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FLUID INCLUSIONS AND GEOCHEMISTRY

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1 INTRODUCTION

This geochemistry special study has been performed to obtain supplementary data from the possible resevoir units in well 35/4-1.

The data are integrated with results from the standard petroleum geochemistry report (Document ID R-077887).

2 SAMPLE MATERIAL

The oilbased mud that has been used in this well has caused contamination of the sample material. The core samples are usually contaminated to a lesser extent than the drillcutting samples, and are therefore prefered in a geochemical study.

The samples were selected from predominantly sandy/silty lithologies in order to obtain information on possible migrated hydrocarbons. The same samples were also included in the fluid inclusion study. A list of all analysed samples is presented in Table 2.1.

Table 2.1 List of samples analysed

Depth(m RBK)		rockeval	rockextr	extr	iatro	GC-sat	GC-MS bio	GC-MS-aro
4084.8		1	1	1	1	1	1	1
4090.05		1	1	1	1	1	1	1
4123.55		1	1	1	1	1	1	1
4138.3		1	1	1	1	1	1	1
4158		1	1	1	1	1	1	1
4159.2		1	1	1	1	1	1	1
4192.45		1	1	1	1	1	1	1
4218.9		1	1	1	1	1	1	1
4244.05		1	1	1	1	1	1	1
4451		1	1	1	1	1	1	1
4463		1	1	1	1	1	1	1
4472		1	1	1	1	1	1	1
4474.6		1	1	1	1	1	1	1
4350	MUD	1	1	1	1	1	1	1

3 METHOLOGY

Standard geochemistry

The analytical and preparative methods employed in this study comprised of geochemical screening and bitumen characterisation. The methods used are listed below:

- Rock-Eval pyrolysis on rock and extracted rock
- Solvent extraction
- Asphaltene precipitation
- Preparative group type separation, MPLC[1]
- Analytical group type separation, TLC-FID [2] (Iatroscan)
- Gas chromatography of saturated hydrocarbons
- Gas chromatography-mass spectrometry (GC-MSD[3]) of saturated hydrocarbons (biomarkers) and aromatic hydrocarbons

Analytical procedures are based upon "The Norwegian Industry Guide to Organic Geochemical Analysis, 3rd edition 1993".

Hydrocarbon core scanner (HCS)

The principles of the HCS are relatively simple. Monochromatic ultraviolet light with a wavelenght of 365 nm (exitation light) is directed on to a slabbed core. The ultraviolet light causes any aromatic hydrocarbons present to fluorescence or emit light within the visible spectrum. The resulting fluorescence signal is detected by a photometer which quantitatively records the light intensity and spectral distribution.

4 RESULTS AND DISCUSSION

4.1 Data quality

The oilbased mud used in this well contains a significant hydrocarbon signature and has caused a large degree of uncertainty in the geochemical interpretation of the sample material. Hydrocarbon analysis (C_5-C_{20}) of the mud (Figure 4.1) shows a significant quantity of C_{13}-C_{20} alkanes. In addition, the oilbased mud also contains a small amount of saturated biomarkers and aromatic hydrocarbons (see pkt. 4.5 and 4.6). Contribution from the mud will consequently interfere with natural existing hydrocarbons.

1 Medium Performance Liquid Chromatography
2 Thin Layer Chromatography with Flame Ionisation Detection
3 Mass-Selective Detector

APPENDIX

Figure 4.1A Rock-Eval results, unextracted rock

ROCK EVAL SCREENING DATA

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HYDRO

Well	Depth (m)	Lithology	Type	Tmax (C)	S1(kg/t)	S2 (kg/t)	TOC (%)	HI	PI	Analysing Company
NOR : 35/4-1	4084.80	CLYST/SLS	COCH	429	16.6	1.3	1.9	69	0.93	NORSK HYDRO
NOR : 35/4-1	4090.05	SLST	COCH	443	6.2	0.9	1.0	88	0.88	NORSK HYDRO
NOR : 35/4-1	4123.55	SLST	COCH	456	9.2	0.9	1.3	67	0.92	NORSK HYDRO
NOR : 35/4-1	4138.30	SLST	COCH	446	2.9	0.7	0.6	115	0.81	NORSK HYDRO
NOR : 35/4-1	4158.00	CLYST/SLS	COCH	468	3.6	3.0	4.6	66	0.54	NORSK HYDRO
NOR : 35/4-1	4159.20	SLST	COCH	438	1.3	0.5	0.3	168	0.73	NORSK HYDRO
NOR : 35/4-1	4192.45	SLST	COCH	469	4.4	0.4	0.5	96	0.91	NORSK HYDRO
NOR : 35/4-1	4218.90	SLST	COCH	523	1.6	0.3	0.2	147	0.87	NORSK HYDRO
NOR : 35/4-1	4244.05	SLST	COCH	469	0.3	0.6	0.4	166	0.30	NORSK HYDRO
NOR : 35/4-1	4350.00	SLST	MUD	327	132.0	13.9	12.7	110	0.90	NORSK HYDRO
NOR : 35/4-1	4451.00	SLST	COCH	461	7.9	0.6	0.7	89	0.93	NORSK HYDRO
NOR : 35/4-1	4463.00	SLST	COCH	426	2.6	0.5	0.3	141	0.85	NORSK HYDRO
NOR : 35/4-1	4472.00	CLYST/SLS	COCH	273	2.7	0.3	0.7	42	0.91	NORSK HYDRO
NOR : 35/4-1	4474.60	SLST	COCH	467	5.5	0.5	0.6	84	0.91	NORSK HYDRO

Figure 4.1B Rock-Eval results, extracted rock

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HYDRO

ROCK EVAL SCREENING DATA ON EXTRACTED SEDIMENTS, WELL NOR : 35/4-1

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Depth (m)	Lithology	Type	Tmax (C)	S1(kg/t)	S2 (kg/t)	TOC (%)	HI	PI	Analysing Company
4084.80	CLYST/SLS	COCH	449	0.0	0.2	0.3	59		NORSK HYDRO
4090.05	SLST	COCH	457	0.0	0.2	0.3	75		NORSK HYDRO
4123.55	SLST	COCH	469	0.0	0.6	0.4	130		NORSK HYDRO
4138.30	SLST	COCH	475	0.0	0.2	0.2	83		NORSK HYDRO
4158.00	CLYST/SLS	COCH	472	0.1	1.9	4.1	47	0.07	NORSK HYDRO
4159.20	SLST	COCH		0.0	0.2	0.1	182		NORSK HYDRO
4192.45	SLST	COCH		0.0	0.3	0.1	500		NORSK HYDRO
4218.90	SLST	COCH		0.0	0.3		800		NORSK HYDRO
4244.05	SLST	COCH	481	0.0	0.5	0.3	167	0.06	NORSK HYDRO
4451.00	SLST	COCH		0.0	0.3		1650		NORSK HYDRO
4463.00	SLST	COCH		0.0	0.2		2400		NORSK HYDRO
4472.00	CLYST/SLS	COCH	481	0.0	0.0	0.3			NORSK HYDRO
4474.60	SLST	COCH	479	0.0	0.3	0.1	223		NORSK HYDRO

