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**GEOCHEMICAL EVALUATION OF OIL ISOLATED
FROM WELL 6407/6-4, MIKKEL STRUCTURE,
MID-NORWAY**

Technical Service No. 509-8277

J.R. Gormly
May 1991
Dallas Research Laboratory

TECHNICAL SERVICE PROJECT 509-8277

**GEOCHEMICAL EVALUATION OF OIL ISOLATED FROM
WELL 6407/6-4, MIKKEL STRUCTURE, MID-NORWAY**

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May 1991

**GEOCHEMICAL PROPERTIES
CORE SAMPLES FROM THE 6407/6-4 WELL
OFFSHORE MID-NORWAY**

SAMPLE	DEPTH meters	del ¹³ C vs. PDB per mil				GC DATA		
		¹³ C SAT	¹³ C AROM	¹³ C NSO	¹³ C ASPH	Pr/Ph	Pr/nC ₁₇	Ph/nC ₁₈
1615 01 01	2662.50	-24.27	NA	-25.06	-24.29	1.05	0.91	0.24
1615 01 02	2685.50	-24.97	-25.52	-25.90	NA	0.53	0.77	0.29
1615 01 03	3089.25	NA	-28.06	-25.55	NA	NA	NA	NA

SAMPLE	DEPTH meters	THERMAL-MATURITY-RELATED PROPERTIES					SOURCE-RELATED PROPERTIES				
		Ts %	22S %	22S/22R	20S/20R	BB/aa	C27 %	C28 %	C29 %	C21 %	27dS/27R
1615 01 01	2662.50	31.8	59.4	1.46	0.75	1.11	33.3	21.7	44.9	25.2	1.96
1615 01 02	2685.50	30.3	59.0	1.44	0.77	0.97	35.3	19.0	45.7	28.5	1.39
1615 01 03	3089.25	31.8	58.8	1.43	0.75	1.05	40.1	19.4	40.4	21.0	1.27

* Note: Sample size was too small to permit reliable determination of gross composition.

