

SUMMARY OF FMT
 RUN 4A, 4B and 4C

DEPTH	INITIAL	SHUT-IN	REMARKS
M RKB	HP	SG	
<u>RUN 4A</u>			
4027.0			No seal
4027.3			No seal
4030.0			Tight
4029.0			Tight
4032.0			Tight
4033.4	6100.8	6074	Tight
4036.4			No seal
4044.0			No seal
4052.0			No seal
4060.0	6190.0	6159	Tight
4074.0	6186.3	6154	Tight
4076.0	6188.0	6149	Tight
4052.0			Tight
4053.0			No seal
4064.0	6176.0	6143	Tight
4069.0			Tight
4081.0			Tight
4087.0	6196.1	6163	Tight
4092.0			Tight
4105.4	6125.3	6095	
4109.0	6134.4	6104	
4113.0	6152.3	6120	Tight
4116.0	6147.1	6115	
4178.0			No seal
4177.4			No seal
4181.0			No seal
4192.0			No seal
4204.4			No seal
4210.0			No seal
4209.4			No seal

DEPTH M RKB	INITIAL HP	SHUT-IN SG	REMARKS
4217.0			No seal
4395.0			No seal
4391.0			No seal
4093.0	6147.8	6119	Tight
4053.0			No seal
4055.0	6217.8	6191	Tight
4056.0	6223.0	6191	Tight
4033.0	6096.0	6066	Tight
4031.0	6195.4	6164	Tight
<u>RUN 4B</u>			
4033.0			Tight
4074.0	6159.4	6192	Tight
4105.4	6127.6	6155	Attempted sampling
4105.3	6124.3	6153	Segregated sample
<u>RUN 4C</u>			
4386.0			No seal
4386.4			No seal
4387.4			No seal
4388.0			No seal
4388.4	7730.6	7753	Tight
4390.0			No seal
4389.0			No seal
4389.4			No seal
4390.4			No seal
4391.0			No seal
4391.4	7732.3	7755	Tight
4392.0			No seal
4392.4			No seal
4393.0			No seal
4393.4			No seal
4394.0	7736.1	7760	Tight
4394.4	7734.1	7760	Tight
4395.0			No seal

DEPTH	INITIAL	SHUT-IN	REMARKS
M RKB	HP	SG	
4395.4			No seal
4396.0			No seal
4396.4	7739.4	7765	Tight
4397.0			No seal
4397.4			No seal
4398.0			No seal
4402.0			No seal
4402.4			No seal
4401.4			No seal
4396.4			No seal
4195.4			No seal
4198.4			No seal
4198.4			Tight
4196.0			Tight
4191.0			Tight
4117.0	6139.6	6172	Tight
4114.0	6134.3	6165	Tight
4108.0	6123.4	6154	Segregated sample
4105.4	6117.6	6152	No seal
4103.4	6114.4	6148	No seal

WELL 6406/3-4
PRODUCTION TEST SUMMARY

TEST/ FLOW NO	PERF. INT.	DURATION	CHOKE	GAS RATE	COND. RATE	WATER RATE (BSW)	GOR	COND DENS.	GAS. GRAV.	WELL HEAD PRESS.	BOTTOM HOLE PRESS.	WELL HEAD TEMP.	BOTTOM HOLE TEMP.
	MRKB	HOURS	1/64"	SM ³ /D	SM ³ /D	M ³ /D	SM ³ /SM ³	KG/M ³	AIR=1	KPA	KPA	C ^o	C ^o
1	4175	FLOWED APPROX. 1.8 - 2 M ³ / DAY											
	4198	NO FORMATION FLUID SAMPLES											
2	4103	FLOWED APPROX. 60 M ³ /DAY DECREASING TO 2.7 M ³ /DAY CL. 40.000 PPM											
	4117	BOTTOM HOLE SAMPLING											
3	4054	FLOWED APPROX. 7.4 M ³ /DAY DECREASING TO 4 M ³ /DAY CL. 19.000 PPM											
	4082	BOTTOM HOLE SAMPLING											
4	4025	FLOWED APPROX. 2.6 M ³ /DAY DECREASING TO 1.6 M ³ /DAY											
	4044	NO FORMATION FLUID SAMPLES											

PRODUCT	UNIT	UNIT PRICE \$	36" SECTION	COST	26" SECTION	COST	17.5" SECTION	COST	12.25" SECTION	COST	8.5" SECTION	COST	6" SECTION	COST	TEST P & A	COST	TOTAL USED	TOTAL COST \$
BARITE	M.T.	86.00	95	8170.00		.00	804	69144.00	701	60286.00	317	27262.00		.00	375	32250.00	2292	197112.00
BENTONITE	M.T.	219.00	23	5037.00	63	13797.00	1	219.00		.00	63	13797.00		.00	5	1095.00	155	33945.00
CAUSTIC SODA	25 KG	11.50	6	69.00	17	195.50	6	69.00	29	333.50	94	1081.00		.00	2	23.00	154	1771.00
BICARBONATE	50 KG	17.92		.00		.00	7	125.44	7	125.44	7	125.44		.00	40	716.80	61	1093.12
SODA ASH	30 KG.	9.60	3	28.80	4	38.40		.00		.00	14	134.40		.00	1	9.60	22	211.20
GYP SUM	40 KG.	8.50		.00		.00	139	1181.50		.00		.00		.00		.00	139	1181.50
BENTONITE	50 KG.	14.08		.00		.00		.00		.00	55	774.40		.00		.00	55	774.40
LIME	40 KG.	10.24		.00		.00	22	225.28		.00		.00		.00		.00	22	225.28
XC-POLYMER	50 LBS.	216.00		.00		.00	12	2592.00		.00		.00		.00		.00	12	2592.00
DRISPAC REG.	50 LBS.	80.50		.00		.00	178	14329.00	17	1368.50	1	80.50		.00		.00	196	15778.00
DRISPAC SLO.	50 LBS.	80.50		.00		.00	295	23747.50	548	44114.00		.00		.00		.00	843	67861.50
GYP SUM	25 KG.	5.31		.00		.00	359	1906.29	579	3074.49		.00		.00		.00	938	4980.78
LIME	25 KG.	6.40		.00		.00	56	358.40	118	755.20		.00		.00		.00	174	1113.60
SPERCELL C	25 KG	12.00		.00		.00	2	24.00		.00	305	3660.00		.00	66	792.00	373	4476.00
DESCO	25 LBS.	35.84		.00		.00		.00	227	8135.68	41	1469.44		.00	68	2437.12	336	12042.24
CMC HIVIS	25 KG.	30.00		.00	100	3000.00		.00		.00		.00		.00		.00	100	3000.00
ANCOLIG C	25 KG.	20.48		.00		.00		.00		.00	318	6512.64		.00	10	204.80	328	6717.44
MICA C	25 KG.	10.00		.00		.00		.00		.00		.00		.00		.00	0	.00
MICA F	25 KG.	10.00		.00		.00		.00		.00		.00		.00		.00	0	.00
NUT PLUG C	25 KG.	14.08		.00		.00		.00		.00		.00		.00		.00	0	.00
NUT PLUG F	25 KG.	14.08		.00		.00		.00		.00		.00		.00		.00	0	.00
ANCO RESIN	25 KG	89.60		.00		.00		.00		.00	224	20070.40		.00		.00	224	20070.40
SODA ASH	40 KG	12.80		.00		.00	2	25.60		.00		.00		.00		.00	2	25.60
ZINCCARBONATE	25 KG.	57.60		.00		.00	40	2304.00	50	2880.00		.00		.00		.00	90	5184.00
DEFOAMER	25 LIT.	75.52		.00		.00		.00		.00		.00		.00		.00	0	.00
ANCOIDE	25 KG.	69.12		.00		.00	12	829.44	9	622.08		.00		.00		.00	21	1451.52
DETERGENT	200 L	297.00		.00		.00		.00		.00		.00		.00		.00	0	.00
TOTALS				13304.80		17030.90		117080.45		121694.89		74967.22		.00		37528.32		381606.58
HOLE DRILLED (METRES)				117		736		1511		1336		444						4144
COST PR.METRE				113.72		23.14		77.49		91.09		168.85						92.09
TOTAL DAYS				3		7		12		24		17				34		97
COST PR. DAY				4434.93		2432.99		9756.70		5070.62		4409.84				1103.77		3934.09
HUD MIXED (CU.M)				366		1582		1586		1037		718				329		5618
COST PR.CU.M				36.35		10.77		73.82		117.35		104.41				114.07		67.93

