

### 6.3 Mud report

36" hole, 30" csg.: A 17-1/2" pilot hole was drilled to 330 m using seawater and high viscous pills. The hole was then opened to 36" and reamed with a 36" stabilized assembly. Due to fill on bottom the hole was displaced to 1.70 rd mud before the 30" casing was run.

Materials used in this section were:

Barite, Bentonite, Caustic Soda, Soda Ash and Lime.

26" hole, 20" csg.: The 17-1/2" pilot hole was drilled to 622 m using a seawater/Bentonite system added small amounts of polymers and viscofires. The hole was displaced to 1.14 rd mud before logging. The hole was then underreamed to 26". Due to high gas readings the hole was displaced to 1.32 rd mud which gave loss to the formations. The mud weight was then reduced to 1.14 rd to regain circulation and a lost circulation material pill was spotted. The mud weight was increased to 1.21 rd and the riser dump valve opened. Due to indications of influx the riser was displaced to mud. The mudweight was reduced to 1.14 rd and the well plugged back to 538 m. The mudweight was then increased to 1.30 rd before the riser was pulled. The 20" casing was set with the shoe at 532 m.

Materials used in this section were:

Barite, Bentonite, Caustic Soda, Soda Ash, Celpol Reg, XC-polymer, SAAP, Nut Plug, Mica, Spersene, AL-Stearate, Drilling detergent and Magcolube.

17-1/2" hole, 13-3/8" csg.: The 17-1/2" hole was drilled to 1269 m using a KCL, low ph, polymer system. The mudweight was reduced to 1.17 rd before the casing was drilled . The KCL concentration was held at 45 lbs/bbl. When tripping at 1117 m the pipe got stuck at 945 m. After working the drill string free the KCL concentration was reduced to 30 lbs/bbl to stop dehydration of the formation. The mud weight was increased to 1.25 rd prior to logging due to tight hole on the wiper trip. The 13-3/8" casing was set with the shoe at 1254 m.

Materials used in this section were:  
Barite, Caustic, Celpol Reg., Celpol SL, XC-Polymer, SAAP, Spersene, Magcolube and KCL.

12-1/4" hole, 9-5/8" csg.: The 12-1/4" hole was drilled to 2517 m using the same mud system. During drilling the cuttings became more sticky and drag on connections were experienced. The KCL concentration was therefore increased which cured the hole problems. The mud weight was increased to 1.30 rd at 1650 m.

Materials used in this section were:  
Barite, Caustic, Celpol Reg., Celpol SL, XC-Polymer, KCL, SAAP, Spersene, Drispac Reg., Drispac SL and Bentonite.

8-3/8" hole:

The 8-3/8" hole was drilled to 3167 m after increasing the mudweight to 1.37 rd before the casing was drilled out. The mud was converted to a dispersed gel system allowing natural depletion of the KCL. The mud was treated with chemicals to control gel due to fine solid build up, especially in sections drilled with turbine. One wiper trip was made prior to logging due to a bridge at 3114 m.

Materials used in this section were:

Barite, Bentonite, Caustic, Drispac Reg., Spersene, XP-20, XCD-Polymer, Lime, SAPP, Magcolube, Soda Ash, CMC LV and Magconol.

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# DAILY MUD PROPERTIES

Well: 7119/7-1

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83	DATE	DEPTH	WT.	VIS SEC.	CORR. 115°F PV	GELS Pa 6 10	pH	FLUID LOSS 100 PSI API	CL	K1	ALKALINITY			RETORT			V.G. METER READING @ 115°						BLM	KCl ppB			
											PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	600 RPM	300 RPM	200 RPM	100 RPM	6 RPM			3 RPM	CEC	
	12.07	267	1.09	100																							
	13.07	330	1.09	100																							
	14.07	330	1.09	100																							
	15.07	330	1.09	100																							
	16.07	330	1.68	70																							
	17.07	333	1.68	60																							
	17.07	333	1.09	60																							
	18.07	402	1.09	55																							
	19.07	622	1.14	56																							
	20.07	436/622	1.14	62																							
	21.07	622	1.33	58																							
	22.07	622	1.21	48																							
	23.07	538	1.30	57																							
	24.07	538	1.30	54																							
	25.07	538	-	-																							
	26.07	-	1.10	58	19	11	1	2	9.0	6.0	-	67000	.1	.5	.4	200	-	-	-	60	41	33	21	2	1		48
	27.07	830	1.17	51	15	7.5	1	2	9.5	6.2	-	62000	.15	.7	.5	600	-	10	90	45	30	23	14	2	1	10	45
	28.07	1117	1.17	50	15	9.5	1.5	2.5	9.0	7.0	-	65000	.2	1.0	.5	720	-	9	91	49	34	27	18	4	2	10	42
	29.07	1192	1.17	50	14	10	1.5	2	9.1	7.0	-	51000	.1	.6	.5	620	-	9	91	48	34	26	18	3	2	11	31
	30.07	1265	1.25	51	17	1.5	2	3	8.7	6.8	-	51000	TR	.5	.3	540	-	11	89	57	40	32	22	5	3	12	30
	31.07	1269	1.25	53	15	11	2	3.5	8.3	7.0	-	51000	TR	.3	.3	620	-	11	89	52	37	31	21	5	3	13	30
	01.08	1269	1.20	55	14	1.5	2	3	8.3	6.0	-	50000	TR	.3	.2	680	-	12	88	49	35	29	20	5	3	13	29
1/4	02.08	1269	1.25	45	14	9.5	1.5	5	10.8	9.2	-	50000	.3	2.2	.7	400	-	12	88	47	33	26	18	4	3	13	28
	03.08	1425	1.25	47	14	8	1	4	10.5	6.8	-	57000	.3	2.1	.5	340	-	12	88	44	30	23	16	3	2	16	32
	04.08	1655	1.30	53	19	10	2	4.5	10.0	6.2	-	73000	.15	1.9	.4	540	-	14	86	57	39	29	19	3	2	20	46
	05.08	1760	1.30	50	19	9	1	5	9.8	6.5	-	80000	.1	.9	.4	560	-	14	86	57	38	29	18	3	2	22	49
	06.08	1810	1.30	47	17	8.5	2	6	9.0	6.5	-	81000	.1	.5	.35	560	-	14	86	51	34	27	18	3	2	22	47
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TABLE B-5

# DAILY MUD PROPERTIES

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83 DATE	DEPTH	WT.	VIS LLT SEC	CORR. 115°F		GELS Pa 0 10	pH	FLUID LOSS		CL <input checked="" type="checkbox"/> CACL <input type="checkbox"/> MACL <input type="checkbox"/>	ALKALINITY				RETORT			V.G. METER READING @ 115°						Bbl CEC	KCl ppB
				PV	Pa YP			DECK <input checked="" type="checkbox"/> STRIP <input type="checkbox"/>	100 PSI API		500 PSI 300°F HT HP	PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	600 RPM	300 RPM	200 RPM	100 RPM	6 RPM		
07.08	1926	1.30	46	16	7.5	1 7	9.0	5.4	-	79K	.1	.5	.2	480	-	14	86	47	31	21	16	3	2	19	48
08.08	2030	1.30	47	14	7	1 9	9.7	5.6	-	79K	.1	.4	.25	320	-	13	87	42	28	21	15	3	2	20	48
09.08	2064	1.30	47	14	6.5	1 7.5	9.2	5.4	-	78K	.1	.35	.3	360	-	13	87	41	27	21	15	3	2	20	47
10.08	2132	1.30	46	14	6.4	1 9.5	9.4	5.6	-	76K	.1	.35	.3	280	-	14	86	41	27	21	14	3	2	20	45
11.08	2147	1.30	47	14	7	1 7	9.3	5.2	-	74K	.1	.3	.3	240	-	14	86	42	28	21	15	3	2	19	44
12.08	2240	1.30	47	15	9	2 9.5	8.7	5.9	-	72K	.05	.3	.15	280	-	14	86	48	33	25	18	4	3	19	42
13.08	2261	1.30	44	15	7.5	2 7	9.3	5.3	-	68K	.1	.35	.3	240	-	13	87	45	30	24	15	3	2	19	41
14.08	2360	1.30	44	17	8	1 8	8.0	5.5	-	64K	.1	.1	.15	280	-	14	86	51	34	27	18	4	3	18	41
15.08	2370	1.30	42	15	6.5	1 6	8.2	7.0	-	56K	.05	.2	.15	240	-	13	87	43	28	23	15	3	2	17	40
16.08	2417	1.30	42	16	8	1 6.5	8.6	5.8	-	53K	.1	.3	.2	200	-	14	86	48	32	26	17	4	3	17	38
17.08	2517	1.30	41	16	8.5	1 5	9.4	5.6	17.5	50K	0	.15	.1	280	-	14	86	49	33	27	17	4	3	17	33
18.08	2517	1.30	44	16	8.5	1 5	9.3	5.6	17.5	47K	0	.15	.1	280	-	14	86	49	33	27	17	4	3	17	33
19.08	2517	1.31	42	16	8.5	1 5	9.3	5.6	17.5	47K	0	.15	.1	280	-	14	86	49	33	27	17	4	3	17	33
20.08	2517	1.31	46	16	8.3	1 5	9.3	5.6	17.5	47K	0	.15	.1	280	-	14	86	49	33	27	17	4	3	17	33
21.08	2517	1.31	42	14	7	1 7	8.6	5.7	17.8	47K	.05	.2	.1	280	-	14	86	42	28	20	13	3	2	17	33
22.08	2518	1.31	42	18	8	1 5	10.8	5.8	17.6	42K	.6	2.0	1.1	280	-	14	86	44	26	21	15	4	3	21	N/A
23.08	2564	1.37	44	16	7	1 9.5	10.4	5.9	17.8	42K	.4	1.8	1.0	280	-	16	84	46	30	24	17	4	3	21	N/A
24.08	2564	1.37	48	18	8	1 8.4	9.9	5.2	16.0	26K	.3	1.6	1.3	200	-	15	85	52	34	27	19	4	2	24	N/A
25.08	2673	1.37	47	16	7	2 10	9.9	5.4	16.5	29K	.3	1.6	1.3	280	-	17	83	46	30	25	18	4	3	19	N/A
26.08	2714	1.37	47	13	6.5	1 9	10.0	5.8	18.5	28K	.2	.8	.7	100	-	16	84	39	26	19	13	3	2	18	
27.08	2795	1.37	46	15	6.5	1 10	10.2	5.5	16.5	25K	.3	1.2	.8	240	-	16	84	43	28	21	14	3	2	19	
28.08	2826	1.37	45	15	5.5	1 8	10.0	5.4	16.0	23K	.25	1.0	.8	320	-	15	85	41	26	19	12	3	2	19	
29.08	2826	1.37	51	14	5.5	1 8	9.8	5.2	17.0	23K	.2	.8	.8	320	-	15	85	39	25	18	13	3	2	18	
30.08	2859	1.37	42	13	4.5	1 5	10.0	5.8	17.5	22K	.3	.9	.9	140	-	15	85	35	22	16	10	2	1	19	
31.08	2981	1.37	43	14	4.5	1 5	10.3	5.4	16.5	24K	.4	1.2	1.0	120	-	15	85	37	23	17	10	2	1	19	
01.09	3091	1.37	44	15	5.0	1 6	10.4	5.5	17.0	23K	.5	1.4	1.2	160	-	15	85	40	25	18	11	3	2	20	
02.09	3158	1.37	43	15	4.0	1 6	10.2	5.8	-	49K	.5	1.7	1.3	240	-	16	84	38	23	17	11	2	1	19	
03.09	3167	1.38	44	17	5.0	1 8	1.07	5.8	-	62K	1.7	3.4	3.6	100	-	17	83	44	27	20	12	3	2	18	