TABLE 1

APPENDIX A

**GAS CHROMATOGRAMS OF SATURATED FRACTIONS OF
EXTRACTS FROM WELL 6407/6-4**

6407/6-4 WELL, 2662.5 meters,
1615_01_01

1615_01

91/00854

S91_00854
abundance = 45052

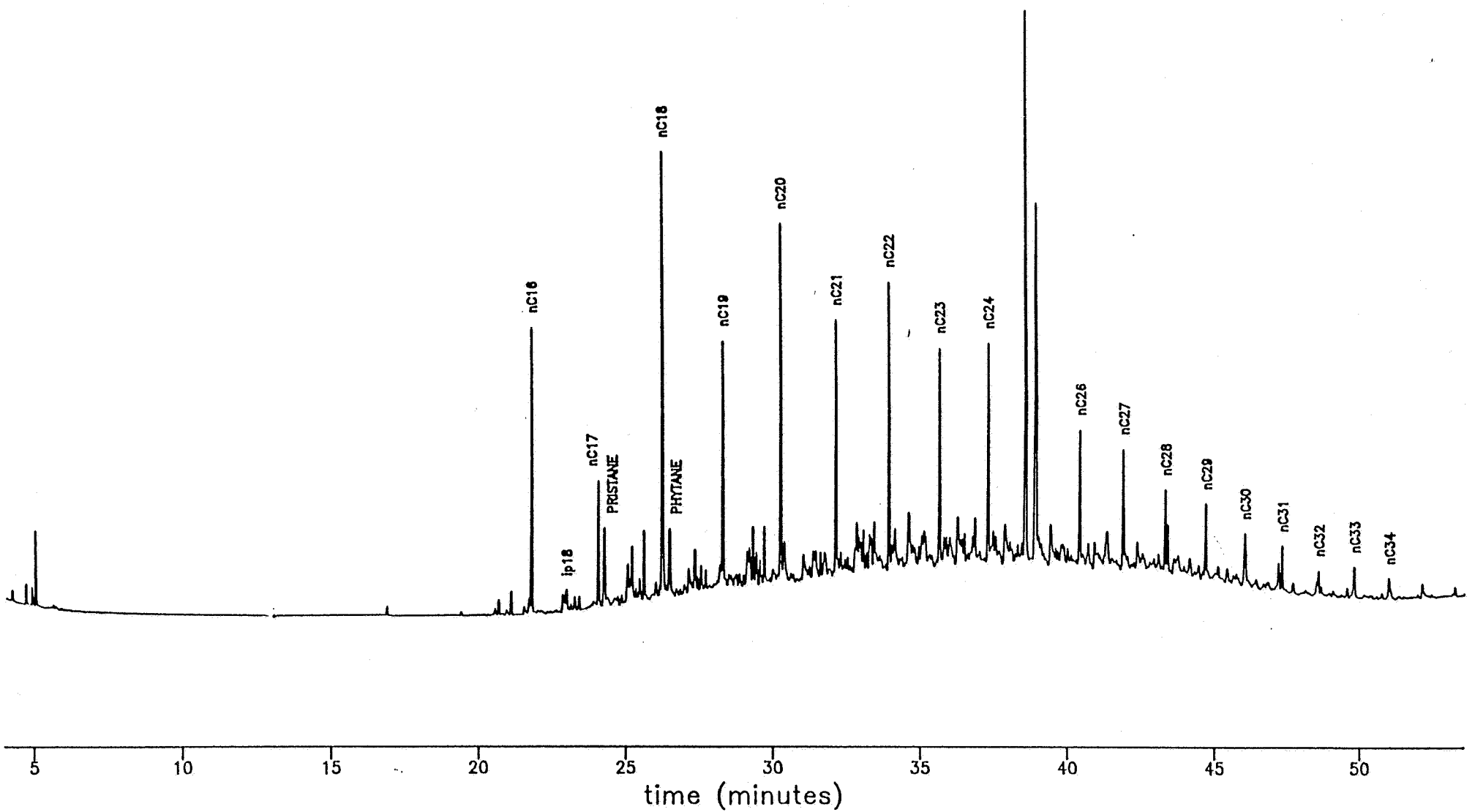


Figure A-1. Gas chromatogram of the saturated fraction of the extract from well 6407/6-4, 2662.5m.