STATOIL WELL NO. 6406/3-4

DRILLING MUD PROPERTIES RECORD

AREA: HALTANBANKEN

MUD SYSTEM: SEAWATER/GEL LIGNO LIGNITE

SHEET 1 OF 3

RIG: DYVI DELTA

DAY No.	DATE 1987	DEPTH metre	M.W. sq	F.V. s/qt	600	300	A.V. cps	PV cps	Y.P.	GEL 0	GEL 10	pH	API Filt.	CAKE 32nds	HTHP ml.	Chl.ppm *1000	Calc. PPM.	Pf %Sol.	%Oil %Sand	HBT ppb	GYP ppb
1	24/9		1.04	98			0	0	0			10.7									
2	25/9	442	1.06	94			0	0	0			10.2									
3	26/9	442	1.05	104			0	0	0			10.8									
4	27/9	731	1.05	120			0	0	0			10.8									
5	28/9	1101	1.05	100			0	0	0			10.6									
6	29/9	1179	1.05	100			0	0	0			10.6									
7	30/9	1179	1.05	100			0	0	0			10.8									
8	1/10	1179	1.05	100			0	0	0			10.4									
9	2/10	1172	1.05	100			0	0	0			10.8									
10	3/10	1172	1.06	72	42	27	21	15	12	2	2	9.5	6			19000	4480	.15			3.50
11	4/10	1172	1.06	62	32	20	16	12	8	2	2	9.1	7.2			20000	4640	.1			3.30
12	5/10	1182	1.1	70	41	26	20.5	15	11	2	2	9.3	6			20000	4640	.1	4		3.50
13	6/10	1422	1.12	57	36	23	18	13	10	1	2	8.7	4			20000	4640	.02	4	.25	2.10
14	7/10	1676	1.2	58	38	24	19	14	10	1	2	8.2	3.5			20000	4480		7	.5	2.60
15	8/10	1945	1.5	57	48	29	24	19	10	2	17	8.1	4.9			19500	4000		15	.75	4.80
16	9/10	2210	1.55	58	52	32	26	20	12	3	40	8.5	5.5			19000	3500	.05	18	1.5	2.10
17	10/10	2414	1.6	55	57	32	28.5	25	7	9	58	8.6	8.1			18000	2800	.05	18	1	2.10
18	11/10	2617	1.6	51	54	34	27	20	14	10	47	8.3	9.9			18000	3000		18.5	1	2.00
19	12/10	2665	1.6	59	50	33	25	17	16	12	49	8.3	10			18000	3200		18.5	1	2.30
20	13/10	2665	1.6	72	52	34	26	18	16	15	42	8.7	8.5			18000	2800	.1	18	1.5	2.80
21	14/10	2665	1.6	74	56	36	28	20	16	15	44	8.5	8.7			18000	2800	.05	18	1	2.70
22	15/10	2665	1.6	75	57	37	28.5	20	17	15	63	8.3	9.4			18000	2800	.05	18	1	2.60
23	16/10	2692	1.53	49	48	29	24	19	10	6	48	9.5	9.7			17000	2360	.1	17	.75	1.70
24	17/10	2751	1.53	50	44	26	22	18	8	4	35	9.2	8.5			17000	2440	.05	17	.75	1.80
25	18/10	2865	1.53	55	48	29	24	19	10	3	22	8.5	6			17000	2820	.05	16.5	.5	2.40
26	19/10	3076	1.53	53	54	33	27	21	12	5	36	8.2	6.5			17500	3040	.05	17	.5	2.30
27	20/10	3166	1.53	50	52	33	26	19	14	9	42	8.3	6.8			17500	3320	.05	17	.25	1.90
28	21/10	3216	1.53	48	47	30	23.5	17	13	7	37	8.2	7			17500	3400	.02	17	.25	2.10
29	22/10	3311	1.53	45	45	29	22.5	16	13	7	34	8.2	7.6			18000	3520		17	.25	1.70
30	23/10	3342	1.53	47	45	29	22.5	16	13	7	35	8.3	7.8			19000	3440	.02	18	.25	1.70
31	24/10	3419	1.53	48	48	32	24	16	16	17	55	8.5	7.8			19000	3600	.02	19	.25	2.00
32	25/10	3478	1.53	49	41	29	20.5	12	17	22	40	8.6	8.6			18500	3640	.02	19		1.80

