3.4 FMT results

One run with the Western Atlas FMT tool were performed. One sample containing gas was collected The 10 litre chamber was emptied offshore cromatograph analysis showed a dry gas containing mainly C_1 (97.3%), some C_2 (2.3%) and traces of C_3 (0.4%). The 4 litre chamber was send onshore for analysis but the content was lost in laboratory.

The pore pressure in the water zone is 1.03 g/cm^3, with a water gradient of 1.03 g/cm^3 .

The table below shows the FMT pressure measurements.

No.	Depth, m MD RKB	Hydrost. pressure kPa before	Hydrost. pressure kPa after	Formation pressure kPa	Seal	Perm. mD	Remarks
1	1122	13709	13705	-	Y	0	Tight
2	1163.2	14207	14202	-	Y	0	Tight
3	1206.5	14734	14732	12232	Y	1.6	Good Test
4	1227.5	14991	14989	-	N	-	Lost seal
5	1228	14998	14996	12332	Y	31.1	Good Test
6	1247.4	15231	15232	12472	Y	41	Good Test
7	1260	15385	15386	12597	Y	49.3	Good Test
8	1277.5	15600	15603	12778	Y	47.9	Good Test
9	1289	15741	15741	12893	Y	504.6	Good Test
10	1339	16343	16342	13390	Y	603.2	Good Test
11	1388	16938	16940	13896	Y	74.6	Good Test
12	1404	17138	17138	14068	Y	60.2	Good Test
13	1515	18482	18481	15173	Y	502.1	Good Test
14	1596	19463	19471	-	Y	0	Tight
15	1727	21065	21067	17408	Y	7.3	Good Test
16	1797.5	21921	21912	18017	Y	7.1	Good Test
17	1899	23154	23158	19026	Y	186.6	Good Test
18	1955	23843	23842	19585	Y	6.3	Good Test
19	1976	24102	24102	19797	Y	97.2	Good Test
20	1206.5	14791	14713	12209	Y	31.3	Sample

Well Footage Summary								
Interval	Interval TD MD	Footage Drilled	Casing Size	Depth Set	Max. Angle	Max. B.H.S.T.	Drilling Days	Total Days
in	m	m	in	m	deg	degC	d	d
36.	497.	87.	30.	493.	0.		1.	4.3
17.5	1000.	503.	13.375	994.			1.9	4.9
12.25	2032.	1032.	13.375	994.			7.	9.

Sea level depth	m	23.5	Sea bed depth	m	433.

Dates & Drilling Fluids Summary						
Interval	Date TD	Fluid Type	Max. Density	Fluid Cost	Cost / Volume	Cost / Footage
in				Nkr	Nkr/m3	Nkr/m
36.	07-Apr-1997	SPUD MUD	1.2	145389.00	472.5	1671.40
17.5	09-Apr-1997	SPUD MUD	1.2	12820.00	27.77	25.49
12.25	19-Apr-1997	KCL POLYMER	1.24	599833.95	1153.52	581.23

Schlumberger
Dowell

MudCADE*

Client : Statoil

Well : 6507/03-2

WELL COST BREAKDOWN

Description	% Cost	Unit Size	Unit Cost	Used	Cost
	%		Nkr		Nkr
Drilling Fluid Materials					
Aquapac Reg C329	8.2	kg	29.88	2100.	**62748.00**
Aquapac SL C330	19.9	kg	29.88	5115.	**152836.20**
Barite API C100	17.1	MT	752.00	175.	**131600.00**
Bentonite Hi Yield C350	2.4	MT	2054.00	9.	**18486.00**
Drill water	0.	m3	0.00	1059.	**0.00**
Potassium Chloride C296	1.9	1000 kg BB	1600.00	9.	**14400.00**
RHODAPOL 23P C720	15.2	25 kg sk	1602.50	65	**104162.50**
Soda Ash C109	0.1	25 kg sk	68.25	57	**3890.25**
STAPLEX 500 Shale Stabilizer C850	23.4	L	10.68	16800.	**179424.00**
CI Brine	11.8	m3	404.00	224.	**90496.00**
	100%			**Sub Total**	**758042.95**
Corrected Drilling Fluid Materials Cost					
Mud b/f from previous interval		m3	0.00	0.	**0.00**
Mud c/f to next well		m3	0.00	370.8	**0.00**
				Sub Total	**758042.95**
				Plan	754073.00
Engineering Costs					
C. McLennan			4559.00	19	**86621.00**
S. Seglem			3880.00	7	**27160.00**
R. Nagel			3880.00	12	**46560.00**
				Sub Total	**160341.00**
				Plan	
				Total Drilling Fluid Cost	**918383.95**
				Plan	
Ancillary materials					
Bentonite Hi Yield C350		MT	2054.00	22.	45188.00
				Sub Total:	**45188.00**
				Total Well Cost	**972979.45**
				Plan	

INTERPRETATION REPORT

GEOLAB NOR AS
PO Box 5740 Fossegrenda
N-7002 Trondheim
Norway

Tel: (47) 73 964000
Fax: (47) 73 968728
Tlx: 65706 geono n

Internet: firmapost@geolab-nor.telemax no
X.400: S=firmapost, O=geolab-nor, A=telemax, C=no

CLIENT:

STATOIL

REF(S)
Richard Patience
ORDER NO: G97-18
CONTRACT NO: DTJ 020215

TITLE

GEOCHEMICAL ANALYSIS OF NOCS WELL 6507/3-2

AUTHOR(S)

Peter Barry Hall

GEOLAB PROJECT NO.	DATE
62376	30.10.97
PROJECT MANAGER	**QA RESPONSIBLE**
Peter Barry Hall, Snr. Scientist	Kjell Arne Bakken, Snr. Scientist
REPORT NO./FILE	PAGE 1 of 1

Chapter 1

INTRODUCTION

1.1 General Well Information

The aims of the Statoil designed analytical program were to evaluate any source rock sections and any oil shows. Maturity of the sampled sequence was also determined.