6407/6-4 WELL, 2685.5 meters,
1615_01_02

1615_01

91/00855

S91_00855
abundance = 29127

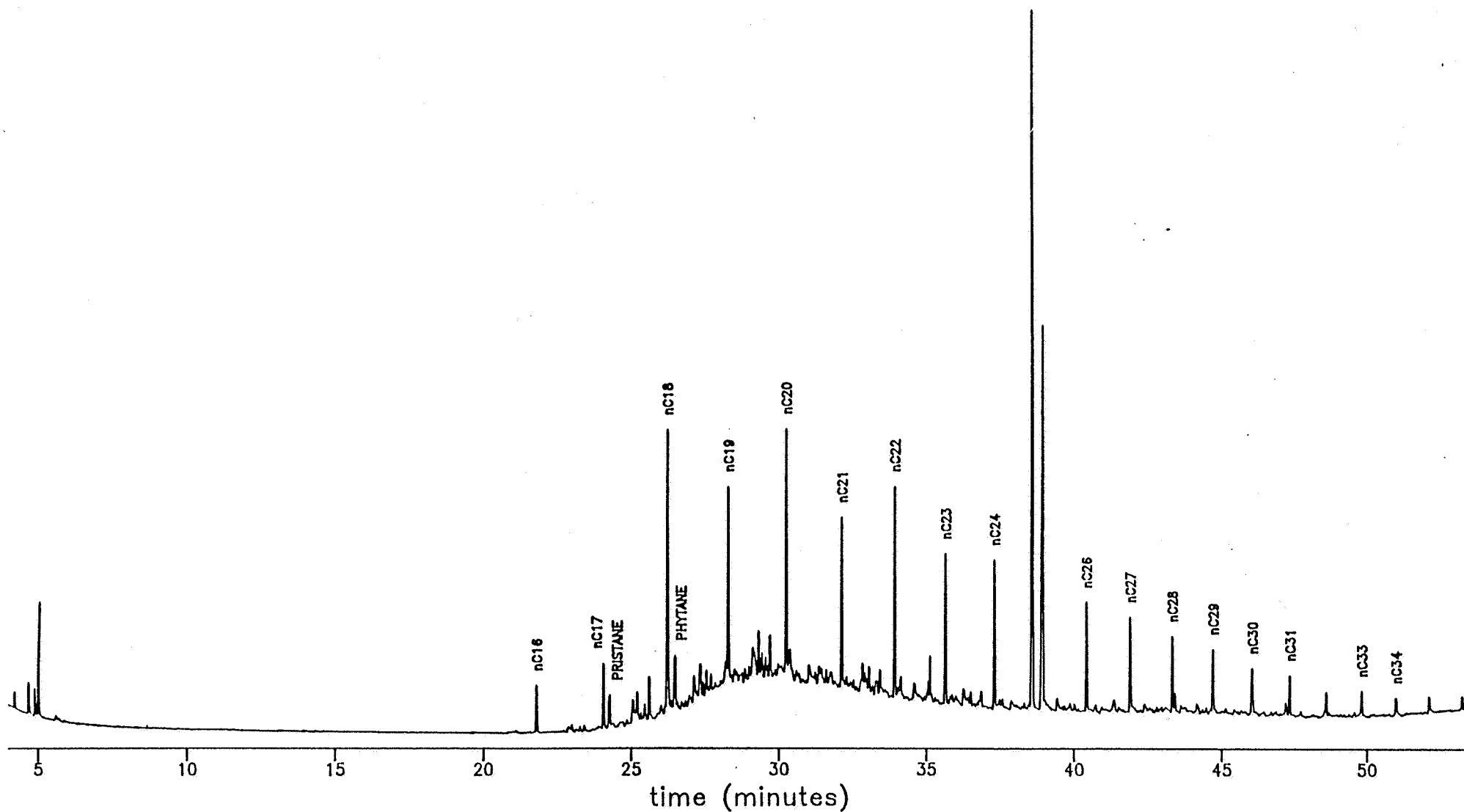


Figure A-2. Gas chromatogram of the saturated fraction of the extract from well 6407/6-4, 2685.5m.