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COST

TABLE B-5

# DAILY MUD PROPERTIES

Well: 7119/7-1

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DATE	DEPTH	WT	VIS		CORR		GELS		pH	FLUID LOSS			CL	ALKALINITY				RETORT			V.G. METER READING @ 115°						bbl	CEC
			SEC	PV	YP	Pa	Pa	BECK STRIP		100 PSI API	500 PSI 300 °F HT HP	CACL		NAACL	PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	600 RPM	300 RPM	200 RPM	100 RPM	6 RPM		
04.09	3167	1.38	48	16	4.5	1	6	10.6	6.6	-		64K	1.6	3.3	3.6	100	-	17	83	41	25	19	12	3	2	18		
05.09	3167	1.40	40	13	4.0	1	5.5	9.8	7.6	-		65K	1.0	2.2	2.8	200	-	17	83	34	21	16	10	3	2	16		
06.09	3167	1.40	42	14	4.0	1	5	10.7	7.8	-		64K	1.05	4.4	2.6	100	-	17	83	36	22	16	9	3	2	17		
07.09	-	1.40	46	13	3.5	1	8	10.8	8.8	-		51K	1.1	7.8	2.3	120	-	17	83	33	20	15	9	2	1	18		
08.09	-	1.37	48																									

DATE SPUD

DATE TO

COST

# ORGANIC GEOCHEMICAL SCREENING ANALYSES 3

NOCS WELL 7119/7-1

U-380

NORSK HYDRO

80-6005-BA  
22 OKT. 1986  
**REGISTRERT**  
OLJEDIREKTORATET



**GEOLAB NOR**  
GEOCHEMICAL LABORATORIES OF NORWAY AS



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1. ALPHABETIC LIST OF ABBREVIATIONS  
USED IN LITHOLOGY DESCRIPTIONS
2. LITHOLOGY DESCRIPTIONS
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Alphanumeric list of abbreviations used in Lithology Descriptions:
 

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Abbreviation	Expansion
ang	ANGULAR
bar	BARYTE
bl	BLUE
blk	BLACK
br	BRITTLE
brn	BROWN
Ca	CARBONATE
calc	CALCAREOUS
carb	CARBONACEOUS
cem	CEMENT/CEMENTED
Chert	CHERT
chk	CHALKY
cly	SHALEY/CLAYEY
Coal	COAL
Coal-ad	COAL-LIKE ADDITIVE
Congl	CONGLOMERATE
Cont	CONTAMINANT
cngl	CONGLOMERATIC
crs	COARSE GRAINED
drk	DARK
dd	DRILLING MUD
dol	DOLOMITIC
dsk	DUSKY
evap	SALT/GYPSUM/HALITE
f	FINE GRAINED
fib	FIBRES
fis	FISSILE
fos	FOSSILIFEROUS
glauc	GLAUCONITIC/GLAUCONITE
gn	GREEN
gy	GREY
hd	HARD
ign	IGNEOUS
Kaolin	KAOLIN
kln	KAOLINITIC
l	LOOSE
lam	LAMINATED/LAMINAE
lt	LIGHT
m	MEDIUM
Marl	MARL
mrl	MARLY
m drk	MEDIUM DARK
m lt	MEDIUM LIGHT
mic	MICACEOUS
Mica-ad	MICA ADDITIVE
No Mat	NO MATERIAL
ns	NUTSHELLS
ol	OLIVE
ool	OOLIT/e/ic
or	ORANGE

Alphabetic list of abbreviations used in Lithology Descriptions:
 

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Abbreviation	Expansion
Other	OTHER
pi	PINK
pl	PALE
prp	PAINT/RUST/PLASTIC
pu	PURPLE
pyr	PYRITIC/PYRITE
red	RED
rnd	ROUND
s	SANDY
S/Sst	SANDSTONE/SAND
Sh/Clst	SHALE/CLAYSTONE
sid	SIDERITIC
sil	SILICEOUS/CHERTY
slt	SILTY
Sltst	SILTSTONE
st	STAINED
tar-ad	TAR LIKE ADDITIVE
tuf	TUFFACEOUS
Tuff	TUFF
v col	VARIOUS COLOURS
w	WHITE
wx	WAXY
y	YELLOW

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
1338.50	swc					001	
	0.85	100	Sh/Clst: lt gy to m gy, calc, carb, s, mic, glauc			001-1	
1352.00						002	
	1.19	95	Sh/Clst: lt gy to m gy, calc, pyr, slt, mic			002-1	
		5	Ca	:	w to gy	002-2	
		tr	Cont	:	prp	002-3	
1357.00						003	
	1.14	95	Sh/Clst: lt gy to m gy, calc, pyr, slt, mic			003-1	
		5	Ca	:	w to gy	003-2	
		tr	Cont	:	prp	003-3	
		tr	Other	:	pyr, glauc	003-4	
1360.00						004	
	0.94	90	Sh/Clst: lt gy to m gy, calc, pyr, slt, mic			004-1	
		10	Ca	:	w to gy	004-2	
		tr	Cont	:	prp	004-3	
		tr	Other	:	pyr, glauc	004-4	
1362.00						005	
	0.80	95	Sh/Clst: lt gy to m gy, calc, pyr, slt, mic			005-1	
		5	Ca	:	w to gy	005-2	
		tr	Cont	:	prp	005-3	
		tr	Other	:	pyr, glauc	005-4	

1 : Lithology description for well NOCS 7119/7-1

unit of measure: m

Type	Grp	Frm	Age	Trb	Sample	Depth
TOC%	%	Lithology description				
0.00					006	1
0.56	95	Sh/Clst: lt gy to m gy, calc, pyr, slt, s, mic, glauc			006-1	1-1
	5	Ca : w to gy			006-2	
		tr Cont : prp			006-3	
		tr Other : pyr, glauc			006-4	2
						2-1
0.00	swc				007	
	0.46	100	S/Sst : lt gy, carb, pyr, cly, mic, glauc, f		007-1	2-2
						2-3
0.00					008	3
0.52	100	Sh/Clst: lt gy to m gy, calc, pyr, slt, s, mic, glauc			008-1	3-1
		tr S/Sst : brn			008-2	3-2
		tr Ca : w			008-3	
		tr Cont : prp, dd			008-4	3-3
						3-4
0.00					009	4
0.52	100	Ca : w to lt gy, gn gy, carb, pyr, glauc			009-1	4-1
		tr Sh/Clst: lt gy to m gy, calc, pyr, slt, s, mic, glauc			009-2	4-2
0.00					010	.5
0.52	100	Ca : w to lt gy, gn gy, carb, pyr, glauc			010-1	.5-1
		tr Cont : dd			010-2	.5-2
						16
						16-1
						16-2

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1470.00						017
	0.59	90	Sh/Clst:	lt gy, calc		017-1
		10	Ca	: w, lt gy, cly		017-2
1485.00						018
	0.53	100	Ca	: lt gy, pyr, cly		018-1
1502.50	swc					019
		100	S/Sst	: gy, lt gy, lt brn, m gy, carb, pyr, cly, mic, glauc, f, crs		019-1
1507.00						021
	0.51	90	Sh/Clst:	lt gy, calc, carb, pyr, mic		021-1
		10	Ca	: lt gy, cly		021-2
		tr	Cont	: prp		021-3
1510.00						020
	0.48	80	Sh/Clst:	lt gy to m gy, calc, pyr, mic		020-1
		20	Ca	: lt gy, cly		020-2
		tr	Cont	: dd		020-3
1512.00						022
	0.36	90	Sh/Clst:	lt gy to m gy, calc		022-1
		10	Ca	: lt gy		022-2
		tr	Sltst	: brn		022-3
		tr	Cont	: dd		022-4

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1513.00	swc					023
	0.47	100		Sh/Clst: gn gy, ol gy, lt gy to m gy, carb, pyr, slt, mic, glauc		023-1
1515.00						024
	0.41	90		Sh/Clst: lt gy to m gy, m drk gy, carb, pyr, mic		024-1
		10	Ca	: w, lt gy		024-2
		tr	Cont	: prp, dd		024-3
1525.00						025
	0.41	95		Sh/Clst: lt gy to m gy, calc, pyr, mic, glauc		025-1
		5	Cont	: dd		025-2
1537.00						026
	0.35	90		Sh/Clst: lt gy to m gy, calc, carb, pyr, slt, s, mic		026-1
		5	Ca	: w to lt gy		026-2
		5	Cont	: dd		026-3
1551.50	swc					027
		100		No Mat.		027-1
1562.00						028
	0.39	90		Sh/Clst: lt gy to m gy, calc, carb, pyr, slt, s, mic		028-1
		5	Ca	: w to lt gy		028-2
		5	Cont	: dd		028-3

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
1574.50	swc					029	
	0.76	100	Sh/Clst: lt gy to m gy to drk gy, carb, pyr, slt, s, mic, glauc			029-1	
1587.00						030	
	0.48	95	Sh/Clst: lt gy to m gy, calc, carb, pyr, slt, s, mic			030-1	
		5	Ca	:	w to lt gy	030-2	
		tr	Cont	:	dd	030-3	
1595.00	swc					031	
	0.51	100	Sh/Clst: gn gy, ol gy, lt gy to m gy, carb, pyr, mic			031-1	
1605.50	swc					032	
	0.33	100	Sh/Clst: brn gy, lt gy to m gy, carb, pyr, mic			032-1	
1622.00						033	
	0.50	90	Sh/Clst: m gy, pyr, slt, mic			033-1	
		10	Ca	:	lt gy to m gy, cly, glauc	033-2	
1633.00	swc					034	
	0.67	100	Sh/Clst: lt gy to m gy, carb, pyr, mic			034-1	
1640.00	swc					035	
	0.55	100	Sh/Clst: lt gy to m gy, carb, pyr, mic			035-1	