Vitrinite reflectance and gas composition and isotopic composition were performed by IFE All the other analyses were performed by Geolab Nor. The results, particularly the Rock Eval data, are affected by the water based mud with polyalkylene glycol additives used in this well.

The report is divided into Chapter 2 (Source Rock Evaluation), Chapter 3 (Thermal Maturity), Chapter 4 (Migrated Hydrocarbons) and Chapter 5 (Conclusions).

ANALYTICAL PROGRAM:																														
NOCS 6507/3-2																														
PROJECT: STATOIL 6507/3-2, G97-18																														
Scientist: PBH																														
Client Contact: Ann Elin Gilje/Richard Patience																														
DATABASE CODE: 8376 P67																														
Page: 1 of 2																														
Technician: ALH																														
Date: 24.11.97																														
Sample Depth c = Cuttings s = SWC p = Conv core/ plug m = Mud o = oil/gas R = Reservoir S = Source	**Sample Type**	Fractions	Headspace & Occluded Gas	Headspace Isotope	Lithology	Leco TOC	RockEval	Thermal Extraction GC	Pyrolysis GC	Extraction	MPLC & Deasphalt.	Iatroscan	EOM GC	Sat GC	Aro GC	Sat GCMS Quant.	Aro GCMS	Bulk Carbon Isotope	Visual Kerogen	Vitrinite Reflectance	Gas Isotopes and Composition
Table Nos:			2a-c	2d	3	5	5	-		8a	8a-e	8f-g								4	15
1009	sS	0001-1l				x	x														
1025	cS	0002-1l	x		x															x	
1050	cS	0003-0	x		x																
1072	sS	0004-1l				x	x														
1075	cS	0005-1l	x		x																
1100	cS	0006-1l	x		x															x	
1122	sS	0008-1l				x	x													x	
1125	cS	0007-0	x		x																
1150	cS	0009-0	x		x																
1167	sS	0010-1l				x	x														
1175	cS	0011-1l	x	x	x															x	
1200	cS	0012-0	x		x																
1203	sS	0013-1l				x	x													x	
1222	sS	0014-1l				x	x													x	
1225	cS	0015-0	x		x																
1230.16	pS	0017-1l				x	x	x												x	
1231.42	pS	0018-1l				x	x	x													
1232.86	pS	0019-1l				x	x	x													
1250	cS	0016-3l	x		x	x	x														
1275	cS	0020-3l	x		x	x	x														
1295	sS	0022-1l				x	x	x												x	
1300	cS	0021-2l	x		x															x	
1325	cS	0023-2l			x	x	x													x	
1358	sS	0024-1l				x	x													x	
1375	cS	0025-0			x																
1400	cS	0026-0			x																
1403.02	pR	0027-1l					x	x													
1404.99	pR	0047-1l					x														
1405.72	pS	0028-1l				x	x													x	
1406.84	pS	0029-1l				x	x													x	
1409.83	pR	0030-1l					x														
1425	cS	0031-2l			x	x	x														
1450	cS	0032-0	x		x																
1467	sS	0033-1l				x	x													x	

ANALYTICAL PROGRAM:						DATABASE CODE:						8376		P67								
NOCS 6507/3-2						Page: 2 of 2																
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Sample Depth and Type c = Cuttings s = SWC p = Conv core/ plug m = Mud o = oil/gas R = Reservoir S = Source		Fractions	Headspace & Occluded Gas	Headspace Isotope	Lithology	Leco TOC	RockEval	Thermal Extraction GC	Pyrolysis GC	Extraction	MPLC & Deasphalt.	Iatroscan	EOM GC	Sat GC	Aro GC	Sat GCMS Quant.	Aro GCMS	Bulk Carbon Isotope	Visual Kerogen	Vitrinite Reflectance	Gas Isotopes and Composition
Table Nos:			2a-c	2d	3	5	5	-		8a	8a-e	8f-g								4	15
1475	cS	0034-0	x	x	x																
1489	sS	0035-1l				x	x														
1500	cS	0036-0	x		x																
1557	sS	0037-1l				x	x													x	
1600	cS	0038-2l			x	x	x														
1650	cS	0039-2l			x															x	
1700	cS	0040-2l			x	x	x														
1756	sS	0041-1l				x	x														
1803	sS	0042-1l				x	x													x	
1873	sS	0043-1l				x	x													x	
1925	cS	0044-0			x	x	x														
1949.5	sS	0045-1l				x	x														
2019.5	sS	0046-1l				x	x													x	
Gas RFT	o	P71/0001																			x
1100m	m	P70/0004									x			x							
1200m	m	P70/0001					x				x	x		x							
1300m	m	P70/0002					x				x	x		x							
1400m	m	P70/0003					x				x	x		x							
Total			15	2	23	28	34	5			4	3		4						19	1

