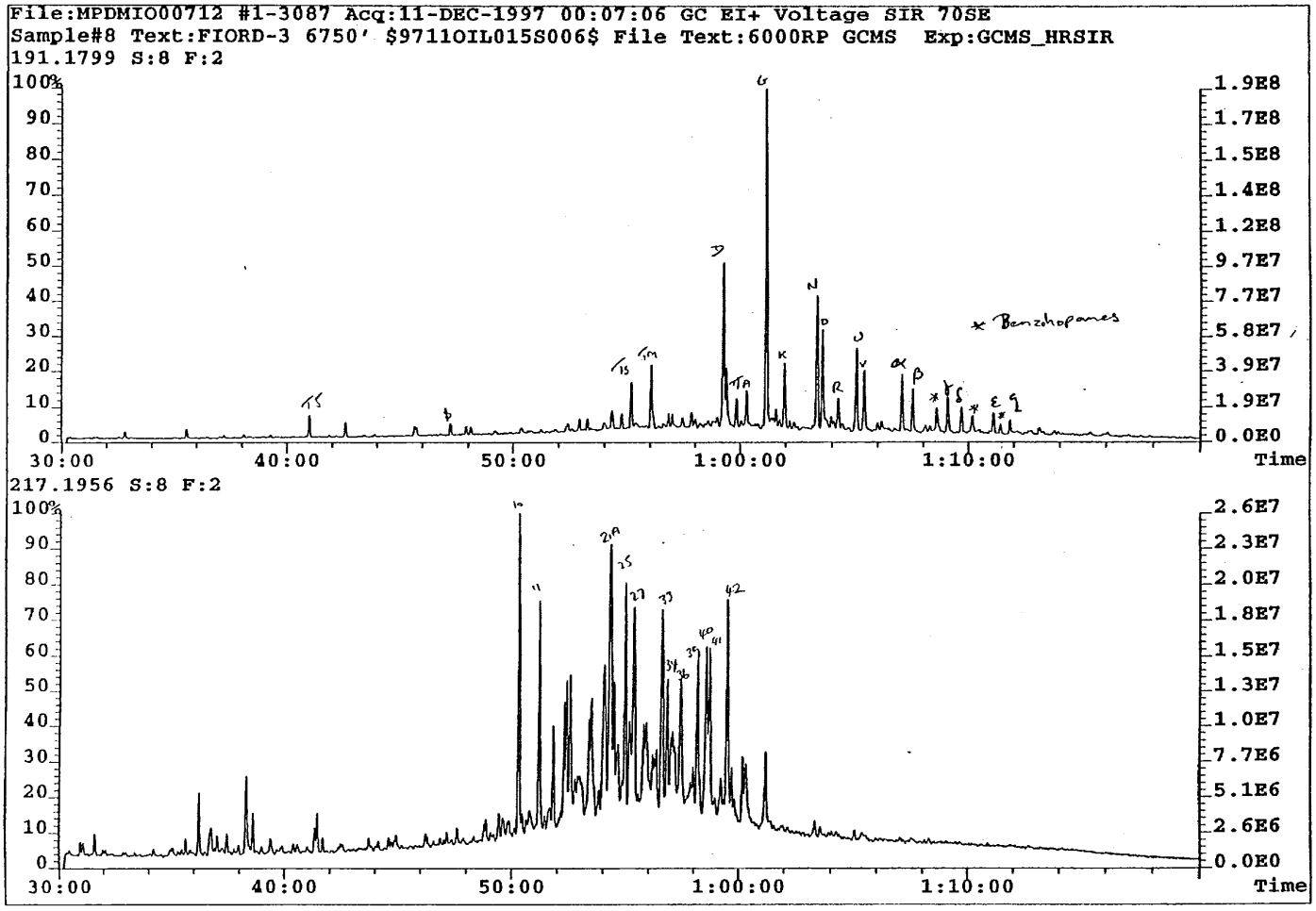

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 00:07:06 GC EI+ Voltage SIR 70SE
Sample#8 Text:FIORD-3 6750' $9711OIL015S006$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:8 F:2
100%
1.9E8
1.7E8
1.5E8
1.4E8
1.2E8
9.7E7
7.7E7
5.8E7
3.9E7
1.9E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
Time
* Benzohopanes
217.1956 S:8 F:2
100%
2.6E7
2.3E7
2.0E7
1.8E7
1.5E7
1.3E7
1.0E7
7.7E6
5.1E6
2.6E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
Time

Figure 3.16

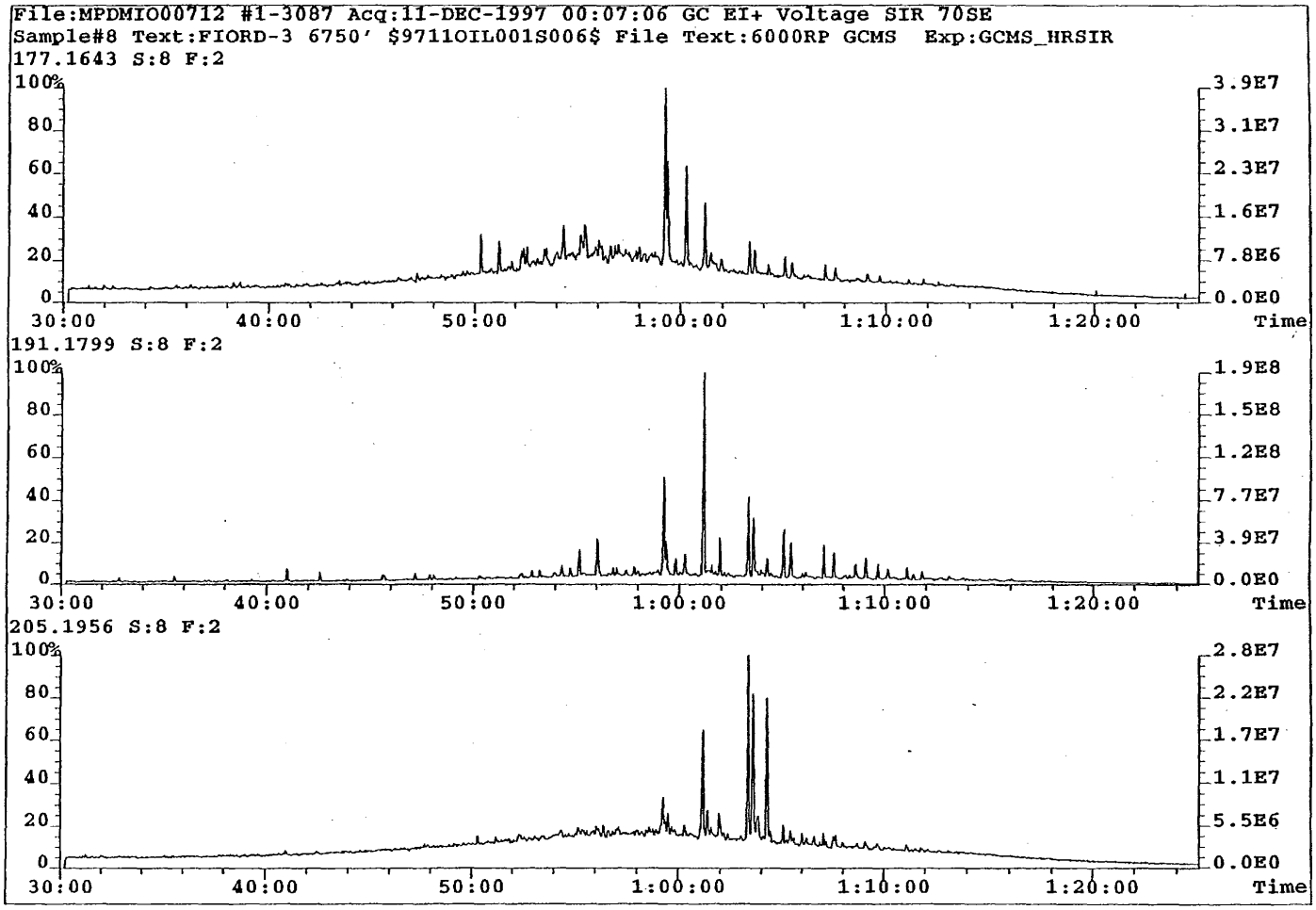

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 00:07:06 GC EI+ Voltage SIR 70SE
Sample#8 Text:FIORD-3 6750' $9711OIL001S006$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:8 F:2
100%
80
60
40
20
0
3.9E7
3.1E7
2.3E7
1.6E7
7.8E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:8 F:2
100%
80
60
40
20
0
1.9E8
1.5E8
1.2E8
7.7E7
3.9E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:8 F:2
100%
80
60
40
20
0
2.8E7
2.2E7
1.7E7
1.1E7
5.5E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.17

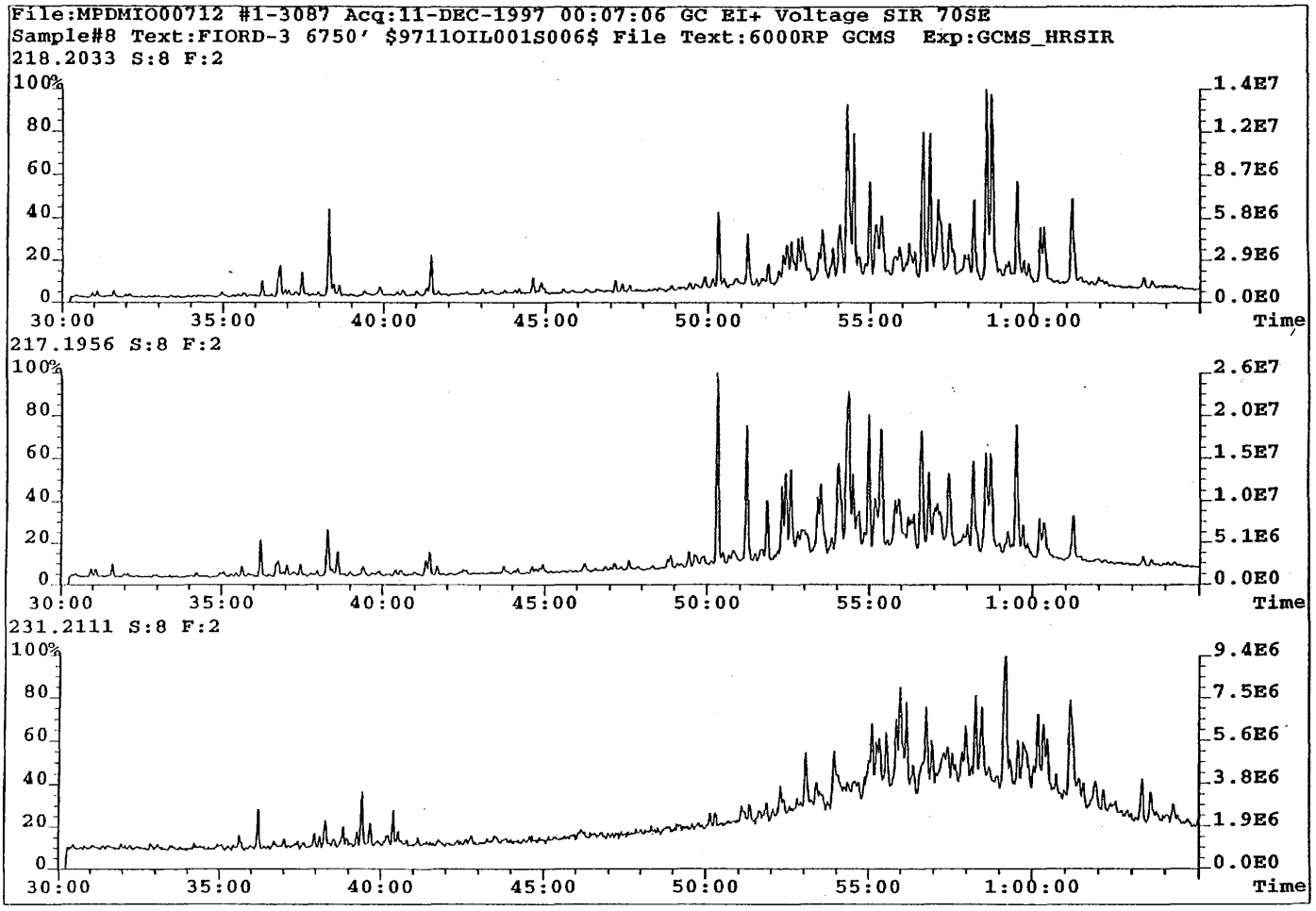

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 00:07:06 GC EI+ Voltage SIR 70SE
Sample#8 Text:FIORD-3 6750' $9711OIL001S006$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:8 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
1.4E7
1.2E7
8.7E6
5.8E6
2.9E6
0.0E0
217.1956 S:8 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
2.6E7
2.0E7
1.5E7
1.0E7
5.1E6
0.0E0
231.2111 S:8 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
9.4E6
7.5E6
5.6E6
3.8E6
1.9E6
0.0E0

Figure 3.18

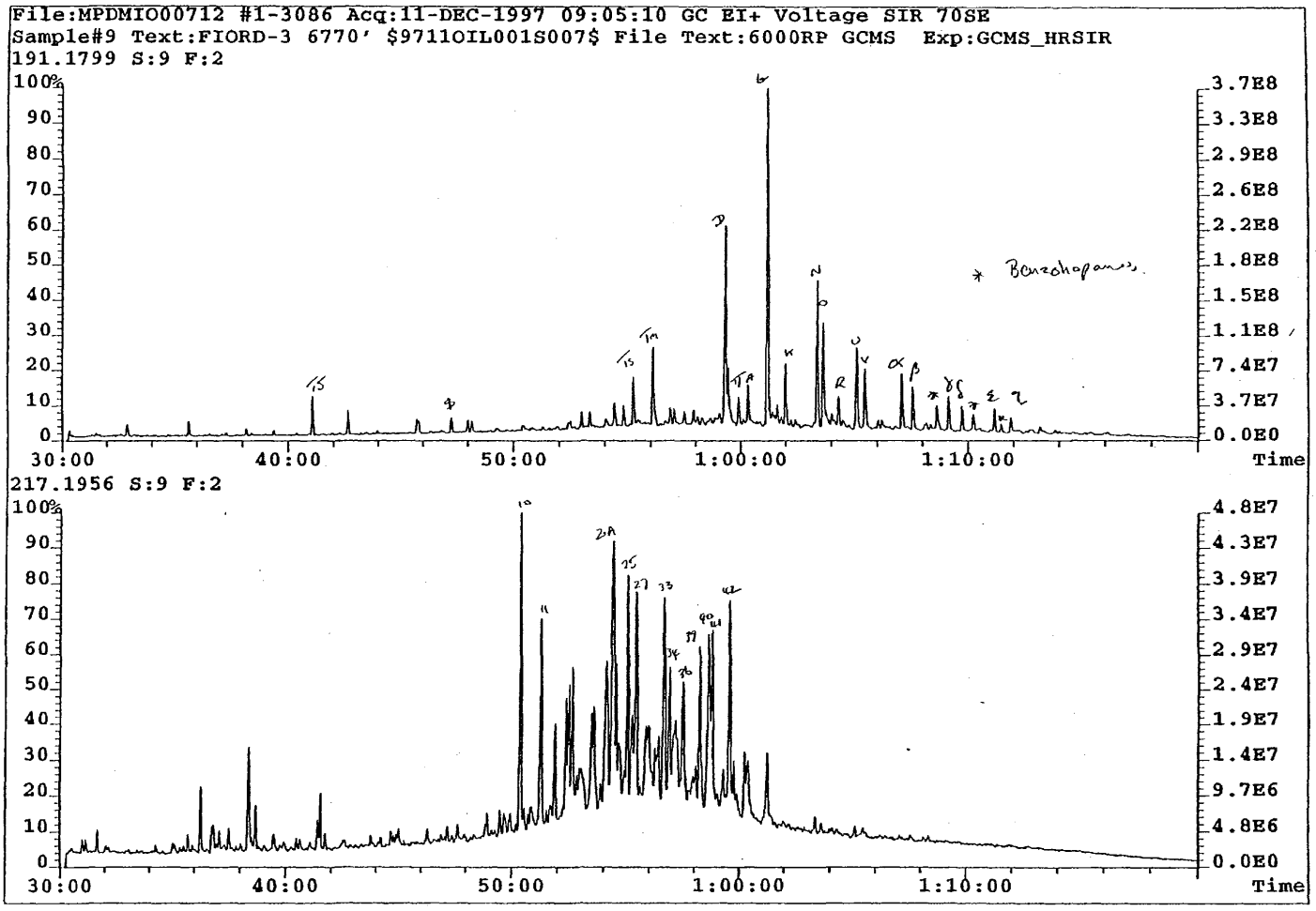

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 09:05:10 GC EI+ Voltage SIR 70SE
Sample#9 Text:FIORD-3 6770' $9711OIL001S007$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:9 F:2
* Benzohopanes
217.1956 S:9 F:2
Time

Figure 3.19

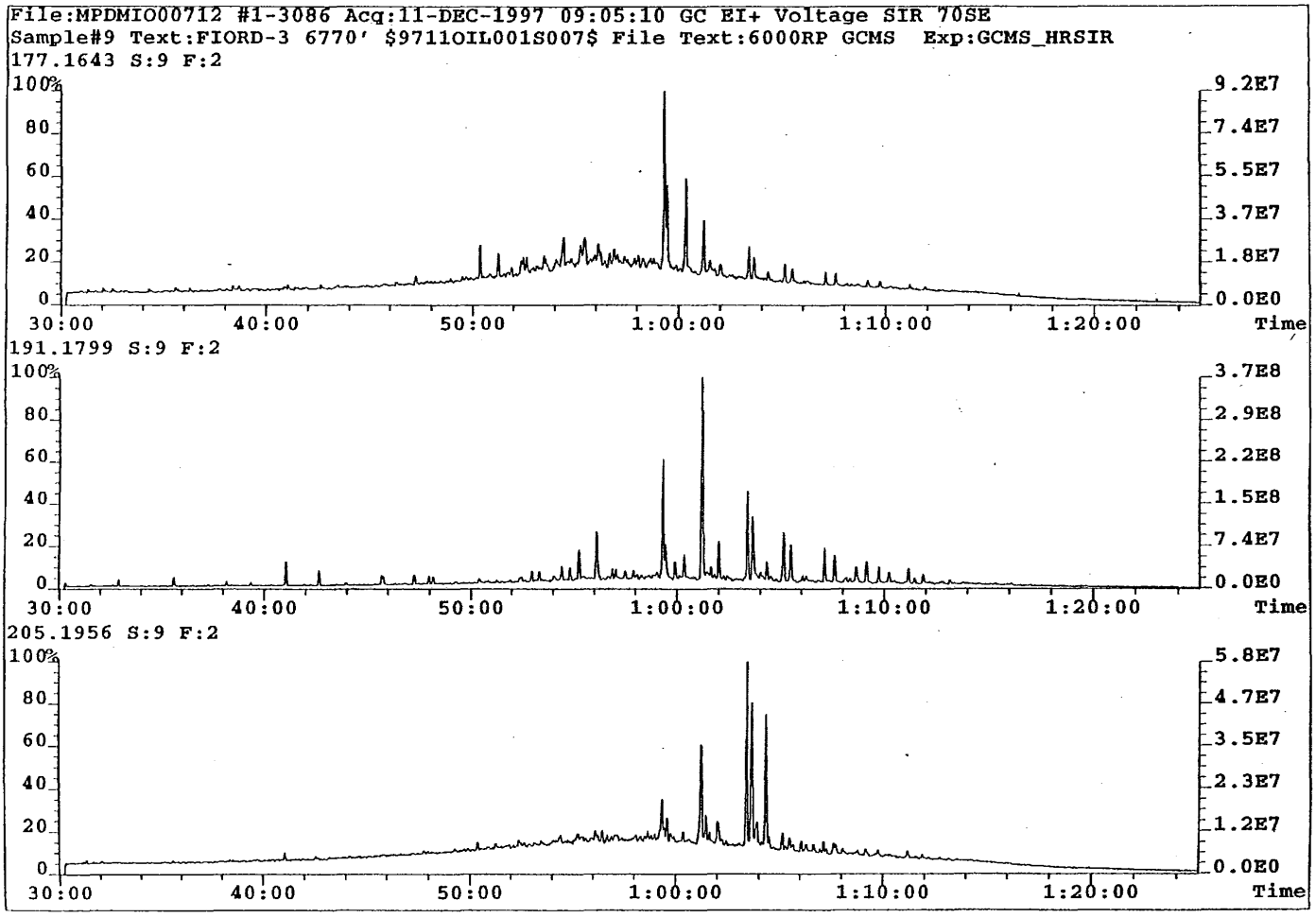

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 09:05:10 GC EI+ Voltage SIR 70SE
Sample#9 Text:FIORD-3 6770' $9711OIL001S007$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:9 F:2
100%
80
60
40
20
0
9.2E7
7.4E7
5.5E7
3.7E7
1.8E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:9 F:2
100%
80
60
40
20
0
3.7E8
2.9E8
2.2E8
1.5E8
7.4E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:9 F:2
100%
80
60
40
20
0
5.8E7
4.7E7
3.5E7
2.3E7
1.2E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.20

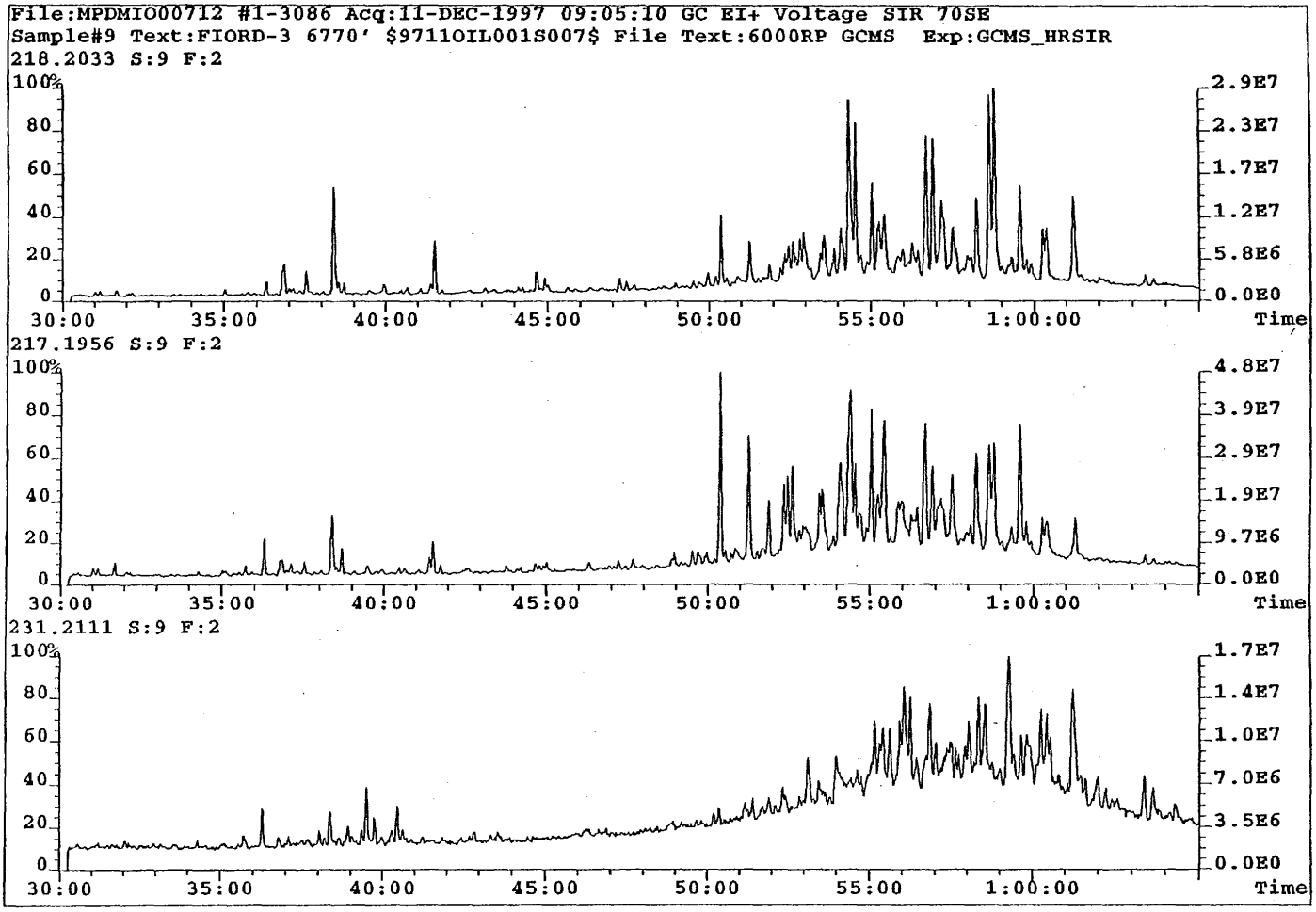

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 09:05:10 GC EI+ Voltage SIR 70SE
Sample#9 Text:FIORD-3 6770' $9711OIL001S007$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:9 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
2.9E7
2.3E7
1.7E7
1.2E7
5.8E6
0.0E0
217.1956 S:9 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
4.8E7
3.9E7
2.9E7
1.9E7
9.7E6
0.0E0
231.2111 S:9 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
1.7E7
1.4E7
1.0E7
7.0E6
3.5E6
0.0E0

Figure 3.21

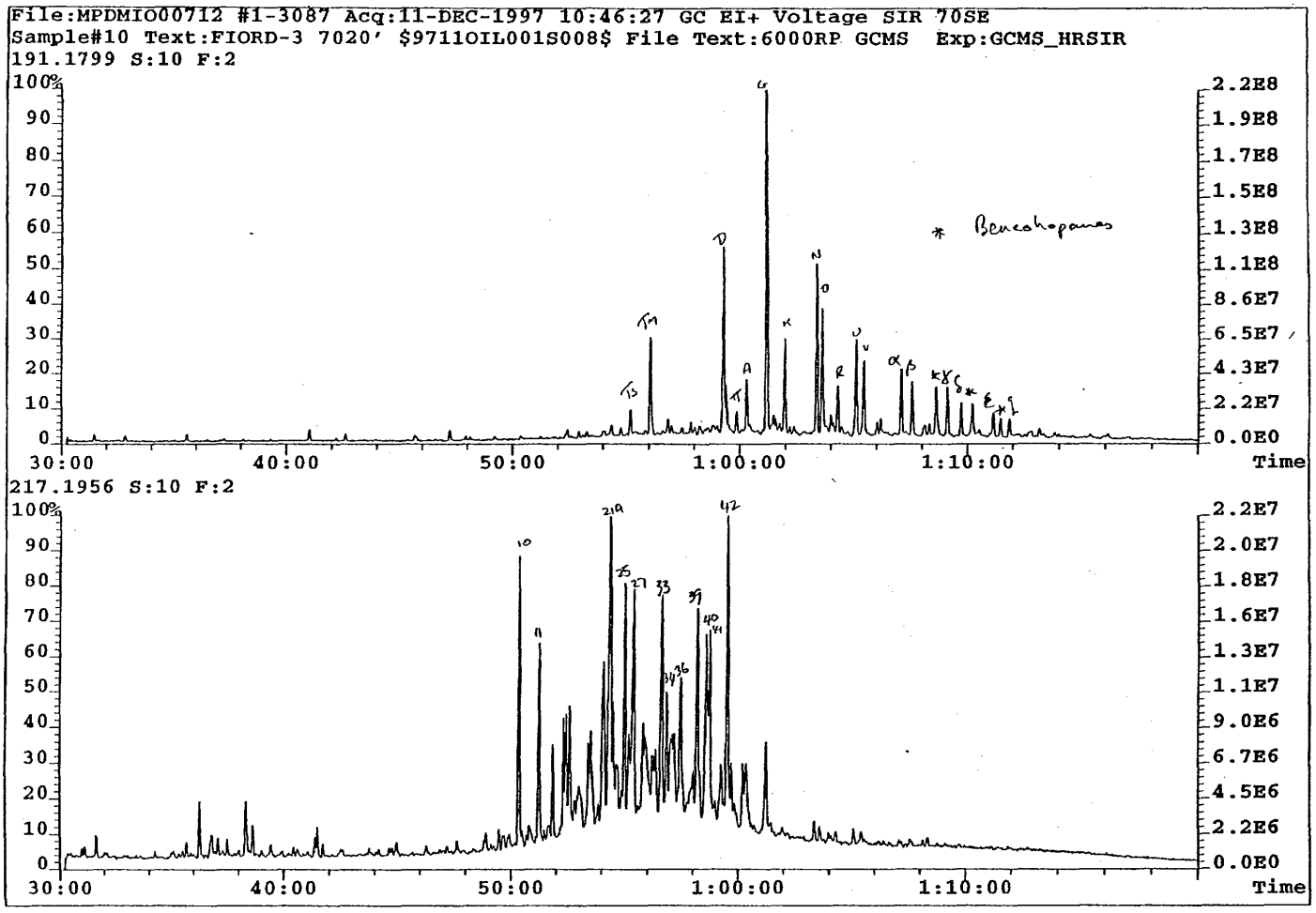

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 10:46:27 GC EI+ Voltage SIR 70SE
Sample#10 Text:FIORD-3 7020' $9711OIL001S008$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:10 F:2
* Benzohopanes
Time
217.1956 S:10 F:2
Time

Figure 3.22

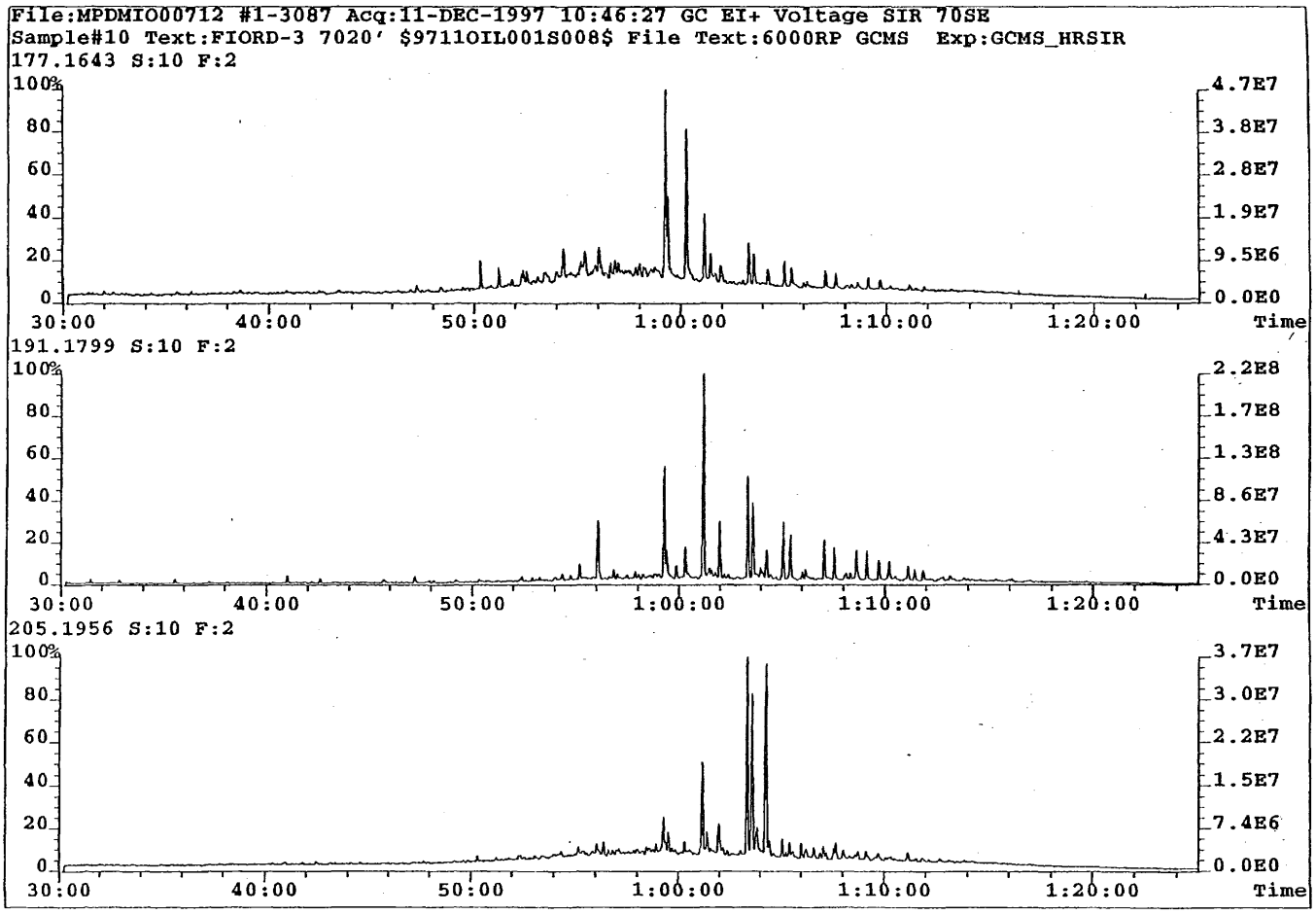

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 10:46:27 GC EI+ Voltage SIR 70SE
Sample#10 Text:FIORD-3 7020' $9711OIL001S008$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:10 F:2
100%
80
60
40
20
0
4.7E7
3.8E7
2.8E7
1.9E7
9.5E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:10 F:2
100%
80
60
40
20
0
2.2E8
1.7E8
1.3E8
8.6E7
4.3E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:10 F:2
100%
80
60
40
20
0
3.7E7
3.0E7
2.2E7
1.5E7
7.4E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 3.23

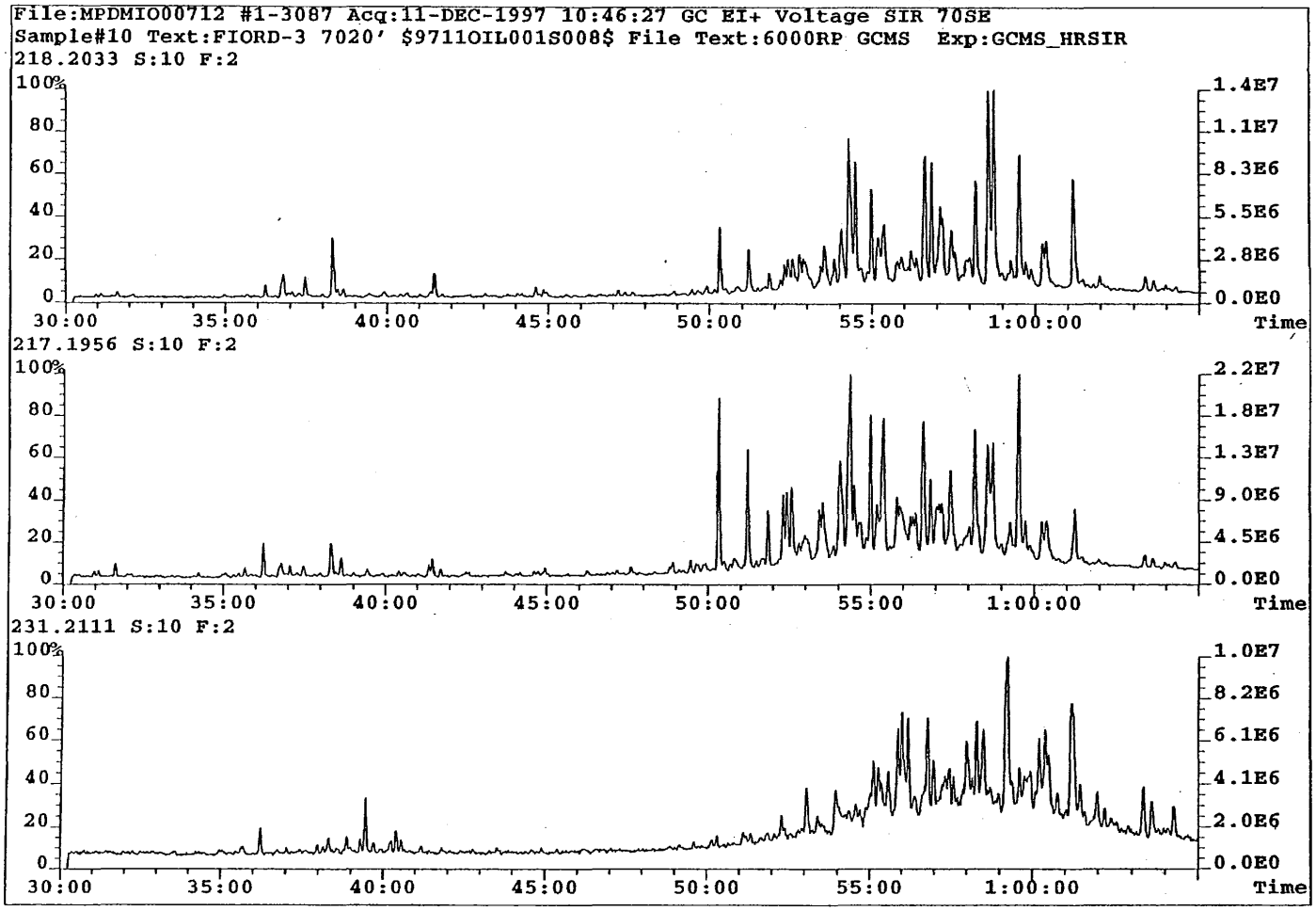

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 10:46:27 GC EI+ Voltage SIR 70SE
Sample#10 Text:FIORD-3 7020' $9711OIL001S008$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:10 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
1.4E7
1.1E7
8.3E6
5.5E6
2.8E6
0.0E0
217.1956 S:10 F:2
2.2E7
1.8E7
1.3E7
9.0E6
4.5E6
0.0E0
231.2111 S:10 F:2
1.0E7
8.2E6
6.1E6
4.1E6
2.0E6
0.0E0

Figure 3.24

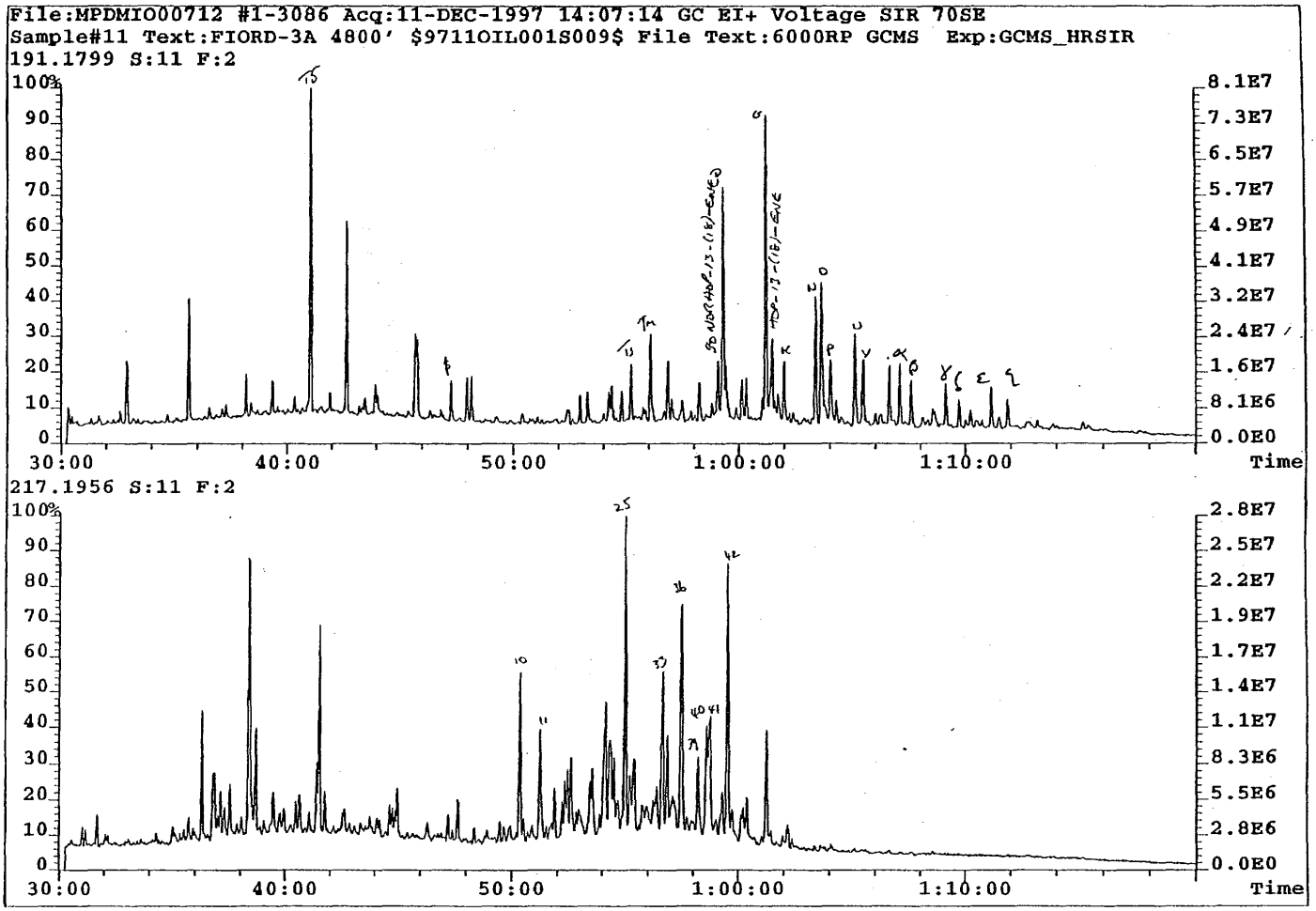

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 14:07:14 GC EI+ Voltage SIR 70SE
Sample#11 Text:FIORD-3A 4800' $9711OIL001S009$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:11 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
40:00
50:00
1:00:00
1:10:00
Time
8.1E7
7.3E7
6.5E7
5.7E7
4.9E7
4.1E7
3.2E7
2.4E7
1.6E7
8.1E6
0.0E0
217.1956 S:11 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
40:00
50:00
1:00:00
1:10:00
Time
2.8E7
2.5E7
2.2E7
1.9E7
1.7E7
1.4E7
1.1E7
8.3E6
5.5E6
2.8E6
0.0E0

Figure 4.1

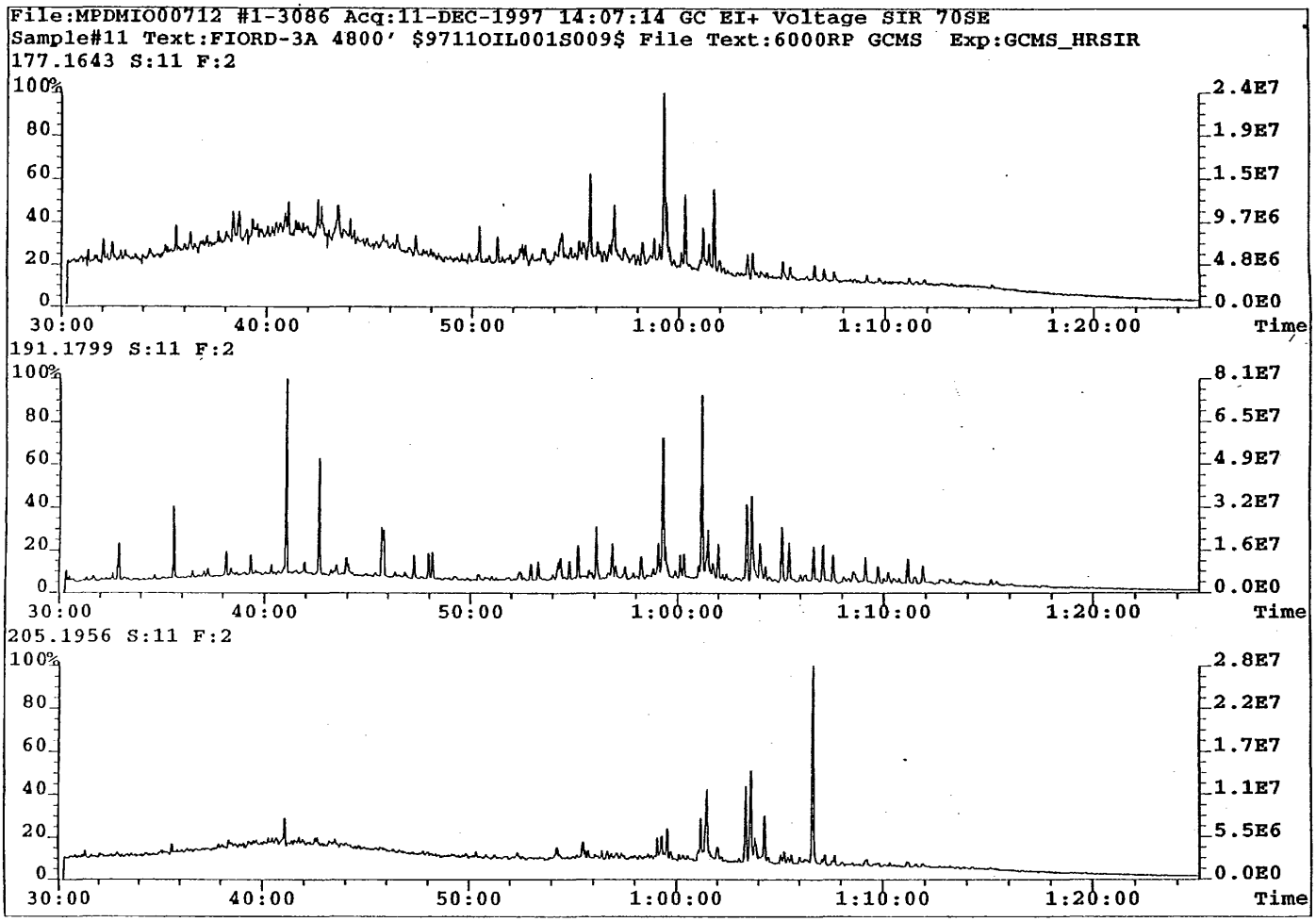

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 14:07:14 GC EI+ Voltage SIR 70SE
Sample#11 Text:FIORD-3A 4800' $9711OIL001S009$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:11 F:2
100%
80
60
40
20
0
2.4E7
1.9E7
1.5E7
9.7E6
4.8E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:11 F:2
100%
80
60
40
20
0
8.1E7
6.5E7
4.9E7
3.2E7
1.6E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:11 F:2
100%
80
60
40
20
0
2.8E7
2.2E7
1.7E7
1.1E7
5.5E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 4.2

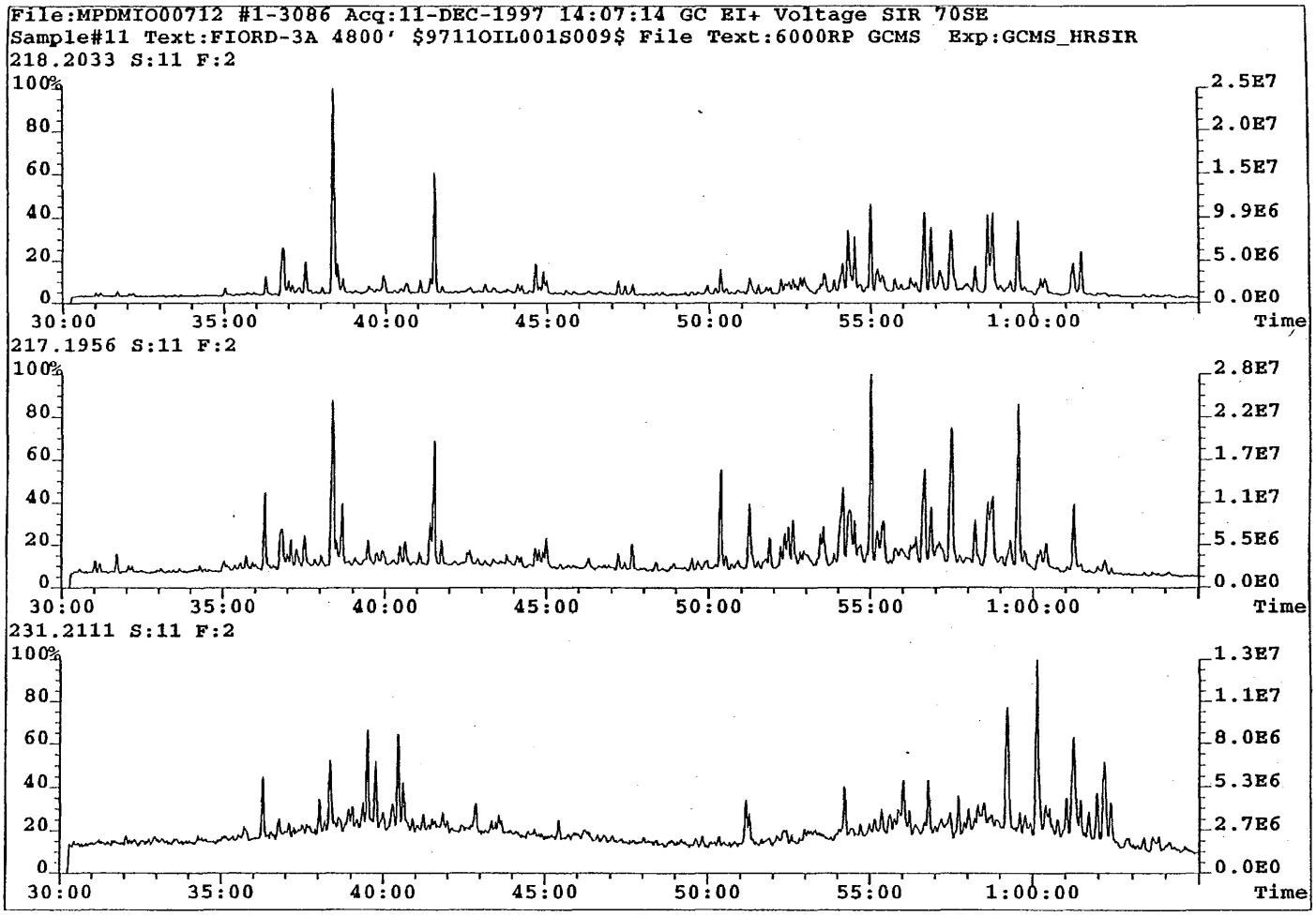

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 14:07:14 GC EI+ Voltage SIR 70SE
Sample#11 Text:FIORD-3A 4800' $9711OIL001S009$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:11 F:2
100%
80
60
40
20
0
2.5E7
2.0E7
1.5E7
9.9E6
5.0E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:11 F:2
100%
80
60
40
20
0
2.8E7
2.2E7
1.7E7
1.1E7
5.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:11 F:2
100%
80
60
40
20
0
1.3E7
1.1E7
8.0E6
5.3E6
2.7E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 4.3