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1660.00						036
	0.51	90	Sh/Clst:	lt gy to m gy, pyr, slt, mic		036-1
		5	Ca	: lt gy		036-2
		5	Cont	: dd		036-3
			tr Sltst			036-4
1675.00						037
	0.65	90	Sh/Clst:	lt gy to m gy, pyr, slt, mic		037-1
		10	Cont	: dd		037-2
			tr Ca	: w to lt gy		037-3
1692.00						038
	0.55	95	Sh/Clst:	lt gy to m gy to m drk gy		038-1
		5	Ca	: brn to w to gy		038-2
			tr Cont			038-3
1707.00						039
	0.44	100	Sh/Clst:	lt gy to m gy, mic, glauc		039-1
			tr Ca	: brn to w		039-2
			tr Cont	: prp, dd		039-3
1725.50	swc					040
	0.97	100	Sh/Clst:	lt gy to m gy, calc, carb, pyr, mic		040-1
1730.00						041
	0.77	100	Sh/Clst:	lt gy to m gy, mic, glauc		041-1
			tr Ca	: brn to w		041-2
			tr Cont	: prp, dd		041-3



Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1747.00						042
	0.70	100		Sh/Clst: m gy to m drk gy, pyr, slt, mic tr Cont : dd tr Sltst tr Ca : brn to brn gy		042-1 042-2 042-3 042-4
1762.00						043
	0.70	95		Sh/Clst: lt gy to m gy to m drk gy, pyr, slt, mic 5 Ca : brn to gy, cly, dol tr Cont : cem, prp, dd		043-1 043-2 043-3
1777.00						044
	0.78	95		Sh/Clst: lt gy to m gy to m drk gy, pyr, slt, mic 5 Ca : brn to gy, w, cly, dol tr Cont : prp, dd		044-1 044-2 044-3
1795.00	swc					045
	0.91	100		Sh/Clst: lt gy to m gy to m drk gy, calc, carb, pyr, slt, s, mic, glauc		045-1
1800.00						046
	0.44	95		Sh/Clst: lt gy to m gy to m drk gy, pyr, slt, mic 5 Ca : brn to gy, w, cly, dol tr Cont : prp, dd		046-1 046-2 046-3
1805.00						082
	0.62	95		Sh/Clst: lt gy to m gy to m drk gy, pyr, slt, mic 5 Ca : brn to gy, w, cly, dol tr Cont : prp, dd		082-1 082-2 082-3

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1810.00						083
	0.64	90	Sh/Clst:	lt gy to m gy to m drk gy, pyr, slt, mic		083-1
		5	Ca	: lt brn to drk brn, dol		083-2
		5	Cont	: prp, dd		083-3
1815.00						084
	0.68	90	Sh/Clst:	lt gy to m gy to m drk gy, pyr, slt, mic		084-1
		10	Cont	: prp, dd		084-2
			tr Sltst			084-3
1820.00						085
	0.59	90	Sh/Clst:	lt gy to m gy to m drk gy, pyr, slt, mic		085-1
		10	Cont	: prp, dd		085-2
			tr Sltst			085-3
1825.00						086
	0.69	90	Sh/Clst:	lt gy to m gy to m drk gy, pyr, slt, mic		086-1
		10	Cont	: prp, dd		086-2
			tr Sltst			086-3
1835.00						087
	0.73	90	Sh/Clst:	lt gy to m gy to m drk gy, pyr, slt, mic		087-1
		10	Cont	: prp, dd		087-2
			tr Sltst			087-3

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1850.00	swc					047
	0.73	100		Sh/Clst: lt gy to m gy to m drk gy, carb, pyr, slt, mic, glauc		047-1
1860.00						088
	0.72	70		Sh/Clst: lt gy to m gy, calc, mic		088-1
		30		Ca : lt gy		088-2
		tr		Cont : prp, dd		088-3
1875.00						089
	0.68	70		Sh/Clst: m gy to m drk gy, calc, mic		089-1
		30		Ca : w to brn to lt gy		089-2
		tr		Sltst		089-3
1884.90	swc					048
	0.85	100		Sh/Clst: lt gy to m gy, calc, carb, mic, glauc		048-1
1895.00						090
	0.77	90		Sh/Clst: lt gy to m gy		090-1
		10		Cont : dd		090-2
		tr		Sltst		090-3
		tr		Ca		090-4
1910.00						091
	0.53	95		Sh/Clst: m gy to m drk gy, calc, slt, mic		091-1
		5		Ca : lt gy to w		091-2
		tr		Cont : dd		091-3

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1935.00	swc					049
	0.72	100	Sh/Clst:	lt gy to m gy, carb, mic, glauc		049-1
1950.00						092
	0.90	100	Sh/Clst:	m gy to m drk gy, calc, slt, mic		092-1
			tr Ca	: lt gy to w		092-2
			tr Sltst	: dd		092-3
1960.50	swc					050
	1.03	100	Sh/Clst:	m gy to m drk gy, drk gy, calc, carb, pyr, mic		050-1
1975.00						093
	0.82	100	Sh/Clst:	m gy to m drk gy, calc, slt, mic		093-1
			tr Ca	: lt gy to w		093-2
			tr Sltst	: dd		093-3
1988.50	swc					051
	0.93	100	Sh/Clst:	m gy to drk gy, mic		051-1
2005.00						094
	0.76	100	Sh/Clst:	lt gy to m gy, pyr, slt, mic		094-1
			tr Ca	: lt gy to w		094-2
			tr Sltst	: dd		094-3
2020.00						095
	0.57	100	Sh/Clst:	m gy to m drk gy, pyr, slt, mic		095-1
			tr Ca	: lt gy to w		095-2
			tr Sltst			095-3

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2040.00	swc					052
		0.67	100	Sh/Clst: m gy to drk gy, mic tr Ca : w to brn, mic		052-1 052-2
2057.50	swc					053
		1.00	100	Sh/Clst: m gy, pyr, mic, glauc		053-1
2065.00						096
		0.76	100	Sh/Clst: lt gy to m gy to m drk gy, slt, mic tr Ca : lt gy to w tr Cont : prp		096-1 096-2 096-3
2082.00	swc					054
		0.47	100	Ca : w to lt gy, pyr, glauc		054-1
2095.00	swc					055
		0.93	100	Sh/Clst: m gy, calc, pyr, slt, s, mic, glauc		055-1
2109.50	swc					056
		0.90	100	Sh/Clst: lt gy to m gy, calc, pyr, slt, s, mic, glauc		056-1
2125.00						097
		0.74	50	Sh/Clst: lt gy, slt, mic 50 Ca : lt gy to w		097-1 097-2

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
2145.00						098
	0.65	50	Sh/Clst:	lt gy, slt, mic		098-1
		50	Ca	: lt gy to w		098-2
2170.00						099
	0.60	80	Sh/Clst:	m gy to m drk gy to drk gy, mic		099-1
		15	Ca	: w to lt gy		099-2
		5	Cont	: dd		099-3
2195.00						122
	0.55	90	Sh/Clst:	m gy to m drk gy to drk gy, mic		122-1
		10	Ca	: w to lt gy		122-2
			tr Cont	: dd		122-3
			tr S/Sst	: l		122-4
2209.50	swc					057
	0.76	100	Sh/Clst:	w, lt gy to m gy, calc, pyr, slt, s, mic, glauc		057-1
2220.00						100
	0.67	90	Sh/Clst:	m gy to m drk gy to drk gy, mic		100-1
		10	Ca	: w to lt gy		100-2
2235.00						125
	0.76	95	Sh/Clst:	m gy to m drk gy to drk gy, mic		125-1
		5	Sltst	: lt brn		125-2
			tr Ca	: w		125-3

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2247.50	swc					058
		0.79	60	Sh/Clst: m gy to drk gy, calc, pyr, mic, glauc, lam		058-1
		0.67	40	Ca : w to brn, crs bulk		058-2 058-0
2255.50	swc					059
		0.84	60	Ca : w to brn, crs		059-2
			40	Sh/Clst: m gy to drk gy, calc, pyr, mic, glauc, lam		059-1
		0.59		bulk		059-0
2260.00					trb	126
		0.63	95	Sh/Clst: m gy to m drk gy to drk gy, mic		126-1
			5	Sltst : lt brn		126-2
			tr	Ca : w		126-3
2270.00					trb	130
		0.48	90	Sh/Clst: drk gy, mic		130-1
			10	Sh/Clst: lt gy, calc		130-2
			tr	Cont : cem		130-3
			tr	Ca : w		130-4
			tr	S/Sst : l		130-5
2280.00	swc					060
		0.59	100	Ca : w to brn, lt gy, m gy, pyr, cly, glauc, crs, lam		060-1
2296.50	swc					061
		1.01	100	Sh/Clst: m gy, calc, mic		061-1

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2310.00					trb	127
	0.30	100	Sh/Clst:	m gy to drk gy, slt		127-1
			tr Ca	: w to gy		127-2
2320.00					trb	101
	0.40	90	Sh/Clst:	lt gy to m gy		101-1
		10	Ca	: w to lt gy		101-2
2330.00	swc					062
	0.67	100	Sh/Clst:	m gy, calc, mic, dol, lam, sid		062-1
2340.00					trb	102
	0.24	90	Sh/Clst:	lt gy to m gy		102-1
		10	Ca	: w to lt gy		102-2
2357.00	swc					063
	1.09	100	Sh/Clst:	m gy to m drk gy, calc, pyr, mic, glauc		063-1
			tr Ca	: w to lt gy		063-2
2365.00					trb	129
	0.40	90	Sh/Clst:	drk gy to blk		129-1
		10	Sh/Clst:	gn gy, lt gy		129-2
			tr Cont	: dd		129-3
			tr Ca	: w		129-4
2381.50	swc					064
	1.03	100	Sh/Clst:	m gy to m drk gy, calc, pyr, mic, glauc		064-1
			tr Ca	: w to lt gy		064-2



Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2388.00	swc					065
	0.64	100		Sh/Clst: m gy to m drk gy, pyr		065-1
2395.00	swc					066
	0.78	100		Sh/Clst: m gy, pyr, s, mic, glauc		066-1
2407.50	swc					067
	0.69	95		Sh/Clst: m gy, calc, pyr, mic		067-1
		5	Ca	: w to brn to gn, pyr, cly, glauc		067-2
2420.50	swc					068
	0.78	95		Sh/Clst: m gy to m drk gy, calc, carb, pyr, mic, glauc		068-1
		5	Ca	: w to brn, cly, glauc, lam		068-2
2434.00	swc					069
	0.90	75		Sh/Clst: m gy to m drk gy, drk gy, calc, carb, pyr, mic, glauc, lam		069-1
		25	Ca	: w to brn, cly, glauc, lam		069-2
2440.50	swc					070
	0.85	100		Sh/Clst: m gy to m drk gy, drk gy, calc, pyr, slt, mic, glauc, lam		070-1
2451.00	swc					071
	0.10	95		Sh/Clst: red brn to gy, calc, pyr, glauc, crs, lam		071-1
		5	Ca	: red brn to w, crs		071-2

