

Test 1

The well was opened through a 3.2 mm (8/64") adjustable choke and later increased to a 6.4 mm (16/64") choke. During the 8 hours flow period the surface production rate was 2 Sm³/D. In order to increase the production rate, the string contents (water) were reversed out and displaced with diesel, thereby reducing the weight of the string contents. The well was opened on a 7.9 mm (20/64") choke. The production rate was not improved. After 15 minutes the well was shut in. When reversing out the diesel some hydrocarbon gas (C1, C2 and C3) was detected on the mudlogging system. The pressure and rate measurements from test 1 are presented in fig. 5.2.

Test 2

Test 2 was cancelled due to the results of test 1. However, a cased hole RFT was run in order to identify the fluid system.

The cased hole RFT sample from 3972 mRKB (depth reference final print CN/DEN/GR log, run 5B) contained primarily mud, cement water and traces of gas. A pressure point was also taken at 3978 mRKB. The pressures are presented in section 5.3.

Test 3A

The well was opened on 6.4 mm (16/64") adjustable choke. The choke size was stepwise increased to 31.8 mm (80/64"). After the production of one string volume (28 m³), small amounts of waxy oil was produced with formation water. An average total rate (oil and water) of 19 Sm³/D was measured on the tank during this last period. The BS&W measurements on the well stream showed a watercut of 90 - 97%. The pressure and rate measurements from test 3A are presented in fig. 5.3.

Test 3B

The second interval was perforated with wireline guns, and an immediate pressure increase followed. The well was opened on 4.8 mm (12/64") adjustable choke. The choke was then stepwise increased to 16.7 mm (42/64"). A water rate of 610 Sm³/D was registered. No oil was produced during Test 3B. H₂S was measured on Dräger tubes and consequently the test was stopped and the well was killed. The pressure and rate measurements from test 3B are presented in fig. 5.3.

Further details, test interpretation and fluid analyses will be given in Saga's Well Test Report 6406/11-1S.

5.5 Fluid Analyses

FMT samples

During the formation pressure measurements, three segregated samples were taken. The FMT-sample from 3694.3 mRKB contained oil and water. Analyses were carried out on the oil showing a waxy oil with a pour point of 34° C. The PVT analyses of the oil gave a bubble point pressure of 275 bar at 80° C and a stock tank oil density of 875.4 kg/m³. The GOR from single stage flash is 126.5 Sm³/Sm³. The reservoir oil composition is given in fig. 5.4.

Test 1

During test 1 in the Åre Formation minor amounts of water was produced. This was not enough to perform analyses.

Test 2

The cased hole RFT sample from 3972 mRKB (depth reference final print CN/DEN/GR log, run 5B) contained primarily mud and cement water. Some gas was sampled when flashing the one gallon chambre contents to standard conditions. The gas was analysed, and heptanes and lighter components were found. H₂S was not detected. The analysed gas sample was mixed with air.

Test 3A

During the first part of test 3A, the initial string contents were produced. After the production of one string volume (28 m³), small amounts of waxy oil was produced with the water. Stock tank oil samples were taken, and a total wax contents of 31 weight% is measured in the laboratory.

Test 3B

Due to the short production of test 3B, clean formation water was not obtained at the end of the production period. The well was killed because of H₂S detection. A gas sample collected at wellhead was analysed one month later; H₂S was then not detected, but Carbonyl Sulfide (COS) at 4.1 ppm was measured.

Well 6406/11-1S



DEPTH		HYDROSTATIC MUD PRESSURES		FORMATION PRESSURE (HP-GAUGE)		COMMENTS
MD mRKB	TVD mRKB	(before) psia	(after) psia	psia	bar	
<i>RUN 4A</i>						
3601.8	3548.8	8748.3	8743.1	8494.1	585.65	
3602.8	3549.8	8746.7	8745.9	8494.7	585.69	
3607.3	3554.3	8762.5	8758.4	8501.3	586.14	
3607.8	3554.8	8761.6	8757.1	8509.5	586.71	
3611.8	3558.8	8770.1	---	8564.5	590.50	<i>Abandon test</i>
3621.8	3568.8	8793.1	8787.8	8626.6	594.78	
3630.8	3577.8	8814.3	8809.6	8696.5	599.60	
3651.8	3598.7	8870.1	8864.0	8540.8	588.87	
3693.8	3640.6	8974.7	8968.4	8613.3	593.87	
3694.3	3641.1	8975.0	8972.0	8627.0	594.81	
3703.3	3650.1	8993.5	8986.5	8682.1	598.61	
3703.8	3650.6	8992.1	8988.0	8662.2	597.24	
3710.3	3657.1	9009.0	9002.6	8671.0	597.84	
3710.8	3657.6	9008.6	---	---	---	<i>Tight, abandon test</i>
3728.8	3675.5	9057.4	9048.7	8674.0	598.05	
3871.8	3818.2	9399.0	9399.8	---		<i>Tight "</i>
3872.3	3818.7	9393.0	9396.4	---		<i>Tight "</i>
3890.3	3836.7	9447.2	9446.5	---		<i>Tight "</i>
3894.3	3840.7	9441.7	9441.2	---		<i>Tight "</i>
3894.8	3841.2	9450.7	9448.4	---		<i>Tight "</i>
3904.3	3850.7	9474.6	9466.0	8977.1	618.95	
3904.8	3851.2	9466.3	9466.5	---		<i>Tight "</i>
3908.8	3855.2	9480.8	9470.0	9107.8	627.96	
3909.3	3855.7	9484.0	---	---		<i>Abandon test</i>

Remarks: The pressures are temperature corrected KB: 26 m

Table 5.3a Formation pressure, well 6406/11-1S

22.08.91 KaS/ERF

Formation Pressures



FORMATION PRESSURE WELL 6406/11-1S

DEPTH		HYDROSTATIC MUD PRESSURES		FORMATION PRESSURE (HP-GAUGE)		COMMENTS
MD mRKB	TVD mRKB	(before) psia	(after) psia	psia	bar	
<i>RUN 5E</i>						
3650.8	3597.2	9329.0	9321.0	8567.0	590.70	
3651.8	3598.7	9318.0	9315.0	8660.0	590.21	
3652.8	3599.7	9313.0	9310.0	8561.0	590.28	
3904.3	3850.7	9990.0	9997.0	---	---	<i>Tight</i>
3918.3	3864.6	10011.0	10012.0	---	---	<i>Tight</i>
3928.8	3875.1	10028.0	10029.0	---	---	<i>Tight</i>
3940.8	3887.1	10040.0	10041.0	9120.0	628.82	
3949.8	3896.1	0	---	---	---	<i>No seal</i>
3968.8	3915.1	10122.0	10113.0	---	---	<i>Tight</i>
3978.3	3924.5	0	---	---	---	<i>Lost seal</i>
3977.8	3924.0	0	---	---	---	<i>No seal, stuck</i>

*Remarks: The pressures are temperature corrected
KB: 26 m*

Formation Pressures



FORMATION PRESSURES AND FMT FLUID SAMPLING, WELL 6406/11-1S

Depth		Hydrostatic mud pressures		Formation pressures		Comments
MD mRKB	TVD mRKB	(before) psia	(after) psia	(HP-gauge) psia	bar	
<i>RUN 4B</i>						
3694.3	3641.1	8975.0	8969.0	8627.0	594.83	Strain gauge, segr. sample, open. pressure 1550 psia, 1500cc oil, 7000cc mud-filtrate, 5cf gas
<i>RUN 4C</i>						
3604.3	3551.3	8745.0	8746.0	8494.0	585.66	Strain gauge, segr. sample, open. pressure 0, 5500cc mudfiltrate, 0.1cf gas, (lost seal)
<i>RUN 4D</i>						
3651.8	3598.8	8978.0	8971.0	8544.2	589.12	Segr. sample, open. pressure 0, 8800cc mudfiltrate
<i>Cased hole RFT</i>						
3972		10189	10188	8971	618.7	1 and 6 gal chambers: Filtrate water w/some gas
3978		10211	10215	8990	620.0	

Remarks: The pressures are temperature corrected
KB: 26 m



Test	1	3A	3B
Fluid	WATER	WATER/OIL	WATER
Perforation interval (mRKB)	4027-4049 4053-4060	3709-3723	3692-3705 3709-3723
STABLE MAIN FLOW			
flowing rate (Sm ³ /D)	2	19	610
flowing wellhead pressure (bar)	1.0	2.0	23
flowing bottomhole pressure (bar)	515.2	355.0	372
- at depth (mRKB)	3997.12	3660.65	3660.65
choke size (mm)	6.4	31.8	16.7
dead water/oil density (kg/m ³)	N/A	N/A	N/A
gas gravity (air = 1)	N/A	N/A	N/A
GOR (Sm ³ /Sm ³)	N/A	N/A	N/A
- at separator pressure (bar)	N/A	N/A	N/A
- at separator temperature (C)	N/A	N/A	N/A
maximum temperature registered (C)	141.3	133.9	139.5
estimated initial pressure (bar)	628	N/A	590.3
- at depth (mRKB)	3997.12	3660.65	3660.65

Table 5.4 Test results, Well 6406/11-1S



RESERVOIR OIL COMPOSITION
 FMT-SAMPLE @ 3694.3 mRKB
 WELL 6406/11-1S

COMPONENT	weight %	mol %
CO ₂	0.26	0.69
N ₂	0.13	0.57
C ₁	6.37	47.50
C ₂	1.31	5.22
C ₃	1.84	5.00
i - C ₄	0.52	1.07
n - C ₄	1.16	2.38
i - C ₅	0.44	0.73
n - C ₅	0.51	0.84
C ₆	0.52	0.75
C ₇	1.20	1.65
C ₈	1.42	1.69
C ₉	0.78	0.81
C ₁₀₊	83.54	31.10

Molecular weight of C ₇₊	:	298
Density of C ₇₊ [kg/m ³]	:	880
Molecular weight of C ₁₀₊	:	322
Density of C ₁₀₊ [kg/m ³]	:	884
Average molecular weight	:	120

Figure 5.4 Reservoir Fluid Composition,
 FMT-sample @ 3694.3 mRKB, Well 6406/11-1S

Well: 6406/11-1S

Date	Hole size	Hole depth	Mud weight	PV	YP	Gel strength	pH	Alkalinity Pf /Mf	Ca++ mg/l	Cl- mg/l	Sand %	Solids %	Mudtype
901018			1.05			/		/					SPUD MUD
901019	36"		1.05			/		/					SPUD MUD
901020	36"	454.0	1.12	15.0	25.0	20/35	9.9	/		1300	.5		SPUD MUD
901021		934.0	1.13	5.0	20.0	20/40	9.2	/	40	2200	.3		GEL MUD
901022		1215.0	1.15	5.0	20.0	26/45	9.5	/	60	2200	1.5		GEL MUD
901023	26"	1215.0	1.15	5.0	19.0	25/47	9.5	/	80	2300	1.3		GEL MUD
901024	26"	1215.0	1.16	6.0	21.0	29/47	9.3	/	80	2500	.7		GEL MUD
901025	26"	1215.0	1.18	6.0	22.0	28/45	9.3	/	80	2500	.7		GEL MUD
901026	26"	1218.0	1.18	7.0	25.0	29/47	9.0	/	80	2000			GEL MUD
901027	26"	1218.0	1.18	7.0	25.0	29/47	9.0	/	80	2000			GEL MUD
901028	17 1/2"	1235.0	1.30	23.0	34.0	4/7	7.4	/1.7	280	45000	.5	14.0	KCL MUD
901029	17 1/2"	1525.0	1.30	28.0	42.0	5/7	7.7	/1.5	360	4700	.5	12.0	KCL MUD
901030	17 1/2"	1920.0	1.52	28.0	40.0	8/15	7.4	/1.5	400	59000	1.0	20.0	KCL MUD
901031	17 1/2"	2125.0	1.59	37.0	23.0	6/30	7.6	/1.2	800	56000	1.0	24.0	KCL MUD
901101	17 1/2"	2165.0	1.61	33.0	17.0	6/36	8.0	/1.6	760	55000	.8	25.0	KCL MUD
901102	17 1/2"	2165.0	1.61	36.0	13.0	4/28	8.0	/1.5	360	58000	.8	25.0	KCL MUD
901103	17 1/2"	2165.0	1.61	35.0	15.0	4/31	8.9	/1.6	360	57000	.8	25.0	KCL MUD
901104	17 1/2"	2165.0	1.61	34.0	18.0	4/33	8.6	/1.6	280	56000	.8	25.0	KCL MUD
901105	17 1/2"	2165.0	1.61	35.0	15.0	4/31	8.4	/1.4	260	55000	.6	25.0	KCL MUD
901106	17 1/2"	2165.0	1.61	35.0	13.0	4/28	8.6	/1.6	220	55000	.6	25.0	KCL MUD
901107	12 1/4"	2297.0	1.66	30.0	13.0	5/37	9.0	.2/3.0	260	55000	.5	26.0	KCL MUD
901108	12 1/4"	2450.0	1.71	37.0	21.0	7/43	9.2	.2/3.6	240	55000	.5	27.0	KCL MUD
901109	12 1/4"	2636.0	1.71	30.0	21.0	8/44	9.2	.2/2.1	540	55000	.5	27.0	KCL MUD
901110	12 1/4"	2721.0	1.71	31.0	15.0	5/34	8.8	/1.8	320	55000	.5	26.0	KCL MUD
901111	12 1/4"	2827.0	1.71	31.0	17.0	5/38	8.8	.1/2.5	440	55000	.5	26.0	KCL MUD
901112	12 1/4"	2898.0	1.71	35.0	20.0	6/40	8.7	.1/2.1	360	56000	.5	26.0	KCL MUD
901113	12 1/4"	2992.0	1.71	37.0	19.0	6/34	8.6	.1/2.1	380	53000	.5	26.0	KCL MUD

Well: 6406/11-1S

Date	Hole size	Hole depth	Mud weight	PV	YP	Gel strength	pH	Alkalinity Pf /Mf	Ca++ mg/l	Cl- mg/l	Sand %	Solids %	Mudtype
901114	12 1/4"	3104.0	1.71	33.0	23.0	5/38	8.6	.1/2.0	380	50000	.5	26.0	KCL MUD
901115	12 1/4"	3159.0	1.71	34.0	22.0	5/37	8.6	.1/1.9	360	50000	.5	26.0	KCL MUD
901116	12 1/4"	3195.0	1.71	32.0	20.0	5/37	8.7	.1/1.8	360	51000	.5	26.0	KCL MUD
901117	12 1/4"	3244.0	1.71	28.0	17.0	5/38	8.7	.1/1.8	360	50000	.5	26.0	KCL MUD
901118	12 1/4"	3244.0	1.71	28.0	17.0	5/38	8.7	.1/1.8	320	50000	.5	26.0	KCL MUD
901119	12 1/4"	3295.0	1.71	29.0	21.0	6/43	8.8	.1/1.9	300	50000	.5	26.0	KCL MUD
901120	12 1/4"	3348.0	1.71	38.0	25.0	5/41	8.6	.0/1.6	320	50000	.5	26.0	KCL MUD
901121	12 1/4"	3389.0	1.71	32.0	19.0	4/28	8.6	.0/2.2	320	53000	.5	26.0	KCL MUD
901122	12 1/4"	3395.0	1.71	33.0	21.0	4/25	8.9	.0/1.5	320	54000	.5	26.0	KCL MUD
901123	12 1/4"	3395.0	1.71	33.0	22.0	4/27	8.7	/1.7	320	54000	.5	26.0	KCL MUD
901124	12 1/4"	3395.0	1.71	34.0	19.0	4/24	8.6	/1.9	360	56000	.5	26.0	KCL MUD
901125	12 1/4"	3395.0	1.71	35.0	19.0	5/28	8.5	/2.1	360	56000	.5	26.0	KCL MUD
901126	12 1/4"	3395.0	1.71	31.0	18.0	4/20	8.3	/1.2	360	51000	.5	27.0	KCL MUD
901127	12 1/4"	3395.0	1.71	30.0	18.0	4/19	8.2	/1.3	360	51000	.5	26.0	KCL MUD
901128	12 1/4"	3395.0	1.72	31.0	15.0	3/19	8.4	/1.3	320	50000	.5	26.0	KCL MUD
901129	12 1/4"	3395.0	1.72	36.0	21.0	5/46	9.5	.4/4.0	80	50000	.5	26.0	KCL MUD
901130	12 1/4"	3395.0	1.72	35.0	13.0	3/19	8.7	.3/4.0	120	47000	.5	26.0	KCL MUD
901201	12 1/4"	3395.0	1.72	35.0	12.0	3/18	8.6	.3/4.2	120	47000	.5	26.0	KCL MUD
901202	8 1/2"	3395.0	1.72	36.0	16.0	3/20	8.9	.3/4.4	100	46000	.3	26.0	KCL MUD
901203	8 1/2"	3395.0	1.72	35.0	19.0	3/24	8.5	.2/4.2	140	46000	.3	26.0	KCL MUD
901204	8 1/2"	3395.0	1.72	34.0	17.0	3/23	8.4	.2/3.8	160	46000	.3	26.0	KCL MUD
901205	8 1/2"	3395.0	1.72	34.0	17.0	3/23	8.4	.2/3.8	160	46000	.3	26.0	KCL MUD
901206	8 1/2"	3319.0	1.72	30.0	11.0	3/20	8.4	.2/3.8	160	46000	.3	26.0	KCL MUD
901207	8 1/2"	3319.0	1.72	30.0	10.0	3/19	8.4	.2/3.8	160	46000	.3	26.0	KCL MUD
901208	8 1/2"	3319.0	1.72	26.0	10.0	3/17	8.4	.2/3.8	160	46000	.3	26.0	KCL MUD
901210	8 1/2"	3319.0	1.72	28.0	21.0	6/29	8.6	.2/3.9	200	46000	.3	26.0	KCL MUD
901211	8 1/2"	3319.0	1.72	32.0	18.0	5/24	8.5	.2/3.9	280	46000	.3	26.0	KCL MUD