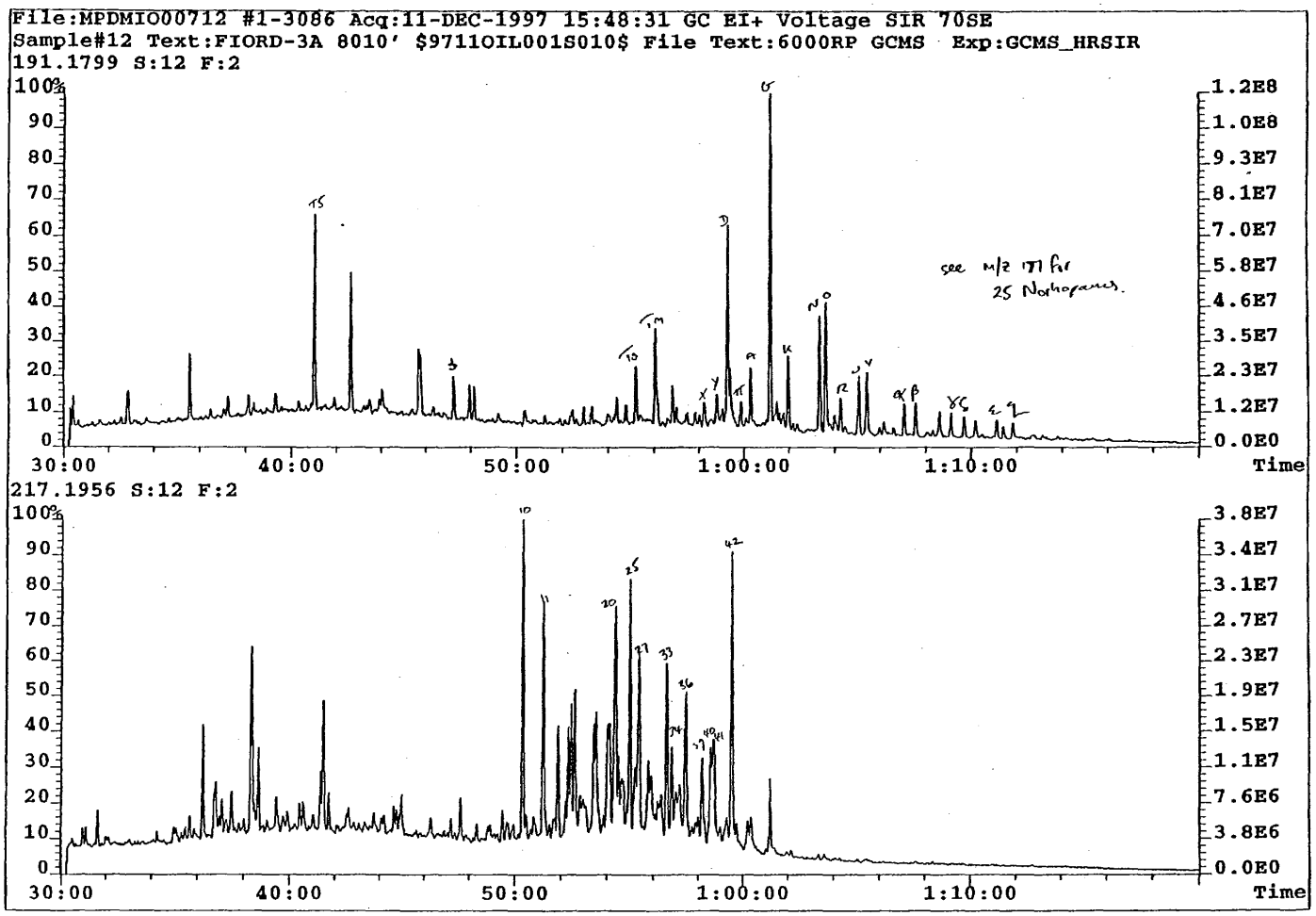

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 15:48:31 GC EI+ Voltage SIR 70SE
Sample#12 Text:FIORD-3A 8010' $9711OIL001S010$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:12 F:2
see m/z 171 for 25 Norhopanes.
Time
217.1956 S:12 F:2
Time

Figure 4.4

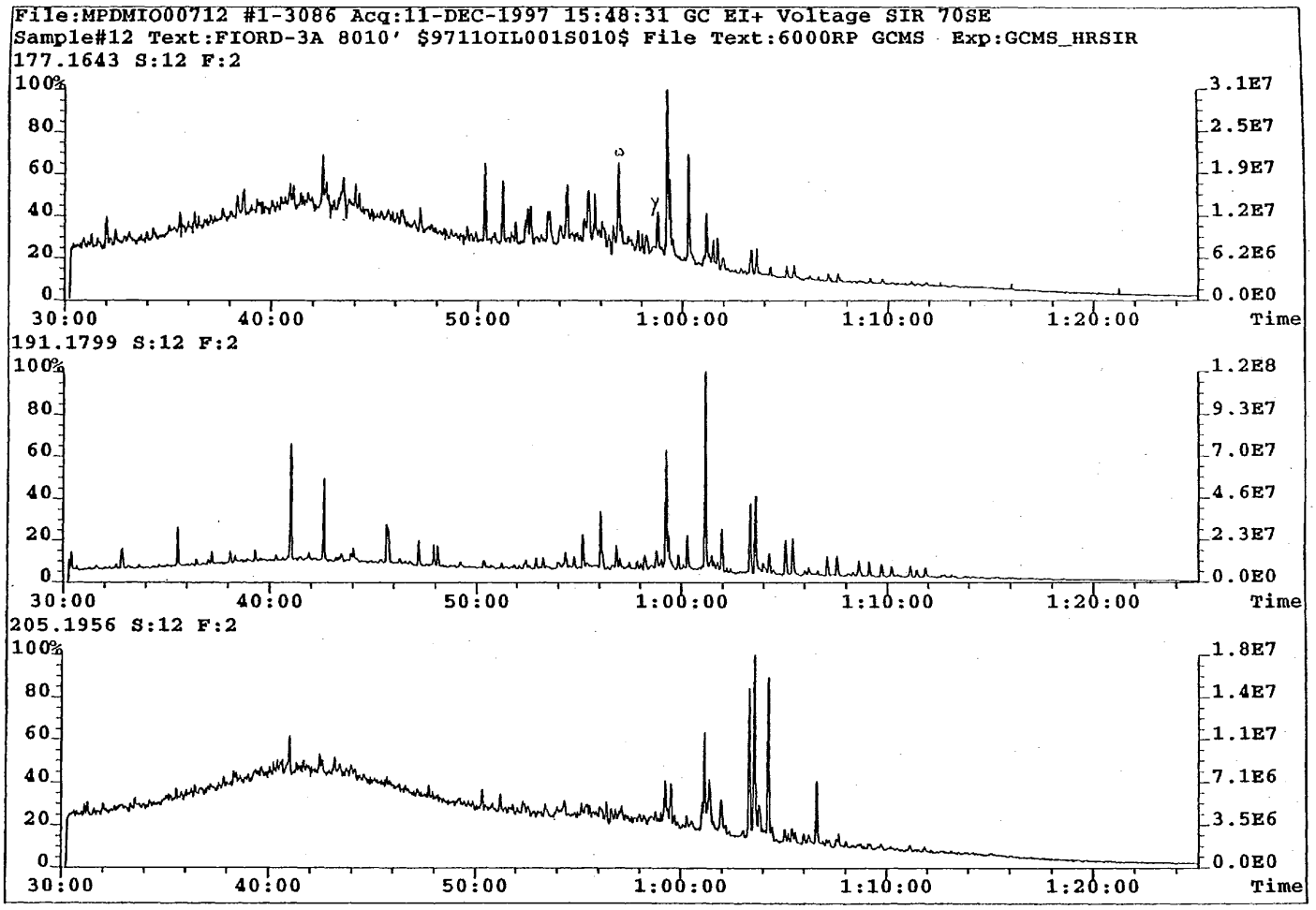

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 15:48:31 GC EI+ Voltage SIR 70SE
Sample#12 Text:FIORD-3A 8010' $9711OIL001S010$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:12 F:2
100%
80
60
40
20
0
3.1E7
2.5E7
1.9E7
1.2E7
6.2E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:12 F:2
1.2E8
9.3E7
7.0E7
4.6E7
2.3E7
0.0E0
205.1956 S:12 F:2
1.8E7
1.4E7
1.1E7
7.1E6
3.5E6
0.0E0

Figure 4.5

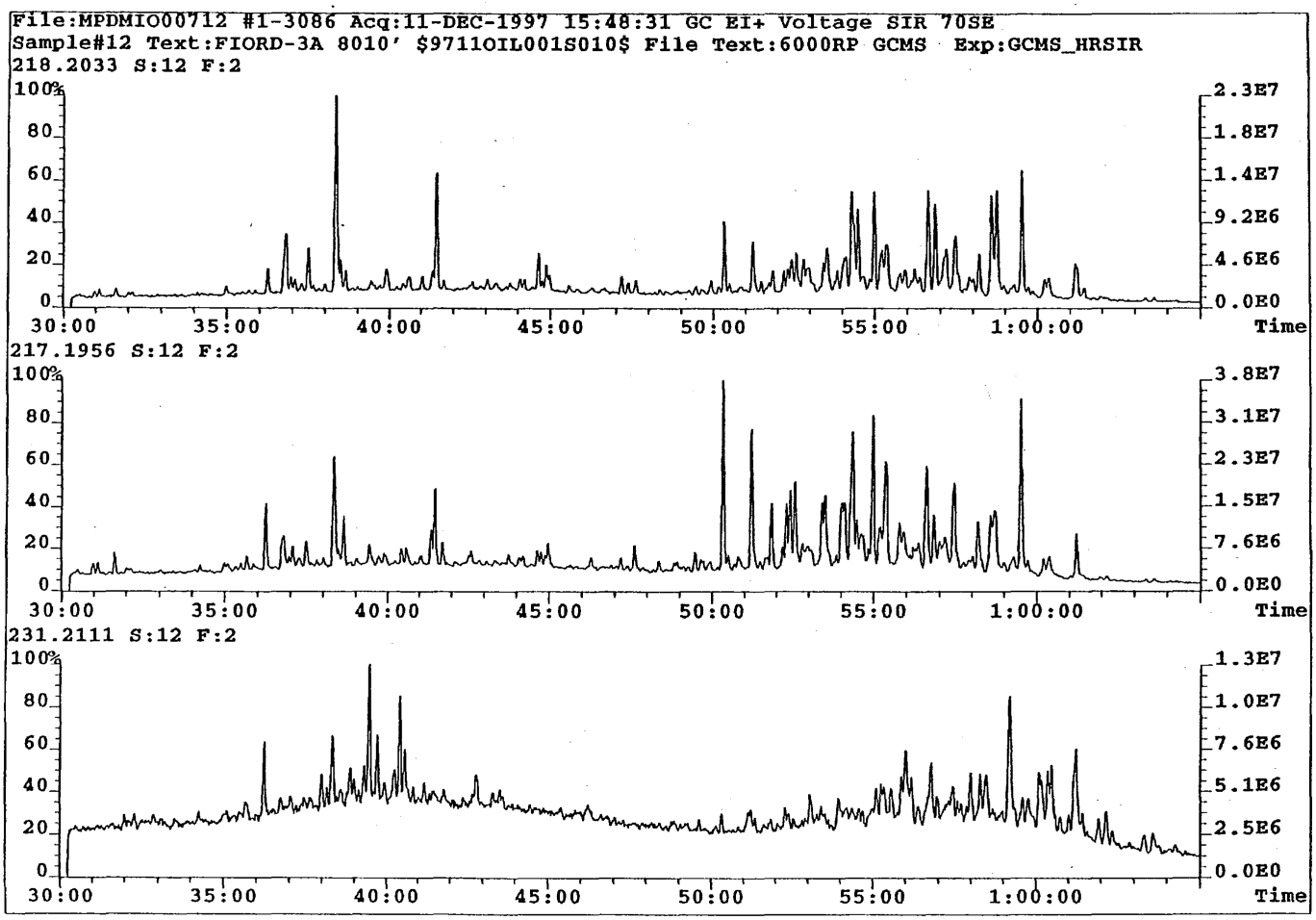

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 15:48:31 GC EI+ Voltage SIR 70SE
Sample#12 Text:FIORD-3A 8010' $9711OIL001S010$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:12 F:2
100%
80
60
40
20
0
2.3E7
1.8E7
1.4E7
9.2E6
4.6E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:12 F:2
100%
80
60
40
20
0
3.8E7
3.1E7
2.3E7
1.5E7
7.6E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:12 F:2
100%
80
60
40
20
0
1.3E7
1.0E7
7.6E6
5.1E6
2.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 4.6

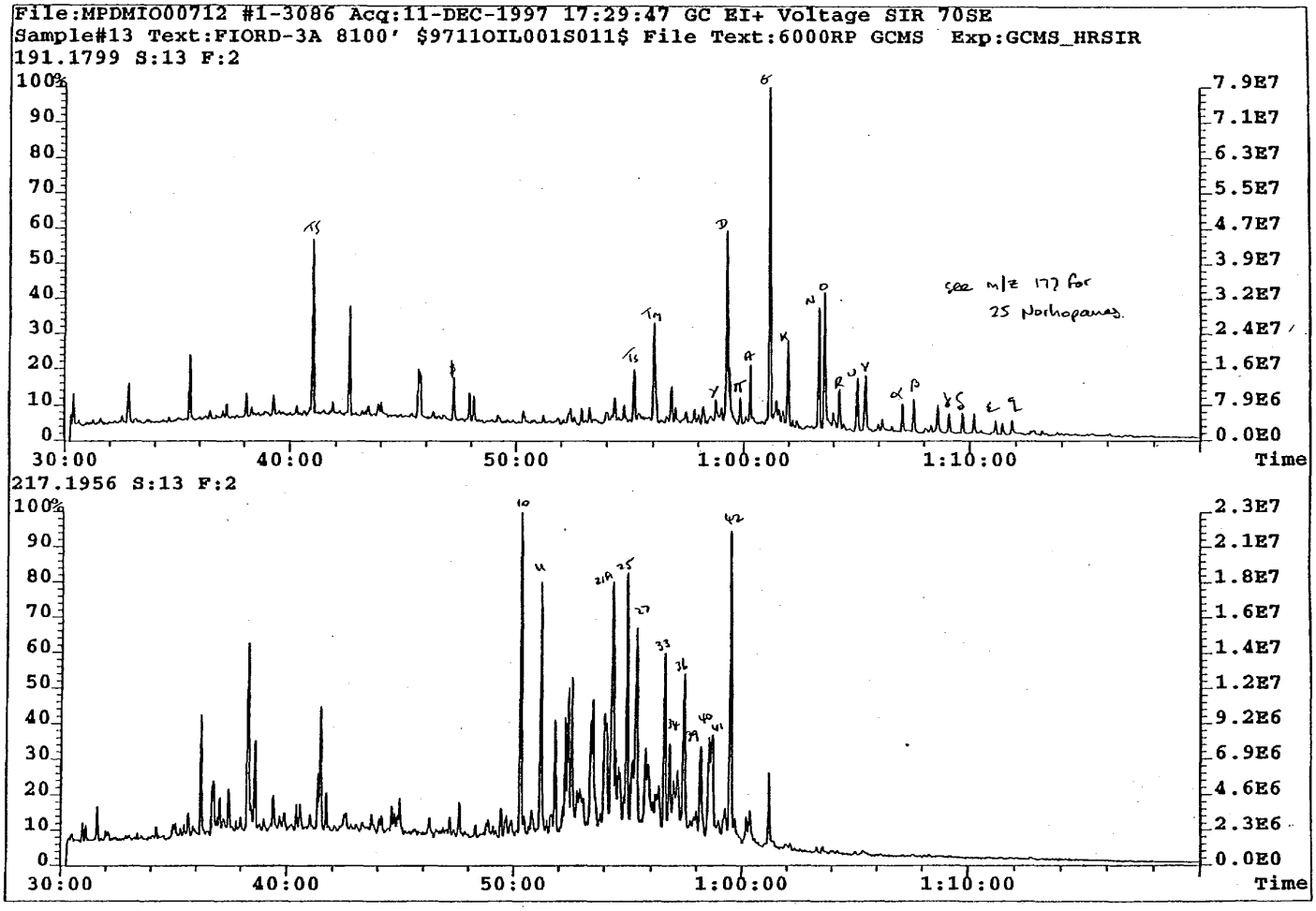

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 17:29:47 GC EI+ Voltage SIR 70SE
Sample#13 Text:FIORD-3A 8100' $9711OIL001S011$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:13 F:2
see m/z 177 for 25 Norhopanes.
217.1956 S:13 F:2
Time

Figure 4.7

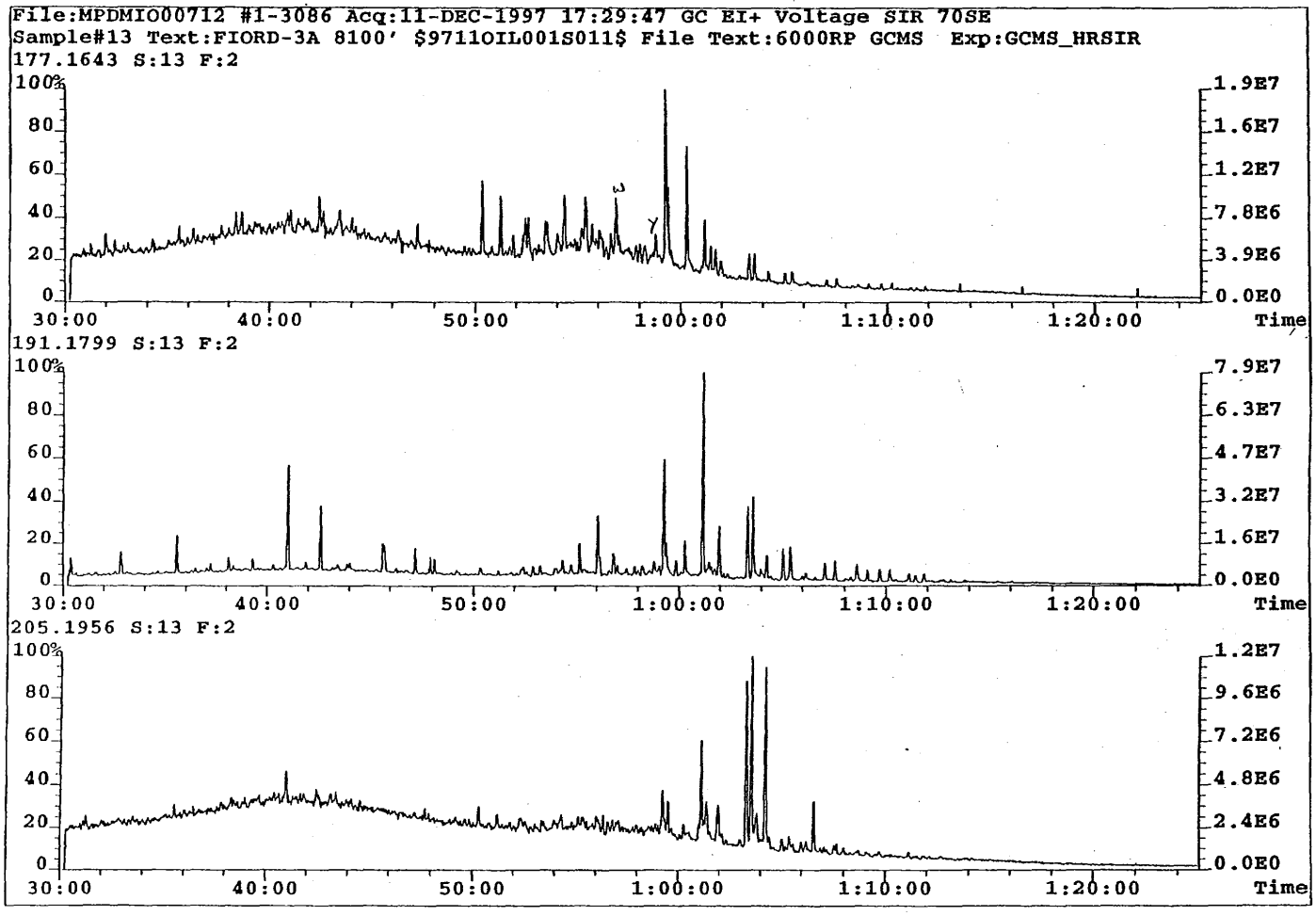

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 17:29:47 GC EI+ Voltage SIR 70SE
Sample#13 Text:FIORD-3A 8100' $9711OIL001S011$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:13 F:2
100%
80
60
40
20
0
1.9E7
1.6E7
1.2E7
7.8E6
3.9E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:13 F:2
7.9E7
6.3E7
4.7E7
3.2E7
1.6E7
0.0E0
205.1956 S:13 F:2
1.2E7
9.6E6
7.2E6
4.8E6
2.4E6
0.0E0

Figure 4.8

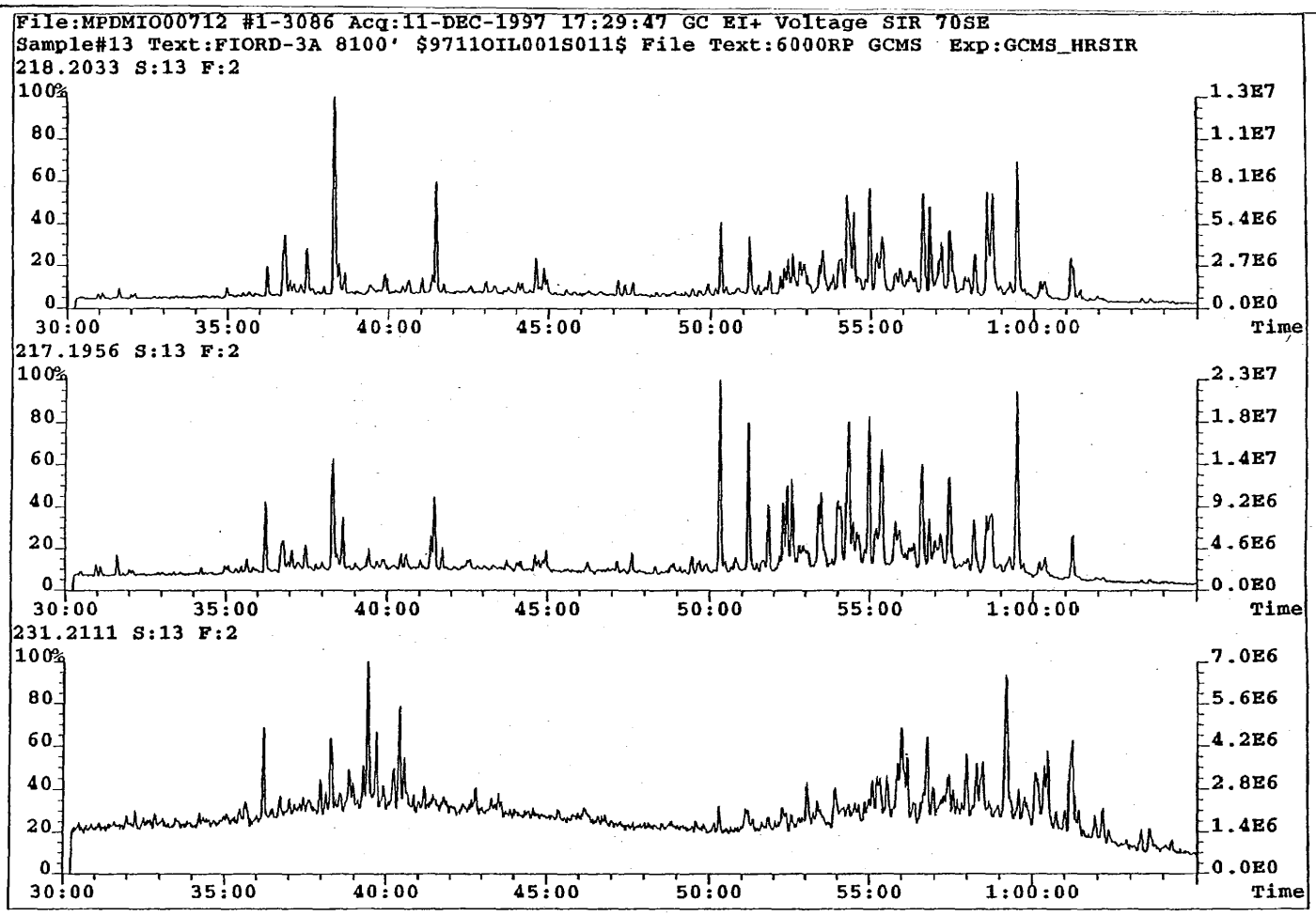

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 17:29:47 GC EI+ Voltage SIR 70SE
Sample#13 Text:FIORD-3A 8100' $9711OIL001S011$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:13 F:2
100%
80
60
40
20
0
1.3E7
1.1E7
8.1E6
5.4E6
2.7E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:13 F:2
100%
80
60
40
20
0
2.3E7
1.8E7
1.4E7
9.2E6
4.6E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:13 F:2
100%
80
60
40
20
0
7.0E6
5.6E6
4.2E6
2.8E6
1.4E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 4.9

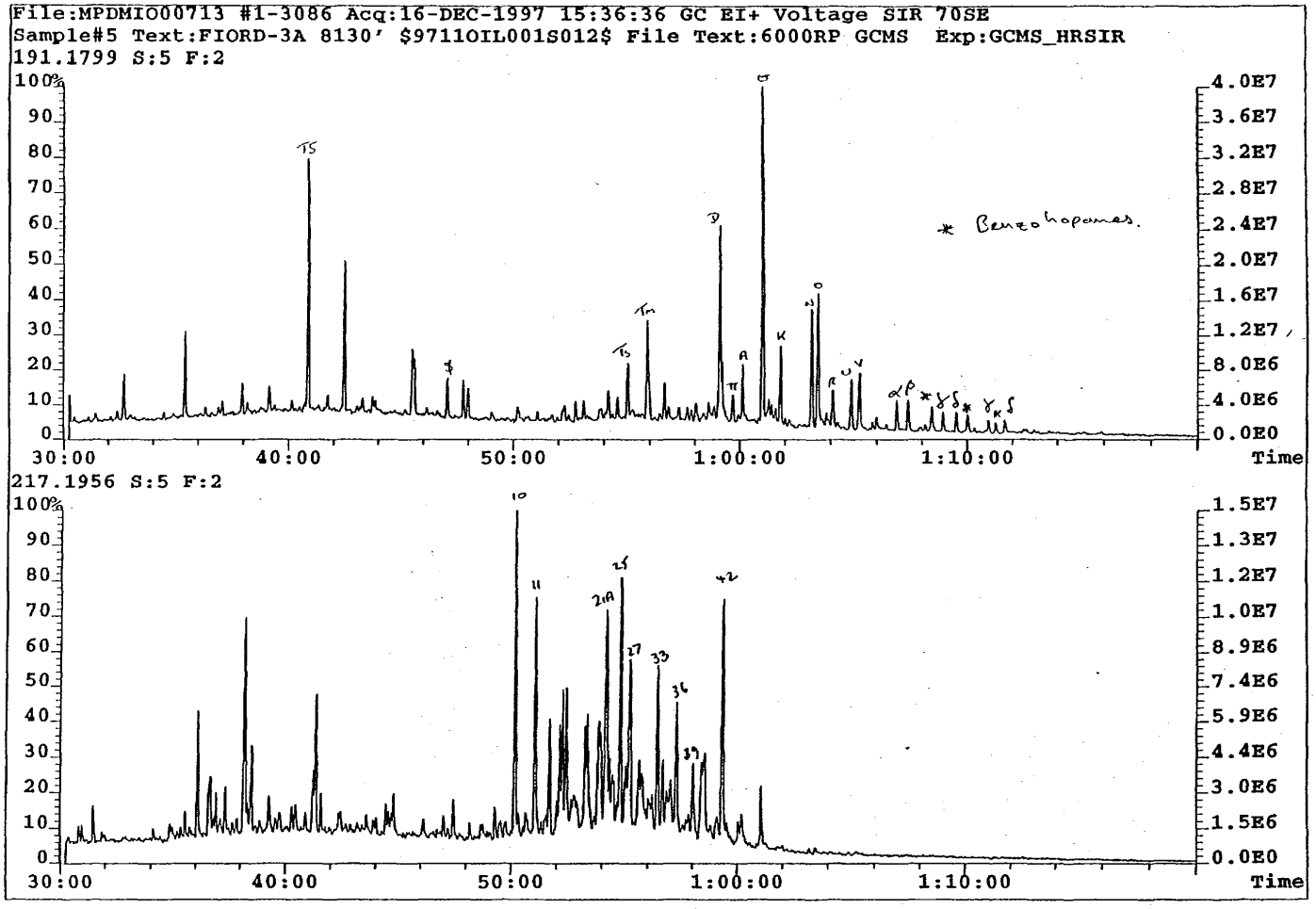

File:MPDMIO00713 #1-3086 Acq:16-DEC-1997 15:36:36 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3A 8130' $9711OIL001S012$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:5 F:2
* Benzohopanes.
217.1956 S:5 F:2
Time

Figure 4.10

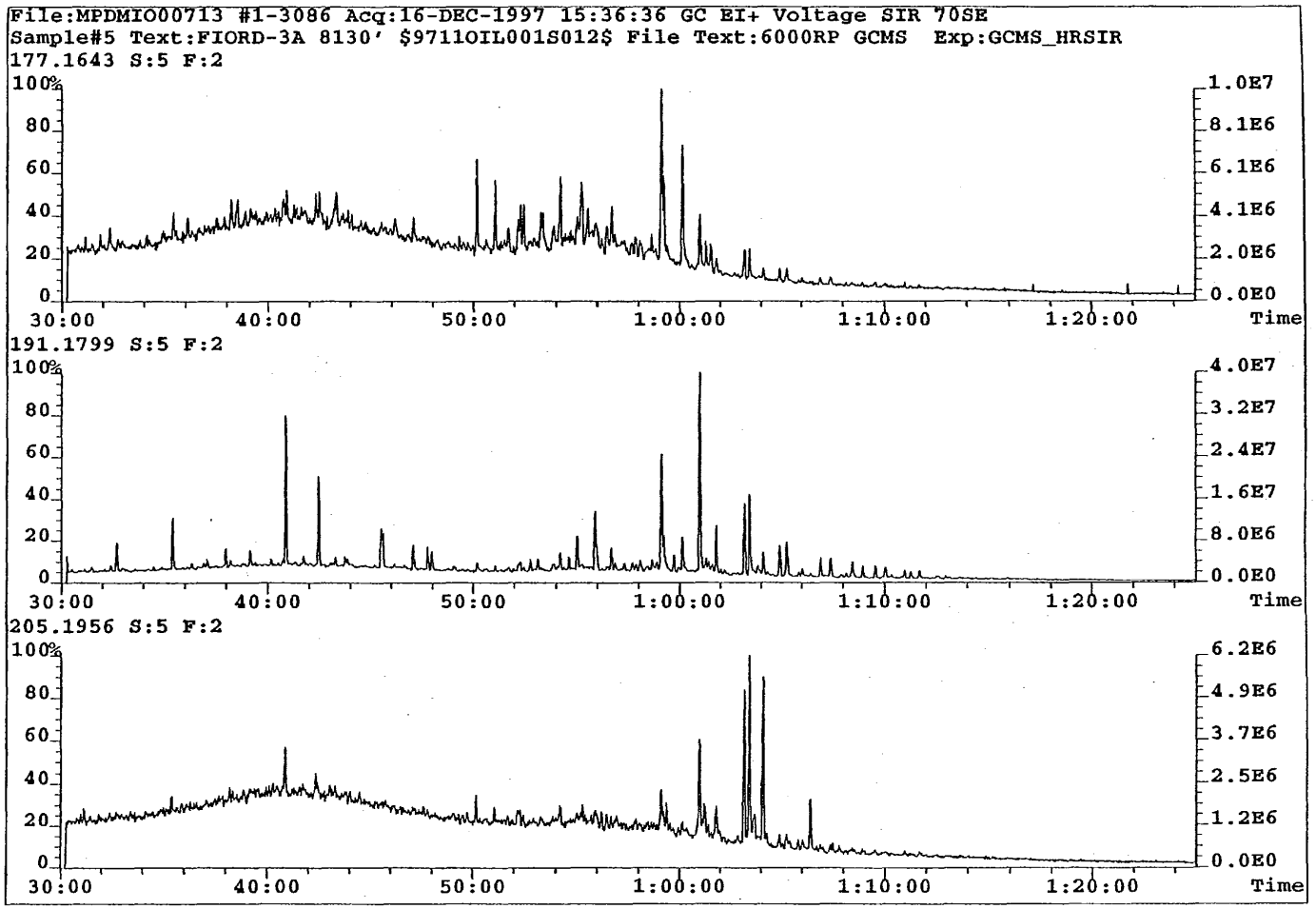

File:MPDMIO00713 #1-3086 Acq:16-DEC-1997 15:36:36 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3A 8130' $9711OIL001S012$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:5 F:2
100%
80
60
40
20
0
1.0E7
8.1E6
6.1E6
4.1E6
2.0E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:5 F:2
100%
80
60
40
20
0
4.0E7
3.2E7
2.4E7
1.6E7
8.0E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:5 F:2
100%
80
60
40
20
0
6.2E6
4.9E6
3.7E6
2.5E6
1.2E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 4.11

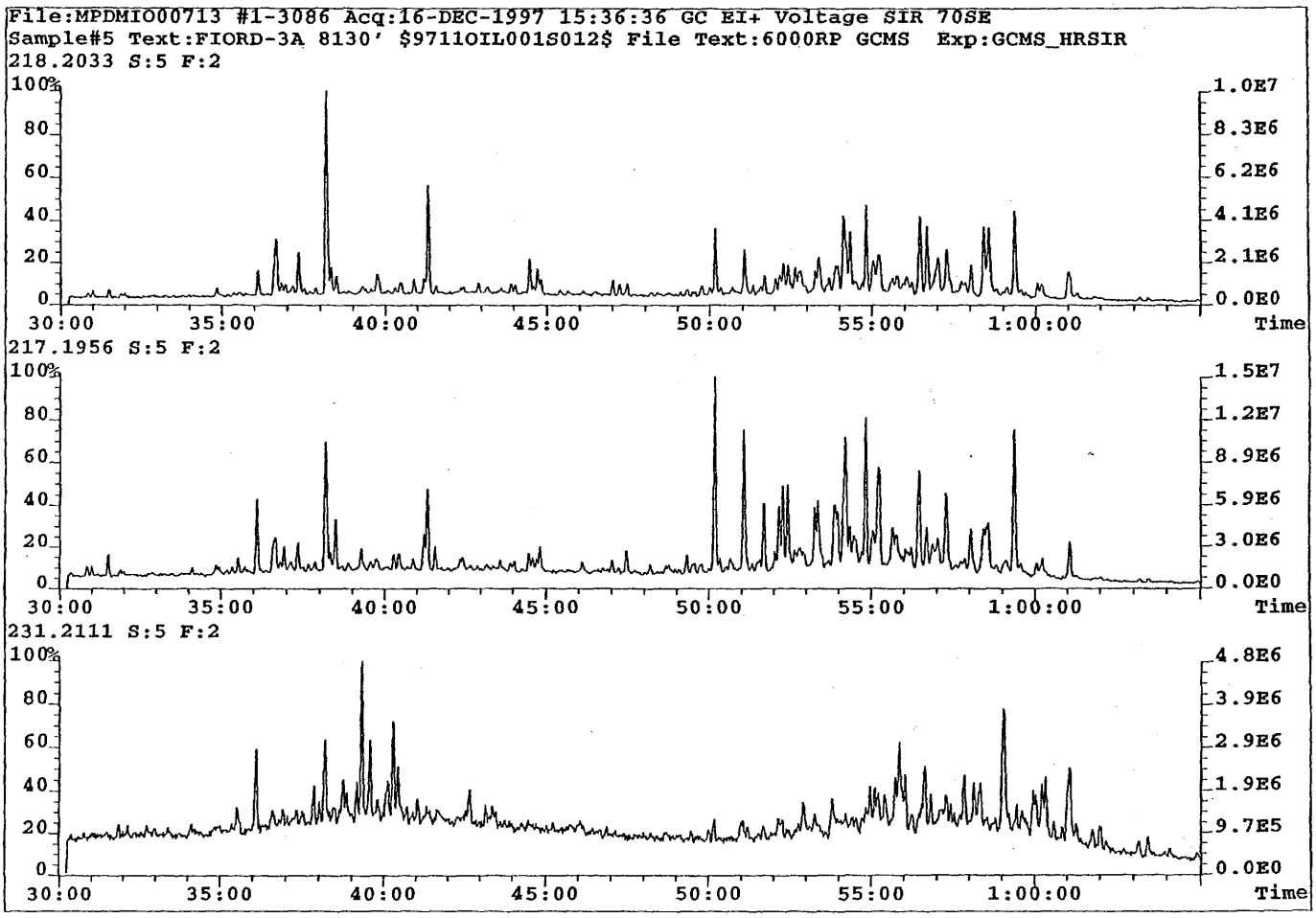

File:MPDMIO00713 #1-3086 Acq:16-DEC-1997 15:36:36 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3A 8130' $9711OIL001S012$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:5 F:2
217.1956 S:5 F:2
231.2111 S:5 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
1.0E7
8.3E6
6.2E6
4.1E6
2.1E6
0.0E0
1.5E7
1.2E7
8.9E6
5.9E6
3.0E6
4.8E6
3.9E6
2.9E6
1.9E6
9.7E5

Figure 4.12

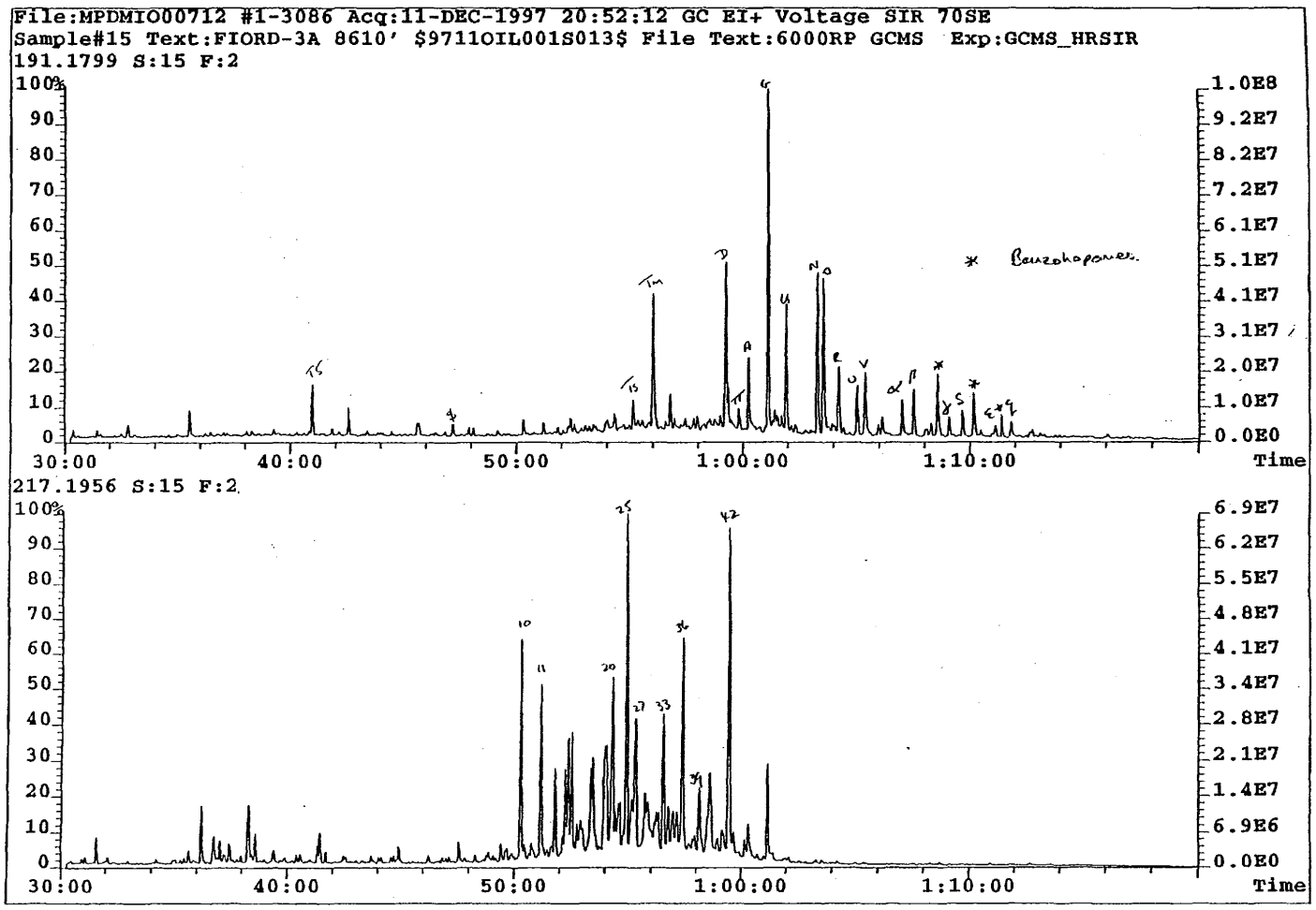

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 20:52:12 GC EI+ Voltage SIR 70SE
Sample#15 Text:FIORD-3A 8610' $9711OIL001S013$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:15 F:2
* Benzohopanes.
Time
217.1956 S:15 F:2
Time

Figure 4.13

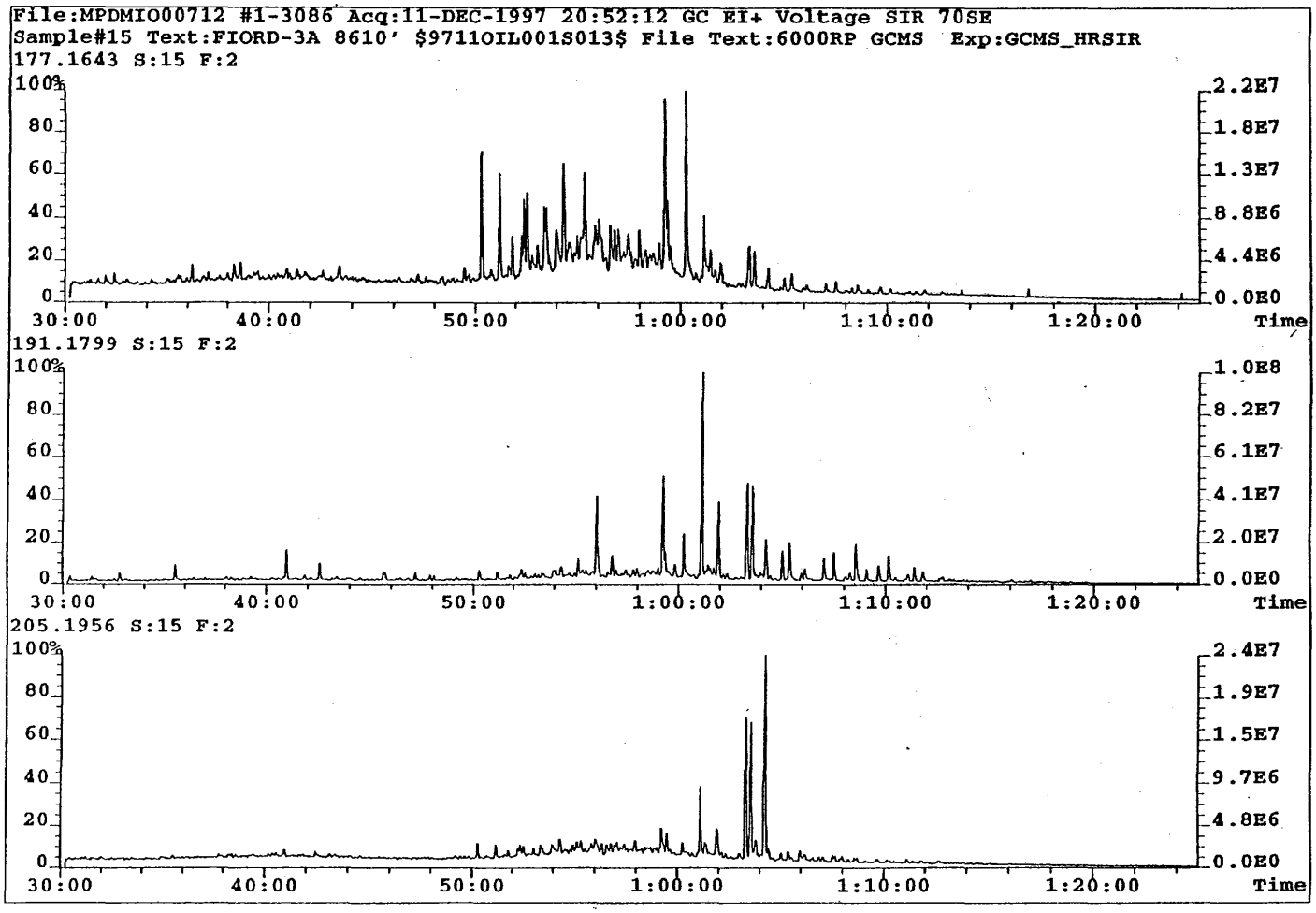
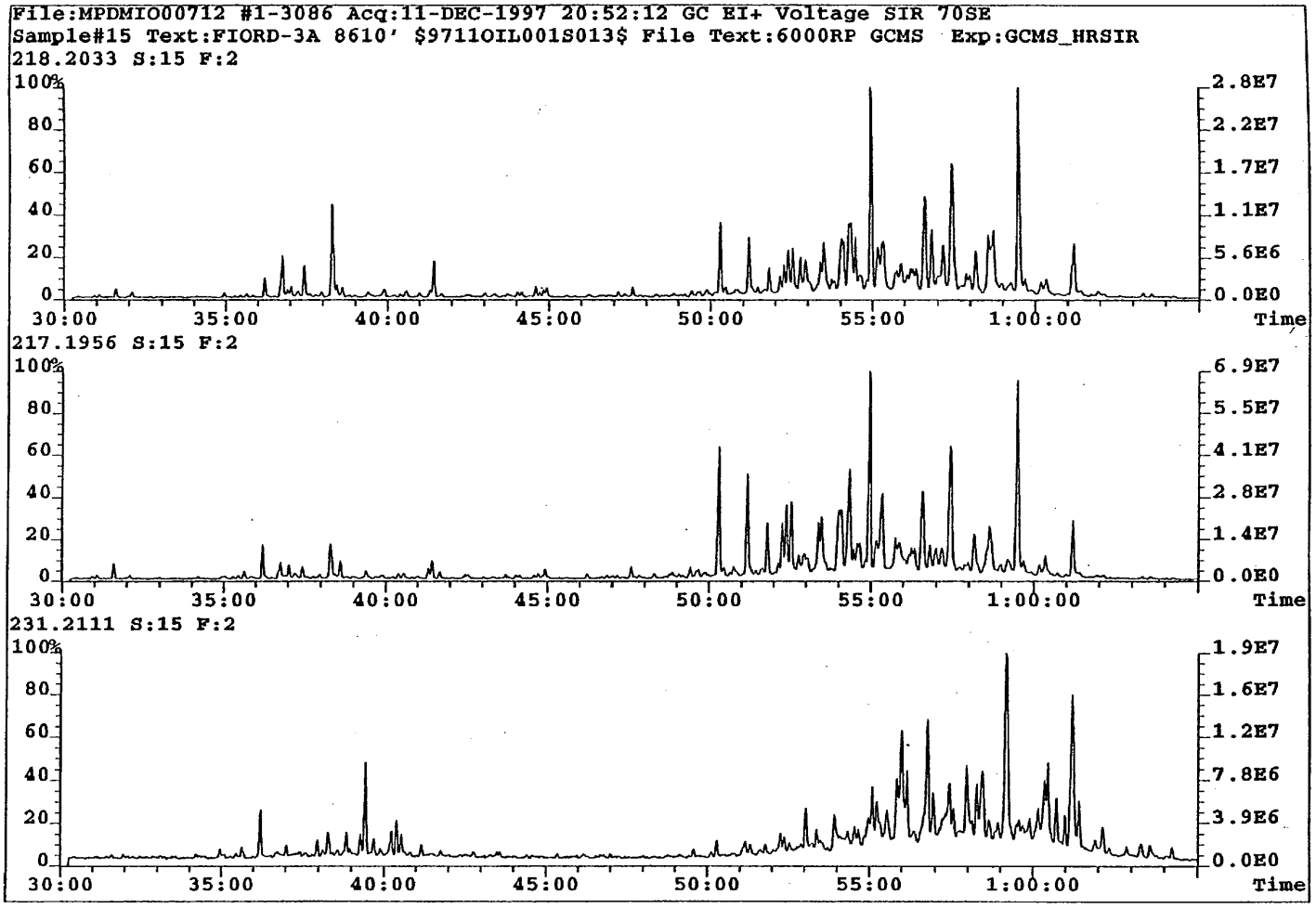