STATOIL WELL NO. 6406/3-4

DRILLING MUD PROPERTIES RECORD

AREA: HALTANBANKEN

MUD SYSTEM: SEAWATER/GEL LIGNO LIGNITE

SHEET 2 OF 3

RIG: DYVI DELTA

DAY No.	DATE 1987	DEPTH metre	M.W. sp	F.V. s/qt	600	300	A.V. cps	PV cps	Y.P. cps	GEL 0	GEL 10	pH	API Filt.	CAKE 32nds	HTHP ml.	Chl.ppm *1000	Calc. PPM.	Pf %Sol.	%011	%Sand	MBT ppb	GYP ppb
33	26/10	3501	1.53	53	43	30	21.5	13	17	20	32	8.4	8.8			18500	3660		19			1.90
34	27/10	3530	1.53	58	48	33	24	15	18	18	56	8.5	6.9			18500	3600	.02	19			1.80
35	28/10	3536	1.53	51	41	28	20.5	13	15	14	42	8.1	7.3			18500	3680		19			2.00
36	29/10	3621	1.53	53	52	34	26	18	16	14	40	8.4	6.4			18500	3600	.02	19			1.80
37	30/10	3718	1.53	48	50	33	25	17	16	11	32	8.4	5.8			18500	3480		19.5			1.40
38	31/10	3812	1.53	47	47	31	23.5	16	15	9	27	8.8	6.3	22.00		18500	3340	.02	19			1.30
39	1/11	3889	1.53	48	51	33	25.5	18	15	10	28	8.6	6.2	22.00		18500	3100	.02	19.5			1.20
40	2/11	3927	1.53	45	47	30	23.5	17	13	7	25	8.6	6.2	23.00		18500	2930	.02	19.5			1.10
41	3/11	3959	1.53	49	46	29	23	17	12	7	23	8.4	5.8	21.00		18500	3040		19.5			.70
42	4/11	3980	1.53	46	42	27	21	15	12	8	23	8.5	6.3			18500	2640		19.5			.70
43	5/11	3984	1.53	53	46	30	23	16	14	8	26	8.5	6.5			19000	2800		20			
44	6/11	3984	1.53	53	40	26	20	14	12	9	23	8.3	6.8			19000	2800		20			
45	7/11	3984	1.53	53	40	26	20	14	12	9	25	8.2	7			19000	2900		20			
46	8/11	3984	1.53	49	34	22	17	12	10	8	21	8	7.1			18500	2900		20			
47	9/11	2983	1.24	48	34	22	17	12	10	8	21	8	7.1			18000	2800		20			
48	10/11	3933	1.24	47	33	21	16.5	12	9	7	21	8	7.2			18000	2800		20			
49	11/11	3994	1.24	50	42	27	21	15	12	8	69	9	7.5			2500	240	.05	10			
50	12/11	4048	1.24	53	43	27	21.5	16	11	8	40	9.8	7			2800	120	.2	9		.25	
51	13/11	4076	1.24	48	36	22	18	14	8	2	11	9.7	6.7	21.00		3100	80	.4	9		.25	
52	14/11	4122	1.22	50	35	21	17.5	14	7	2	6	9.7	5.3	18.00		3200	100	.03	9			
53	15/11	4156	1.22	56	40	24	20	16	8	2	4	10	5.7	17.00		3200	140	.45	9		.25	
54	16/11	4194	1.23	56	38	23	19	15	8	2	4	9.7	5.4	15.00		3300	160	.4	9		.25	
55	17/11	4270	1.24	60	42	25	21	17	8	2	4	9.7	5.5	15.00		3500	100	.5	9			
56	18/11	4360	1.24	53	40	24	20	16	8	2	4	10	5.1	14.00		3500	100	.6	9		.25	
57	19/11	4414	1.24	60	41	24	20.5	17	7	2	4	9.5	5.1	14.00		3500	100	.4	9		.25	
58	20/11	4414	1.24	58	39	23	19.5	16	7	2	4	9.8	5.2	14.00		3500	120	.55	9		.25	
59	21/11	4414	1.24	57	42	24	21	18	6	2	4	9.7	5.2	14.00		3500	100	.4	9			
60	22/11	4414	1.24	57	40	23	20	17	6	2	4	9.6	5.3	14.00		3200	120	.3	9		.25	
61	23/11	4414	1.24	56	38	22	19	16	6	2	4	9.6	5.2	14.00		3200	140	.4	9			
62	24/11	4414	1.24	59	50	29	25	21	8	2	4	9.3	5.2	14.00		3200	160	.2	9			
63	25/11	4414	1.24	60	40	23	20	17	6	2	4	10.5	6.5	14.00		3200	100	.6	9		.25	

15-11-88-771-1
 - 2 JUNI 1988
REGISTRERT



VEDIREKTORATET

Report no. 88.24
 GEOLAB
 Copy no. 8
 No. of copies 10

SECTOR FOR PETROLEUM TECHNOLOGY

Geological laboratories

Grading

Title GEOCHEMICAL STUDY ON SEDIMENT ROCK SAMPLES FROM WELL 6406/3-4 ON HALTENBANKEN, OFFSHORE NORWAY

Requested by Lennart Jensen, LET-K	Project Geochemistry, well 6406/3-4
--	--

Date 02.05.88	No. of pages	No. of enclosures
-------------------------	---------------------	--------------------------

Key words Geochemistry, spill point, thermal extraction, Rock-Eval, shows characterisation, gas chromatography, biomarker analyses, isotopic analyses, "oil family".

[Empty box for additional information]

Prepared by
 Project leader: Trygve Meyer, GEOI
 Lab. analyses : Edle Berge, GEOLAB
 Biomarkers : IKU, Trondheim
 Carbon isotops: IFE, Kjeller
 Data,
 well 6406/3-2 : Geochem Labs, UK

Text operator

Approved by
 16/5.88 Snorre Olaussen
 Snorre Olaussen, Dept.
 manager Statoil Geological
 laboratories

This report presents the results of a geochemical study performed on rock sediment samples (core chips) from well 6406/3-4 on Haltenbanken, offshore Norway. A location map is given in Figure 1.

The aim of the study was to use geochemical methods to define a possible OWC in the well and to compare reservoir rock extracts with the DST-2, well 6406/3-2.

The present geochemical project was carried out at Statoil's GEOLAB with subcontracts at IKU (biomarker analyses) and IFE (carbon isotope analyses).