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Table 2a: C1 to C7 hydrocarbons in HEADSPACE gas
(µl gas/kg rock)

Project: NOCS 6507/3-2
Well: NOCS 6507/3-2
Depth unit of measure: m * Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 / nC4
1025.00	7671	9	4	2	2	13	7688	16	0.2	0.96
1050.00	9059	9	4	2	1	18	9075	15	0.2	1.80
1075.00	11370	12	5	2	1	20	11390	21	0.2	1.25
1100.00	8805	10	5	1	1	11	8821	16	0.2	1.58
1125.00	11273	11	5	2	1	6	11291	19	0.2	1.81
1150.00	11350	23	7	3	1	12	11383	33	0.3	2.29
1175.00	27192	44	11	5	2	15	27255	63	0.2	2.40
1200.00	17281	36	5	1	1	6	17325	43	0.2	2.57
1225.00	15384	47	3			1	15435	51	0.3	1.82
1250.00	33014	202	8	-	-	-	33225	211	0.6	-
1275.00	43899	529	8	-	-	-	44436	537	1.2	-
1300.00	77465	814	9	-	-	-	78288	823	1.1	-
1450.00	33806	87	-	-	-	-	33892	87	0.3	-
1475.00	71036	150	8	2	4	72	71200	164	0.2	0.54
1500.00	67384	133	4	-	2	23	67523	139	0.2	-

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Table 2b: C1 to C7 hydrocarbons in CUTTINGS gas
(µl gas/kg rock)

Project: NOCS 6507/3-2
Well: NOCS 6507/3-2
Depth unit of measure: m * Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4/nC4
1025.00	81	1				1	83	1	1.8	0.50
1050.00	40	2	1			2	42	3	6.4	0.32
1075.00	30	2	1			3	33	3	8.0	0.36
1100.00	129	2	1			2	132	3	2.5	0.55
1125.00	602	5	1		1	4	609	7	1.2	0.49
1150.00	62	3	1		1	5	67	6	8.2	0 7
1175.00	110	4	2		1	8	117	7	6.2	0.58
1200.00	392	6	2		1	4	401	9	2.2	0.41
1225.00	96	6	2		1	4	105	9	8.4	0.37
1250.00	261	10	2		1	3	274	13	4.8	0.30
1275.00	169	12	2		1	4	185	15	8.4	0.38
1300.00	124	8	2		1	2	135	11	8.0	0.54
1450.00	87	3	1			2	92	5	5.1	0.26
1475.00	63	2	1			2	67	4	5.6	0.30
1500.00	251	11	3		1	2	266	15	5.7	0.31

Table 2.c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas GEOLAB NOR
(µl gas/kg rock)

Project: NOCS 6507/3-2
Well: NOCS 6507/3-2
Depth unit of measure: m * Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 / nC4
1025.00	7753	10	4	2	2	14	7770	18	0.2	0.93
1050.00	9099	11	5	2	1	20	9117	18	0.2	1.38
1075.00	11400	14	6	2	2	23	11423	23	0.2	1.11
1100.00	8934	12	5	2	1	13	8953	20	0.2	1.28
1125.00	11874	16	6	2	1	11	11900	26	0.2	1.31
1150.00	11411	26	8	3	2	16	11450	38	0.3	1.72
1175.00	27302	49	13	5	3	23	27372	70	0.3	1.91
1200.00	17674	41	8	2	1	11	17726	52	0.3	1.20
1225.00	15480	53	6	1	1	5	15540	60	0.4	0.71
1250.00	33275	212	11		1	3	33498	224	0.7	0.30
1275.00	44068	541	10		1	4	44620	552	1.2	0.38
1300.00	77589	822	11		1	2	78423	834	1.1	0.54
1450.00	33893	90	1			2	33984	91	0.3	0.26
1475.00	71099	152	9	2	4	74	71267	168	0.2	0.52
1500.00	67636	144	7		2	25	67789	154	0.2	0.11

Table 2d: Isotope GC Analysis of Headspace Gas for well NOCS 6507/3-2

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2	C3	iC4	nC4	C5	CO2	D	Sample
1175.00	cut	bulk	-69.3	-31.5	-	-	-	-	-	-	0011-0B
1475.00	cut	bulk	-67.5	-30.6	-	-	-	-	-	-	0034-0B

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Table 3: Lithology description for well NOCS 6507/3-2