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 20:52:12 GC EI+ Voltage SIR 70SE
Sample#15 Text:FIORD-3A 8610' $9711OIL001S013$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:15 F:2
100%
80
60
40
20
0
2.2E7
1.8E7
1.3E7
8.8E6
4.4E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:15 F:2
100%
80
60
40
20
0
1.0E8
8.2E7
6.1E7
4.1E7
2.0E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:15 F:2
100%
80
60
40
20
0
2.4E7
1.9E7
1.5E7
9.7E6
4.8E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 4.14


File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 20:52:12 GC EI+ Voltage SIR 70SE
Sample#15 Text:FIORD-3A 8610' $9711OIL001S013$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:15 F:2
100%
80
60
40
20
0
2.8E7
2.2E7
1.7E7
1.1E7
5.6E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:15 F:2
100%
80
60
40
20
0
6.9E7
5.5E7
4.1E7
2.8E7
1.4E7
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:15 F:2
100%
80
60
40
20
0
1.9E7
1.6E7
1.2E7
7.8E6
3.9E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

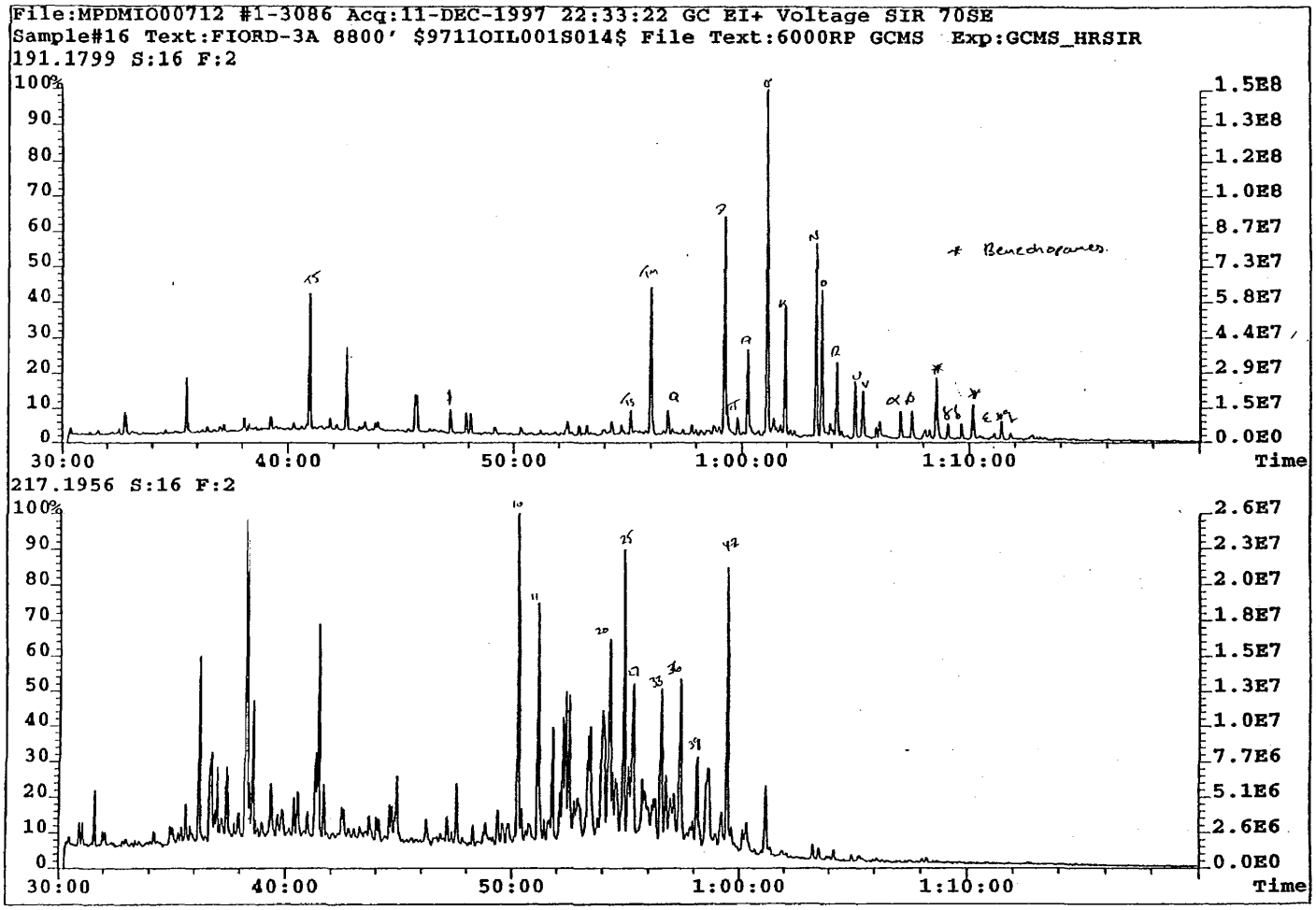

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 22:33:22 GC EI+ Voltage SIR 70SE
Sample#16 Text:FIORD-3A 8800' $9711OIL001S014$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:16 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
40:00
50:00
1:00:00
1:10:00
Time
1.5E8
1.3E8
1.2E8
1.0E8
8.7E7
7.3E7
5.8E7
4.4E7
2.9E7
1.5E7
0.0E0
* Benzohopanes.
217.1956 S:16 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
40:00
50:00
1:00:00
1:10:00
Time
2.6E7
2.3E7
2.0E7
1.8E7
1.5E7
1.3E7
1.0E7
7.7E6
5.1E6
2.6E6
0.0E0

Figure 4.16

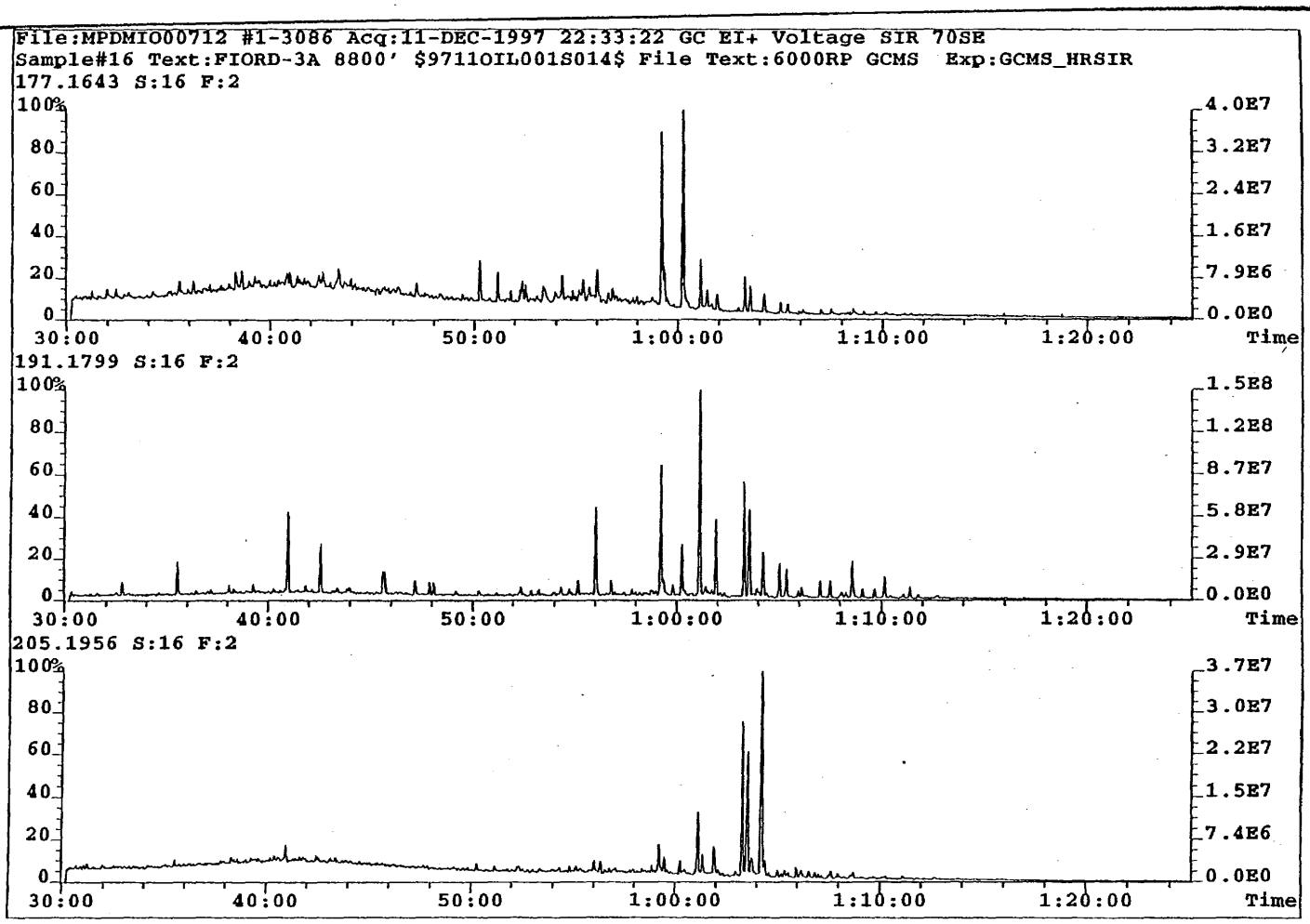

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 22:33:22 GC EI+ Voltage SIR 70SE
Sample#16 Text:FIORD-3A 8800' $9711OIL001S014$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:16 F:2
100%
80
60
40
20
0
4.0E7
3.2E7
2.4E7
1.6E7
7.9E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:16 F:2
100%
80
60
40
20
0
1.5E8
1.2E8
8.7E7
5.8E7
2.9E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:16 F:2
100%
80
60
40
20
0
3.7E7
3.0E7
2.2E7
1.5E7
7.4E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 4.17

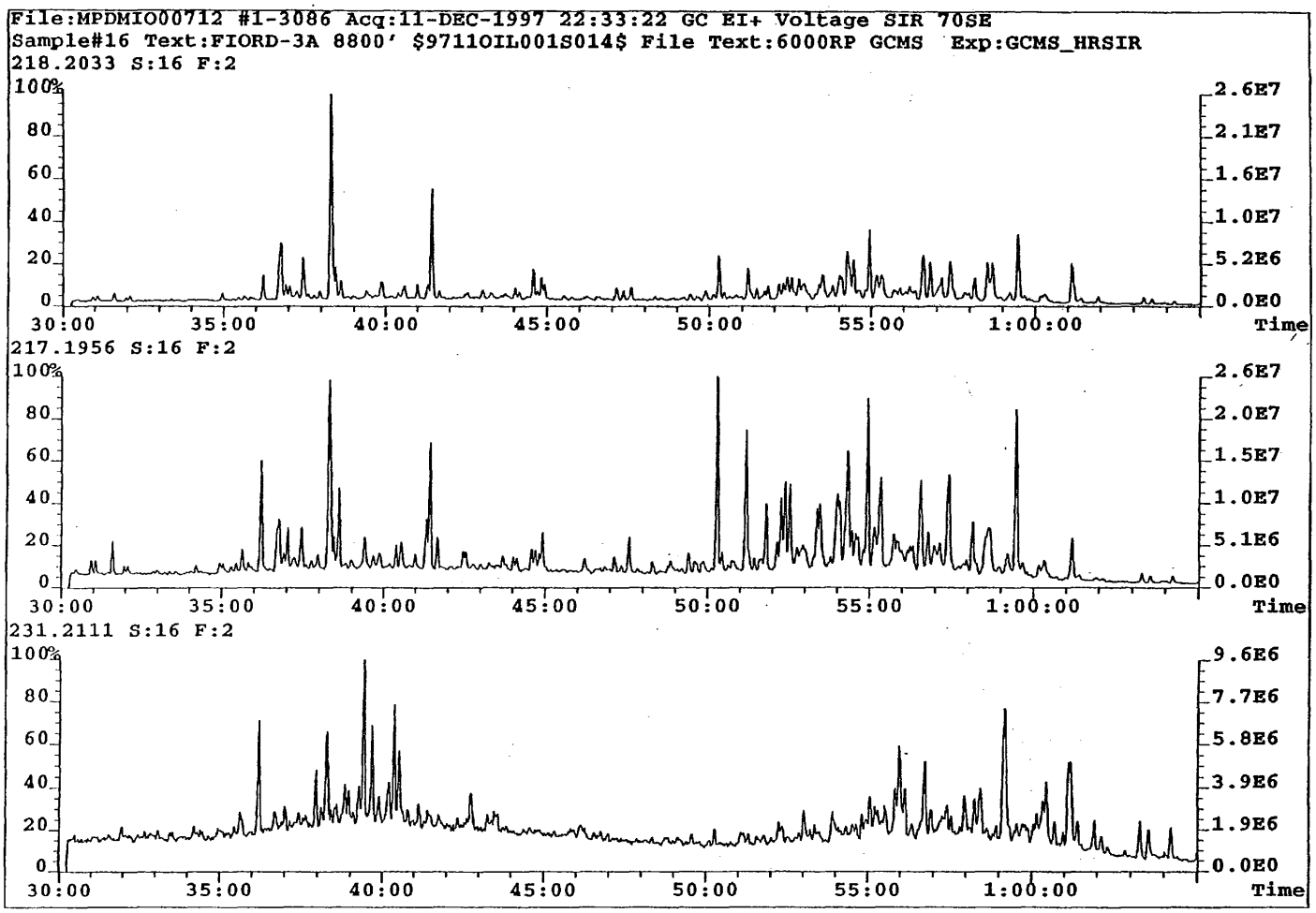
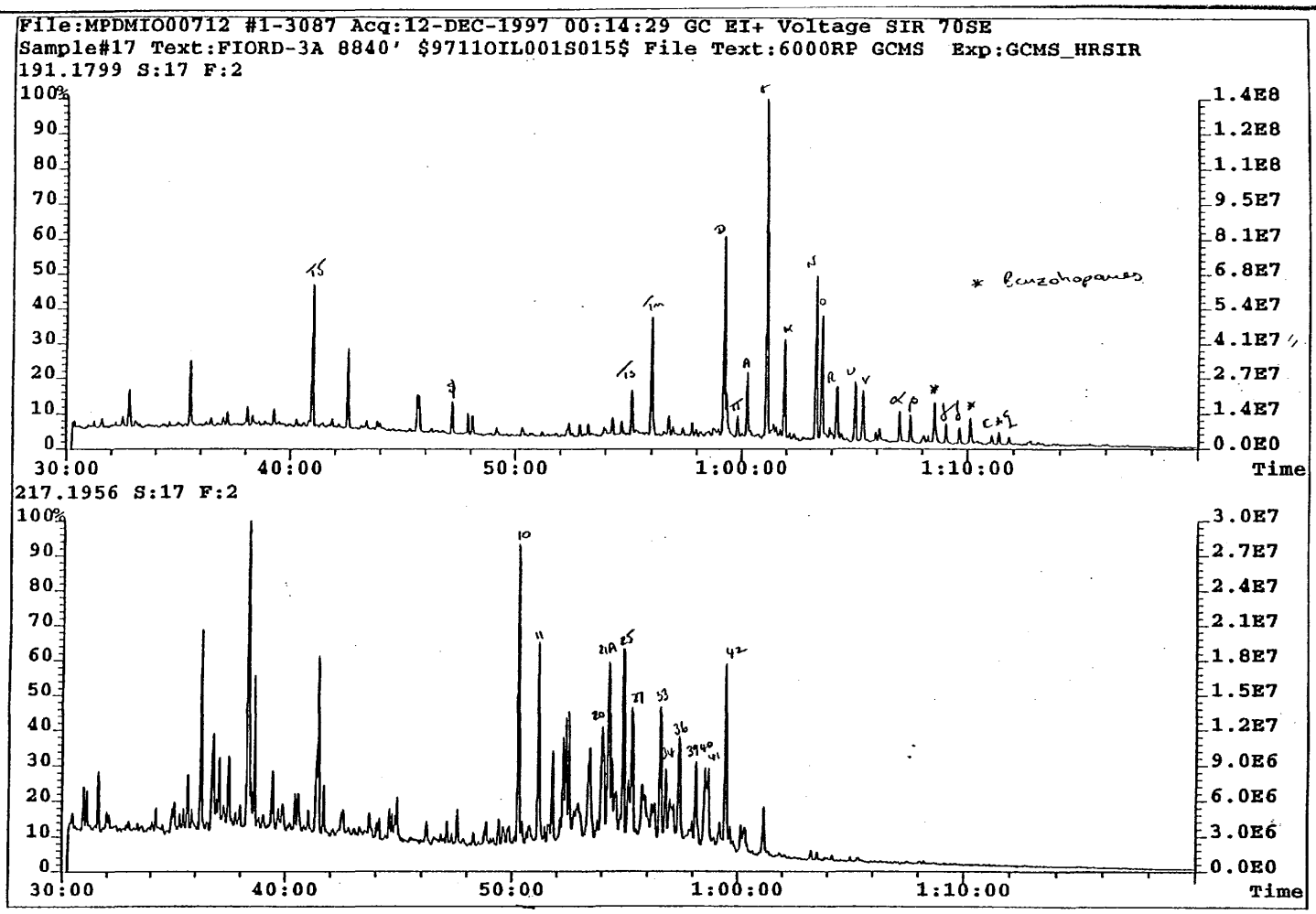

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 22:33:22 GC EI+ Voltage SIR 70SE
Sample#16 Text:FIORD-3A 8800' $9711OIL001S014$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:16 F:2
100%
80
60
40
20
0
2.6E7
2.1E7
1.6E7
1.0E7
5.2E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:16 F:2
100%
80
60
40
20
0
2.6E7
2.0E7
1.5E7
1.0E7
5.1E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:16 F:2
100%
80
60
40
20
0
9.6E6
7.7E6
5.8E6
3.9E6
1.9E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 4.18


File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 00:14:29 GC EI+ Voltage SIR 70SE
Sample#17 Text:FIORD-3A 8840' $97110IL001S015$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:17 F:2
* Benzohopanes
Time
217.1956 S:17 F:2
Time

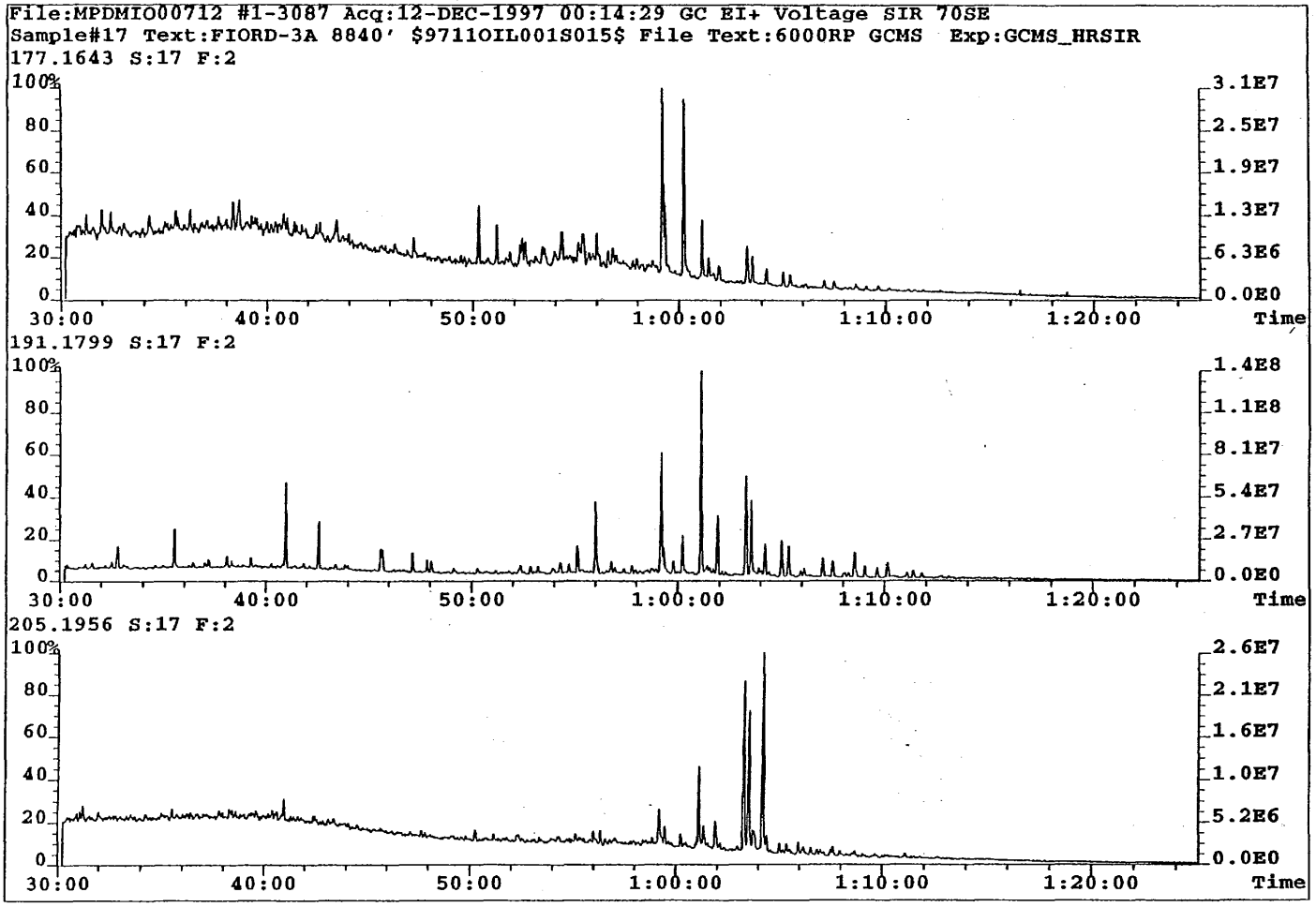

File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 00:14:29 GC EI+ Voltage SIR 70SE
Sample#17 Text:FIORD-3A 8840' $9711OIL001S015$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:17 F:2
100%
80
60
40
20
0
3.1E7
2.5E7
1.9E7
1.3E7
6.3E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
191.1799 S:17 F:2
100%
80
60
40
20
0
1.4E8
1.1E8
8.1E7
5.4E7
2.7E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
205.1956 S:17 F:2
100%
80
60
40
20
0
2.6E7
2.1E7
1.6E7
1.0E7
5.2E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time

Figure 4.20

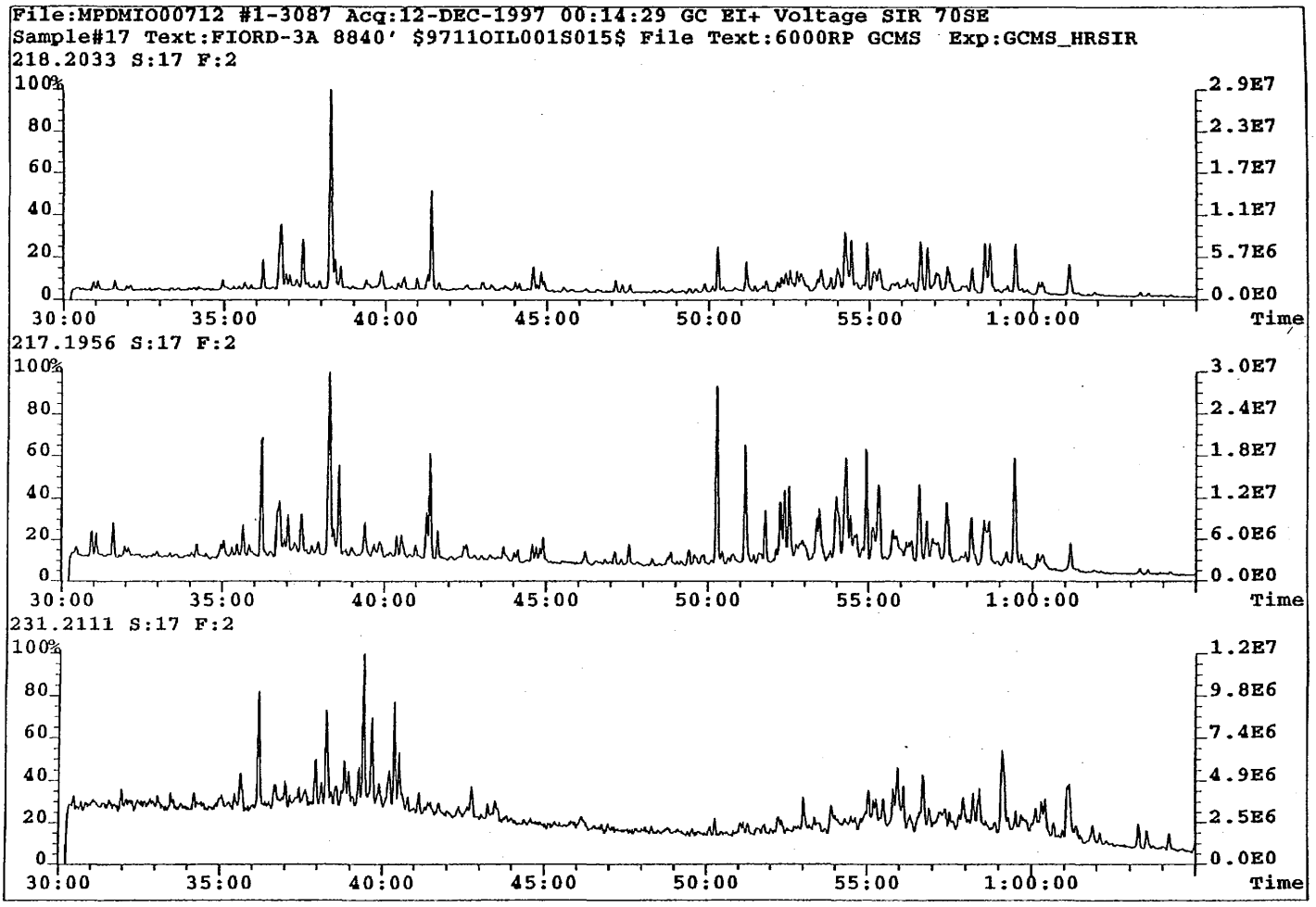

File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 00:14:29 GC EI+ Voltage SIR 70SE
Sample#17 Text:FIORD-3A 8840' $9711OIL001S015$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:17 F:2
100%
80
60
40
20
0
2.9E7
2.3E7
1.7E7
1.1E7
5.7E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
217.1956 S:17 F:2
100%
80
60
40
20
0
3.0E7
2.4E7
1.8E7
1.2E7
6.0E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
231.2111 S:17 F:2
100%
80
60
40
20
0
1.2E7
9.8E6
7.4E6
4.9E6
2.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time

Figure 4.21

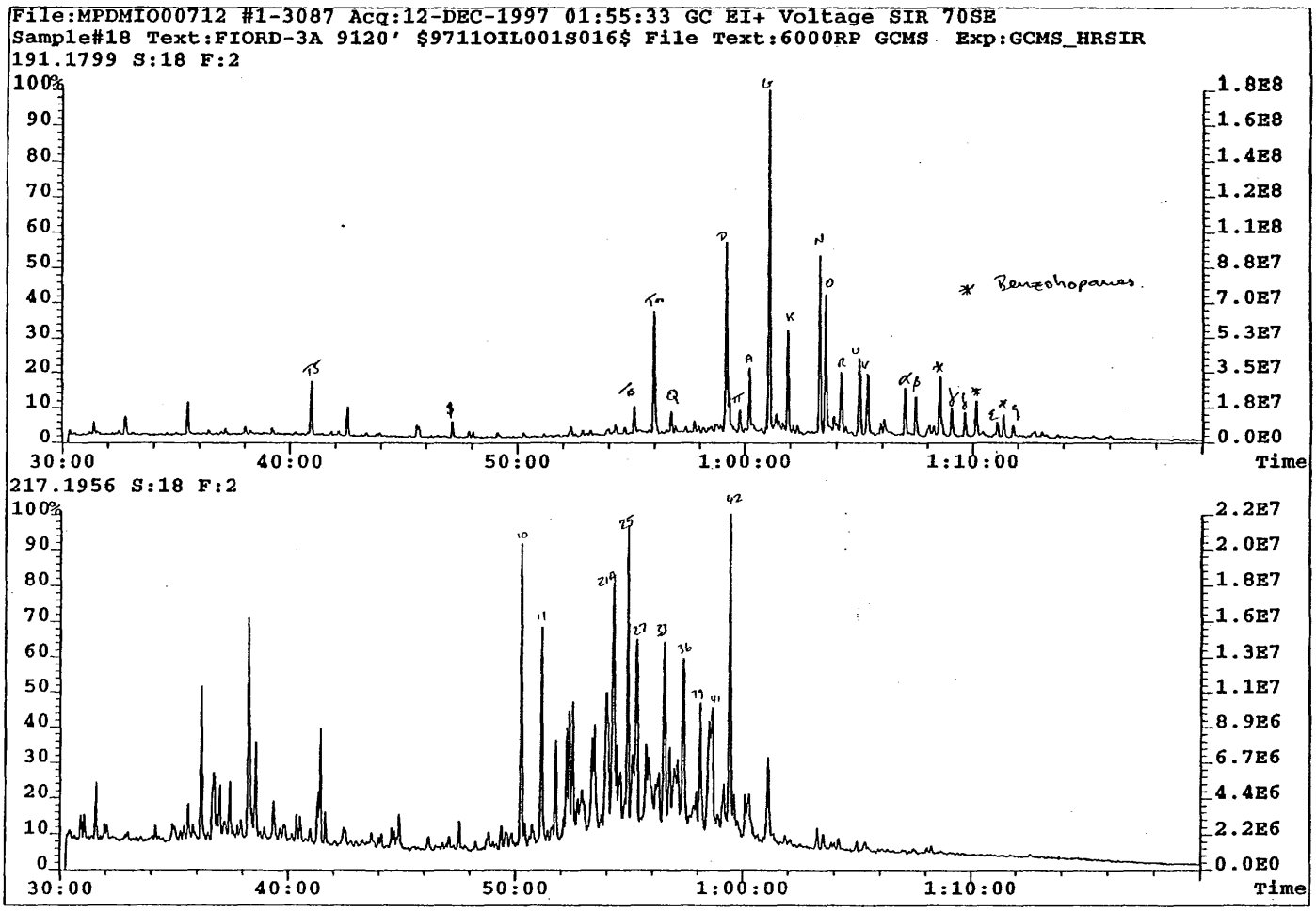

File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 01:55:33 GC EI+ Voltage SIR 70SE
Sample#18 Text:FIORD-3A 9120' $9711OIL001S016$ File Text:6000RP GCMS Exp:GCMS_HRSIR
191.1799 S:18 F:2
100%
90
80
70
60
50
40
30
20
10
0
1.8E8
1.6E8
1.4E8
1.2E8
1.1E8
8.8E7
7.0E7
5.3E7
3.5E7
1.8E7
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
Time
* Benzohopanes.
217.1956 S:18 F:2
100%
90
80
70
60
50
40
30
20
10
0
2.2E7
2.0E7
1.8E7
1.6E7
1.3E7
1.1E7
8.9E6
6.7E6
4.4E6
2.2E6
0.0E0
30:00
40:00
50:00
1:00:00
1:10:00
Time

Figure 4.22

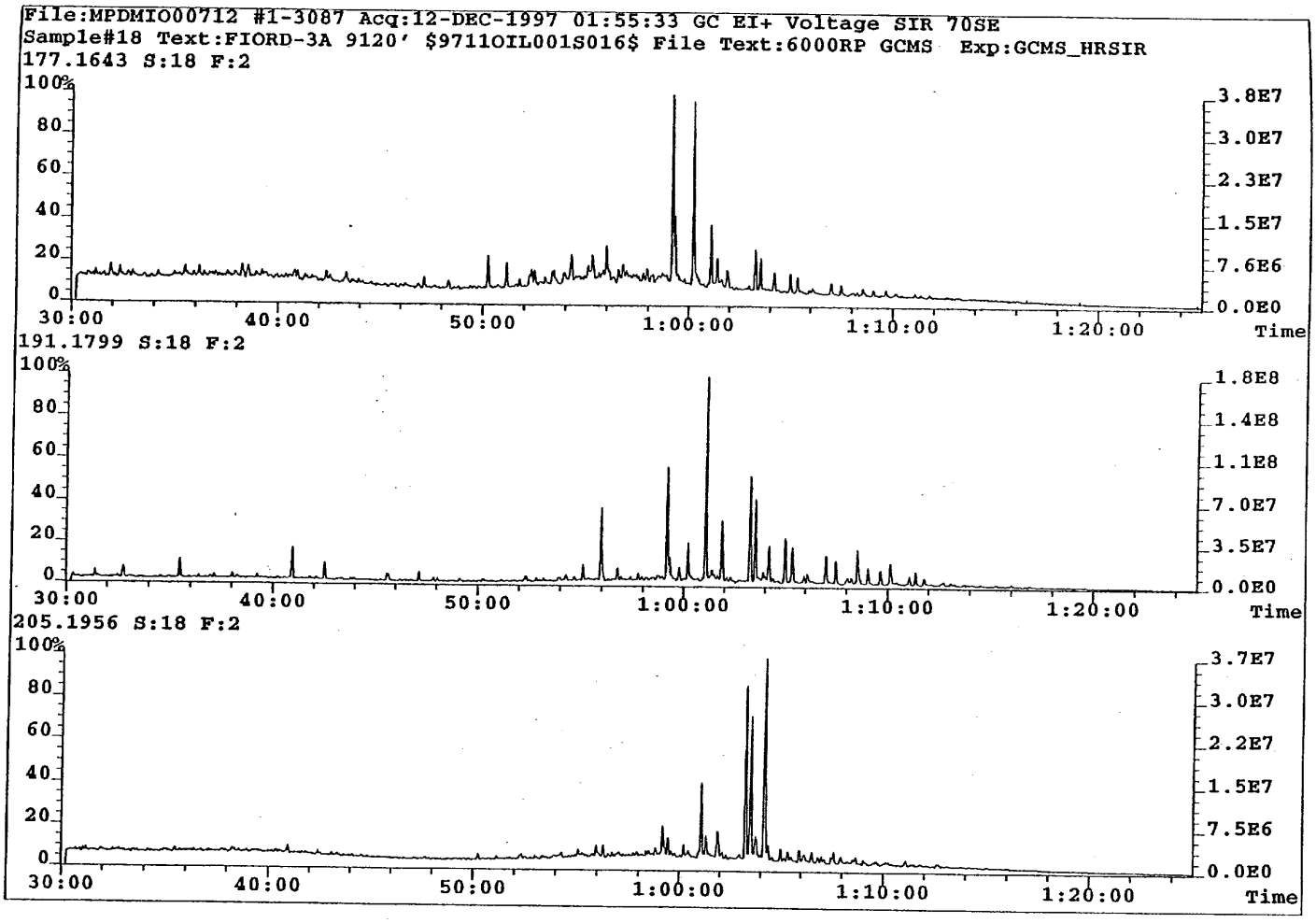

File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 01:55:33 GC EI+ Voltage SIR 70SE
Sample#18 Text:FIORD-3A 9120' $9711OIL001S016$ File Text:6000RP GCMS Exp:GCMS_HRSIR
177.1643 S:18 F:2
100%
80
60
40
20
0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
3.8E7
3.0E7
2.3E7
1.5E7
7.6E6
0.0E0
191.1799 S:18 F:2
100%
80
60
40
20
0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
1.8E8
1.4E8
1.1E8
7.0E7
3.5E7
0.0E0
205.1956 S:18 F:2
100%
80
60
40
20
0
30:00
40:00
50:00
1:00:00
1:10:00
1:20:00
Time
3.7E7
3.0E7
2.2E7
1.5E7
7.5E6
0.0E0

Figure 4.23

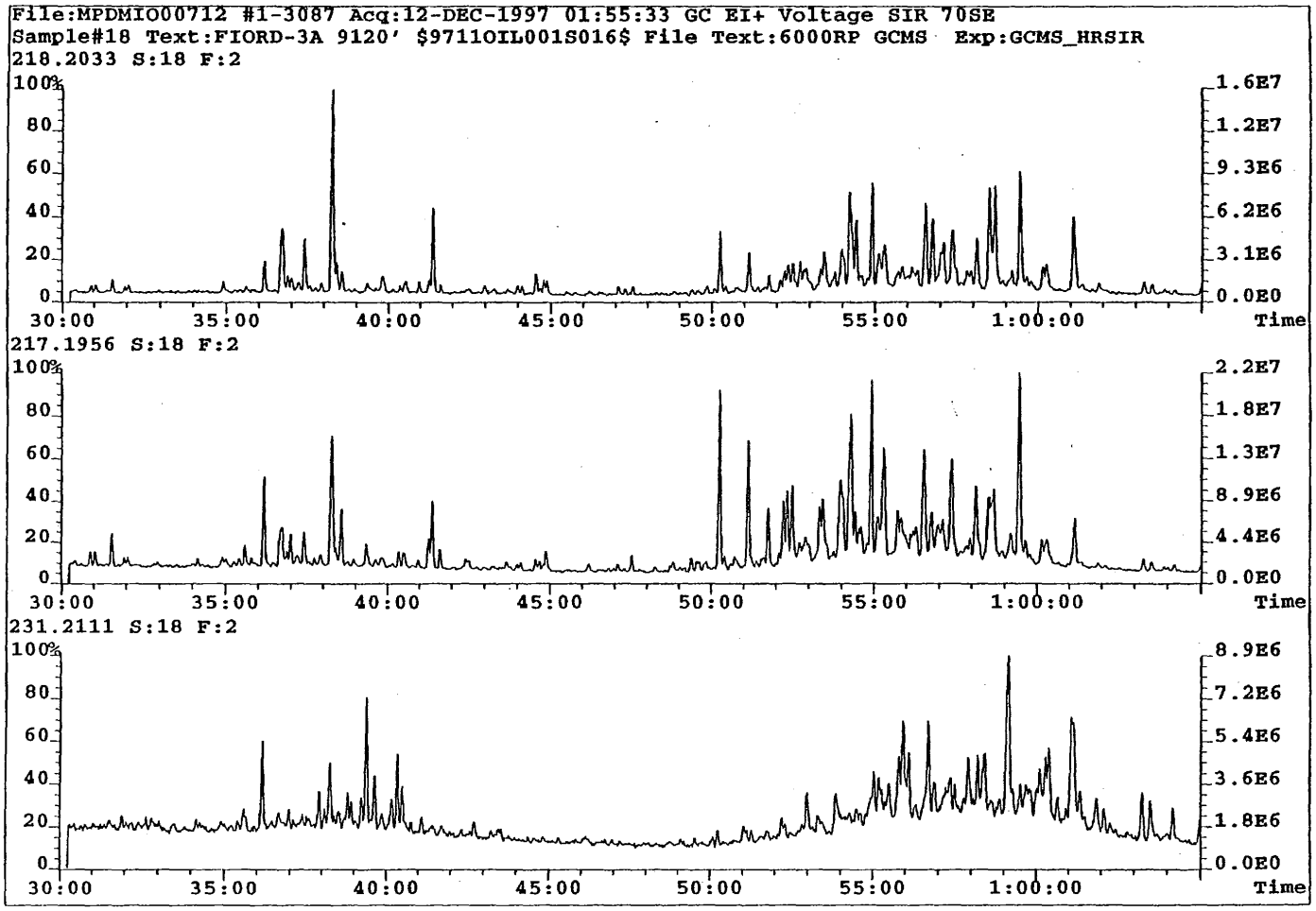

File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 01:55:33 GC EI+ Voltage SIR 70SE
Sample#18 Text:FIORD-3A 9120' $9711OIL001S016$ File Text:6000RP GCMS Exp:GCMS_HRSIR
218.2033 S:18 F:2
100%
80
60
40
20
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
Time
1.6E7
1.2E7
9.3E6
6.2E6
3.1E6
0.0E0
217.1956 S:18 F:2
2.2E7
1.8E7
1.3E7
8.9E6
4.4E6
0.0E0
231.2111 S:18 F:2
8.9E6
7.2E6
5.4E6
3.6E6
1.8E6
0.0E0

Figure 4.24

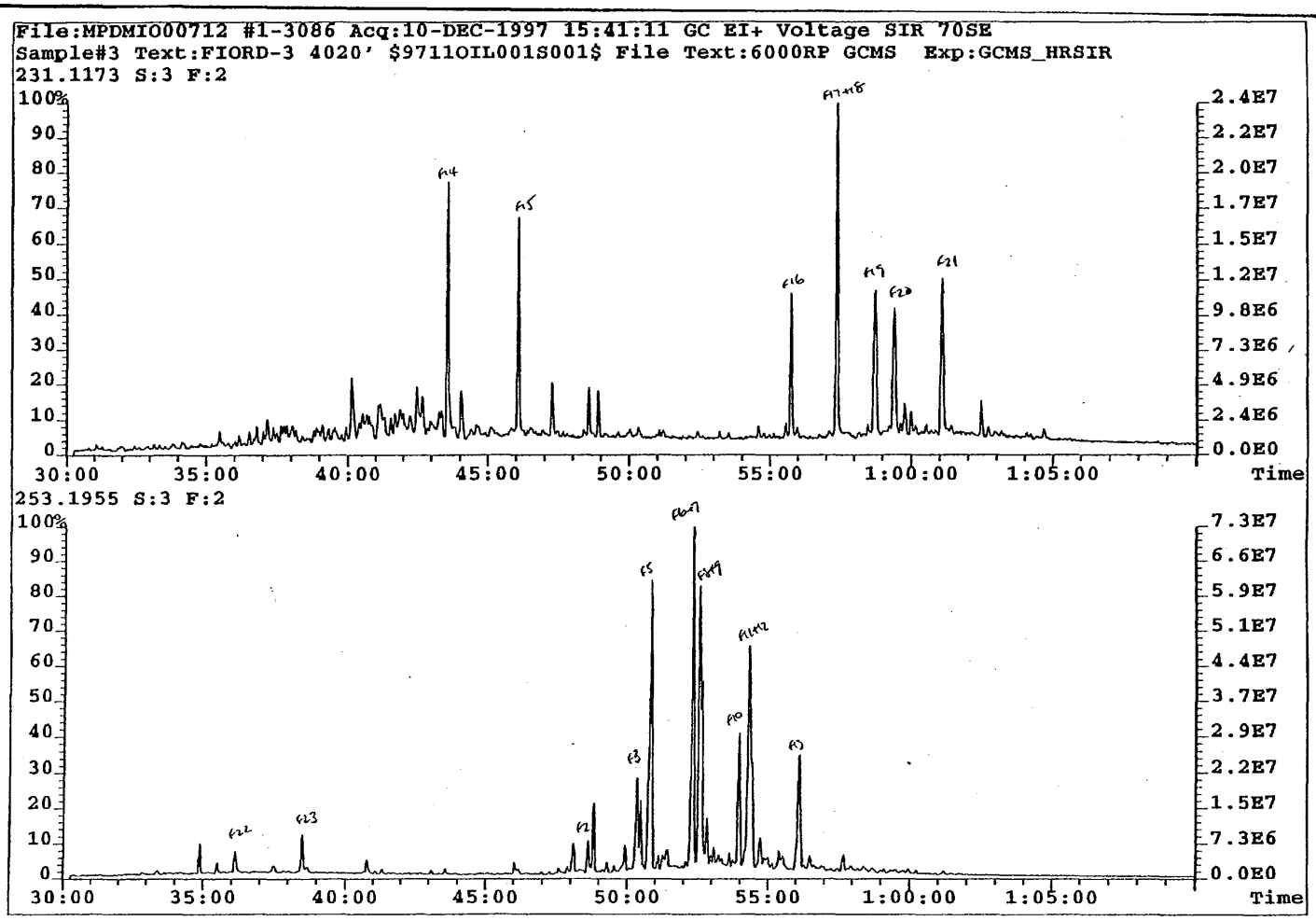

File:MPDMI000712 #1-3086 Acq:10-DEC-1997 15:41:11 GC EI+ Voltage SIR 70SE
Sample#3 Text:FIORD-3 4020' $9711OIL001S001$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:3 F:2
253.1955 S:3 F:2
Time

Figure 5.1

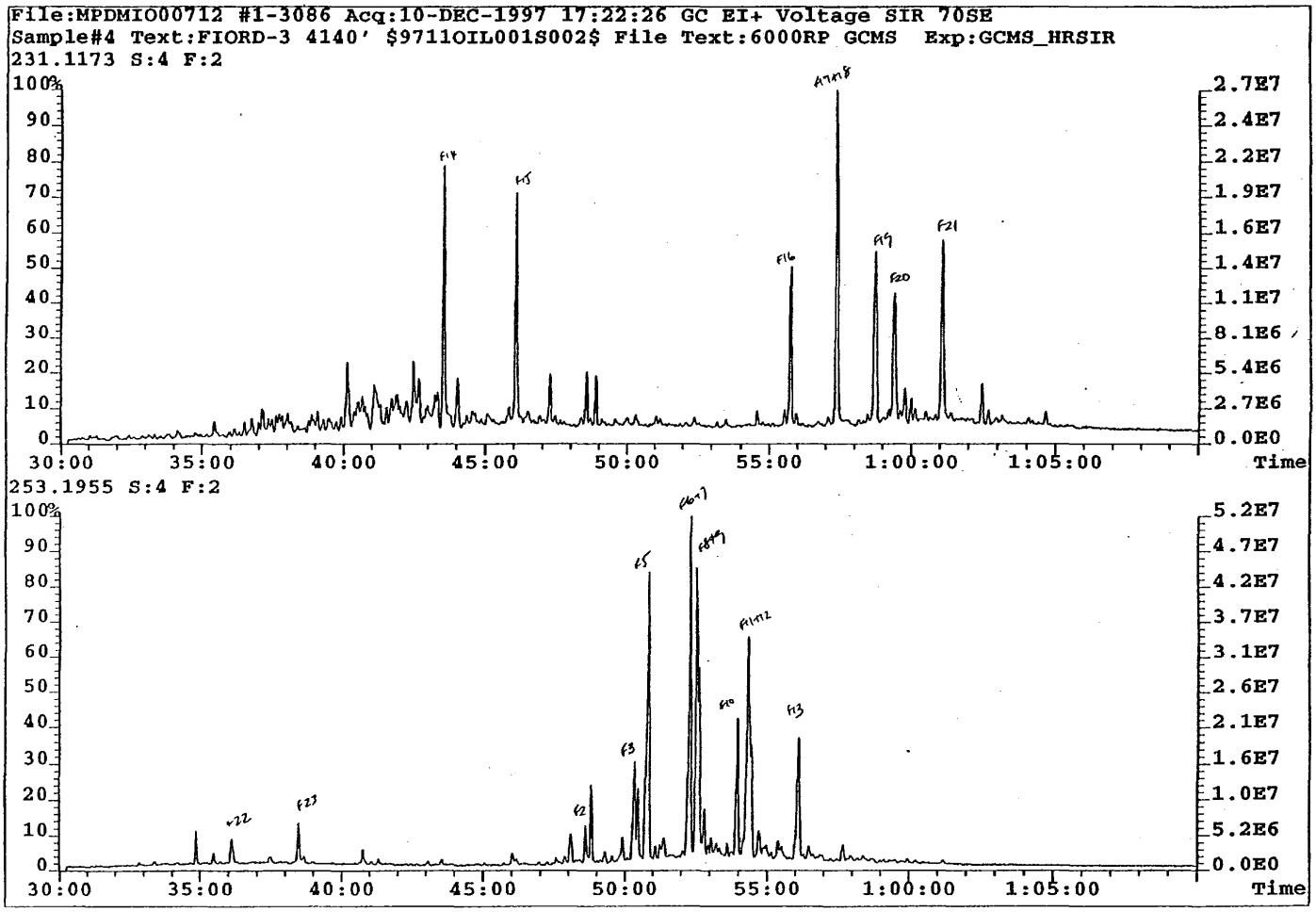

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 17:22:26 GC EI+ Voltage SIR 70SE
Sample#4 Text:FIORD-3 4140' $9711OIL001S002$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:4 F:2
253.1955 S:4 F:2
Time