Figure 4.2 Extraction and deasphaltation data

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HYDRO

EXTRACTION/DESPHALTING DATA (SEDIMENTS)

Well	Depth (m)	Lithology	Type	Rock (g)	EOM (mg)	ASP (mg)	EOM (%)	ASP (%)	EOM (ppm)	TOC (%)	EOM/TOC (%)	Analysing comp
NOR : 35/4-1	4084.80		COCH	3.1	71.0	0.6	2.31	0.9	23 100	1.9	1.2	Norsk Hydro
NOR : 35/4-1	4090.05		COCH	2.3	14.0	0.2	0.61	1.6	6 100	1.0	0.6	Norsk Hydro
NOR : 35/4-1	4123.55		COCH	2.0	15.0	0.4	0.74	3.0	7 400	1.3	0.6	Norsk Hydro
NOR : 35/4-1	4138.30		COCH	5.0	15.0	0.2	0.30	1.5	3 000	0.6	0.5	Norsk Hydro
NOR : 35/4-1	4158.00		COCH	17.6	26.0	2.5	0.15	10.7	1 500	4.6	0.0	Norsk Hydro
NOR : 35/4-1	4159.20		COCH	17.8	18.0	0.6	0.10	3.7	1 000	0.3	0.4	Norsk Hydro
NOR : 35/4-1	4192.45		COCH	3.3	9.0	0.3	0.28	3.7	2 800	0.5	0.6	Norsk Hydro
NOR : 35/4-1	4218.90		COCH	19.6	25.0	0.5	0.13	2.2	1 300	0.2	0.8	Norsk Hydro
NOR : 35/4-1	4244.05		COCH	20.9	10.0	0.9	0.05	10.0	500	0.4	0.1	Norsk Hydro
NOR : 35/4-1	4350.00		MUD	0.4	79.0	2.8	20.26	3.9	202 600	12.7	1.6	Norsk Hydro
NOR : 35/4-1	4451.00		COCH	2.4	15.0	0.2	0.61	1.5	6 100	0.7	0.9	Norsk Hydro
NOR : 35/4-1	4463.00		COCH	7.5	21.0	0.4	0.28	2.1	2 800	0.3	0.9	Norsk Hydro
NOR : 35/4-1	4472.00		COCH	17.8	9.0	0.6	0.05	7.4	500	0.7	0.1	Norsk Hydro
NOR : 35/4-1	4474.60		COCH	3.1	15.0	0.1	0.49	0.7	4 900	0.6	0.8	Norsk Hydro

Figure 4.3 Composition of deasphalted extracts

COMPOSITION OF deasphalted EXTRACTS/OILS

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Well	St.Depth (m)	En.Depth (m)	Type	Lithology	Name	SAT(%)	ARO(%)	NSO(%)	Non-HC TOTAL	TOT HC /Non-HC	Analysing Company
NOR 35/4-1	4084.80	4084.80	COCH	CLYST/SLS		92.0	3.0	5.0	5.0	19.0	NORSK HYDRO
NOR 35/4-1	4090.05	4090.05	COCH	SLST		80.0	11.0	9.0	9.0	10.1	NORSK HYDRO
NOR 35/4-1	4123.55	4123.55	COCH	SLST		84.0	7.0	9.0	9.0	10.1	NORSK HYDRO
NOR 35/4-1	4138.30	4138.30	COCH	SLST		75.0	12.0	13.0	13.0	6.7	NORSK HYDRO
NOR 35/4-1	4158.00	4158.00	COCH	CLYST/SLS		87.0	7.0	6.0	6.0	15.7	NORSK HYDRO
NOR 35/4-1	4159.20	4159.20	COCH	SLST		74.0	4.0	22.0	22.0	3.5	NORSK HYDRO
NOR 35/4-1	4192.45	4192.45	COCH	SLST		82.0	3.0	15.0	15.0	5.7	NORSK HYDRO
NOR 35/4-1	4218.90	4218.90	COCH	SLST		83.0	2.0	15.0	15.0	5.7	NORSK HYDRO
NOR 35/4-1	4244.05	4244.05	COCH	SLST		67.0	8.0	25.0	25.0	3.0	NORSK HYDRO
NOR 35/4-1	4350.00	4350.00	MUD	SLST		91.0	2.0	7.0	7.0	13.3	NORSK HYDRO
NOR 35/4-1	4451.00	4451.00	COCH	SLST		91.0	2.0	7.0	7.0	13.3	NORSK HYDRO
NOR 35/4-1	4463.00	4463.00	COCH	SLST		87.0	3.0	10.0	10.0	9.0	NORSK HYDRO
NOR 35/4-1	4472.00	4472.00	COCH	CLYST/SLS		90.0	3.0	7.0	7.0	13.3	NORSK HYDRO
NOR 35/4-1	4474.60	4474.60	COCH	SLST		90.0	4.0	6.0	6.0	15.7	NORSK HYDRO

Table 4.4 Absolute amounts of saturated hydrocarbons

Amounts

S-Depth (m)	E-Depth (m)	Well	Type	Lithology	Name	Orgid	Project	Seq.#	File name	File path	Instrument	Setup	Method
4084.80	4084.80	35/4-1	COCH	CLYST/SL		625750	2004629	13	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4090.05	4090.05	35/4-1	COCH	CLYST/SL		637130	2005849	3	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4123.55	4123.55	35/4-1	COCH	CLYST/SL		637131	2005849	4	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4138.30	4138.30	35/4-1	COCH	CLYST/SL		637132	2005849	5	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4158.00	4158.00	35/4-1	COCH	CLYST/SL		625751	2004629	14	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4159.20	4159.20	35/4-1	COCH	CLYST/SL		637133	2005849	6	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4192.45	4192.45	35/4-1	COCH	CLYST/SL		637134	2005849	7	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4218.90	4218.90	35/4-1	COCH	CLYST/SL		637135	2005849	8	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4244.05	4244.05	35/4-1	COCH	CLYST/SL		637136	2005849	9	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4350.00	4350.00	35/4-1	MUD	SLST		625840	2004629	15	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4451.00	4451.00	35/4-1	COCH	CLYST/SL		637137	2005849	10	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4463.00	4463.00	35/4-1	COCH	CLYST/SL		637138	2005849	11	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4472.00	4472.00	35/4-1	COCH	CLYST/SL		625753	2004629	16	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4474.60	4474.60	35/4-1	COCH	CLYST/SL		637139	2005849	12	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3