Date	Hole size	Hole depth	Mud weight	PV	YP	Gel strength	pH	Alkalinity Pf /Mf	Ca++ mg/l	Cl- mg/l	Sand %	Solids %	Mudtype
901212	8 1/2"	3320.0	1.72	30.0	15.0	3/17	8.5	.2/3.9	280	46000	.3	26.0	KCL MUD
901213	8 1/2"	3324.0	1.72	30.0	18.0	5/21	8.5	.2/3.9	200	46000	.3	26.0	KCL MUD
901214	8 1/2"	3324.0	1.72	32.0	12.0	4/21	8.8	.2/3.9	180	46000	.3	26.0	KCL MUD
901215	8 1/2"	3324.0	1.72	28.0	11.0	4/17	9.4	.3/4.0	360	46000	.3	27.0	KCL MUD
901216	8 1/2"	3390.0	1.72	27.0	12.0	4/19	9.4	.3/4.0	180	46000	.3	27.0	KCL MUD
901217	8 1/2"	3405.0	1.72	25.0	12.0	5/22	9.4	.3/4.0	400	46000	.3	27.0	KCL MUD
901218	8 1/2"	3455.0	1.72	26.0	10.0	4/19	9.2	.2/4.0	600	45000	.3	26.0	KCL MUD
901219	8 1/2"	3488.0	1.72	29.0	15.0	5/22	10.5	.2/5.9	520	41000	.3	26.0	KCL MUD
901220	8 1/2"	3532.0	1.72	30.0	14.0	4/25	10.6	.2/5.0	400	38000	.3	26.0	KCL MUD
901221	8 1/2"	3576.0	1.72	29.0	12.0	4/22	10.3	.2/4.6	600	34000	.3	26.0	KCL MUD
901222	8 1/2"	3615.0	1.72	28.0	11.0	3/20	10.3	.2/4.1	500	33000	.3	26.0	KCL MUD
901223	8 1/2"	3625.0	1.72	29.0	11.0	3/22	10.1	.1/4.2	520	33000	.3	26.0	KCL MUD
901224	8 1/2"	3653.0	1.72	29.0	10.0	3/20	10.1	.1/4.5	480	32000	.3	26.0	KCL MUD
901225	8 1/2"	3665.0	1.72	29.0	10.0	3/20	10.2	.2/4.4	480	31000	.3	26.0	KCL MUD
901226	8 1/2"	3684.0	1.72	29.0	11.0	3/21	10.2	.2/4.5	440	31000	.3	26.0	KCL MUD
901227	8 1/2"	3713.0	1.72	28.0	11.0	3/25	10.1	.1/4.1	480	30000	.3	26.0	KCL MUD
901228	8 1/2"	3532.0	1.72	27.0	12.0	4/24	10.0	.1/4.0	480	30000	.3	26.0	KCL MUD
901229	8 1/2"	3532.0	1.72	31.0	16.0	5/32	9.7	.1/3.8	480	30000	.3	26.0	KCL MUD
901230	8 1/2"	3532.0	1.72	32.0	16.0	5/32	10.1	.2/4.0	440	30000	.3	26.0	KCL MUD
901231	8 1/2"	3532.0	1.72	36.0	18.0	5/34	10.4	.2/4.0	400	31000	.3	26.0	KCL MUD
910101	8 1/2"	3532.0	1.72	34.0	17.0	5/32	10.5	.2/3.9	420	30000	.3	25.0	KCL MUD
910102	8 1/2"	3532.0	1.72	34.0	17.0	5/34	10.5	.2/3.9	420	30000	.3	25.0	KCL MUD
910103	8 1/2"	3532.0	1.72	33.0	16.0	3/23	10.8	.3/3.8	520	28000	.3	25.0	KCL MUD
910104	8 1/2"	3600.0	1.72	34.0	16.0	4/24	10.7	.3/3.7	520	28000	.3	25.0	KCL MUD
910105	8 1/2"	3600.0	1.72	34.0	11.0	3/18	10.5	.3/3.8	520	28000	.3	25.0	KCL MUD
910106	8 1/2"	3600.0	1.76	40.0	12.0	3/28	10.7	.3/3.7	480	28000	.3	26.0	KCL MUD
910107	8 1/2"	3945.0	1.78	26.0	10.0	3/22	10.2	.2/1.9	400	4000	.8	27.0	WATER BASED

Date	Hole size	Hole depth	Mud weight	PV	YP	Gel strength	pH	Alkalinity Pf /Mf	Ca++ mg/l	Cl- mg/l	Sand %	Solids %	Mudtype
910108	8 1/2"	3945.0	1.78	28.0	11.0	4/34	10.0	.1/2.0	480	4400	.3	27.0	WATER BASED
910109	8 1/2"	3945.0	1.78	29.0	14.0	5/38	10.0	.1/1.9	480	4400	.3	27.0	WATER BASED
910110	8 1/2"	4091.0	1.81	29.0	15.0	7/50	10.1	.2/2.0	360	4000	.3	28.0	WATER BASED
910111	8 1/2"	4091.0	1.81	36.0	18.0	8/67	10.5	.3/2.0	400	4300	.3	28.0	WATER BASED
910112	8 1/2"	4091.0	1.81	27.0	12.0	8/51	10.1	.1/2.0	480	4500	.3	28.0	WATER BASED
910113	8 1/2"	4091.0	1.81	27.0	12.0	/51	10.1	.1/2.0	480	4500	.3	28.0	WATER BASED
910114	8 1/2"	4185.0	1.83	33.0	13.0	5/47	9.8	.1/2.2	360	4500	.3	29.0	WATER BASED
910115	8 1/2"	4185.0	1.83	32.0	14.0	5/42	10.0	.2/2.2	320	4500	.3	29.0	WATER BASED
910116	8 1/2"	4185.0	1.83	28.0	10.0	4/28	10.6	.2/2.0	440	4500	.3	29.0	WATER BASED
910117	8 1/2"	4185.0	1.83	26.0	10.0	4/25	10.6	.2/2.0	440	4500	.3	29.0	WATER BASED
910118	8 1/2"	4185.0	1.83	28.0	9.0	4/25	11.1	.4/2.3	400	4800	.3	29.0	WATER BASED
910119	8 1/2"	4185.0	1.83	25.0	8.0	4/20	10.7	.3/2.0	340	4800	.3	29.0	WATER BASED
910120	8 1/2"	4185.0	1.83	24.0	10.0	5/28	10.2	.3/2.0	320	4800	.3	29.0	WATER BASED
910121	8 1/2"	4185.0	1.83	26.0	14.0	8/40	10.2	.3/1.9	360	6000	.3	29.0	WATER BASED
910122	8 1/2"	4185.0	1.83	22.0	8.0	5/22	10.1	.2/1.8	360	6000	.3	29.0	WATER BASED
910123	8 1/2"	4185.0	1.83	22.0	8.0	4/19	11.2	.3/2.1	580	5000	.3	29.0	WATER BASED
910124	8 1/2"	4185.0	1.83	26.0	8.0	4/17	11.3	.4/2.0	600	5200	.3	29.0	WATER BASED
910125	8 1/2"	4185.0	1.83	26.0	8.0	4/17	11.1	.4/2.0	600	5200	.3	29.0	WATER BASED
910126	8 1/2"	4185.0	1.83	28.0	9.0	4/20	11.3	.4/2.1	600	5200	.3	29.0	WATER BASED
910127	8 1/2"	4185.0	1.83	25.0	8.0	3/12	11.5	.6/2.2	540	5400	.3	29.0	WATER BASED
910128	8 1/2"	4185.0	1.83	22.0	9.0	3/11	11.5	.6/2.4	600	5500	.3	29.0	WATER BASED
910129	8 1/2"	4185.0	1.83	22.0	9.0	3/12	11.4	.6/2.4	600	5500	.3	29.0	WATER BASED
910130	8 1/2"	4185.0	1.83	23.0	8.0	3/11	11.6	.6/2.5	600	5500	.3	29.0	WATER BASED
910131	8 1/2"	4185.0	1.83	22.0	10.0	3/10	11.7	.7/2.6	640	5500	.3	29.0	WATER BASED
910201	8 1/2"	4185.0	1.83	22.0	10.0	3/10	11.6	.6/2.6	640	5500	.3	29.0	WATER BASED
910202	8 1/2"	4185.0	1.83	22.0	10.0	3/10	11.6	.6/2.6	640	5500	.3	29.0	WATER BASED
910203	8 1/2"	4185.0	1.83	23.0	8.0	3/9	11.5	.6/2.5	620	5500	.3	29.0	WATER BASED

Date	Hole size	Hole depth	Mud weight	PV	YP	Gel strength	pH	Alkalinity Pf /Mf	Ca++ mg/l	Cl- mg/l	Sand %	Solids %	Mudtype
910204	8 1/2"	4185.0	1.83	23.0	8.0	3/8	11.4	.6/2.5	620	5500	30.0	29.0	WATER BASED
910205	8 1/2"	4185.0	1.83	22.0	10.0	3/10	11.7	/2.5	600	5500	25.0	29.0	WATER BASED
910206		3975.0	1.83	22.0	8.0	7/9	11.7	.6/2.5	600	5700	.3	29.0	WATER BASED
910207		3975.0	1.83	23.0	8.0	2/9	11.6	.6/2.6	600	6000	.3	29.0	WATER BASED
910208		3975.0	1.83	22.0	9.0	3/9	11.5	.6/2.6	640	6000	.3	29.0	WATER BASED
910209		3975.0	1.83	22.0	9.0	3/9	11.5	.6/2.4	640	6000	.3	29.0	WATER BASED
910210		3975.0	1.83	21.0	4.0	2/7	11.3	.6/2.8	640	7000	.3	29.0	WATER BASED
910211		3975.0	1.83	22.0	8.0	3/9	11.3	.6/2.8	640	7000	.3	29.0	WATER BASED
910212		3975.0	1.83	22.0	8.0	3/9	11.3	.6/2.8	640	7000	.3	29.0	WATER BASED
910213		3975.0	1.84	22.0	10.0	3/10	11.2	.6/2.8	640	7300	.3	29.0	WATER BASED
910214		3875.0	1.85	22.0	9.0	3/9	11.0	.6/2.8	640	7300	.3	29.0	WATER BASED
910215		3875.0	1.85	22.0	9.0	3/9	11.0	.6/2.8	640	7300	.3	29.0	WATER BASED
910216		3875.0	1.81	28.0	17.0	6/54	10.6	.4/3.8	440	14500	.3	28.0	WATER BASED
910217						/		/					WATER BASED
910218						/		/					WATER BASED
910220						/		/					WATER BASED
910221						/		/					WATER BASED

SAGA PETROLEUM A.S.

6.2.2 MUD MATERIALS USED
Well no.: 6406/11-1S

Materials	Unit	36" Hole	26" Hole	17 1/2" Hole	12 1/4" Hole	8 1/2" Hole	DST	Total
AGIPACK LV	KG			10725	13425	8775		32925
AGIACK REG.	KG			3550	5450	575		9575
ALCOMER 75L	KG					5900	1150	7050
BACRAN 3	KG					30	5	35
BARITE	MT		106	603	913	1084	140	2846
BENTONITE	MT	18	51			16	8	93
CAUSTIC SODA	KG	75	150	125	575	1500	200	2625
CITRIC ACID	KG			150	1825	3325		5300
DESCO CF	KG					4579	769	5348
GYPSUM	KG				1050	1960		3010
KCL BRINE	BBL			2887	1772	204		4863
KCL POWDER	KG			3750	7000	1250		12000
LAMPAC REG.	KG				1475			1475
LIME	KG		340		100	3220	250	3910
MPOC	KG					208		208
POLYDRILL	KG					7150	575	7725

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SAGA PETROLEUM A.S.

6.2.2 MUD MATERIALS USED
Well no.: 6406/11-1S

Materials	Unit	36" Hole	26" Hole	17 1/2" Hole	12 1/4" Hole	8 1/2" Hole	DST	Total
POLY PLUS	KG			850	925	525		2300
POT.BICARB.	KG			1775	6025	1525		9325
POT. CARBONATE	KG			1000	1000			2000
RESINEX	KG					11068	1540	12608
SIL.DEFOAMER	KG					200	800	1000
SODA ASH	KG	100	825			25		950
SOD.BICARB.	KG		175		850	2875	150	4050
XANTHAM GUM	KG			1200		225	100	1525
ZINC CARBONATE	KG						750	750

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GEOCHEMICAL ANALYSIS REPORT
WELL NOCS ~~6046/11-1S~~
6406/11-1-S

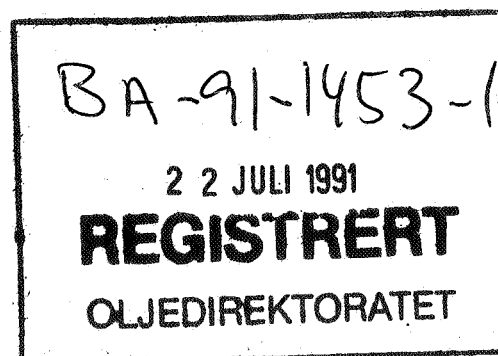
PART 1

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Date : 14.05.1991



INTRODUCTION

Geochemical analyses were performed on 70 cuttings samples, 11 core-chip samples, 10 sidewall core samples and 2 oil samples from the well NOCS 6406/11-1S (approximate location - Figure 1-map). The analyses were performed according to the analytical program ordered by Saga Petroleum and was as follows:

Lithology description	94 samples
Headspace/occluded gas analysis	69 samples
TOC by LECO carbon analyser	36 samples
Whole rock pyrolysis using Rock-Eval	32 samples
Extraction, separation and asphaltene precipitation of soluble bitumen of whole rock samples	15 samples
Capillary - gas chromatography of saturated and aromatic hydrocarbon fractions	12 samples
Gas chromatography - mass spectrometry	11 samples
$\delta^{13}\text{C}$ isotope analysis of $\text{C}_1 - \text{C}_4$ gases	10 samples
$\delta^{13}\text{C}$ isotope analysis (saturated HC, aromatic HC, NSO and asphaltene fractions)	11 samples
Vitrinite reflectance microscopy	38 samples
Visual kerogen microscopy	8 samples
Complete oil analysis	2 samples

Tables listing in detail which samples were analysed and with all data acquired from individual geochemical analyses are located in Appendix 1. Saturated and aromatic hydrocarbon gas chromatograms are in Appendix 2. Reflectance histograms are in Appendix 3. Gas chromatography - mass spectrometry fragmentograms are in Appendix 4.

FLUID ANALYSIS

Oil Analysis Results

	<u>Gravity</u>	<u>Sulphur</u> <u>Content</u>	<u>Ni (mg/l)</u>	<u>V (mg/l)</u>
DST 3A	884.9 kg/m ³	0.07	> 0.3	> 0.3
DST 3A, >210°C fraction	887.0 kg/m ³			

Comments

The sample was so viscous that it required warming to 60°C several times in order that it could be transferred to suitable sample vessels for the different analyses. This could have affected the gravity measurement.

Procedure

Gravity was measured at 15°C. The instrument used was an AP Paar Density meter.

Sulphur was measured using a Princeton Gamma Tech. The blank standard was "babyoil".

Nickel and vanadium were analysed using an IPC AES, using a 1:10 dilution with p.a. quality kerosene.

EXPERIMENTAL PROCEDURES

Headspace gas analysis

The analysis is performed using a gas chromatograph with a 50 m capillary column, loop injector and flame ionisation detector. Helium is used as carrier gas.

Two cm³ of headspace gas are removed from each sample can for chromatographic analysis of the C₁ to C₇ range of hydrocarbons.

Occluded gas analysis

The analysis is performed using a gas chromatograph with a 50 m capillary column, loop injector and flame ionisation detector. Helium is used as carrier gas.

The canned samples are washed in thermostatted water to remove drilling contaminants and sieved on a 2 mm mesh sieve to remove large, caved rock fragments. An aliquot (ca 25 mg) of sieved sample is crushed with 25 cm³ water in an airtight ball mill. After crushing, 2 cm³ of the released gas are removed from the ball mill for gas chromatographic analysis.

Total organic carbon (TOC) and total carbon analysis

This analysis is performed using a LECO CS244 Carbon Analyser.

Hand-picked lithologies from cutting samples are crushed with a mortar and pestle and approximately 200 mg (50 mg for coals) are accurately weighed into LECO crucibles. The samples are then treated three times with dilute hydrochloric acid, to remove oxidised (carbonate) carbon, and

washed four times with distilled water. The samples are dried on a hotplate at 60-70°C before analysis of total organic carbon. Total carbon is analysed on the same instrument using approximately 200 mg of untreated crushed whole rock. Oxidised (carbonate) carbon is calculated by difference.

Extractable Organic Matter (EOM) Analysis

Samples are selected for extraction on the basis of screening analysis. 10 - 20 g of whole rock are accurately weighed.

Extraction is carried out in a Tecator Soxtec HT extractor using 7% (v/v) methanol in dichloromethane as extraction solvent. Samples are boiled for 1 h and rinsed for 2 h. Samples with TOC greater than 10% are extracted a second time and the extracts combined. After filtration into a tared flask the solvent is removed by rotary evaporation at 200 mB and 35°C. The residue, dried to constant weight, is weighed to give the amount of EOM.

Separation of Asphaltenes

The EOM is dissolved in 1:3 (w:v) tetrahydrofuran in an tared flask and pentane added to precipitate asphaltenes. A minimum of 40 volumes of pentane per 1 volume of THF/EOM is used and the solution allowed to stand 8 h at room temperature in the dark. The solution is filtered and the precipitated asphaltenes returned to the original flask by dissolution in methanol (7% v/v)/dichloromethane. The asphaltene solution is evaporated to constant weight.

Liquid chromatographic separation

Chromatographic separation is performed using an MPLC system developed by the company. The EOM (after removal of asphaltenes) is injected into the MPLC and chromatographed using hexane as eluent. This effects a separation into saturated and aromatic fractions which are collected and concentrated on a rotary evaporator, at 35°C and 200 mB, to remove the bulk of the hexane. The fractions are then transferred to small tared vials and evaporated to dryness in a stream of nitrogen. The vials are re-weighed to obtain the weights of both fractions. The weight of the NSO fraction, which is retained on the chromatography column, is obtained by difference.

Gas chromatographic analyses

Saturated fraction

The instrument used for this analysis is a gas chromatograph with a 25 m OV1 column, split injector and FID detector. The carrier gas is helium and the temperature program runs isothermally at 60°C, for 2 minutes and then rises to 290°C at a rate of 4°C/min.

The sample of saturated fraction is diluted by 1:20 with hexane and a 1 microlitre aliquot of this is injected into the instrument.

Aromatic fraction

The instrument used is a gas chromatograph with a 25 m SE-54 capillary column, split injector and effluent splitter leading to FID and FPD detectors, allowing simultaneous analysis of hydrocarbons and sulphur compounds. The carrier

gas is helium and the temperature program runs from 60°C to 300°C at a rate of 4°C/min.

The sample of aromatic fraction is diluted by 1:20 with hexane and a 1 microlitre aliquot of this is injected into the instrument.

Whole Oil

Whole oil chromatograms are determined on a gas chromatograph fitted with a split injector, 25m SE54 capillary column and effluent splitter connected to FID and sulphur mode FPD detectors allowing simultaneous determination of hydrocarbons and sulphur compounds. Approximately 0.1 microlitres of whole oil are injected and the temperature program on the chromatograph runs from -10°C to 300°C at 4°C/min.