6407/6-4 WELL,3089.25 meters,
1615_01_03

1615_01

91/00856

S91_00856
abundance = 31767

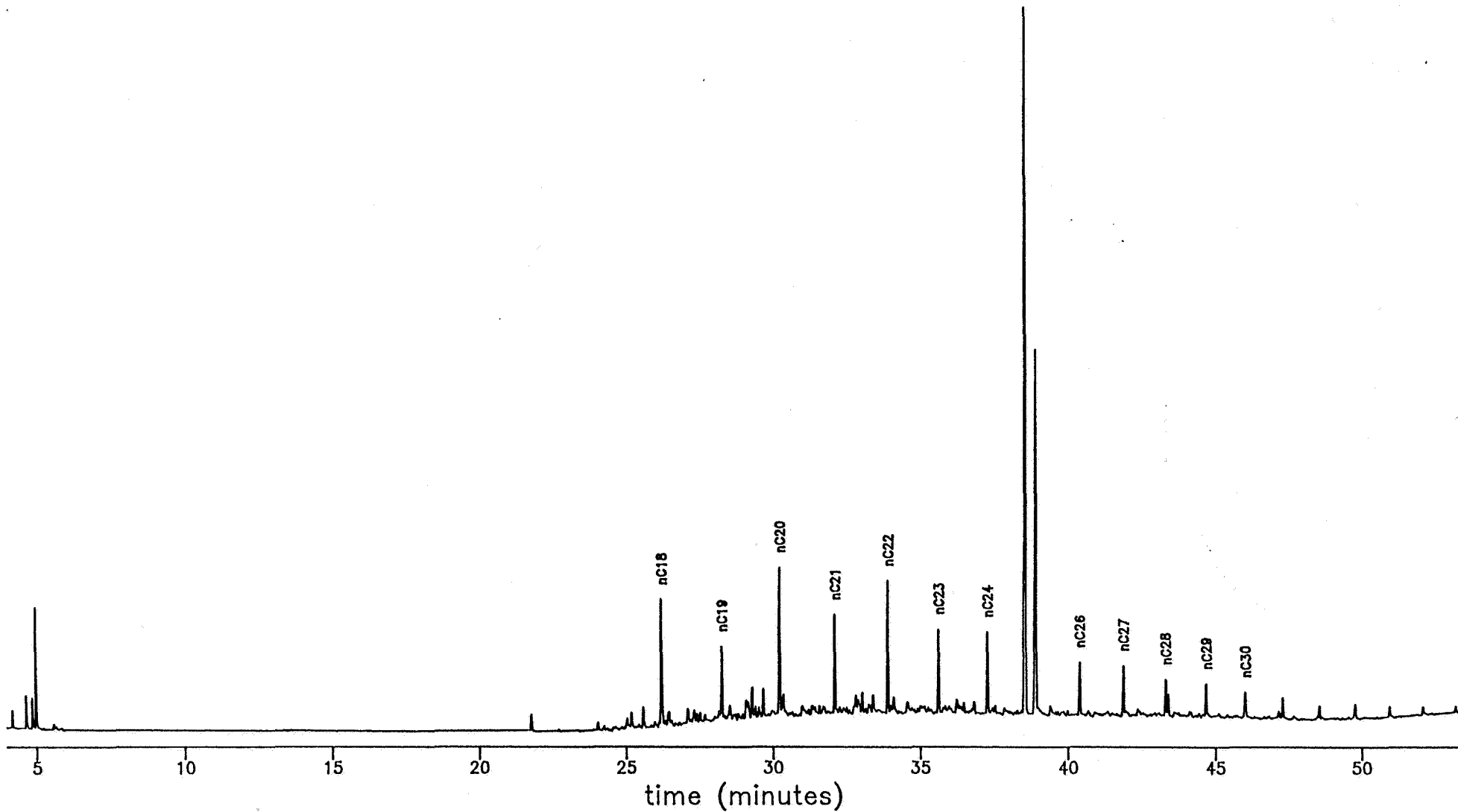


Figure A-3. Gas chromatogram of the saturated fraction of the extract from well 6407/6-4, 3089.25m.