Table 4.4 Absolute amounts of saturated hydrocarbons

E-Depth (m)	Operator	Company	Aquired date	Misc.info.	Country	Status	nC11	nC12	nC13	nC14	iC16
4084.80	Linda	NORSK HYDRO	1997-08-12		NOR	OK	0	0	0	0	5
4090.05	Linda	NORSK HYDRO	1998-05-01		NOR	OK					5
4123.55	Linda	NORSK HYDRO	1998-05-02		NOR	OK					7
4138.30	Linda	NORSK HYDRO	1998-05-03		NOR	OK					5
4158.00	Linda	NORSK HYDRO	1997-08-12	uncertain C16D34	NOR	OK	0	0	0	0	6
4159.20	Linda	NORSK HYDRO	1998-05-04		NOR	OK					8
4192.45	Linda	NORSK HYDRO	1998-05-05		NOR	OK					8
4218.90	Linda	NORSK HYDRO	1998-05-06		NOR	OK					7
4244.05	Linda	NORSK HYDRO	1998-05-07		NOR	OK					5
4350.00	Linda	NORSK HYDRO	1997-08-12		NOR	OK	0	0	0	0	5
4451.00	Linda	NORSK HYDRO	1998-05-08		NOR	OK					7
4463.00	Linda	NORSK HYDRO	1998-05-09		NOR	OK					3
4472.00	Linda	NORSK HYDRO	1997-08-12	uncertain C16D34	NOR	OK	0	0	0	0	7
4474.60	Linda	NORSK HYDRO	1998-05-10		NOR	OK					1

Table 4.4 Absolute amounts of saturated hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	nC15	nC16	iC18	nC17	Pristane	nC18	Phytane	nC19	nC20	nC21	nC22
4084.80	9	9	2	8	4	6	2	4	3	2	1
4090.05	11	12	3	10	5	8	3	6	5	4	3
4123.55	30	15	4	13	6	10	4	6	5	3	2
4138.30	11	11	3	9	4	7	3	5	4	3	3
4158.00	13	12	4	26	13	19	8	12	8	5	4
4159.20	16	14	5	10	5	7	3	5	3	2	1
4192.45	15	16	4	14	6	11	4	7	5	3	2
4218.90	13	12	3	11	5	8	3	5	4	2	1
4244.05	12	13	3	11	3	8	2	5	4	3	2
4350.00	8	8	2	6	3	4	2	3	2	1	1
4451.00	14	15	4	4	2	3	1	2	1	1	2
4463.00	6	6	2	12	5	9	2	6	4	3	2
4472.00	15	15	4	56	21	41	16	26	17	12	8
4474.60	1	2	0	1	1	1	0	1	0	0	0

Table 4.4 Absolute amounts of saturated hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31	nC32	nC33
4084.80	1	1	0	0	0	0	0	0	0	0	0
4090.05	3	2	2	2	2	1	1	1	1	1	0
4123.55	2	1	1	1	1	1	1	0	0	0	0
4138.30	3	3	2	2	2	2	1	1	1	1	1
4158.00	2	1	0	0	0	0	0	0	0	0	0
4159.20	1	1	0	0	0	0	0	0	0	0	0
4192.45	2	1	1	0	0	0	0	0	0	0	0
4218.90	1	1	0	0	0	0	0	0	0	0	0
4244.05	2	2	1	1	1	1	1	1	0	0	0
4350.00	0	0	0	0	0	0	0	0	0	0	0
4451.00	1	1	1	0	0	0	0	0	0	0	0
4463.00	1	1	1	1	0	0	0	0	0	0	0
4472.00	5	3	2	1	1	2	1	1	1	0	0
4474.60	0	0	0	0	0	0	0	0	0	0	0

Table 4.4 Absolute amounts of saturated hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	nC34	nC35	C12D26	C16D34	C20D42	C24D50	C30D62	IntStdOld
4084.80	0	0	3	3	3	3	2	
4090.05	0	0	4	4	4	4	2	
4123.55	0	0	4	4	4	4	2	
4138.30	1	0	4	4	4	4	2	
4158.00	0	0	4	4	4	4	2	
4159.20	0	0	4	4	4	5	2	
4192.45	0	0	4	4	4	4	2	
4218.90	0	0	4	4	4	4	2	
4244.05	0	0	4	4	4	4	2	
4350.00	0	0	3	3	3	3	0	
4451.00	0	0	4	4	4	4	2	
4463.00	0	0	5	5	5	5	3	
4472.00	0	0	6	6	6	6	11	
4474.60	0	0	0	0	0	0	0	

Table 4.4 Absolute amounts of saturated hydrocarbons

Table 4.5 Molecular ratios of saturated hydrocarbons

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sat-hc ord. samples - Amount

S-Depth (m)	E-Depth (m)	Well	Type	Lithology	Name	Orgid	Project	Seq.#	File name	File path	Instrument	Setup	Method
4084.80	4084.80	35/4-1	COCH	CLYST/SL		625750	2004629	13	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4090.05	4090.05	35/4-1	COCH	CLYST/SL		637130	2005849	3	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4123.55	4123.55	35/4-1	COCH	CLYST/SL		637131	2005849	4	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4138.30	4138.30	35/4-1	COCH	CLYST/SL		637132	2005849	5	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4158.00	4158.00	35/4-1	COCH	CLYST/SL		625751	2004629	14	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4159.20	4159.20	35/4-1	COCH	CLYST/SL		637133	2005849	6	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4192.45	4192.45	35/4-1	COCH	CLYST/SL		637134	2005849	7	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4218.90	4218.90	35/4-1	COCH	CLYST/SL		637135	2005849	8	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4244.05	4244.05	35/4-1	COCH	CLYST/SL		637136	2005849	9	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4350.00	4350.00	35/4-1	MUD	SLST		625840	2004629	15	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4451.00	4451.00	35/4-1	COCH	CLYST/SL		637137	2005849	10	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4463.00	4463.00	35/4-1	COCH	CLYST/SL		637138	2005849	11	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4472.00	4472.00	35/4-1	COCH	CLYST/SL		625753	2004629	16	3541	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3
4474.60	4474.60	35/4-1	COCH	CLYST/SL		637139	2005849	12	tert7d	XCHROM	HP5890II	GC-FID-SAT	FID_SAT3

HYDRO

Ratios - amounts:

E-Depth (m)	Operator	Company	Aquired date	Misc.info.	Country	Status	Data Type	Pr Nc17	Ph Nc18	Prn17 Phn18	Pr Ph	Nc17 Nc17c27
4084.80	Linda	NORSK HYDRO	1997-08-12		NOR	OK	AM	0.47	0.38	1.21	1.54	0.98
4090.05	Linda	NORSK HYDRO	1998-05-01		NOR	OK	AM	0.46	0.36	1.29	1.63	0.87
4123.55	Linda	NORSK HYDRO	1998-05-02		NOR	OK	AM	0.42	0.39	1.08	1.47	0.95
4138.30	Linda	NORSK HYDRO	1998-05-03		NOR	OK	AM	0.42	0.36	1.15	1.44	0.84
4158.00	Linda	NORSK HYDRO	1997-08-12	uncertain C16D34	NOR	OK	AM	0.49	0.40	1.23	1.69	0.99
4159.20	Linda	NORSK HYDRO	1998-05-04		NOR	OK	AM	0.50	0.41	1.23	1.72	0.98
4192.45	Linda	NORSK HYDRO	1998-05-05		NOR	OK	AM	0.43	0.38	1.15	1.47	0.97
4218.90	Linda	NORSK HYDRO	1998-05-06		NOR	OK	AM	0.43	0.40	1.06	1.43	0.99
4244.05	Linda	NORSK HYDRO	1998-05-07		NOR	OK	AM	0.30	0.24	1.21	1.57	0.90
4350.00	Linda	NORSK HYDRO	1997-08-12		NOR	OK	AM	0.54	0.36	1.51	2.20	0.99
4451.00	Linda	NORSK HYDRO	1998-05-08		NOR	OK	AM	0.43	0.42	1.01	1.29	0.92
4463.00	Linda	NORSK HYDRO	1998-05-09		NOR	OK	AM	0.40	0.26	1.49	2.02	0.97
4472.00	Linda	NORSK HYDRO	1997-08-12	uncertain C16D34	NOR	OK	AM	0.39	0.39	1.00	1.37	0.98
4474.60	Linda	NORSK HYDRO	1998-05-10		NOR	OK	AM	0.43	0.41	1.04	1.34	0.94