The analytical program within organic geochemistry was as follows:

- Sample preparation
- Sample description
- Rock-Eval screening
- Extraction, quantification
- MPLC separation into SATS, ARO, NSO's and ASPH
- GC of SATS
- GC of ARO
- GC/MS of biomarkers (m/z 177, 191, 205, 217, 231 and 259)
- $\delta^{13}\text{C}$ of EOM, SATS, ARO, NSO's and ASPH.

For the comparison between the rock extract data, this well, and the data for DST-2, well 6406/3-2, pertinent data were taken from the report "Geochemical evaluation and hydrocarbon characterisation study 6406/3-2 well" by Geochem Labs. These data are listed in the appropriate tables in the present report.

The samples used in the study are listed in Table 1.

Table 1

Core sample descriptions, well 6406/3-4

Sample no.	Core depth (in m)	Description
S-2839	4021.18	Light grey - light greyish brown SST, fine - med. fine, hard, micaceous, HC smell
S-2840	4023.18	As S-2839
S-2841	4026.07	As S-2839, but with two thin silt laminae
S-2842	4029.08	As S-2841
S-2843	4032.09 - .19	As S-2839, but with weaker HC smell
S 2844	4034.93 - .98	Light grey SST, fine, hard, micaceous
S-2845	4038.15 - .20	As S-2839
S-2846	4040.86 - .94	Light grey - light greyish brown SST, fine, hard, micaceous, HC smell
S-2847	4044.0 - .05	As S-2839
S-2848	4047.0 - .06	As S-2839
S-2849	4048.22 - .31	Light grey SST, fine, hard, micaceous
S-2850	4050.06 - .12	Light grey SST, fine, hard, micaceous
S-2851	4051.86 - .94	Light grey - light greyish brown SST, fine - med fine, hard, micaceous, HC smell

Sample no.	Core depth (in m)	Description
S-2852	4054.0 - .06	Light grey SST, fine - med. fine, hard, micaceous, weakly laminated
S-2853	4057.0 - .06	As S-2852, but not laminated
S-2854	4060.05 - .09	As S-2852, but not laminated
S-2855	4063.12 - .18	Light grey SST, fine, hard, micaceous, weakly laminated
S-2856	4065-89 - .94	Light grey SST, fine - med. fine, hard, micaceous
S-2857	4069.04 - .12	Light grey SST, fine, hard, micaceous
S-2858	4071.09 - .16	As S-2856
S-2859	4072.16 - .20	As S-2858
S-2860	4073.0 - .06	As S-2858
S-2861	4073.81 - .88	As S-2858
S-2862	4075.09 - .17	As S-2857
S-2863	4076.05 - .10	As S-2858
S-2864	4078.96 - 4079	Light grey SST, fine, hard, micaceous
S-2865	4085.95 - 4086	As S-2864
S-2866	4092.84 - .90	Light grey SST, fine, hard, micaceous
S-2867	4099.87 - .94	As S-2866
S-2868	4107.06 - .13	As S-2864
S-2869	4113.93 - 4114	As S-2866
S-2870	4121.0 - .07	Light grey silty SST, fine, mod. hard - hard, finely laminated, micaceous

Sample no.	Core depth (in m)	Description
S-2871	4156.17 - .25	As S-2870, but coarsely laminated
S-2872	4165.91 - .97	As S-2870, but coarsely laminated
S-2873	4177.0 - .09	Light grey SST, fine, hard, weakly fine liminated, micaceous
S-2874	4185.19 - .26	As S-2873, but without laminas
S-2875	4192.0 - .08	Light grey SST (silty), fine, hard, micaceous, weakly fine laminated
S-2876	4199.0 - .05	As S-2874
S-2877	4206.56 - .60	Light grey SST, fine, hard micaceous
S-2878	4212.32 - .38	Light grey SST (silty), fine, hard, micaceous, weakly laminated

The core samples appeared to be very semented.

TABLE 2: Rock-Eval screening results, well 6406/3-4

Sample no.	Depth in m (core depth)	S ₁ (mgHC / g rock)	S ₂ (mgHC / g rock)	PI	PP	Tmax (°C)
S2839	4021.18	2.76	0.12	0.96	2.88	ND
S2840	4023.18	1.73	0.07	0.96	1.80	ND
S2841	4026.07	2.80	0.13	0.96	2.93	ND
S2842	4029.08	1.96	0.20	0.91	2.16	ND
S2843	4032.19	1.92	0.11	0.95	2.03	ND
S2844	4034.98	0.01	0.00	1.00	0.01	ND
S2845	4038.20	1.53	0.06	0.96	1.59	ND
S2846	4040.94	1.39	0.07	0.95	1.46	ND
S2847	4044.05	1.87	0.09	0.95	1.96	ND
S2848	4047.06	1.32	0.04	0.97	1.36	ND
S2849	4048.31	1.31	0.04	0.97	1.35	ND
S2850	4050.12	0.02	0.03	0.40	0.05	ND
S2851	4051.94	1.32	0.04	0.97	1.36	ND
S2852	4054.06	0.01	0.03	0.25	0.04	ND
S2853	4057.06	0.01	0.01	0.50	0.02	ND
S2854	4060.09	0.01	0.02	0.33	0.03	ND
S2855	4063.18	0.01	0.01	0.50	0.02	ND
S2856	4065.94	0.01	0.01	0.50	0.02	ND
S2857	4069.12	0.01	0.02	0.33	0.03	ND
S2858	4071.16	0.01	0.01	0.50	0.02	ND
S2859	4072.20	0.01	0.02	0.33	0.03	ND
S2860	4073.06	0.00	0.00	0.00	0.00	ND
S2861	4073.88	0.01	0.00	1.00	0.01	ND
S2862	4075.17	0.00	0.00	0.00	0.00	ND
S2863	4076.10	0.01	0.00	1.00	0.01	ND
S2864	4079.00	0.01	0.02	0.33	0.03	ND
S2865	4086.00	0.00	0.01	0.00	0.01	ND
S2866	4092.90	0.00	0.00	0.00	0.00	ND
S2867	4099.94	0.00	0.00	0.00	0.00	ND
S2868	4107.13	0.00	0.00	0.00	0.00	ND
S2869	4114.00	0.00	0.00	0.00	0.00	ND
S2870	4121.07	0.02	0.02	0.50	0.04	ND
S2871	4156.25	0.08	0.26	0.24	0.34	450
S2872	4165.97	0.17	0.67	0.20	0.84	453
S2873	4177.09	0.00	0.00	0.00	0.00	ND
S2874	4185.26	0.00	0.00	0.00	0.00	ND
S2875	4192.08	0.00	0.00	0.00	0.00	ND
S2876	4199.05	0.01	0.00	1.00	0.01	ND
S2877	4206.60	0.00	0.00	0.00	0.00	ND
S2878	4212.38	0.02	0.02	0.50	0.04	ND

* Not v.