Depth unit of measure: m

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age	Trb	Sample	Lithology description
1009.00	swc							0001	
		0.39	100	Sh/Clst				0001-1L	
1025.00								0002	
			70	Sh/Clst				0002-1L	m gy to ol gy, slt, s, mic
			30	S/Sst				0002-2L	w, mic, f, crs
			tr	Cont				0002-3L	cem, prp
			tr	Ca				0002-4L	w, fos
1050.00								0003	
			70	Sh/Clst				0003-1L	m gy to ol gy, slt, s, mic
			30	S/Sst				0003-2L	w, mic, f, crs
			tr	Ca				0003-3L	w, fos
1072.00	swc							0004	
		0.64	100	Sh/Clst				0004-1L	
1075.00								0005	
			50	Sh/Clst				0005-1L	m gy to ol gy, slt, s, mic
			50	S/Sst				0005-2L	w, mic, f, crs
			tr	Ca				0005-3L	w, fos
1100.00								0006	
			80	Sh/Clst				0006-1L	m gy to ol gy, slt, s, mic
			20	S/Sst				0006-2L	w, mic, f, crs
			tr	Ca				0006-3L	w, fos
1122.00	swc							0008	
		1.13	100	Sh/Clst				0008-1L	

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Table 3: Lithology description for well NOCS 6507/3-2

Depth unit of measure: m

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age	Trb	Sample	Lithology description
1125.00								0007	
			65	Sh/Clst				0007-1L	m gy to ol gy, slt, s, mic
			35	S/Sst				0007-2L	w, f, crs
			tr	Ca				0007-3L	w, fos
1150.00								0009	
			65	Sh/Clst				0009-1L	m gy to ol gy, slt, s, mic
			35	S/Sst				0009-2L	w, f, crs
			tr	Ca				0009-3L	w, fos
1167.00	swc							0010	
		0.73	100	Sh/Clst				0010-1L	
1175.00								0011	
			75	Sh/Clst				0011-1L	m gy to ol gy, slt
			25	S/Sst				0011-2L	w, slt, mic
1200.00								0012	
			100	Sh/Clst				0012-1L	m drk gy to ol gy, slt
			tr	S/Sst				0012-2L	w, slt, mic
1203.00	swc							0013	
		0.46	100	Sh/Clst				0013-1L	
1222.00	swc							0014	
		1.56	100	Sh/Clst				0014-1L	
1225.00								0015	
			90	Sh/Clst				0015-1L	m drk gy to ol gy, brn gy, slt, mic
			10	S/Sst				0015-2L	w

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Table 3: Lithology description for well NOCS 6507/3-2

Depth unit of measure: m

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age	Lithology description	Trb	Sample
1230.16		ccp							0017
		3.27	100	Sh/Clst					0017-1L
1231.42		ccp							0018
		0.35	100	Sh/Clst			: slt		0018-1L
1232.86		ccp							0019
		0.86	100	S/Sst			: cly, lam		0019-1L
1250.00									0016
			85	S/Sst			: w, mic, f		0016-1L
			10	Sh/Clst			: m drk gy to brn gy		0016-2L
		23.50	5	Coal			: brn blk to blk, cly		0016-3L
1275.00									0020
			90	S/Sst			: w, pyr, mic, f		0020-1L
			5	Sh/Clst			: m drk gy to brn gy		0020-2L
		51.80	5	Coal			: brn blk to blk, cly		0020-3L
1295.00		swc							0022
		8.31	100	S/Sst			: w, carb		0022-1L
1300.00									0021
			95	S/Sst			: w, carb, mic, f		0021-1L
			5	Coal			: brn blk to blk, cly		0021-2L
1325.00									0023
			95	S/Sst			: w, carb, mic, f		0023-1L
		53.40	5	Coal			: brn blk to blk, cly		0023-2L

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Table 3: Lithology description for well NOCS 6507/3-2

Depth unit of measure: m

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age	Lithology description	Trb	Sample
1358.00		swc							0024
		0.57	100	Sltst					0024-1L
1375.00									0025
			90	S/Sst			: w, mic, f		0025-1L
			10	Coal			: brn blk to blk		0025-2L
1400.00									0026
			90	S/Sst			: w, mic, f		0026-1L
			10	Coal			: brn blk to blk		0026-2L
1403.02		ccp							0027
			100	S/Sst					0027-1L
1404.99		ccp							0047
			100	S/Sst			: w, carb, f		0047-1L
1405.72		ccp							0028
		16.80	100	Sh/Clst					0028-1L
1406.84		ccp							0029
		32.70	100	Sh/Clst					0029-1L
1409.83		ccp							0030
			100	S/Sst					0030-1L
1425.00									0031
			85	S/Sst			: w, mic, f		0031-1L
		57.60	15	Coal			: brn blk to blk		0031-2L

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Table 3: Lithology description for well NOCS 6507/3-2

Depth unit of measure: m

Depth Int	Type Cvd	TOC%	%	Grp	Frm	Age	Trb	Sample	Lithology description
1450.00								0032	
			95	S/Sst				0032-1L	: w, mic, f
			5	Coal				0032-2L	: brn blk to blk
1467.00	swc							0033	
		4.96	100	Sh/Clst				0033-1L	: carb
1475.00								0034	
			100	S/Sst				0034-1L	: w, mic, f
			tr	Coal				0034-2L	: brn blk to blk
1489.00	swc							0035	
		0.31	100	Sh/Clst				0035-1L	
1500.00								0036	
			85	S/Sst				0036-1L	: w, mic, f
			15	Coal				0036-2L	: brn blk to blk, cly
1557.00	swc							0037	
		1.25	100	Sh/Clst				0037-1L	
1600.00								0038	
			95	S/Sst				0038-1L	: w, f, crs
		48.65	5	Coal				0038-2L	: brn blk to blk, cly
1650.00								0039	
			95	S/Sst				0039-1L	: w, f, crs
			5	Coal				0039-2L	: brn blk to blk, cly
			tr	Sh/Clst				0039-3L	: m gy