HYDRO

Ratios - amounts:

E-Depth (m)	Cpi 1	Cpi 2
4084.80	1.03	0.91
4090.05	1.07	0.95
4123.55	1.06	0.96
4138.30	1.08	0.97
4158.00	1.00	0.84
4159.20	0.94	0.89
4192.45	1.01	0.91
4218.90	1.08	0.84
4244.05	1.01	0.92
4350.00	1.49	1.00
4451.00	1.04	0.94
4463.00	1.03	0.91
4472.00	0.80	0.92
4474.60	1.27	1.00

Table 4.7 Molecular ratios of saturated biomarkers

Petroleum Geochemistry Group
Research Centre Bergen
27-Feb-1998 12:41

HYDRO

sat-biom ord. samples - Amount

S-Depth (m)	E-Depth (m)	Well	Type	Lithology	Name	Orgid	Project	Seq.#	File name	File path	Instrument	Setup	Method
4084.80	4084.80	35/4-1	COCH	CLYST/SL		625750	2004629	13	4084.D	3541S	HP5971A	GC-MSD-SA	MSD_S_C
4090.05	4090.05	35/4-1	COCH	SLST		630824	2005849	4	4090.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4123.55	4123.55	35/4-1	COCH	SLST		630835	2005849	5	4123.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4138.30	4138.30	35/4-1	COCH	SLST		630840	2005849	6	4138.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4158.00	4158.00	35/4-1	COCH	CLYST/SL		625751	2004629	14	4158.D	3541S	HP5971A	GC-MSD-SA	MSD_S_C
4159.20	4159.20	35/4-1	COCH	SLST		630846	2005849	7	4159.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4192.45	4192.45	35/4-1	COCH	SLST		630851	2005849	8	4192.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4218.90	4218.90	35/4-1	COCH	SLST		630853	2005849	9	4218.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4244.05	4244.05	35/4-1	COCH	SLST		630859	2005849	10	4244.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4451.00	4451.00	35/4-1	COCH	SLST		630863	2005849	11	4451.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4463.00	4463.00	35/4-1	COCH	SLST		630869	2005849	12	4463.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4472.00	4472.00	35/4-1	COCH	CLYST/SL		625753	2004629	16	4472.D	3541S	HP5971A	GC-MSD-SA	MSD_S_C
4474.60	4474.60	35/4-1	COCH	SLST		630873	2005849	13	4474.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C

HYDRO

Ratios - amounts:

E-Depth (m)	Operator	Company	Aquired date	Misc.info.	Country	Status	Data Type	%29aas	%29bb	%27ster	%28ster	%29ster
4084.80	LINDA	NORSK HYDRO	1997-07-11		NOR	WEAK	AM	35.34	64.51	39.20	22.40	28.80
4090.05	LINDA	NORSK HYDRO	1997-11-15		NOR	WEAK	AM	54.54	71.74	35.99	22.53	33.24
4123.55	LINDA	NORSK HYDRO	1997-11-15		NOR	WEAK	AM	53.32	69.52	36.36	23.97	31.82
4138.30	LINDA	NORSK HYDRO	1997-11-15		NOR	WEAK	AM	51.57	67.73	34.35	23.92	31.47
4158.00	LINDA	NORSK HYDRO	1997-07-11		NOR	WEAK	AM	44.27	62.24	39.72	22.43	31.31
4159.20	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	AM	28.88	65.24	44.90	24.49	26.53
4192.45	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	AM	50.38	83.44	42.42	18.18	30.30
4218.90	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	AM	37.85	65.43	45.10	21.57	29.41
4244.05	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	AM	33.67	78.74	39.47	21.05	28.95
4451.00	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	AM	100.00	78.95	38.30	23.40	31.91
4463.00	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	AM	42.03	62.71	41.18	23.53	29.41
4472.00	LINDA	NORSK HYDRO	1997-07-11		NOR	WEAK	AM	44.19	64.59	40.00	23.55	30.09
4474.60	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	AM	60.36	66.80	42.11	26.32	26.32

HYDRO

Ratios - amounts:

E-Depth (m)	%30ster	%preg	%20/3	%23/3	%24/4	%tri	%27ts	%28ab	%29ts	%25nor30ab	%29ab
4084.80	9.60	22.36	11.11	64.65	33.91	53.80	72.97	18.09	40.85	13.39	48.13
4090.05	8.24	22.22	22.38	58.10	39.02	44.09	94.27	34.44	56.10	21.88	71.60
4123.55	7.85	17.69	15.73	61.45	36.11	47.10	86.33	22.31	57.14	18.68	42.75
4138.30	10.25	14.33	18.37	53.11	33.60	47.80	94.19	22.31	78.79	24.42	42.98
4158.00	6.54	24.38	10.76	65.79	37.83	52.96	61.00	17.59	28.57	14.16	52.73
4159.20	4.08	31.94	14.13	65.25	37.97	63.40	62.50	20.41	31.58	26.41	57.14
4192.45	9.09	28.26	12.17	64.36	35.71	59.98	56.52	28.14	34.48	20.70	55.36
4218.90	3.92	31.08	10.79	64.33	33.33	62.89	54.55	18.09	26.83	26.91	52.48
4244.05	10.53	26.92	18.97	63.16	40.00	50.74	70.83	35.00	40.91	30.97	53.84
4451.00	6.38	27.13	8.78	66.83	37.27	57.21	53.19	16.58	24.32	16.58	55.30
4463.00	5.88	30.61	12.24	66.05	38.20	60.43	53.13	13.76	24.49	16.07	54.14
4472.00	6.36	17.57	8.79	62.43	37.77	41.47	56.92	16.80	26.50	11.51	53.65
4474.60	5.26	24.00	12.65	64.37	32.61	57.60	50.00	24.60	27.27	24.60	51.08

HYDRO

Ratios - amounts:

E-Depth (m)	%30ba	%30d	%30g	%32abs	%35ab	%27hop	%28hop	%29hop	%30hop	%31hop	%32hop
4084.80	10.96	50.40	20.95	68.97	58.82	21.27	2.87	14.95	14.62	16.39	8.34
4090.05	21.15	89.56	45.67	62.96	50.00	53.53	2.88	17.08	6.95	4.80	5.18
4123.55	9.64	69.13	22.31	57.14	36.67	34.77	3.75	11.76	14.46	12.76	8.75
4138.30	18.37	90.08	51.00	50.00	51.72	60.26	1.87	8.41	7.97	7.94	3.74
4158.00	10.30	21.36	9.64	60.81	44.44	14.77	3.25	19.65	16.98	16.99	10.93
4159.20	12.50	46.57	17.02	50.00	45.45	20.61	3.22	19.32	14.35	12.88	9.02
4192.45	15.38	45.90	20.70	60.00	50.00	18.24	4.76	19.03	14.36	11.89	7.93
4218.90	15.22	22.75	6.86	69.23	50.00	20.12	3.66	20.73	19.53	12.19	7.92
4244.05	23.81	53.84	26.41	66.67	40.00	21.31	5.33	15.98	12.99	11.54	7.99
4451.00	5.80	11.70	11.70	60.87	52.63	17.80	3.41	24.24	18.20	15.15	8.71
4463.00	11.76	20.33	13.76	55.00	43.75	16.62	2.60	23.89	18.45	13.51	10.39
4472.00	4.48	11.51	10.09	54.96	39.19	15.18	3.50	23.05	18.17	17.44	10.20
4474.60	24.14	24.60	6.13	53.85	54.55	14.73	4.09	18.00	16.53	13.09	10.64

Ratios - amounts:

E-Depth (m)	%33hop	%34hop	%35hop	Ho/St1	Ho/St2
4084.80	6.90	6.04	8.62	1.23	2.22
4090.05	3.84	2.88	2.88		1.14
4123.55	6.25	4.75	2.75		1.32
4138.30	3.04	3.27	3.50		0.61
4158.00	8.13	5.17	4.14	1.41	2.52
4159.20	6.44	7.73	6.44		2.53
4192.45	6.34	8.72	8.72		3.05
4218.90	6.10	4.88	4.88		2.57
4244.05	7.10	10.65	7.10		2.36
4451.00	5.30	3.41	3.79		2.24
4463.00	6.23	4.67	3.64		2.26
4472.00	6.70	3.50	2.26	1.27	1.91
4474.60	4.91	8.18	9.82		2.57

Table 4.7 Absolute amounts of saturated biomarkers

Petroleum Geochemistry Group
Research Centre Bergen
27-Feb-1998 13:01

HYDRO

Heights

S-Depth (m)	E-Depth (m)	Well	Type	Lithology	Name	Orgid	Project	Seq.#	File name	File path	Instrument	Setup	Method
4084.80	4084.80	35/4-1	COCH	CLYST/SL		625750	2004629	13	4084.D	3541S	HP5971A	GC-MSD-SA	MSD_S_C
4090.05	4090.05	35/4-1	COCH	SLST		630824	2005849	4	4090.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4123.55	4123.55	35/4-1	COCH	SLST		630835	2005849	5	4123.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4138.30	4138.30	35/4-1	COCH	SLST		630840	2005849	6	4138.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4158.00	4158.00	35/4-1	COCH	CLYST/SL		625751	2004629	14	4158.D	3541S	HP5971A	GC-MSD-SA	MSD_S_C
4159.20	4159.20	35/4-1	COCH	SLST		630846	2005849	7	4159.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4192.45	4192.45	35/4-1	COCH	SLST		630851	2005849	8	4192.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4218.90	4218.90	35/4-1	COCH	SLST		630853	2005849	9	4218.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4244.05	4244.05	35/4-1	COCH	SLST		630859	2005849	10	4244.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4350.00	4350.00	35/4-1	MUD	SLST		625840	2004629	15	4350.D	3541S	HP5971A	GC-MSD-SA	MSD_S_C
4451.00	4451.00	35/4-1	COCH	SLST		630863	2005849	11	4451.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4463.00	4463.00	35/4-1	COCH	SLST		630869	2005849	12	4463.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C
4472.00	4472.00	35/4-1	COCH	CLYST/SL		625753	2004629	16	4472.D	3541S	HP5971A	GC-MSD-SA	MSD_S_C
4474.60	4474.60	35/4-1	COCH	SLST		630873	2005849	13	4474.D	3541UTV	HP5971A	GC-MSD-SA	MSD_S_C

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	Operator	Company	Aquired date	Misc.info.	Country	Status	19/3	20/3	21/3	23/3	24/3
4084.80	LINDA	NORSK HYDRO	1997-07-11		NOR	WEAK	62	45	99	139	43
4090.05	LINDA	NORSK HYDRO	1997-11-15		NOR	WEAK	197	92	92	104	49
4123.55	LINDA	NORSK HYDRO	1997-11-15		NOR	WEAK	98	56	77	110	45
4138.30	LINDA	NORSK HYDRO	1997-11-15		NOR	WEAK	148	72	77	94	57
4158.00	LINDA	NORSK HYDRO	1997-07-11		NOR	WEAK	84	82	188	275	90
4159.20	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	55	38	63	92	28
4192.45	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	37	23	47	65	20
4218.90	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	44	30	68	101	33
4244.05	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	31	22	26	36	12
4350.00	LINDA	NORSK HYDRO	1997-07-11		NOR	WEAK	64	55	97	145	42
4451.00	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	47	31	76	139	42
4463.00	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	38	36	67	107	32
4472.00	LINDA	NORSK HYDRO	1997-07-11		NOR	WEAK	109	80	200	334	120
4474.60	LINDA	NORSK HYDRO	1997-11-16		NOR	WEAK	23	21	40	56	17

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	25/3	26/3R	26/3S	28/3R	28/3S	29/3R	29/3S	30/3R	30/3S	24/4	27Ts
4084.80	33	27	19	11	11	15	8			39	54
4090.05	26	24	24	22	20	41	28			48	263
4123.55	24	22	22	15	14	18	18			39	120
4138.30	26	32	34	32	25	48	30			42	243
4158.00	53	32	42	20	14	21	16			87	61
4159.20	21	15	12	7	6	8	5			30	20
4192.45	16	8	10	8	6	5	5			20	13
4218.90	23	11	12	7	4	7	4			28	18
4244.05	9	5	6	4	2	5	3			14	17
4350.00	32	19	23	12	10	13	9			33	22
4451.00	27	19	19	11	10	13	7			41	25
4463.00	23	15	14	9	6	8	6			34	17
4472.00	81	50	45	38	29	41	29			122	111
4474.60	14	10	8	6	5	7	5			15	9

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	27Tm	27b	25nor28ab	28ab	25nor29ab	29ab	29ba	29Ts	25nor30ab	30ab	30ba
4084.80	20	15	7	10	17	42	10	29	7	65	8
4090.05	16	15	14	15	17	72	17	92	8	41	11
4123.55	19	20	15	15	19	39	8	52	12	75	8
4138.30	15	18	24	8	18	21	15	78	9	40	9
4158.00	39	19	6	22	35	115	18	46	17	148	17
4159.20	12	9	4	5	10	26	4	12	7	28	4
4192.45	10	4	2	6	9	19	5	10	4	22	4
4218.90	15	8	7	6	20	30	4	11	10	39	7
4244.05	7	2	3	6	6	13	5	9	5	16	5
4350.00	16	12	8	8	8	40	10	19	9	47	8
4451.00	22	13	9	9	17	56	8	18	9	65	4
4463.00	15	11	7	5	10	37	9	12	6	45	6
4472.00	84	34	35	45	56	258	38	93	29	320	15
4474.60	9	1	6	5	10	16	6	6	5	22	7