TABLE 3a: Solvent extractable organic matter in ppm of rock,
well 6406/3-4.

Depth in m (core depth)		Sample no.	Total EOM (ppm)	Hydrocarbons SATS ARO Total (ppm)			Non-hydrocarbons ASPH NSO's Total (ppm)		
4021.18	S2839	*	4006	2401	1334	3735	61	210	271
4023.18	S2840	*	2856	1645	905	2550	53	253	306
4026.07	S2841	*	4226	2468	1336	3804	84	339	423
4029.08	S2842	*	3150	1701	857	2558	166	425	591
4032.19	S2843	*	3094	1859	961	2820	73	200	273
4038.20	S2845	*	2638	1518	779	2297	55	286	341
4040.94	S2846	*	2503	1368	777	2145	65	293	358
4044.05	S2847	*	2720	1449	772	2221	104	395	499
4047.06	S2848	*	2307	1329	744	2073	63	171	234
4048.31	S2849	*	2100	1237	663	1900	54	146	200
4051.94	S2851	*	2004	1142	587	1729	49	226	275

TABLE 3b: Normalised composition of C₁₅₊ extractable organic matter in rock sediments from well 6406/3-4 and of topped oil, DST-2, well 6406/3-2.

Depth in m (core depth)	Sample no.	*	Hydrocarbons			Non-hydrocarbons		
			SATS	ARO	Total	ASPH	NSO's	Total
4021.18	S2839	*	59.94	33.30	93.24	1.52	5.24	6.76
4023.18	S2840	*	57.60	31.69	89.29	1.86	8.86	10.71
4026.07	S2841	*	58.40	31.61	90.01	1.99	8.02	10.01
4029.08	S2842	*	54.00	27.21	81.21	5.27	13.49	18.76
4032.19	S2843	*	60.08	31.06	91.14	2.36	6.46	8.82
4038.20	S2845	*	57.54	29.53	87.07	2.08	10.84	12.93
4040.94	S2846	*	54.65	31.04	85.70	2.60	11.71	14.30
4044.05	S2847	*	53.27	28.38	81.65	3.82	14.52	18.35
4047.06	S2848	*	57.61	32.25	89.86	2.73	7.41	10.14
4048.31	S2849	*	58.90	31.57	90.48	2.57	6.95	9.52
4051.94	S2851	*	56.99	29.29	86.28	2.45	11.28	13.72
3937-	DST-2							
95	Well 6406/3-2	*	75.64	17.24	92.88	2.01	4.92	6.93

* mRKB

TABLE 4: Data from the gas chromatographic analyses of saturate fractions of rock extracts, well 6406/3-4, and DST-2, well 6406/3-2.

Depth in m (core Sample depth)	Sample no.		Pr/Ph	Pr/n-C ₁₇	Ph/n-C ₁₈	A/B	CPI1	CPI2
4021.18	S2839	*	1.42	0.84	0.75	1.12	1.04	0.97
4023.18	S2840	*	1.28	0.83	0.75	1.11	1.07	0.98
4026.07	S2841	*	1.40	0.84	0.75	1.12	1.04	1.00
4029.08	S2842	*	1.29	0.85	0.77	1.10	1.05	0.95
4032.19	S2843	*	1.50	0.84	0.76	1.11	1.03	0.87
4038.20	S2845	*	1.52	0.84	0.78	1.08	0.97	0.90
4040.94	S2846	*	1.24	0.86	0.82	1.05	1.02	0.94
4044.05	S2847	*	1.25	0.87	0.82	1.06	1.00	0.94
4047.06	S2848	*	1.25	0.87	0.80	1.09	1.02	1.00
4048.31	S2849	*	1.24	0.86	0.78	1.10	1.03	0.95
4051.94	S2851	*	1.30	0.86	0.79	1.09	1.06	0.94
3937-	DST-2							
95	Well 6406/3-2	*	1.08	0.75	0.80	0.94	1.03	0.95

* mRKB

$$CPI1 = \frac{1}{2} \left[\frac{(C25+C27+C29+C31)}{(C24+C26+C28+C30)} + \frac{(C25+C27+C29+C31)}{(C26+C28+C30+C32)} \right]$$

$$CPI2 = \frac{2x(C27)}{C26+C28}$$

$$A = Pr/n-C_{17}$$

$$B = Ph/n-C_{18}$$

TABLE 5: Biomarker ratios for maturity and source evaluation of rock extracts, well 6406/3-4, and DST-2, well 6406/3-2.

Depth in m (core depth)	Sample no.	STERANES ¹⁾			TERPANES ³⁾				% 22S C ₃₁ αβ	%Tt#X ⁴⁾
		%20S ¹⁾ C ₂₉ ααα	%ββ ²⁾ C ₂₉	%1) C ₂₇ :C ₂₈ :C ₂₉	%Ts	C ₂₈ /C ₃₀	C ₂₉ /C ₃₀	%αβ C ₃₀		
4021.18	S-2839	51.2	68.1	38:32:30	68.3	0.2	0.5	96.6	60.8	90.0
4023.18	S-2840	51.2	68.1	38:32:30	67.3	0.2	0.5	96.5	60.6	86.7
4026.07	S-2841	52.2	68.7	39:31:30	66.7	0.1	0.4	96.0	60.0	86.7
4029.08	S-2842	50.0	67.3	38:32:30	69.2	0.2	0.4	95.6	61.3	87.1
4038.20	S-2845	50.0	69.2	42:29:29	67.3	0.1	0.4	96.1	61.0	84.6
4040.94	S-2846	52.0	68.4	39:31:30	64.6	0.1	0.5	95.2	61.5	82.1
4044.05	S-2847	51.0	67.6	38:32:30	64.6	0.2	0.5	94.7	61.8	83.3
4051.94	S-2851	50.9	67.5	36:32:32	66.7	0.1	0.5	95.2	62.0	83.9
3937- 95*	DST-2 Well 6406/3-2	47.6	61.8	43:27:30	69.2	0.3	0.4	80.0	60.5	82.1

* mRKB

Data are based on manually measured peak heights on the fragmentograms.