Rock Eval pyrolysis

This analysis is performed using a ROCK EVAL II Pyrolyser into which approximately 100 mg of crushed whole rock are loaded. Analysis involves heating the sample, from 300°C to 600°C, in an inert atmosphere (helium) to release naturally generated hydrocarbons (S1 peak) and then pyrolytically generated hydrocarbons (S2 peak), both of which are detected by an FID. In the temperature interval between 300°C and 390°C, the released gases are split and a proportion passed through a carbon dioxide trap, which is connected to a thermal conductivity detector (TCD). The value obtained from the TCD corresponds to the amount of oxygen contained in the kerogen of the sample and is reported as the S3 peak. The temperature corresponding to the maximum of the S₂ peak, T_{max}, is also recorded.

Thermal extraction/pyrolysis gas chromatography

The instrument used for this analysis is a gas chromatograph connected to a pyrolysis oven. A very small amount (2 mg) of whole rock sample is loaded into the oven and heated isothermally, at 300°C, for 3 minutes, during which time thermal extraction of the generated hydrocarbons occurs (equivalent to the S1 peak of Rock Eval). The released gases pass to a 15 m OV1 column with a nitrogen-cooled trap.

After 3 minutes the pyrolysis oven heats up to 510°C, at a rate of 40°C per minute, causing bound hydrocarbons to be released from the kerogen of the sample (equivalent to the S2 peak of Rock Eval). These gases are passed through a 25m DB1 capillary column with a nitrogen-cooled trap.

The temperature program for the chromatographic oven, in which both columns are situated, rises from 0°C to 290°C at a rate of 4°C/min. Both columns are linked to FID detectors.

Vitrinite reflectance analysis

Samples, in the form of small granules, are mounted in a

fast setting resin. The resin blocks are ground on coarse corundum paper to expose the rock granule surfaces and then on three finer grades of corundum paper to improve these surfaces and reduce scratches. The resin blocks are finally polished on a rotating Selvyt-covered lap using two grades of polishing alumina. Isopropyl alcohol is used to lubricate the entire grinding and polishing process except in the case of coal samples, when water is used.

Reflectance measurements are taken under oil immersion ($n = 1.518$) using a ZEISS MPM03 microscope photometer with a 546nm interference filter. The polished blocks are mounted on the microscope stage and scanned manually in order to locate and measure particles of vitrinite. An attempt is made to obtain readings from 20 individual particles per sample but this is not always possible in samples with low amounts of phytoclasts.

Spore fluorescence colour

Samples are also analysed microscopically in U.V. light, using an exciter filter with a band pass of 400 - 440 nm and a barrier filter with a long pass of 470 nm, and the colour of the spore fluorescence is determined. This is used as an alternative maturity parameter to verify the result obtained from vitrinite reflectance and is reported on a numerical scale from 1 to 9:

<u>Fluorescence Colour</u>	<u>Colour Index</u>	<u>Corresp. Vitrinite Reflectance</u>
Green	1	0.2%
Green/Yellow	2	0.2/0.3%
Yellow	3	0.3%
Yellow/Orange	4	0.4%
Light Orange	5	0.5%
Mid-Orange	6	0.6%
Dark Orange	7	0.8%
Orange/Red	8	1.0%
Red	9	1.1%

NB. This table only provides a rough correlation as vitrinite reflectance and spore fluorescence colour are both independently affected by factors such as depositional environment and catagenic history.

Preparation of Kerogen Concentrates

Samples are stirred for 16 h with 25 cm³ concentrated hydrochloric acid at 35 - 40°C. The acid is decanted and the residue washed by stirring for 3 h with 25 cm³ distilled water. The washing is repeated twice more.

If the concentrate is not being prepared for slides the residue is washed, rapidly, at this point, with 25 cm³ dichloromethane.

25 cm³ hydrofluoric acid are then added to the residue and the mixture stirred for 16 h at room temperature. The acid is decanted and the residue washed by stirring for 3 h with distilled water. The water washing is repeated three times with fresh aliquots of distilled water each time. The water is then decanted and the residue either dried in an oven at 40 - 50°C to constant weight, or, if slides are to be made, it is transferred to a microscope cover slip and dried on a hot bench at 40 - 50°C.

Preparation of Slides

The dry kerogen concentrate is mounted on a slide in glycerine/gelatine and left to dry at room temperature overnight.

EXPERIMENTAL

Isotope Ratio Mass Spectrometry

The isotope analysis were performed on a dual inlet VG SIRA 10 instrument. The combustion of the samples were done by a Carlo Erba EA 1108 element analyser directly connected to the inlet system of the mass spectrometer.

The combustion temperature was 1020°C and the carries gas used was Helium. After the combustion H₂O and CO₂ were trapped in different cool traps. The CO₂ gas was then heated up before it was admitted to the mass spectrometer. The whole operation was controlled by a IBM PC50 computer system.

δ-values

The isotope ratios are given as δ-values in ‰ versus the PDB-standard:

$$\delta^{13}\text{C} = (\text{R sample} - \text{R standard} / \text{R standard}) * 1000$$

$$\text{R} = {}^{13}\text{C} / {}^{12}\text{C}$$

The PDB standard (a marine chalk of the Pee Dee-formation, USA) was created by Craig 1957. All results of ¹³C / ¹²C - analysis of organic matter today are calculated (Craig correction) against this international standard.

Reproducebility

The presision of the combustion system and the mass spectrometer is controlled by determinations of an international calibrated standard, NBS22 oil and a house standard of carbon.

Double analysis on samples are also done.

Experimental, combined gas chromatography - mass spectrometry (GC-MS)

The GC-MS analyses were performed on a VG TS250 system interfaced to a Hewlett Packard 5890 gas chromatograph. The GC was fitted with a fused silica SE 54 capillary column (50 m x 0.22 mm i.d.) directly into the ion source. Helium (12psi) was used as carrier gas and the injections were performed in splitless mode. The GC oven was programmed from 45°C to 150°C at 35°C/min at which point the programme rate was 2°C/min. up to 310°C where the column was held isothermally for 15 min. For the aromatic hydrocarbons, the GC oven was programmed from 50°C to 310°C at 5°C/min and held isothermally at 310°C for 15 min. The mass spectrometer was operated in electron impact (EI) mode at 70 eV electron energy, a trap current of 500 uA and a source temperature of 220°C. The instrument resolution used was 1500 (10% valley).

The data system used was a VG PDP11/73 system. The samples were analysed in multiple ion detection mode (MID) at a scan cycle time of approximately 1,1 sec.

Calculation of peak ratios was done from peak heights in the appropriate mass fragmentograms.

In the discussion of the GC-MS data, the results will be discussed by area. The wells within an area will be discussed separately. In the discussion, samples within one formation are discussed together. The discussion is further divided into types of compounds as follows:

Saturated Fractions:

Terpanes

The most commonly used fragment ions for detection of terpanes are M/Z 163 for detection of 25, 28, 30 trisnor-moretane or 25, 28, 30 trisnorhopane, M/Z 177 for detection of demethylated hopanes or moretanes, M/Z 191 for detection of tricyclic, tetracyclic- and pentacyclic terpanes and M/Z 205 for methylated hopanes or moretanes. The molecular ions M/Z 370 and 384 are also recorded for identification of C₂₇ and C₂₈ triterpanes respectively.

Steranes

The most commonly used fragment ions for detection of steranes are M/Z 149 to distinguish between 5 α and 5 β steranes, M/Z 189 and 259 for detection of rearranged steranes, M/Z 217 for detection of rearranged and normal steranes and M/Z 218 for detection of 14 β (H), 17 β (H) steranes.

The M/Z 231 fragment ion is used to detect possible aromatic contamination of the saturated fraction. It is also used for detection of methyl steranes.

Aromatic Fractions:

Alkyl-substituted Benzenes

The M/Z 106 fragment ion is often used to detect the alkyl-substituted benzenes. It is especially useful for the detection of di-substituted benzenes. M/Z 134 can also be used for the detection of C₄-alkylbenzenes, but benzothiophene will also give a signal with this fragment ion.

Naphthalenes

Methylnaphthalenes are normally detected by the M/Z 142 fragment ion while C₂-naphthalenes are detected by M/Z 156 and C₃-naphthalenes by M/Z 170.

Benzothiophenes and Dibenzothiophenes

Benzothiophene can be detected, as mentioned above, by M/Z 134. The M/Z 198 and M/Z 212 fragment ions are used for methylsubstituted dibenzothiophenes and dimethylsubstituted dibenzothiophenes respectively.

Phenanthrenes

Phenanthrene is detected using the M/Z 178 fragment ion. Anthracene will, if present also give a signal in the M/Z 178 fragmentation. Methyl-substituted phenanthrenes give signals in the M/Z 192 fragment ion while the M/Z 206 fragment ion shows the dimethyl-substituted phenanthrenes and the M/Z 220 fragmentation shows the C₃ substituted phenanthrenes.

Aromatic Steranes

Monoaromatic steranes are detected using the M/Z 253 fragment ion while the triaromatic steranes are detected using the M/Z 231 fragmentation.

D/X/32

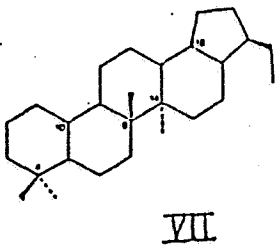
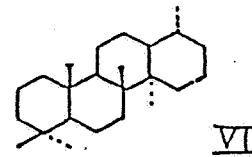
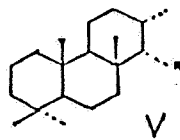
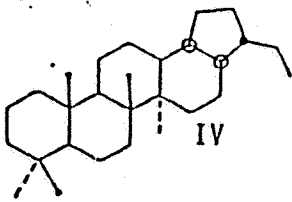
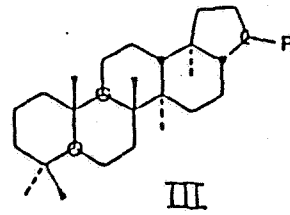
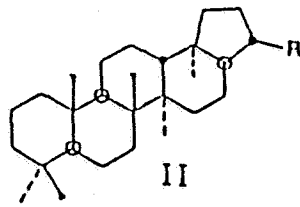
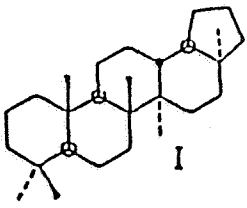
2a. Mass Fragmentograms representing Terpanes

(M/Z 163, 177, 191, 205, 370, 384, 398, 412 and 426)

Peak identification. (α and β refer to hydrogen atoms at C-17 and C-21 respectively unless indicated otherwise).

A.	18 α trisnorneohopane (Ts)	$C_{27}H_{44}$	(I)
B.	17 α trisnorhopane (Tm)	$C_{27}H_{46}$	(II, R=H)
Z.	Bisnorhopane	$C_{28}H_{48}$	(IV)
C.	$\alpha\beta$ norhopane	$C_{29}H_{50}$	(II, R= C_2H_5)
D.	$\beta\alpha$ norhopane	$C_{29}H_{50}$	(III, R= C_2H_5)
E.	$\alpha\beta$ hopane	$C_{30}H_{52}$	(II, R=i- C_3H_7)
F.	$\beta\alpha$ hopane	$C_{30}H_{52}$	(III, R=i- C_3H_7)
G.	22S $\alpha\beta$ homohopane	$C_{31}H_{54}$	(II, R=i- C_4H_9)
H.	22R $\alpha\beta$ homohopane	$C_{31}H_{54}$	(II, R=i- C_4H_9)
I.	$\beta\alpha$ homomoretane	$C_{31}H_{54}$	(III, R=i- C_4H_9)
J.	22S $\alpha\beta$ bishomohopane	$C_{32}H_{56}$	(II, R=i- C_5H_{11})
	22R $\alpha\beta$ bishomohopane	$C_{32}H_{56}$	(II, R=i- C_5H_{11})
K.	22S $\alpha\beta$ trishomohopane	$C_{33}H_{58}$	(II, R=i- C_6H_{13})
	22R $\alpha\beta$ trishomohopane	$C_{33}H_{58}$	(II, R=i- C_6H_{13})
L.	22S $\alpha\beta$ tetrakishomohopane	$C_{34}H_{60}$	(II, R=i- C_7H_{15})
	22R $\alpha\beta$ tetrakishomohopane	$C_{34}H_{60}$	(II, R=i- C_7H_{15})
M.	22S $\alpha\beta$ pentakishomohopane	$C_{35}H_{62}$	(II, R=i- C_8H_{17})
	22R $\alpha\beta$ pentakishomohopane	$C_{35}H_{62}$	(II, R=i- C_8H_{17})
P.	Tricyclic terpene	$C_{23}H_{42}$	(V, R=i- C_4H_9)
Q.	Tricyclic terpene	$C_{24}H_{44}$	(V, R=i- C_5H_{11})
R.	Tricyclic terpene (17R, 17S)	$C_{25}H_{66}$	(V, R=i- C_6H_{13})
S.	Tetracyclic terpene	$C_{24}H_{42}$	(VI)
T.	Tricyclic terpene (17R, 17S)	$C_{26}H_{48}$	(V, R=i- C_7H_{15})
N.	Tricyclic terpene	$C_{21}H_{38}$	(V, R= C_2H_5)
O.	Tricyclic terpene	$C_{22}H_{40}$	(V, R= C_3H_7)
Y.	25,28,30-Trisnorhopane/Moretane	$C_{27}H_{46}$	(VII)
X.	Unknown triterpene	$C_{30}H_{52}$	

STRUCTURES REPRESENTING TERPANES



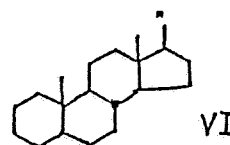
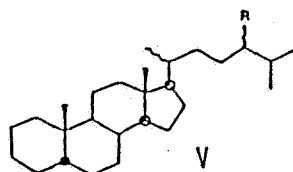
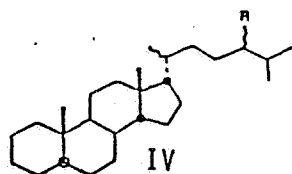
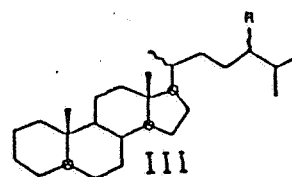
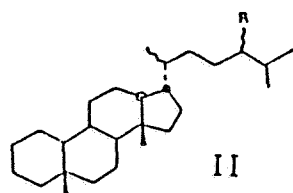
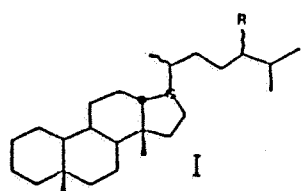
2b. Mass Fragmentograms representing Steranes

(M/Z 149, 189, 217, 218, 259, 372, 386, 400 and 414)

Peak identifications. (α and β refer to hydrogen atoms at C-5, C-14 and C-17 in regular steranes and at C-13 and C-17 in diasteranes).

a.	20S $\beta\alpha$ diacholestane	$C_{27}H_{48}$	(I, R=H)
b.	20R $\beta\alpha$ diacholestane	$C_{27}H_{48}$	(I, R=H)
c.	20S $\alpha\beta$ diacholestane	$C_{27}H_{48}$	(II, R=H)
d.	20R $\alpha\beta$ diacholestane	$C_{27}H_{48}$	(II, R=H)
e.	20S $\beta\alpha$ 24-methyl-diacholestane	$C_{28}H_{50}$	(I, R= CH_3)
f.	20R $\beta\alpha$ 24-methyl-diacholestane	$C_{28}H_{50}$	(I, R= CH_3)
g.	20S $\alpha\beta$ 24-methyl-diacholestane	$C_{28}H_{50}$	(II, R= CH_3)
	+ 20S $\alpha\alpha\alpha$ cholestane	$C_{27}H_{48}$	(III, R=H)
h.	20S $\beta\alpha$ 24-ethyl-diacholestane	$C_{29}H_{52}$	(II, R= C_2H_5)
	+20R $\alpha\beta\beta$ cholestane	$C_{27}H_{48}$	(IV, R=H)
i.	20S $\alpha\beta\beta$ cholestane	$C_{27}H_{48}$	(IV, R=H)
	+20R $\alpha\beta$ 24-methyl-diacholestane	$C_{28}H_{50}$	(II, R= CH_3)
j.	20R $\alpha\alpha\alpha$ cholestane	$C_{27}H_{48}$	(III, R=H)
k.	20R $\beta\alpha$ 24-ethyl-diacholestane	$C_{29}H_{52}$	(I, R= C_2H_5)
l.	20S $\alpha\beta$ 24-ethyl-diacholestane	$C_{29}H_{52}$	(II, R= C_2H_5)
m.	20S $\alpha\alpha\alpha$ 24-methyl-cholestane	$C_{28}H_{50}$	(III, R= CH_3)
n.	20R $\alpha\beta\beta$ 24-methyl-cholestane	$C_{28}H_{50}$	(IV, R= CH_3)
	+ 20R $\alpha\beta$ 24-ethyl-diacholestane	$C_{29}H_{52}$	(II, R= C_2H_5)
o.	20S $\alpha\beta\beta$ 24-methyl-cholestane	$C_{28}H_{50}$	(IV, R= CH_3)
p.	20R $\alpha\alpha\alpha$ 24-methyl-cholestane	$C_{28}H_{50}$	(III, R= CH_3)
q.	20S $\alpha\alpha\alpha$ 24-ethyl-cholestane	$C_{29}H_{52}$	(III, R= C_2H_5)
r.	20R $\alpha\beta\beta$ 24-ethyl-cholestane	$C_{29}H_{52}$	(IV, R= C_2H_5)
s.	20S $\alpha\beta\beta$ 24-ethyl-cholestane	$C_{29}H_{52}$	(IV, R= C_2H_5)
t.	20R $\alpha\alpha\alpha$ 24-ethyl-cholestane	$C_{29}H_{52}$	(III, R= C_2H_5)
u.	5 α sterane	$C_{21}H_{36}$	(VI, R= C_2H_5)
v.	5 α sterane	$C_{22}H_{38}$	(VI, R= C_3H_7)

STRUCTURES REPRESENTING STERANES

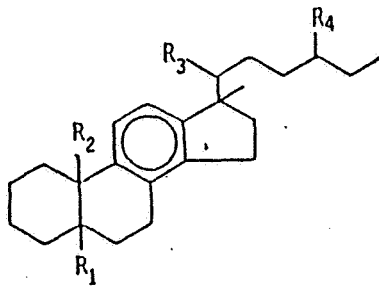
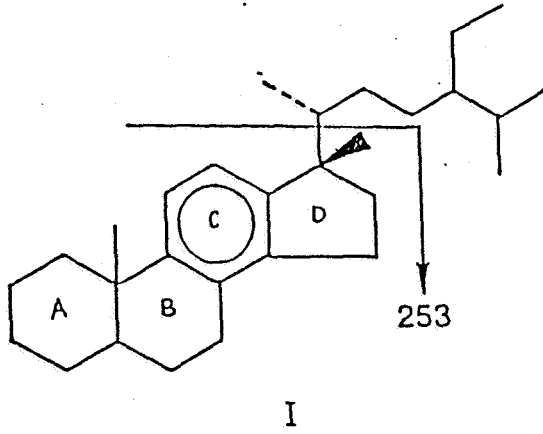