Figure 5.2

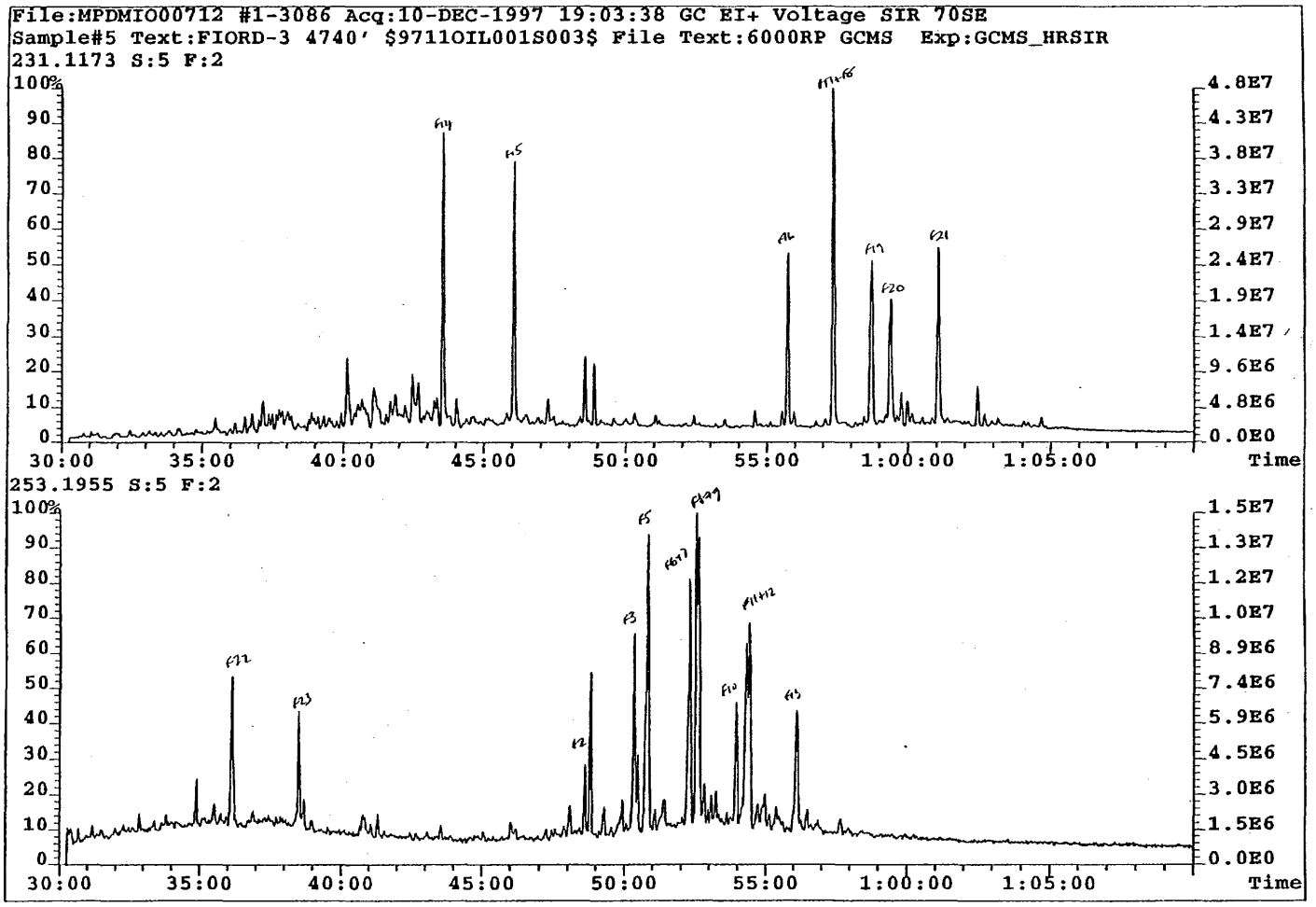

File:MPDMIO00712 #1-3086 Acq:10-DEC-1997 19:03:38 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3 4740' $9711OIL001S003$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:5 F:2
100%
90
80
70
60
50
40
30
20
10
0
4.8E7
4.3E7
3.8E7
3.3E7
2.9E7
2.4E7
1.9E7
1.4E7
9.6E6
4.8E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
253.1955 S:5 F:2
100%
90
80
70
60
50
40
30
20
10
0
1.5E7
1.3E7
1.2E7
1.0E7
8.9E6
7.4E6
5.9E6
4.5E6
3.0E6
1.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time

Figure 5.3

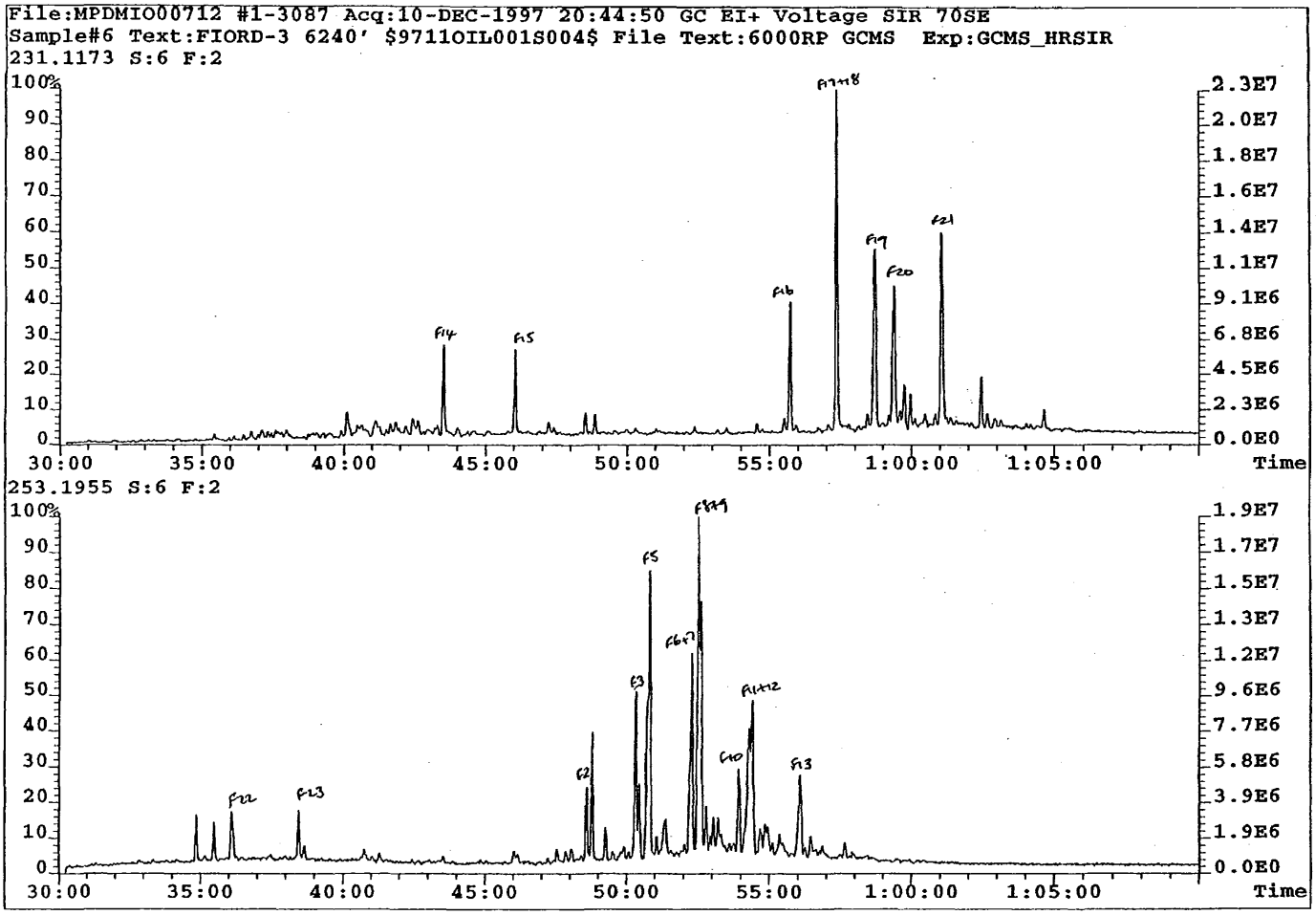

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 20:44:50 GC EI+ Voltage SIR 70SE
Sample#6 Text:FIORD-3 6240' $9711OIL001S004$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:6 F:2
F14
F15
F16
F17+18
F19
F20
F21
253.1955 S:6 F:2
F22
F23
F2
F3
F5
F6+7
F8+9
F10
F11+12
F13
Time

Figure 5.4

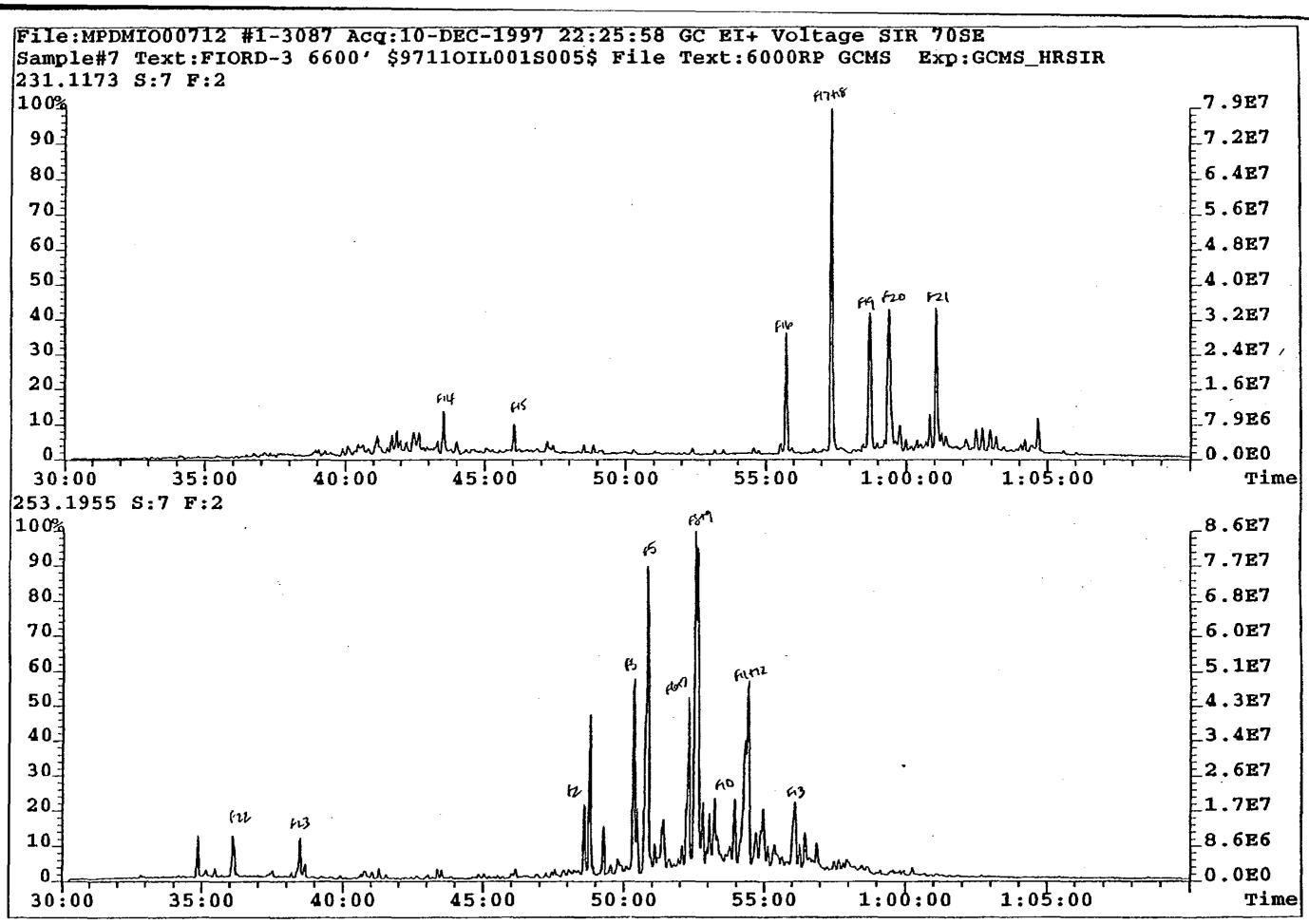

File:MPDMIO00712 #1-3087 Acq:10-DEC-1997 22:25:58 GC EI+ Voltage SIR 70SE
Sample#7 Text:FIORD-3 6600' $9711OIL001S005$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:7 F:2
100%
90
80
70
60
50
40
30
20
10
0
7.9E7
7.2E7
6.4E7
5.6E7
4.8E7
4.0E7
3.2E7
2.4E7
1.6E7
7.9E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
253.1955 S:7 F:2
100%
90
80
70
60
50
40
30
20
10
0
8.6E7
7.7E7
6.8E7
6.0E7
5.1E7
4.3E7
3.4E7
2.6E7
1.7E7
8.6E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time

Figure 5.5

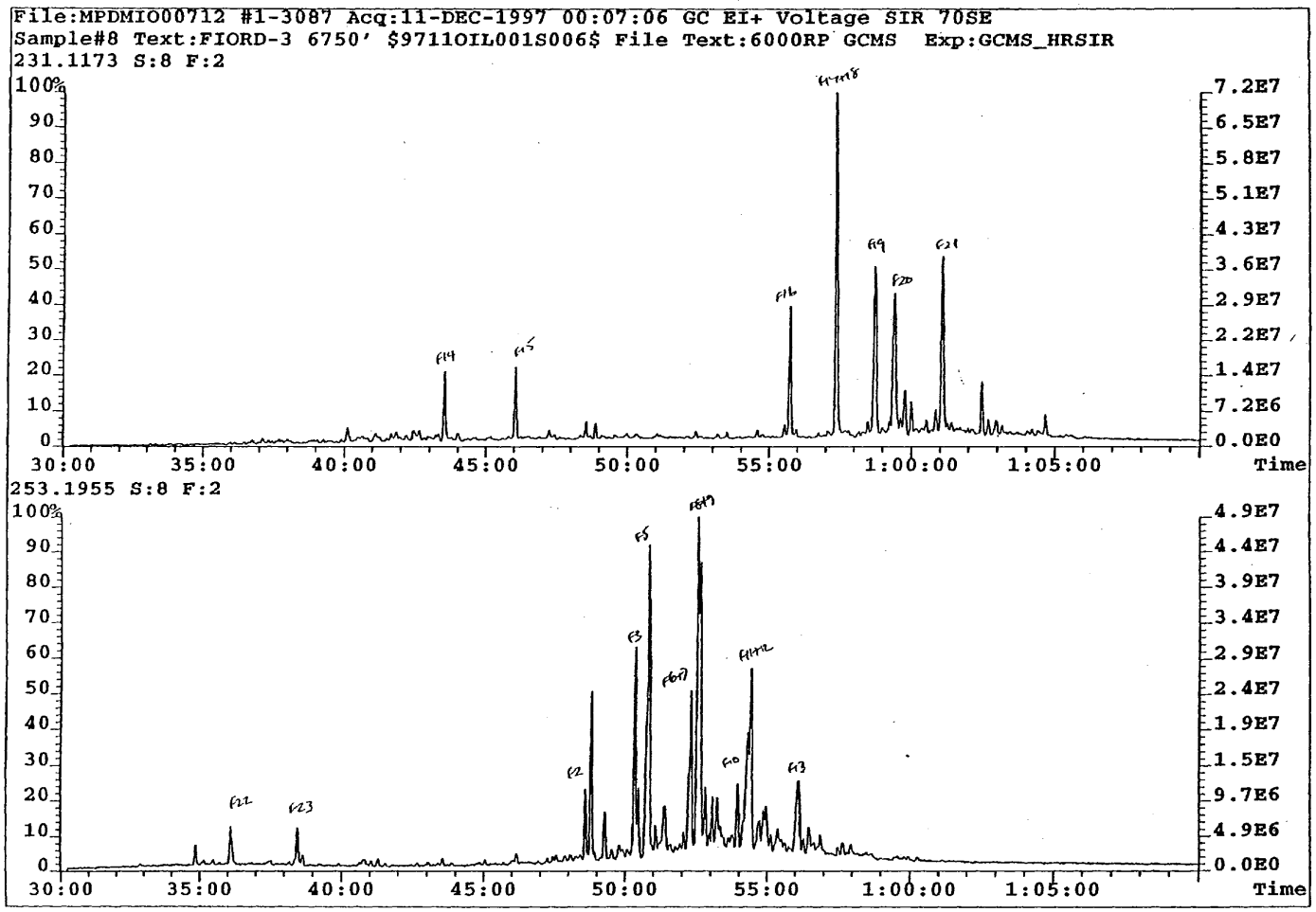

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 00:07:06 GC EI+ Voltage SIR 70SE
Sample#8 Text:FIORD-3 6750' $9711OIL001S006$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:8 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
7.2E7
6.5E7
5.8E7
5.1E7
4.3E7
3.6E7
2.9E7
2.2E7
1.4E7
7.2E6
0.0E0
253.1955 S:8 F:2
4.9E7
4.4E7
3.9E7
3.4E7
2.9E7
2.4E7
1.9E7
1.5E7
9.7E6
4.9E6
0.0E0

Figure 5.6

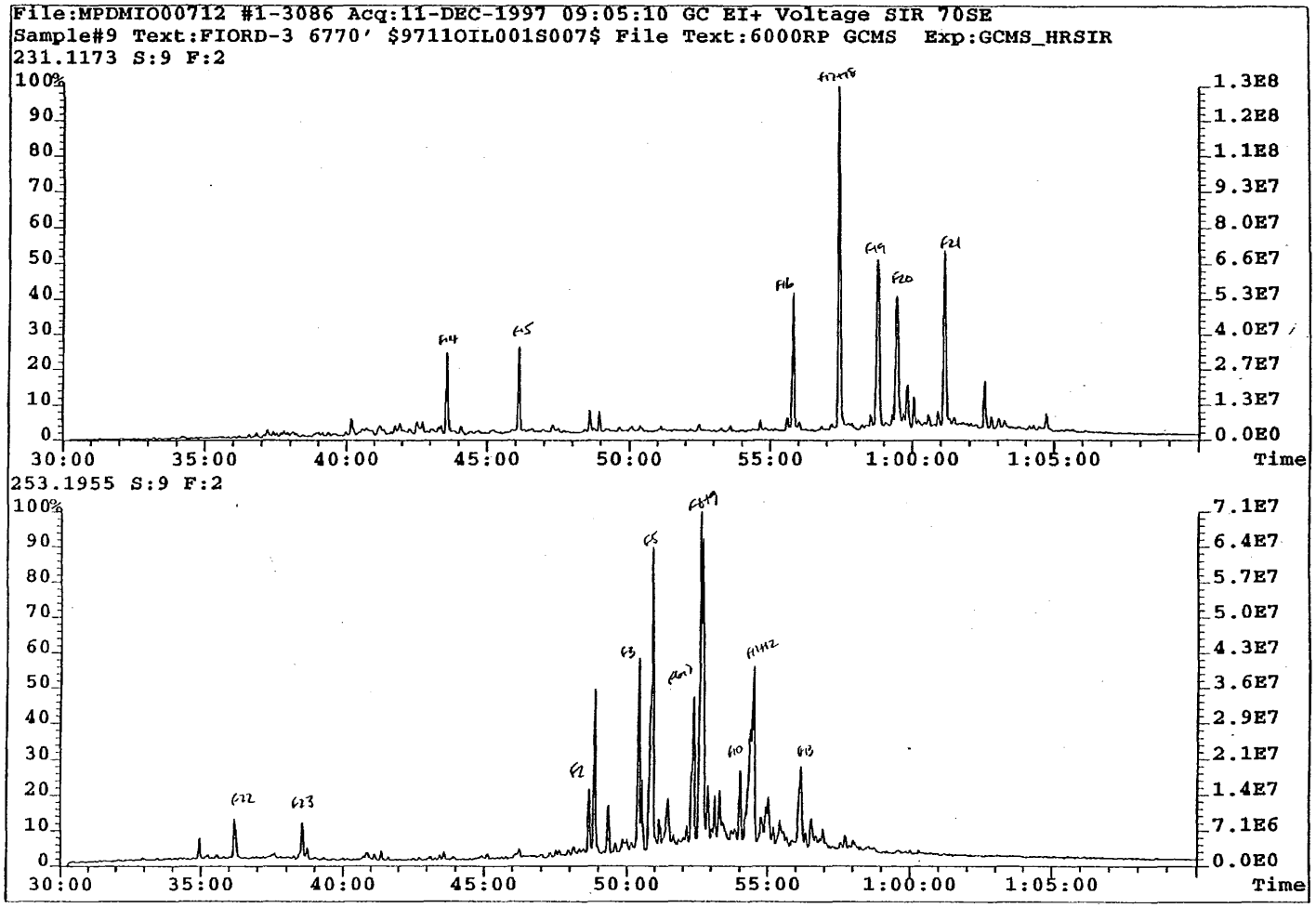

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 09:05:10 GC EI+ Voltage SIR 70SE
Sample#9 Text:FIORD-3 6770' $9711OIL001S007$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:9 F:2
253.1955 S:9 F:2
Time

Figure 5.7

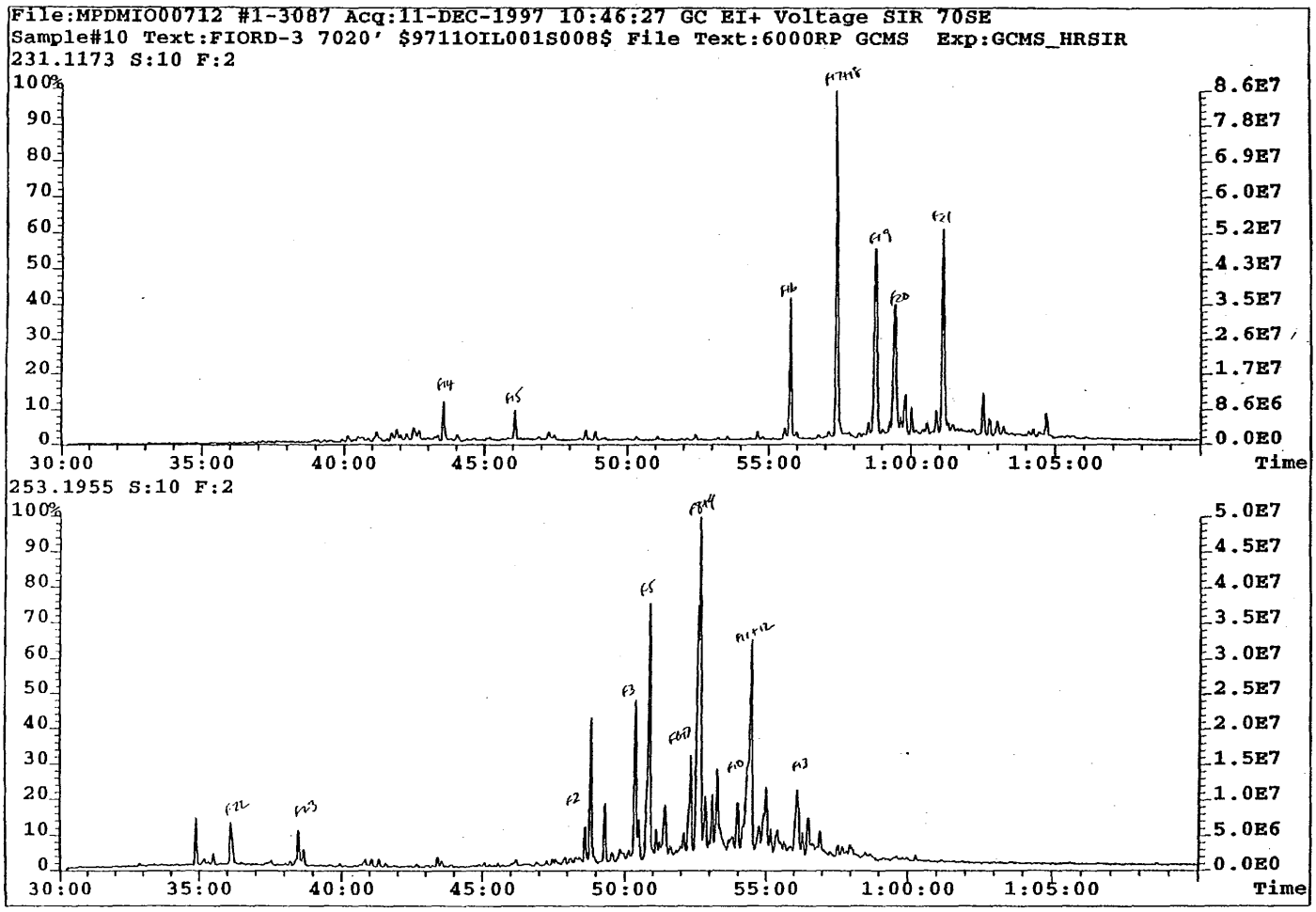

File:MPDMIO00712 #1-3087 Acq:11-DEC-1997 10:46:27 GC EI+ Voltage SIR 70SE
Sample#10 Text:FIORD-3 7020' $9711OIL001S008$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:10 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
8.6E7
7.8E7
6.9E7
6.0E7
5.2E7
4.3E7
3.5E7
2.6E7
1.7E7
8.6E6
0.0E0
253.1955 S:10 F:2
5.0E7
4.5E7
4.0E7
3.5E7
3.0E7
2.5E7
2.0E7
1.5E7
1.0E7
5.0E6
0.0E0

Figure 5.8

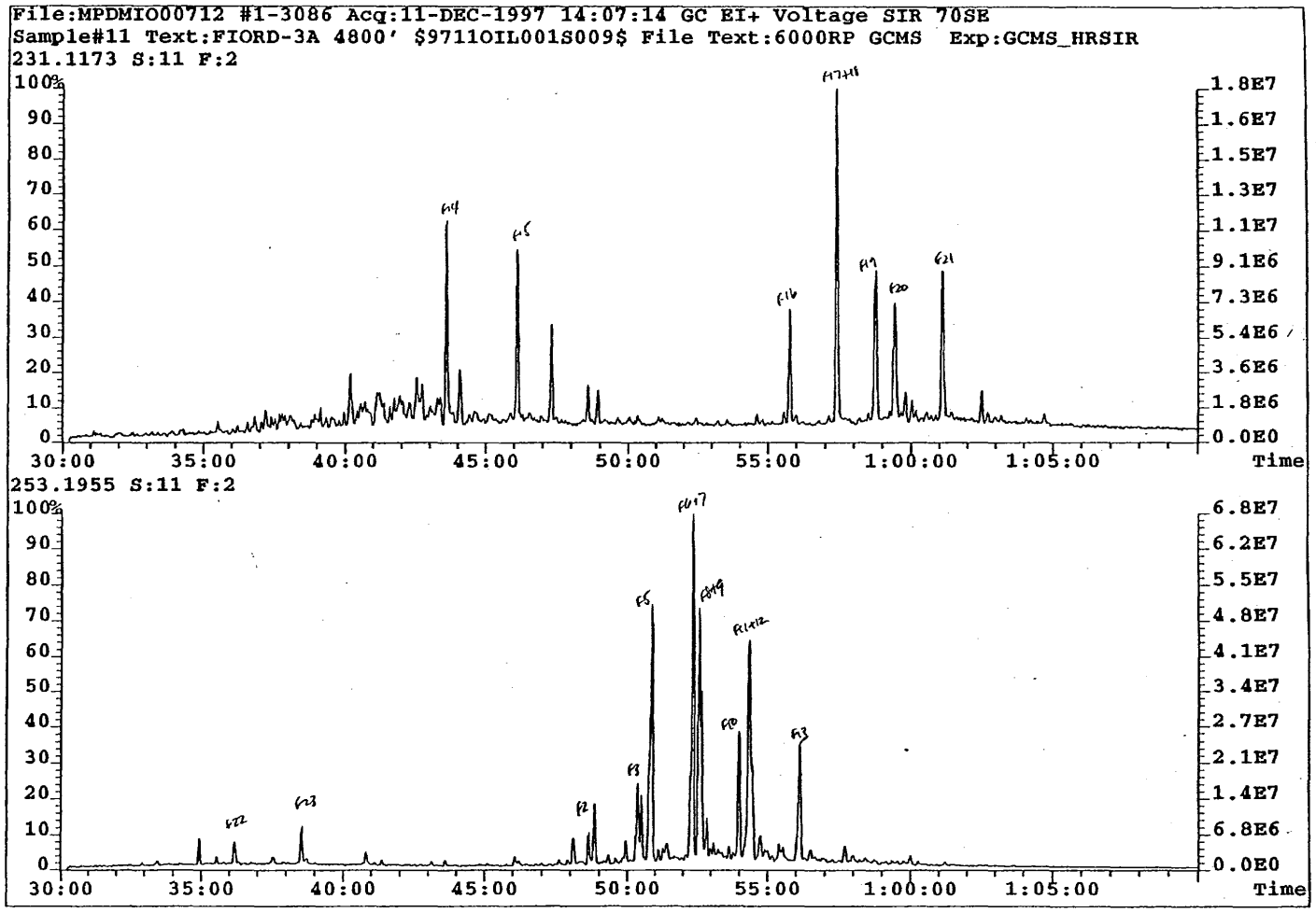

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 14:07:14 GC EI+ Voltage SIR 70SE
Sample#11 Text:FIORD-3A 4800' $9711OIL001S009$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:11 F:2
253.1955 S:11 F:2
Time

Figure 6.1

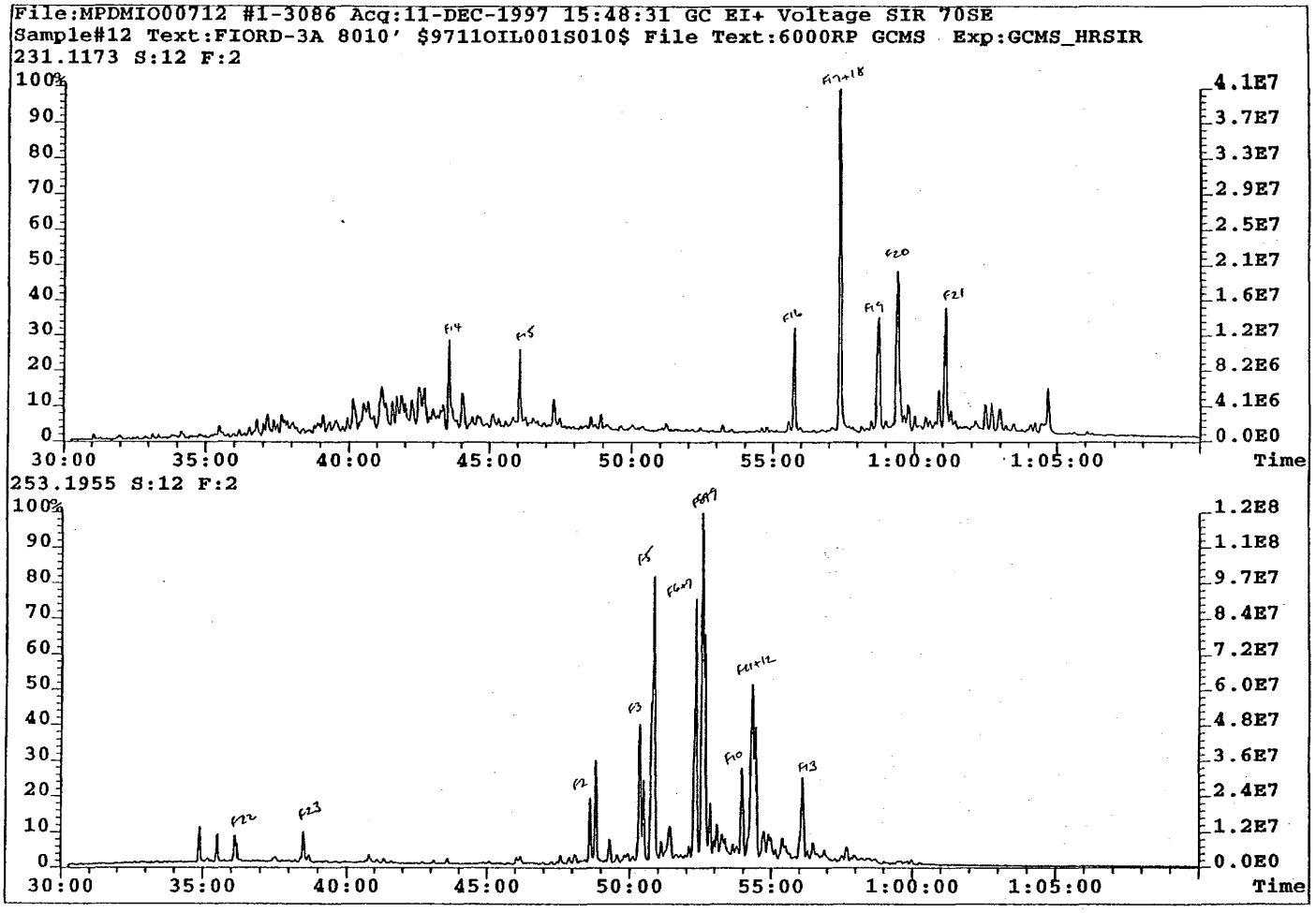

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 15:48:31 GC EI+ Voltage SIR 70SE
Sample#12 Text:FIORD-3A 8010' $9711OIL001S010$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:12 F:2
253.1955 S:12 F:2
Time

Figure 6.2

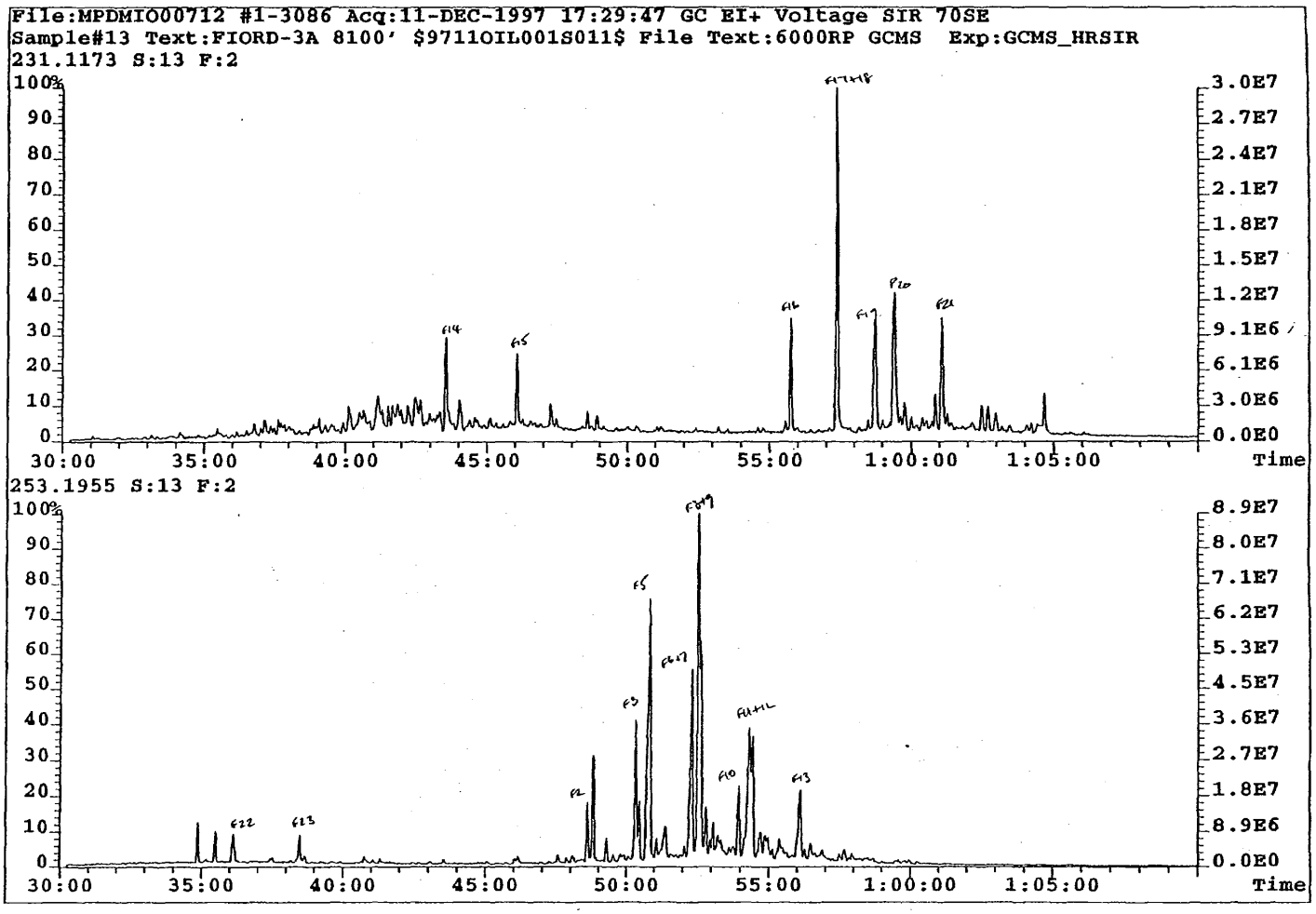

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 17:29:47 GC EI+ Voltage SIR 70SE
Sample#13 Text:FIORD-3A 8100' $9711OIL001S011$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:13 F:2
253.1955 S:13 F:2
Time

Figure 6.3

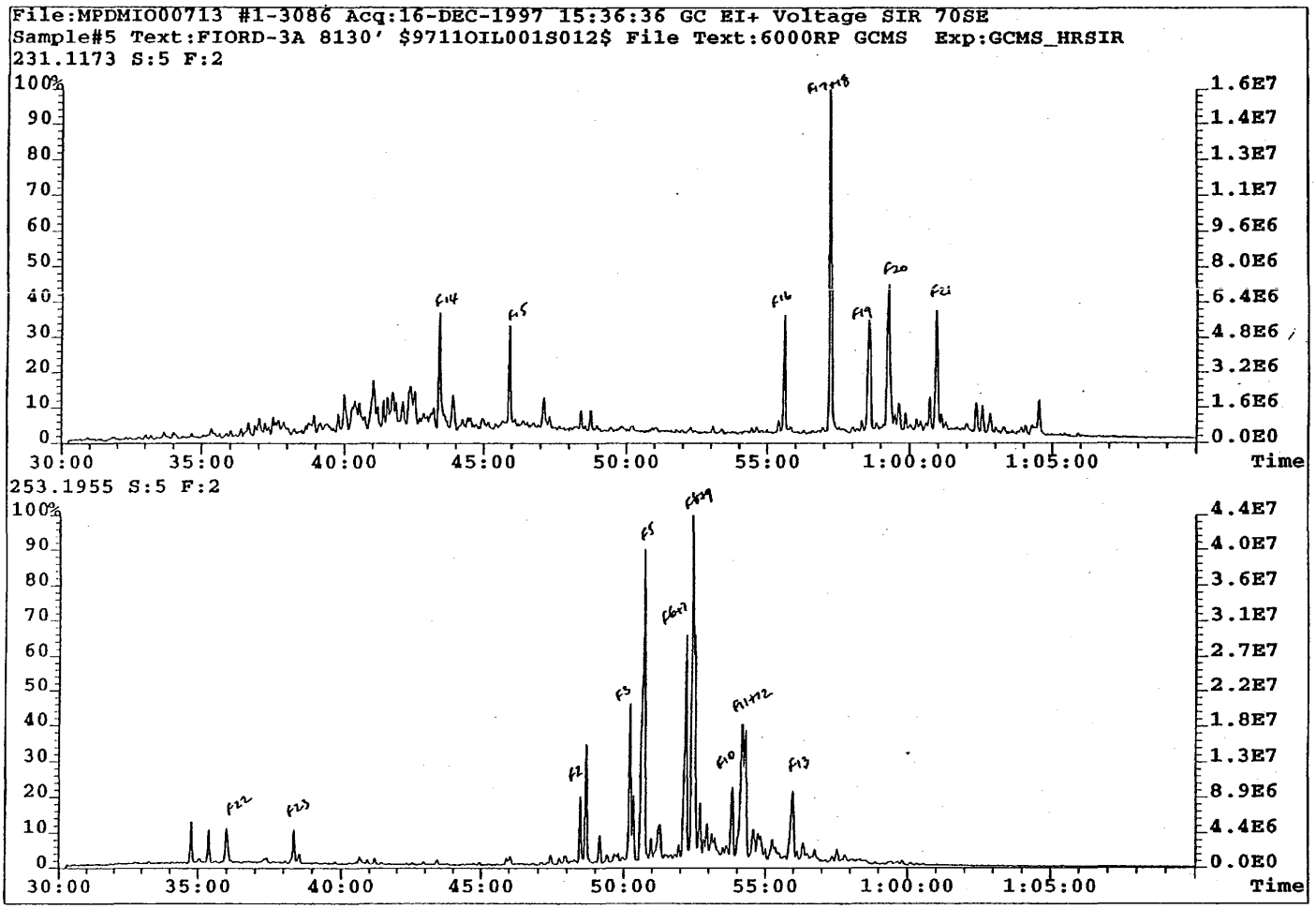

File:MPDMIO00713 #1-3086 Acq:16-DEC-1997 15:36:36 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3A 8130' $9711OIL001S012$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:5 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
1.6E7
1.4E7
1.3E7
1.1E7
9.6E6
8.0E6
6.4E6
4.8E6
3.2E6
1.6E6
0.0E0
253.1955 S:5 F:2
100%
90
80
70
60
50
40
30
20
10
0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
4.4E7
4.0E7
3.6E7
3.1E7
2.7E7
2.2E7
1.8E7
1.3E7
8.9E6
4.4E6
0.0E0

Figure 6.4

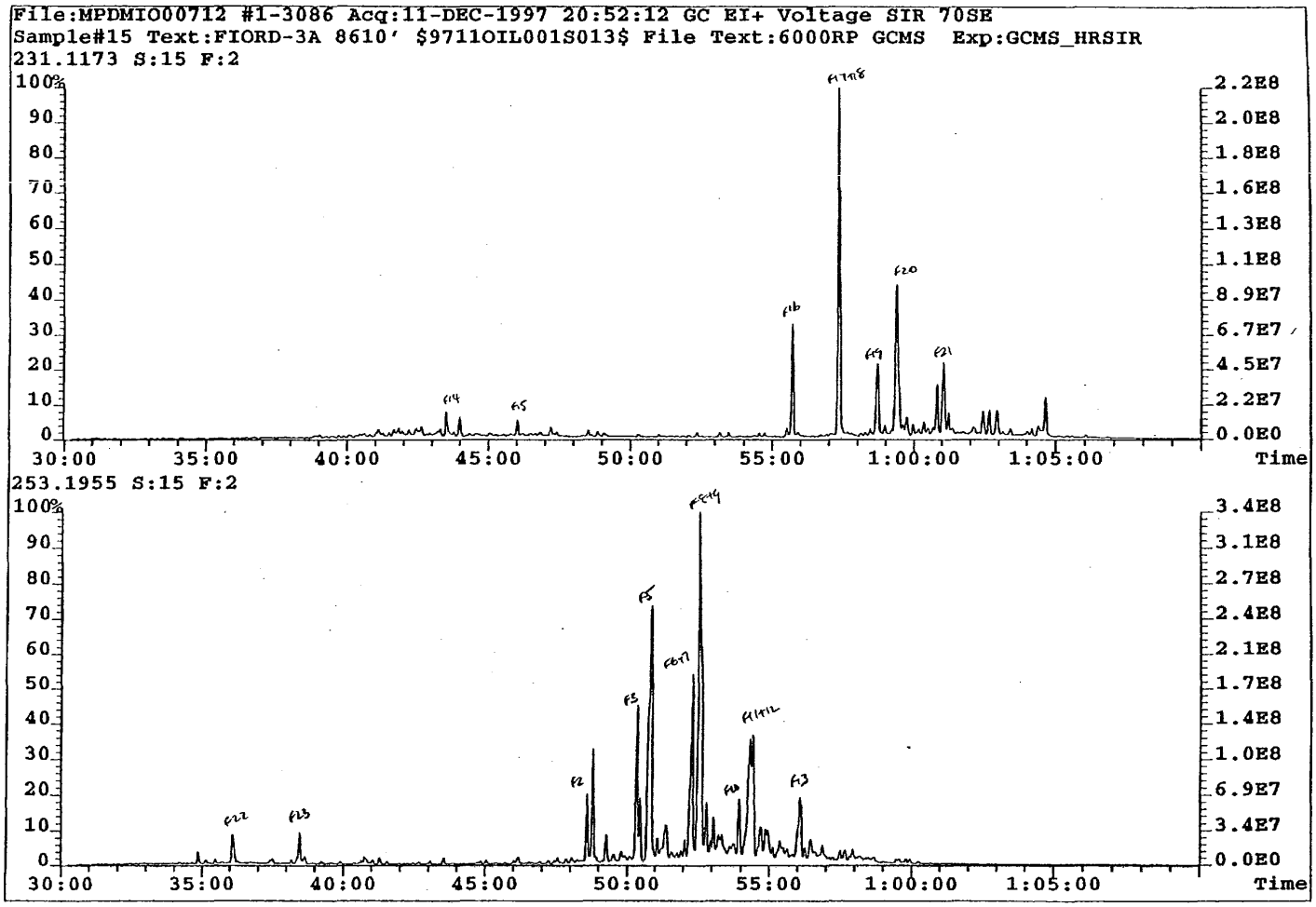

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 20:52:12 GC EI+ Voltage SIR 70SE
Sample#15 Text:FIORD-3A 8610' $9711OIL001S013$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:15 F:2
253.1955 S:15 F:2
Time

Figure 6.5

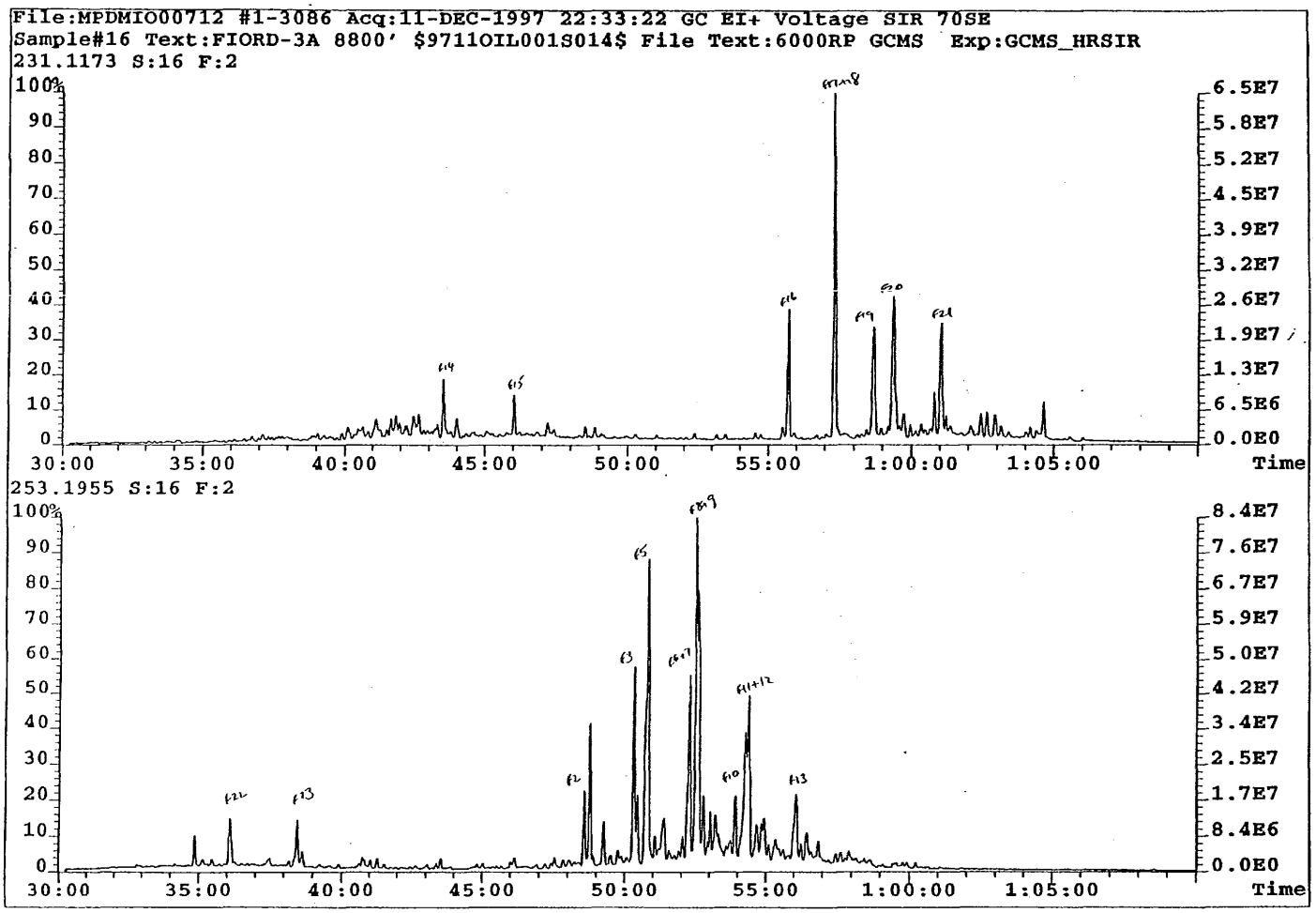

File:MPDMIO00712 #1-3086 Acq:11-DEC-1997 22:33:22 GC EI+ Voltage SIR 70SE
Sample#16 Text:FIORD-3A 8800' $9711OIL001S014$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:16 F:2
100%
90
80
70
60
50
40
30
20
10
0
6.5E7
5.8E7
5.2E7
4.5E7
3.9E7
3.2E7
2.6E7
1.9E7
1.3E7
6.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
253.1955 S:16 F:2
100%
90
80
70
60
50
40
30
20
10
0
8.4E7
7.6E7
6.7E7
5.9E7
5.0E7
4.2E7
3.4E7
2.5E7
1.7E7
8.4E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time