APPENDIX B

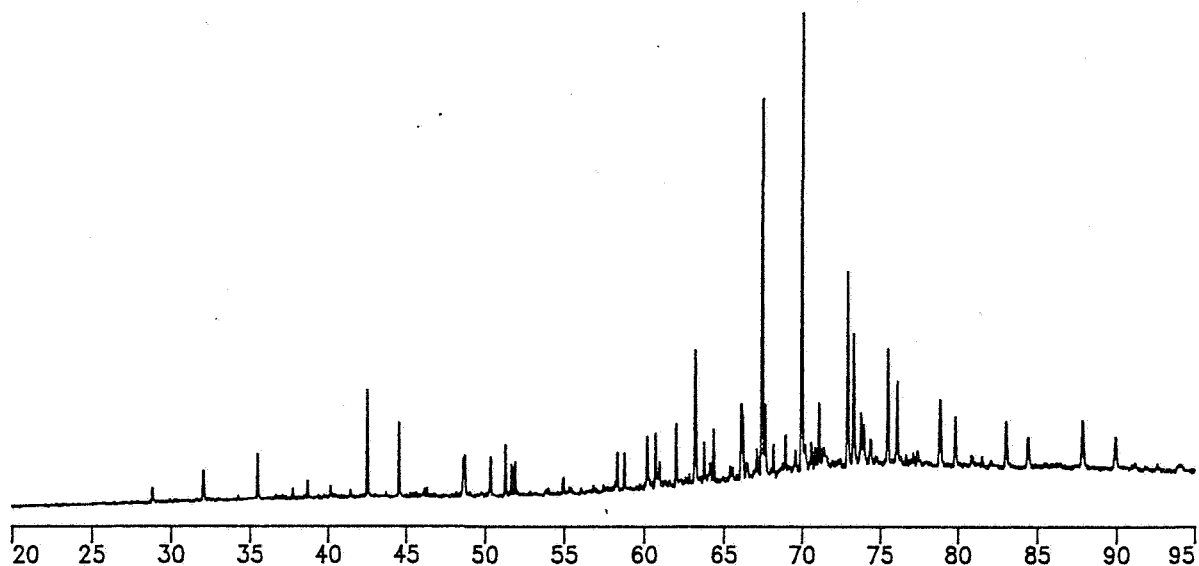
**MASS FRAGMENTOGRAMS OF SATURATED FRACTIONS OF
EXTRACTS FROM WELL 6407/6-4**

6407/6-4 WELL, 2662.5 meters
1615_01_01

1615_01

m/z 191

T91_00854
abundance = 10830



6407/6-4 WELL, 2662.5 meters
1615_01_01

1615_01

m/z 217

ST91_00854
abundance = 2274

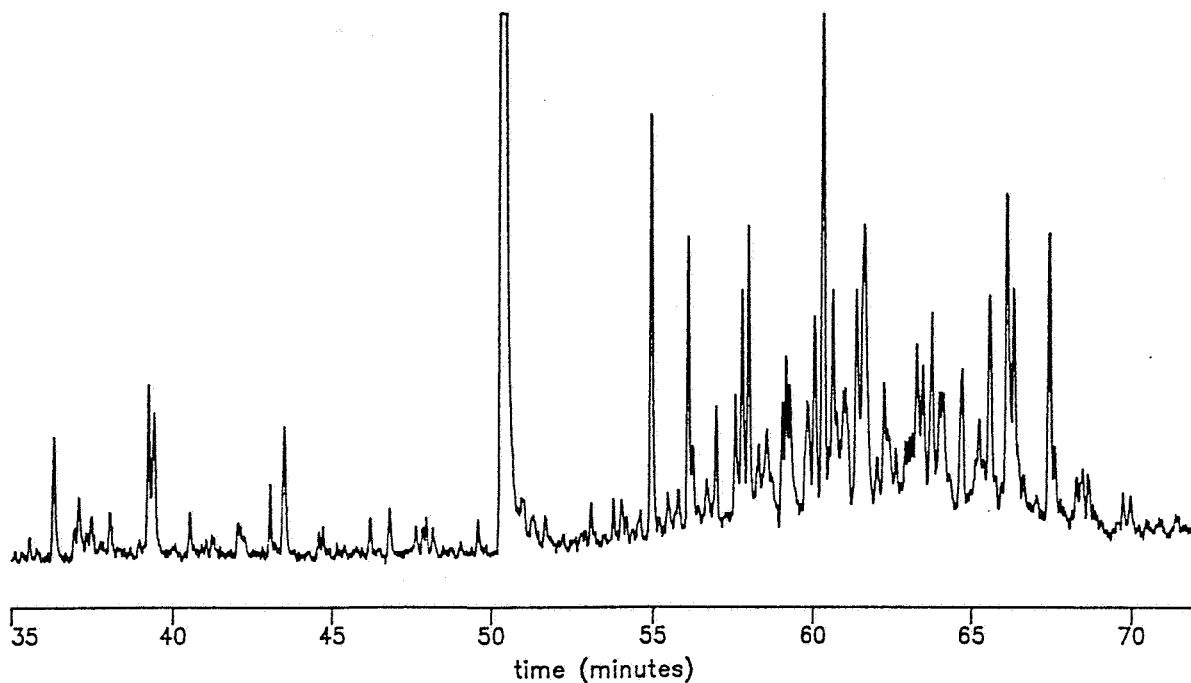


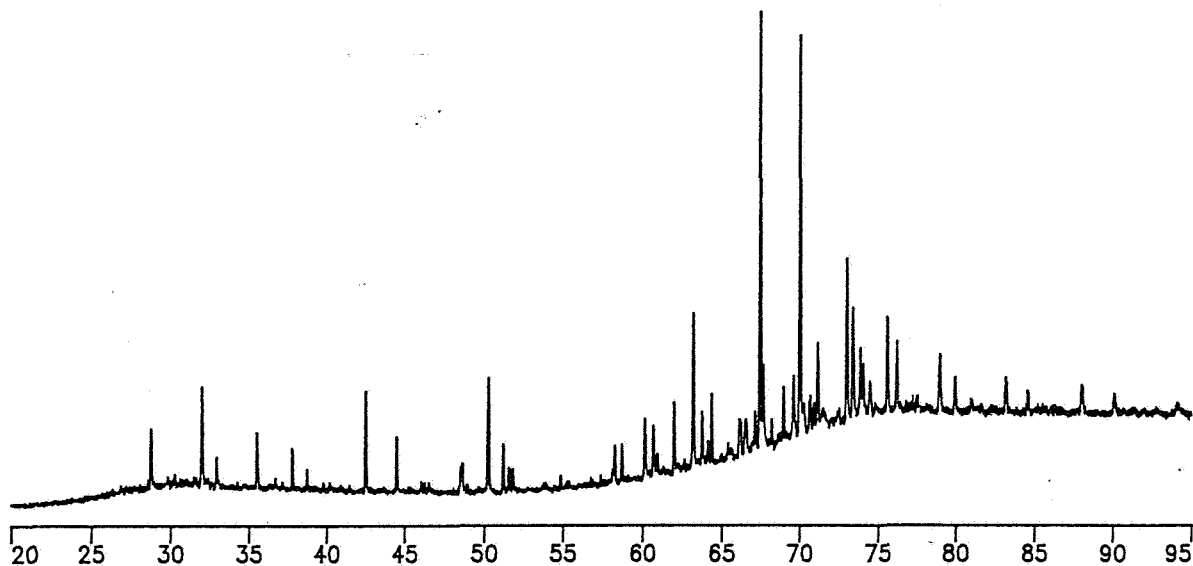
Figure B-1. Mass fragmentogram of the saturated fraction of the extract from well 6407/6-4, 2662.5m.