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	30bb	30D	30G	30O	30D13	31abS	31abR	31ba	30nor32ab	32abS	32abR
4084.80		46	12		5	29	28	9		20	9
4090.05		245	24		9	9	16	11		17	10
4123.55		117	15		6	30	21	5		20	15
4138.30		253	29		8	18	16	11		8	8
4158.00		28	11		12	70	45	16		45	29
4159.20		17	4		6	13	7	2		7	7
4192.45		13	4		5	8	7	5		6	4
4218.90		8	2		0	13	7	4		9	4
4244.05		13	4		3	8	5	1		6	3
4350.00		3	10		4	25	16	4		15	12
4451.00		6	6		3	26	14	5		14	9
4463.00		8	5		4	16	10	3		11	9
4472.00		29	25		22	129	95	6		72	59
4474.60		5	1		3	10	6	4		7	6

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	33abS	33abR	34abS	34abR	35abS	35abR	21aa	21bb	22aa	22bb	23aa
4084.80	13	11	10	11	15	15	38	23	23	13	
4090.05	13	7	6	9	8	7	97	81	96	23	
4123.55	16	9	12	7	5	6	49	37	44	15	
4138.30	7	6	7	7	9	6	88	69	90	24	
4158.00	33	22	16	19	15	13	69	41	39	28	
4159.20	6	4	5	7	4	6	23	15	12	8	
4192.45	3	5	7	4	5	6	17	8	9	5	
4218.90	4	6	3	5	4	4	24	15	10	8	
4244.05	3	5	6	6	5	3	11	8	9	6	
4350.00	12	11	9	13	11	11	35	16	17	10	
4451.00	8	6	6	3	4	6	27	21	15	14	
4463.00	7	5	4	5	4	3	22	18	12	12	
4472.00	51	35	29	16	14	15	88	69	44	45	
4474.60	3	3	5	5	5	7	13	6	5	6	

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	23bb	27dbS	27dbR	27daR	27daS	27aaS	27bbR	27bbS	27aaR	28dbSA	28dbSB
4084.80		77	34				30	19	81		
4090.05		208	123				90	41	39		
4123.55		125	66				59	29	48		
4138.30		239	142				125	66	50		
4158.00		100	45				47	38	129		
4159.20		29	14				14	8	32		
4192.45		21	9				9	5	25		
4218.90		30	12				14	9	32		
4244.05		17	9				9	6	10		
4350.00		41	20				15	18	76		
4451.00		40	20				22	14	41		
4463.00		28	15				16	12	34		
4472.00		196	113				126	88	184		
4474.60		18	8				10	6	20		

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	28dbRA	28dbRB	28daR	28daS	28aaS	28bbR	28bbS	28aaR	29dbS	29dbR	29daR
4084.80						13	15				
4090.05						33	49				
4123.55						23	35				
4138.30						52	81				
4158.00						21	27				
4159.20						4	8				
4192.45						3	3				
4218.90						5	6				
4244.05						4	4				
4350.00						8	9				
4451.00						11	11				
4463.00						7	9				
4472.00						59	67				
4474.60						4	6				

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	29daS	29aaS	29bbR	29bbS	29aaR	30dbS	30dbR	30daR	30daS	30aaS	30bbR
4084.80		7	21	15	13						6
4090.05		26	69	52	22						14
4123.55		18	43	34	16						12
4138.30		43	91	84	41						29
4158.00		18	34	33	23						5
4159.20		2	8	5	5						1
4192.45		1	6	4	1						1
4218.90		3	10	5	5						1
4244.05		1	6	5	2						2
4350.00		5	10	11	6						3
4451.00		8	16	14	0						3
4463.00		5	12	8	7						2
4472.00		39	88	73	50						15
4474.60		3	6	4	2						1

Table 4.7 Absolute amounts of saturated biomarkers

Peak values - heights:

E-Depth (m)	30bbS	30aaR	24baa	4D21a	2D29ba	4D27aaR
4084.80	6		1079			
4090.05	16		599			
4123.55	7		640			
4138.30	28		453			
4158.00	9		726			
4159.20	1		765			
4192.45	2		363			
4218.90	1		600			
4244.05	2		274			
4350.00	4		1257			
4451.00	3		630			
4463.00	2		795			
4472.00	19		597			
4474.60	1		417			

Table 4.7 Absolute amounts of saturated biomarkers

Table 4.8 Absolute amounts of aromatic hydrocarbons

HYDRO

Amounts

S-Depth (m)	E-Depth (m)	Well	Type	Lithology	Name	Orgid	Project	Seq.#	File name	File path	Instrument	Setup	Method
4084.80	4084.80	35/4-1	COCH	CLYST/SL		625750	2004629	13	4084.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4090.05	4090.05	35/4-1	COCH	SLST		630824	2005849	17	4090A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4123.55	4123.55	35/4-1	COCH	SLST		630835	2005849	18	4123A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4138.30	4138.30	35/4-1	COCH	SLST		630840	2005849	19	4138A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4158.00	4158.00	35/4-1	COCH	CLYST/SL		625751	2004629	14	4158.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4159.20	4159.20	35/4-1	COCH	SLST		630846	2005849	20	4159A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4192.45	4192.45	35/4-1	COCH	SLST		630851	2005849	21	4192A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4244.05	4244.05	35/4-1	COCH	SLST		630859	2005849	23	4244A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4350.00	4350.00	35/4-1	MUD	SLST		625840	2004629	15	4350.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4451.00	4451.00	35/4-1	COCH	SLST		630863	2005849	24	4451A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4463.00	4463.00	35/4-1	COCH	SLST		630869	2005849	25	4463A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4472.00	4472.00	35/4-1	COCH	CLYST/SL		625753	2004629	16	4472.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4474.60	4474.60	35/4-1	COCH	SLST		630873	2005849	26	4474A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	Operator	Company	Aquired date	Misc.info.	Country	Status	C13AI	C14AI	C15AI	C16AI	C17AI
4084.80	LINDA	NORSK HYDRO	1997-07-24		NOR	WEAK	0	0	0	0	0
4090.05	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	0	0	0	0	0
4123.55	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	0	0	0	0	0
4138.30	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	0	0	0	0	0
4158.00	LINDA	NORSK HYDRO	1997-07-24		NOR	OK	0	0	0	0	0
4159.20	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	0	0	0	0	0
4192.45	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	0	0	0	0	0
4244.05	LINDA	NORSK HYDRO	1997-11-17		NOR	OK	0	0	0	0	0
4350.00	LINDA	NORSK HYDRO	1997-07-24		NOR	WEAK	0	0	0	0	0
4451.00	LINDA	NORSK HYDRO	1997-11-17		NOR	WEAK	0	0	0	0	0
4463.00	LINDA	NORSK HYDRO	1997-11-17		NOR	WEAK	0	0	0	0	0
4472.00	LINDA	NORSK HYDRO	1997-07-24		NOR	OK	0	0	0	0	0
4474.60	LINDA	NORSK HYDRO	1997-11-17		NOR	OK	0	0	0	0	0