Figure 6.6

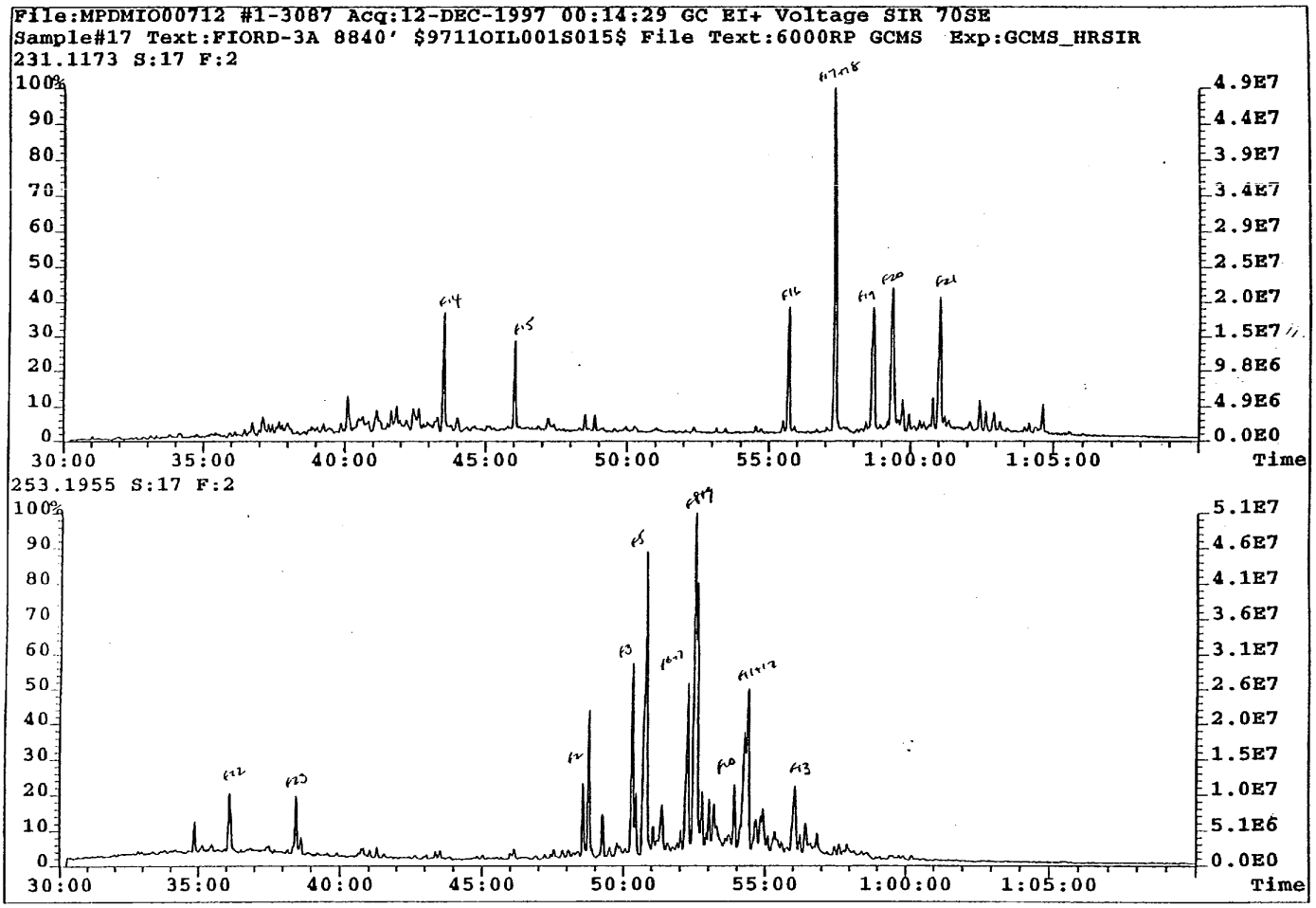

File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 00:14:29 GC EI+ Voltage SIR 70SE
Sample#17 Text:FIORD-3A 8840' $9711OIL001S015$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:17 F:2
253.1955 S:17 F:2
Time

Figure 6.7

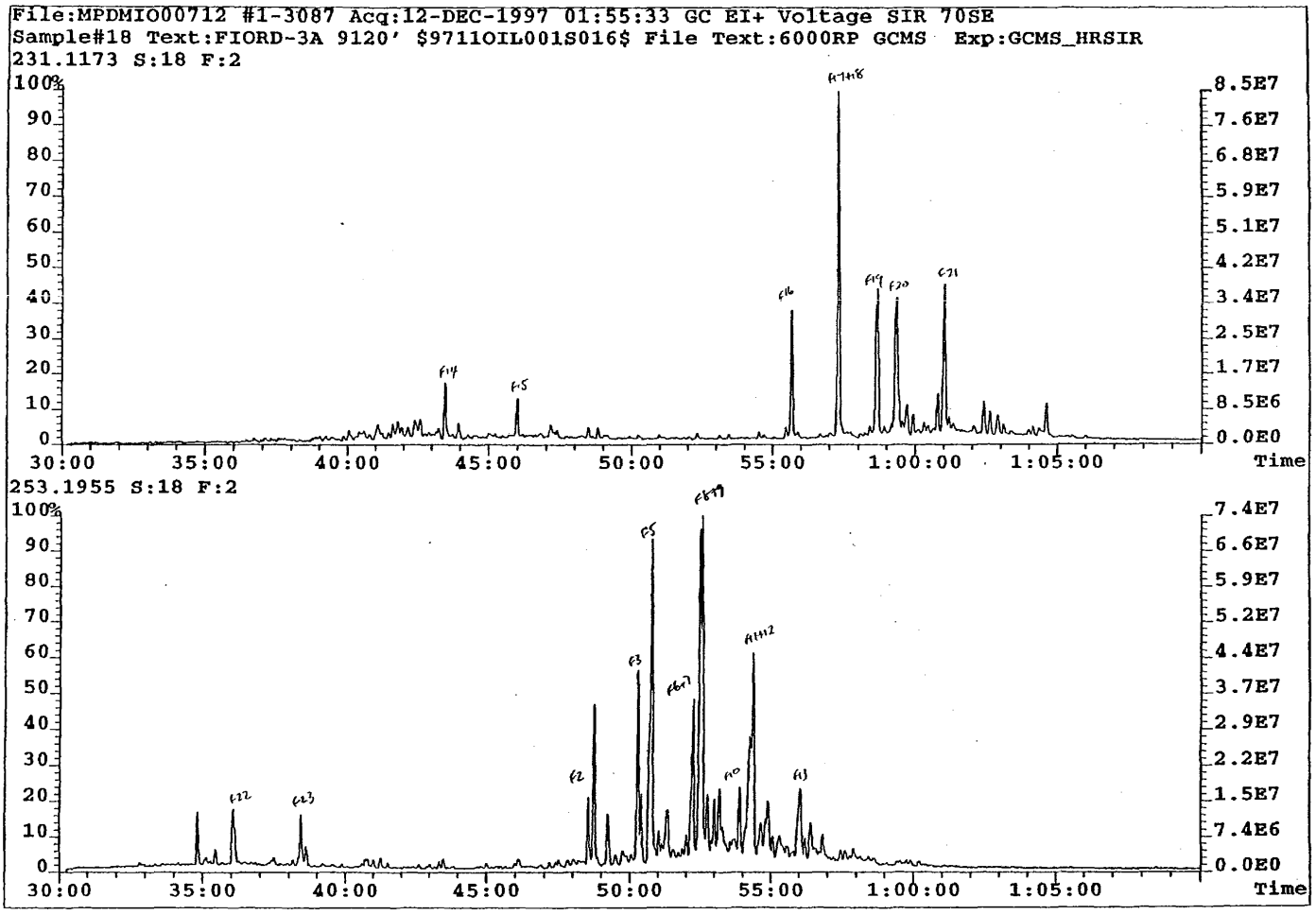

File:MPDMIO00712 #1-3087 Acq:12-DEC-1997 01:55:33 GC EI+ Voltage SIR 70SE
Sample#18 Text:FIORD-3A 9120' $9711OIL001S016$ File Text:6000RP GCMS Exp:GCMS_HRSIR
231.1173 S:18 F:2
100%
90
80
70
60
50
40
30
20
10
0
8.5E7
7.6E7
6.8E7
5.9E7
5.1E7
4.2E7
3.4E7
2.5E7
1.7E7
8.5E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time
253.1955 S:18 F:2
100%
90
80
70
60
50
40
30
20
10
0
7.4E7
6.6E7
5.9E7
5.2E7
4.4E7
3.7E7
2.9E7
2.2E7
1.5E7
7.4E6
0.0E0
30:00
35:00
40:00
45:00
50:00
55:00
1:00:00
1:05:00
Time

Figure 6.8

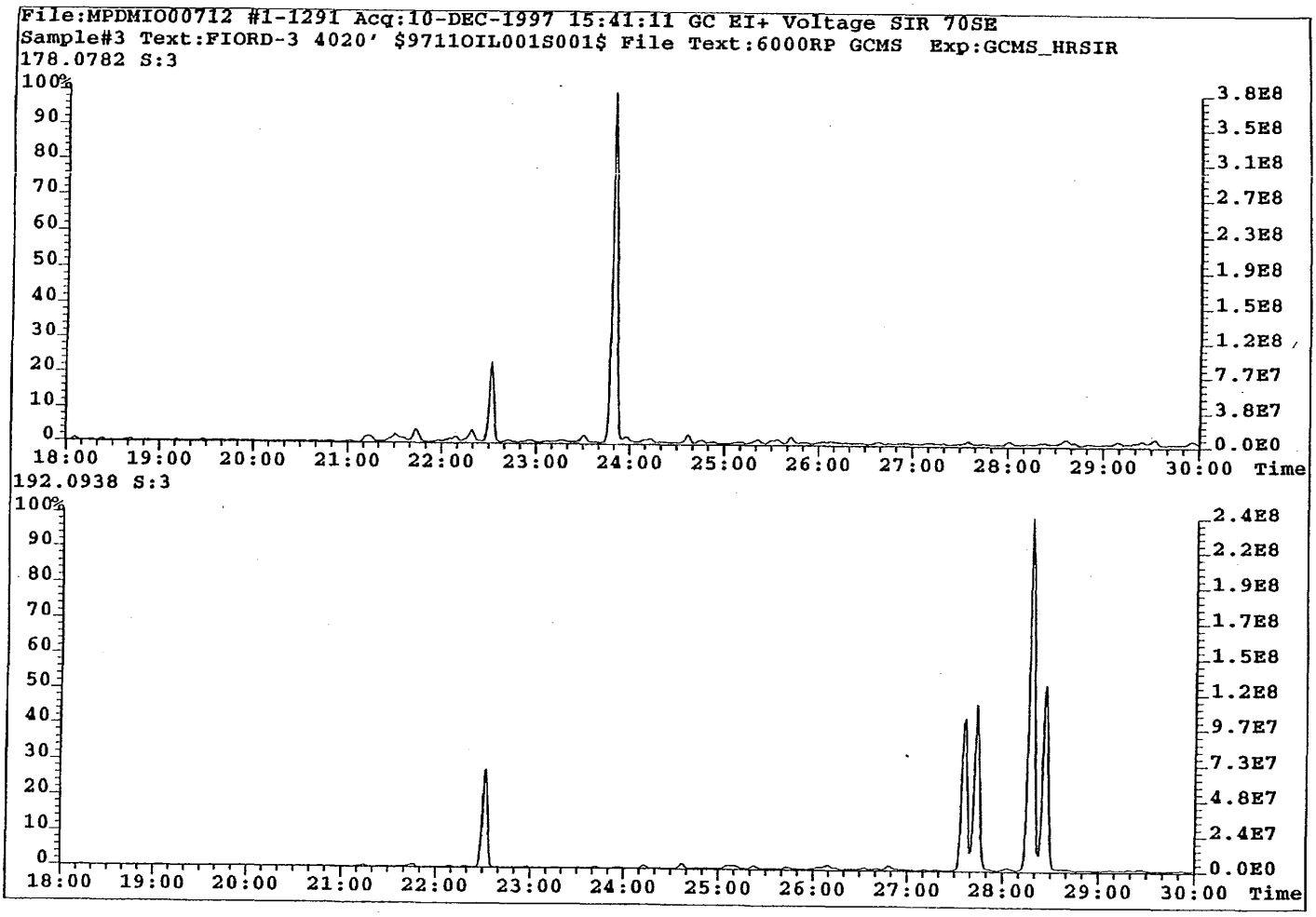

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 15:41:11 GC EI+ Voltage SIR 70SE
Sample#3 Text:FIORD-3 4020' $9711OIL001S001$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:3
100%
90
80
70
60
50
40
30
20
10
0
3.8E8
3.5E8
3.1E8
2.7E8
2.3E8
1.9E8
1.5E8
1.2E8
7.7E7
3.8E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:3
100%
90
80
70
60
50
40
30
20
10
0
2.4E8
2.2E8
1.9E8
1.7E8
1.5E8
1.2E8
9.7E7
7.3E7
4.8E7
2.4E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 7.1

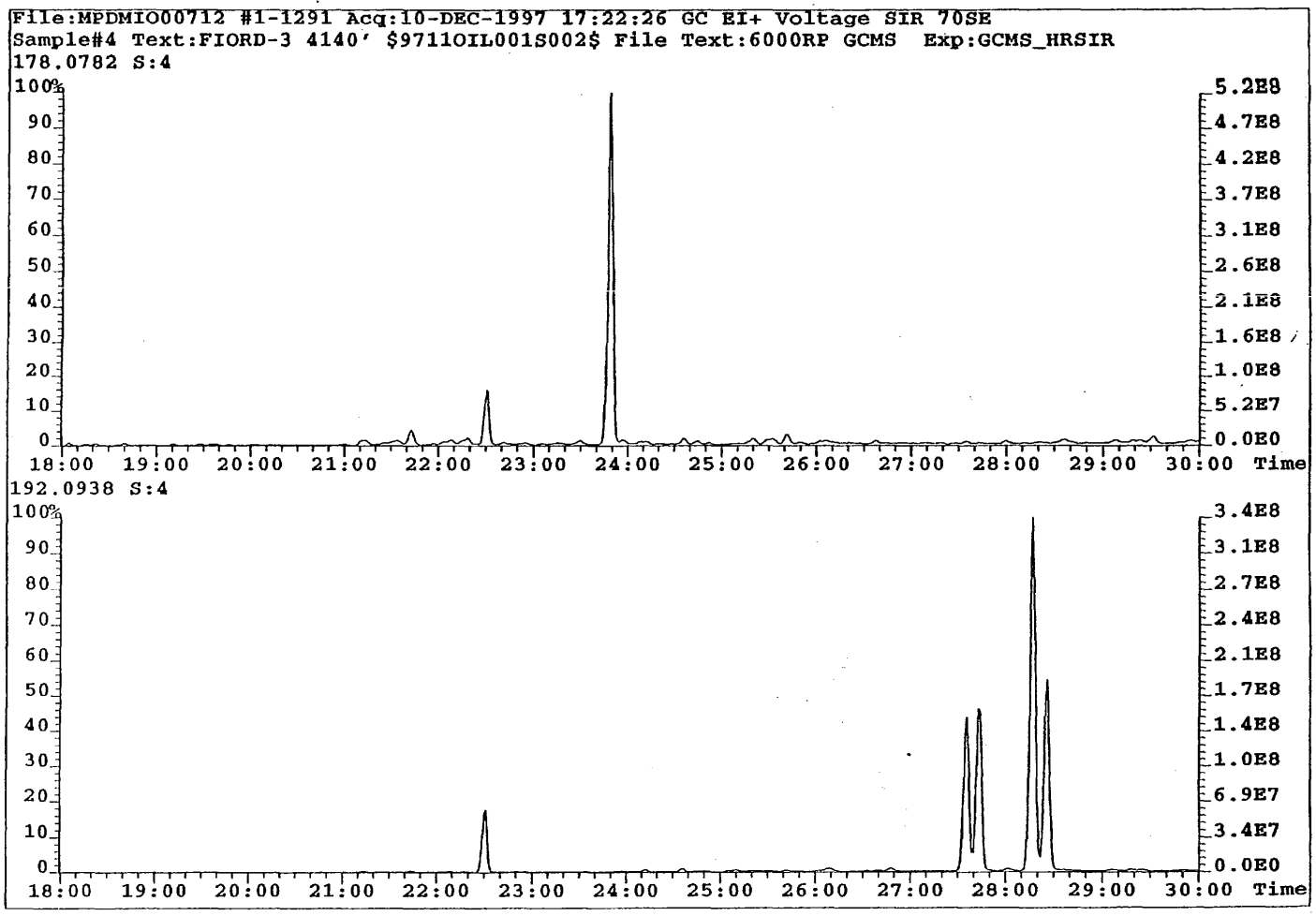

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 17:22:26 GC EI+ Voltage SIR 70SE
Sample#4 Text:FIORD-3 4140' $9711OIL001S002$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:4
100%
90
80
70
60
50
40
30
20
10
0
5.2E8
4.7E8
4.2E8
3.7E8
3.1E8
2.6E8
2.1E8
1.6E8
1.0E8
5.2E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:4
100%
90
80
70
60
50
40
30
20
10
0
3.4E8
3.1E8
2.7E8
2.4E8
2.1E8
1.7E8
1.4E8
1.0E8
6.9E7
3.4E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 7.2

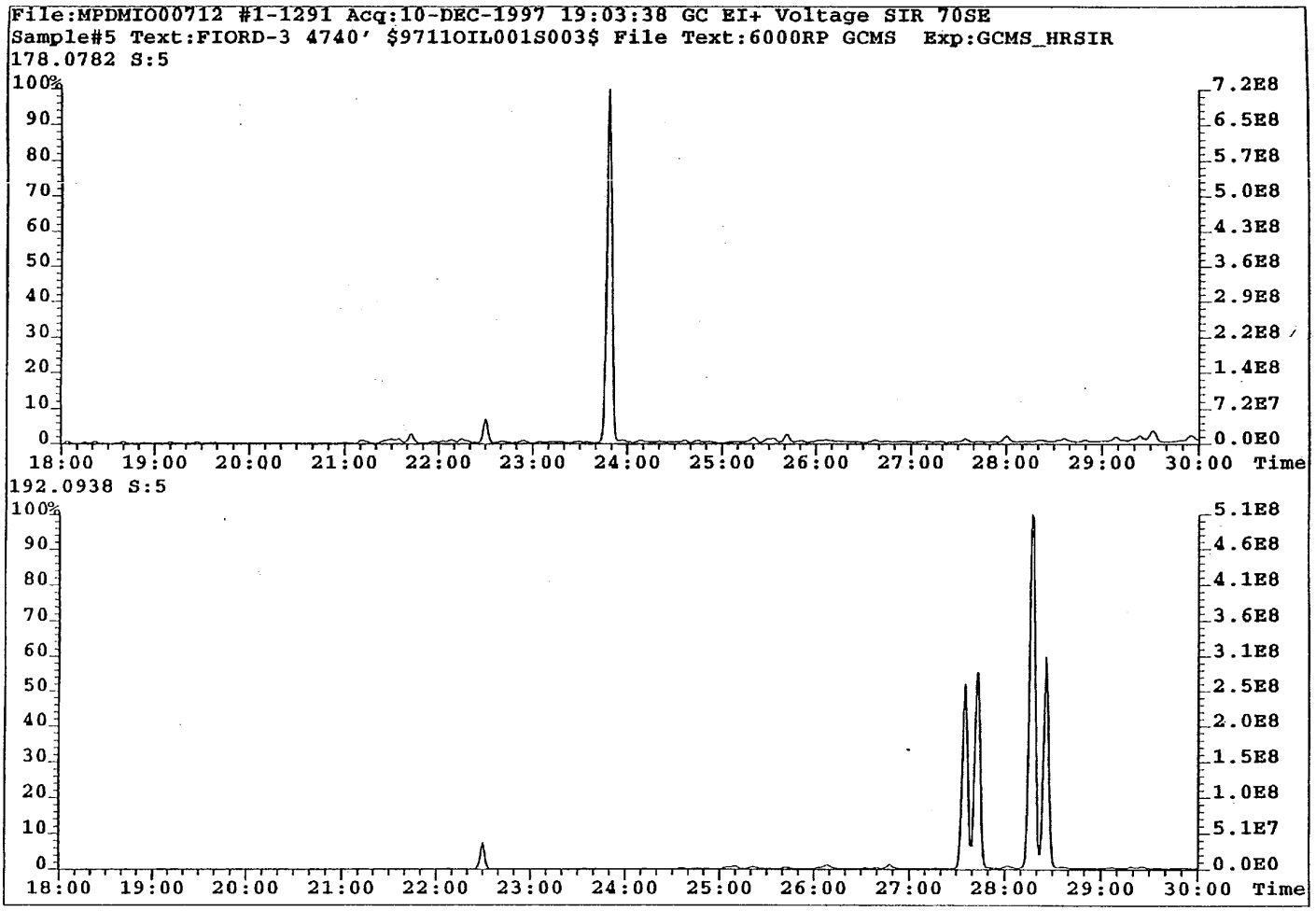

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 19:03:38 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3 4740' $9711OIL001S003$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:5
100%
90
80
70
60
50
40
30
20
10
0
7.2E8
6.5E8
5.7E8
5.0E8
4.3E8
3.6E8
2.9E8
2.2E8
1.4E8
7.2E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:5
100%
90
80
70
60
50
40
30
20
10
0
5.1E8
4.6E8
4.1E8
3.6E8
3.1E8
2.5E8
2.0E8
1.5E8
1.0E8
5.1E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 73

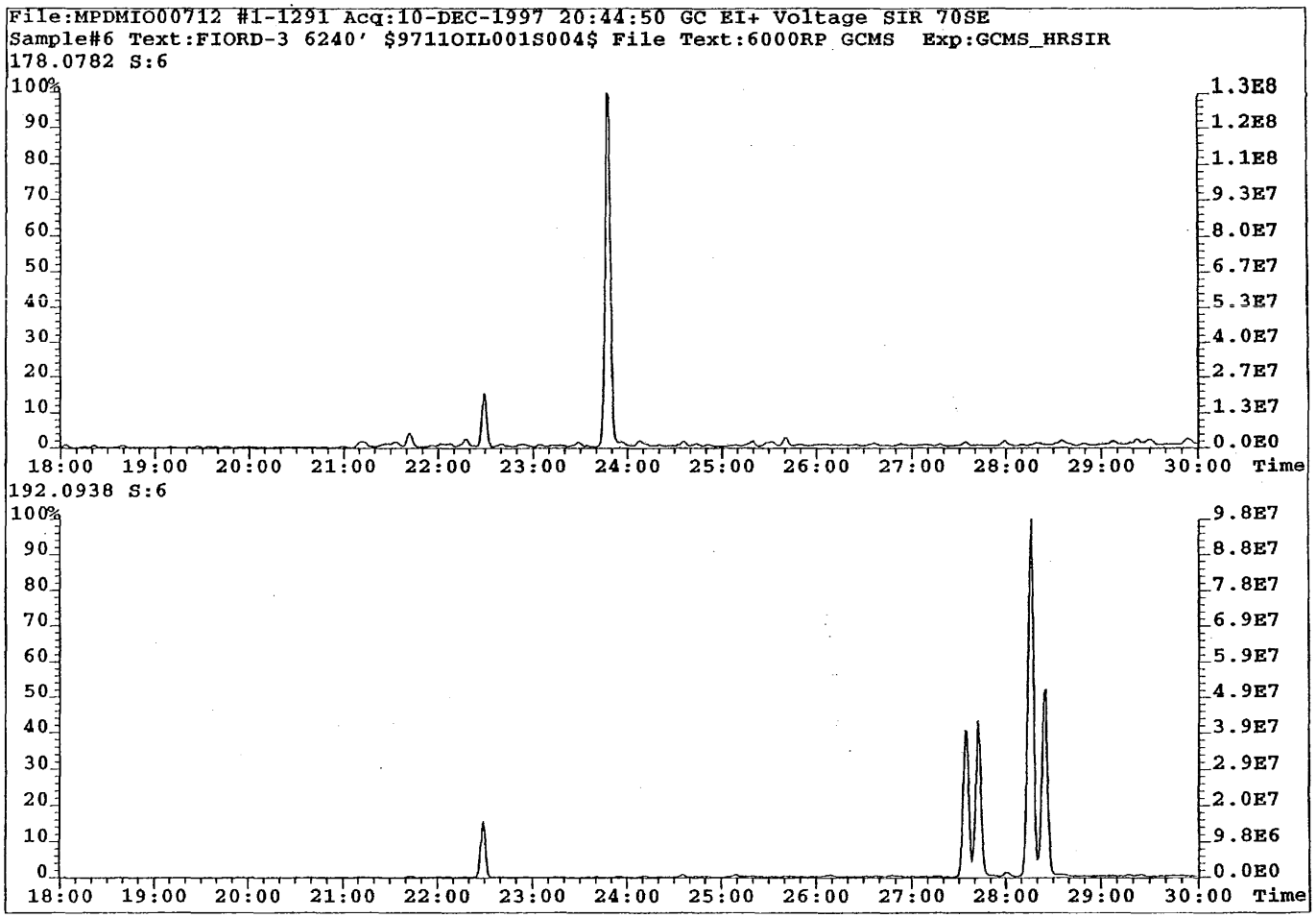

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 20:44:50 GC EI+ Voltage SIR 70SE
Sample#6 Text:FIORD-3 6240' $9711OIL001S004$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:6
100%
90
80
70
60
50
40
30
20
10
0
1.3E8
1.2E8
1.1E8
9.3E7
8.0E7
6.7E7
5.3E7
4.0E7
2.7E7
1.3E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:6
100%
90
80
70
60
50
40
30
20
10
0
9.8E7
8.8E7
7.8E7
6.9E7
5.9E7
4.9E7
3.9E7
2.9E7
2.0E7
9.8E6
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 7.4

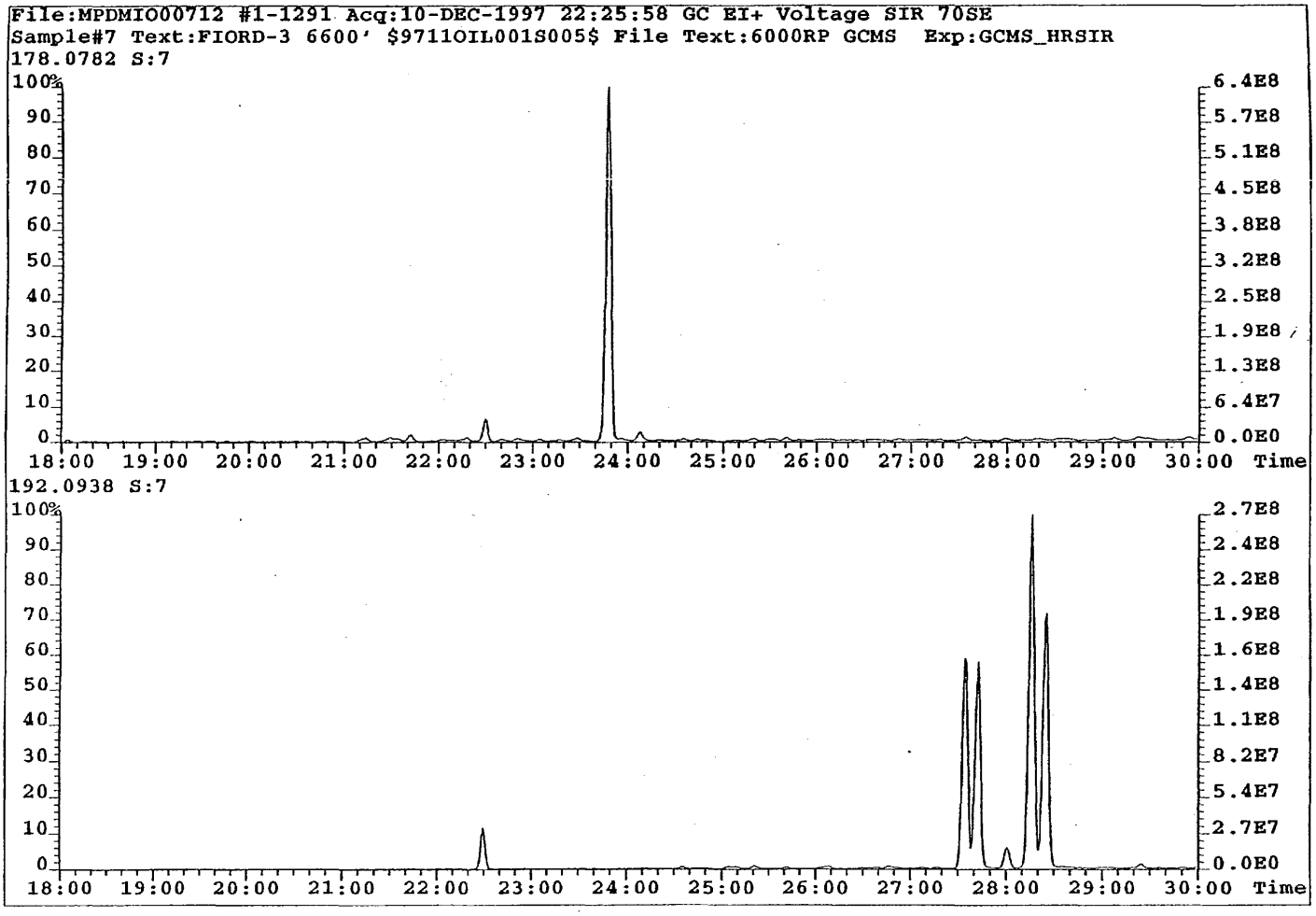

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 22:25:58 GC EI+ Voltage SIR 70SE
Sample#7 Text:FIORD-3 6600' $9711OIL001S005$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:7
100%
90
80
70
60
50
40
30
20
10
0
6.4E8
5.7E8
5.1E8
4.5E8
3.8E8
3.2E8
2.5E8
1.9E8
1.3E8
6.4E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:7
100%
90
80
70
60
50
40
30
20
10
0
2.7E8
2.4E8
2.2E8
1.9E8
1.6E8
1.4E8
1.1E8
8.2E7
5.4E7
2.7E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 7.5

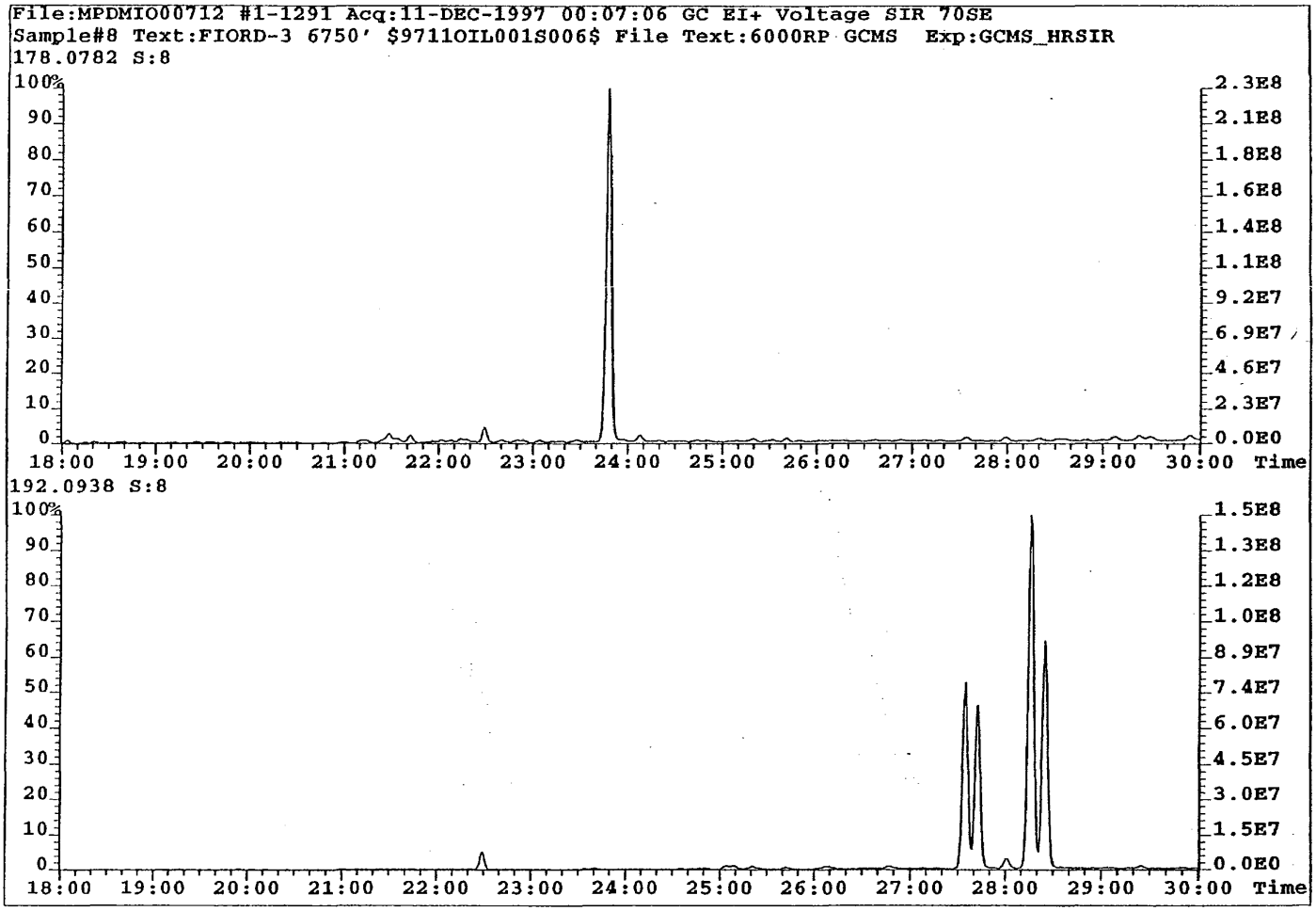

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 00:07:06 GC EI+ Voltage SIR 70SE
Sample#8 Text:FIORD-3 6750' $9711OIL001S006$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:8
100%
90
80
70
60
50
40
30
20
10
0
2.3E8
2.1E8
1.8E8
1.6E8
1.4E8
1.1E8
9.2E7
6.9E7
4.6E7
2.3E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:8
100%
90
80
70
60
50
40
30
20
10
0
1.5E8
1.3E8
1.2E8
1.0E8
8.9E7
7.4E7
6.0E7
4.5E7
3.0E7
1.5E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 7.6

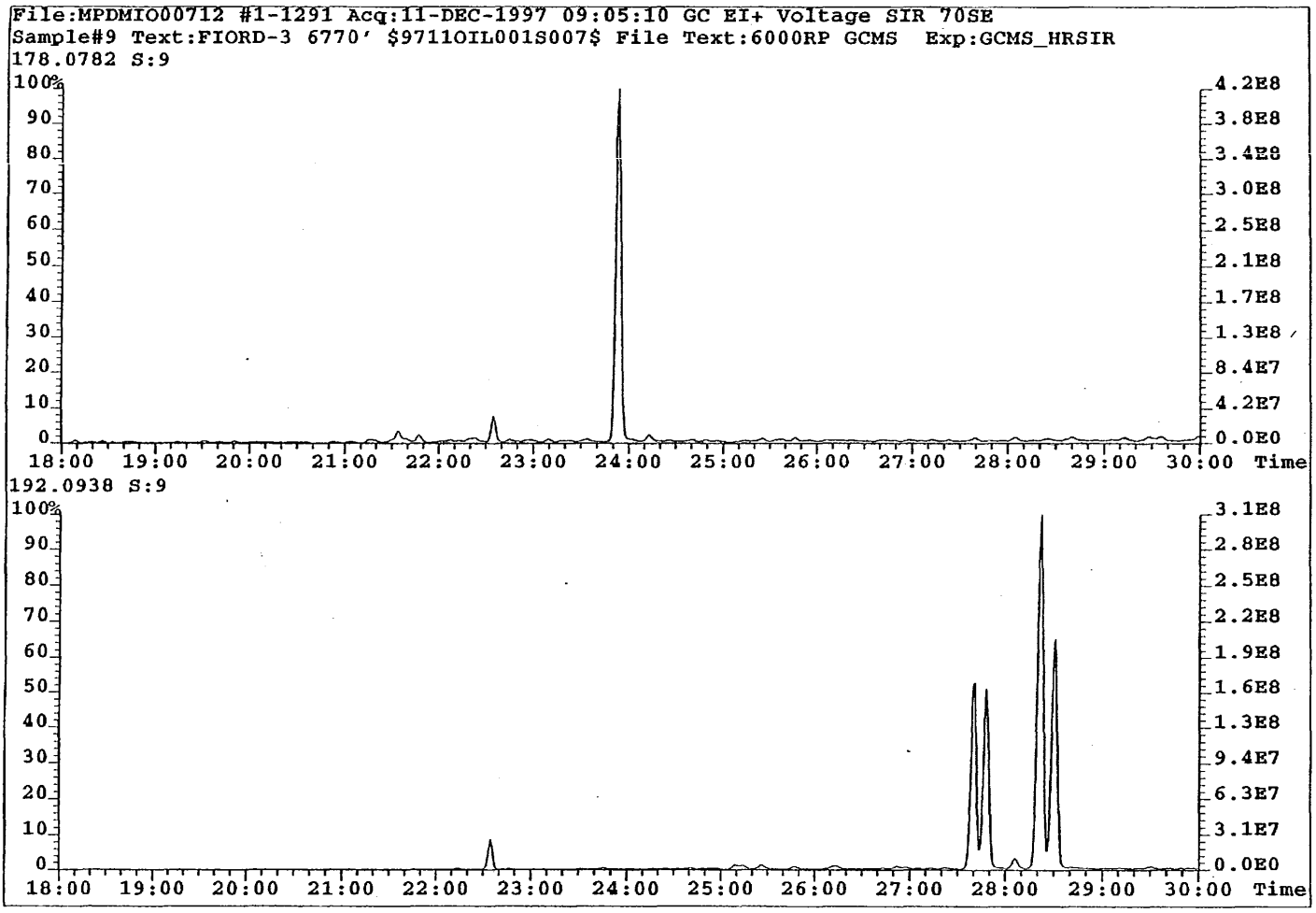

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 09:05:10 GC EI+ Voltage SIR 70SE
Sample#9 Text:FIORD-3 6770' $9711OIL001S007$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:9
100%
90
80
70
60
50
40
30
20
10
0
4.2E8
3.8E8
3.4E8
3.0E8
2.5E8
2.1E8
1.7E8
1.3E8
8.4E7
4.2E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:9
100%
90
80
70
60
50
40
30
20
10
0
3.1E8
2.8E8
2.5E8
2.2E8
1.9E8
1.6E8
1.3E8
9.4E7
6.3E7
3.1E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 7.7

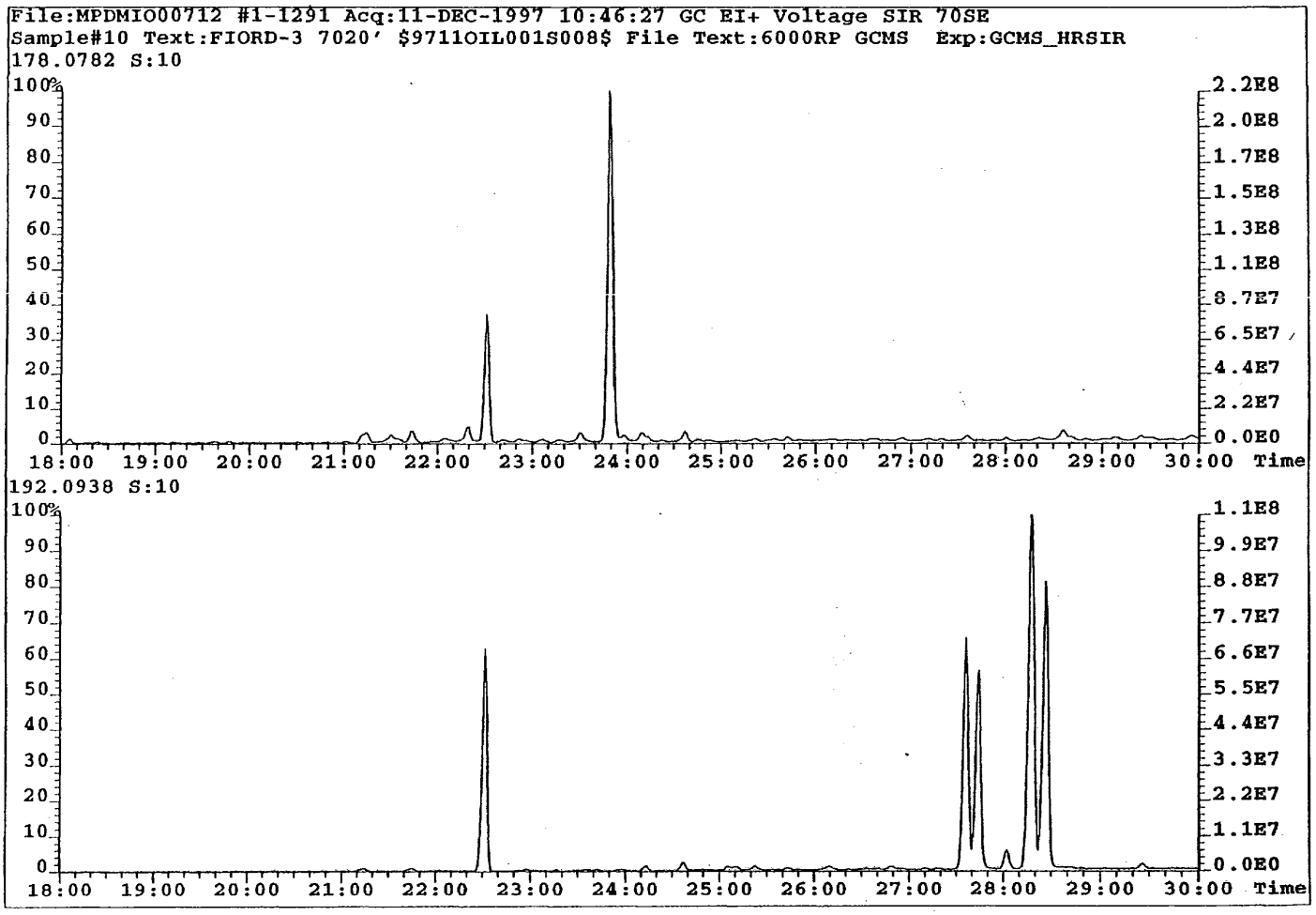

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 10:46:27 GC EI+ Voltage SIR 70SE
Sample#10 Text:FIORD-3 7020' $9711OIL001S008$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:10
100%
90
80
70
60
50
40
30
20
10
0
2.2E8
2.0E8
1.7E8
1.5E8
1.3E8
1.1E8
8.7E7
6.5E7
4.4E7
2.2E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:10
100%
90
80
70
60
50
40
30
20
10
0
1.1E8
9.9E7
8.8E7
7.7E7
6.6E7
5.5E7
4.4E7
3.3E7
2.2E7
1.1E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 7.8

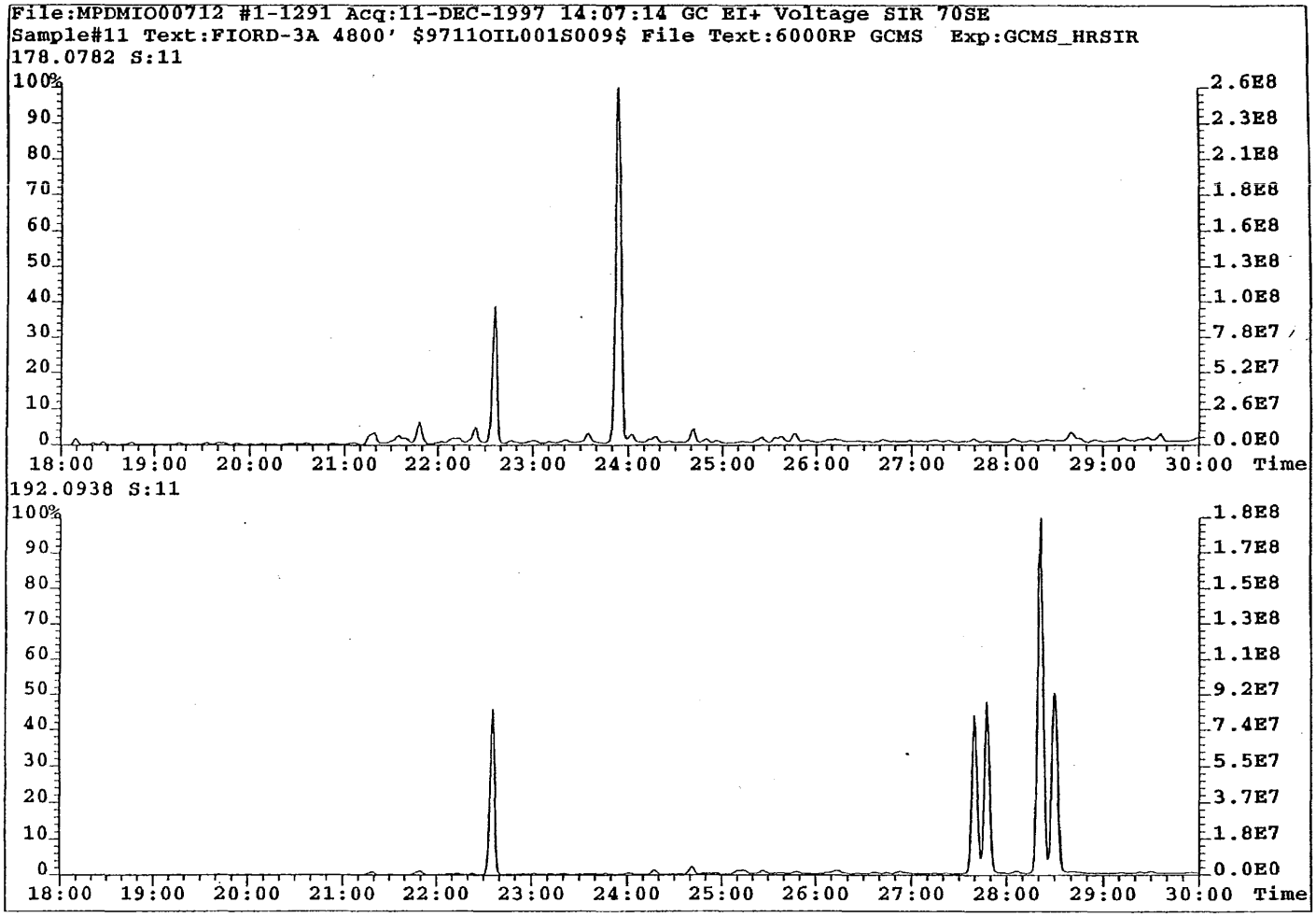

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 14:07:14 GC EI+ Voltage SIR 70SE
Sample#11 Text:FIORD-3A 4800' $9711OIL001S009$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:11
100%
90
80
70
60
50
40
30
20
10
0
2.6E8
2.3E8
2.1E8
1.8E8
1.6E8
1.3E8
1.0E8
7.8E7
5.2E7
2.6E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:11
100%
90
80
70
60
50
40
30
20
10
0
1.8E8
1.7E8
1.5E8
1.3E8
1.1E8
9.2E7
7.4E7
5.5E7
3.7E7
1.8E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.1