6407/6-4 WELL, 2685.5 meters,
1615_01_02

1615_01

m/z 191

T91_00855
abundance = 4414



6407/6-4 WELL, 2685.5 meters,
1615_01_02

1615_01

m/z 217

ST91_00855
abundance = 626

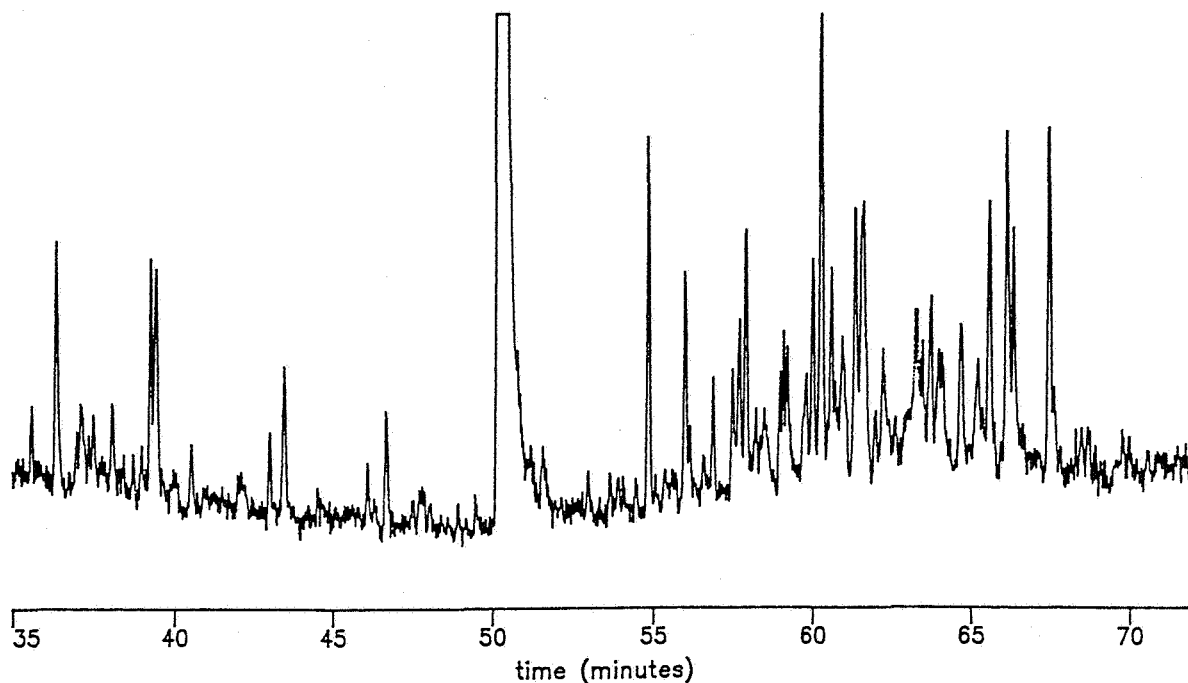


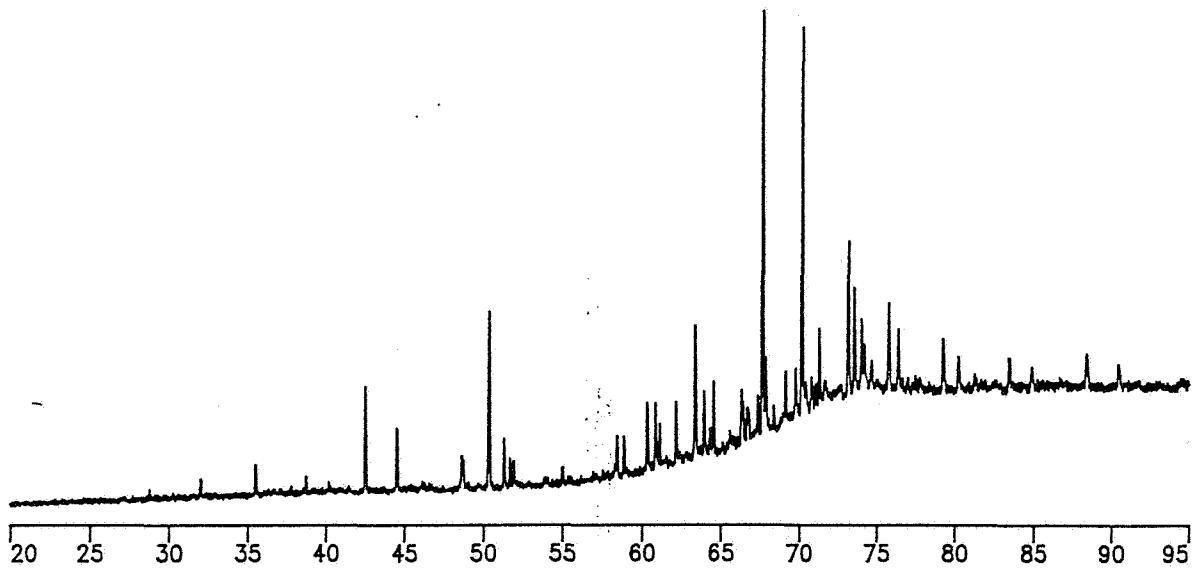
Figure B-2. Mass fragmentogram of the saturated fraction of the extract from well 6407/6-4, 2685.5m.