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Table 3: Lithology description for well NOCS 6507/3-2

Depth unit of measure: m

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age	Trb	Sample	Lithology description
1700.00								0040	
			95	S/Sst				0040-1L	: w, f, crs
		48.30	5	Coal				0040-2L	: brn blk to blk, cly
			tr	Sh/Clst				0040-3L	: m gy
1756.00		swc						0041	
		1.35	100	Sh/Clst				0041-1L	
1803.00		swc						0042	
		0.41	100	Sh/Clst				0042-1L	
1873.00		swc						0043	
		0.24	100	Sh/Clst				0043-1L	: slt
1925.00								0044	
			70	S/Sst				0044-1L	: w, f, crs
			15	Sh/Clst				0044-2L	: m gy to m drk gy
			10	Ca				0044-3L	: m gy to brn gy, w, s
			5	Sh/Clst				0044-4L	: brn gy to dsk y brn, calc
			tr	Coal				0044-5L	: blk
1949.50		swc						0045	
		0.96	100	Sh/Clst				0045-1L	: slt
2019.50		swc						0046	
		0.15	100	Sh/Clst				0046-1L	

Table 4 : Thermal Maturity Data for well NOCS 6507/3-2

Depth unit of measure: m

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation (%)	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
1025.00	cut	Sh/Clst: m gy to ol gy	0.19	4	0.04	-	-	-	0002-1L
1100.00	cut	Sh/Clst: m gy to ol gy	0.22	23	0.03	-	-	-	0006-1L
1122.00	swc	Sh/Clst	0.20	19	0.03	-	-	372	0008-1L
1175.00	cut	Sh/Clst: m gy to ol gy	0.24	16	0.03	-	-	-	0011-1L
1203.00	swc	Sh/Clst	0.27	20	0.04	-	-	418	0013-1L
1222.00	swc	Sh/Clst	0.28	22	0.04	-	-	432	0014-1L
1230.16	ccp	Sh/Clst	0.29	19	0.03	-	-	423	0017-1L
1295.00	swc	S/Sst : w	0.27	25	0.04	-	-	373	0022-1L
1300.00	cut	Coal : brn blk to blk	0.29	21	0.05	-	-	-	0021-2L
1325.00	cut	Coal : brn blk to blk	0.28	24	0.01	-	-	381	0023-2L
1358.00	swc	Sltst	0.30	22	0.04	-	-	363	0024-1L
1405.72	ccp	Sh/Clst	0.31	26	0.05	-	-	411	0028-1L
1406.84	ccp	Sh/Clst	0.32	23	0.02	-	-	413	0029-1L
1467.00	swc	Sh/Clst	0.33	23	0.02	-	-	415	0033-1L
1557.00	swc	Sh/Clst	0.32	24	0.05	-	-	418	0037-1L

Table 4 : Thermal Maturity Data for well NOCS 6507/3-2

Depth unit of measure: m

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation (%)	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
1650.00	cut	Coal : brn blk to blk	0.34	22	0.04	-	-	-	0039-2L
1803.00	swc	Sh/Clst	0.32	22	0.03	-	-	403	0042-1L
1873.00	swc	Sh/Clst	NDP	-	-	-	-	433	0043-1L
2019.50	swc	Sh/Clst	NDP	-	-	-	-	465	0046-1L

Table 5A: Rock-Eval table for well NOCS 6507/3-2

Depth unit of measure: m

Depth	Typ	Form	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1009.00	swc		Sh/Clst	0.18	0.57	0.93	0.61	0.39	146	238	0.8	0.24	362	0001-1L
1072.00	swc		Sh/Clst	0.81	3.75	2.13	1.76	0.64	586	333	4.6	0.18	371	0004-1L
1122.00	swc		Sh/Clst	0.62	3.84	2.20	1.75	1.13	340	195	4.5	0.14	372	0008-1L
1167.00	swc		Sh/Clst	0.28	1.57	2.15	0.73	0.73	215	295	1.9	0.15	366	0010-1L
1203.00	swc		Sh/Clst	0.13	0.92	0.65	1.42	0.46	200	141	1.1	0.12	418	0013-1L
1222.00	swc		Sh/Clst	0.17	1.73	0.87	1.99	1.56	111	56	1.9	0.09	432	0014-1L
1230.16	ccp		Sh/Clst	8.18	2.92	2.42	1.21	3.27	89	74	11.1	0.74	423	0017-1L
1231.42	ccp		Sh/Clst	0.17	1.19	3.43	0.35	0.35	340	980	1.4	0.13	471	0018-1L
1232.86	ccp		S/Sst	0.22	1.32	1.55	0.85	0.86	153	180	1.5	0.14	417	0019-1L
1250.00	cut		Coal : brn blk to blk	0.65	18.85	10.32	1.83	23.50	80	44	19.5	0.03	386	0016-3L
1275.00	cut		Coal : brn blk to blk	3.39	60.35	17.32	3.48	51.80	117	33	63.7	0.05	399	0020-3L
1295.00	swc		S/Sst : w	1.27	11.34	4.96	2.29	8.31	136	60	12.6	0.10	373	0022-1L
1325.00	cut		Coal : brn blk to blk	3.47	76.23	16.95	4.50	53.40	143	32	79.7	0.04	381	0023-2L
1358.00	swc		Sltst	0.25	2.42	1.13	2.14	0.57	425	198	2.7	0.09	363	0024-1L
1403.02	ccp		S/Sst	0.43	0.57	0.82	0.70	-	-	-	1.0	0.43	353	0027-1L
1404.99	ccp		S/Sst : w	0.21	0.80	1.03	0.78	-	-	-	1.0	0.21	354	0047-1L