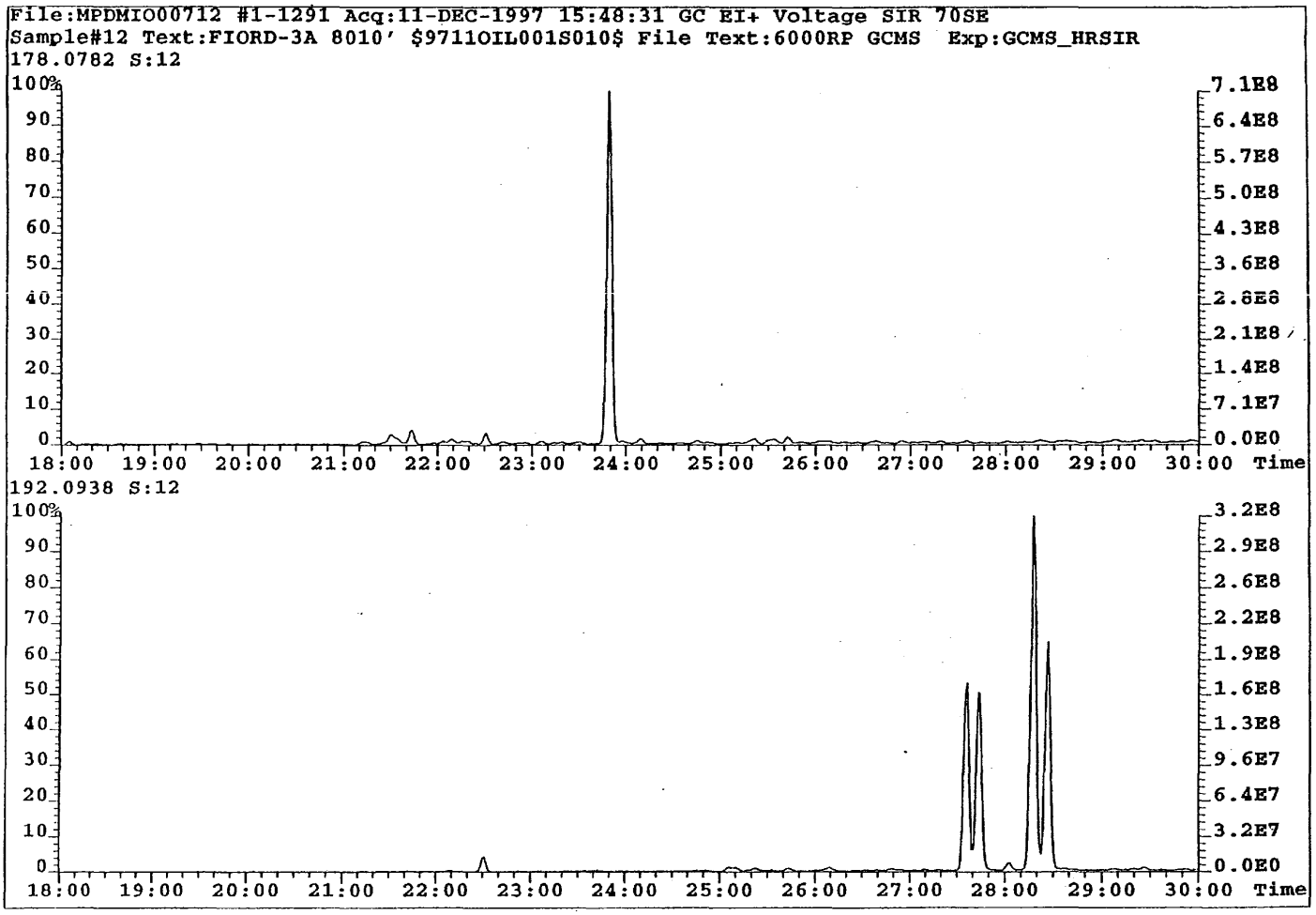

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 15:48:31 GC EI+ Voltage SIR 70SE
Sample#12 Text:FIORD-3A 8010' $9711OIL001S010$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:12
100%
90
80
70
60
50
40
30
20
10
0
7.1E8
6.4E8
5.7E8
5.0E8
4.3E8
3.6E8
2.8E8
2.1E8
1.4E8
7.1E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:12
100%
90
80
70
60
50
40
30
20
10
0
3.2E8
2.9E8
2.6E8
2.2E8
1.9E8
1.6E8
1.3E8
9.6E7
6.4E7
3.2E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.2

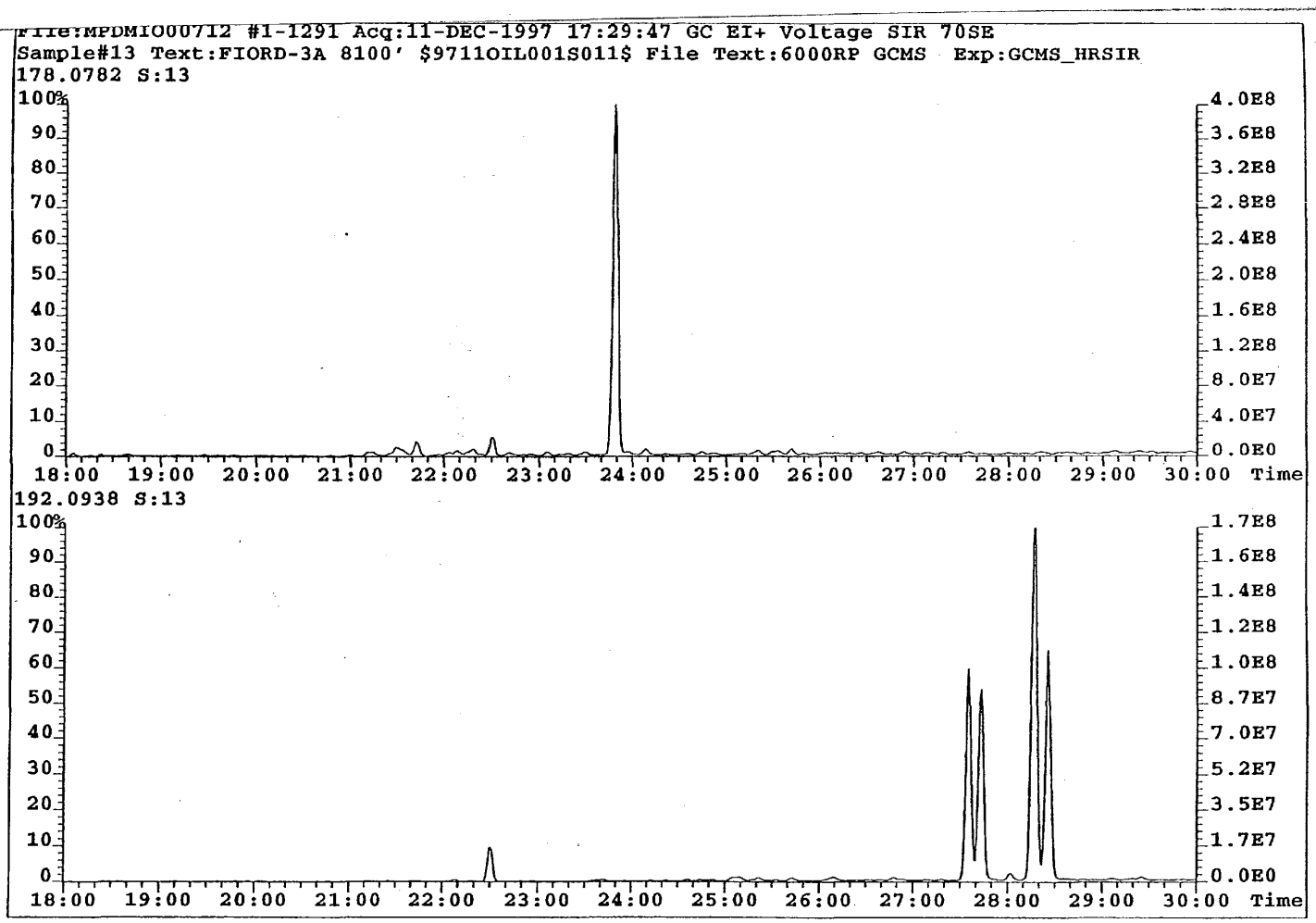

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 17:29:47 GC EI+ Voltage SIR 70SE
Sample#13 Text:FIORD-3A 8100' $9711OIL001S011$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:13
100%
90
80
70
60
50
40
30
20
10
0
4.0E8
3.6E8
3.2E8
2.8E8
2.4E8
2.0E8
1.6E8
1.2E8
8.0E7
4.0E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:13
100%
90
80
70
60
50
40
30
20
10
0
1.7E8
1.6E8
1.4E8
1.2E8
1.0E8
8.7E7
7.0E7
5.2E7
3.5E7
1.7E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.3

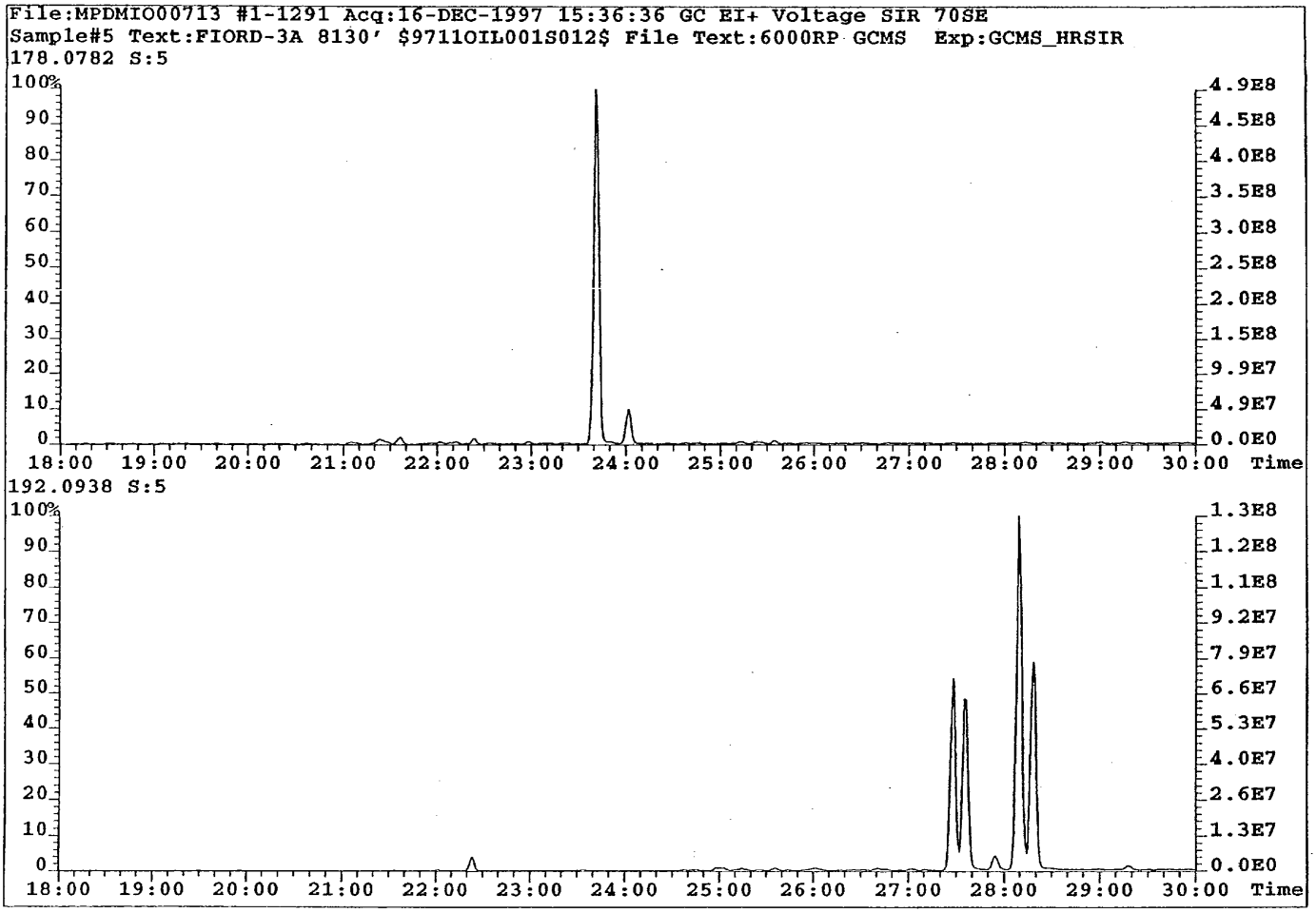

File:MPDMIO00713 #1-1291 Acq:16-DEC-1997 15:36:36 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3A 8130' $9711OIL001S012$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:5
100%
90
80
70
60
50
40
30
20
10
0
4.9E8
4.5E8
4.0E8
3.5E8
3.0E8
2.5E8
2.0E8
1.5E8
9.9E7
4.9E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:5
100%
90
80
70
60
50
40
30
20
10
0
1.3E8
1.2E8
1.1E8
9.2E7
7.9E7
6.6E7
5.3E7
4.0E7
2.6E7
1.3E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.4

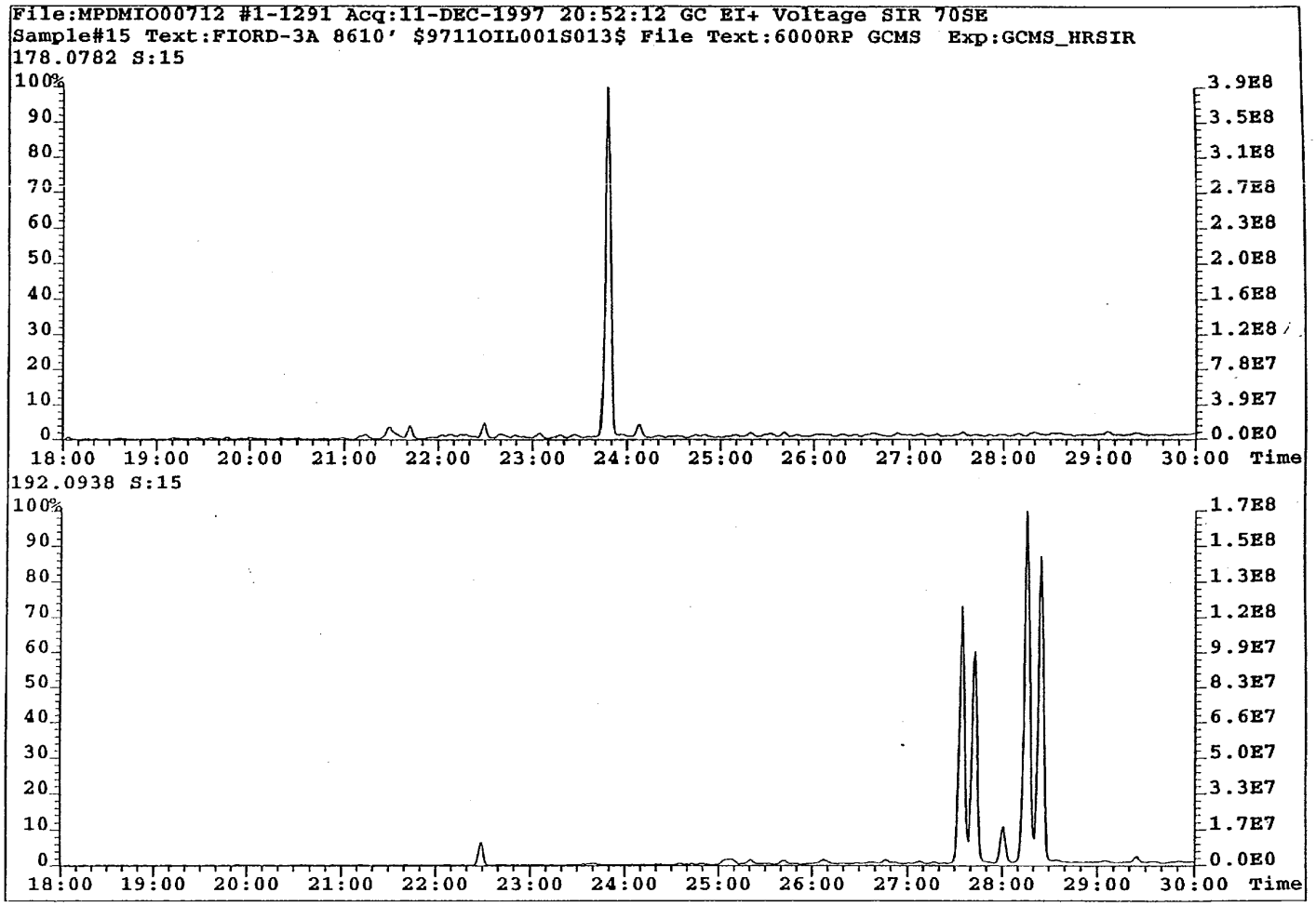

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 20:52:12 GC EI+ Voltage SIR 70SE
Sample#15 Text:FIORD-3A 8610' $9711OIL001S013$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:15
100%
90
80
70
60
50
40
30
20
10
0
3.9E8
3.5E8
3.1E8
2.7E8
2.3E8
2.0E8
1.6E8
1.2E8
7.8E7
3.9E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:15
100%
90
80
70
60
50
40
30
20
10
0
1.7E8
1.5E8
1.3E8
1.2E8
9.9E7
8.3E7
6.6E7
5.0E7
3.3E7
1.7E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.5

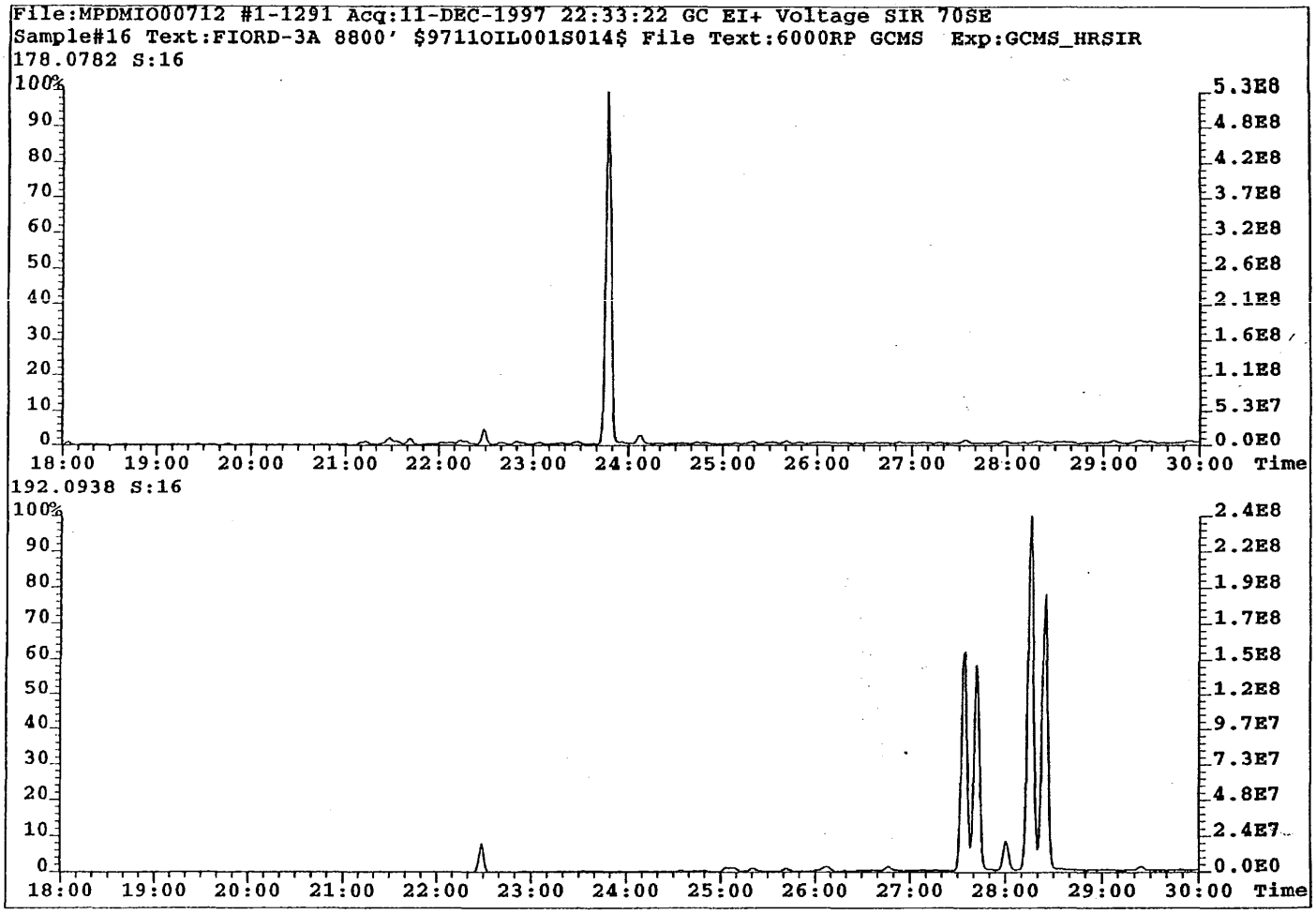

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 22:33:22 GC EI+ Voltage SIR 70SE
Sample#16 Text:FIORD-3A 8800' $9711OIL001S014$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:16
100%
90
80
70
60
50
40
30
20
10
0
5.3E8
4.8E8
4.2E8
3.7E8
3.2E8
2.6E8
2.1E8
1.6E8
1.1E8
5.3E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:16
100%
90
80
70
60
50
40
30
20
10
0
2.4E8
2.2E8
1.9E8
1.7E8
1.5E8
1.2E8
9.7E7
7.3E7
4.8E7
2.4E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.6

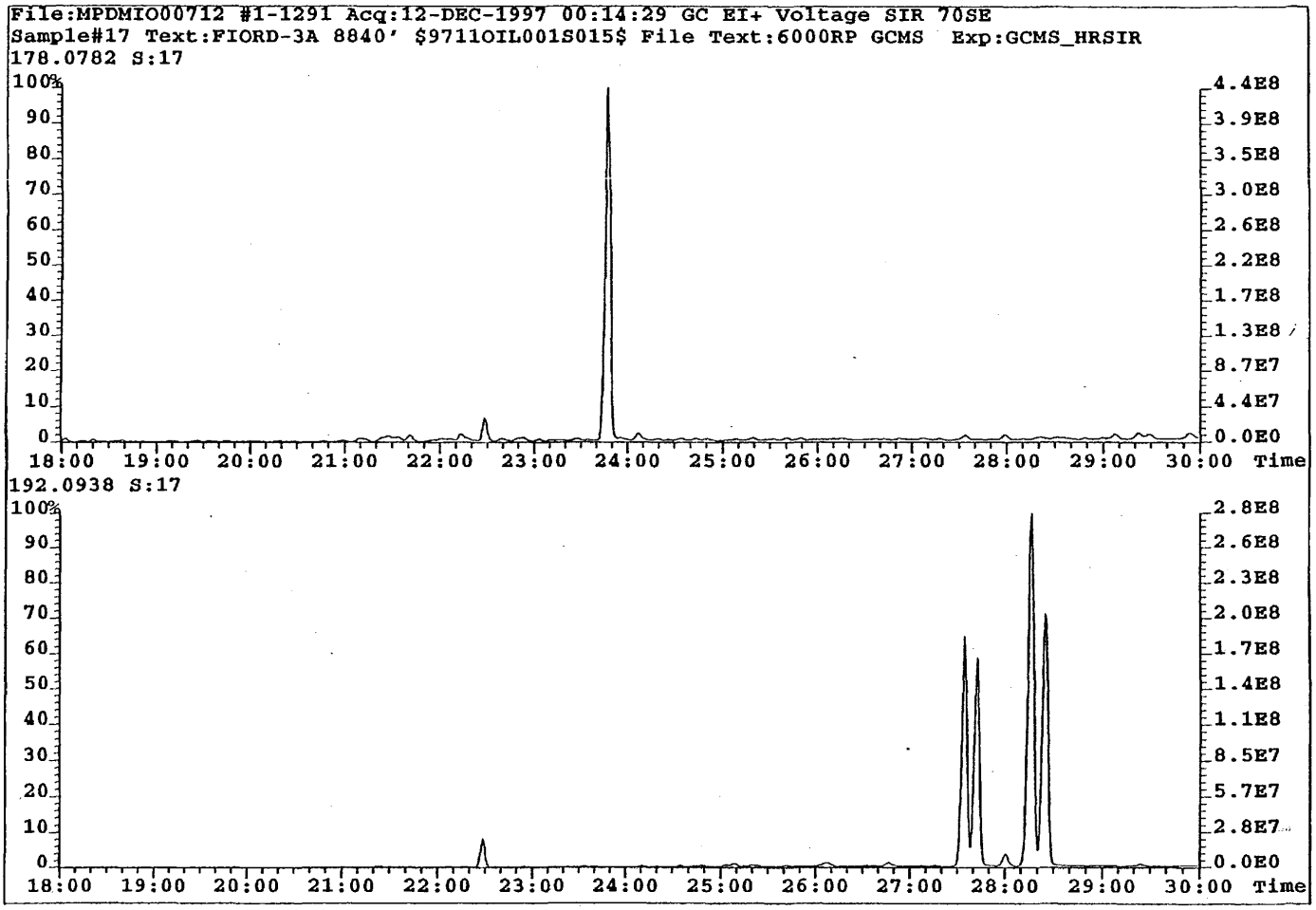

File:MPDMIO00712 #1-1291 Acq:12-DEC-1997 00:14:29 GC EI+ Voltage SIR 70SE
Sample#17 Text:FIORD-3A 8840' $9711OIL001S015$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:17
100%
90
80
70
60
50
40
30
20
10
0
4.4E8
3.9E8
3.5E8
3.0E8
2.6E8
2.2E8
1.7E8
1.3E8
8.7E7
4.4E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:17
100%
90
80
70
60
50
40
30
20
10
0
2.8E8
2.6E8
2.3E8
2.0E8
1.7E8
1.4E8
1.1E8
8.5E7
5.7E7
2.8E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.7

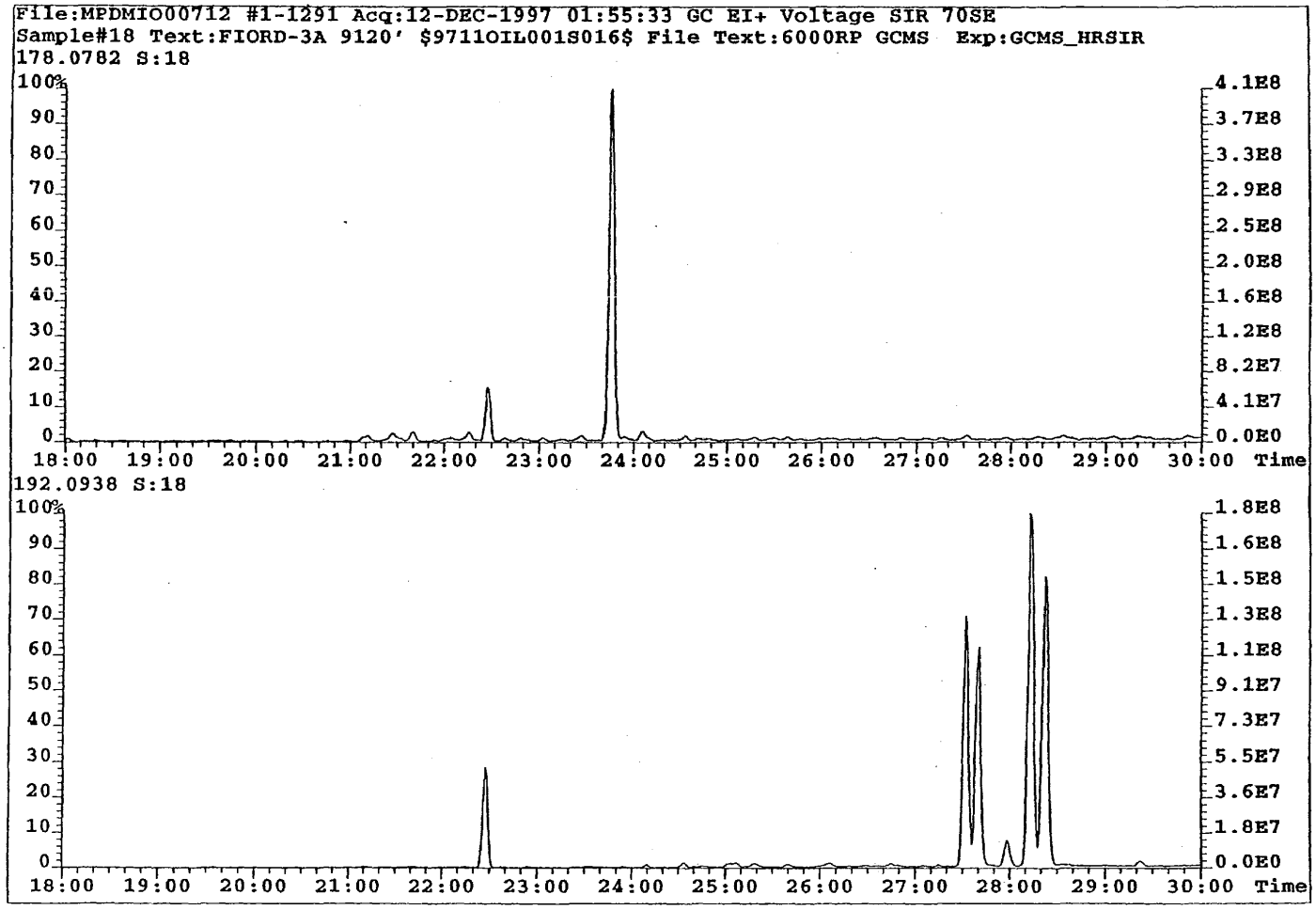

File:MPDMIO00712 #1-1291 Acq:12-DEC-1997 01:55:33 GC EI+ Voltage SIR 70SE
Sample#18 Text:FIORD-3A 9120' $9711OIL001S016$ File Text:6000RP GCMS Exp:GCMS_HRSIR
178.0782 S:18
100%
90
80
70
60
50
40
30
20
10
0
4.1E8
3.7E8
3.3E8
2.9E8
2.5E8
2.0E8
1.6E8
1.2E8
8.2E7
4.1E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time
192.0938 S:18
100%
90
80
70
60
50
40
30
20
10
0
1.8E8
1.6E8
1.5E8
1.3E8
1.1E8
9.1E7
7.3E7
5.5E7
3.6E7
1.8E7
0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 29:00 30:00 Time

Figure 8.8

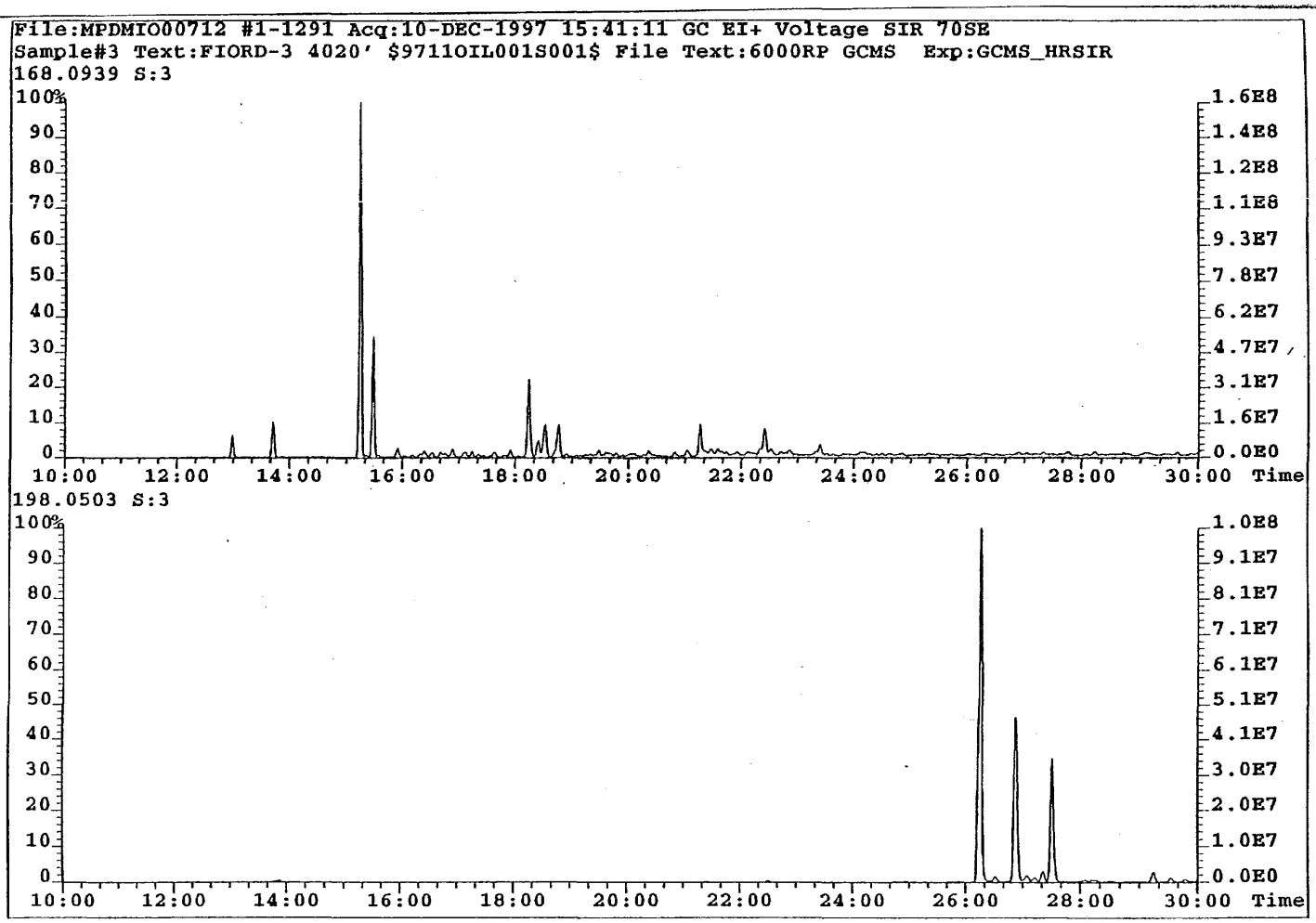


Figure 9-1
118/154

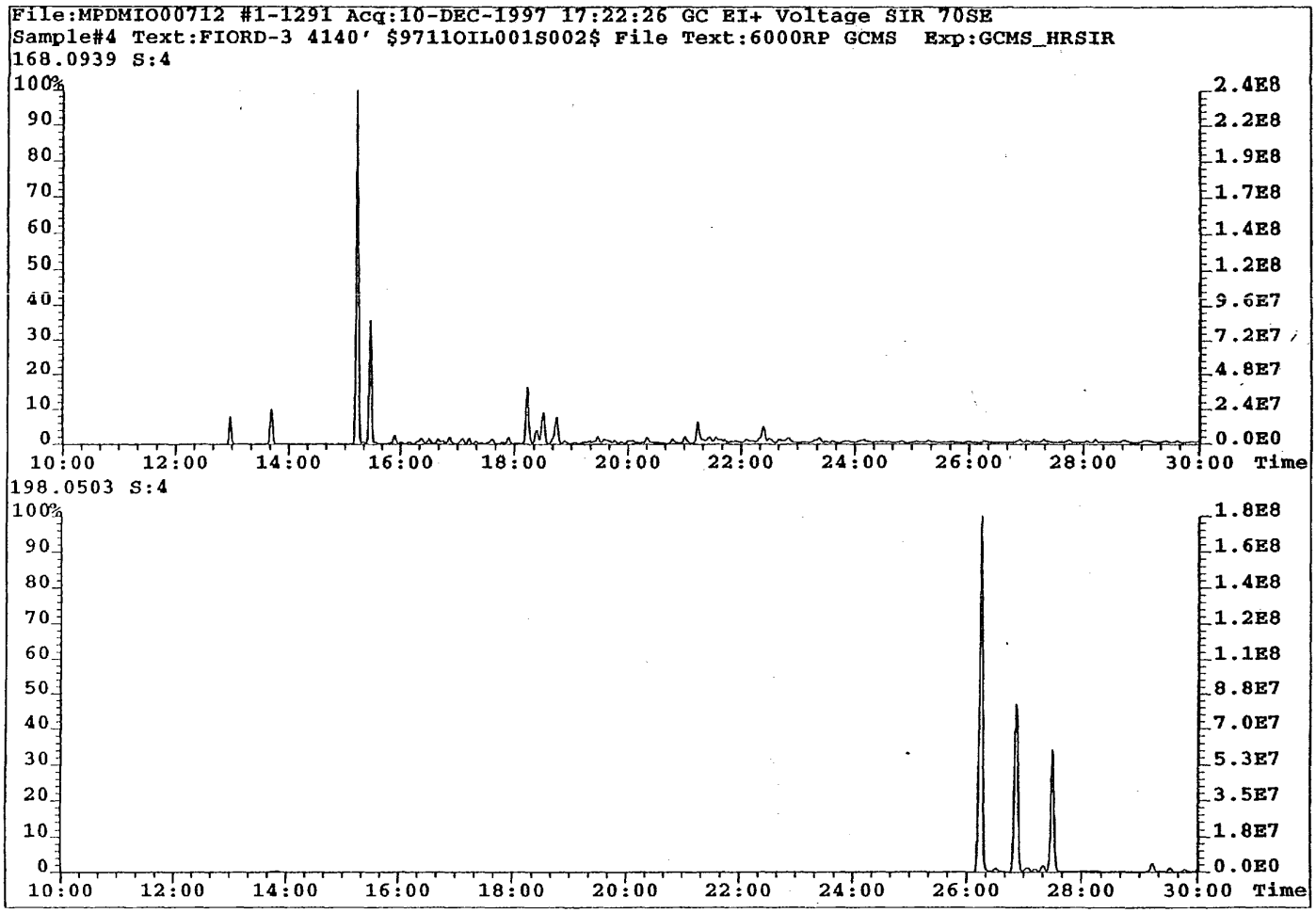

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 17:22:26 GC EI+ Voltage SIR 70SE
Sample#4 Text:FIORD-3 4140' $9711OIL001S002$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:4
100%
90
80
70
60
50
40
30
20
10
0
2.4E8
2.2E8
1.9E8
1.7E8
1.4E8
1.2E8
9.6E7
7.2E7
4.8E7
2.4E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:4
100%
90
80
70
60
50
40
30
20
10
0
1.8E8
1.6E8
1.4E8
1.2E8
1.1E8
8.8E7
7.0E7
5.3E7
3.5E7
1.8E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 9.2

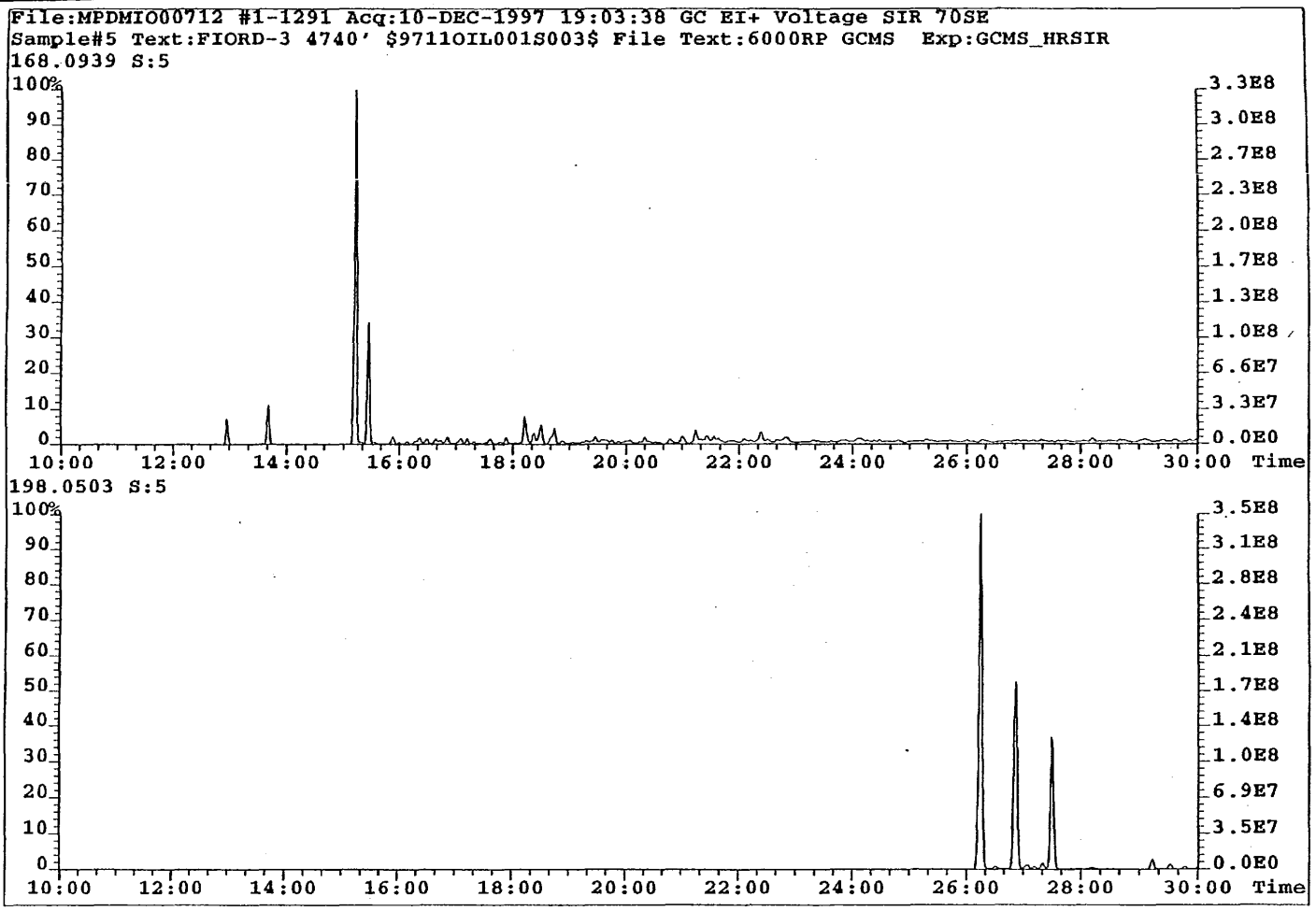

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 19:03:38 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3 4740' $9711OIL001S003$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:5
100%
90
80
70
60
50
40
30
20
10
0
3.3E8
3.0E8
2.7E8
2.3E8
2.0E8
1.7E8
1.3E8
1.0E8
6.6E7
3.3E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:5
100%
90
80
70
60
50
40
30
20
10
0
3.5E8
3.1E8
2.8E8
2.4E8
2.1E8
1.7E8
1.4E8
1.0E8
6.9E7
3.5E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 9.3

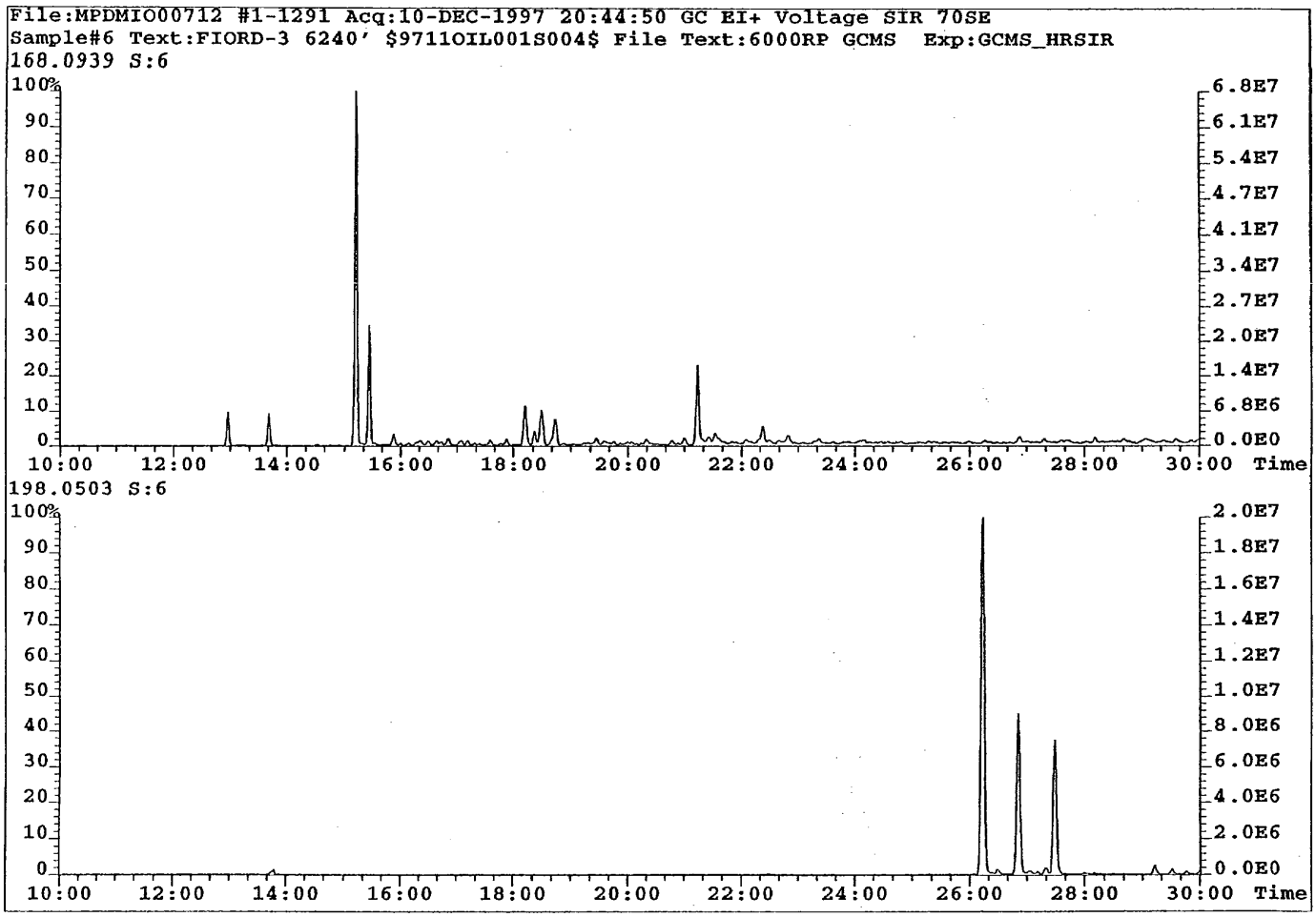

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 20:44:50 GC EI+ Voltage SIR 70SE
Sample#6 Text:FIORD-3 6240' $9711OIL001S004$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:6
198.0503 S:6
Time