6407/6-4 WELL, 3089.25 meters,
1615_01_03

1615_01

m/z 191

T91_00856
abundance = 3277



6407/6-4 WELL, 3089.25 meters,
1615_01_03

1615_01

m/z 217

ST91_00856
abundance = 481

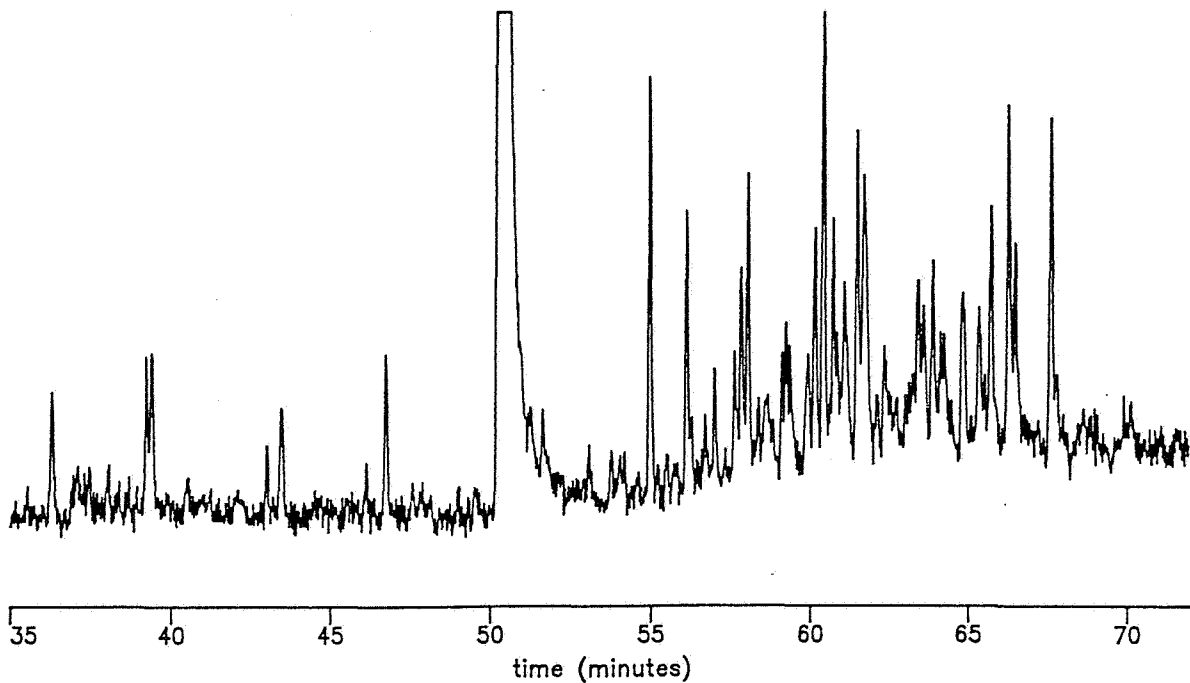


Figure B-3. Mass fragmentogram of the saturated fraction of the extract from well 6407/6-4, 3089.25m.

MOBIL RESEARCH AND DEVELOPMENT CORPORATION
 Dallas Research Laboratory
 Basin Analysis Database System

GCMS REPORT
 MAR. 19 1991

Field Name : MIKKEL STRUCTURE File Number : 1615_01
 Country : Norway
 State :
 Well Name : 6407/6-4
 Depth : meters

Sample Name : 1615_01_01 Sample ID # : 91/00854
 Description : Core GCMS File : >ON906
 Depth : 2662.50 meters Job No : 1615_01
 Comments :

Sterane Summary		Terpane Summary	
% C27 Sterane-(20R)	33.3	% Tricyclics/Hopane	50.7
% C28 Sterane-(20R)	21.7	% Ts (C27 Hopanes)	31.8
% C29 Sterane-(20R)	44.9	% 22S for C31 Hopanes	59.4
		22S/22R (C31 Hopanes)	1.5
% C21 Sterane	25.2		
% BB (C29 steranes)	52.0	% C29N in C29 Hopanes	16.3
% 20S (C29 steranes)	42.9	% C30M in C30 Hopanes	11.7
20S/20R (C29 steranes)	.75		
BB/aa (C29 steranes)	1.11		
27dS/27R	1.96	28H/30H	.17
=====	Sterane Data	=====	
C21	.593	C29dR	.960
C27dS	1.456	C28R	.485
C27dR	1.013	C29S	.754
C27S	.690	C29BR	1.112
C27B29d	1.718	C29BS	.790
C27R	.743	C29R	1.002
		C30	.139
=====	Terpane Data	=====	
C23t	3.000	C29N	2.050
C24t	2.085	C29M	1.121
C25t	1.082	C30H	12.755
C24tet	1.433	C30M	1.692
C26tA	.865	C31S	5.450
C26tB	.942	C31R	3.727
C28tA	1.091	C32S	3.210
C28tB	1.053	C32R	2.288
C29tA	1.460	C33S	1.865
C29tB	1.526	C33R	1.405
Ts	1.755	C34S	1.305
Tm	3.756	C34R	.848
C28H	2.114	C35S	1.330
C29H	10.555	C35R	.901