Mass Fragmentograms representing Monoaromatic Steranes
(M/Z 253)

Description of C-ring monoaromatic steroid hydrocarbons

Peak	Substituents				Abbreviation of Compound
	R ₁	R ₂	R ₃	R ₄	
A1					C ₂₁ MA
B1					C ₂₂ MA
C1	β(H)	CH ₃	S(CH ₃)	H	βSC ₂₇ MA
	CH ₃	H	S(CH ₃)	H	SC ₂₇ DMA
D1	β(H)	CH ₃	R(CH ₃)	H	βRC ₂₇ MA
	CH ₃	H	R(CH ₃)	H	RC ₂₇ DMA
	α(H)	CH ₃	S(CH ₃)	H	αSC ₂₇ MA
E1	β(H)	CH ₃	S(CH ₃)	CH ₃	βSC ₂₈ MA
	CH ₃	H	S(CH ₃)	CH ₃	SC ₂₈ DMA
F1	α(H)	CH ₃	R(CH ₃)	H	αRC ₂₇ MA
	α(H)	CH ₃	S(CH ₃)	CH ₃	αSC ₂₈ MA
G1	β(H)	CH ₃	R(CH ₃)	CH ₃	βRC ₂₈ MA
	CH ₃	H	R(CH ₃)	CH ₃	RC ₂₈ DMA
	β(H)	CH ₃	S(CH ₃)	C ₂ H ₅	βSC ₂₉ MA
	CH ₃	H	S(CH ₃)	C ₂ H ₅	SC ₂₉ DMA
H1	α(H)	CH ₃	R(CH ₃)	CH ₃	αRC ₂₈ MA
	β(H)	CH ₃	R(CH ₃)	C ₂ H ₅	βRC ₂₉ MA
	CH ₃	H	R(CH ₃)	C ₂ H ₅	RC ₂₉ DMA
I1	α(H)	CH ₃	R(CH ₃)	C ₂ H ₅	αRC ₂₉ MA

STRUCTURES REPRESENTING MONOAROMATIC STERANES:

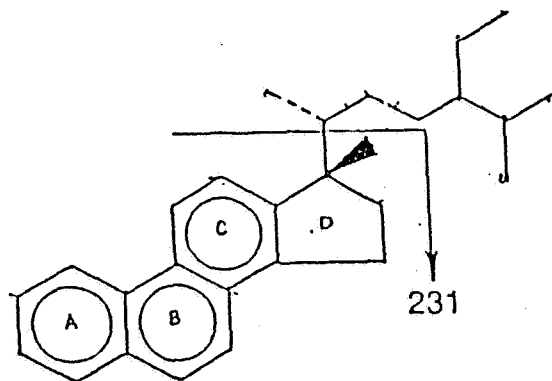


Mass Fragmentograms representing Triaromatic Steranes
(M/Z 231)

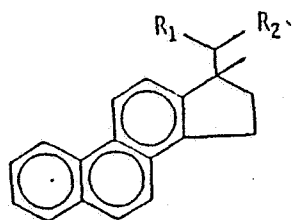
Description of ABC-ring triaromatic steroid hydrocarbons

Peak	Substituents		Abbreviation of Compound
	R ₁	R ₂	
a1	CH ₃	H	C ₂₀ TA
b1	CH ₃	CH ₃	C ₂₁ TA
c1	S(CH ₃)	C ₆ H ₁₃	SC ₂₆ TA
d1	R(CH ₃)	C ₆ H ₁₃	RC ₂₆ TA
	S(CH ₃)	C ₇ H ₁₅	SC ₂₇ TA
e1	S(CH ₃)	C ₈ H ₁₇	SC ₂₈ TA
f1	S(CH ₃)	C ₇ H ₁₅	RC ₂₇ TA
g1	R(CH ₃)	C ₈ H ₁₇	RC ₂₈ TA

STRUCTURES REPRESENTING TRIAROMATIC STERANES



II



FLUID ANALYSIS

Gravity was measured at 15°C. The instrument used was an AP Paar Density meter.

Sulphur was measured using a Princeton Gamma Tech. The blank standard was "babyoil".

Nickel and vanadium were analysed using an IPC AES, using a 1:10 dilution with p.a. quality kerosene.

List of abbreviations used for lithology description
(sorted alphabetically)

ang	= angular
bar	= Baryte (mud additive)
bl	= blue/blueish
blk	= black
br	= brittle
brn	= brown/brownish
Ca	= Carbonate (Limestone/Chalk/Dolomite/Siderite)
calc	= calcareous
carb	= carbonaceous
cem	= cement used as additive (under "Cont") or to describe cemented S/Sst
Chert	= Chert
chk	= Chalk/chalky
cly	= clayey/shaley
cngl	= conglomeratic
Coal	= Coal
Coal-ad	= Coal-like additive (e.g. chromlignosulfonate)
Congl	= Conglomerate
Cont	= Contamination
crs	= coarse grained
cvd	= caved
dd	= dried drilling mud
dol	= Dolomite/dolomitic
drk	= dark (colour)
dsk	= dusky (colour)
evap	= Salt/Gypsum/Halite (natural "Other" or as additive "Cont")
f	= fine grained
fib	= fibres (mud additive/contamination)
fis	= fissile
fos	= fossiliferous
glauc	= Glauconite/glauconitic
gn	= green/greenish
gy	= grey/greyish
hd	= hard
ign	= Igneous (material derived from igneous source)
int	= percentage interpreted from logs
Kaolin	= Kaolin(ite)
kln	= kaolinitic
l	= loose
lam	= laminated/laminae
lt	= light (colour)
m	= medium (colour or grain size)

List of abbreviations used for lithology description
(sorted alphabetically)

Marl	= Marl (calcareous claystone/mudstone)
mic	= micaceous
Mica-ad	= Mica used as mud additive
mrl	= marly
No Mat.	= No material left after washing
ns	= nutshells (mud additive)
ol	= olive
ool	= Oolite/oolitic
or	= orange
Other	= Other lithology/mineral, specified after this word
pi	= pink/pinkish
pl	= pale (colour)
prp	= paint/rust/plastic contamination/additives
pu	= purple
pyr	= Pyrite/pyritic
red	= red/reddish
rnd	= round/rounded
s	= sandy
S/Sst	= Sand and/or sandstone
Sh/Clst	= Shale and/or claystone
sid	= Siderite/sideritic
sil	= siliceous/cherty
slt	= silty
Sltst	= Siltstone
st	= stained (with natural oil or oil-like additive)
tar-ad	= Tar-like additive (e.g. "Black Magic")
Tuff	= Tuff
tuff	= tuffaceous
v col	= Various colours
w	= white
wx	= waxy
y	= yellow/yellowish

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas
(μl gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

Depth unit of measure: m

* Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum	sum	%wet	iC4
							C1-C4	C2-C4		ness
3348.00	14796	2331	1279	247	313	176	18966	4170	22.0	0.79
3357.00	20623	3745	2903	776	974	794	29021	8398	28.9	0.80
3366.00	12309	2428	1032	49	120	94	15938	3629	22.8	0.41
3375.00	47038	11680	3807	170	272	60	62967	15929	25.3	0.63
3384.00	22132	3307	1035	56	97	28	26627	4495	16.9	0.58
3393.00	5588	1135	610	54	85	26	7472	1884	25.2	0.64
3402.00	63	35	46	5	9	16	158	95	60.1	0.56
3411.00	1912	358	145	17	35	44	2467	555	22.5	0.49
3420.00	10370	11574	17066	3923	5638	3701	48571	38201	78.7	0.70
3429.00	25705	13514	15707	3103	4269	3477	62298	36593	58.7	0.73
3438.00	14820	7833	10001	1920	2847	2244	37421	22601	60.4	0.67
3447.00	22407	10118	10889	1583	2668	1710	47665	25258	53.0	0.59
3456.00	22313	8619	9354	1436	2499	1877	44221	21908	49.5	0.57
3465.00	25563	7008	7010	1034	1871	1294	42486	16923	39.8	0.55
3474.00	43827	15133	12627	1398	2686	1445	75671	31844	42.1	0.52
3483.00	51335	15495	11962	1222	2335	1115	82349	31014	37.7	0.52
3492.00	45026	9729	6218	607	1078	446	62658	17632	28.1	0.56
3501.00	30773	6483	4993	517	1030	515	43796	13023	29.7	0.50
3510.00	12559	2833	1872	163	334	140	17761	5202	29.3	0.49
3528.00	41827	8712	4949	407	757	262	56652	14825	26.2	0.54
3537.00	11619	2029	1242	112	236	95	15238	3619	23.8	0.47
3546.00	7483	1741	1011	90	156	47	10481	2998	28.6	0.58
3555.00	3200	918	645	62	113	40	4938	1738	35.2	0.55

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas
(μ l gas/kg rock)

Project: 6406/11-1S
Well: NOCS 6406/11-1S
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
3564.00	2292	952	687	72	141	57	4144	1852	44.7	0.51
3573.00	4025	1731	1618	201	410	191	7985	3960	49.6	0.49
3582.00	7647	6976	6198	847	1749	874	23417	15770	67.3	0.48
3600.00	6556	8333	7985	1172	2213	1519	26259	19703	75.0	0.53
3603.00	28255	16329	19411	3722	7326	7907	75043	46788	62.4	0.51
3765.00	1159	432	691	144	383	615	2809	1650	58.7	0.38
3774.00	1357	352	476	127	377	733	2689	1332	49.5	0.34
3783.00	2410	475	746	232	712	2829	4575	2165	47.3	0.33
3792.00	251	33	47	12	33	76	376	125	33.2	0.36
3801.00	2030	317	537	134	385	861	3403	1373	40.4	0.35
3810.00	1884	431	595	191	572	1630	3673	1789	48.7	0.33
3828.00	2624	764	1907	726	2137	4747	8158	5534	67.8	0.34
3837.00	1014	293	749	253	749	1274	3058	2044	66.8	0.34
3846.00	2099	460	1054	412	1271	2239	5296	3197	60.4	0.32
3855.00	1257	349	1019	579	1928	7430	5132	3875	75.5	0.30
3864.00	1439	563	1434	580	1828	4401	5844	4405	75.4	0.32
3873.00	1232	504	975	401	1316	5866	4428	3196	72.2	0.30
3882.00	1802	589	1159	346	1063	2733	4959	3157	63.7	0.33
3900.00	4344	1858	3510	797	2335	4174	12844	8500	66.2	0.34
3909.00	2362	1069	1736	365	1046	2143	6578	4216	64.1	0.35
3918.00	27859	4776	2261	524	1539	5179	36959	9100	24.6	0.34
3927.00	9151	2089	1003	133	332	595	12708	3557	28.0	0.40
3936.00	4513	1280	1214	248	552	619	7807	3294	42.2	0.45

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas
(μ l gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

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
3945.00	2096	900	1270	361	811	1731	5438	3342	61.5	0.45
3963.00	6457	907	335	52	81	117	7832	1375	17.6	0.64
3972.00	3911	920	399	70	119	256	5419	1508	27.8	0.59
3981.00	1414	319	159	38	71	246	2001	587	29.3	0.54
3990.00	4605	756	260	41	80	124	5742	1137	19.8	0.51
3999.00	96	92	51	6	15	15	260	164	63.1	0.40
4008.00	6207	1923	407	33	64	41	8634	2427	28.1	0.52
4017.00	9174	1839	359	34	52	30	11458	2284	19.9	0.65
4035.00	15568	2737	621	85	112	261	19123	3555	18.6	0.76
4044.00	794	272	59	6	11	10	1142	348	30.5	0.55
4053.00	2532	463	116	12	22	16	3145	613	19.5	0.55
4062.00	1412	289	74	8	14	15	1797	385	21.4	0.57
4080.00	2046	232	69	12	18	32	2377	331	13.9	0.67
4098.00	391	145	46	5	13	27	600	209	34.8	0.38
4107.00	283	89	26	2	5	6	405	122	30.1	0.40
4116.00	269	153	66	6	14	19	508	239	47.1	0.43
4125.00	732	148	70	8	19	40	977	245	25.1	0.42
4134.00	243	59	28	3	6	8	339	96	28.3	0.50
4143.00	389	91	43	4	10	13	537	148	27.6	0.40
4161.00	2	3	2	-	1	2	8	6	75.0	-
4170.00	10	2	1	-	-	1	13	3	23.1	-
4179.00	143	18	4	-	1	2	166	23	13.9	-
4188.00	63	13	4	-	1	4	81	18	22.2	-

Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas
(μ l gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

Depth unit of measure: m

* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3348.00	42	36	60	11	27	272	176	134	76.1	0.41
3357.00	173	15	39	13	31	99	271	98	36.2	0.42
3366.00	47	41	91	6	23	16	208	161	77.4	0.26
3375.00	81	331	479	22	57	12	970	889	91.7	0.39
3384.00	175	544	576	32	64	10	1391	1216	87.4	0.50
3393.00	46	123	275	27	77	28	548	502	91.6	0.35
3402.00	184	29	134	20	62	40	429	245	57.1	0.32
3411.00	137	78	163	17	45	25	440	303	68.9	0.38
3420.00	123	330	2218	1118	2050	3969	5839	5716	97.9	0.55
3429.00	6	16	127	71	135	305	355	349	98.3	0.53
3438.00	2	2	15	9	14	28	42	40	95.2	0.64
3447.00	196	959	3314	784	1529	1012	6782	6586	97.1	0.51
3456.00	229	841	2988	676	1517	1118	6251	6022	96.3	0.45
3465.00	270	816	2619	525	1278	985	5508	5238	95.1	0.41
3474.00	441	1465	3283	462	1154	547	6805	6364	93.5	0.40
3483.00	545	1578	3314	431	1071	457	6939	6394	92.2	0.40
3492.00	750	1930	2989	323	729	293	6721	5971	88.8	0.44
3501.00	1158	2076	3026	326	743	301	7329	6171	84.2	0.44
3510.00	506	1202	2212	242	651	288	4813	4307	89.5	0.37
3528.00	555	1212	1663	135	319	100	3884	3329	85.7	0.42
3537.00	454	1344	1989	209	546	391	4542	4088	90.0	0.38
3546.00	423	1034	1421	128	392	147	3398	2975	87.6	0.33
3555.00	146	580	1011	95	307	171	2139	1993	93.2	0.31

Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas
(μ l gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

Depth unit of measure: m

* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3564.00	102	358	646	70	242	122	1418	1316	92.8	0.29
3573.00	166	482	837	105	338	253	1928	1762	91.4	0.31
3582.00	74	633	1926	376	1106	752	4115	4041	98.2	0.34
3600.00	157	735	1842	250	777	207	3761	3604	95.8	0.32
3603.00	146	772	2438	628	1647	1924	5631	5485	97.4	0.38
3765.00	232	90	342	53	219	212	936	704	75.2	0.24
3774.00	181	123	459	96	427	926	1286	1105	85.9	0.22
3783.00	141	29	110	33	165	889	478	337	70.5	0.20
3792.00	86	18	91	24	115	486	334	248	74.3	0.21
3801.00	83	20	78	22	101	571	304	221	72.7	0.22
3810.00	154	43	192	50	218	1261	657	503	76.6	0.23
3828.00	145	59	250	57	266	477	777	632	81.3	0.21
3837.00	100	75	479	279	1186	11639	2119	2019	95.3	0.24
3846.00	66	119	445	212	909	6162	1751	1685	96.2	0.23
3855.00	91	75	454	332	1394	14434	2346	2255	96.1	0.24
3864.00	180	60	511	471	1888	20047	3110	2930	94.2	0.25
3873.00	172	124	479	251	1061	10090	2087	1915	91.8	0.24
3882.00	292	71	4	109	510	3965	986	694	70.4	0.21
3900.00	509	100	313	65	339	745	1326	817	61.6	0.19
3909.00	199	71	455	163	767	4093	1655	1456	88.0	0.21
3918.00	246	270	390	87	409	2076	1402	1156	82.5	0.21
3927.00	936	1797	2122	235	950	1379	6040	5104	84.5	0.25
3936.00	499	579	902	118	502	910	2600	2101	80.8	0.24

Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas
(μ l gas/kg rock)

Project: 6406/11-1S
Well: NOCS 6406/11-1S
Depth unit of measure: m

* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3945.00	982	221	770	199	789	2399	2961	1979	66.8	0.25
3963.00	2212	2405	1720	168	523	427	7028	4816	68.5	0.32
3972.00	893	1154	1114	156	477	782	3794	2901	76.5	0.33
3981.00	1538	510	439	46	161	222	2694	1156	42.9	0.29
3990.00	519	386	335	38	135	181	1413	894	63.3	0.28
3999.00	1289	506	341	37	122	127	2295	1006	43.8	0.30
4008.00	3694	2543	1205	99	247	93	7788	4094	52.6	0.40
4017.00	4175	3049	858	66	170	83	8318	4143	49.8	0.39
4035.00	2497	3570	1505	127	301	189	8000	5503	68.8	0.42
4044.00	3038	1914	683	64	187	188	5886	2848	48.4	0.34
4053.00	2718	1592	563	54	150	117	5077	2359	46.5	0.36
4062.00	1023	720	340	36	96	74	2215	1192	53.8	0.38
4080.00	3600	2689	1423	191	579	614	8482	4882	57.6	0.33
4098.00	1434	1923	997	108	293	352	4755	3321	69.8	0.37
4107.00	5207	2871	631	59	135	126	8903	3696	41.5	0.44
4116.00	554	349	386	43	136	115	1468	914	62.3	0.32
4125.00	969	558	435	61	184	263	2207	1238	56.1	0.33
4134.00	206	191	215	25	80	72	717	511	71.3	0.31
4143.00	424	112	163	21	73	90	793	369	46.5	0.29
4161.00	161	79	69	8	31	72	348	187	53.7	0.26
4170.00	976	519	263	29	96	105	1883	907	48.2	0.30
4179.00	680	422	183	17	66	78	1368	688	50.3	0.26
4188.00	309	193	77	9	33	60	621	312	50.2	0.27

Table 1c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas
(μl gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