Figure 9.4

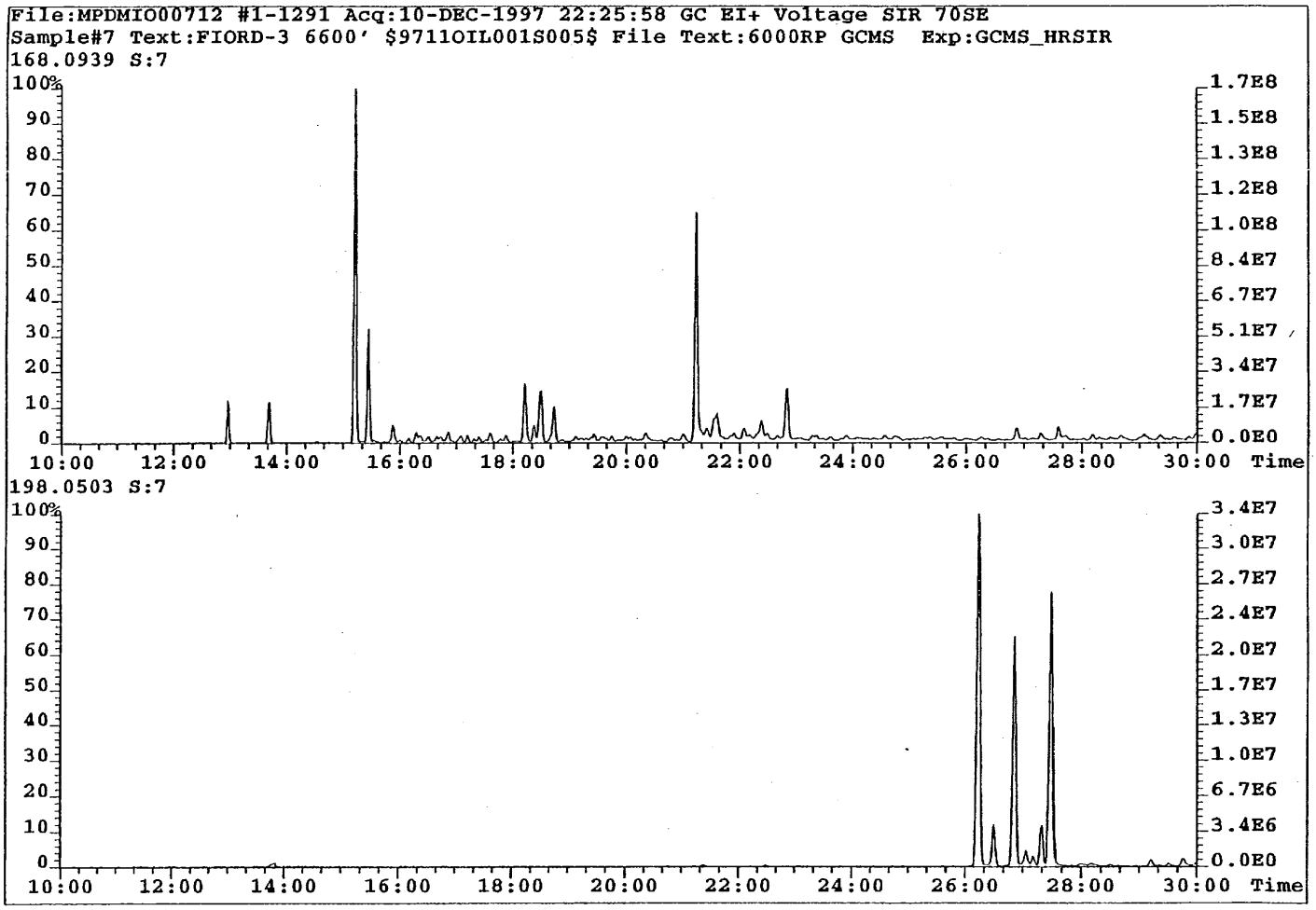

File:MPDMIO00712 #1-1291 Acq:10-DEC-1997 22:25:58 GC EI+ Voltage SIR 70SE
Sample#7 Text:FIORD-3 6600' $9711OIL001S005$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:7
100%
90
80
70
60
50
40
30
20
10
0
1.7E8
1.5E8
1.3E8
1.2E8
1.0E8
8.4E7
6.7E7
5.1E7
3.4E7
1.7E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:7
100%
90
80
70
60
50
40
30
20
10
0
3.4E7
3.0E7
2.7E7
2.4E7
2.0E7
1.7E7
1.3E7
1.0E7
6.7E6
3.4E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 9.5

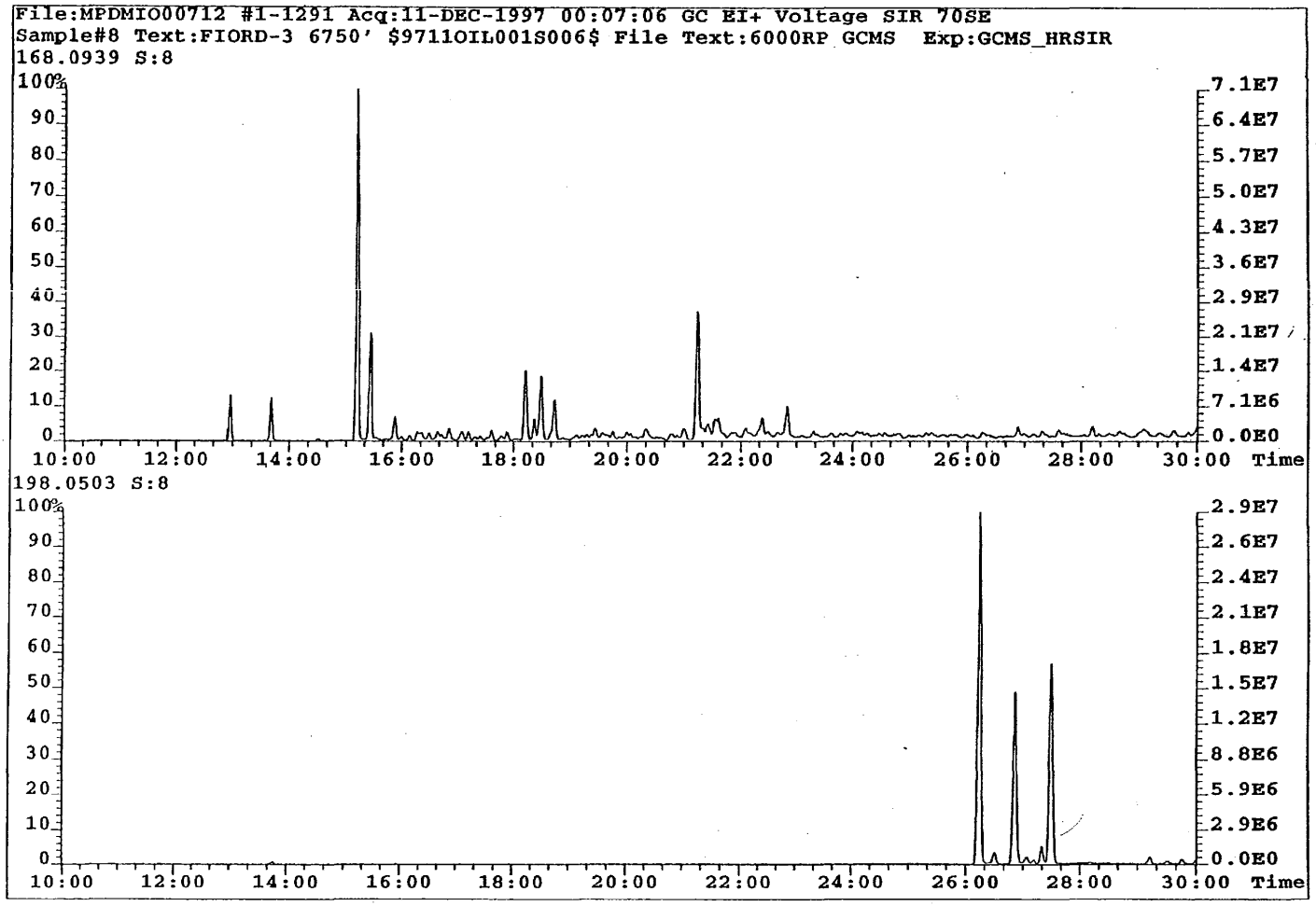

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 00:07:06 GC EI+ Voltage SIR 70SE
Sample#8 Text:FIORD-3 6750' $9711OIL001S006$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:8
100%
90
80
70
60
50
40
30
20
10
0
7.1E7
6.4E7
5.7E7
5.0E7
4.3E7
3.6E7
2.9E7
2.1E7
1.4E7
7.1E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:8
100%
90
80
70
60
50
40
30
20
10
0
2.9E7
2.6E7
2.4E7
2.1E7
1.8E7
1.5E7
1.2E7
8.8E6
5.9E6
2.9E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 9.6

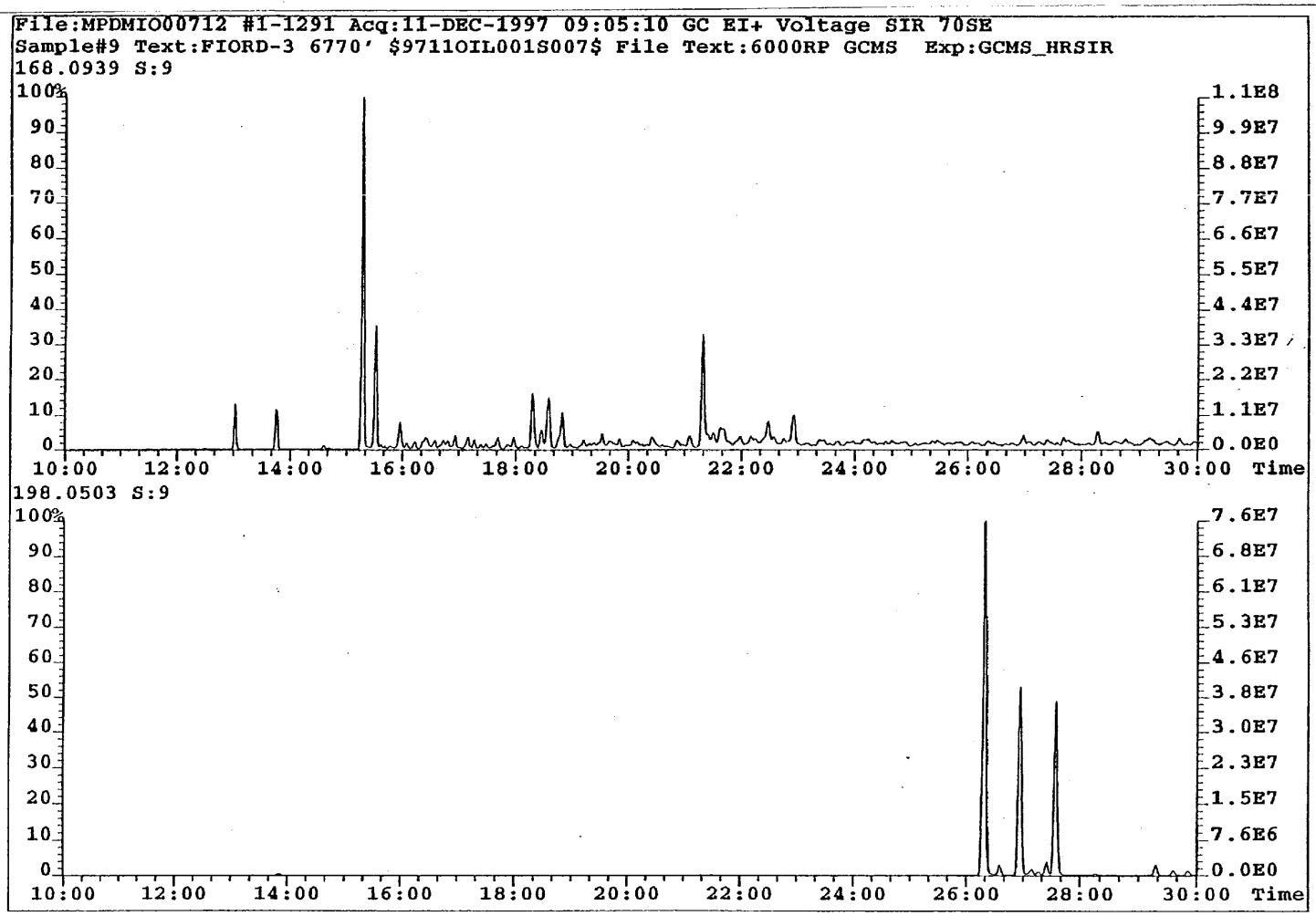

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 09:05:10 GC EI+ Voltage SIR 70SE
Sample#9 Text:FIORD-3 6770' $9711OIL001S007$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:9
100%
90
80
70
60
50
40
30
20
10
0
1.1E8
9.9E7
8.8E7
7.7E7
6.6E7
5.5E7
4.4E7
3.3E7
2.2E7
1.1E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:9
100%
90
80
70
60
50
40
30
20
10
0
7.6E7
6.8E7
6.1E7
5.3E7
4.6E7
3.8E7
3.0E7
2.3E7
1.5E7
7.6E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 9.7

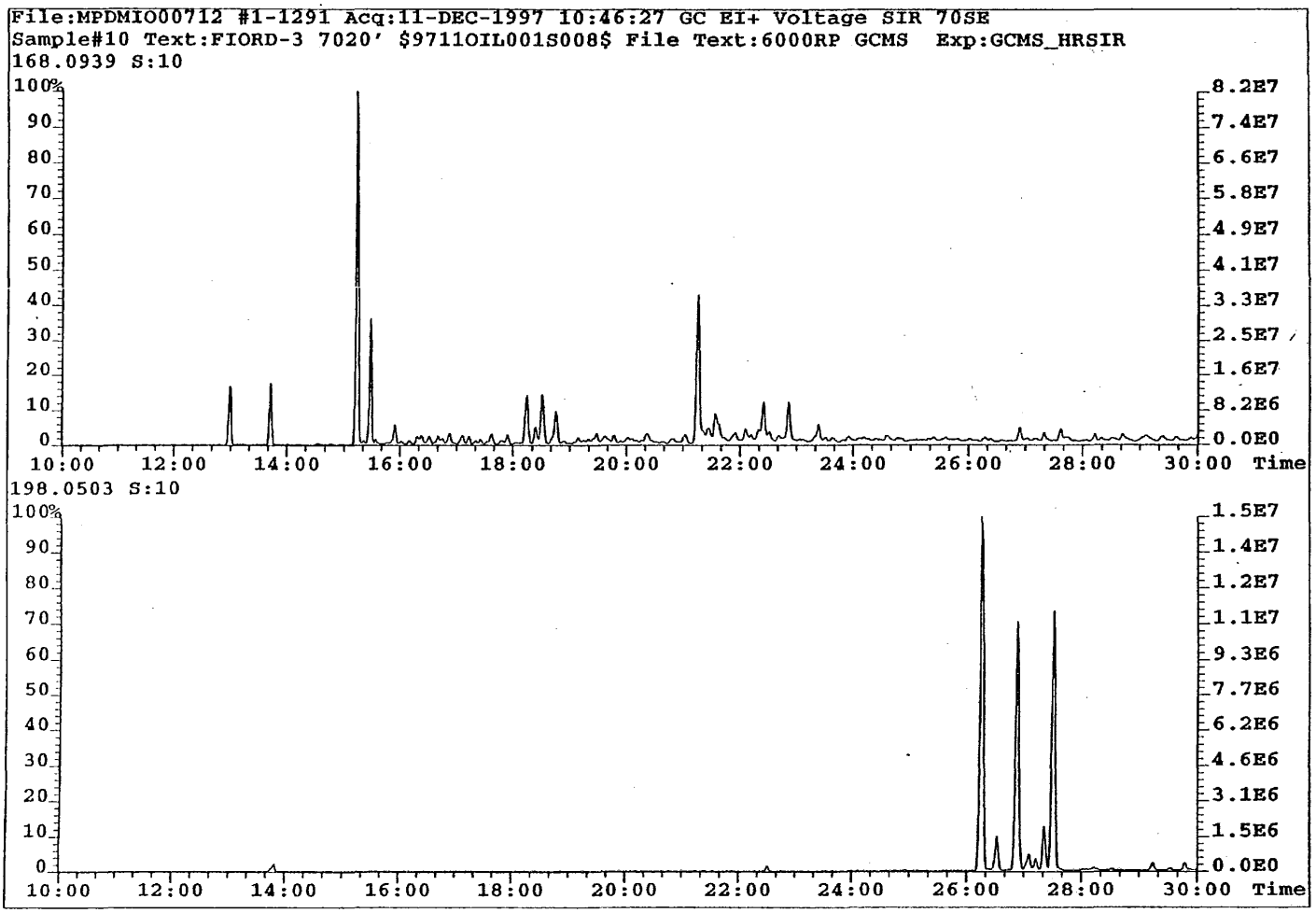

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 10:46:27 GC EI+ Voltage SIR 70SE
Sample#10 Text:FIORD-3 7020' $9711OIL001S008$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:10
100%
90
80
70
60
50
40
30
20
10
0
8.2E7
7.4E7
6.6E7
5.8E7
4.9E7
4.1E7
3.3E7
2.5E7
1.6E7
8.2E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:10
100%
90
80
70
60
50
40
30
20
10
0
1.5E7
1.4E7
1.2E7
1.1E7
9.3E6
7.7E6
6.2E6
4.6E6
3.1E6
1.5E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 9.8

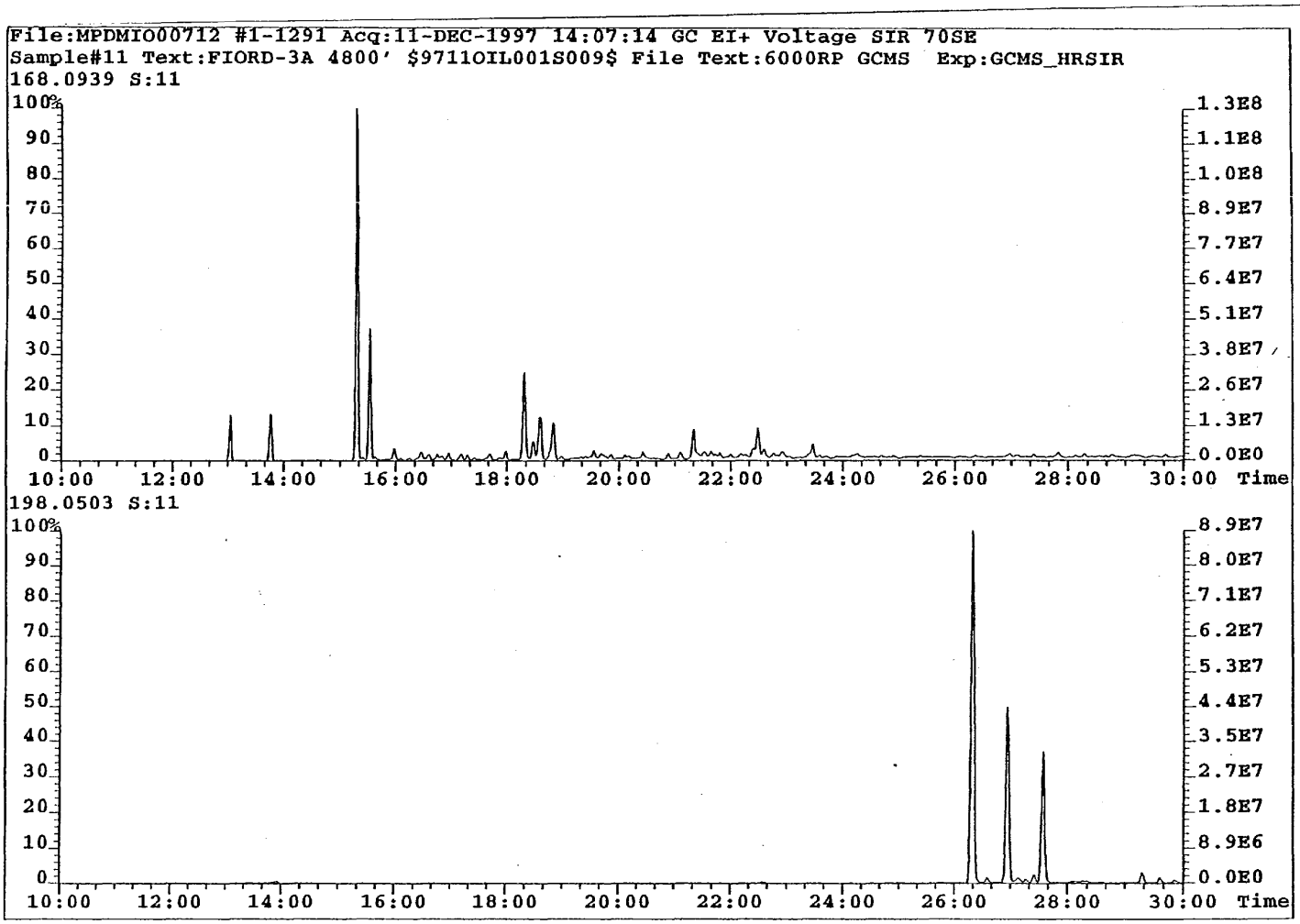

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 14:07:14 GC EI+ Voltage SIR 70SE
Sample#11 Text:FIORD-3A 4800' $9711OIL001S009$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:11
100%
90
80
70
60
50
40
30
20
10
0
1.3E8
1.1E8
1.0E8
8.9E7
7.7E7
6.4E7
5.1E7
3.8E7
2.6E7
1.3E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:11
100%
90
80
70
60
50
40
30
20
10
0
8.9E7
8.0E7
7.1E7
6.2E7
5.3E7
4.4E7
3.5E7
2.7E7
1.8E7
8.9E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.1

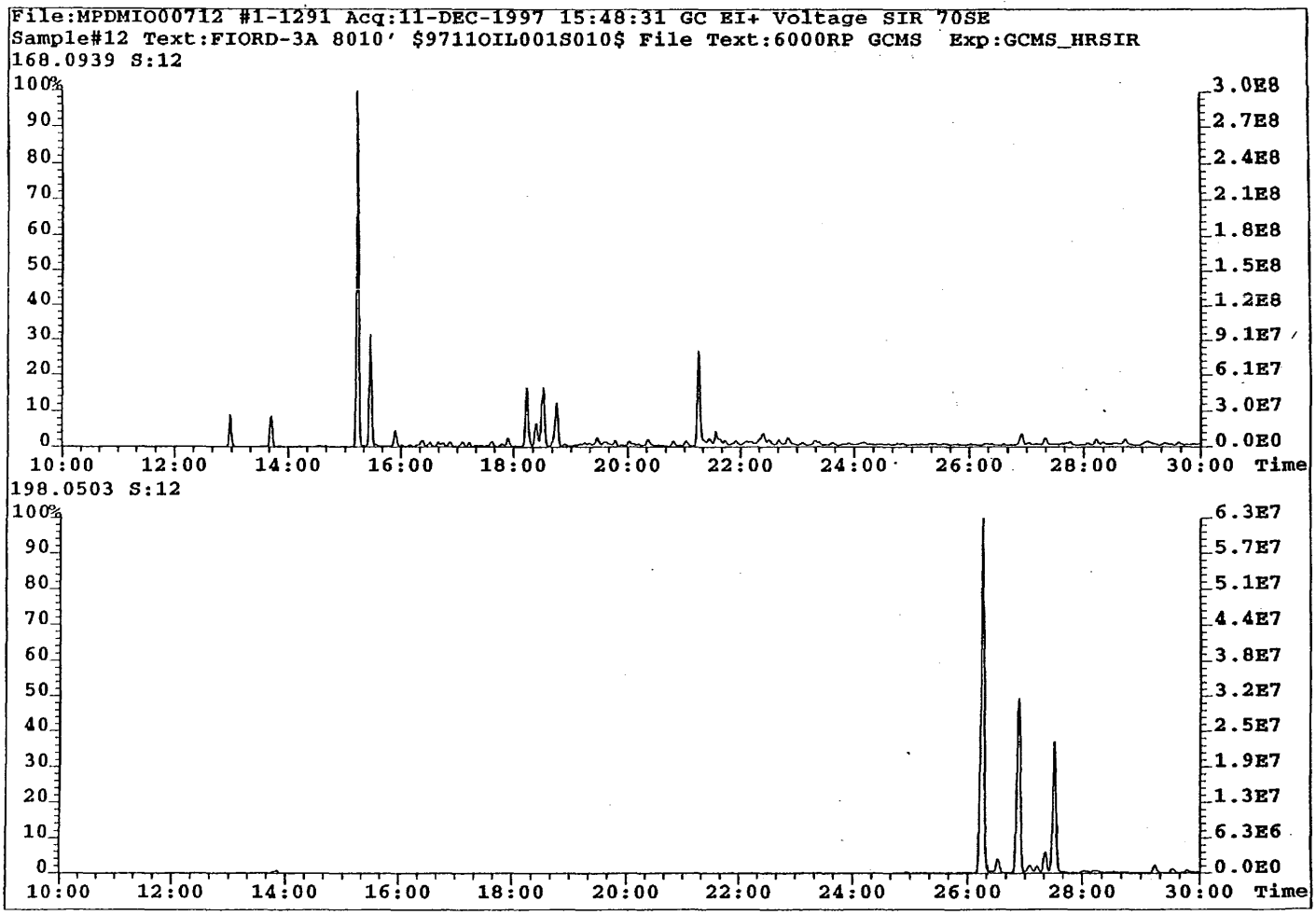

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 15:48:31 GC EI+ Voltage SIR 70SE
Sample#12 Text:FIORD-3A 8010' $9711OIL001S010$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:12
100%
90
80
70
60
50
40
30
20
10
0
3.0E8
2.7E8
2.4E8
2.1E8
1.8E8
1.5E8
1.2E8
9.1E7
6.1E7
3.0E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:12
100%
90
80
70
60
50
40
30
20
10
0
6.3E7
5.7E7
5.1E7
4.4E7
3.8E7
3.2E7
2.5E7
1.9E7
1.3E7
6.3E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.2

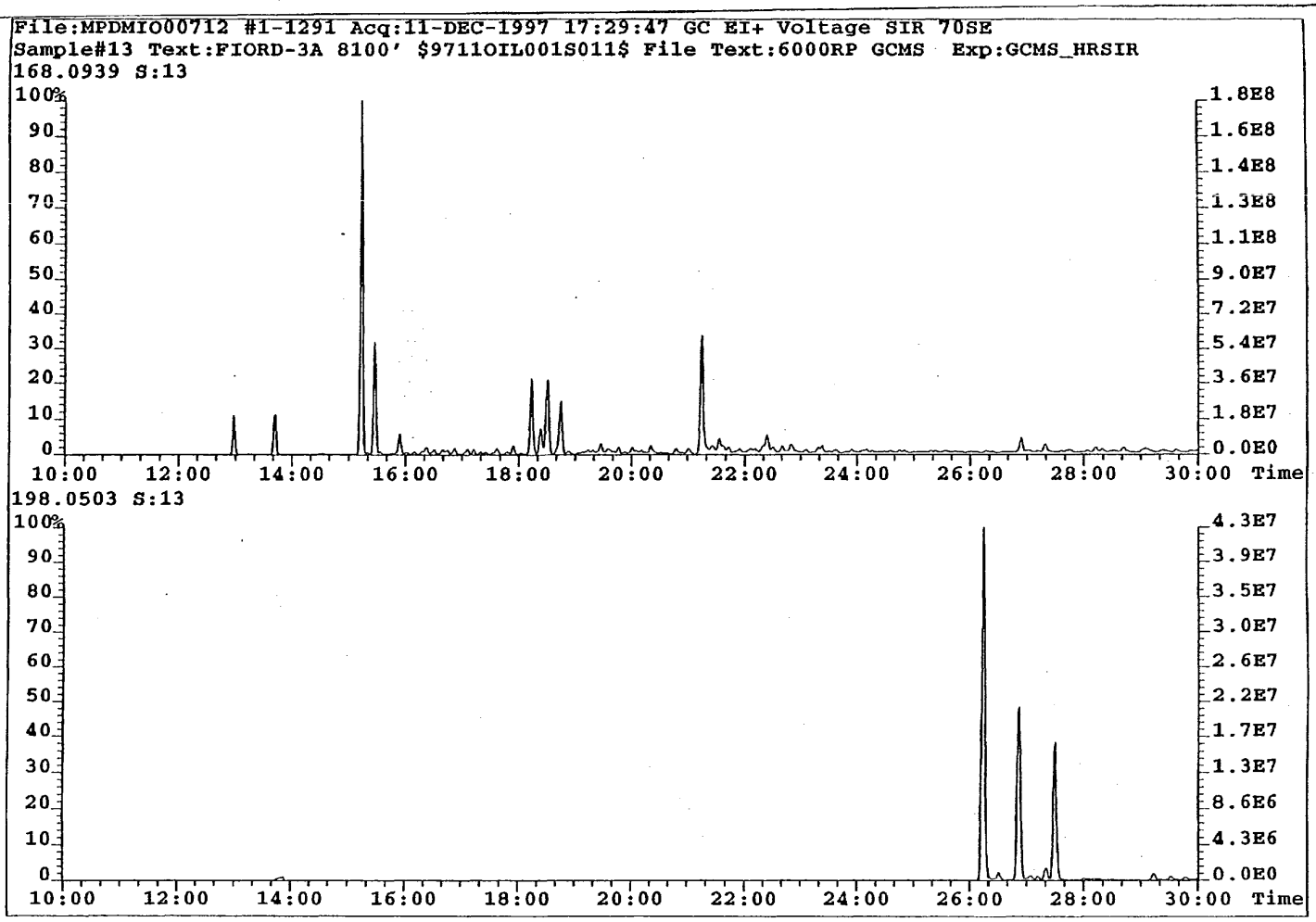

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 17:29:47 GC EI+ Voltage SIR 70SE
Sample#13 Text:FIORD-3A 8100' $9711OIL001S011$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:13
100%
90
80
70
60
50
40
30
20
10
0
1.8E8
1.6E8
1.4E8
1.3E8
1.1E8
9.0E7
7.2E7
5.4E7
3.6E7
1.8E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:13
100%
90
80
70
60
50
40
30
20
10
0
4.3E7
3.9E7
3.5E7
3.0E7
2.6E7
2.2E7
1.7E7
1.3E7
8.6E6
4.3E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.3

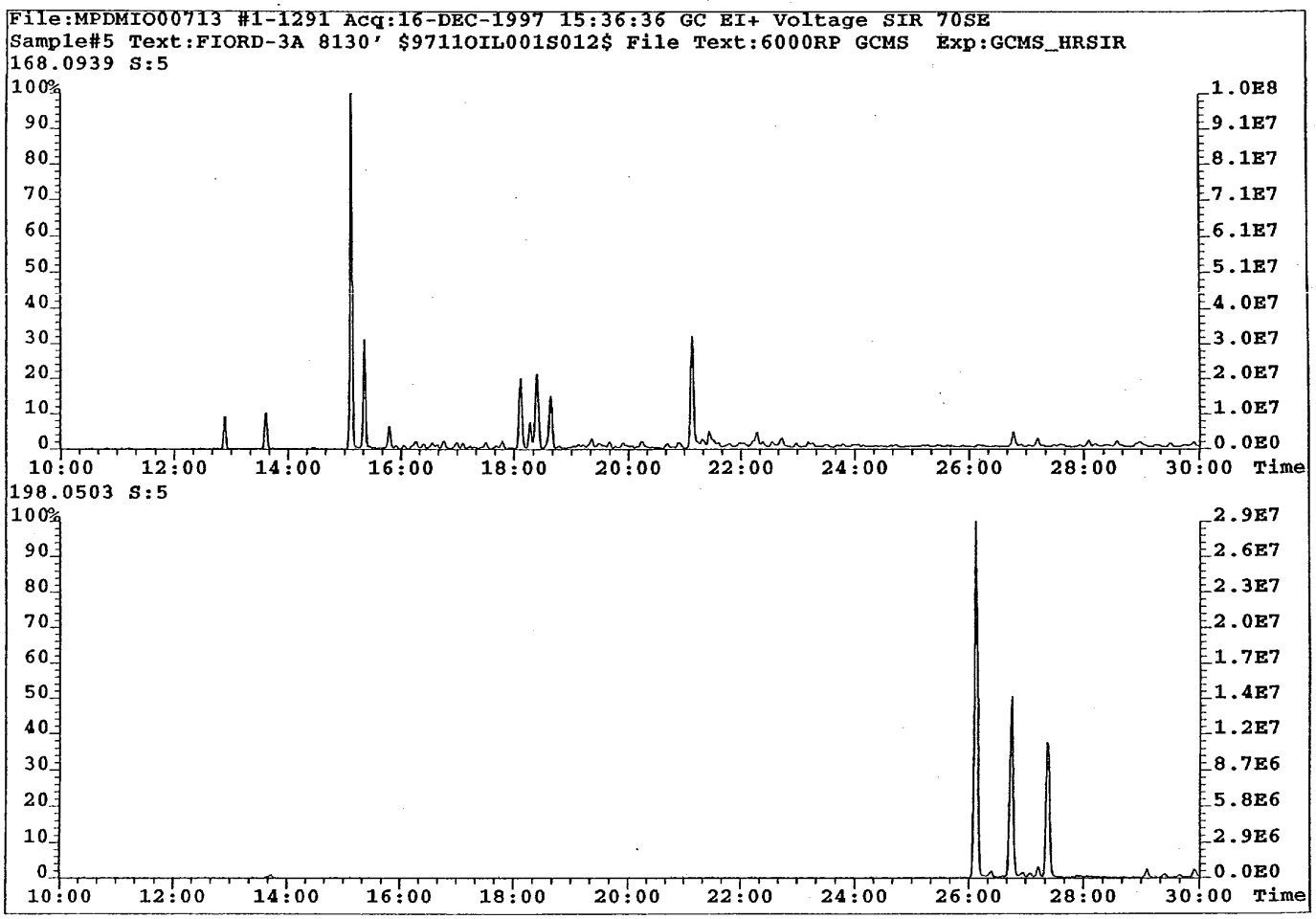

File:MPDMIO00713 #1-1291 Acq:16-DEC-1997 15:36:36 GC EI+ Voltage SIR 70SE
Sample#5 Text:FIORD-3A 8130' $9711OIL001S012$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:5
100%
90
80
70
60
50
40
30
20
10
0
1.0E8
9.1E7
8.1E7
7.1E7
6.1E7
5.1E7
4.0E7
3.0E7
2.0E7
1.0E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:5
100%
90
80
70
60
50
40
30
20
10
0
2.9E7
2.6E7
2.3E7
2.0E7
1.7E7
1.4E7
1.2E7
8.7E6
5.8E6
2.9E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.4

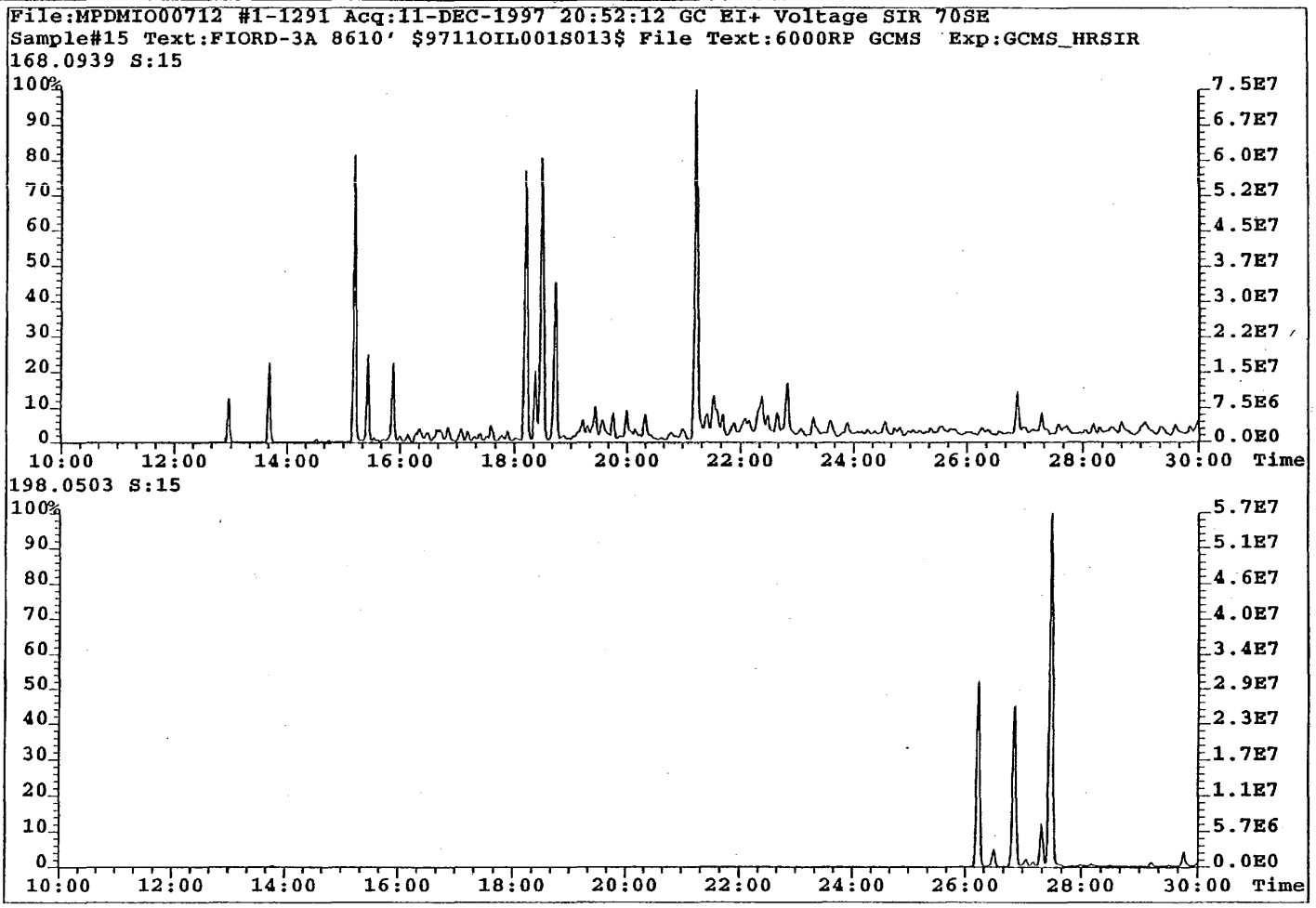

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 20:52:12 GC EI+ Voltage SIR 70SE
Sample#15 Text:FIORD-3A 8610' $9711OIL001S013$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:15
100%
90
80
70
60
50
40
30
20
10
0
7.5E7
6.7E7
6.0E7
5.2E7
4.5E7
3.7E7
3.0E7
2.2E7
1.5E7
7.5E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:15
100%
90
80
70
60
50
40
30
20
10
0
5.7E7
5.1E7
4.6E7
4.0E7
3.4E7
2.9E7
2.3E7
1.7E7
1.1E7
5.7E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.5

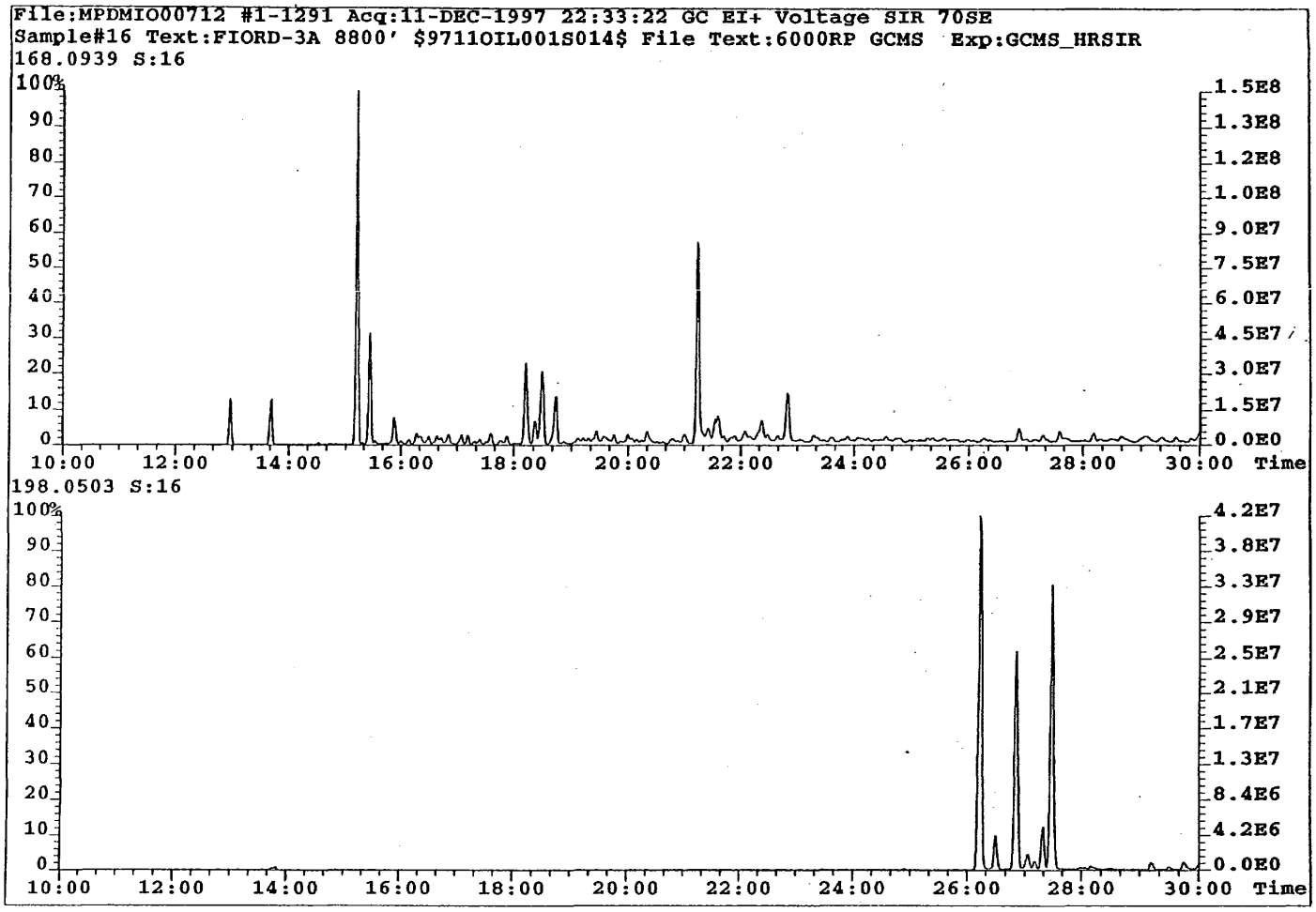

File:MPDMIO00712 #1-1291 Acq:11-DEC-1997 22:33:22 GC EI+ Voltage SIR 70SE
Sample#16 Text:FIORD-3A 8800' $9711OIL001S014$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:16
100%
90
80
70
60
50
40
30
20
10
0
1.5E8
1.3E8
1.2E8
1.0E8
9.0E7
7.5E7
6.0E7
4.5E7
3.0E7
1.5E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:16
100%
90
80
70
60
50
40
30
20
10
0
4.2E7
3.8E7
3.3E7
2.9E7
2.5E7
2.1E7
1.7E7
1.3E7
8.4E6
4.2E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.6

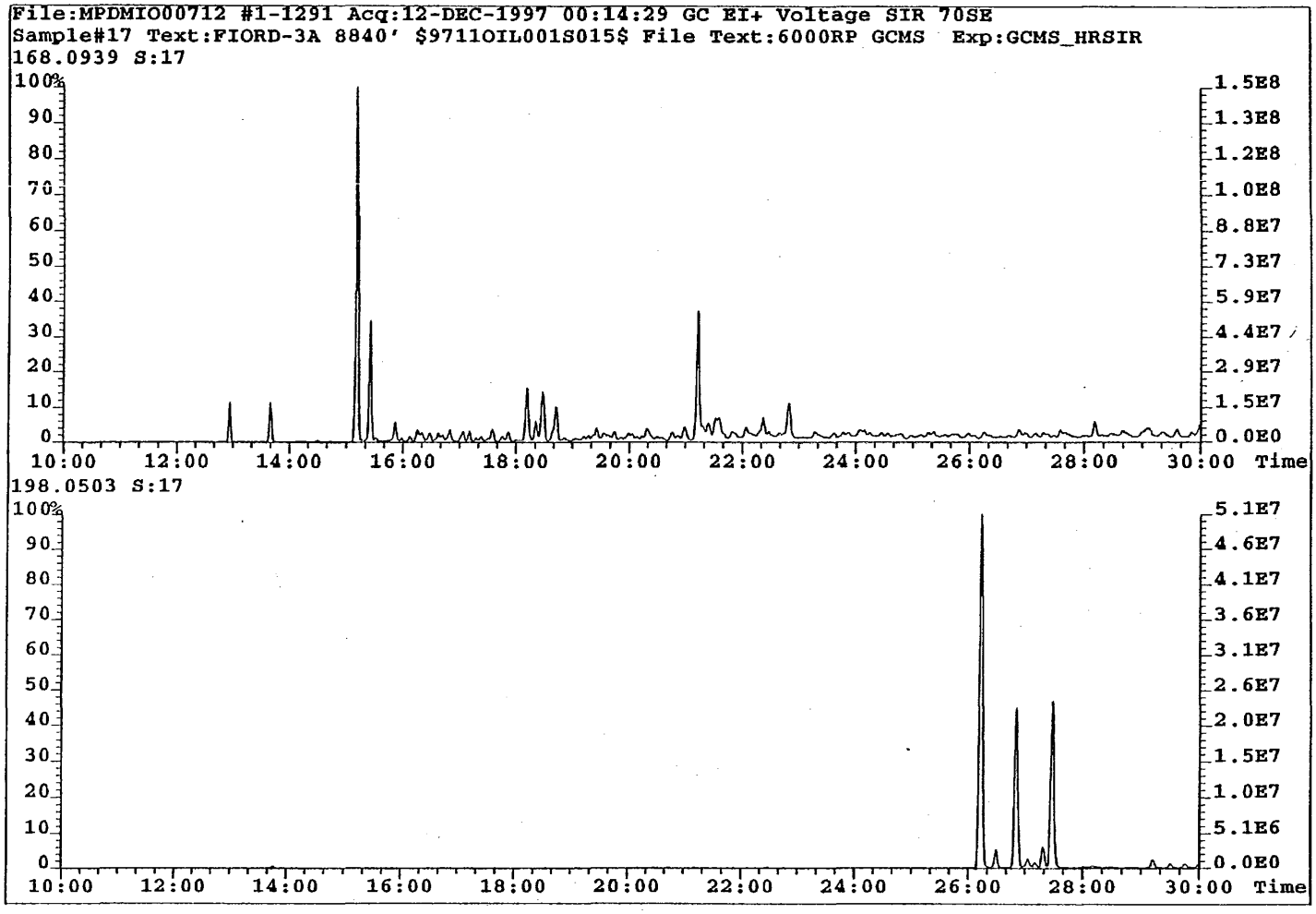

File:MPDMIO00712 #1-1291 Acq:12-DEC-1997 00:14:29 GC EI+ Voltage SIR 70SE
Sample#17 Text:FIORD-3A 8840' $9711OIL001S015$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:17
100%
90
80
70
60
50
40
30
20
10
0
1.5E8
1.3E8
1.2E8
1.0E8
8.8E7
7.3E7
5.9E7
4.4E7
2.9E7
1.5E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:17
100%
90
80
70
60
50
40
30
20
10
0
5.1E7
4.6E7
4.1E7
3.6E7
3.1E7
2.6E7
2.0E7
1.5E7
1.0E7
5.1E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.7

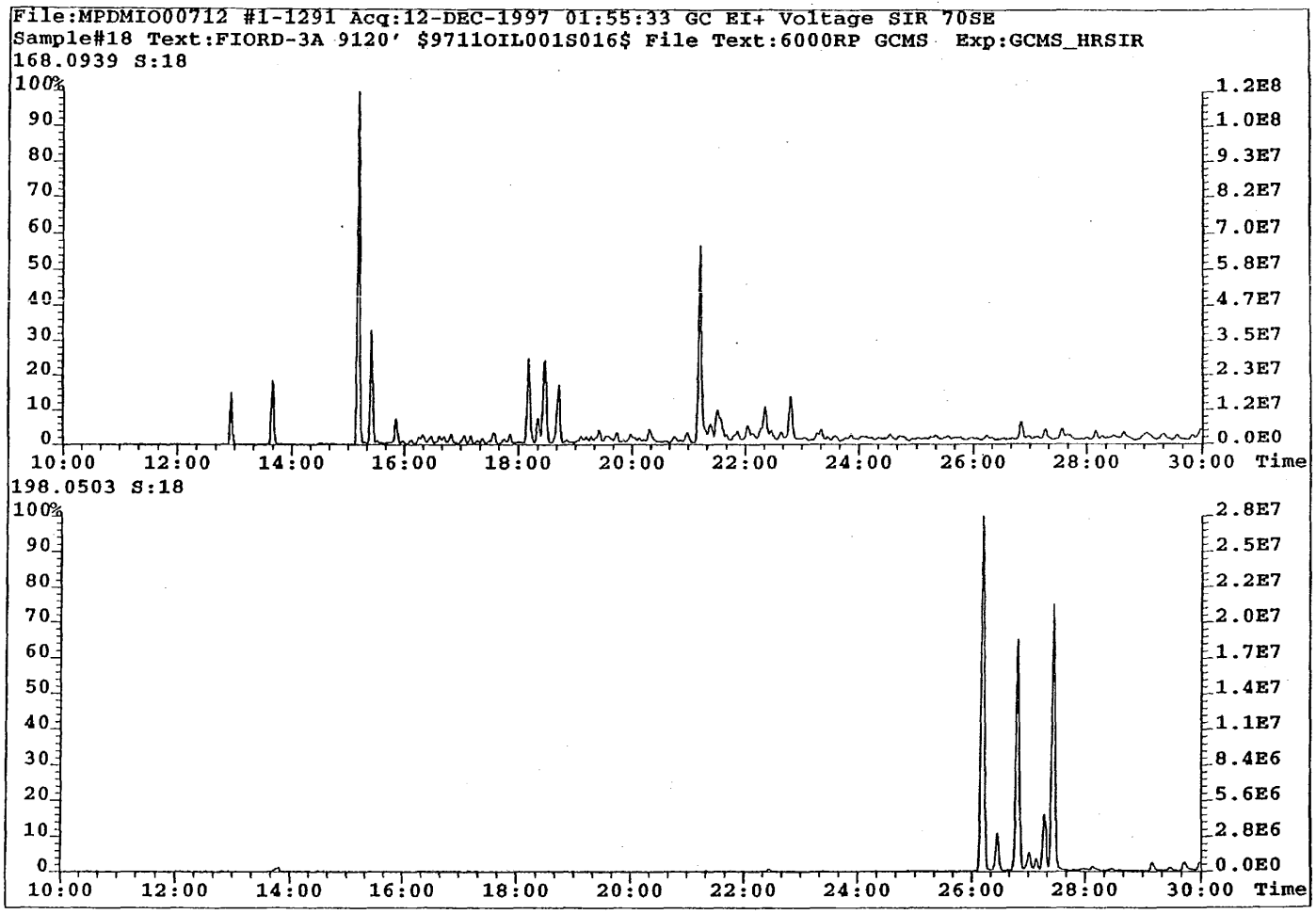

File:MPDMIO00712 #1-1291 Acq:12-DEC-1997 01:55:33 GC EI+ Voltage SIR 70SE
Sample#18 Text:FIORD-3A 9120' $9711OIL001S016$ File Text:6000RP GCMS Exp:GCMS_HRSIR
168.0939 S:18
100%
90
80
70
60
50
40
30
20
10
0
1.2E8
1.0E8
9.3E7
8.2E7
7.0E7
5.8E7
4.7E7
3.5E7
2.3E7
1.2E7
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time
198.0503 S:18
100%
90
80
70
60
50
40
30
20
10
0
2.8E7
2.5E7
2.2E7
2.0E7
1.7E7
1.4E7
1.1E7
8.4E6
5.6E6
2.8E6
0.0E0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
26:00
28:00
30:00
Time