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2465.00	swc					072
	1.01	100		Sh/Clst: m drk gy to drk gy, calc, pyr, mic, glauc, lam		072-1
2479.00	swc					073
	1.03	100		Sh/Clst: m drk gy to drk gy, calc, pyr, mic, glauc, lam		073-1
2487.00	swc					074
			50	Sh/Clst: m gy to drk gy, calc, carb, pyr, mic, lam		074-1
	0.86		50	Ca : w to brn, pyr, mic, glauc, lam bulk		074-2 074-0
2510.00					trb	103
	0.30	95		Sh/Clst: m gy to drk gy, slt, mic		103-1
		5		Ca : w to lt gy		103-2
2529.50	swc					075
	1.06	100		Sh/Clst: lt gy to m gy, calc, pyr, slt, mic, f, fis		075-1
2547.00						104
	0.77	60		Sh/Clst: m gy to drk gy, calc, slt, mic		104-1
		20		Ca : w to lt gy		104-2
		20		Cont : cem, prp		104-3

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
2560.00						105	
	0.71	90	Sh/Clst: m gy to drk gy, calc, slt, mic			105-1	
		10	Ca : w to lt gy			105-2	
		tr	Cont : prp			105-3	
2572.00						106	
	0.76	50	Sh/Clst: drk gy to m drk gy, slt, mic			106-1	
		50	Cont : cem, prp			106-2	
		tr	Ca : brn gy, dol			106-3	
		tr	Sltst : m drk gy, calc, s, mic			106-4	
2585.00						107	
int	0.84	80	Sh/Clst: drk gy to m drk gy, slt, mic, glauc			107-1	
int		20	Sltst : m drk gy, calc, s, mic			107-2	
int		tr	Cont : cem, prp			107-3	
		tr	Ca : brn gy to drk gy, dol			107-4	
2592.00						108	
	0.94	90	Sh/Clst: drk gy, slt, mic			108-1	
		10	Sltst : lt gy to m gy, calc, s, mic			108-2	
		tr	Ca : brn gy, dol			108-3	
		tr	Cont : cem, prp			108-4	
2610.00						109	
	1.02	100	Sh/Clst: m gy to m drk gy, slt, mic			109-1	
		tr	Ca : brn gy to m drk gy, dol			109-2	
		tr	Cont : cem, prp			109-3	

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2620.00						123
		0.74	75	Sh/Clst: m gy to m drk gy, slt, mic		123-1
			25	Ca : brn gy to m drk gy, dol		123-2
			tr	Cont : cem, prp, dd		123-3
2635.00						124
		0.75	75	Sh/Clst: m gy to m drk gy, slt, mic		124-1
			25	Ca : brn gy to m drk gy, dol		124-2
			tr	Cont : cem, prp, dd		124-3
2647.00						143
		1.11	80	Sh/Clst: m gy to m drk gy, slt, mic		143-1
			20	Ca : brn gy to m drk gy, dol		143-2
			tr	Cont : cem, prp, dd		143-3
2660.00						128
			95	Sh/Clst: m drk gy to drk gy, slt, mic		128-1
			5	Cont : prp, dd		128-2
			tr	Ca		128-3
			tr	Coal		128-4
			tr	Sltst		128-5
2681.00	swc					076
		1.38	100	Sh/Clst: m gy to drk gy, calc, pyr, slt, mic, f, fis		076-1
2700.00						110
int		1.07	90	Sh/Clst: m gy to m drk gy, slt, mic, glauc		110-1
int			10	Sltst : m gy, calc, s, mic		110-2
			tr	Ca : w to lt gy		110-3
			tr	Ca : brn gy to m gy, dol		110-4
			tr	Other : pyr		110-5
			tr	Cont : cem, prp		110-6

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2706.00	swc					077
	1.22	100	Sh/Clst:	gy brn, m gy to drk gy, calc, pyr, slt, mic, f, fis		077-1
2712.00						111
	0.92	100	Sh/Clst:	m drk gy, slt, mic, glauc		111-1
			tr Sltst	: m drk gy, mic		111-2
			tr Ca	: w		111-3
			tr Cont	: cem, prp		111-4
2732.00						112
	1.08	100	Sh/Clst:	m drk gy, slt, mic, glauc		112-1
			tr Sltst	: m drk gy, mic		112-2
			tr Ca	: w		112-3
			tr Cont	: cem, prp		112-4
			tr Ca	: brn gy to m drk gy, dol		112-5
2737.00						113
	0.96	100	Sh/Clst:	m drk gy, slt, mic, glauc		113-1
			tr Sltst	: m drk gy, mic		113-2
			tr Ca	: w		113-3
			tr Cont	: cem, prp		113-4
			tr Ca	: brn gy to m drk gy, dol		113-5
2747.00						114
	0.82	100	Sh/Clst:	m drk gy, slt, mic, glauc		114-1
			tr Sltst	: m drk gy, mic		114-2
			tr Ca	: w		114-3
			tr Cont	: cem, prp		114-4
			tr Ca	: brn gy to m drk gy, dol		114-5

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
2760.00						115	
	1.00	100	Sh/Clst: m drk gy, mic, glauc			115-1	
			tr Ca : w			115-2	
			tr Cont : cem, prp			115-3	
2775.00						116	
	0.87	100	Sh/Clst: m drk gy, mic, glauc			116-1	
			tr Ca : w			116-2	
			tr Cont : cem, prp			116-3	
2787.00						117	
	0.97	100	Sh/Clst: m drk gy, mic, glauc			117-1	
			tr Ca : w			117-2	
			tr Cont : cem, prp			117-3	
2805.00						118	
	1.10	100	Sh/Clst: m drk gy, mic, glauc			118-1	
			tr Ca : w			118-2	
			tr Cont : cem, prp			118-3	
2810.00						119	
	0.92	100	Sh/Clst: m drk gy, calc, pyr, mic, glauc			119-1	
			tr Ca : brn gy, dol			119-2	
			tr Ca : w to lt gy			119-3	
			tr Cont : cem, prp			119-4	
2820.00						120	
int	0.84	100	Sh/Clst: m drk gy, calc, slt, mic, glauc			120-1	
			tr Ca : w			120-2	
			tr Ca : brn gy, dol			120-3	
			tr Cont : cem, prp			120-4	
			tr S/Sst : m drk gy, calc, glauc			120-5	

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2832.00	swc					078
	1.02	100		Sh/Clst: brn gy, m gy to drk gy, calc, pyr, slt, s, fis		078-1
2840.00						121
	0.88		70	Cont : cem, prp		121-4
			20	Sh/Clst: m drk gy, calc, mic, glauc		121-2
			10	Sh/Clst: drk gy, calc, slt, mic, glauc		121-1
			tr Ca	: w to lt gy		121-3
2850.00					trb	131
	0.81	95		Sh/Clst: gy blk to m drk gy		131-1
		5		Cont : dd		131-2
			tr	Cont : prp, tar-ad		131-3
			tr	Coal		131-4
2864.50	swc					079
	0.93	100		Sltst : brn gy, m gy to m drk gy to drk gy, carb, pyr, mic		079-1
2880.00					trb	132
	0.54	100		Sh/Clst: gy blk to m drk gy		132-1
			tr	Cont : dd		132-2
2890.00					trb	133
	0.38	100		Sh/Clst: gy blk to m drk gy		133-1
			tr	Cont : dd		133-2

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2905.00					trb	134
	0.51	100	Sh/Clst:	gy blk to m drk gy		134-1
			tr Cont	: dd		134-2
2920.00					trb	135
	0.48	85	Sh/Clst:	gy blk to m drk gy		135-1
		15	Cont	: dd		135-2
2935.00					trb	136
	0.40	85	Sh/Clst:	gy blk to m drk gy		136-1
		15	Cont	: dd		136-2
2950.00					trb	137
	0.43	100	Sh/Clst:	gy blk to m drk gy		137-1
			tr Cont	: dd		137-2
			tr Ca	: y gy, chk		137-3
2965.00					trb	138
	0.49	100	Sh/Clst:	gy blk to m drk gy		138-1
			tr Cont	: dd		138-2
			tr Ca	: y gy, chk		138-3
2975.00					trb	139
	0.46	100	Sh/Clst:	gy blk to m drk gy		139-1
			tr Cont	: dd, tar-ad		139-2
2990.00					trb	140
	0.45	100	Sh/Clst:	gy blk to m drk gy		140-1
			tr Cont	: dd		140-2



Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3000.00					trb	141
	0.35	100		Sh/Clst: gy blk to m drk gy tr Cont : dd		141-1 141-2
3010.00					trb	142
	0.32	100		Sh/Clst: gy blk to m drk gy tr Cont : dd		142-1 142-2
3015.00					trb	150
	0.31	100		Sh/Clst: gy blk to m drk gy tr Cont : dd		150-1 150-2
3020.00	301				trb	151
	0.35	100		Sh/Clst: gy blk to m drk gy tr Cont : dd, tar-ad		151-1 151-2
3025.00					trb	152
	0.42	100		Sh/Clst: gy blk to m drk gy tr Cont : dd, tar-ad		152-1 152-2
3030.00					trb	147
	0.38	100		Sh/Clst: gy blk to m drk gy tr Cont : dd		147-1 147-2
3040.00					trb	148
	0.53	100		Sh/Clst: gy blk to m drk gy tr Cont : dd		148-1 148-2

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3045.00					trb	149
		0.44	100	Sh/Clst: gy blk to m drk gy tr Cont : dd		149-1 149-2
3050.00					trb	144
		0.78	100	Sh/Clst: gy blk to m drk gy tr Cont : prp, dd		144-1 144-2
3055.00					trb	145
		0.75	100	Sh/Clst: gy blk to m drk gy tr Cont : prp, dd, tar-ad		145-1 145-2
3060.00	swc					080
		2.17	100	Sh/Clst: brn gy, m gy to m drk gy to drk gy, carb, pyr, slt, mic		080-1
3065.00					trb	146
		0.83	100	Sh/Clst: gy blk to m drk gy tr Cont : dd		146-1 146-2
3070.00					trb	153
		0.87	100	Sh/Clst: gy blk to m drk gy tr Cont : dd		153-1 153-2
3075.00					trb	154
		1.04	100	Sh/Clst: gy blk to m drk gy tr Cont : dd		154-1 154-2

Table 1 : Lithology description for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3080.00					trb	155
	0.91	100	Sh/Clst:	gy blk to m drk gy		155-1
			tr Cont	: dd		155-2
3085.00					trb	156
	0.99	100	Sh/Clst:	gy blk to m drk gy		156-1
			tr Cont	: Mica-ad, dd		156-2
3095.00					trb	157
	0.87	100	Sh/Clst:	gy blk to m drk gy		157-1
			tr Cont	: dd		157-2
3100.00					trb	158
	0.90	60	Sh/Clst:	gy blk to m drk gy		158-1
		40	Cont	: bar		158-2
			tr Cont	: dd		158-3