Depth unit of measure: m * Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3348.00	14838	2367	1339	258	340	448	19142	4304	22.5	0.76
3357.00	20796	3760	2942	789	1005	893	29292	8496	29.0	0.79
3366.00	12356	2469	1123	55	143	110	16146	3790	23.5	0.38
3375.00	47119	12011	4286	192	329	72	63937	16818	26.3	0.58
3384.00	22307	3851	1611	88	161	38	28018	5711	20.4	0.55
3393.00	5634	1258	885	81	162	54	8020	2386	29.8	0.50
3402.00	247	64	180	25	71	56	587	340	57.9	0.35
3411.00	2049	436	308	34	80	69	2907	858	29.5	0.43
3420.00	10493	11904	19284	5041	7688	7670	54410	43917	80.7	0.66
3429.00	25711	13530	15834	3174	4404	3782	62653	36942	59.0	0.72
3438.00	14822	7835	10016	1929	2861	2272	37463	22641	60.4	0.67
3447.00	22603	11077	14203	2367	4197	2722	54447	31844	58.5	0.56
3456.00	22542	9460	12342	2112	4016	2995	50472	27930	55.3	0.53
3465.00	25833	7824	9629	1559	3149	2279	47994	22161	46.2	0.50
3474.00	44268	16598	15910	1860	3840	1992	82476	38208	46.3	0.48
3483.00	51880	17073	15276	1653	3406	1572	89288	37408	41.9	0.49
3492.00	45776	11659	9207	930	1807	739	69379	23603	34.0	0.51
3501.00	31931	8559	8019	843	1773	816	51125	19194	37.5	0.48
3510.00	13065	4035	4084	405	985	428	22574	9509	42.1	0.41
3528.00	42382	9924	6612	542	1076	362	60536	18154	30.0	0.50
3537.00	12073	3373	3231	321	782	486	19780	7707	39.0	0.41
3546.00	7906	2775	2432	218	548	194	13879	5973	43.0	0.40

Table 1c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas
(μl gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

Depth unit of measure: m

* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3555.00	3346	1498	1656	157	420	211	7077	3731	52.7	0.37
3564.00	2394	1310	1333	142	383	179	5562	3168	57.0	0.37
3573.00	4191	2213	2455	306	748	444	9913	5722	57.7	0.41
3582.00	7721	7609	8124	1223	2855	1626	27532	19811	72.0	0.43
3600.00	6713	9068	9827	1422	2990	1726	30020	23307	77.6	0.48
3603.00	28401	17101	21849	4350	8973	9831	80674	52273	64.8	0.48
3765.00	1391	522	1033	197	602	827	3745	2354	62.9	0.33
3774.00	1538	475	935	223	804	1659	3975	2437	61.3	0.28
3783.00	2551	504	856	265	877	3718	5053	2502	49.5	0.30
3792.00	337	51	138	36	148	562	710	373	52.5	0.24
3801.00	2113	337	615	156	486	1432	3707	1594	43.0	0.32
3810.00	2038	474	787	241	790	2891	4330	2292	52.9	0.31
3828.00	2769	823	2157	783	2403	5224	8935	6166	69.0	0.33
3837.00	1114	368	1228	532	1935	12913	5177	4063	78.5	0.27
3846.00	2165	579	1499	624	2180	8401	7047	4882	69.3	0.29
3855.00	1348	424	1473	911	3322	21864	7478	6130	82.0	0.27
3864.00	1619	623	1945	1051	3716	24448	8954	7335	81.9	0.28
3873.00	1404	628	1454	652	2377	15956	6515	5111	78.5	0.27
3882.00	2094	660	1163	455	1573	6698	5945	3851	64.8	0.29
3900.00	4853	1958	3823	862	2674	4919	14170	9317	65.8	0.32
3909.00	2561	1140	2191	528	1813	6236	8233	5672	68.9	0.29
3918.00	28105	5046	2651	611	1948	7255	38361	10256	26.7	0.31

Table 1c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas
(μ l gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

Depth unit of measure: m

* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 nC4
3927.00	10087	3886	3125	368	1282	1974	18748	8661	46.2	0.29
3936.00	5012	1859	2116	366	1054	1529	10407	5395	51.8	0.35
3945.00	3078	1121	2040	560	1600	4130	8399	5321	63.4	0.35
3963.00	8669	3312	2055	220	604	544	14860	6191	41.7	0.36
3972.00	4804	2074	1513	226	596	1038	9213	4409	47.9	0.38
3981.00	2952	829	598	84	232	468	4695	1743	37.1	0.36
3990.00	5124	1142	595	79	215	305	7155	2031	28.4	0.37
3999.00	1385	598	392	43	137	142	2555	1170	45.8	0.31
4008.00	9901	4466	1612	132	311	134	16422	6521	39.7	0.42
4017.00	13349	4888	1217	100	222	113	19776	6427	32.5	0.45
4035.00	18065	6307	2126	212	413	450	27123	9058	33.4	0.51
4044.00	3832	2186	742	70	198	198	7028	3196	45.5	0.35
4053.00	5250	2055	679	66	172	133	8222	2972	36.2	0.38
4062.00	2435	1009	414	44	110	89	4012	1577	39.3	0.40
4080.00	5646	2921	1492	203	597	646	10859	5213	48.0	0.34
4098.00	1825	2068	1043	113	306	379	5355	3530	65.9	0.37
4107.00	5490	2960	657	61	140	132	9308	3818	41.0	0.44
4116.00	823	502	452	49	150	134	1976	1153	58.4	0.33
4125.00	1701	706	505	69	203	303	3184	1483	46.6	0.34
4134.00	449	250	243	28	86	80	1056	607	57.5	0.33
4143.00	813	203	206	25	83	103	1330	517	38.9	0.30
4161.00	163	82	71	8	32	74	356	193	54.2	0.25

Table 1c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas
(μl gas/kg rock)

Project: 6406/11-1S

Well: NOCS 6406/11-1S

Depth unit of measure: m * Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 nC4
4170.00	986	521	264	29	96	106	1896	910	48.0	0.30
4179.00	823	440	187	17	67	80	1534	711	46.4	0.25
4188.00	372	206	81	9	34	64	702	330	47.0	0.26

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1050.00	swc					0074
				100 Sltst : brn gy, cly		0074-1L
				tr Sh/Clst: drk gy to brn blk, calc		0074-2L
1203.00	swc					0075
				100 S/Sst : lt brn gy to lt ol gy, f, cly		0075-1L
1310.00						0083
				100 Sh/Clst: brn gy, mic, slt		0083-1L
				tr S/Sst : lt gy to drk gy, crs, l		0083-2L
				tr Cont : prp		0083-3L
1420.00						0084
				100 Sh/Clst: lt brn gy, mic, slt		0084-1L
1520.00						0085
				100 Sh/Clst: brn gy, mic, slt		0085-1L
1640.00						0086
				100 Sh/Clst: lt brn gy to m gy, slt		0086-1L
1720.00						0087
				100 Sh/Clst: m gy		0087-1L
				tr Cont : prp		0087-2L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1775.00	swc					0001
			100	Sh/Clst: brn gy to ol gy, slt		0001-1L
1935.00	swc					0002
			100	Sh/Clst: dsk brn, slt		0002-1L
2070.00	swc					0003
			100	Sh/Clst: ol gy, slt		0003-1L
2150.00	swc					0004
			100	Sh/Clst: lt ol gy to y gy, slt		0004-1L
2260.00						0088
			100	Sh/Clst: lt gy to m gy		0088-1L
				tr Cont : prp		0088-2L
2330.00						0089
			100	Sh/Clst: lt gy to m gy		0089-1L
				tr Cont : prp		0089-2L
2430.00						0090
			100	Sh/Clst: lt gy, slt		0090-1L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2540.00						0091
				100 Sh/Clst: lt gy, slt tr Cont : prp		0091-1L 0091-2L
2640.00						0092
				100 Sh/Clst: m gy tr Cont : prp, dd		0092-1L 0092-2L
2757.00	swc					0005
				100 Sh/Clst: drk gy to brn blk		0005-1L
2870.00						0093
				100 Sh/Clst: m gy tr Marl : lt gy to ol gy tr Cont : prp, dd		0093-1L 0093-2L 0093-3L
3120.00	swc					0006
				100 Sh/Clst: drk gy to brn blk, slt tr S/Sst : lt gy to lt brn gy, crs		0006-1L 0006-2L
3275.00	swc					0007
				100 Sh/Clst: blk to brn blk		0007-1L
3325.00	swc					0008
				100 Sh/Clst: m brn, slt		0008-1L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3348.00						0015
				75 Sh/Clst: m gy to drk gy		0015-1L
				25 Cont : dd, prp		0015-2L
				tr Sh/Clst: drk brn to gy brn		0015-3L
3357.00						0016
	0.88	100		Sh/Clst: m gy to drk gy, pyr		0016-1L
				tr Cont : dd, prp		0016-2L
				tr Sh/Clst: drk brn to gy brn		0016-3L
3366.00						0017
				60 Sh/Clst: m gy to drk gy		0017-1L
				40 Sh/Clst: drk brn to gy brn		0017-2L
				tr Cont : prp		0017-3L
3375.00						0018
				90 Sh/Clst: m gy to drk gy, calc		0018-1L
				10 Sh/Clst: drk brn to gy brn		0018-2L
				tr Cont : prp		0018-3L
3384.00						0019
				95 Sh/Clst: m gy to drk gy, calc		0019-1L
				5 Sh/Clst: drk brn to gy brn		0019-2L
				tr Cont : prp		0019-3L
3393.00						0020
				50 Sh/Clst: m gy to drk gy, calc		0020-1L
				50 Sh/Clst: drk brn to gy brn, calc		0020-2L
				tr Cont : dd		0020-3L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3402.00						0021
				90 Sh/Clst: drk brn to m brn, mrl		0021-1L
				10 Sh/Clst: m gy to drk gy, calc		0021-2L
				tr Cont : prp, dd		0021-3L
3411.00						0022
				90 Sh/Clst: drk brn to m brn, mrl		0022-1L
				10 Sh/Clst: drk gy		0022-2L
				tr Cont : prp, dd		0022-3L
3420.00						0023
	0.60			70 Sh/Clst: drk brn to m brn, mrl		0023-1L
				25 Marl : lt brn gy to gy pi		0023-2L
				5 Sh/Clst: drk gy, calc		0023-3L
				tr Cont : prp, dd		0023-4L
3429.00						0024
				100 Sh/Clst: m gy to drk gy		0024-1L
				tr Sh/Clst: m brn to drk brn, mrl		0024-2L
				tr Marl : lt gy to ol gy		0024-3L
				tr Cont : prp, dd		0024-4L
3438.00						0025
	1.97			100 Sh/Clst: m gy to brn gy		0025-1L
				tr Sh/Clst: m brn to drk brn, mrl		0025-2L
				tr Cont : prp, dd		0025-3L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3447.00						0026
	2.24	100		Sh/Clst: m gy to brn gy		0026-1L
				tr Sh/Clst: m brn to drk brn, mrl		0026-2L
				tr Marl : lt gy to ol gy		0026-3L
				tr Cont : prp		0026-4L
3456.00						0027
	1.96	95		Sh/Clst: m gy to brn gy		0027-1L
				5 Cont : prp		0027-2L
				tr Sh/Clst: m brn to drk brn		0027-3L
				tr Marl : lt gy to ol gy		0027-4L
3465.00						0028
		95		Sh/Clst: m gy to brn gy		0028-1L
				5 Marl : lt gy to ol gy		0028-2L
				tr Cont : prp		0028-3L
3474.00						0029
	2.46	100		Sh/Clst: drk gy, calc		0029-1L
				tr Marl : lt gy to ol gy		0029-2L
				tr Cont : prp		0029-3L
3483.00						0030
		100		Sh/Clst: drk gy to dsk brn, calc		0030-1L
				tr Marl : lt gy to ol gy		0030-2L
				tr Cont : prp		0030-3L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3492.00						0031
			100	Sh/Clst: drk gy to calc		0031-1L
				tr Marl : lt gy to ol gy		0031-2L
				tr Cont : prp		0031-3L
3501.00						0032
	3.63		100	Sh/Clst: drk gy to brn blk		0032-1L
				tr Marl : lt gy to ol gy		0032-2L
				tr Cont : prp		0032-3L
3510.00						0033
			100	Sh/Clst: drk gy to brn blk		0033-1L
				tr Cont : prp, dd		0033-2L
3537.00						0034
	2.46		90	Sh/Clst: brn gy to drk gy to brn blk, mic,		0034-1L
				wx		
			5	Marl : lt gy to or gy		0034-2L
			5	Cont : prp		0034-3L
				tr Sh/Clst: m brn to drk brn		0034-4L
3546.00						0035
			100	Sh/Clst: brn gy to drk gy to brn blk, wx,		0035-1L
				pyr		
				tr Marl : lt gy to or gy		0035-2L
				tr Cont : prp		0035-3L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3555.00						0036
	1.94	95	Sh/Clst:	m gy to drk gy to brn blk, mic, wx		0036-1L
		5	Marl	: lt gy to or gy, slt		0036-2L
		tr	Cont	: prp		0036-3L
3564.00						0037
		95	Sh/Clst:	m gy to drk gy, mic, wx		0037-1L
		5	Marl	: lt gy to ol gy		0037-2L
		tr	Cont	: prp, dd		0037-3L
3573.00						0038
		100	Sh/Clst:	m gy to drk gy, mic, wx		0038-1L
		tr	Marl	: lt gy to ol gy		0038-2L
		tr	Cont	: prp, dd		0038-3L
3582.00						0039
	2.11	100	Sh/Clst:	m gy to drk gy, mic, wx		0039-1L
		tr	Marl	: lt gy to ol gy		0039-2L
		tr	Cont	: prp, dd		0039-3L
3603.00						0040
		75	Sh/Clst:	drk gy		0040-1L
	0.16	20	S/Sst	: w to lt gy, crs, l, f, kln		0040-2L
		5	Marl	: lt gy to ol gy		0040-3L
		tr	Cont	: prp		0040-4L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3605.00	ccp					0094
			100 Marl	: lt gy to ol gy, s		0094-1L
3616.60	ccp					0076
		28.91	100 Coal	: blk, wx		0076-1L
3627.30	ccp					0077
		68.00	100 Coal	: blk, wx		0077-1L
3648.00	ccp					0095
			100 Sh/Clst:	lt gy, slt, mic		0095-1L
3653.00	ccp					0096
			100 S/Sst	: lt gy to m gy to lt brn, crs, l, kln		0096-1L
3666.00	ccp					0078
		3.16	100 Sh/Clst:	drk gy to brn blk, lam		0078-1L
3682.00	ccp					0079
		3.34	100 Sh/Clst:	drk gy to brn gy, mic		0079-1L
3692.00	ccp					0009
			100 S/Sst	: brn gy, crs, cem		0009-1L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3694.00	ccp					0012
		100	S/Sst	: brn gy, crs, cem		0012-1L
3718.00	ccp					0010
		100	S/Sst	: brn gy to gy brn, mic, cem		0010-1L
3719.00	ccp					0011
		100	S/Sst	: lt gy to brn blk, carb, mic, cem		0011-1L
3725.50	ccp					0080
	2.47	100	Sh/Clst:	drk gy, mic, wx		0080-1L
3735.50	ccp					0081
	5.58	100	Sh/Clst:	drk gy to brn blk, mic, wx		0081-1L
3746.00	ccp					0082
	0.80	100	Sltst	: lt gy to drk gy, hd		0082-1L
3774.00						0041
		40	Sltst	: lt gy, cly		0041-1L
		20	Sh/Clst:	m gy to drk gy, calc		0041-2L
		20	Sh/Clst:	m brn		0041-3L
		10	Ca	: lt gy to lt or, mrl		0041-4L
		10	S/Sst	: w to lt gy, crs, l, f, kln		0041-5L
		tr	Cont	: prp, dd		0041-6L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
3783.00						0042	
	0.38	80	Sltst	:	lt gy, cly	0042-1L	
		10	Sh/Clst:	m gy to drk gy, calc		0042-2L	
		10	Sh/Clst:	m brn		0042-3L	
		tr	Ca	:	lt or	0042-4L	
		tr	S/Sst	:	w to lt gy, f, kln	0042-5L	
		tr	Cont	:	prp, dd	0042-6L	
3792.00						0043	
		50	Sltst	:	lt gy, kln	0043-1L	
		40	Ca	:	lt or	0043-2L	
		5	Sh/Clst:	m gy to drk gy		0043-3L	
		5	Sh/Clst:	m brn to drk brn		0043-4L	
		tr	Cont	:	prp	0043-5L	
3801.00						0044	
		60	Ca	:	lt or	0044-1L	
		30	Sltst	:	lt gy, kln	0044-2L	
		5	Sh/Clst:	m gy to drk gy		0044-3L	
		5	Sh/Clst:	m brn to drk brn		0044-4L	
		tr	Cont	:	prp	0044-5L	
3810.00						0045	
		30	Ca	:	lt or	0045-1L	
		25	Sltst	:	lt gy to w, kln	0045-2L	
		25	Sh/Clst:	m gy to drk gy to brn blk		0045-3L	
		20	Sh/Clst:	m brn to drk brn		0045-4L	
		tr	Cont	:	prp	0045-5L	