Figure 10.8

Appendix A Molecular Parameter List

MOLECULAR PARAMETER LIST

LGC CODE	PARAMETER	USE
H1	C32 HOPANE 22S/(22S+22R)	M
H2	C31 HOPANE 22S/(22S+22R)	M
H3	C30 HOPANE/(C30 HOPANE+C30 MORETANE)	MS
H4	ββ HOPANES PRESENT/ABSENT	M
H5	C30:C31:C32:C33:C34:C35 HOPANE DISTRIBUTION	S
H6	C27 HOPANES Ts/(Ts+Tm)	MS
H7	C33 HOPANE 22S/(22S+22R)	M
H8	C34 HOPANE 22S/(22S+22R)	M
H9	C35 HOPANE 22S/(22S+22R)	M
H10	RESIN DITERPANES % RELATIVE TO C30 HOPANE (PEAK G)	S
H11	C23 EXT TRICYCLIC TERPANE % RELATIVE TO C30 HOPANE (PEAK G)	S
H12	C24 TETRACYCLIC TERPANE % RELATIVE TO C30 HOPANE (PEAK G)	S
H13	28,30 BISNORHOPANE (PEAK X) % RELATIVE TO C30 HOPANE (PEAK G)	S
H14	PENTACYCLANE II % RELATIVE TO C30 HOPANE (PEAK G)	S
H15	OLEANANE % RELATIVE TO C30 HOPANE (PEAK G)	S
H16	GAMMACERANE % RELATIVE TO (PEAK G)	S
H17	HOPANES C35/(C34+C35) %	S
H18	25-NORHOPANE/C30 HOPANE %	B
S1	C29 ααα STERANES 20S/(20S+20R)	M
S2	C29 STERANES αββ/(αββ+ααα)	M
S3	STERANES ααα C27:C28:C29	S
S4	STERANES αββ C27:C28:C29	S
S5	βα DIASTERANES/(SAME+ααα+αββ STERANES) %	SM
S6	LOW MOLECULAR WEIGHT STERANES RELATIVE TO C29 STERANES	S
S7	STERANE INDEX C27/(C27+C29) % (FROM S3)	S
S8	4-ME C30 STERANE % RELATIVE TO C29 20R ααα STERANE (PEAK 42)	S
S9	4-ME STERANES INDEX C28/(C28+C30) %	S
S10	BICADINANES PRESENT/ABSENT	S
A1	C28 20R TRIAROM. STERANE/(SAME+C29 20R MONOAROM. STERANE)	M
A2	SUM TRIAROM. STERANES/(SAME+SUM MONOAROM. STERANES)	M
A3	C20 TRIAROM. STERANE/(SAME+C28 20R TRIAROM. STERANE)	M
A4	C20+C21 TRIAROM. STERANE/(SAME+SUM C26-C28 TRIAROM. STERANES)	M
A5	C26 20S TRIAROM. STERANE/C28 20S TRIAROM. STERANE	S
A6	C27 20R TRIAROM. STERANE/C28 20R TRIAROM. STERANE	S
M2	PHENANTHRENES (3ME+2ME)/(9ME+1ME)	M
M3	MPI [(3ME+2ME)/(PHENANTHRENE+9ME+1ME)] * 1.5	M
MBP	3-METHYL BIPHENYL/2-METHYL BIPHENYL	M
MDR	4-METHYLDIBENZOTHIOPHENE/1-METHYLDIBENZOTHIOPHENE	M
M4	SUM C27-C35 HOPANES/(SAME+ SUM C27-C29 STERANES) %	S
ALKIND	ALKANE INDEX n-C17/(n-C17+n-C27) %	
R22	R22 INDEX (2 * n-C22)/(n-C21+n-C23)	SM

NOTES:

1. S=SOURCE PARAMETER, M=MATURITY PARAMETER.
2. TRIAROM. STERANE=MONOMETHYL TRIAROMATIC STERANES
   MONOAROM. STERANE=DIMETHYL MONOAROMATIC STERANES. (13/11/92)

Appendix B Biomarker Identifications

APPENDIX

MOLECULAR PARAMETER LIST

CODE	PARAMETER	USE
H1	C32 HOPANE 22S/(22S+22R)	M
H2	C31 HOPANE 22S/(22S+22R)	M
H3	C30 HOPANE/(C30 HOPANE+C30 MORETANE)	MS
H4	ββ HOPANES PRESENT/ABSENT	M
H5	C30:C31:C32:C33:C34:C35 HOPANE DISTRIBUTION	S
H6	C27 HOPANES Ts/(Ts+Tm)	MS
H7	C33 HOPANE 22S/(22S+22R)	M
H8	C34 HOPANE 22S/(22S+22R)	M
H9	C35 HOPANE 22S/(22S+22R)	M
S1	C29 ααα STERANES 20S/(20S+20R)	M
S2	C29 STERANES αββ/(αββ+ααα)	M
S3	STERANES ααα C27:C28:C29	S
S4	STERANES αββ C27:C28:C29	S
S5	βα DIASTERANES/(SAME + ααα+αββ STERANES) %	SM
A1	C28 20R TRIAROM. STERANE/(SAME+C29 20R MONOAROM. STERANE)	M
A2	SUM TRIAROM. STERANES/(SAME+SUM MONOAROM. STERANES)	M
A3	C20 TRIAROM. STERANE/(SAME+C28 20R TRIAROM. STERANE)	M
A4	C20+C21 TRIAROM. STERANE/(SAME+SUM C26-C28 TRIAROM. STERANES)	M
A5	C26 20S TRIAROM. STERANE/C28 20S TRIAROM. STERANE	S
A6	C27 20R TRIAROM. STERANE/C28 20R TRIAROM. STERANE	S
M2	PHENANTHRENES (3ME+2ME)/(9ME+1ME)	M
M3	MPI [(3ME+2ME)/(PHENANTHRENE+9ME+1ME)] * 1.5	M
M4	SUM C27-C35 HOPANES/(SAME+ SUM C27-C29 STERANES) %	S
ALKIND		ALKANE
INDEX	n-C17/(n-C17+n-C27) %	S
R22	R22 INDEX (2 X n-C22)/(n-C21+n-C23)	SM

Notes:

1) FOR A FULL DISCUSSION OF THE USE OF THESE PARAMETERS CONSULT GCB/173/86 in summary S=source parameter ,M=maturity parameter
2) Aromatic Steranes ,TRIAROM. STERANE refers to monomethyl triaromatic steranes and MONOAROM. STERANE refers to dimethyl monoaromatic steranes.

Appendix C Whole Oil GC Peak Areas

Software Version:	4.1<0G07>				
Date:	20/01/98	17:11			
Sample Name:	9711OIL001S001 F-3, 4020'				
Data File:	C:_DATA\B9711001\WOGC001.RAW	Date:	18/12/97	10:04	
Sequence File:	C:_DATA\B9711001\WOGC8.SEQ	Cycle:	2	Channel:	A
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0 Operator:	NSG
Sample Amount:	1	tion Factor	1		

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.842	143.3	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.978		
methylcyclopentane	8.376	274.8	0
2,4-dimethylpentane	8.646	1211	0.02
Benzene	9.036	483.4	0.01
cyclohexane	9.144	169.6	0
2-methylhexane + 1,2-DMP	9.539	2266.8	0.03
3-methylhexane	9.849	334.2	0
1,3-cis-dimethylcyclopentane	9.923	43.8	6.00E-04
1,2-trans-dimethylcyclopentane	9.964	0	0
1,3-trans-dimethylcyclopentane	10.01	203.5	0
n-heptane	10.396	0	0
methylcyclohexane	10.857	242	0
ethylcyclopentane	11.015	0	0
Toluene	11.57	0	0
n-Octane	12.7	0	0
n-Nonane	14.801	0	0
n-Decane	16.742	221.37	0
n-C11	18.547	208.9	0
n-C12	20.136	1299.7	0.02
n-C13	21.737	454355.8	6.22
n-C14	23.251	1312470	17.98
n-C15	24.585	324850.4	4.45
n-C16	25.871	62789.84	0.86
n-C17	27.107	88365.9	1.21
Pristane	27.226	112699.1	1.54
n-C18	28.283	42329.82	0.58
Phytane	28.399	8524.98	0.12
n-C19	29.401	40827.71	0.56
n-C20	30.472	34573.24	0.47
n-C21	31.494	34720.65	0.48
n-C22	32.475	37030.7	0.51
n-C23	33.412	34542.4	0.47
n-C24	34.309	25607.43	0.35
n-C25	35.174	22298.4	0.31
n-C26	36.002	35227.45	0.48
n-C27	36.807	24041.35	0.33
n-C28	37.595	15971.6	0.22
n-C29	38.402	30473.81	0.42
n-C30	39.242	12888.8	0.18
n-C31	40.136	16003.09	0.22
n-C32	41.116	11596.54	0.16
n-C33	42.21	13009.47	0.18
n-C34	43.451	9063.96	0.12
n-C35	44.882	5933.4	0.08
n-C36	46.54	5379.1	0.07
		7300911	100

Batch Code	9711OIL001S001
Data File	C:_DATA\B9711001\WOGC001.RAW

MCH (MeCyC6 as % all C7 alkanes)
HER (Heptane/(Hp+MeCyC6)
HXR (Hexane/(Hx+CyC6)
Thompson's Heptane Ratio
Thompson's Iso Heptane Index
Note: -1 denotes not calculated

Software Version:	4.1<0G07>					
Date:	20/01/98	17:23				
Sample Name:	9711OIL001S002 F-3, 4140'					
Data File:	C:_DATA\B9711001\WOGC002.RAW	Date:	18/12/97	11:17		
Sequence File:	C:_DATA\B9711001\WOGC8.SEQ	Cycle:	3	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.858	162.1	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.945		
methylcyclopentane	8.351	281.2	0.01
2,4-dimethylpentane	8.618	1400.9	0.03
Benzene	9.01	485.2	0.01
cyclohexane	9.12	167.3	0
2-methylhexane + 1,2-DMP	9.512	2021.4	0.05
3-methylhexane	9.828	362.6	0.01
1,3-cis-dimethylcyclopentane	9.844	0	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.992	191.1	0
n-heptane	10.498	143.2	0
methylcyclohexane	10.845	131.3	0
ethylcyclopentane	11.015	0	0
Toluene	11.592	209.4	0
n-Octane	12.7	0	0
n-Nonane	14.801	0	0
n-Decane	16.744	501.73	0.01
n-C11	18.589	4261.16	0.1
n-C12	20.136	6298.53	0.14
n-C13	21.76	906961.4	20.71
n-C14	23.268	1919474	43.82
n-C15	24.589	376196.6	8.59
n-C16	25.872	95564.23	2.18
n-C17	27.107	104045.1	2.38
Pristane	27.226	132221.5	3.02
n-C18	28.283	53494.93	1.22
Phytane	28.448	43375.83	0.99
n-C19	29.401	58775.3	1.34
n-C20	30.471	43980.89	1
n-C21	31.493	33897.8	0.77
n-C22	32.471	40177.6	0.92
n-C23	33.409	36563.58	0.83
n-C24	34.307	30446.07	0.7
n-C25	35.316	29290	0.67
n-C26	36.001	34109.5	0.78
n-C27	36.808	22653.79	0.52
n-C28	37.594	18166.58	0.41
n-C29	38.402	22240.4	0.51
n-C30	39.241	11000.2	0.25
n-C31	40.136	13881.37	0.32
n-C32	41.115	10385.81	0.24
n-C33	42.21	11864.39	0.27
n-C34	43.452	6937.82	0.16
n-C35	44.874	703.5	0.02
n-C36	46.525	3666.4	0.08
		4380166	100

Batch Code	9711OIL001S002
Data File	C:_DATA\B9711001\WOGC002.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	

Note: -1 denotes not calculated

Software Version:	4.1<0G07>					
Date:	20/01/98	17:26				
Sample Name:	9711OIL001S003 4740'					
Data File:	C:_DATA\B9711001\WOGC003.RAW	Date:	12/12/97	12:51		
Sequence File:	C:_DATA\B9711001\WOGC1.SEQ	Cycle:	2	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.84	123.7	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.922		
methylcyclopentane	8.328	346.4	0.01
2,4-dimethylpentane	8.593	1368.2	0.02
Benzene	8.982	456.6	0.01
cyclohexane	9.151	149.6	0
2-methylhexane + 1,2-DMP	9.488	1608.2	0.03
3-methylhexane	9.831	304.93	0.01
1,3-cis-dimethylcyclopentane	9.844	0	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	10.002	101.8	0
n-heptane	10.396	0	0
methylcyclohexane	10.772	0	0
ethylcyclopentane	11.015	0	0
Toluene	11.57	0	0
n-Octane	12.675	78.8	0
n-Nonane	14.801	0	0
n-Decane	16.752	948.82	0.02
n-C11	18.568	3400.31	0.06
n-C12	20.154	130516.6	2.32
n-C13	21.784	1489920	26.51
n-C14	23.256	1217043	21.65
n-C15	24.594	253327.3	4.51
n-C16	25.895	130738.5	2.33
n-C17	27.14	121230.4	2.16
Pristane	27.253	113331.3	2.02
n-C18	28.321	137638.2	2.45
Phytane	28.479	71570.8	1.27
n-C19	29.446	180550.5	3.21
n-C20	30.517	143982.7	2.56
n-C21	31.537	112310.9	2
n-C22	32.514	113282.4	2.02
n-C23	33.45	92851.16	1.65
n-C24	34.348	81801.7	1.46
n-C25	35.213	92365.86	1.64
n-C26	36.041	78828.47	1.4
n-C27	36.844	53293.16	0.95
n-C28	37.635	43410.85	0.77
n-C29	38.442	31446.4	0.56
n-C30	39.285	19978.28	0.36
n-C31	40.184	21099.42	0.38
n-C32	41.17	16615.4	0.3
n-C33	42.273	12475.1	0.22
n-C34	43.522	8068.96	0.14
n-C35	44.948	2826.92	0.05
n-C36	46.621	3715.4	0.07
		5620916	100

Batch Code	9711OIL001S003
Data File	C:_DATA\B9711001\WOGC003.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>					
Date:	20/01/98	17:28				
Sample Name:	9711OIL001S004 6240'					
Data File:	C:_DATA\B9711001\WOGC004.RAW	Date:	12/12/97	14:10		
Sequence File:	C:_DATA\B9711001\WOGC1.SEQ	Cycle:	3	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.818	0	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.448		
n-hexane	7.888		
methylcyclopentane	8.33	23.02	4.00E-04
2,4-dimethylpentane	8.618	1759.3	0.03
Benzene	9.024	385	0.01
cyclohexane	9.138	125.2	0
2-methylhexane + 1,2-DMP	9.545	1607.6	0.03
3-methylhexane	9.765	0	0
1,3-cis-dimethylcyclopentane	9.844	0	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.964	0	0
n-heptane	10.396	0	0
methylcyclohexane	10.879	96.1	0
ethylcyclopentane	11.015	0	0
Toluene	11.57	0	0
n-Octane	12.7	0	0
n-Nonane	14.925	187.2	0
n-Decane	16.746	1148.16	0.02
n-C11	18.679	1098.27	0.02
n-C12	20.145	110557.3	1.99
n-C13	21.775	2122807	38.14
n-C14	23.25	1633447	29.35
n-C15	24.58	285964.7	5.14
n-C16	25.874	66056.44	1.19
n-C17	27.115	94598.25	1.7
Pristane	27.234	92622.65	1.66
n-C18	28.294	71474.83	1.28
Phytane	28.456	47910.58	0.86
n-C19	29.417	89138.98	1.6
n-C20	30.488	65334.7	1.17
n-C21	31.51	57526.4	1.03
n-C22	32.49	58023.09	1.04
n-C23	33.428	53607.82	0.96
n-C24	34.326	47444.21	0.85
n-C25	35.19	39682.12	0.71
n-C26	36.02	46191.4	0.83
n-C27	36.824	30932.6	0.56
n-C28	37.612	33143.17	0.6
n-C29	38.422	30500.3	0.55
n-C30	39.264	18463.1	0.33
n-C31	40.16	22281.59	0.4
n-C32	41.143	14966.8	0.27
n-C33	42.251	16438.6	0.3
n-C34	43.498	11864.38	0.21
n-C35	44.932	10583.02	0.19
n-C36	46.593	5891	0.11
		5566157	100

Batch Code	9711OIL001S004
Data File	C:_DATA\B9711001\WOGC004.RAW

MCH (MeCyC6 as % all C7 alkanes)
HER (Heptane/(Hp+MeCyC6)
HXR (Hexane/(Hx+CyC6)
Thompson's Heptane Ratio
Thompson's Iso Heptane Index
Note: -1 denotes not calculated

Software Version:	4.1<0G07>					
Date:	20/01/98	17:30				
Sample Name:	9711OIL001S005 6600'					
Data File:	C:_DATA\B9711001\WOGC005.RAW	Date:	12/12/97	15:21		
Sequence File:	C:_DATA\B9711001\WOGC1.SEQ	Cycle:	4	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.85	162.4	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.863		
methylcyclopentane	8.42	193.55	0
2,4-dimethylpentane	8.617	624.06	0.01
Benzene	8.986	0	0
cyclohexane	9.198	149.6	0
2-methylhexane + 1,2-DMP	9.516	11789.94	0.14
3-methylhexane	9.765	0	0
1,3-cis-dimethylcyclopentane	9.844	0	0
1,3-trans-dimethylcyclopentane	9.903	329.71	0
1,2-trans-dimethylcyclopentane	9.978	65.19	8.00E-04
n-heptane	10.324	207.8	0
methylcyclohexane	10.772	0	0
ethylcyclopentane	11.015	0	0
Toluene	11.535	578.6	0.01
n-Octane	12.7	0	0
n-Nonane	14.801	0	0
n-Decane	16.745	192.93	0
n-C11	18.473	3373	0.04
n-C12	20.176	388380.3	4.64
n-C13	21.852	3334825	39.85
n-C14	23.3	2400345	28.68
n-C15	24.599	393935.7	4.71
n-C16	25.883	102026.9	1.22
n-C17	27.123	107166.3	1.28
Pristane	27.243	169053.3	2.02
n-C18	28.294	72559.27	0.87
Phytane	28.455	71525.48	0.85
n-C19	29.413	127149.3	1.52
n-C20	30.482	67752.45	0.81
n-C21	31.503	97173.64	1.16
n-C22	32.481	92938.22	1.11
n-C23	33.422	109020.6	1.3
n-C24	34.318	71965.04	0.86
n-C25	35.19	132126.8	1.58
n-C26	36.015	79282.88	0.95
n-C27	36.826	122595.9	1.46
n-C28	37.61	67631.9	0.81
n-C29	38.423	87684.92	1.05
n-C30	39.256	31326	0.37
n-C31	40.157	47435.44	0.57
n-C32	41.287	30646.56	0.37
n-C33	42.238	28955.91	0.35
n-C34	43.578	11882.99	0.14
n-C35	44.904	12276.96	0.15
n-C36	46.689	901.07	0.01
		8368593	100

Batch Code	9711OIL001S005
Data File	C:_DATA\B9711001\WOGC005.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>				
Date:	22/01/98	13:29			
Sample Name:	9711OIL001S006 6750' Split/splitless				
Data File:	C:_DATA\B9711001\WOGC006B.RA	Date:	16/12/97	08:31	
Sequence File:	C:_DATA\B9711001\WOGC3.SEQ	Cycle:	1	Channel:	A
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0 Operator:	NSG
Sample Amount:	1	tion Factor	1		

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.853	194.2	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.384		
n-hexane	7.839		
methylcyclopentane	8.294	263.8	0
2,4-dimethylpentane	8.587	2252.2	0.02
Benzene	9.001	493.8	0
cyclohexane	9.117	157.5	0
2-methylhexane + 1,2-DMP	9.602	869.31	0.01
3-methylhexane	9.761	77.8	6.00E-04
1,3-cis-dimethylcyclopentane	9.849	371.9	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.964	0	0
n-heptane	10.396	0	0
methylcyclohexane	10.874	415.8	0
ethylcyclopentane	11.015	0	0
Toluene	11.709	75	6.00E-04
n-Octane	12.675	113.8	9.00E-04
n-Nonane	14.801	0	0
n-Decane	16.754	638.3	0.01
n-C11	18.48	14133.19	0.11
n-C12	20.179	521610.9	4.19
n-C13	21.814	2268094	18.21
n-C14	23.269	1494810	12
n-C15	24.606	384593.7	3.09
n-C16	25.91	227850	1.83
n-C17	27.159	267474.5	2.15
Pristane	27.281	235068	1.89
n-C18	28.338	281962.1	2.26
Phytane	28.491	148290.9	1.19
n-C19	29.462	346560.2	2.78
n-C20	30.529	255722.2	2.05
n-C21	31.55	218321.9	1.75
n-C22	32.53	233700.9	1.88
n-C23	33.475	276690.1	2.22
n-C24	34.379	260743.4	2.09
n-C25	35.251	316110.8	2.54
n-C26	36.086	282977.4	2.27
n-C27	36.892	257686.8	2.07
n-C28	37.682	199836.1	1.6
n-C29	38.497	195203.8	1.57
n-C30	39.336	114072.8	0.92
n-C31	40.239	107991.8	0.87
n-C32	41.226	74445.05	0.6
n-C33	42.334	84521.26	0.68
n-C34	43.586	38413.16	0.31
n-C35	45.027	32825.06	0.26
n-C36	46.694	19262.7	0.15
		12452759	100

Batch Code	9711OIL001S006
Data File	C:_DATA\B9711001\WOGC006B.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	

Note: -1 denotes not calculated

Software Version:	4.1<0G07>					
Date:	21/01/98	17:20				
Sample Name:	9711OIL001S007 6770' split/splitless					
Data File:	C:_DATA\B9711001\WOGC007.RAW	Date:	15/12/97	17:17		
Sequence File:	C:_DATA\B9711001\WOGC3.SEQ	Cycle:	2	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.858	217.8	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.87		3.62
methylcyclopentane	8.413	0	0
2,4-dimethylpentane	8.584	1516.6	0.02
Benzene	8.996	421.2	0.01
cyclohexane	9.112	152.4	0
2-methylhexane + 1,2-DMP	9.52	2171.2	0.03
3-methylhexane	9.754	37.6	5.00E-04
1,3-cis-dimethylcyclopentane	9.841	320.6	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.964	0	0
n-heptane	10.396	0	0
methylcyclohexane	10.869	168.7	0
ethylcyclopentane	11.015	0	0
Toluene	11.533	237.7	0
n-Octane	12.661	77.3	0
n-Nonane	14.801	0	0
n-Decane	16.744	345.56	0
n-C11	18.47	1161.08	0.02
n-C12	20.146	86444.73	1.23
n-C13	21.772	1036903	14.79
n-C14	23.246	939393.4	13.4
n-C15	24.594	297555.8	4.24
n-C16	25.899	206954.7	2.95
n-C17	27.148	325088.6	4.64
Pristane	27.268	279512.1	3.99
n-C18	28.326	242082	3.45
Phytane	28.481	137296.9	1.96
n-C19	29.452	325461	4.64
n-C20	30.522	238579.5	3.4
n-C21	31.544	233991.9	3.34
n-C22	32.524	247090	3.52
n-C23	33.467	282467.7	4.03
n-C24	34.263	35304.38	0.5
n-C25	35.244	323249.5	4.61
n-C26	36.08	271892.6	3.88
n-C27	36.888	269970.3	3.85
n-C28	37.682	206166.6	2.94
n-C29	38.497	221589.4	3.16
n-C30	39.339	145259.7	2.07
n-C31	40.244	127967.9	1.83
n-C32	41.231	91771.71	1.31
n-C33	42.344	107790.9	1.54
n-C34	43.459	2874.69	0.04
n-C35	45.038	42371.96	0.6
n-C36	46.707	24743.2	0.35
		7010612	100

Batch Code	9711OIL001S007
Data File	C:_DATA\B9711001\WOGC007.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>				
Date:	21/01/98	14:21			
Sample Name:	9711OIL001S008 7020' split/splitless				
Data File:	C:_DATA\B9711001\WOGC008.RAW	Date:	16/12/97	09:58	
Sequence File:	C:_DATA\B9711001\WOGC3.SEQ	Cycle:	3	Channel:	A
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0 Operator:	NSG
Sample Amount:	1	tion Factor	1		

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.85	567.2	0.01
2-methylpropane	2.445	0	0
n-butane	2.931	161.8	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.942		
methylcyclopentane	8.362	382.8	0.01
2,4-dimethylpentane	8.646	1890.73	0.03
Benzene	9.05	390.9	0.01
cyclohexane	9.222	177	0
2-methylhexane + 1,2-DMP	9.483	11889.16	0.17
3-methylhexane	9.79	399.1	0.01
1,3-cis-dimethylcyclopentane	9.878	325.5	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.952	93.8	0
n-heptane	10.396	0	0
methylcyclohexane	10.772	0	0
ethylcyclopentane	10.904	127.6	0
Toluene	11.725	68.9	0
n-Octane	12.675	57.2	8.00E-04
n-Nonane	14.801	0	0
n-Decane	16.749	645.68	0.01
n-C11	18.592	2294.68	0.03
n-C12	20.16	224616.7	3.27
n-C13	21.819	1514951	22.09
n-C14	23.298	1728178	25.19
n-C15	24.635	623127.9	9.08
n-C16	25.902	167215.3	2.44
n-C17	27.14	138068.8	2.01
Pristane	27.261	279316.8	4.07
n-C18	28.309	91679.7	1.34
Phytane	28.469	67977.96	0.99
n-C19	29.427	158953.3	2.32
n-C20	30.494	90756.51	1.32
n-C21	31.516	104571.6	1.52
n-C22	32.496	93634.89	1.37
n-C23	33.435	110869.3	1.62
n-C24	34.336	116603.2	1.7
n-C25	35.209	146009.9	2.13
n-C26	36.043	139571.1	2.03
n-C27	36.852	153060.2	2.23
n-C28	37.644	130036.9	1.9
n-C29	38.461	154386.7	2.25
n-C30	39.301	95104.03	1.39
n-C31	40.205	99165.91	1.45
n-C32	41.191	69588.27	1.01
n-C33	42.299	72898.64	1.06
n-C34	43.546	23543.1	0.34
n-C35	44.989	30782	0.45
n-C36	46.647	17407.4	0.25
		6859332	100

Batch Code	9711OIL001S008
Data File	C:_DATA\B9711001\WOGC008.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>					
Date:	21/01/98	14:19				
Sample Name:	9711OIL001S009 F-3A 4800					
Data File:	C:_DATA\B9711001\WOGC009.RAW	Date:	16/12/97	13:36		
Sequence File:	C:_DATA\B9711001\WOGC4.SEQ	Cycle:	2	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.849	1149.8	0.01
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.404		
n-hexane	7.937		
methylcyclopentane	8.474	219.6	0
2,4-dimethylpentane	8.572	280.2	0
Benzene	8.986	0	0
cyclohexane	9.132	444.6	0
2-methylhexane + 1,2-DMP	9.551	13207.91	0.15
3-methylhexane	9.703	976.09	0.01
1,3-cis-dimethylcyclopentane	9.844	0	0
1,3-trans-dimethylcyclopentane	9.847	126.2	0
1,2-trans-dimethylcyclopentane	9.933	438	0
n-heptane	10.332	119706.2	1.33
methylcyclohexane	10.826	76.1	8.00E-04
ethylcyclopentane	11.008	4128.84	0.05
Toluene	11.567	1115.25	0.01
n-Octane	12.577	123.6	0
n-Nonane	14.801	0	0
n-Decane	16.746	180.24	0
n-C11	18.641	3908.36	0.04
n-C12	20.146	32229.25	0.36
n-C13	21.796	1213516	13.46
n-C14	23.29	1702234	18.88
n-C15	24.611	440415.2	4.89
n-C16	25.897	158601.5	1.76
n-C17	27.131	163505.9	1.81
Pristane	27.252	201397.1	2.23
n-C18	28.303	55408.4	0.61
Phytane	28.469	56114.77	0.62
n-C19	29.42	81516.5	0.9
n-C20	30.492	44153.45	0.49
n-C21	31.512	41531.63	0.46
n-C22	32.492	47539.24	0.53
n-C23	33.429	38270.1	0.42
n-C24	34.328	35418.1	0.39
n-C25	35.116	102480.5	1.14
n-C26	36.021	38544.27	0.43
n-C27	36.824	28732.64	0.32
n-C28	37.614	25227.58	0.28
n-C29	38.423	27914	0.31
n-C30	39.261	12064.8	0.13
n-C31	40.158	20734.07	0.23
n-C32	41.146	10057.9	0.11
n-C33	42.245	12018.4	0.13
n-C34	43.5	8346.89	0.09
n-C35	44.929	6068	0.07
n-C36	46.588	5183.4	0.06
		9014389	100

Batch Code	9711OIL001S009
Data File	C:_DATA\B9711001\WOGC009.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>				
Date:	21/01/98	14:14			
Sample Name:	9711OIL001S010 F-3A 8010				
Data File:	C:_DATA\B9711001\WOGC010.RAW	Date:	16/12/97	14:53	
Sequence File:	C:_DATA\B9711001\WOGC4.SEQ	Cycle:	3	Channel:	A
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0 Operator:	NSG
Sample Amount:	1	tion Factor	1		

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.818	0	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.73		
2,3-dimethylbutane	6.848		
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.92		
methylcyclopentane	8.373	302.8	0
2,4-dimethylpentane	8.642	1244.7	0.01
Benzene	8.976	63.93	5.00E-04
cyclohexane	9.146	156.75	0
2-methylhexane + 1,2-DMP	9.468	10283.98	0.07
3-methylhexane	9.765	0	0
1,3-cis-dimethylcyclopentane	9.87	279.8	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	10.033	178	0
n-heptane	10.396	0	0
methylcyclohexane	10.772	0	0
ethylcyclopentane	10.998	320.4	0
Toluene	11.649	332.14	0
n-Octane	12.817	92.4	7.00E-04
n-Nonane	14.936	148	0
n-Decane	16.733	2761.54	0.02
n-C11	18.594	3801.12	0.03
n-C12	20.148	347044.9	2.52
n-C13	21.804	1976300	14.36
n-C14	23.261	2670077	19.4
n-C15	24.574	357386.3	2.6
n-C16	25.865	79915.37	0.58
n-C17	27.106	69843.87	0.51
Pristane	27.227	73518.79	0.53
n-C18	28.284	47402.11	0.34
Phytane	28.449	48646.09	0.35
n-C19	29.406	63655.39	0.46
n-C20	30.478	45523.22	0.33
n-C21	31.501	39281.37	0.29
n-C22	32.481	38202.46	0.28
n-C23	33.421	35898	0.26
n-C24	34.318	32887.71	0.24
n-C25	35.326	41243.93	0.3
n-C26	36.011	35951.49	0.26
n-C27	36.816	21598.81	0.16
n-C28	37.603	25730.1	0.19
n-C29	38.411	39384.9	0.29
n-C30	39.25	12850.9	0.09
n-C31	40.145	22703.91	0.16
n-C32	41.123	13815	0.1
n-C33	42.222	16029.13	0.12
n-C34	43.467	7660.15	0.06
n-C35	44.899	10535.57	0.08
n-C36	46.548	8255.09	0.06
		13763146	100

Batch Code	9711OIL001S010
Data File	C:_DATA\B9711001\WOGC010.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>					
Date:	21/01/98	14:13				
Sample Name:	9711OIL001S011 F-3A 8100					
Data File:	C:_DATA\B9711001\WOGC011.RAW	Date:	16/12/97	16:10		
Sequence File:	C:_DATA\B9711001\WOGC4.SEQ	Cycle:	4	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.841	121.8	1.00E-03
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.957		
methylcyclopentane	8.369	355.76	0
2,4-dimethylpentane	8.648	1302.44	0.01
Benzene	9.049	432.8	0
cyclohexane	9.22	164.2	0
2-methylhexane + 1,2-DMP	9.479	10312.69	0.08
3-methylhexane	9.765	0	0
1,3-cis-dimethylcyclopentane	9.873	288.8	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.947	31.2	3.00E-04
n-heptane	10.299	390.05	0
methylcyclohexane	10.879	97.2	8.00E-04
ethylcyclopentane	11.089	45.8	4.00E-04
Toluene	11.623	419	0
n-Octane	12.7	0	0
n-Nonane	14.805	401.2	0
n-Decane	16.743	1798	0.01
n-C11	18.472	16629.05	0.13
n-C12	20.194	676134.2	5.47
n-C13	21.892	5161172	41.75
n-C14	23.336	4091588	33.1
n-C15	24.609	612489.3	4.95
n-C16	25.882	159275.9	1.29
n-C17	27.12	207926.4	1.68
Pristane	27.242	155172.2	1.26
n-C18	28.296	91168.3	0.74
Phytane	28.459	82759.58	0.67
n-C19	29.419	135330.8	1.09
n-C20	30.489	86117.6	0.7
n-C21	31.512	83527.4	0.68
n-C22	32.491	95246.57	0.77
n-C23	33.43	83726.9	0.68
n-C24	34.327	63141.9	0.51
n-C25	35.194	95359.27	0.77
n-C26	36.019	62446.89	0.51
n-C27	36.823	42906.8	0.35
n-C28	37.61	40692.35	0.33
n-C29	38.417	39969.39	0.32
n-C30	39.254	16793.69	0.14
n-C31	40.149	22863.82	0.18
n-C32	41.126	12745.91	0.1
n-C33	42.226	14703.27	0.12
n-C34	43.471	7590.44	0.06
n-C35	44.897	6057.6	0.05
n-C36	46.547	4308.4	0.03
		12361745	100

Batch Code	9711OIL001S011
Data File	C:_DATA\B9711001\WOGC011.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>				
Date:	21/01/98	15:38			
Sample Name:	9711OIL001S012 F-3A				
Data File:	C:_DATA\B9711001\WOGC012.RAW	Date:	17/12/97	16:32	
Sequence File:	C:_DATA\B9711001\WOGC7.SEQ	Cycle:	1	Channel:	A
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0 Operator:	NSG
Sample Amount:	1	tion Factor	1		

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.85	170.3	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	8.035	[illegible]	2.19
methylcyclopentane	8.407	149.2	0
2,4-dimethylpentane	8.665	1853.4	0.02
Benzene	9.051	446	0.01
cyclohexane	9.159	156	0
2-methylhexane + 1,2-DMP	9.473	11587.78	0.15
3-methylhexane	9.857	294.8	0
1,3-cis-dimethylcyclopentane	9.93	26.4	3.00E-04
1,2-trans-dimethylcyclopentane	9.964	0	0
1,3-trans-dimethylcyclopentane	10.015	173.1	0
n-heptane	10.396	0	0
methylcyclohexane	10.848	104.7	0
ethylcyclopentane	11.07	40.4	5.00E-04
Toluene	11.614	402.4	0.01
n-Octane	12.7	0	0
n-Nonane	14.801	0	0
n-Decane	16.742	328.6	0
n-C11	18.469	2732.61	0.03
n-C12	20.16	226278	2.86
n-C13	21.826	2664670	33.62
n-C14	23.285	2354028	29.7
n-C15	24.589	387712	4.89
n-C16	25.878	144468.2	1.82
n-C17	27.124	144539.8	1.82
Pristane	27.246	145320.2	1.83
n-C18	28.3	131498.5	1.66
Phytane	28.461	112343.6	1.42
n-C19	29.424	217949.4	2.75
n-C20	30.497	131825.3	1.66
n-C21	31.516	125955.3	1.59
n-C22	32.495	125551.5	1.58
n-C23	33.432	115000.1	1.45
n-C24	34.329	99590.96	1.26
n-C25	35.193	129256	1.63
n-C26	36.017	87587	1.11
n-C27	36.822	69003.73	0.87
n-C28	37.608	126978.8	1.6
n-C29	38.412	81294.2	1.03
n-C30	39.248	18457.7	0.23
n-C31	40.143	25493.98	0.32
n-C32	41.361	29182.68	0.37
n-C33	42.217	14483.02	0.18
n-C34	43.559	13222.31	0.17
n-C35	44.885	7788.44	0.1
n-C36	46.526	4389.34	0.06
		7925511	100

Batch Code	9711OIL001S012
Data File	C:_DATA\B9711001\WOGC012.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>					
Date:	21/01/98	15:45				
Sample Name:	9711OIL001S013 F-3A 8610'					
Data File:	C:_DATA\B9711001\WOGC013.RAW	Date:	17/12/97	09:59		
Sequence File:	C:_DATA\B9711001\WOGC6.SEQ	Cycle:	1	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.848	136.1	0
2-methylpropane	2.445	0	0
n-butane	2.963	332.2	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.925		
methylcyclopentane	8.355	199.4	0
2,4-dimethylpentane	8.639	1089.8	0.01
Benzene	9.042	411.8	0
cyclohexane	9.155	139.8	0
2-methylhexane + 1,2-DMP	9.475	11811.8	0.12
3-methylhexane	9.765	0	0
1,3-cis-dimethylcyclopentane	9.873	422.6	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.946	66.1	7.00E-04
n-heptane	10.308	767183.8	7.68
methylcyclohexane	10.877	295.86	0
ethylcyclopentane	10.982	141383.5	1.42
Toluene	11.539	59776	0.6
n-Octane	12.7	0	0
n-Nonane	14.801	0	0
n-Decane	16.741	1448.25	0.01
n-C11	18.471	27936.54	0.28
n-C12	20.193	664472.8	6.65
n-C13	21.858	3731407	37.36
n-C14	23.282	1997156	19.99
n-C15	24.59	290857	2.91
n-C16	25.88	111278.8	1.11
n-C17	27.123	166784.6	1.67
Pristane	27.261	326456.9	3.27
n-C18	28.295	80292.6	0.8
Phytane	28.466	182562	1.83
n-C19	29.417	105359.6	1.05
n-C20	30.486	62477.6	0.63
n-C21	31.508	75915.91	0.76
n-C22	32.487	69738.77	0.7
n-C23	33.425	81181.3	0.81
n-C24	34.322	64575.45	0.65
n-C25	35.191	93467.69	0.94
n-C26	36.022	64171.91	0.64
n-C27	36.831	64548.97	0.65
n-C28	37.619	52562.67	0.53
n-C29	38.431	58377.85	0.58
n-C30	39.263	13598.04	0.14
n-C31	40.155	29828.58	0.3
n-C32	41.279	19981.98	0.2
n-C33	42.234	18009.02	0.18
n-C34	43.48	3345.2	0.03
n-C35	44.908	5293.6	0.05
n-C36	46.56	5220.11	0.05
		9988822	100

Batch Code	9711OIL001S013
Data File	C:_DATA\B9711001\WOGC013.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	

Software Version:	4.1<0G07>				
Date:	21/01/98	15:49			
Sample Name:	9711OIL001S014 F-3A 8800'				
Data File:	C:_DATA\B9711001\WOGC014.RAW	Date:	17/12/97	11:12	
Sequence File:	C:_DATA\B9711001\WOGC6.SEQ	Cycle:	2	Channel:	A
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator: NSG
Sample Amount:	1	tion Factor	1		

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.865	191	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	5.957		
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	8.011		
methylcyclopentane	8.404	316.8	0
2,4-dimethylpentane	8.609	0	0
Benzene	8.986	0	0
cyclohexane	9.157	166.4	0
2-methylhexane + 1,2-DMP	9.476	11960.8	0.11
3-methylhexane	9.765	0	0
1,3-cis-dimethylcyclopentane	9.844	0	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.945	41.9	4.00E-04
n-heptane	10.396	0	0
methylcyclohexane	10.875	125.8	0
ethylcyclopentane	11.096	86	8.00E-04
Toluene	11.635	52.4	5.00E-04
n-Octane	12.7	0	0
n-Nonane	14.801	0	0
n-Decane	16.744	318.1	0
n-C11	18.472	18973.23	0.18
n-C12	20.193	597907.8	5.74
n-C13	21.869	3765306	36.16
n-C14	23.3	2410339	23.14
n-C15	24.603	408366.7	3.92
n-C16	25.895	265863.3	2.55
n-C17	27.137	293332.2	2.82
Pristane	27.262	298283.8	2.86
n-C18	28.31	216883.2	2.08
Phytane	28.468	154669.9	1.49
n-C19	29.432	261191.2	2.51
n-C20	30.499	185329.1	1.78
n-C21	31.519	171595.6	1.65
n-C22	32.495	144959.7	1.39
n-C23	33.433	152971.3	1.47
n-C24	34.326	108912.4	1.05
n-C25	35.196	154490.1	1.48
n-C26	36.017	100816.4	0.97
n-C27	36.821	97765.4	0.94
n-C28	37.603	66438.95	0.64
n-C29	38.411	81468.18	0.78
n-C30	39.243	28742.74	0.28
n-C31	40.137	36477.91	0.35
n-C32	41.115	14821	0.14
n-C33	42.21	21246.72	0.2
n-C34	43.447	6793.97	0.07
n-C35	44.871	7356	0.07
n-C36	46.512	3017	0.03
		10414107	100

Batch Code	9711OIL001S014
Data File	C:_DATA\B9711001\WOGC014.RAW

MCH (MeCyC6 as % all C7 alkanes)
HER (Heptane/(Hp+MeCyC6)
HXR (Hexane/(Hx+CyC6)
Thompson's Heptane Ratio
Thompson's Iso Heptane Index
Note: -1 denotes not calculated

Software Version:	4.1<0G07>				
Date:	21/01/98	15:53			
Sample Name:	9711OIL001S015 F-3A 8840'				
Data File:	C:_DATA\B9711001\WOGC015.RAW	Date:	17/12/97	13:54	
Sequence File:	C:_DATA\B9711001\WOGC6.SEQ	Cycle:	3	Channel:	A
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0 Operator:	NSG
Sample Amount:	1	tion Factor	1		

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.871	941.2	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	8.013		
methylcyclopentane	8.416	232.51	9.00E-04
2,4-dimethylpentane	8.609	165.33	7.00E-04
Benzene	8.986	0	0
cyclohexane	9.26	187	7.00E-04
2-methylhexane + 1,2-DMP	9.515		
3-methylhexane	9.82	99.5	4.00E-04
1,3-cis-dimethylcyclopentane	9.906	332.8	0
1,3-trans-dimethylcyclopentane	9.907	0	0
1,2-trans-dimethylcyclopentane	9.982	92.2	4.00E-04
n-heptane	10.311	1653.56	0.01
methylcyclohexane	10.733	88.7	4.00E-04
ethylcyclopentane	10.912	179.6	7.00E-04
Toluene	11.728	104.93	4.00E-04
n-Octane	12.686	88.4	4.00E-04
n-Nonane	14.902	126.3	5.00E-04
n-Decane	16.727	1400.8	0.01
n-C11	18.455	95703.86	0.38
n-C12	20.249	991782.7	3.96
n-C13	21.932	3434782	13.71
n-C14	23.382	3331401	13.3
n-C15	24.696	1298603	5.18
n-C16	26.012	1206995	4.82
n-C17	27.282	1861977	7.43
Pristane	27.405	1417416	5.66
n-C18	28.466	1334270	5.33
Phytane	28.612	654453	2.61
n-C19	29.602	1837643	7.33
n-C20	30.666	1196474	4.78
n-C21	31.678	1023698	4.09
n-C22	32.642	903884.4	3.61
n-C23	33.567	804738.8	3.21
n-C24	34.448	625767	2.5
n-C25	35.307	686143.1	2.74
n-C26	36.122	470735	1.88
n-C27	36.917	462494.6	1.85
n-C28	37.696	297741.5	1.19
n-C29	38.505	240608	0.96
n-C30	39.333	151302	0.6
n-C31	40.232	144533.6	0.58
n-C32	41.21	74489.35	0.3
n-C33	42.311	100404.2	0.4
n-C34	43.654	54969.96	0.22
n-C35	44.984	33088.98	0.13
n-C36	46.632	20726.57	0.08
		25053947	100

Batch Code	9711OIL001S015
Data File	C:_DATA\B9711001\WOGC015.RAW

MCH (MeCyC6 as % all C7 alkanes)
HER (Heptane/(Hp+MeCyC6)
HXR (Hexane/(Hx+CyC6)
Thompson's Heptane Ratio
Thompson's Iso Heptane Index
Note: -1 denotes not calculated

Software Version:	4.1<0G07>					
Date:	21/01/98	15:57				
Sample Name:	9711OIL001S016 F-3A 9120'					
Data File:	C:_DATA\B9711001\WOGC016.RAW	Date:	17/12/97	15:11		
Sequence File:	C:_DATA\B9711001\WOGC6.SEQ	Cycle:	4	Channel:	A	
Instrument:	WHOLE_OILS_GC	Rack/Vial:	0	0	Operator:	NSG
Sample Amount:	1	tion Factor	1			

Whole Oil GC Analysis

Component Name	Time [min]	Area [µV·s]	Amount [%]
Propane	1.85	78.3	0
2-methylpropane	2.445	0	0
n-butane	3.008	0	0
2-methylbutane	4.561	0	0
n-pentane	5.248	0	0
DCM	5.744	0	0
2,2-dimethylbutane	6.081	0	0
Cyclopentane	6.715	0	0
2,3-dimethylbutane	6.859	0	0
2-methylpentane	7.024	0	0
3-methylpentane	7.369	0	0
n-hexane	7.949		
methylcyclopentane	8.349	277.8	0
2,4-dimethylpentane	8.623	1268.2	0.02
Benzene	9.018	433.6	0.01
cyclohexane	9.129	155.2	0
2-methylhexane + 1,2-DMP	9.527	2078	0.03
3-methylhexane	9.848	283.4	0
1,3-cis-dimethylcyclopentane	9.921	48.8	7.00E-04
1,2-trans-dimethylcyclopentane	9.964	0	0
1,3-trans-dimethylcyclopentane	10.013	181.9	0
n-heptane	10.396	0	0
methylcyclohexane	10.87	109	0
ethylcyclopentane	11.015	0	0
Toluene	11.57	0	0
n-Octane	12.7	0	0
n-Nonane	14.883	120	0
n-Decane	16.741	1472.28	0.02
n-C11	18.464	12621.17	0.18
n-C12	20.17	440760.3	6.19
n-C13	21.83	3006149	42.24
n-C14	23.269	1781555	25.03
n-C15	24.583	275014	3.86
n-C16	25.873	98944.55	1.39
n-C17	27.111	128284	1.8
Pristane	27.231	185993.3	2.61
n-C18	28.284	61976.6	0.87
Phytane	28.447	57175.16	0.8
n-C19	29.404	87344.8	1.23
n-C20	30.473	57546.13	0.81
n-C21	31.494	57525.98	0.81
n-C22	32.471	57970.57	0.81
n-C23	33.409	63189.4	0.89
n-C24	34.307	56106.67	0.79
n-C25	35.177	78648.67	1.11
n-C26	36.005	54264.5	0.76
n-C27	36.813	51760.5	0.73
n-C28	37.601	43267.2	0.61
n-C29	38.412	53370	0.75
n-C30	39.249	25742.8	0.36
n-C31	40.148	29989.37	0.42
n-C32	41.127	19359	0.27
n-C33	42.224	25106.85	0.35
n-C34	43.326	4495.8	0.06
n-C35	44.896	14888.26	0.21
n-C36	46.546	780.2	0.01
		7117154	100

Batch Code	9711OIL001S016
Data File	C:_DATA\B9711001\WOGC016.RAW
MCH (MeCyC6 as % all C7 alkanes)	
HER (Heptane/(Hp+MeCyC6)	
HXR (Hexane/(Hx+CyC6)	
Thompson's Heptane Ratio	
Thompson's Iso Heptane Index	
Note: -1 denotes not calculated	