1) m/z 217

2) m/z 218

3) m/z 191

4) After Cornford, C., C. E. J. Needham and L. deWalque (1986):

Geochemical Habitat of North Sea Oils and Gases.

In: Habitat of Hydrocarbons on the Norwegian Continental

Shelf, Eds., Spencer et al., Graham and Trotman, pp. 39-54.

TABLE 6: Isotopic composition of rock extract fractions, well -4, 6406/3-4, and fractions of topped oil, DST-2, well 6406/3-2.

Sample no.	IFE no.	$\delta^{13}\text{C}_{\text{PDB}}$				
		EOM	SAT	ARO	NSO	ASPH
S-2839	7394	-29.3	-30.0	-28.6	-28.7	-28.6
S-2840	7395	-29.4	-30.0	-28.7	-28.8	-28.5
S-2841	7396	-29.4	-30.0	-28.6	-28.7	-28.6
S-2842	7397	-29.3	-29.9	-28.5	-28.8	-28.1
S-2845	7398	-29.5	-30.3	-28.7	-29.1	-28.5
S-2846	7399	-29.6	-30.3	-28.7	-29.0	-28.5
S-2847	7400	-29.6	-30.3	-28.7	-28.7	-28.4
S-2851	7401	-29.5	-30.0	-28.6	-28.5	-28.6
DST-2, well 6406/3-2		-29.85*	-28.96	-28.27	-28.04	-29.21

* Whole oil

REPORT

REG. NO.:	ACCESSIBILITY:
88.048	CONFIDENTIAL

<p>REPORT TITLE:</p> <p>DATA REPORT</p> <p>BIOMARKER ANALYSIS, WELL 6406/3-4</p> <p style="text-align: right;">REPORT NO.: 22.1884.00/02/88</p>
<p>AUTHORS:</p> <p>B. Thorvaldsen, M.B. Myhr</p>

DATE:	NO. OF PAGES:	NO. OF APPENDICES:	PROJECT MANAGER:	SIGN.:
5 April-88	62	-	B. Thorvaldsen	May Britt Myhr

CLIENT:

Statoil, Geolab. Statoil open contract T-4533, job no. 44.

SUMMARY:

Biomarker analysis of 8 samples.

KEY WORDS:	
Well no. 6406/3-4	Biomarkers
GC/MS	

INTRODUCTION

Saturated hydrocarbon fractions from eight samples from well 6406/3-4 were sent to IKU for biomarker analysis. The job was done under the Statoil contract no. T-4533, job no. 44, and was given the IKU reference number 22.1884.03.

EXPERIMENTAL

Gas chromatography - mass spectrometry (GC-MS)

GC-MS analyses were performed on a VG Micromass 70-70H GC-MS-DS system. The Varian Series 3700 GC was fitted with a fused silica DB-5 capillary column (30 m x 0.32 mm i.d.). Helium (1.5 ml/min.) was used as carrier gas and the injections were performed in splitless mode.

The GC oven was programmed from 120°C (2 min.) to 280°C at 4°C/min.

The saturated hydrocarbons were analysed in multiple ion mode (MID) at a scan cycle time of approximately 2 secs. The mass spectrometer operated at 70eV electron energy with an ion source temperature of 200°C. Data acquisition was performed using VG data systems.

Peaks were identified by comparison with elution patterns in certain mass chromatograms. Peak ratios were calculated from peak heights in the appropriate mass chromatograms.

Table 1:

Molecular ratios from terpane and sterane mass chromatograms.
Maturity and source characteristic ratios.

Code	Depth (m)	Q/E ¹⁾	Tm/Ts ²⁾	X/E ³⁾	Z/E ⁴⁾	a/a+j ⁵⁾
S-2839	4021.18	0.26	0.46	0.16	0.17	0.92
S-2840	4023.18	0.32	0.49	0.16	0.18	0.96
S-2841	4026.07	0.29	0.50	0.16	0.14	0.95
S-2842	4029.08	0.28	0.45	0.16	0.15	0.95
S-2845	4038.20	0.28	0.49	0.13	0.13	0.96
S-2846	4040.94	0.22	0.55	0.13	0.15	0.95
S-2847	4044.05	0.25	0.55	0.14	0.15	0.95
S-2851	4051.94	0.19	0.50	0.15	0.13	0.94

1) Relative abundance of tricyclic terpanes (Q/E in m/z 191).

2) B/A in m/z 191.

3) Relative abundance of unknown (X/E in m/z 191).

4) Relative abundance of bisnorhopane (Z/E in m/z 191).

5) Relative abundance of C₂₇ rearranged steranes (a/(a+j) in m/z 217).

Table 2:

Molecular ratios from sterane and terpane mass chromatograms.
Maturity ratios.

Code	Depth (m)	$\alpha\beta/\alpha\beta+\beta\alpha$ ¹⁾	%22S ²⁾	% $\beta\beta$ ³⁾	%20S ⁴⁾
S-2839	4021.18	0.97	61.26	68.15	51.16
S-2840	4023.18	0.96	60.67	68.15	51.16
S-2841	4026.07	0.96	59.91	68.71	52.17
S-2842	4029.08	0.96	60.76	67.35	50.00
S-2845	4038.20	0.96	60.79	69.23	50.00
S-2846	4040.94	0.95	60.66	68.35	52.00
S-2847	4044.05	0.95	61.07	67.59	51.06
S-2851	4051.92	0.95	61.57	67.46	50.91

1) E/(E+F) in m/z 191.

2) Average % distribution between first and second eluting isomers of extended hopanes.

3) (r+s)/(q+t+r+s) in m/z 217.

4) q/(q+t) in m/z 217.