MOBIL RESEARCH AND DEVELOPMENT CORPORATION
 Dallas Research Laboratory
 Basin Analysis Database System

GCMS REPORT
 MAR. 19 1991

Field Name : MIKKEL STRUCTURE
 Country : Norway
 State :
 Well Name : 6407/6-4
 Depth : meters

File Number : 1615_01

Sample Name : 1615_01_02
 Description : Core
 Depth : 2685.50 meters
 Comments :

Sample ID # : 91/00855
 GCMS File : >0N907
 Job No : 1615_01

Sterane Summary	Terpane Summary
% C27 Sterane-(20R) 35.3	% Tricyclics/Hopane 51.7
% C28 Sterane-(20R) 19.0	% Ts (C27 Hopanes) 30.3
% C29 Sterane-(20R) 45.7	% 22S for C31 Hopanes 59.0
	22S/22R (C31 Hopanes) 1.4
% C21 Sterane 28.5	
% BB (C29 steranes) 48.5	
% 20S (C29 steranes) 43.6	% C29N in C29 Hopanes 16.6
20S/20R (C29 steranes) .77	% C30M in C30 Hopanes 17.1
BB/aa (C29 steranes) .97	
27dS/27R 1.39	28H/30H .10
===== Sterane Data =====	=====
C21 .260	C29dR .291
C27dS .395	C28R .153
C27dR .248	C29S .285
C27S .231	C29BR .357
C27B29d .484	C29BS .257
C27R .284	C29R .368
	C30 .062
===== Terpane Data =====	=====
C23t 2.842	C29N 2.440
C24t 1.571	C29M 1.621
C25t .848	C30H 11.150
C24tet 1.361	C30M 2.300
C26tA .699	C31S 4.572
C26tB .662	C31R 3.175
C28tA 1.071	C32S 2.707
C28tB 1.080	C32R 2.013
C29tA 1.701	C33S 1.669
C29tB 1.455	C33R 1.045
Ts 1.892	C34S 1.057
Tm 4.361	C34R .698
C28H 1.083	C35S .804
C29H 12.249	C35R .622

MOBIL RESEARCH AND DEVELOPMENT CORPORATION
 Dallas Research Laboratory
 Basin Analysis Database System

GCMS REPORT
 MAR. 19 1991

Field Name : MIKKEL STRUCTURE
 Country : Norway
 State :
 Well Name : 6407/6-4
 Depth : meters

File Number : 1615_01

Sample Name : 1615_01_03
 Description : Core
 Depth : 3089.25 meters
 Comments :

Sample ID # : 91/00856
 GCMS File : >0N908
 Job No : 1615_01

Sterane Summary		Terpane Summary	
% C27 Sterane-(20R)	40.1	% Tricyclics/Hopane	55.0
% C28 Sterane-(20R)	19.4	% Ts (C27 Hopanes)	31.8
% C29 Sterane-(20R)	40.4	% 22S for C31 Hopanes	58.8
		22S/22R (C31 Hopanes)	1.4
% C21 Sterane	21.0		
% BB (C29 steranes)	49.4	% C29N in C29 Hopanes	15.2
% 20S (C29 steranes)	42.7	% C30M in C30 Hopanes	16.4
20S/20R (C29 steranes)	.75		
BB/aa (C29 steranes)	1.05		
27dS/27R	1.27	28H/30H	.14
===== Sterane Data =====		=====	
C21	.121	C29dR	.223
C27dS	.328	C28R	.125
C27dR	.219	C29S	.194
C27S	.188	C29BR	.274
C27B29d	.352	C29BS	.169
C27R	.258	C29R	.260
		C30	.054
===== Terpane Data =====		=====	
C23t	2.102	C29N	1.501
C24t	1.230	C29M	1.099
C25t	.712	C30H	7.705
C24tet	1.010	C30M	1.507
C26tA	.571	C31S	3.073
C26tB	.495	C31R	2.151
C28tA	.855	C32S	1.782
C28tB	.770	C32R	1.233
C29tA	1.382	C33S	1.104
C29tB	1.291	C33R	.752
Ts	1.251	C34S	.673
Tm	2.688	C34R	.463
C28H	1.107	C35S	.681
C29H	8.388	C35R	.491