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3837.00						0046
				80 Sh/Clst: m gy to brn gy		0046-1L
				10 Ca : lt or		0046-2L
				5 Sltst : lt gy to w, kln		0046-3L
				5 Sh/Clst: m brn to drk brn		0046-4L
				tr Cont : prp		0046-5L
3846.00						0047
	1.19			75 Sh/Clst: lt brn gy to brn gy to m gy, wx		0047-1L
				10 Ca : lt or to lt gy, mrl		0047-2L
				10 Sltst : lt gy to w, kln		0047-3L
				5 Sh/Clst: m brn to drk brn		0047-4L
				tr Cont : prp		0047-5L
3855.00						0048
	1.28			90 Sh/Clst: lt brn gy to brn gy		0048-1L
				5 Ca : lt or to lt gy		0048-2L
				5 Sh/Clst: m brn to drk brn		0048-3L
				tr Sltst : lt gy to w, kln		0048-4L
				tr Cont : prp		0048-5L
3864.00						0049
	1.51			85 Sh/Clst: lt brn gy to brn gy		0049-1L
				5 Ca : lt or to lt gy		0049-2L
				5 Sh/Clst: m brn to drk brn		0049-3L
				5 Sh/Clst: brn blk, mic		0049-4L
				tr Cont : prp		0049-5L
3873.00						0050
	1.53			85 Sh/Clst: lt brn gy to brn gy		0050-1L
				5 Ca : lt or to lt gy, mrl		0050-2L
				5 Sh/Clst: m brn to drk brn		0050-3L
				5 Sh/Clst: brn blk, mic		0050-4L
				tr Cont : prp		0050-5L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3882.00						0051
	0.31			50 Sltst : w to lt gy, kln		0051-1L
				30 Sh/Clst: lt brn gy to brn gy to drk gy		0051-2L
				15 Ca : ol gy to w		0051-3L
				5 Sh/Clst: m brn to pl brn		0051-4L
				tr Cont : prp		0051-5L
3909.00						0052
				80 Sltst : w to lt gy, kln, s		0052-1L
				10 Sh/Clst: lt brn gy to brn gy to drk gy, mic		0052-2L
				10 Ca : ol gy to w		0052-3L
				tr Sh/Clst: m brn to pl brn		0052-4L
				tr Cont : prp		0052-5L
3918.00						0053
	0.14			70 S/Sst : w to lt gy, f, kln, slt		0053-1L
				20 Sh/Clst: lt brn gy to brn gy to drk gy, mic		0053-2L
				10 Ca : ol gy to w, slt		0053-3L
				tr Sh/Clst: m brn to pl brn		0053-4L
				tr Cont : prp		0053-5L
3927.00						0054
				70 S/Sst : w to lt gy, f, kln, crs, l		0054-1L
				15 Sh/Clst: lt brn gy to brn gy to drk gy, mic		0054-2L
				15 Ca : ol gy to w, slt		0054-3L
				tr Sh/Clst: m brn to pl brn		0054-4L
				tr Cont : prp		0054-5L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3936.00						0055
				70 S/Sst : w to lt gy, f, kln, crs, l		0055-1L
				25 Sh/Clst: lt brn gy to brn gy to drk gy, mic		0055-2L
				5 Sh/Clst: m brn to pl brn		0055-3L
				tr Ca : ol gy to lt or to w, slt		0055-4L
3945.00						0056
	0.15			80 S/Sst : w to lt gy, crs, l, f, kln		0056-1L
				15 Sh/Clst: lt brn gy to brn gy to m gy to drk gy, mic		0056-2L
				5 Sh/Clst: m brn to pl brn		0056-3L
3972.00						0057
				90 S/Sst : w, crs, l, kln, cngr		0057-1L
				10 Sh/Clst: brn gy to m gy to drk gy, mic		0057-2L
				tr Sh/Clst: m brn to pl brn		0057-3L
				tr Cont : prp		0057-4L
3981.00						0058
				100 S/Sst : w, crs, f, l, cngr		0058-1L
				tr Sh/Clst: brn gy to m gy to drk gy, mic		0058-2L
				tr Sh/Clst: m brn to pl brn		0058-3L
3990.00						0059
				80 S/Sst : w to lt gy, crs, f, l, cngr		0059-1L
				20 Sh/Clst: brn gy to m gy to drk gy, mic		0059-2L
				tr Sh/Clst: m brn to pl brn		0059-3L
				tr Ca : w to lt or		0059-4L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
3999.00						0060	
			70	S/Sst	: w to lt gy, crs, f, l, cngl	0060-1L	
			30	Sh/Clst:	brn gy to m gy to drk gy to brn blk, mic	0060-2L	
			tr	Ca	: w to lt or	0060-3L	
			tr	Sh/Clst:	m brn to pl brn	0060-4L	
4008.00						0061	
			80	S/Sst	: w to lt gy, crs, f, l	0061-1L	
			20	Sh/Clst:	brn gy to m gy to drk gy to brn blk, mic, wx	0061-2L	
			tr	Sh/Clst:	m brn to pl brn	0061-3L	
			tr	Cont	: dd, prp	0061-4L	
4017.00						0062	
	1.28		75	S/Sst	: w to lt gy, crs, f, l, cngl	0062-1L	
			25	Sh/Clst:	brn gy to m gy to drk gy to brn blk, mic, wx	0062-2L	
			tr	Sh/Clst:	m brn to pl brn	0062-3L	
			tr	Coal	: blk, wx	0062-4L	
			tr	Cont	: dd, prp	0062-5L	
4044.00						0063	
			70	S/Sst	: w to lt gy, crs, f, l, cngl	0063-1L	
			20	Sh/Clst:	drk gy to brn gy to drk brn to brn blk, mic, wx	0063-2L	
	38.30		10	Coal	: blk, wx	0063-3L	
			tr	Sh/Clst:	m brn to drk brn	0063-4L	
			tr	Cont	: prp	0063-5L	

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4053.00						0064
	0.09			90 S/Sst : w, crs, l		0064-1L
				10 Sh/Clst: drk gy to brn gy to dsk brn to brn blk, mic, wx		0064-2L
				tr Coal : blk, wx		0064-3L
				tr Sh/Clst: m brn to drk brn		0064-4L
				tr Cont : prp		0064-5L
4062.00						0065
				85 S/Sst : w, crs, l		0065-1L
				10 Sh/Clst: drk gy to brn gy to dsk brn, mic, wx		0065-2L
				5 Sh/Clst: m brn to drk brn		0065-3L
				tr Coal : blk, wx		0065-4L
4107.00						0066
	0.16			65 S/Sst : w, crs, l		0066-1L
				20 Sh/Clst: drk gy to brn gy to dsk brn, mic, wx		0066-2L
	47.80			10 Coal : blk, wx		0066-3L
				5 Sh/Clst: m brn to pl brn		0066-4L
4116.00						0067
	1.05			65 Sh/Clst: m gy to drk gy to brn gy to dsk brn		0067-1L
				25 S/Sst : w, crs, l		0067-2L
				10 Sh/Clst: m brn to pl brn		0067-3L
				tr Coal : blk, wx		0067-4L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4125.00						0068
	1.08	85		Sh/Clst: m gy to gy brn to brn gy to brn blk, wx		0068-1L
		10		S/Sst : w, crs, l		0068-2L
		5		Sh/Clst: m brn to pl brn		0068-3L
		tr		Coal : blk, wx		0068-4L
		tr		Cont : prp		0068-5L
4134.00						0069
	1.04	65		Sh/Clst: m gy to gy brn to brn gy to brn blk, wx		0069-1L
		10		S/Sst : w, crs, l		0069-2L
		10		Kaolin : w		0069-5L
		10		Cont : prp, dd		0069-6L
		5		Sh/Clst: m brn to pl brn		0069-3L
		tr		Coal : blk, wx		0069-4L
4143.00						0070
	1.03	60		Sh/Clst: m gy to gy brn to brn gy to brn blk, wx		0070-1L
		25		S/Sst : w, crs, l		0070-2L
		10		Kaolin : w		0070-5L
		5		Sh/Clst: m brn to pl brn		0070-3L
		tr		Coal : blk, wx		0070-4L
4170.00						0071
		70		Sh/Clst: m gy to gy pu to lt brn gy to brn gy to dsk brn, mic, wx		0071-1L
		25		S/Sst : w to or gy, crs, l		0071-2L
		5		Sh/Clst: m brn to pl brn		0071-3L
		tr		Coal : blk, wx		0071-4L
		tr		Kaolin : w		0071-5L

Table 2 : Lithology description for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
4179.00						0072
	0.23	80	Sh/Clst: m gy to gy pu to lt brn gy to brn gy to m brn to pl brn to dsk brn, mic, wx			0072-1L
		20	S/Sst : w to or gy, crs, l, kln			0072-2L
		tr	Coal : blk, wx			0072-3L
4188.00						0073
		95	Sh/Clst: m gy to gy pu to lt brn gy to brn gy to m brn to pl brn to dsk brn, mic, wx			0073-1L
		5	S/Sst : w to or gy to gy pi, crs, l, kln			0073-2L

Table 3 : Rock-Eval table for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3357.00	cut	Sh/Clst: m gy to drk gy	0.08	0.31	1.20	0.26	0.88	35	136	0.4	0.21	430	0016-1L
3420.00	cut	Sh/Clst: drk brn to m brn	0.27	0.84	1.80	0.47	0.60	140	300	1.1	0.24	446	0023-1L
3438.00	cut	Sh/Clst: m gy to brn gy	0.73	3.58	1.68	2.13	1.97	182	85	4.3	0.17	443	0025-1L
3447.00	cut	Sh/Clst: m gy to brn gy	0.60	3.08	1.88	1.64	2.24	138	84	3.7	0.16	442	0026-1L
3456.00	cut	Sh/Clst: m gy to brn gy	0.52	2.81	2.53	1.11	1.96	143	129	3.3	0.16	440	0027-1L
3474.00	cut	Sh/Clst: drk gy	0.55	3.39	1.75	1.94	2.46	138	71	3.9	0.14	443	0029-1L
3501.00	cut	Sh/Clst: drk gy to brn blk	0.68	4.20	2.32	1.81	3.63	116	64	4.9	0.14	441	0032-1L
3537.00	cut	Sh/Clst: brn gy to drk gy to brn blk	0.32	2.02	1.83	1.10	2.46	82	74	2.3	0.14	444	0034-1L
3555.00	cut	Sh/Clst: m gy to drk gy to brn blk	0.29	1.35	1.54	0.88	1.94	70	79	1.6	0.18	444	0036-1L
3582.00	cut	Sh/Clst: m gy to drk gy	0.32	4.50	1.10	4.09	2.11	213	52	4.8	0.07	449	0039-1L
3616.60	ccp	Coal : blk	6.08	98.11	3.33	29.46	28.91	339	12	104.2	0.06	446	0076-1L
3627.30	ccp	Coal : blk	13.20	92.26	4.90	18.83	68.00	136	7	105.5	0.13	451	0077-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	0.69	5.28	0.21	25.14	3.16	167	7	6.0	0.12	445	0078-1L
3682.00	ccp	Sh/Clst: drk gy to brn gy	0.63	4.13	0.21	19.67	3.34	124	6	4.8	0.13	445	0079-1L

Table 3 : Rock-Eval table for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3725.50	ccp	Sh/Clst: drk gy	0.31	3.31	0.18	18.39	2.47	134	7	3.6	0.09	446	0080-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	1.13	8.40	0.24	35.00	5.58	151	4	9.5	0.12	444	0081-1L
3746.00	ccp	Sltst : lt gy to drk gy	0.11	0.87	0.35	2.49	0.80	109	44	1.0	0.11	446	0082-1L
3846.00	cut	Sh/Clst: lt brn gy to brn gy to m gy	0.35	1.85	1.48	1.25	1.19	155	124	2.2	0.16	445	0047-1L
3855.00	cut	Sh/Clst: lt brn gy to brn gy	0.40	2.22	1.69	1.31	1.28	173	132	2.6	0.15	447	0048-1L
3864.00	cut	Sh/Clst: lt brn gy to brn gy	0.68	3.49	1.63	2.14	1.51	231	108	4.2	0.16	446	0049-1L
3873.00	cut	Sh/Clst: lt brn gy to brn gy	0.81	3.32	1.27	2.61	1.53	217	83	4.1	0.20	444	0050-1L
3918.00	cut	S/Sst : w to lt gy	-	0.06	0.42	0.14	0.14	43	300	0.1	-	469	0053-1L
3945.00	cut	S/Sst : w to lt gy	0.02	0.10	0.31	0.32	0.15	67	207	0.1	0.17	462	0056-1L
4017.00	cut	Sh/Clst: brn gy to m gy to drk gy to brn blk	0.09	0.54	0.45	1.20	1.28	42	35	0.6	0.14	445	0062-2L
4044.00	cut	Coal : blk	6.66	77.71	5.78	13.44	38.30	203	15	84.4	0.08	455	0063-3L
4053.00	cut	S/Sst : w	-	0.03	0.26	0.12	0.09	33	289	-	-	480	0064-1L
4107.00	cut	S/Sst : w	0.01	0.07	0.18	0.39	0.16	44	113	0.1	0.13	451	0066-1L
4107.00	cut	Coal : blk	5.49	80.39	5.09	15.79	47.80	168	11	85.9	0.06	460	0066-3L

Table 3 : Rock-Eval table for well NGLS 0400/11-15

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
4116.00	cut	Sh/Clst: m gy to drk gy to brn gy to dsk brn	0.03	0.22	0.36	0.61	1.05	21	34	0.3	0.12	446	0067-1L
4125.00	cut	Sh/Clst: m gy to gy brn to brn gy to brn blk	0.04	0.27	0.35	0.77	1.08	25	32	0.3	0.13	442	0068-1L
4134.00	cut	Sh/Clst: m gy to gy brn to brn gy to brn blk	0.04	0.29	0.33	0.88	1.04	28	32	0.3	0.12	441	0069-1L
4143.00	cut	Sh/Clst: m gy to gy brn to brn gy to brn blk	0.02	0.19	0.30	0.63	1.03	18	29	0.2	0.10	446	0070-1L

Table 4 a: Weight of EOM and Chromatographic Fraction for well NOCS 6406/11-1S

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
3501.00	cut	Sh/Clst: drk gy to brn blk	9.0	25.1	3.1	3.4	15.5	3.1	6.5	18.6	3.63	0032-1L
3605.00	ccp	Marl : lt gy to ol gy	12.2	4.6	0.6	2.6	0.6	0.8	3.2	1.4	0.10	0094-1L
3627.30	ccp	Coal : blk	1.2	47.8	3.5	10.6	30.1	3.6	14.1	33.7	68.00	0077-1L
3648.00	ccp	Sh/Clst: lt gy	9.5	16.1	6.2	2.7	1.1	6.1	8.9	7.2	0.22	0095-1L
3653.00	ccp	S/Sst : lt gy to m gy to lt brn	13.6	5.9	2.0	1.2	1.4	1.3	3.2	2.7	0.17	0096-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	9.3	38.8	4.3	4.8	26.7	3.0	9.1	29.7	3.16	0078-1L
3692.00	ccp	S/Sst : brn gy	10.1	80.5	44.4	12.6	5.5	18.0	57.0	23.5	0.53	0009-1L
3694.00	ccp	S/Sst : brn gy	11.1	110.3	57.6	13.2	26.6	12.9	70.8	39.5	0.59	0012-1L
3718.00	ccp	S/Sst : brn gy to gy brn	10.1	75.5	53.1	11.7	8.7	2.0	64.8	10.7	0.66	0010-1L
3719.00	ccp	S/Sst : lt gy to brn blk	11.0	49.7	34.0	9.3	5.4	1.0	43.3	6.4	0.54	0011-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	9.6	44.8	2.1	5.4	32.4	4.9	7.5	37.3	5.58	0081-1L
3864.00	cut	Sh/Clst: lt brn gy to brn gy	9.9	21.4	5.1	4.3	7.9	4.1	9.4	12.0	1.43	0049-1L
3873.00	cut	Sh/Clst: lt brn gy to brn gy	7.9	19.1	5.0	4.7	6.3	3.1	9.7	9.4	1.53	0050-1L
4044.00	cut	Coal : blk	3.1	95.9	1.1	6.4	85.6	2.8	7.5	88.4	38.30	0063-3L

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
4107.00	cut	S/Sst : w	4.2	5.3	3.5	0.8	0.3	0.7	4.3	1.0	0.16	0066-1L

Table 4 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
3501.00	cut	Sh/Clst: drk gy to brn blk	2801	345	379	1729	345	725	2075	0032-1L
3605.00	ccp	Marl : lt gy to ol gy	378	49	213	49	65	263	115	0094-1L
3627.30	ccp	Coal : blk	39504	2892	8760	24876	2975	11652	27851	0077-1L
3648.00	ccp	Sh/Clst: lt gy	1701	655	285	116	644	940	761	0095-1L
3653.00	ccp	S/Sst : lt gy to m gy to lt brn	433	146	88	102	95	235	198	0096-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	4185	463	517	2880	323	981	3203	0078-1L
3692.00	ccp	S/Sst : brn gy	7986	4404	1250	545	1785	5654	2331	0009-1L
3694.00	ccp	S/Sst : brn gy	9927	5184	1188	2394	1161	6372	3555	0012-1L
3718.00	ccp	S/Sst : brn gy to gy brn	7453	5241	1154	858	197	6396	1056	0010-1L
3719.00	ccp	S/Sst : lt gy to brn blk	4522	3093	846	491	90	3939	582	0011-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	4656	218	561	3367	509	779	3877	0081-1L
3864.00	cut	Sh/Clst: lt brn gy to brn gy	2155	513	433	795	412	946	1208	0049-1L
3873.00	cut	Sh/Clst: lt brn gy to brn gy	2420	633	595	798	392	1229	1191	0050-1L
4044.00	cut	Coal : blk	30638	351	2044	27348	894	2396	28242	0063-3L

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
4107.00	cut	S/Sst : w	1270	839	191	71	167	1031	239	0066-1L

Table 4 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
3501.00	cut	Sh/Clst: drk gy to brn blk	77.17	9.53	10.45	47.66	9.53	19.98	57.19	0032-1L
3605.00	ccp	Marl : lt gy to ol gy	378.29	49.34	213.82	49.34	65.79	263.16	115.13	0094-1L
3627.30	ccp	Coal : blk	58.09	4.25	12.88	36.58	4.38	17.14	40.96	0077-1L
3648.00	ccp	Sh/Clst: lt gy	773.59	297.91	129.73	52.85	293.10	427.64	345.95	0095-1L
3653.00	ccp	S/Sst : lt gy to m gy to lt brn	255.00	86.44	51.86	60.51	56.19	138.31	116.70	0096-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	132.45	14.68	16.39	91.15	10.24	31.07	101.39	0078-1L
3692.00	ccp	S/Sst : brn gy	1506.81	831.09	235.85	102.95	336.93	1066.94	439.88	0009-1L
3694.00	ccp	S/Sst : brn gy	1682.71	878.73	201.38	405.80	196.80	1080.11	602.60	0012-1L
3718.00	ccp	S/Sst : brn gy to gy brn	1129.26	794.22	175.00	130.13	29.91	969.22	160.04	0010-1L
3719.00	ccp	S/Sst : lt gy to brn blk	837.46	572.91	156.71	90.99	16.85	729.62	107.84	0011-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	83.46	3.91	10.06	60.36	9.13	13.97	69.49	0081-1L
3864.00	cut	Sh/Clst: lt brn gy to brn gy	150.71	35.92	30.28	55.63	28.87	66.20	84.51	0049-1L
3873.00	cut	Sh/Clst: lt brn gy to brn gy	158.22	41.42	38.93	52.19	25.68	80.35	77.87	0050-1L
4044.00	cut	Coal : blk	80.00	0.92	5.34	71.41	2.34	6.26	73.74	0063-3L

Table 4 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 0400/11-15

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
4107.00	cut	S/Sst : w	794.36	524.58	119.90	44.96	104.92	644.48	149.88	0066-1L

Table 4 d: Composition of material extracted from the rock (%) for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	EOM	Aro	
3501.00	cut	Sh/Clst: drk gy to brn blk	12.35	13.55	61.75	12.35	25.90	74.10	91.18	34.95	0032-1L
3605.00	ccp	Marl : lt gy to ol gy	13.04	56.52	13.04	17.39	69.57	30.43	23.08	228.57	0094-1L
3627.30	ccp	Coal : blk	7.32	22.18	62.97	7.53	29.50	70.50	33.02	41.84	0077-1L
3648.00	ccp	Sh/Clst: lt gy	38.51	16.77	6.83	37.89	55.28	44.72	229.63	123.61	0095-1L
3653.00	ccp	S/Sst : lt gy to m gy to lt brn	33.90	20.34	23.73	22.03	54.24	45.76	166.67	118.52	0096-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	11.08	12.37	68.81	7.73	23.45	76.55	89.58	30.64	0078-1L
3692.00	ccp	S/Sst : brn gy	55.16	15.65	6.83	22.36	70.81	29.19	352.38	242.55	0009-1L
3694.00	ccp	S/Sst : brn gy	52.22	11.97	24.12	11.70	64.19	35.81	436.36	179.24	0012-1L
3718.00	ccp	S/Sst : brn gy to gy brn	70.33	15.50	11.52	2.65	85.83	14.17	453.85	605.61	0010-1L
3719.00	ccp	S/Sst : lt gy to brn blk	68.41	18.71	10.87	2.01	87.12	12.88	365.59	676.56	0011-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	4.69	12.05	72.32	10.94	16.74	83.26	38.89	20.11	0081-1L
3864.00	cut	Sh/Clst: lt brn gy to brn gy	23.83	20.09	36.92	19.16	43.93	56.07	118.60	78.33	0049-1L
3873.00	cut	Sh/Clst: lt brn gy to brn gy	26.18	24.61	32.98	16.23	50.79	49.21	106.38	103.19	0050-1L
4044.00	cut	Coal : blk	1.15	6.67	89.26	2.92	7.82	92.18	17.19	8.48	0063-3L