Table 5A: Rock-Eval table for well NOCS 6507/3-2

Depth unit of measure: m

Depth	Typ	Form	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1405.72	ccp		Sh/Clst	0.35	12.53	4.29	2.92	16.80	75	26	12.9	0.03	411	0028-1L
1406.84	ccp		Sh/Clst	1.98	73.61	8.59	8.57	32.70	225	26	75.6	0.03	413	0029-1L
1409.83	ccp		S/Sst	0.11	1.53	0.57	2.68	-	-	-	1.6	0.07	466	0030-1L
1425.00	cut		Coal : brn blk to blk	5.40	80.49	16.39	4.91	57.60	140	28	85.9	0.06	383	0031-2L
1467.00	swc		Sh/Clst	0.38	5.74	1.97	2.91	4.96	116	40	6.1	0.06	415	0033-1L
1489.00	swc		Sh/Clst	0.17	0.90	0.19	4.74	0.31	290	61	1.1	0.16	462	0035-1L
1557.00	swc		Sh/Clst	0.37	2.03	0.38	5.34	1.25	162	30	2.4	0.15	418	0037-1L
1600.00	cut		Coal : brn blk to blk	6.22	79.62	13.20	6.03	48.65	164	27	85.8	0.07	403	0038-2L
1700.00	cut		Coal : brn blk to blk	2.04	59.38	14.89	3.99	48.30	123	31	61.4	0.03	412	0040-2L
1756.00	swc		Sh/Clst	0.27	1.99	0.36	5.53	1.35	147	27	2.3	0.12	439	0041-1L
1803.00	swc		Sh/Clst	0.50	1.94	0.46	4.22	0.41	473	112	2.4	0.20	403	0042-1L
1873.00	swc		Sh/Clst	0.19	1.14	0.21	5.43	0.24	475	88	1.3	0.14	433	0043-1L
1925.00	com		bulk	0.40	2.40	1.16	2.07	1.27	189	91	2.8	0.14	367	0048-0B
1949.50	swc		Sh/Clst	0.22	2.76	1.25	2.21	0.96	288	130	3.0	0.07	374	0045-1L
2019.50	swc		Sh/Clst	0.05	0.59	0.11	5.36	0.15	393	73	0.6	0.08	465	0046-1L

Table 5A: Rock-Eval table for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Form	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1200.00	mud		bulk	9.50	42.00	17.62	2.38	-	-	-	51.5	0.18	351	0001-0B
1300.00	mud		bulk	9.83	25.39	14.72	1.72	-	-	-	35.2	0.28	349	0002-0B
1400.00	mud		bulk	12.05	28.29	15.86	1.78	-	-	-	40.3	0.30	351	0003-0B

Table 5B: Rock-Eval table for well RE,STD

Depth unit of measure: m

Depth	Typ	Form	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1.00	std		bulk	0.49	19.33	1.85	10.45	-	-	-	19.8	0.02	423	0158-0B
2.00	std		bulk	0.47	18.93	1.92	9.86	-	-	-	19.4	0.02	418	0159-0B

Table 8a: MPLC Bulk Composition: Weight of EOM and Fraction for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC(e) (%)	Sample
1100.00	mud	bulk	-	463.0	1.5	1.5	449.8	10.2	2.9	460.1	-	0004-0B
1200.00	mud	bulk	-	466.8	5.6	1.4	451.5	8.4	7.0	459.8	-	0001-0B
1300.00	mud	bulk	-	57.2	0.2	0.1	56.6	0.2	0.4	56.8	-	0002-0B
1400.00	mud	bulk	-	56.0	0.1	0.1	55.6	0.1	0.3	55.7	-	0003-0B

Table 8b: MPLC Bulk Composition: Concentration of EOM and Fraction (wt ppm rock) for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
1100.00	mud	bulk	-	-	-	-	-	-	-	0004-0B
1200.00	mud	bulk	-	-	-	-	-	-	-	0001-0B
1300.00	mud	bulk	-	-	-	-	-	-	-	0002-0B
1400.00	mud	bulk	-	-	-	-	-	-	-	0003-0B

Table 8c: MPLC Bulk Composition: Concentration of EOM and Fraction (mg/g TOC(e)) for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
1100.00	mud	bulk	-	-	-	-	-	-	-	0004-0B
1200.00	mud	bulk	-	-	-	-	-	-	-	0001-0B
1300.00	mud	bulk	-	-	-	-	-	-	-	0002-0B
1400.00	mud	bulk	-	-	-	-	-	-	-	0003-0B