Figure 1:

m/z 191 and m/z 205 mass chromatograms

Mass chromatograms representing terpanes (m/z 191)

P	tricyclic terpane	$C_{23}H_{42}$	(IV, R=C ₄ H ₉)
Q	tricyclic terpane	$C_{24}H_{44}$	(IV, R=C ₅ H ₁₁)
R	tricyclic terpane (17R,17S)	$C_{25}H_{46}$	(IV, R=C ₆ H ₁₃)
S	tetracyclic terpane	$C_{24}H_{42}$	(V)
T	tricyclic terpane (17R,17S)	$C_{26}H_{48}$	(IV, R=C ₇ H ₁₅)
A	T _s , 18α(H)-trisnorneohopane	$C_{27}H_{46}$	(III)
B	T _m , 17α(H)-trisnorhopane	$C_{27}H_{46}$	(I, R=H)
Z	bisnorhopane	$C_{28}H_{48}$	
C	17α(H)-norhopane	$C_{29}H_{50}$	(I, R=C ₂ H ₅)
X	unknown triterpane	$C_{30}H_{52}$	
D	17β(H)-normoretane	$C_{29}H_{50}$	(II, R=C ₂ H ₅)
E	17α(H)-hopane	$C_{30}H_{52}$	(I, R=C ₃ H ₇)
F	17β(H)-moretane	$C_{30}H_{52}$	(II, R=C ₃ H ₇)
G	17α(H)-homohopane (22S)	$C_{31}H_{54}$	(I, R=C ₄ H ₉)
H	17α(H)-homohopane (22R)	$C_{31}H_{54}$	(I, R=C ₄ H ₉)
	+ unknown triterpane (gammacerane?)		
I	17β(H)-homomoretane	$C_{31}H_{54}$	(II, R=C ₄ H ₉)
J	17α(H)-bishomohopane (22S,22R)	$C_{32}H_{56}$	(I, R=C ₅ H ₁₁)
K	17α(H)-trishomohopane (22S,22R)	$C_{33}H_{58}$	(I, R=C ₆ H ₁₃)
L	17α(H)-tetrakishomohopane (22S,22R)	$C_{34}H_{60}$	(I, R=C ₇ H ₁₅)
M	17α(H)-pentakishomohopane (22S,22R)	$C_{35}H_{62}$	(I, R=C ₈ H ₁₇)

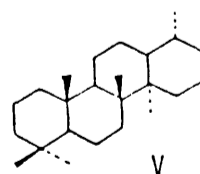
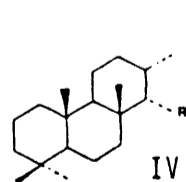
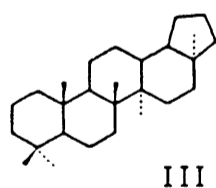
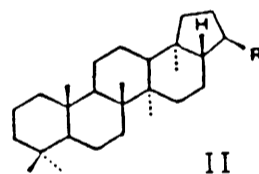
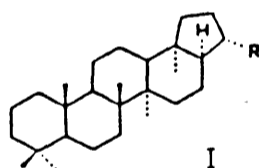
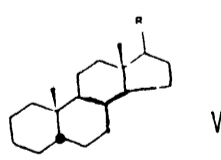
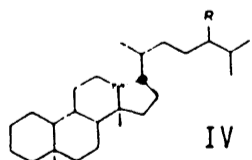
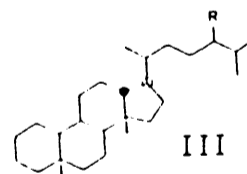
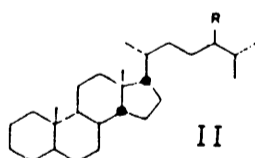
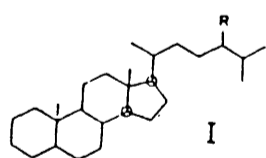


Figure 2:

m/z 217 and m/z 218 mass chromatograms

Mass chromatograms representing steranes (m/z 217 and 218)

u	5 α (H)-sterane	C ₂₁ H ₃₆	(V,R=C ₂ H ₅)
v	5 α (H)-sterane	C ₂₂ H ₃₈	(V,R=C ₃ H ₇)
a	13 β (H),17 α (H)-diasterane (20S)	C ₂₇ H ₄₈	(III,R=H)
b	13 β (H),17 α (H)-diasterane (20R)	C ₂₇ H ₄₈	(III,R=H)
c	13 α (H),17 β (H)-diasterane (20S)	C ₂₇ H ₄₈	(IV,R=H)
d	13 α (H),17 β (H)-diasterane (20R)	C ₂₇ H ₄₈	(IV,R=H)
e	13 β (H),17 α (H)-diasterane (20S)	C ₂₈ H ₅₀	(III,R=CH ₃)
f	13 β (H),17 α (H)-diasterane (20R)	C ₂₈ H ₅₀	(III,R=CH ₃)
g	13 α (H),17 β (H)-diasterane (20S)	C ₂₈ H ₅₀	(IV,R=CH ₃)
	+ 14 α (H),17 α (H)-sterane (20S)	C ₂₇ H ₄₈	(I,R=H)
h	13 β (H),17 α (H)-diasterane (20S)	C ₂₉ H ₅₂	(III,R=C ₂ H ₅)
	+ 14 β (H),17 β (H)-sterane (20R)	C ₂₇ H ₄₈	(II,R=H)
i	14 β (H),17 β (H)-sterane (20S)	C ₂₇ H ₄₈	(II,R=H)
	+ 13 α (H),17 β (H)-diasterane (20R)	C ₂₈ H ₅₀	(IV,R=CH ₃)
j	14 α (H),17 α (H)-sterane (20R)	C ₂₇ H ₄₈	(I,R=H)
k	13 β (H),17 α (H)-diasterane (20R)	C ₂₉ H ₅₂	(III,R=C ₂ H ₅)
l	13 α (H),17 β (H)-diasterane (20S)	C ₂₉ H ₅₂	(IV,R=C ₂ H ₅)
m	14 α (H),17 α (H)-sterane (20S)	C ₂₈ H ₅₀	(I,R=CH ₃)
n	13 α (H),17 β (H)-diasterane (20R)	C ₂₉ H ₅₂	(IV,R=C ₂ H ₅)
	+ 14 β (H),17 β (H)-sterane (20R)	C ₂₈ H ₅₀	(II,R=CH ₃)
o	14 β (H),17 β (H)-sterane (20S)	C ₂₈ H ₅₀	(II,R=CH ₃)
p	14 α (H),17 α (H)-sterane (20R)	C ₂₈ H ₅₀	(I,R=CH ₃)
q	14 α (H),17 α (H)-sterane (20S)	C ₂₉ H ₅₂	(I,R=C ₂ H ₅)
r	14 β (H),17 β (H)-sterane (20R)	C ₂₉ H ₅₂	(II,R=C ₂ H ₅)
	+ unknown sterane		
s	14 β (H),17 β (H)-sterane (20S)	C ₂₉ H ₅₂	(II,R=C ₂ H ₅)
t	14 α (H),17 α (H)-sterane (20R)	C ₂₉ H ₅₂	(I,R=C ₂ H ₅)