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1338.50	swc	Sh/Clst: lt gy to m gy	1.01	0.68	1.03	0.66	0.85	80	121	1.7	0.60	434	001-1
1352.00	cut	Sh/Clst: lt gy to m gy	0.16	0.68	0.84	0.81	1.19	57	71	0.8	0.19	428	002-1
1357.00	cut	Sh/Clst: lt gy to m gy	0.13	0.49	0.73	0.67	1.14	43	64	0.6	0.21	427	003-1
1360.00	cut	Sh/Clst: lt gy to m gy	0.13	0.50	0.75	0.67	0.94	53	80	0.6	0.21	425	004-1
1362.00	cut	Sh/Clst: lt gy to m gy	0.15	0.62	0.62	1.00	0.80	78	78	0.8	0.19	424	005-1
1367.00	cut	Sh/Clst: lt gy to m gy	0.19	0.59	0.55	1.07	0.56	105	98	0.8	0.24	424	006-1
1374.00	swc	S/Sst : lt gy	1.04	0.50	0.15	3.33	0.46	109	33	1.5	0.68	427	007-1
1385.00	cut	Sh/Clst: lt gy to m gy	0.21	0.56	0.42	1.33	0.52	108	81	0.8	0.27	423	008-1
1387.00	cut	Ca : w to lt gy, gn gy	0.16	0.54	0.44	1.23	0.52	104	85	0.7	0.23	424	009-1
1395.00	cut	Ca : w to lt gy, gn gy	0.20	0.56	0.51	1.10	0.52	108	98	0.8	0.26	422	010-1
1410.50	swc	Sh/Clst: gn gy, ol gy, lt gy to m gy	1.13	0.11	0.17	0.65	0.38	29	45	1.2	0.91	378	011-1
1422.00	cut	Sh/Clst: lt gy to m gy	0.04	0.16	0.70	0.23	0.54	30	130	0.2	0.20	416	012-1
1430.00	cut	Sh/Clst: lt gy to m gy	0.09	0.44	0.52	0.85	0.55	80	95	0.5	0.17	422	013-1
1440.00	cut	Sh/Clst: lt gy to m gy	0.09	0.37	0.47	0.79	0.39	95	121	0.5	0.20	425	014-1
1450.00	cut	Ca : lt gy	0.01	0.06	0.52	0.12	0.32	19	163	0.1	0.14	424	015-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1455.00	cut	Ca : lt gy	0.03	0.07	0.71	0.10	0.50	14	142	0.1	0.30	422	016-1
1470.00	cut	Sh/Clst: lt gy	0.08	0.26	0.70	0.37	0.59	44	119	0.3	0.24	426	017-1
1485.00	cut	Ca : lt gy	0.04	0.09	0.58	0.16	0.53	17	109	0.1	0.31	422	018-1
1507.00	cut	Sh/Clst: lt gy	0.13	0.35	0.50	0.70	0.51	69	98	0.5	0.27	435	021-1
1510.00	cut	Sh/Clst: lt gy to m gy	0.18	0.42	0.69	0.61	0.48	88	144	0.6	0.30	427	020-1
1512.00	cut	Sh/Clst: lt gy to m gy	0.04	0.12	0.51	0.24	0.36	33	142	0.2	0.25	415	022-1
1513.00	swc	Sh/Clst: gn gy, ol gy, lt gy to m gy	0.97	0.12	0.20	0.60	0.47	26	43	1.1	0.89	382	023-1
1515.00	cut	Sh/Clst: lt gy to m gy, m drk gy	0.05	0.18	0.71	0.25	0.41	44	173	0.2	0.22	423	024-1
1525.00	cut	Sh/Clst: lt gy to m gy	0.06	0.18	0.35	0.51	0.41	44	85	0.2	0.25	425	025-1
1537.00	cut	Sh/Clst: lt gy to m gy	0.02	0.10	0.24	0.42	0.35	29	69	0.1	0.17	421	026-1
1562.00	cut	Sh/Clst: lt gy to m gy	0.01	0.03	0.28	0.11	0.39	8	72	-	0.25	356	028-1
1574.50	swc	Sh/Clst: lt gy to m gy to drk gy	2.21	0.56	0.36	1.56	0.76	74	47	2.8	0.80	387	029-1
1587.00	cut	Sh/Clst: lt gy to m gy	0.05	0.21	0.21	1.00	0.48	44	44	0.3	0.19	432	030-1
1595.00	swc	Sh/Clst: gn gy, ol gy, lt gy to m gy	1.18	0.16	0.24	0.67	0.51	31	47	1.3	0.88	391	031-1
1605.50	swc	Sh/Clst: brn gy, lt gy to m gy	0.08	0.07	0.16	0.44	0.33	21	48	0.2	0.53	442	032-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1622.00	cut	Sh/Clst: m gy	0.08	0.26	0.26	1.00	0.50	52	52	0.3	0.24	427	033-1
1633.00	swc	Sh/Clst: lt gy to m gy	1.52	0.34	0.24	1.42	0.67	51	36	1.9	0.82	435	034-1
1640.00	swc	Sh/Clst: lt gy to m gy	1.04	0.16	0.20	0.80	0.55	29	36	1.2	0.87	425	035-1
1660.00	cut	Sh/Clst: lt gy to m gy	0.02	0.08	0.34	0.24	0.51	16	67	0.1	0.20	427	036-1
1675.00	cut	Sh/Clst: lt gy to m gy	0.07	0.42	0.87	0.48	0.65	65	134	0.5	0.14	430	037-1
1692.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.06	0.30	1.31	0.23	0.55	55	238	0.4	0.17	433	038-1
1707.00	cut	Sh/Clst: lt gy to m gy	0.02	0.04	1.09	0.04	0.44	9	248	0.1	0.33	465	039-1
1725.50	swc	Sh/Clst: lt gy to m gy	2.46	1.01	0.71	1.42	0.97	104	73	3.5	0.71	441	040-1
1730.00	cut	Sh/Clst: lt gy to m gy	0.18	1.04	0.24	4.33	0.77	135	31	1.2	0.15	440	041-1
1747.00	cut	Sh/Clst: m gy to m drk gy	0.16	0.75	0.24	3.13	0.70	107	34	0.9	0.18	439	042-1
1762.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.11	0.58	0.35	1.66	0.70	83	50	0.7	0.16	436	043-1
1777.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.14	0.83	0.88	0.94	0.78	106	113	1.0	0.14	438	044-1
1795.00	swc	Sh/Clst: lt gy to m gy to m drk gy	2.15	1.08	0.14	7.71	0.91	119	15	3.2	0.67	441	045-1
1800.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.01	0.02	0.31	0.06	0.44	5	70	-	0.33	449	046-1
1805.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.08	0.50	0.25	2.00	0.62	81	40	0.6	0.14	432	082-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1810.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.08	0.59	1.12	0.53	0.64	92	175	0.7	0.12	433	083-1
1815.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.14	0.86	0.48	1.79	0.68	126	71	1.0	0.14	431	084-1
1820.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.07	0.48	0.37	1.30	0.59	81	63	0.6	0.13	429	085-1
1825.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.15	0.71	0.65	1.09	0.69	103	94	0.9	0.17	432	086-1
1835.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.17	0.79	0.63	1.25	0.73	108	86	1.0	0.18	439	087-1
1850.00	swc	Sh/Clst: lt gy to m gy to m drk gy	1.04	0.49	0.19	2.58	0.73	67	26	1.5	0.68	438	047-1
1860.00	cut	Sh/Clst: lt gy to m gy	0.14	0.68	0.67	1.01	0.72	94	93	0.8	0.17	433	088-1
1875.00	cut	Sh/Clst: m gy to m drk gy	0.07	0.52	0.43	1.21	0.68	76	63	0.6	0.12	435	089-1
1884.90	swc	Sh/Clst: lt gy to m gy	2.12	0.59	0.19	3.11	0.85	69	22	2.7	0.78	442	048-1
1895.00	cut	Sh/Clst: lt gy to m gy	0.01	0.09	1.08	0.08	0.77	12	140	0.1	0.10	418	090-1
1910.00	cut	Sh/Clst: m gy to m drk gy	0.02	0.03	0.82	0.04	0.53	6	155	0.1	0.40	419	091-1
1935.00	swc	Sh/Clst: lt gy to m gy	1.62	0.42	0.24	1.75	0.72	58	33	2.0	0.79	441	049-1
1950.00	cut	Sh/Clst: m gy to m drk gy	0.31	1.01	0.96	1.05	0.90	112	107	1.3	0.23	440	092-1
1960.50	swc	Sh/Clst: m gy to m drk gy, drk gy	2.00	1.50	0.16	9.38	1.03	146	16	3.5	0.57	443	050-1
1975.00	cut	Sh/Clst: m gy to m drk gy	0.28	1.08	0.60	1.80	0.82	132	73	1.4	0.21	440	093-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1988.50	swc	Sh/Clst: m gy to drk gy	1.67	0.66	0.21	3.14	0.93	71	23	2.3	0.72	445	051-1
2005.00	cut	Sh/Clst: lt gy to m gy	0.14	0.87	0.39	2.23	0.76	114	51	1.0	0.14	436	094-1
2020.00	cut	Sh/Clst: m gy to m drk gy	0.01	0.04	0.72	0.06	0.57	7	126	0.1	0.20	442	095-1
2040.00	swc	Sh/Clst: m gy to drk gy	0.49	0.34	0.25	1.36	0.67	51	37	0.8	0.59	439	052-1
2057.50	swc	Sh/Clst: m gy	1.51	0.70	0.20	3.50	1.00	70	20	2.2	0.68	443	053-1
2065.00	cut	Sh/Clst: lt gy to m gy to m drk gy	0.13	1.07	0.38	2.82	0.76	141	50	1.2	0.11	429	096-1
2082.00	swc	Ca : w to lt gy	0.49	0.22	0.27	0.81	0.47	47	57	0.7	0.69	441	054-1
2095.00	swc	Sh/Clst: m gy	1.89	1.41	0.17	8.29	0.93	152	18	3.3	0.57	447	055-1
2109.50	swc	Sh/Clst: lt gy to m gy	0.50	1.17	0.76	1.54	0.90	130	84	1.7	0.30	449	056-1
2125.00	cut	Sh/Clst: lt gy	0.25	0.96	0.26	3.69	0.74	130	35	1.2	0.21	439	097-1
2145.00	cut	Sh/Clst: lt gy	0.17	0.71	0.35	2.03	0.65	109	54	0.9	0.19	437	098-1
2170.00	cut	Sh/Clst: m gy to m drk gy to drk gy	0.15	0.61	0.32	1.91	0.60	102	53	0.8	0.20	436	099-1
2195.00	cut	Sh/Clst: m gy to m drk gy to drk gy	0.23	0.24	0.36	0.67	0.55	44	65	0.5	0.49	436	122-1
2209.50	swc	Sh/Clst: w, lt gy to m gy	1.06	0.78	0.19	4.11	0.76	103	25	1.8	0.58	440	057-1
2220.00	cut	Sh/Clst: m gy to m drk gy to drk gy	0.17	0.66	0.38	1.74	0.67	99	57	0.8	0.20	440	100-1



Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2235.00	cut	Sh/Clst: m gy to m drk gy to drk gy	0.19	0.71	0.41	1.73	0.76	93	54	0.9	0.21	443	125-1
2247.50	swc	bulk	0.75	0.74	0.28	2.64	0.67	110	42	1.5	0.50	446	058-0
2247.50	swc	Sh/Clst: m gy to drk gy	1.03	0.96	0.16	6.00	0.79	122	20	2.0	0.52	446	058-1
2255.50	swc	bulk	0.23	0.28	0.86	0.33	0.59	47	146	0.5	0.45	445	059-0
2255.50	swc	Sh/Clst: m gy to drk gy	0.52	0.70	0.87	0.80	0.84	83	104	1.2	0.43	447	059-1
2260.00	cut	Sh/Clst: m gy to m drk gy to drk gy	0.33	0.63	0.36	1.75	0.63	100	57	1.0	0.34	442	126-1
2270.00	cut	Sh/Clst: drk gy	0.14	0.22	0.47	0.47	0.48	46	98	0.4	0.39	438	130-1
2280.00	swc	Ca : w to brn, lt gy, m gy	0.95	0.57	0.34	1.68	0.59	97	58	1.5	0.63	444	060-1
2296.50	swc	Sh/Clst: m gy	1.41	1.43	0.22	6.50	1.01	142	22	2.8	0.50	446	061-1
2310.00	cut	Sh/Clst: m gy to drk gy	0.13	0.01	0.20	0.05	0.30	3	67	0.1	0.93	400	127-1
2320.00	cut	Sh/Clst: lt gy to m gy	0.13	0.28	0.39	0.72	0.40	70	98	0.4	0.32	430	101-1
2330.00	swc	Sh/Clst: m gy	0.83	0.67	0.13	5.15	0.67	100	19	1.5	0.55	450	062-1
2340.00	cut	Sh/Clst: lt gy to m gy	0.06	0.04	0.21	0.19	0.24	17	88	0.1	0.60	429	102-1
2357.00	swc	Sh/Clst: m gy to m drk gy	2.00	1.64	0.33	4.97	1.09	150	30	3.6	0.55	447	063-1
2365.00	cut	Sh/Clst: drk gy to blk	0.12	0.14	0.35	0.40	0.40	35	88	0.3	0.46	415	129-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2381.50	swc	Sh/Clst: m gy to m drk gy	1.47	1.28	0.29	4.41	1.03	124	28	2.8	0.53	449	064-1
2388.00	swc	Sh/Clst: m gy to m drk gy	0.46	0.34	0.14	2.43	0.64	53	22	0.8	0.57	451	065-1
2395.00	swc	Sh/Clst: m gy	0.70	0.44	0.20	2.20	0.78	56	26	1.1	0.61	452	066-1
2407.50	swc	Sh/Clst: m gy	0.63	0.62	0.18	3.44	0.69	90	26	1.3	0.50	446	067-1
2420.50	swc	Sh/Clst: m gy to m drk gy	0.76	0.80	0.10	8.00	0.78	103	13	1.6	0.49	448	068-1
2434.00	swc	Sh/Clst: m gy to m drk gy, drk gy	0.83	1.16	0.18	6.44	0.90	129	20	2.0	0.42	452	069-1
2440.50	swc	Sh/Clst: m gy to m drk gy, drk gy	0.89	0.84	0.18	4.67	0.85	99	21	1.7	0.51	449	070-1
2451.00	swc	Sh/Clst: red brn to gy	0.90	0.43	-	-	0.10	430	-	1.3	0.68	468	071-1
2465.00	swc	Sh/Clst: m drk gy to drk gy	1.34	0.90	0.33	2.73	1.01	89	33	2.2	0.60	446	072-1
2479.00	swc	Sh/Clst: m drk gy to drk gy	0.88	0.61	3.30	0.18	1.03	59	320	1.5	0.59	450	073-1
2487.00	swc	bulk	1.39	0.84	0.39	2.15	0.86	98	45	2.2	0.62	444	074-0
2510.00	cut	Sh/Clst: m gy to drk gy	0.09	0.04	0.21	0.19	0.30	13	70	0.1	0.69	297	103-1
2529.50	swc	Sh/Clst: lt gy to m gy	0.25	0.82	0.34	2.41	1.06	77	32	1.1	0.23	449	075-1
2547.00	cut	Sh/Clst: m gy to drk gy	0.15	0.62	1.17	0.53	0.77	81	152	0.8	0.19	452	104-1
2560.00	cut	Sh/Clst: m gy to drk gy	0.04	0.21	1.57	0.13	0.71	30	221	0.3	0.16	456	105-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2572.00	cut	Sh/Clst: drk gy to m drk gy	0.07	0.31	0.83	0.37	0.76	41	109	0.4	0.18	446	106-1
2585.00	cut	Sh/Clst: drk gy to m drk gy	0.07	0.23	1.14	0.20	0.84	27	136	0.3	0.23	437	107-1
2592.00	cut	Sh/Clst: drk gy	0.20	0.62	0.78	0.79	0.94	66	83	0.8	0.24	442	108-1
2610.00	cut	Sh/Clst: m gy to m drk gy	0.20	0.82	1.42	0.58	1.02	80	139	1.0	0.20	448	109-1
2620.00	cut	Sh/Clst: m gy to m drk gy	0.05	0.04	3.38	0.01	0.74	5	457	0.1	0.56	385	123-1
2635.00	cut	Sh/Clst: m gy to m drk gy	0.02	0.17	4.50	0.04	0.75	23	600	0.2	0.11	481	124-1
2647.00	cut	Sh/Clst: m gy to m drk gy	0.05	0.43	2.35	0.18	1.11	39	212	0.5	0.10	446	143-1
2660.00	cut	Sh/Clst: m drk gy to drk gy	0.16	1.07	3.76	0.28	-	-	-	1.2	0.13	446	128-1
2681.00	swc	Sh/Clst: m gy to drk gy	0.36	0.68	0.20	3.40	1.38	49	14	1.0	0.35	439	076-1
2700.00	cut	Sh/Clst: m gy to m drk gy	0.16	0.46	1.01	0.46	1.07	43	94	0.6	0.26	439	110-1
2706.00	swc	Sh/Clst: gy brn, m gy to drk gy	0.21	0.93	0.23	4.04	1.22	76	19	1.1	0.18	454	077-1
2712.00	cut	Sh/Clst: m drk gy	0.02	0.07	1.23	0.06	0.92	8	134	0.1	0.22	476	111-1
2732.00	cut	Sh/Clst: m drk gy	0.33	0.93	0.99	0.94	1.08	86	92	1.3	0.26	446	112-1
2737.00	cut	Sh/Clst: m drk gy	0.15	0.36	0.89	0.40	0.96	38	93	0.5	0.29	446	113-1
2747.00	cut	Sh/Clst: m drk gy	0.05	0.14	1.06	0.13	0.82	17	129	0.2	0.26	455	114-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2760.00	cut	Sh/Clst: m drk gy	0.14	0.48	0.95	0.51	1.00	48	95	0.6	0.23	441	115-1
2775.00	cut	Sh/Clst: m drk gy	0.03	0.08	1.11	0.07	0.87	9	128	0.1	0.27	478	116-1
2787.00	cut	Sh/Clst: m drk gy	0.03	0.40	0.95	0.42	0.97	41	98	0.4	0.07	392	117-1
2805.00	cut	Sh/Clst: m drk gy	0.26	0.54	0.93	0.58	1.10	49	85	0.8	0.32	435	118-1
2810.00	cut	Sh/Clst: m drk gy	0.21	0.41	0.78	0.53	0.92	45	85	0.6	0.34	441	119-1
2820.00	cut	Sh/Clst: m drk gy	0.21	0.41	0.63	0.65	0.84	49	75	0.6	0.34	462	120-1
2832.00	swc	Sh/Clst: brn gy, m gy to drk gy	0.13	0.46	0.42	1.10	1.02	45	41	0.6	0.22	479	078-1
2840.00	cut	Sh/Clst: drk gy	0.19	0.76	0.57	1.33	0.88	86	65	0.9	0.20	441	121-1
2850.00	cut	Sh/Clst: gy blk to m drk gy	0.15	0.34	1.00	0.34	0.81	42	123	0.5	0.31	415	131-1
2864.50	swc	Sltst : brn gy, m gy to m drk gy to drk gy	0.13	-	1.45	-	0.93	-	156	0.1	1.00	296	079-1
2880.00	cut	Sh/Clst: gy blk to m drk gy	0.11	0.08	0.57	0.14	0.54	15	106	0.2	0.58	351	132-1
2890.00	cut	Sh/Clst: gy blk to m drk gy	0.05	0.01	0.38	0.03	0.38	3	100	0.1	0.83	299	133-1
2905.00	cut	Sh/Clst: gy blk to m drk gy	0.12	0.15	0.44	0.34	0.51	29	86	0.3	0.44	395	134-1
2920.00	cut	Sh/Clst: gy blk to m drk gy	0.10	0.08	0.59	0.14	0.48	17	123	0.2	0.56	379	135-1
2935.00	cut	Sh/Clst: gy blk to m drk gy	0.06	0.04	0.53	0.08	0.40	10	133	0.1	0.60	378	136-1

Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2950.00	cut	Sh/Clst: gy blk to m drk gy	0.12	0.17	0.54	0.31	0.43	40	126	0.3	0.41	399	137-1
2965.00	cut	Sh/Clst: gy blk to m drk gy	0.11	0.14	0.51	0.27	0.49	29	104	0.3	0.44	404	138-1
2975.00	cut	Sh/Clst: gy blk to m drk gy	0.08	0.15	0.46	0.33	0.46	33	100	0.2	0.35	441	139-1
2990.00	cut	Sh/Clst: gy blk to m drk gy	0.14	0.07	0.40	0.17	0.45	16	89	0.2	0.67	335	140-1
3000.00	cut	Sh/Clst: gy blk to m drk gy	0.10	-	0.32	-	0.35	-	91	0.1	1.00	252	141-1
3010.00	cut	Sh/Clst: gy blk to m drk gy	0.09	-	0.22	-	0.32	-	69	0.1	1.00	344	142-1
3015.00	cut	Sh/Clst: gy blk to m drk gy	0.08	-	0.23	-	0.31	-	74	0.1	1.00	252	150-1
3020.00	301	Sh/Clst: gy blk to m drk gy	0.20	0.22	0.22	1.00	0.35	63	63	0.4	0.48	389	151-1
3025.00	cut	Sh/Clst: gy blk to m drk gy	0.11	0.12	0.31	0.39	0.42	29	74	0.2	0.48	389	152-1
3030.00	cut	Sh/Clst: gy blk to m drk gy	0.05	0.01	0.22	0.05	0.38	3	58	0.1	0.83	299	147-1
3040.00	cut	Sh/Clst: gy blk to m drk gy	0.07	0.01	0.33	0.03	0.53	2	62	0.1	0.88	273	148-1
3045.00	cut	Sh/Clst: gy blk to m drk gy	0.08	-	0.22	-	0.44	-	50	0.1	1.00	256	149-1
3050.00	cut	Sh/Clst: gy blk to m drk gy	0.09	0.07	-	-	0.78	9	-	0.2	0.56	366	144-1
3055.00	cut	Sh/Clst: gy blk to m drk gy	0.11	0.03	0.56	0.05	0.75	4	75	0.1	0.79	282	145-1
3060.00	swc	Sh/Clst: brn gy, m gy to m drk gy to drk gy	0.17	0.45	1.34	0.34	2.17	21	62	0.6	0.27	509	080-1