Table 8d: MPLC Bulk Composition: Material extracted from the rock (%) for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	Total	HC	Non-HC	Recov. MPLC	Recov. Asph	Sample
1100.00	mud	bulk	0.32	0.32	97.16	2.21	100.00	0.63	99.37	-	0.97	0004-0B
1200.00	mud	bulk	1.19	0.30	96.72	1.79	100.00	1.49	98.51	-	0.97	0001-0B
1300.00	mud	bulk	0.42	0.21	98.95	0.42	100.00	0.63	99.37	-	0.99	0002-0B
1400.00	mud	bulk	0.24	0.24	99.29	0.24	100.00	0.48	99.52	-	0.99	0003-0B

Table 8e: MPLC Bulk Composition: Ratios for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	Sat / Aro	HC / Non-HC	Asp / NSO	Sample
1100.00	mud	bulk	1.00	0.01	43.91	0004-0B
1200.00	mud	bulk	4.00	0.02	54.06	0001-0B
1300.00	mud	bulk	2.00	0.01	235.83	0002-0B
1400.00	mud	bulk	1.00	0.00	417.00	0003-0B

Table 8F: Iatroscan TLC Bulk Composition: Absolute yields in mg of EOM for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	Rock ex	EOM	Sat HC	Aro HC	NSO	Asp	HC	Non-HC	Sample
1200.00	mud	bulk	1.00	407.60	44.41	0.00	90.29	272.90	44.41	363.19	0001-0B
1300.00	mud	bulk	1.00	390.30	75.37	3.24	55.69	256.00	78.61	311.69	0002-0B
1400.00	mud	bulk	1.00	376.90	144.41	9.90	38.59	184.00	154.31	222.59	0003-0B

Table 8G: Iatroscan TLC Bulk Composition: Rel. percentages of sep. fractions for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	Sat HC	Aro HC	NSO	Asp	Total	HC	Non-HC	Recov. Iatr.	Recov. Asp	Sample
1200.00	mud	bulk	10.90	-	22.15	66.95	100.00	10.90	89.10	0.12	0.67	0001-0B
1300.00	mud	bulk	19.31	0.83	14.27	65.59	100.00	20.14	79.86	0.19	0.66	0002-0B
1400.00	mud	bulk	38.31	2.63	10.24	48.82	100.00	40.94	59.06	0.14	0.49	0003-0B

Table 9B: Saturated Hydrocarbon Ratios (peak area) for well NOCS 6507/3-2 MUDS

Depth unit of measure: m

Depth	Typ	Lithology	Pristane / nC17	Pristane / Phytane	Pristane/nC17 / Phytane/nC18	Phytane / nC18	CPI1	nC17 / nC17+nC27	Sample
1100.00	mud	bulk	-	-	-	-	-	-	0004-0B
1200.00	mud	bulk	0.57	0.32	1.39	0.41	-	1.00	0001-0B
1300.00	mud	bulk	0.61	0.52	1.05	0.58	-	1.00	0002-0B
1400.00	mud	bulk	0.97	0.46	1.58	0.61	-	1.00	0003-0B

Table 15A: Volume Composition of Gas Samples from well NOCS 6507/3-2 GAS

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2	C3	iC4	nC4	iC5	nC5	CO2	sum C1-C5	wet-ness	iC4/nC4	Sample
1207.00	gas	bulk	0.04	-	-	-	-	-	-	-	0.0	0.00	-	0001-0B

Table 15B: Isotopic Composition of Gas Samples from well NOCS 6507/3-2 GAS

Depth unit of measure: m

Depth	Typ	Lithology	C1 d13C	C1 dD	C2 d13C	C3 d13C	iC4 d13C	nC4 d13C	CO2 d13C	CO2 d18O	Sample
1207.00	gas	bulk	-66.0	-	-	-	-	-	-14.2	-	0001-0B

	KJELLER	HALDEN
Address	N-2007 Kjeller, Norway	N-1751 Halden, Norway
Telephone	+47 63 80 60 00	+47 69 18 31 00
Telex	76 361 Isotp n	76 335 energ n
Telefax	+47 63 81 11 68	

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1 Introduction

This report gives the result of routine vitrinite reflectance analyses on 19 samples covering the interval from 1000 to 2019.5 mRKB in well 6507/3-2 offshore Norway.

2 Material

2.1 Samples

The material was provided from the client as 10 side wall cores, 6 washed and dried cuttings samples and 3 core chips.

2.2 Geological information and casing points

Information on stratigraphy in well 6507/3-2 was not provided from the client.

3 Analytical techniques

3.1 Preparation

The cuttings samples were washed and then treated with hydrochloric and hydrofluoric acid prior to further preparation. The aim was to avoid soft and expanding mineral phases in order to ensure good polishing quality. The sample material resulting from the acid treatment was embedded in an epoxy resin to make briquettes, ground flat and polished using 0.25 micron diamond paste and magnesium oxide as the two final steps

3.2 Analysis

The analytical equipment being used was a Zeiss MPM 03 photometer microscope equipped with an Epiplan-Neofluar 40/0.90 oil objective. The sensitive measuring spot

was kept constant for all measurements at about 2.5 micron in diameter. The measurements were made through a green band pass filter (546 nm) and in oil immersion (refractive index 1.515 at 18°C). The readings were made without a polarizer and using a stationary stage. This procedure is called measurement of random reflectance (%Rm). The photometer is calibrated daily against a standard of known reflectance (%Rm= 0.588) and routinely (daily) checked against two other standards of significant different reflectances (%Rm=0.879 and 1.696). A deviation from these values of less than ±0.01 and ±0.02 respectively is considered as acceptable. The calibration is routinely checked during the course of measurements at least every hour, and a deviation of less than ±0.005 is considered as acceptable.