APPENDIX 1

PEAK HEIGHTS FROM m/z 191, 217 AND 218 MASS CHROMATOGRAMS

S-2839

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	19.5
Q	22
R	14.5
S	13
T	6.5
A	41
B	19
Z	15
C	44
X	14
E	86
F	3
G	30
H	19.5
J ₁	15.5
J ₂	10
K ₁	8
K ₂	4.5
L ₁	3
L ₂	2
M ₁	2
M ₂	1

S-2839

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u> Peak heights	<u>m/z 218</u> Peak heights
a	90.5	
h		81.5
i		55
j	8	
n		57
o		57
q	11	
r	25	54
s	21	52
t	10.5	

S-2840

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	23
Q	26.5
R	13
S	15
T	7
A	35
B	17
Z	15
C	38
X	13
E	82
F	3
G	32
H	22
J ₁	20
J ₂	13
K ₁	10.5
K ₂	7
L ₁	6
L ₂	3
M ₁	4
M ₂	2

S-2840

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u> Peak heights	<u>m/z 218</u> Peak heights
a	94	
h		85
i		64.5
j	4	
n		58
o		66.5
q	11	
r	24	56.5
s	22	60
t	10.5	

S-2841

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	24
Q	24
R	13
S	14.5
T	6.5
A	34
B	17
Z	12
C	36
X	13
E	83
F	3.5
G	32
H	21.5
J ₁	18
J ₂	12
K ₁	10
K ₂	7
L ₁	5.5
L ₂	4
M ₁	4
M ₂	2

S-2841

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u>	<u>m/z 218</u>
	Peak heights	Peak heights
a	94.5	
h		89
i		59.5
j	5	
n		54
o		62
q	12	
r	25.5	55
s	25	60
t	11	

S-2842

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	21
Q	24.5
R	12
S	15
T	6
A	37
B	16.5
Z	13
C	38
X	14
E	86
F	4
G	33
H	22
J ₁	19
J ₂	12
K ₁	11
K ₂	7
L ₁	5
L ₂	3.5
M ₁	4
M ₂	2

S-2842

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u>	<u>m/z 218</u>	
	Peak heights	Peak heights	
a	94		
h		86.5	
i		64	150.5
j	5		
n		60	176
o		66	
q	12		
r	25	57.5	131
s	24.5	63.5	
t	12		

S-2845

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	26
Q	24.5
R	13
S	16
T	6
A	35
B	17
Z	11
C	37
X	11
E	86
F	3.5
G	30
H	20.5
J ₁	18
J ₂	11.5
K ₁	10.5
K ₂	6.5
L ₁	6
L ₂	4
M ₁	4.5
M ₂	2

S-2845

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u>	<u>m/z 218</u>	
	Peak heights	Peak heights	
a	95		
h		89	
i		64.5	153.5
j	4		
n		54.5	107.5
o		53	
q	10		
r	23	52.5	127.5
s	22	55	
t	10		

S-2846

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	17.5
Q	20
R	11
S	8
T	5
A	31
B	17
Z	13
C	41.5
X	11.5
E	89
F	4.5
G	35
H	24
J ₁	20
J ₂	12.5
K ₁	10.5
K ₂	7
L ₁	5
L ₂	3
M ₁	3.5
M ₂	1.5

S-2846

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u>	<u>m/z 218</u>
	Peak heights	Peak heights
a	93.5	
h		86
i		60
j	5	
n		57
o		61.5
q	13	
r	28	56
s	26	59
t	12	

S-2847

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	21
Q	22
R	12
S	13
T	6
A	31
B	17
Z	13.5
C	41
X	12.5
E	89
F	5
G	36.5
H	24
J ₁	21
J ₂	13
K ₁	12
K ₂	8
L ₁	6.5
L ₂	4
M ₁	4
M ₂	2

S-2847

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u>	<u>m/z 218</u>
	Peak heights	Peak heights
a	94	
h		87
i		57.5 144.5
j	5	
n		57 120
o		63
q	12	
r	26	55.5 43
s	23	57.5
t	11.5	

S-2851

Peak heights from m/z 191 mass chromatograms.

Peak identities	<u>m/z 191</u> Peak heights
P	14.5
Q	17
R	10
S	10
T	4
A	30
B	15
Z	12
C	41
X	13.5
E	89
F	4.5
G	35
H	22
J ₁	22
J ₂	13.5
K ₁	12
K ₂	7.5
L ₁	6
L ₂	4
M ₁	3.5
M ₂	2

S-2851

Peak heights from m/z 217 and 218 mass chromatograms.

Peak identities	<u>m/z 217</u> Peak heights	<u>m/z 218</u> Peak heights
a	90	
h		80
i		51 <i>131</i>
j	6	
n		55.5
o		63.5
q	14	
r	31	59.5
s	26	58
t	13.5	

APPENDIX B

Isotopic analyses
(IFE)

ISOTOPANALYSER BRØNN 6406/3-4
T 6269 NR. 110

1. INNLEDNING

40 ekstraktfraksjoner ble mottatt for isotopanalyse mars/april 1988.
 $\delta^{13}\text{C}$ er bestemt i fraksjonene.

2. ANALYSEPROSEDYRE

2-3 mg (eller så mye som mulig) av prøven forbrennes i glassampuller med CuO ved 550°C i 1 time. Alle isotopbestemmelser er foretatt på et Finnigan MAT 251 massespektrometer. Vår verdi på NBS 22 er -29.77 ± 0.6 o/oo PDB.

3. RESULTATER

$^{13}\text{C}/^{12}\text{C}$ isotopverdiene for ekstraktfraksjonene er gitt i Tabell 1.

Tabell 1 $\delta^{13}\text{C}$ i ekstraktfraksjoner brønn 6406/3-4

Prøve nr.	IFE nr.	$\delta^{13}\text{C}_{\text{PDB}}$				
		EOM	SAT	ARO	NSO	ASF
S-2839	7394	-29.3	-30.0	-28.6	-28.7	-28.6
S-2840	7395	-29.4	-30.0	-28.7	-28.8	-28.5
S-2841	7396	-29.4	-30.0	-28.6	-28.7	-28.6
S-2842	7397	-29.3	-29.9	-28.5	-28.8	-28.1
S-2845	7398	-29.5	-30.3	-28.7	-29.1	-28.5
S-2846	7399	-29.6	-30.3	-28.7	-29.0	-28.5
S-2847	7400	-29.6	-30.3	-28.7	-28.7	-28.4
S-2851	7401	-29.5	-30.0	-28.6	-28.5	-28.6