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	C18AI	C19AI	C20AI	C21AI	C22AI	C23AI	C30AI	C31AI	N	2-MN	1-MN
4084.80	0	0	0	0	0	0	0	0	46	137	74
4090.05	0	0	0	0	0	0	0	0	200	811	472
4123.55	0	0	0	0	0	0	0	0	146	457	226
4138.30	0	0	0	0	0	0	0	0	281	1069	582
4158.00	0	0	0	0	0	0	0	0	2385	3656	1616
4159.20	0	0	0	0	0	0	0	0	338	865	415
4192.45	0	0	0	0	0	0	0	0	100	366	194
4244.05	0	0	0	0	0	0	0	0	683	1727	810
4350.00	0	0	0	0	0	0	0	0	6	17	11
4451.00	0	0	0	0	0	0	0	0	15	68	38
4463.00	0	0	0	0	0	0	0	0	79	226	99
4472.00	0	0	0	0	0	0	0	0	1235	1843	721
4474.60	0	0	0	0	0	0	0	0	131	318	125

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	2-EN	1-EN	2.6+2.7-DMN	1.3+1.7-DMN	1.6-DMN	2.3+1.4-DMN	1.5-DMN	1.2-DMN	C3-N-1	C3-N-2	1.3.7-TMN
4084.80	12	3	69	88	61	28	12	8	5	6	30
4090.05	75	23	565	778	580	262	110	51	38	50	325
4123.55	31	10	194	281	166	92	33	21	11	15	90
4138.30	85	24	492	648	474	238	96	57	33	41	221
4158.00	193	43	1191	1182	930	466	158	108	51	66	297
4159.20	50	13	314	378	275	132	48	31	14	18	93
4192.45	26	8	180	226	154	81	32	21	12	15	74
4244.05	119	19	849	745	677	329	133	57	38	53	252
4350.00	4	1	14	20	11	9	3	4	2	3	8
4451.00	11	3	53	75	41	27	9	7	5	7	25
4463.00	18	5	89	105	66	38	13	9	6	8	27
4472.00	108	27	584	631	369	225	63	42	28	33	153
4474.60	25	6	118	123	78	44	12	9	7	9	33

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	1.3.6-TMN	1.3.5+1.4.6-TMN	2.3.6-TMN	1.6.7+1.2.7-TMN	1.2.6-TMN	1.2.4-TMN	1.2.5-TMN	BP	3-MBP	4-MBP	2.3'-DMBP
4084.80	39	26	29	17	8	1	4	43	59	24	2
4090.05	439	288	289	204	104	14	60	363	585	241	11
4123.55	113	73	81	55	25	5	13	184	215	82	4
4138.30	304	193	239	153	68	13	40	411	503	210	10
4158.00	412	219	405	197	99	17	49	1002	819	351	12
4159.20	128	75	102	58	32	5	15	223	198	87	5
4192.45	102	62	79	42	20	4	11	105	143	56	5
4244.05	332	185	299	158	62	9	21	245	343	143	6
4350.00	10	6	8	4	2	1	1	4	10	3	2
4451.00	34	19	29	13	6	2	3	45	73	32	3
4463.00	38	23	31	17	8	2	4	109	139	55	3
4472.00	218	115	163	86	42	7	16	746	742	320	12
4474.60	47	25	39	19	8	2	3	157	205	78	3

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	2.5-DMBP	2.4+2.4'-DMBP	2.3-DMBP	3-EBP	3.5-DMBP	3.3'-DMBP	4-EBP	3.4'-DMBP	4.4'-DMBP	3.4-DMBP	DBF
4084.80	2	2	4	5	12	29	2	23	5	9	4
4090.05	8	13	41	57	168	384	26	291	65	139	30
4123.55	3	5	12	16	43	103	7	77	17	35	14
4138.30	6	11	38	48	121	302	22	211	48	105	40
4158.00	8	13	34	51	97	307	30	230	59	124	101
4159.20	4	5	10	15	33	79	7	65	15	32	22
4192.45	4	5	9	12	34	82	7	56	12	27	11
4244.05	4	6	29	27	66	232	12	170	33	61	28
4350.00	2	2	0	1	4	7	2	6	1	2	1
4451.00	2	3	3	6	24	47	4	35	8	15	3
4463.00	2	3	6	8	38	71	5	56	12	22	3
4472.00	11	14	29	43	167	297	23	273	59	100	17
4474.60	3	3	8	13	57	105	8	82	18	28	3

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	MDBF-1	MDBF-2	MDBF-3	F	C1-F-1	C1-F-2	1-MF	DBT	4-MDBT	3+2-MDBT	1-MDBT
4084.80	9	12	8	36	11	28	6	1	1	0	0
4090.05	112	65	98	294	85	292	42	4	11	2	0
4123.55	41	26	37	136	37	114	19	2	3	1	0
4138.30	115	76	111	349	99	304	56	4	7	2	0
4158.00	169	149	169	878	212	570	97	19	24	8	1
4159.20	45	33	40	181	39	132	19	3	4	1	0
4192.45	25	27	24	98	28	78	14	1	2	0	0
4244.05	59	46	60	378	116	345	52	13	17	5	1
4350.00	1	12	1	3	1	2	0	0	0	0	0
4451.00	5	19	4	38	12	30	7	0	1	0	0
4463.00	7	14	7	75	19	55	12	1	1	0	0
4472.00	39	55	31	437	99	330	57	7	11	3	0
4474.60	8	16	7	88	26	69	13	1	1	0	0

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	P	3-MP	2-MP	9-MP	1-MP	2EP+9EP+3.6-DMP	1EP	2.6+2.7+3.5-DMP	1.3+2.10+3.9+3.10-DMP	1.6+2.5+2.9-DMP	1.7-DMP
4084.80	50	23	26	29	21	3	7	4	23	13	10
4090.05	346	181	239	262	183	31	61	37	204	125	109
4123.55	214	92	115	116	73	12	24	13	78	44	34
4138.30	415	178	241	226	155	28	49	35	147	86	73
4158.00	1300	473	662	501	437	61	113	96	304	205	175
4159.20	254	104	142	131	85	14	28	18	79	48	38
4192.45	136	57	72	66	40	9	16	11	45	25	17
4244.05	600	258	375	305	261	41	78	52	188	131	101
4350.00	5	1	2	2	1	0	0	0	1	1	1
4451.00	53	25	29	18	14	4	8	4	14	8	5
4463.00	102	48	58	36	26	7	14	9	24	17	10
4472.00	816	386	507	286	198	54	123	74	199	111	76
4474.60	122	58	68	35	24	9	17	10	25	15	9