Table 4 d: Composition of material extracted from the rock (%) IOI well NUGS 0400/11-15

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	EOM	Aro	
4107.00	cut	S/Sst : w	66.04	15.09	5.66	13.21	81.13	18.87	437.50	430.00	0066-1L

Table 5 : Saturated Hydrocarbon Ratios for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	Pristane	Pristane	Pristane + Phytane	Phytane	CPI	Sample
			nC17	Phytane	nC17 + nC18	nC18		
3501.00	cut	Sh/Clst: drk gy to brn blk	1.61	5.32	1.01	0.34	1.32	0032-1L
3627.30	ccp	Coal : blk	1.16	5.58	0.70	0.22	1.16	0077-1L
3653.00	ccp	S/Sst : lt gy to m gy to lt brn	0.46	0.80	0.39	0.34	1.19	0096-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	0.56	3.13	0.38	0.19	1.21	0078-1L
3692.00	ccp	S/Sst : brn gy	0.32	1.81	0.24	0.16	1.13	0009-1L
3694.00	ccp	S/Sst : brn gy	0.31	1.78	0.23	0.16	1.11	0012-1L
3718.00	ccp	S/Sst : brn gy to gy brn	0.31	1.84	0.23	0.15	1.12	0010-1L
3719.00	ccp	S/Sst : lt gy to brn blk	0.31	1.82	0.23	0.15	1.12	0011-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	0.90	4.19	0.55	0.21	1.19	0081-1L
3864.00	cut	Sh/Clst: lt brn gy to brn gy	0.43	2.46	0.32	0.19	1.10	0049-1L
4044.00	cut	Coal : blk	0.58	5.23	0.35	0.12	1.16	0063-3L
4107.00	cut	S/Sst : w	0.32	1.80	0.25	0.17	1.13	0066-1L

Table 6 : AROMATIC HYDROCARBON RATIOS FOR WELL NO. 0001/11-11

Depth unit of measure: m

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MPI1	MPI2	Rc	DBT/P	4/1MDBT (3+2) /1MDBT	Sample	
3501.00	cut	Sh/Clst: drk gy to brn blk	1.33	2.35	0.09	0.84	0.56	0.62	0.74	0.12	3.05	3.84	0032-1L
3627.30	ccp	Coal : blk	1.26	2.25	0.50	0.92	0.62	0.73	0.77	0.21	10.46	6.69	0077-1L
3653.00	ccp	S/Sst : lt gy to m gy to lt brn	0.74	1.70	-	0.99	0.60	0.67	0.76	0.26	-	-	0096-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	1.23	2.30	0.29	1.11	0.60	0.72	0.76	0.12	7.76	5.28	0078-1L
3692.00	ccp	S/Sst : brn gy	1.13	4.34	0.11	-	-	-	-	-	-	-	0009-1L
3694.00	ccp	S/Sst : brn gy	1.28	5.20	0.12	-	-	-	-	-	-	-	0012-1L
3718.00	ccp	S/Sst : brn gy to gy brn	1.33	5.14	0.15	-	-	-	-	-	-	-	0010-1L
3719.00	ccp	S/Sst : lt gy to brn blk	1.24	5.19	0.12	-	-	-	-	-	-	-	0011-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	1.26	2.34	0.29	1.25	0.66	0.83	0.80	0.14	9.47	7.76	0081-1L
3864.00	cut	Sh/Clst: lt brn gy to brn gy	0.80	1.70	0.06	0.76	0.54	0.61	0.72	0.08	4.16	0.98	0049-1L
4044.00	cut	Coal : blk	1.58	3.54	0.59	1.29	0.73	0.87	0.84	0.19	14.68	9.78	0063-3L
4107.00	cut	S/Sst : w	0.77	0.98	-	-	-	-	-	-	-	-	0066-1L

Table 7 : Thermal Maturity Data for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
1050.00	swc bulk	0.26	5	0.01	-	-	-	0074-0B
1203.00	swc bulk	0.29	5	0.03	-	-	-	0075-0B
1310.00	cut bulk	0.27	13	0.04	-	-	-	0083-0B
1420.00	cut bulk	0.29	6	0.05	-	-	-	0084-0B
1520.00	cut bulk	NDP	-	-	-	-	-	0085-0B
1640.00	cut bulk	0.32	3	0.01	-	-	-	0086-0B
1720.00	cut bulk	0.25	4	0.01	-	-	-	0087-0B
1775.00	swc bulk	0.32	3	0.01	-	-	-	0001-0B
1935.00	swc bulk	0.31	10	0.03	-	-	-	0002-0B
2070.00	swc bulk	NDP	-	-	-	-	-	0003-0B
2150.00	swc bulk	0.29	5	0.04	-	-	-	0004-0B
2260.00	cut bulk	0.25	5	0.01	-	-	-	0088-0B
2330.00	cut bulk	0.33	4	0.01	-	-	-	0089-0B
2430.00	cut bulk	0.38	4	0.03	-	-	-	0090-0B

Table 7 : Thermal Maturity Data for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
2540.00	cut bulk	0.51	5	0.06	-	-	-	0091-0B
2640.00	cut bulk	0.53	2	0.09	-	-	-	0092-0B
2757.00	swc bulk	0.52	8	0.04	-	-	-	0005-0B
2870.00	cut bulk	NDP	-	-	-	-	-	0093-0B
3120.00	swc bulk	0.47	6	0.03	-	-	-	0006-0B
3275.00	swc bulk	0.56	5	0.02	-	-	-	0007-0B
3325.00	swc bulk	NDP	-	-	-	-	-	0008-0B
3384.00	cut bulk	NDP	-	-	-	-	-	0019-0B
3438.00	cut bulk	0.51	4	0.03	-	-	-	0025-0B
3537.00	cut bulk	0.67	7	0.09	-	-	-	0034-0B
3582.00	cut Sh/Clst: m gy to drk gy	-	-	-	-	6.5(?)	449	0039-1L
3616.60	ccp bulk	0.57	19	0.04	-	-	-	0076-0B
3627.30	ccp bulk	0.67	17	0.07	-	-	-	0077-0B
3627.30	ccp Coal : blk	-	-	-	-	6.5(??)	451	0077-1L

Table 7 : Thermal Maturity Data for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
3666.00	ccp bulk	0.68	10	0.05	-	-	-	0078-0B
3666.00	ccp Sh/Clst: drk gy to brn blk	-	-	-	-	6.5-7.0	-	0078-1L
3682.00	ccp bulk	0.72	10	0.09	-	-	-	0079-0B
3725.50	ccp bulk	0.77	8	0.06	-	-	-	0080-0B
3735.50	ccp bulk	0.67	14	0.10	-	-	-	0081-0B
3735.50	ccp Sh/Clst: drk gy to brn blk	-	-	-	-	6.5-7.0	444	0081-1L
3746.00	ccp bulk	0.66	4	0.04	-	-	-	0082-0B
3855.00	cut Sh/Clst: lt brn gy to brn gy	-	-	-	-	6.5-7.0	447	0048-1L
3873.00	cut bulk	NDP	-	-	-	-	-	0050-0B
3945.00	cut bulk	0.45	3	0.04	-	-	-	0056-0B
4017.00	cut Sh/Clst: brn gy to m gy to drk gy to brn blk	-	-	-	-	6.5-7.0	445	0062-2L
4044.00	cut bulk	1.00	4	0.03	-	-	-	0063-0B
4062.00	cut bulk	1.08	3	0.02	-	-	-	0065-0B

Table 7 : Thermal maturity data for well ROSS 0100, 11 - 11

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
4107.00	cut bulk	0.83	18	0.05	-	-	-	0066-0B
4134.00	cut bulk	NDP	-	-	-	-	-	0069-0B
4170.00	cut bulk	-	-	-	-	6.0-7.0	-	0071-0B
4179.00	cut bulk	NDP	-	-	-	-	-	0072-0B
4188.00	cut bulk	-	-	-	-	7.0(?)	-	0073-0B

Table 8 : Visual Kerogen Composition Data for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	L I P T %	A m o r L t	L i p D e t	S p / P o l l	C u t P i c l l	R e s i n e	D i a l g o f f i t L	A B i t L	I N E R T %	F u s i n	S e n s i t i v e	M e t h o d s	S c r e e n i n g	V I T R I %	T e l l u r i n e	C o l l i d e r i t V	V i t r i n e V	A m o r b i t V	Sample
3582.00	cut	Sh/Clst: m gy to drk gy	35	**	*	*	**				10	*	*			55	*	*	*		0039-1L
3627.30	ccp	Coal : blk	TR			*	*	?			35	*	*			70	*	*			0077-1L
3666.00	ccp	Sh/Clst: drk gy to brn blk	35	*	**	**	*	*			30	*				35	*	*			0078-1L
3735.50	ccp	Sh/Clst: drk gy to brn blk	10	*	*	**		*			20	*				70	*	*			0081-1L
3855.00	cut	Sh/Clst: lt brn gy to brn gy	NDP		**	*					NDP	*				NDP	*	*			0048-1L
4017.00	cut	Sh/Clst: brn gy to m gy to drk gy to brn blk	10	**	**		*				20	*	*			70	*	*	*		0062-2L
4170.00	cut	bulk	TR	*	*	*					35	*	*			65	*	*	*		0071-0B
4188.00	cut	bulk	NDP		*	*					NDP	*				NDP	*	*			0073-0B

Table 9: Isotope GC Analysis of Headspace Gas for Well 67406/11-1S.

Depth	C1	C2	C3	i-C4	n-C4
3528m	-33.8	-29.5	-29.1	-28.2	-28.4
3600m	-16.9	-24.3	-27.2	-27.6	-27.4
3765m	-37.1	-31.0	-31.4	-32.6	-31.6
3828m	-36.3	-30.5	-30.6	-31.9	-31.3
3900m	-37.1	-28.7	-29.2	-25.8	-31.6
3963m	-34.5	-26.2	-28.3	-29.3	-28.6
4035m	-34.0	-25.8	-26.4	-26.2	-26.3
4080m	-34.1	-27.4	-28.7	-28.9	-28.3
4098m	-13.6	-16.9	-21.6	-24.2	-24.0
4161m	-15.1	Not enough material to be measured			

Table 10a : Tabulation of carbon isotope data for EOM/Oil - fractions or Oils for well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Typ	Lithology	EOM/Oil	Saturated	Aromatic	NSO	Asphaltenes	Kerogen	Sample
3501.00	cut		-	-26.28	-27.54	-25.23	-24.03	-	0032-1L
3627.30	ccp		-	-27.48	-27.07	-25.77	-24.89	-	0077-1L
3653.00	ccp		-	-27.76	-27.47	-27.38	-26.09	-	0096-1L
3666.00	ccp		-	-28.92	-27.40	-26.43	-25.69	-	0078-1L
3692.00	ccp		-	-28.25	-27.23	-28.61	-28.22	-	0009-1L
3694.00	ccp		-	-28.12	-27.13	-28.02	-28.69	-	0012-1L
3718.00	ccp		-	-28.29	-27.14	-28.71	-28.16	-	0010-1L
3719.00	ccp		-	-28.15	-27.26	-28.39	-27.89	-	0011-1L
3735.50	ccp		-	-28.29	-27.45	-25.95	-25.77	-	0081-1L
4044.00	cut		-	-27.51	-26.92	-25.25	-24.74	-	0063-3L
4107.00	cut		-	-27.16	-26.77	-28.06	-26.67	-	0066-1L

Table 10b : Tabulation of cv values from carbon isotope data for well NOR 111, 112, 113

Depth unit of measure: m

Depth	Typ	Lithology	Saturated	Aromatic	cv value	Sample
3501.00	cut		-26.28	-27.54	-6.30	0032-1L
3627.30	ccp		-27.48	-27.07	-2.22	0077-1L
3653.00	ccp		-27.76	-27.47	-2.40	0096-1L
3666.00	ccp		-28.92	-27.40	0.69	0078-1L
3692.00	ccp		-28.25	-27.23	-0.63	0009-1L
3694.00	ccp		-28.12	-27.13	-0.73	0012-1L
3718.00	ccp		-28.29	-27.14	-0.33	0010-1L
3719.00	ccp		-28.15	-27.26	-0.95	0011-1L
3735.50	ccp		-28.29	-27.45	-1.02	0081-1L
4044.00	cut		-27.51	-26.92	-1.81	0063-3L
4107.00	cut		-27.16	-26.77	-2.36	0066-1L

Table 11A: Variation in Triterpane Distribution (peak height) for Well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Lithology	B/A	B/B+A	B		C/E	C/C+E	X/E	Z/E	Z/C	Z/Z+E	Q/E	C+D		J1		Sample
				B+E+F									E/E+F	C+D+E+F	D+F/C+E	J1+J2%	
3501.00	Sh/Clst	12.11	0.92	0.22	0.69	0.41	0.06	0.01	0.02	0.01	-	0.80	0.39	0.21	61.00	0032-1	
3627.30	Coal	1.60	0.62	0.20	0.67	0.40	0.10	0.01	0.01	0.01	0.02	0.90	0.39	0.09	59.03	0077-1	
3653.00	S/Sst	1.25	0.56	0.16	0.66	0.40	0.07	0.03	0.04	0.03	0.10	0.91	0.40	0.09	62.36	0096-1	
3666.00	Sh/Clst	3.78	0.79	0.16	0.53	0.35	0.12	0.02	0.03	0.02	0.01	0.89	0.33	0.10	60.13	0078-1	
3692.00	S/Sst	0.82	0.45	0.18	0.74	0.42	0.22	0.17	0.23	0.14	0.06	0.86	0.41	0.14	68.04	0009-1	
3694.00	S/Sst	0.99	0.50	0.16	0.56	0.36	0.11	0.11	0.20	0.10	0.04	0.90	0.35	0.09	62.23	0012-1	
3718.00	S/Sst	0.81	0.45	0.13	0.46	0.31	0.11	0.08	0.18	0.08	0.04	0.95	0.32	0.06	67.36	0010-1	
3719.00	S/Sst	0.82	0.45	0.14	0.48	0.33	0.15	0.11	0.23	0.10	0.05	0.91	0.33	0.10	70.07	0011-1	
3735.50	Sh/Clst	5.71	0.85	0.17	0.63	0.39	0.10	0.01	0.02	0.01	-	0.89	0.38	0.11	59.23	0081-1	
4044.00	Coal	2.49	0.71	0.20	0.56	0.36	0.17	-	0.01	-	0.01	0.89	0.35	0.11	60.95	0063-3	
4107.00	S/Sst	0.84	0.46	0.08	0.38	0.28	0.05	0.04	0.10	0.04	0.05	0.90	0.28	0.12	69.02	0066-1	

Table 11b: Variation in Sterane Distribution (peak height) for Well NOCS 6406/11-15

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
3501.00	Sh/Clst	0.67	39.35	50.25	0.53	0.56	0.17	0.15	0.34	0.65	0.83	0032-1
3627.30	Coal	0.77	45.66	64.70	0.59	0.67	0.40	0.34	0.48	0.84	1.69	0077-1
3653.00	S/Sst	0.60	42.93	72.55	0.82	0.75	0.27	0.19	0.57	0.75	2.32	0096-1
3666.00	Sh/Clst	0.83	40.36	69.46	0.77	0.74	0.37	0.30	0.53	0.68	1.91	0078-1
3692.00	S/Sst	0.78	52.76	77.50	0.64	0.77	0.20	0.14	0.63	1.12	3.65	0009-1
3694.00	S/Sst	0.75	51.61	77.26	0.61	0.77	0.25	0.18	0.63	1.07	3.51	0012-1
3718.00	S/Sst	0.82	50.85	80.96	0.70	0.81	0.29	0.22	0.68	1.03	4.32	0010-1
3719.00	S/Sst	0.81	50.66	77.60	0.73	0.77	0.24	0.18	0.63	1.03	3.51	0011-1
3735.50	Sh/Clst	0.76	39.58	68.31	0.33	0.73	0.18	0.15	0.52	0.66	1.78	0081-1
4044.00	Coal	0.72	44.32	67.79	0.33	0.70	0.22	0.19	0.51	0.80	1.89	0063-3
4107.00	S/Sst	0.59	34.85	67.11	0.62	0.75	0.24	0.18	0.50	0.53	1.57	0066-1

Ratio1: $a / a + j$

Ratio2: $q / q + t * 100\%$

Ratio3: $2(r + s) / (q + t + 2(r + s)) * 100\%$

Ratio4: $a + b + c + d / h + k + l + n$

Ratio5: $r + s / r + s + q$

Ratio6: $u + v / u + v + q + r + s + t$

Ratio7: $u + v / u + v + i + m + n + q + r + s + t$

Ratio8: $r + s / q + r + s + t$

Ratio9: q / t

Ratio10: $r + s / t$

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Ratio5</u>	<u>Sample</u>
3501.00	Sh/Clst	0.57	0.43	0.30	0.32	0.47	0032-1
3627.30	Coal	0.87	0.76	0.70	0.71	0.83	0077-1
3653.00	S/Sst	0.62	0.50	0.34	0.35	0.51	0096-1
3666.00	Sh/Clst	0.74	0.62	0.47	0.49	0.66	0078-1
3692.00	S/Sst	0.49	0.45	0.26	0.25	0.35	0009-1
3694.00	S/Sst	0.48	0.47	0.26	0.24	0.33	0012-1
3718.00	S/Sst	0.46	0.43	0.24	0.22	0.32	0010-1
3719.00	S/Sst	0.47	0.47	0.26	0.23	0.35	0011-1
3735.50	Sh/Clst	1.00	1.00	1.00	1.00	1.00	0081-1
4044.00	Coal	1.00	1.00	1.00	1.00	1.00	0063-3
4107.00	S/Sst	0.64	0.38	0.29	0.34	0.51	0066-1

Ratio1: $a1 / a1 + g1$ Ratio2: $b1 / b1 + g1$ Ratio3: $a1 + b1 / a1 + b1 + c1 + d1 + e1 + f1 + g1$ Ratio4: $a1 / a1 + e1 + f1 + g1$ Ratio5: $a1 / a1 + d1$