For each sample at least 20 points were measured if possible, and quality ratings are given to various important aspects which may affect the measurements. These aspects are abundance of vitrinite, uncertainties in the identification of indigenous vitrinite, type of vitrinite, particle size, particle surface quality and abundance of pyrite.

3.3 Presentation of results

The raw data from the measurements are presented in appendix for each sample both as tabulated data and histograms. A true vitrinite population is selected among the readings based on observations made during the measurements, and arithmetic mean values are calculated for this population and other populations. A quality rating is given to the true population. The results are listed in table 1. Figure 1 shows a vitrinite reflectance data versus depth plot in both linear and logarithmic scale.

4 Results

The samples were of generally good quality, and it has been possible to establish a fairly good vitrinite reflectance versus depth trend for well 6507/3-2.

Table 1. Vitrinite reflectance data table

Analysis type:	Vitrinite reflectance
Well:	6507/3-2
Number of samples:	19
Time period for analysis:	sep-97
Analysis performed by:	Kristine Aasgaard, Institutt for energiteknikk
Analysis ordered by:	Geolab Nor

IFE sample code	Depth (m)	Sample type	Lithology	Vitr. refl. (%Rm)	Stand. dev.	Number of readings	Sample description	Sample quality	Sample prep.
970700	1000-1025	cut	clst	0.19	0.04	4	-oo--o	P	HF
970701	1075-1100	cut	clst	0.22	0.03	23	ooo-oo	M	HF
970702	1122	swc	clst/sst	0.20	0.03	19	ooo--o	M	HF
970703	1150-1175	cut	clst	0.24	0.03	16	ooo--o	M	HF
970704	1203	swc	clst	0.27	0.04	20	ooo-oo	M	HF
970705	1222	swc	clst/slst	0.28	0.04	22	ooo-oo	M	HF
970706	1230.14-16	core	clst	0.29	0.03	19	oooo-o	M	bulk
970707	1275-1300	cut	clst/coal	0.27	0.04	25	oooooo	G	HF
970708	1295	swc	sst	0.29	0.05	21	oooooo	G	HF
970709	1300-1325	cut	clst/coal	0.28	0.01	24	oooooo	G	HF
970710	1358	swc	clst/slst	0.30	0.04	22	ooo--o	M	HF
970711	1405.71-72	core	clst	0.31	0.05	26	oo±-oo	M	bulk
970712	1406.83-84	core	coal/clst	0.32	0.02	23	oooooo	G	bulk
970713	1467	swc	clst	0.33	0.02	23	oooooo	G	HF
970714	1557	swc	clst/slst	0.32	0.05	24	ooo--o	M	HF
970715	1625-1650	cut	coal/clst	0.34	0.04	22	ooo--+	M	HF
970716	1803	swc	clst/sst	0.32	0.03	22	ooooo+	G	HF
970717	1873	swc	clst/slst	barren					Hf
970718	2019.5	swc	sst/slst	barren					HF

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Statoil well 6507/3-2, G97-18

1 Introduction

One gas sample from well 6507/3-2 is analysed for gas and isotopic composition.

The $\delta^{13}C$ value is measured only on methane and CO_2 due to low concentration of other hydrocarbon gas components. Due to low methane concentration no hydrogen isotopes are determined.

2 Analytical procedures

1.0 ml of the gas sample is sampled with a syringe for analysis on a Poraplot Q column connected with flame ionisation (FID) and thermal conductivity (TCD) detectors. The detection limit for the hydrocarbon gas components is 0.01 µl/ml and for CO_2 0.2 µl/ml.

Due to low hydrocarbon concentration aliquots are sampled with a syringe and analysed on a VG Isochrom connected on line to a VG Optima Mass spectrometer. A HP 5890 II with a Poraplot Q column is used for the separation and helium is used as a carrier gas. The injections are performed either in splitless or in split mode depending on the hydrocarbon concentrations. No hydrogen or oxygen isotopic composition is included in the analytical procedure.

Based on repeated analysis of a laboratory standard gas mixture, the reproducibility in the $\delta^{13}C$ value is better than 0.5‰ PDB.

3 Results

The gas composition is shown in Table 1 and the stable isotope composition is shown in Table 2.

Table 1 Volume composition of a gas sample from well 6507/3-2

Sample	IFE no GEO	C_1 µl/ml	C_2 µl/ml	C_3 µl/ml	iC_4 µl/ml	nC_4 µl/ml	iC_5 µl/ml	nC_5 µl/ml	CO_2 µl/ml
6507/3-2	970552	0.36	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2

Table 2 Isotopic composition of a gas sample from well 6507/3-2

Sample	IFE no GEO	C_1 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{13}C$ ‰ PDB
6507/3-2	970552	-66.0	-14.2