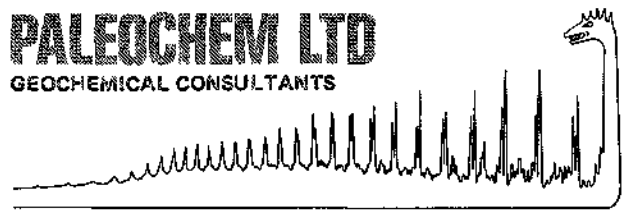
Table 2 : Rock-Eval table for well NOCS 7119/7-1

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3065.00	cut	Sh/Clst: gy blk to m drk gy	0.08	0.06	0.35	0.17	0.83	7	42	0.1	0.57	291	146-1
3070.00	cut	Sh/Clst: gy blk to m drk gy	0.09	0.07	0.43	0.16	0.87	8	49	0.2	0.56	299	153-1
3075.00	cut	Sh/Clst: gy blk to m drk gy	0.15	0.11	0.32	0.34	1.04	11	31	0.3	0.58	336	154-1
3080.00	cut	Sh/Clst: gy blk to m drk gy	0.10	0.07	0.31	0.23	0.91	8	34	0.2	0.59	299	155-1
3085.00	cut	Sh/Clst: gy blk to m drk gy	0.13	0.05	0.87	0.06	0.99	5	88	0.2	0.72	378	156-1
3095.00	cut	Sh/Clst: gy blk to m drk gy	0.11	0.05	0.61	0.08	0.87	6	70	0.2	0.69	348	157-1
3100.00	cut	Sh/Clst: gy blk to m drk gy	0.14	0.05	0.49	0.10	0.90	6	54	0.2	0.74	343	158-1

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GEOCHEMICAL CONSULTANTS



COMPANY INCORPORATED IN U.K. NO. 1509402  
VAT REGISTRATION NO. 354 0213 94

UNIT 14, PARAMOUNT INDUSTRIAL ESTATE,  
SANDOWN ROAD, WATFORD WD2 4XA.  
TEL 43196/31416 TELEX 8812973

*Reg. geol. arkiv*

PETROLEUM GEOCHEMISTRY REPORT

PREPARED FOR

NORSK HYDRO

The Geochemical Evaluation of Sediments from  
Well: 7119/7-1.

BA 83-1155-1

06 DEC 1983

PROSPECT  
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November 1983

1. Introduction

A total of twenty-six cuttings samples and eight sidewall core samples from the depth interval 630 m - 3165 m were used for a geochemical study of Well: 7119/7-1.

Maturity estimations using Vitrinite Reflectance measurements and spore fluorescence colours were obtained throughout the interval to establish a maturation profile for this well. Spore Colouration indices from Visual Kerogen description were used to corroborate reflectance measurements and assess true maturation levels.

Pyrolysis techniques were used to determine hydrocarbon source potential. Total Organic Carbon measurements provide additional information concerning the richness of the sediments. Hydrogen indices have been derived to predict oil and/or gas type for organic rich sediments.





## 2. Samples and Techniques

Cuttings samples were received in tin cans. Sidewall cores were received in small plastic envelopes. Amounts of sidewall cores were small, so several were bulked to obtain enough sediment for analysis. Samples were washed to remove all traces of drilling mud then air dried under controlled conditions of 40°C. Cuttings were carefully hand picked to remove obvious caved material and concentrate potentially organic rich lithologies (Table 1).

Samples for Vitrinite Reflectance measurements were coarsely ground ca 1 mm, mounted in epoxy resin block and polished. Reflectivity values were measured using a reflected light microscope, with an oil immersion objective. Results of these measurements are shown in Table 2.

Samples for Visual Kerogen description were treated with mineral acid. Remaining debris was sedimented onto a microscope slide and examined using a transmitted light microscope. Results of the Visual Kerogen description and assessments of Spore Colouration are shown in Table 4.

Samples for Total Organic Carbon measurements were finely ground and sieved to achieve homogeneity, then digested with fuming hydrochloric acid vapour to remove mineral carbonate. The decarbonated samples were then combusted in a Carlo Erba 1106 Carbon, Nitrogen analyser and their total organic carbon content determined, relative to those of calibrated standards. The results of these measurements are shown in Table 3.

Samples for Screening Pyrolysis were also ground and sieved and examined using a modified Hewlett-Packard 5711 Gas Chromatograph, to measure their ultimate hydrocarbon potential. Samples were subjected to two initial isothermal heating periods of 150°C and 325°C and then ramped to 575°C. Two peaks of

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interpretative significance were evolved, which are conventionally referred to as P1 and P2 and were related to those of a calibrated standard. Eight standards are run daily to ensure accuracy. The Hydrogen Index is derived from P2 and TOC values and is further used to help characterise oil and/or gas kerogens. The results of Screening Pyrolysis are shown in Table 3.



Well No: 7119/7-1

LITHOLOGY DESCRIPTIONS

Depth (m)	Type	Description
630-660	Cu	*60% shale light grey 30% limestone 10% drilling mud.
990-1020	Cu	*100% shale light grey fissile.
1080-110	Cu	*100% shale light grey fissile.
1200-1230	Cu	*100% mudstone light grey sub-fissile.
1290-1305	Cu	*95% mudstone light-medium grey 5% limestone white/grey.
1395-1410	Cu	*100% mudstone light-medium grey.
1500-1515	Cu	*100% mudstone light-medium grey micaceous.
1590-1605	Cu	*100% mudstone light-medium grey slightly calcareous.
1695-1710	Cu	95%*siltstone medium-light grey 5% limestone light grey.
1800-1815	Cu	95%*siltstone dark-medium grey 5% limestone light grey.
1890-1905	Cu	95%*siltstone dark-medium grey 5% limestone light grey.
1995-2010	Cu	95%*mudstone dark-medium grey 5% limestone medium grey.
2100-2115	Cu	95%*mudstone dark-medium grey 5% limestone light grey.
2190-2205	Cu	100%*mudstone, grey calcareous subfissile.
2209.5-2247.5	SWC	100%*mudstone dark grey.
2381.5-2395	SWC	*100% siltstone light-medium grey.
2465-2487	SWC	*100% siltstone light-medium grey.

Table 1.

Well No: 7119/7-1

LITHOLOGY DESCRIPTIONS

Depth (m)	Type	Description
2535-2550	SWC	*Claystone/shale olive black-brown black.
2595-2610	SWC	*Siltstone green-dark grey.
2640-2655	SWC	*Claystone brown-black.
2685-2700	SWC	*Claystone brown-black.
2790-2805	Cu	95%*siltstone dark grey, micaceous.
2882-2850	SWC	*100% siltstone light-medium grey.
2883-2902.5	SWC	*100% siltstone light-medium grey.
2910-2930	SWC	*shale black fissile.
2986-3010	SWC	*shale black fissile.
3033-3060	SWC	*shale black fissile.

Table 1 - continued.

\* = picked lithologies

Well No: 7119/7-1

VITRINITE REFLECTANCE DATA

Depth (m)	Lithology	Special Mineralogy	Bitumen		Phytoclasts Inert/Rew/Vit.	Fluorescence Typ/Cont/Col.	Vitrinite	
			Form	Content			Ro <sub>Av</sub>	(Points)
630-660	Shale+Carb	Iron Oxide	Wisps+	Low Staining	100%/Inert/Tr.Vit	Sp/Mod/Y.O	0.41	(5)
990-1020	Shale	Iron Oxide	Wisps+	Mod Staining	100%/Inert/Tr.Vit	Sp/Low/L.O	0.45	(8)
1500-1515	Silty Shale	Glauconite	Wisps+	Low Staining	100%/Inert/Tr.Vit	Sp/Tr/Y-O	0.55	(8) 0.86(1)
1995-2010	Shale	-	Wisps+	Low Blebs	100%/Inert/Tr.Vit	Sp/Tr/L-M.O	0.55	(9)
2190-2205	Silty Shale	Glauconite	Staining + Wisps	Mod	100%/Inert/Tr.Vit	Sp/Tr/L.O	0.60	(5)
2465-2487	Shale	Pyrite	Staining + Wisps	Mod	100%/Inert/Tr.Vit	Sp/Low/O.R	0.88	(7) 1.25(8)
2598-2610	Shale+ Limestone	Pyrite	Staining + Wisps	Low	100%/Inert/Tr.Vit	Sp/Tr/O.R	0.85	(2) 1.18(6)
2745-2760	Silty Shale	Pyrite	Staining + Wisps		100%/Inert/Tr.Vit	Sp/Low/O.R	1.17	(7) 1.67(3)
2790-2805	Calc shale	-	Staining	Mod	100%/Inert/Tr.Vit	Hs/Tr/Y	1.35	(6)
2910-2930	Calc shale	Pyrite	Staining + Wisps	Mod	100%/Inert/Tr.Vit	Sp/Tr/R	1.38	(2) 2.03(5)
3033-3060	Shale	Pyrite	Staining	Mod	100%/Inert/Tr.Vit	Sp/Tr/DR-B	1.71	(20)

Table 2.

Well No: 7119/7-1

VITRINITE REFLECTANCE DATA

Tr = Trace  
Sp = Spore  
Mod = Moderate  
Typ = Type  
Hs = Hydrocarbon specks  
Rew = Reworked  
Cont = Content  
Col = Colour

Y = Yellow  
L.O = Light Orange  
M.O = Medium Orange  
Y.O = Yellow/Orange  
O.R = Orange/Red  
R = Red  
DR = Dark Red  
B = Brown

Table 2 - continued.

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## PALEOCHEM

Well No: 7119/7-1

PYROLYSIS DATA

Depth (m)	TOC	Yield (Kg./tonne)		Hydrogen Index	Production Index
		P1 Peak	P2 Peak		
990-1020	0.55				
1080-1110	0.46				
1200-1230	0.70				
1290-1305	0.98				
1395-1410	0.49				
1500-1515	0.48				
1590-1605	0.68				
1695-1710	0.50				
1800-1815	0.67				
1890-1905	0.71				
1995-2010	0.75 (0.7R)	0.2	0.7	93	.22
2100-2115	0.66				
2190-2205	0.65				
2209.5-2247.5	0.73				
2381.5-2395	0.84				
2465-2487	1.1	0.4 (0.5R)	0.8 (0.8R)	73	.33
2535-2550	0.85	0.3	0.5	59	.38
2598-2610	0.83				
2640-2655	1.0	0.4	0.8	77	.33
2685-2700	1.1	0.4	0.6	54	.40
2745-2760	0.91				
2790-2805	0.80				
2832-2850	0.96	0.2	0.4	42	.33
2850-2865		0.2	0.4		
2883-2902.5	0.92				
2895-2910		0.7	0.4		
2910-2930	0.79				

Table 3.