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	2.3-DMP	1.9+4.9+4.10-DMP	1.8-DMP	Retene	20TA	21TA	S26TA	R26TA/S27TA	S28TA	R27TA	R28TA
4084.80	4	5	2	1	0	0	0	0	0	0	0
4090.05	33	52	18	4	1	0	0	0	0	0	0
4123.55	14	17	6	2	0	0	0	0	0	0	0
4138.30	30	39	12	3	0	0	0	0	0	0	0
4158.00	75	73	33	4	0	0	0	0	0	0	0
4159.20	16	19	7	1	0	0	0	0	0	0	0
4192.45	9	9	3	1	0	0	0	0	0	0	0
4244.05	50	47	23	2	0	0	0	0	0	0	0
4350.00	0	0	0	0	0	0	0	0	0	0	0
4451.00	3	2	1	1	0	0	0	0	0	0	0
4463.00	7	4	2	1	0	0	0	0	0	0	0
4472.00	52	27	13	3	0	0	0	0	0	0	0
4474.60	8	3	1	0	0	0	0	0	0	0	0

Table 4.8 Absolute amounts of aromatic hydrocarbons

Peak values - amounts: ng/mg EOM

E-Depth (m)	d8N	d10BP	d10P	d12C
4084.80	24	25	24	24
4090.05	56	54	56	56
4123.55	52	50	52	52
4138.30	52	50	52	52
4158.00	33	34	33	33
4159.20	58	56	58	58
4192.45	58	56	58	58
4244.05	52	50	52	52
4350.00	22	22	22	22
4451.00	52	50	52	52
4463.00	62	60	62	62
4472.00	47	49	47	47
4474.60	52	50	52	52

Table 4.8 Absolute amounts of aromatic hydrocarbons

Table 4.9 Aromatic hydrocarbons ratios

Petroleum Geochemistry Group
Research Centre Bergen

27-Feb-1998 12:58

HYDRO

aro-hc ord. samples - Amount

S-Depth (m)	E-Depth (m)	Well	Type	Lithology	Name	Orgid	Project	Seq.#	File name	File path	Instrument	Setup	Method
4084.80	4084.80	35/4-1	COCH	CLYST/SL		625750	2004629	13	4084.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4090.05	4090.05	35/4-1	COCH	SLST		630824	2005849	17	4090A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4123.55	4123.55	35/4-1	COCH	SLST		630835	2005849	18	4123A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4138.30	4138.30	35/4-1	COCH	SLST		630840	2005849	19	4138A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4158.00	4158.00	35/4-1	COCH	CLYST/SL		625751	2004629	14	4158.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4159.20	4159.20	35/4-1	COCH	SLST		630846	2005849	20	4159A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4192.45	4192.45	35/4-1	COCH	SLST		630851	2005849	21	4192A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4244.05	4244.05	35/4-1	COCH	SLST		630859	2005849	23	4244A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4350.00	4350.00	35/4-1	MUD	SLST		625840	2004629	15	4350.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4451.00	4451.00	35/4-1	COCH	SLST		630863	2005849	24	4451A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4463.00	4463.00	35/4-1	COCH	SLST		630869	2005849	25	4463A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C
4472.00	4472.00	35/4-1	COCH	CLYST/SL		625753	2004629	16	4472.D	354_11	HP5971A	GC-MSD-AR	MSD_A_C
4474.60	4474.60	35/4-1	COCH	SLST		630873	2005849	26	4474A.D	3541UTV	HP5971A	GC-MSD-AR	MSD_A_C

Ratios - amounts:

E-Depth (m)	Operator	Company	Aquired date	Misc.info.	Country	Status	Data Type	Naphtalene	C1 Naph	C2 Naph	C3 Naph	Phen
4084.80	LINDA	NORSK HYDRO	1997-07-24		NOR	WEAK	AM	46	212	282	164	50
4090.05	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	AM	200	1282	2443	1810	346
4123.55	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	AM	146	683	828	480	214
4138.30	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	AM	281	1651	2115	1306	415
4158.00	LINDA	NORSK HYDRO	1997-07-24		NOR	OK	AM	2385	5271	4271	1812	1300
4159.20	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	AM	338	1280	1240	539	254
4192.45	LINDA	NORSK HYDRO	1997-11-16		NOR	OK	AM	100	560	728	421	136
4244.05	LINDA	NORSK HYDRO	1997-11-17		NOR	OK	AM	683	2537	2927	1409	600
4350.00	LINDA	NORSK HYDRO	1997-07-24		NOR	WEAK	AM	6	28	66	44	5
4451.00	LINDA	NORSK HYDRO	1997-11-17		NOR	WEAK	AM	15	106	227	142	53
4463.00	LINDA	NORSK HYDRO	1997-11-17		NOR	WEAK	AM	79	326	343	162	102
4472.00	LINDA	NORSK HYDRO	1997-07-24		NOR	OK	AM	1235	2564	2049	861	816
4474.60	LINDA	NORSK HYDRO	1997-11-17		NOR	OK	AM	131	443	416	191	122

HYDRO

Ratios - amounts:

E-Depth (m)	C2 Phen	C1 Phen	Mpi1	F1	F2	Dnr	%tas	Dbt P	F P	Bp 16dmn	2mn 1mn
4084.80	69	98	0.73	0.49	0.26	5.64	82.41	0.01	0.71	0.71	1.85
4090.05	672	864	0.80	0.49	0.28	5.14	89.42	0.01	0.85	0.63	1.72
4123.55	242	397	0.77	0.52	0.29	5.79	88.73	0.01	0.64	1.10	2.02
4138.30	499	800	0.79	0.52	0.30	5.10	85.83	0.01	0.84	0.87	1.84
4158.00	1133	2073	0.76	0.55	0.32	7.55	81.45	0.01	0.68	1.08	2.26
4159.20	266	462	0.79	0.53	0.31	6.56	87.72	0.01	0.71	0.81	2.08
4192.45	145	236	0.80	0.55	0.31	5.62	87.78	0.01	0.72	0.69	1.88
4244.05	709	1199	0.81	0.53	0.31	6.39	91.55	0.02	0.63	0.36	2.13
4350.00	4	6	0.63	0.52	0.29	4.70	77.05	0.02	0.57	0.32	1.58
4451.00	49	87	0.97	0.63	0.34	5.95	72.13	0.01	0.73	1.11	1.81
4463.00	93	168	0.97	0.63	0.34	7.01	89.55	0.01	0.74	1.65	2.28
4472.00	729	1377	1.03	0.65	0.37	9.28	77.03	0.01	0.54	2.02	2.56
4474.60	97	186	1.05	0.68	0.37	9.62	93.15	0.01	0.72	2.01	2.54

Ratios - amounts:

E-Depth (m)	2en 1en	4 1 Mdbt	3mpr
4084.80	3.73	17.81	42.35
4090.05	3.23	26.80	50.63
4123.55	3.11	22.31	60.87
4138.30	3.52	23.58	70.33
4158.00	4.45	19.53	120.24
4159.20	3.80	17.86	112.29
4192.45	3.28	18.74	66.88
4244.05	6.33	20.46	133.18
4350.00	3.73	6.14	5.45
4451.00	3.20	17.17	28.60
4463.00	3.35	29.09	73.98
4472.00	3.96	34.33	116.50
4474.60	3.86	56.50	133.52