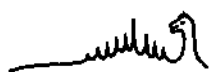
Well No: 7119/7-1

PYROLYSIS DATA

Depth (m)	TOC	Yield (Kg./tonne)		Hydrogen Index	Production Index
		P1 Peak	P2 Peak		
2986-3010	0.89	0.2 (0.2R)	0.1 (0.2R)	11	.66
2985-3000		0.2	0.2		
3033-3060	1.55	0.4	0.4	25	.50
3045-3060		0.2	0.2		
3090-3105		0.2	0.3		
3150-3165		0.3	0.3		

R = Repeat Value

Table 3 - continued.





Well No: 7119/7-1

VISUAL KEROGEN DATA

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Depth (m)	Palynomorphs	Cuticles	Brown Wood	Black Wood	Amorphous	Predominant Source Type	Colour Maturation Rating
2535-50	Trace*	-	Trace	Common	Trace	Gas/Sub oil	4
2640-55	Trace/Common*	-	Trace	Common	Trace/ Common	Gas/Sub oil	4/5
2685-2700	Trace/Common*	-	Trace	Common	Trace/ Common	Gas/Sub oil	4/5
2832-2850	Trace*	-	Trace	Common/ Abundant	Trace	Gas/Sub oil	5
2986-3010	Trace*	-	Trace	Trace/ Common	Trace	Gas/Sub oil	5

Table 4.

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7119/7-1 VITRINITE REFLECTANCE DISTRIBUTIONS

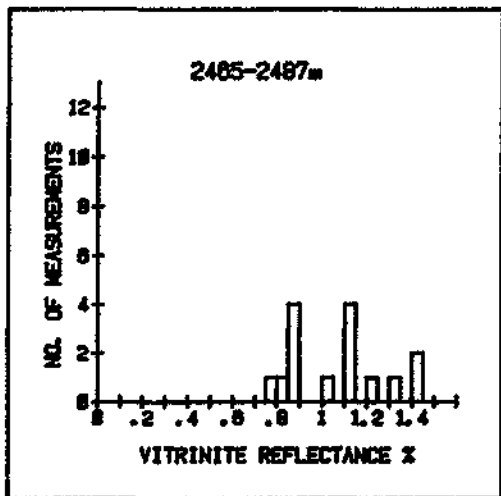
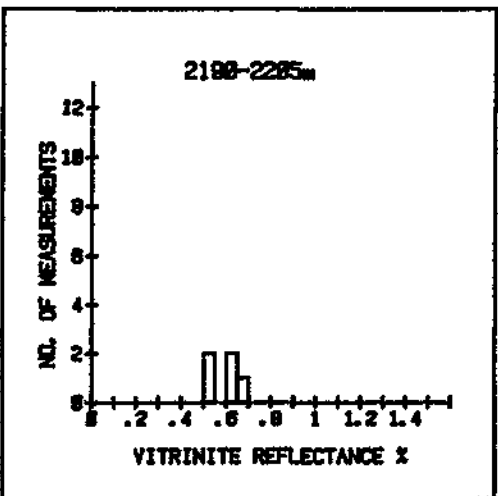
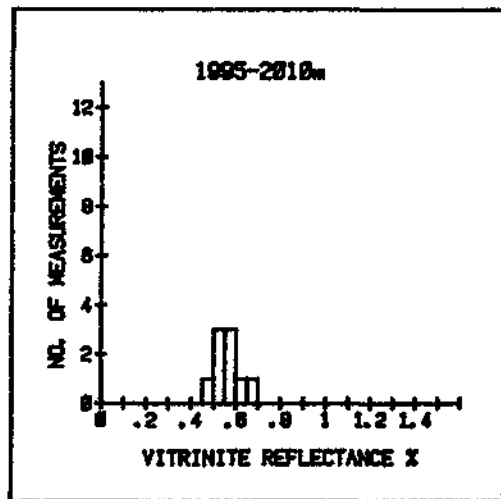
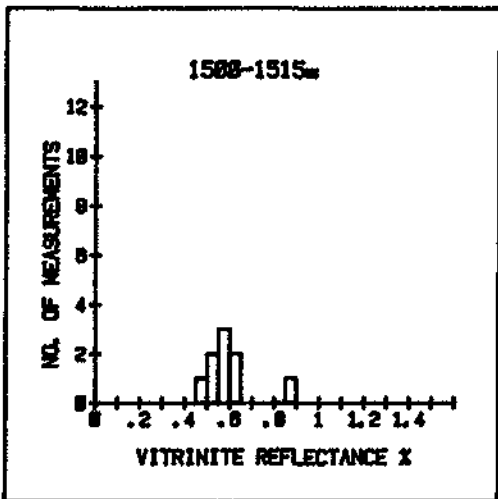
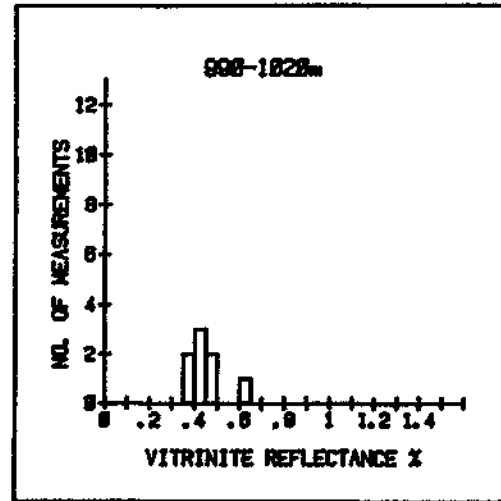
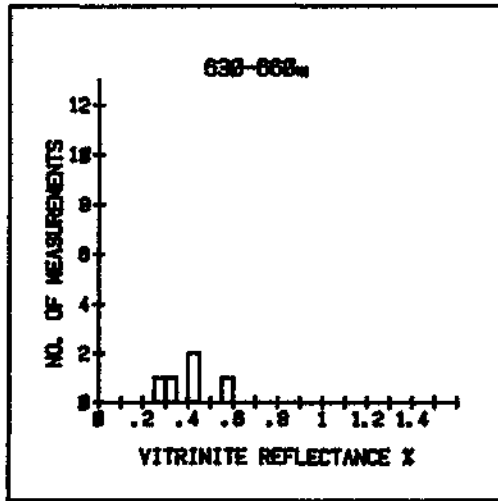


Figure 1.

7119/7-1 VITRINITE REFLECTANCE DISTRIBUTIONS

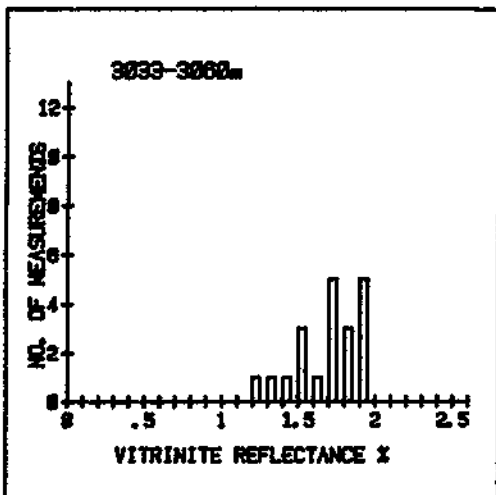
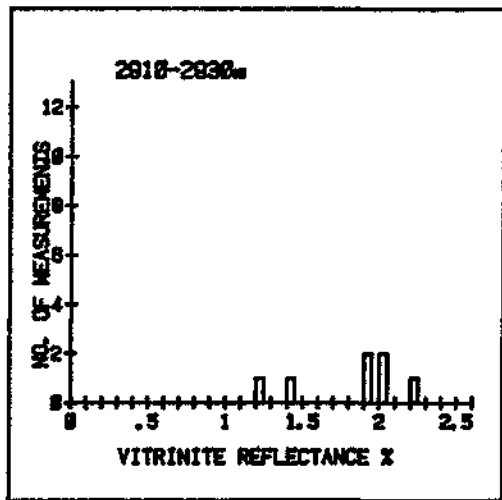
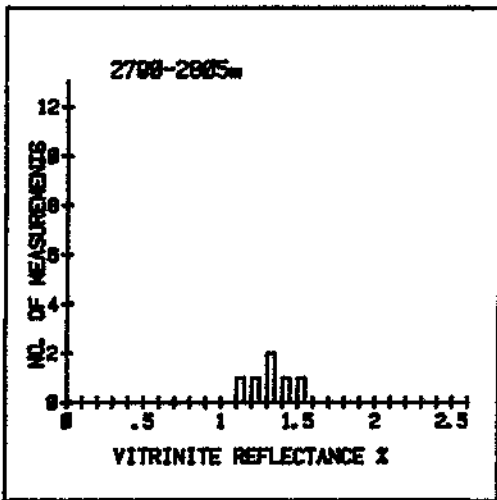
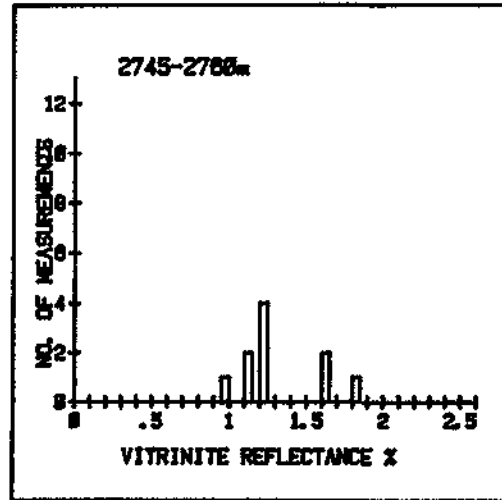
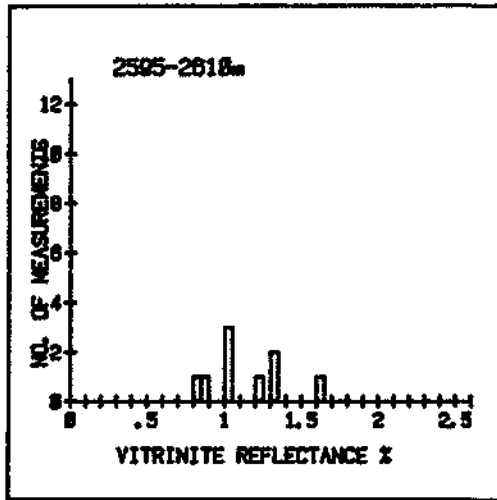


Figure 2.