Table 10 : Variation in Monoaromatic Sterane Distribution for Well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Sample
3501.00	Sh/Clst	0.42	0.28	0.23	0.15	0032-1
3627.30	Coal	0.71	0.44	0.31	0.18	0077-1
3653.00	S/Sst	0.32	0.19	0.20	0.15	0096-1
3666.00	Sh/Clst	0.62	0.41	0.35	0.26	0078-1
3692.00	S/Sst	0.49	0.34	0.32	0.28	0009-1
3694.00	bulk	0.48	0.33	0.31	0.27	0012-0
3718.00	S/Sst	0.48	0.32	0.32	0.17	0010-1
3719.00	S/Sst	0.49	0.34	0.33	0.29	0011-1
3735.50	Sh/Clst	-	-	-	-	0081-1
4044.00	Coal	-	-	-	-	0063-3
4107.00	S/Sst	0.33	0.16	0.22	0.19	0066-1

Ratio1: A1 / A1 + E1
 Ratio2: B1 / B1 + E1

Ratio3: A1 / A1 + E1 + G1
 Ratio4: A1+B1 / A1+B1+C1+D1+E1+F1+G1+H1+I1

Table 11e: Aromatisation of Steranes for Well NOCS 6406/11-1S

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Sample</u>
3501.00	Sh/Clst	0.29	0.65	0032-1
3627.30	Coal	0.27	0.89	0077-1
3653.00	S/Sst	0.42	0.80	0096-1
3666.00	Sh/Clst	0.19	0.90	0078-1
3692.00	S/Sst	0.56	0.95	0009-1
3718.00	S/Sst	0.70	0.90	0010-1
3719.00	S/Sst	0.54	0.92	0011-1
3735.50	Sh/Clst	1.00	-	0081-1
4044.00	Coal	1.00	-	0063-3
4107.00	S/Sst	0.31	0.90	0066-1

$$\text{Ratio1: } \frac{C1+D1+E1+F1+G1+H1+I1}{C1+D1+E1+F1+G1+H1+I1 + c1+d1+e1+f1+g1}$$

$$\text{Ratio2: } g1 / g1 + I1$$

Table 11F: Raw GCMS triterpane data (peak height) for well NOCS 0400/11-10

Depth unit of measure: m

Depth	Lithology	p	q	r	s	t	a	b	z	c	Sample
		x	d	e	f	g	h	i	jl		
		j2	k1	k2	l1	l2	m1	m2			
3501.00	Sh/Clst	10.63	3.71	0.00	54.96	0.00	23.36	282.91	8.88	552.58	0032-1
		46.11	84.18	798.69	197.07	484.02	347.95	126.20	201.74		
		128.98	104.19	66.08	67.78	39.41	21.14	12.28			
3627.30	Coal	19.16	10.35	3.37	47.32	1.74	79.21	126.76	2.44	304.21	0077-1
		45.54	19.65	456.60	51.89	186.28	127.74	22.35	105.60		
		73.29	40.18	25.65	18.66	9.85	4.13	1.28			
3653.00	S/Sst	17.85	8.21	4.28	10.30	2.98	13.66	17.09	2.34	56.21	0096-1
		5.64	4.91	84.62	7.97	38.65	25.19	3.11	22.07		
		13.32	14.36	8.61	7.89	4.08	5.12	2.87			
3666.00	Sh/Clst	8.63	3.78	0.00	27.12	0.00	15.19	57.48	4.16	141.55	0078-1
		33.02	8.50	268.45	34.10	142.69	102.09	23.84	83.93		
		55.66	36.74	28.98	28.20	13.62	10.68	6.40			
3692.00	S/Sst	7.46	6.34	2.65	11.84	2.71	29.45	24.26	16.56	72.16	0009-1
		21.79	8.27	97.87	16.28	39.77	25.29	6.25	26.06		
		12.24	16.14	9.16	6.94	4.30	3.82	2.00			

Table 11F: Raw GCMS triterpane data (peak height) for Well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Lithology	p		q		r		s		t		a		b		z		c	Sample
		x		d		e		f		g		h		i		j1			
		j2		k1		k2		l1		l2		m1		m2					
3694.00	S/Sst	6.11	4.18	1.36	8.83	1.60	21.36	21.07	11.64	57.76	0012-1								
		11.18	3.09	102.44	10.94	29.09	16.83	3.79	17.91										
		10.87	10.94	4.89	4.64	2.65	1.99	1.39											
3718.00	S/Sst	4.11	3.15	1.26	7.02	0.78	15.39	12.43	6.73	36.54	0010-1								
		8.56	2.94	79.79	4.25	14.13	9.95	1.40	10.09										
		4.89	6.62	3.24	2.19	1.28	0.99	0.52											
3719.00	S/Sst	8.97	6.83	2.71	13.20	2.54	31.02	25.52	16.14	70.43	0011-1								
		22.35	7.71	145.96	13.81	38.49	25.21	6.68	25.89										
		11.06	16.67	8.43	6.30	3.84	2.83	1.38											
3735.50	Sh/Clst	8.26	0.00	0.00	41.62	0.00	17.16	97.96	5.33	263.69	0081-1								
		39.70	22.25	415.90	49.15	223.70	162.57	37.45	141.00										
		97.06	69.07	48.21	45.93	23.59	15.75	11.29											
4044.00	Coal	15.63	4.62	0.00	72.41	0.00	60.17	149.92	2.18	306.92	0063-3								
		94.30	25.42	544.61	64.62	226.22	164.61	36.03	128.61										
		82.40	58.11	38.73	31.88	18.67	7.33	4.11											

Table 11F: Raw GCMS chromatogram data (peak height) for well head 0100/22-20

Depth unit of measure: m

Depth	Lithology	p	q	r	s	t	a	b	z	c	Sample
		x	d	e	f	g	h	i	j1		
		j2	k1	k2	l1	l2	m1	m2			
4107.00	S/Sst	1.13	0.62	0.00	0.00	0.62	1.31	1.10	0.43	4.38	0066-1
		0.58	0.55	11.47	1.30	2.52	1.63	0.29	1.76		
		0.79	1.57	0.63	0.75	0.42	0.42	0.00			

Table 1.9: Raw GCMS sterane data (peak height) for Well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Lithology	u	v	a	b	c	d	e	f	g	Sample
		h	i	j	k	l	m	n	o		
		p	q	r	s	t					
3501.00	Sh/Clst	16.71	5.29	24.49	13.78	5.20	5.98	8.58	4.92	14.10	0032-1
		50.51	11.02	11.83	26.40	10.00	5.18	6.46	6.79		
		5.71	27.87	20.31	15.46	42.96					
3627.30	Coal	31.11	6.85	16.38	11.02	4.11	4.01	10.21	6.40	4.04	0077-1
		26.40	8.04	4.81	20.18	6.92	3.29	6.73	8.38		
		3.76	13.36	14.39	12.42	15.90					
3653.00	S/Sst	7.92	3.17	12.59	8.48	2.75	2.45	5.52	3.22	5.96	0096-1
		15.48	7.84	8.31	8.25	2.49	2.26	5.83	6.14		
		3.58	5.53	9.63	7.39	7.35					
3666.00	Sh/Clst	14.94	3.65	16.10	12.61	4.14	4.54	6.71	3.32	4.72	0078-1
		25.55	6.47	3.24	14.98	4.80	2.32	3.40	2.51		
		1.82	5.88	9.04	7.53	8.69					
3692.00	S/Sst	18.11	3.46	31.90	14.93	7.08	7.15	17.91	11.31	11.23	0009-1
		40.43	21.11	9.23	30.64	8.96	7.11	15.02	26.23		
		5.85	17.09	27.99	27.80	15.30					

Table 11g: Raw GCMS sterane data (peak height) for well NUGS 0400/11-10

Depth unit of measure: m

Depth	Lithology	u	v	a	b	c	d	e	f	g	Sample
		h	i	j	k	l	m	n	o		
		p	q	r	s	t					
3694.00	S/Sst	14.58	3.78	22.62	12.96	3.98	4.23	12.84	6.60	7.65	0012-1
		31.56	15.23	7.39	22.59	5.84	4.32	11.61	18.04		
		4.38	10.57	18.84	15.96	9.91					
3718.00	S/Sst	12.16	3.13	15.87	8.97	1.73	2.47	8.19	4.71	4.22	0010-1
		18.01	8.23	3.54	14.51	2.44	2.25	6.54	10.49		
		2.11	5.96	13.04	11.87	5.76					
3719.00	S/Sst	20.82	6.34	35.04	20.00	5.53	6.25	13.00	10.54	10.61	0011-1
		41.46	21.07	8.35	27.64	7.39	5.99	15.34	26.40		
		6.58	15.68	28.70	24.92	15.27					
3735.50	Sh/Clst	9.95	4.72	10.67	7.91	2.70	2.51	7.54	4.42	5.41	0081-1
		33.96	7.19	3.42	23.29	7.92	3.13	5.93	5.88		
		3.33	12.61	18.75	15.59	19.25					
4044.00	Coal	20.50	6.85	10.83	8.21	3.95	2.74	8.98	5.92	4.95	0063-3
		35.94	6.32	4.17	26.35	8.64	3.83	7.03	9.63		
		3.94	20.88	26.63	22.95	26.23					

Depth unit of measure: m

Depth	Lithology	u	v	a	b	c	d	e	f	g	Sample
		h	i	j	k	l	m	n	o		
		p	q	r	s	t					
4107.00	S/Sst	0.92	0.31	0.99	0.71	0.25	0.26	0.53	0.26	0.54	0066-1
		1.60	0.72	0.69	0.95	0.47	0.44	0.53	0.59		
		0.76	0.69	1.14	0.88	1.29					

Table 11h: Raw GCMS trioaromatic sterane data (peak height) for Well NOCS 6406/11-15

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Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	Sample
3501.00	Sh/Clst	279.25	155.30	130.45	318.06	227.34	148.06	208.71	0032-1
3627.30	Coal	446.79	206.11	0.00	88.41	71.14	47.43	66.85	0077-1
3653.00	S/Sst	218.75	134.36	75.60	207.15	140.88	136.14	135.11	0096-1
3666.00	Sh/Clst	285.17	167.16	60.66	148.92	117.65	77.15	102.29	0078-1
3692.00	S/Sst	36.03	29.72	10.60	67.58	40.40	29.15	36.77	0009-1
3694.00	S/Sst	45.94	44.23	14.28	93.84	55.13	40.43	49.97	0012-1
3718.00	S/Sst	42.84	38.52	17.89	90.76	58.11	41.53	51.27	0010-1
3719.00	S/Sst	38.74	38.54	14.10	72.95	52.11	34.99	43.56	0011-1
3735.50	Sh/Clst	179.50	93.81	0.00	0.00	0.00	0.00	0.00	0081-1
4044.00	Coal	203.06	85.76	0.00	0.00	0.00	0.00	0.00	0063-3
4107.00	S/Sst	71.55	24.08	27.63	67.85	55.57	43.16	39.79	0066-1

Table 11: Raw GCMS monoaromatic sterane data (peak height) for Well NOCS 6406/11-1S

Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	h1	i1	Sample
3501.00	Sh/Clst	46.33	24.13	44.64	34.54	63.26	25.81	93.34	41.66	112.01	0032-1
3627.30	Coal	16.72	5.33	8.59	25.72	6.74	14.71	31.12	4.69	8.63	0077-1
3653.00	S/Sst	59.17	28.94	66.89	61.53	125.07	43.88	115.67	60.55	33.61	0096-1
3666.00	Sh/Clst	28.18	12.04	15.86	15.15	17.41	10.20	35.48	10.01	11.20	0078-1
3692.00	S/Sst	58.78	32.09	37.85	22.98	62.24	18.18	62.40	28.76	1.89	0009-1
3694.00	bulk	73.44	39.74	48.55	34.08	79.75	23.47	83.66	35.79	4.52	0012-0
3718.00	S/Sst	82.45	41.75	47.39	335.54	88.49	17.80	85.24	36.71	5.79	0010-1
3719.00	S/Sst	67.51	36.75	37.11	27.53	71.34	18.91	67.07	29.20	3.93	0011-1
3735.50	Sh/Clst	0.00	0.00	15.77	40.58	7.71	77.01	34.13	25.17	26.15	0081-1
4044.00	Coal	0.00	0.00	11.34	56.72	4.67	62.77	39.28	21.34	12.40	0063-3
4107.00	S/Sst	17.17	6.59	11.54	9.94	34.27	5.83	26.31	12.37	4.41	0066-1

Table 12a: Weight of EOM and Chromatographic Fraction for well NOCS 6406/11-1S OILS

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
Dst 3A			-	378.7	293.2	66.0	9.6	9.9	359.2	19.5	-	0002-0B
3691.50			-	238.7	171.0	41.0	8.7	18.0	212.0	26.7	-	0001-0B

Table 12b: Composition of material extracted from the rock (%) for well NOCS 6406/11-1S OILS

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	Aro	Non-HC	
Dst 3A			77.42	17.43	2.53	2.61	94.85	5.15	444.24	1842.05	0002-0B
3691.50			71.64	17.18	3.64	7.54	88.81	11.19	417.07	794.01	0001-0B

Depth unit of measure: m

Depth	Typ	Lithology	Pristane	Pristane	Pristane + Phytane	Phytane	CPI	Sample
			nC17	Phytane	nC17 + nC18	nC18		
DST: 3A			0.33	1.85	0.24	0.16	1.11	0002-0B
3691.50			0.33	1.90	0.25	0.17	1.11	0001-0B

Table 14: Aromatic Hydrocarbon Ratios for well NOCS 6406/11-1S OILS

Depth unit of measure: m

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MPI1	MPI2	Rc	DBT/P	4/1MDBT	(3+2) /1MDBT	Sample
Dst 3A			1.44	2.82	0.22	-	-	-	-	-	-	-	0002-0B
3691.50			1.45	3.09	0.20	-	-	-	-	-	-	-	0001-0B

Table 15a : Tabulation of carbon isotope data for EOM/Oil - fractions of oils for well NCS 0400/11-15 Oils

Depth unit of measure: m

Depth	Typ	Lithology	EOM/Oil	Saturated	Aromatic	NSO	Asphaltenes	Kerogen	Sample
DST 3A			-27.85	-28.32	-27.58	-26.82	-27.72	-	0002-0
3691.50			-27.87	-28.35	-27.21	-28.36	-28.58	-	0001-0B

Table 15b : Tabulation of cv values from carbon isotope data for well NOCS 6406/11-1S OILS

Depth unit of measure: m

<u>Depth</u>	<u>Typ</u>	<u>Lithology</u>	<u>Saturated</u>	<u>Aromatic</u>	<u>cv value</u>	<u>Sample</u>
DST 3A			-28.32	-27.58	-1.23	0002-0
3691.50			-28.35	-27.21	-0.33	0001-0B

Table 16a Variation in Triterpane Distribution (peak height) for Well NOCS 0400/11-15 OILS

Depth unit of measure: m

Depth	Lithology	B/A	B/B+A	B		C/E	C/C+E	X/E	Z/E	Z/C	Z/Z+E	Q/E	E/E+F	C+D		J1		Sample
				B+E+F										C+D+E+F	D+F/C+E	J1+J2%		
DST 3A		0.70	0.41	0.11		0.49	0.33	0.12	0.10	0.20	0.09	0.04	0.92	0.32	0.08	66.78	0002-0	
3691.50		0.87	0.47	0.15		0.53	0.35	0.12	0.12	0.23	0.11	0.05	0.91	0.34	0.09	56.79	0001-0	

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
DST 3A		0.82	53.57	77.77	0.66	0.77	0.25	0.18	0.64	1.15	3.77	0002-0
3691.50		0.75	50.24	76.23	0.62	0.76	0.25	0.18	0.62	1.01	3.22	0001-0

Ratio1: $a / a + j$ Ratio2: $q / q + t * 100\%$ Ratio3: $2(r + s) / (q + t + 2(r + s)) * 100\%$ Ratio4: $a + b + c + d / h + k + l + n$ Ratio5: $r + s / r + s + q$ Ratio6: $u + v / u + v + q + r + s + t$ Ratio7: $u + v / u + v + i + m + n + q + r + s + t$ Ratio8: $r + s / q + r + s + t$ Ratio9: q / t Ratio10: $r + s / t$

Table 16c Variation in Triaromatic Sterane Distribution for well NOCS 0400/11-15 0180

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Ratio5</u>	<u>Sample</u>
DST 3A		0.41	0.44	0.21	0.18	0.27	0002-0
3691.50		0.42	0.48	0.25	0.19	0.29	0001-0

Ratio1: $a1 / a1 + g1$

Ratio2: $b1 / b1 + g1$

Ratio3: $a1 + b1 / a1 + b1 + c1 + d1 + e1 + f1 + g1$

Ratio4: $a1 / a1 + e1 + f1 + g1$

Ratio5: $a1 / a1 + d1$

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Sample</u>
DST 3A		0.46	0.33	0.30	0.26	0002-0
3691.50		0.51	0.37	0.38	0.33	0001-0

Ratio1: A1 / A1 + E1
 Ratio2: B1 / B1 + E1

Ratio3: A1 / A1 + E1 + G1
 Ratio4: A1+B1 / A1+B1+C1+D1+E1+F1+G1+H1+I1

Table 16e Aromatisation of Steranes for Well NOCS 6406/11-1S OILS

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Sample</u>
DST 3A		0.55	0.84	0002-0
3691.50		0.53	0.92	0001-0

$$\text{Ratio1: } \frac{C1+D1+E1+F1+G1+H1+I1}{C1+D1+E1+F1+G1+H1+I1 + c1+d1+e1+f1+g1}$$

$$\text{Ratio2: } g1 / g1 + I1$$

Depth unit of measure: m

Depth	Lithology	p	q	r	s	t	a	b	z	c	Sample
		x	d	e	f	g	h	i	j1		
		j2	k1	k2	l1	l2	m1	m2			
DST 3A		6.04	3.36	1.82	6.48	1.38	15.29	10.63	7.97	40.12	0002-0
		9.89	2.63	81.82	7.23	19.53	12.02	1.93	11.62		
		5.78	8.11	3.73	3.82	2.22	1.80	0.91			
3691.50		6.58	5.01	1.45	9.17	1.69	23.29	20.31	12.79	56.13	0001-0
		13.14	5.02	106.08	10.28	27.99	17.51	3.83	13.34		
		10.15	10.36	5.18	4.20	2.27	1.77	1.05			

Table 10g Raw GMS Sulfate data (peak height) for hole 1000-0

Depth unit of measure: m

Depth	Lithology	u	v	a	b	c	d	e	f	g	Sample
		h	i	j	k	l	m	n	o		
		p	q	r	s	t					
DST 3A		11.46	3.87	21.81	10.43	3.48	3.63	10.63	5.13	7.06	0002-0
		28.52	10.99	4.89	18.13	4.30	3.56	8.46	14.21		
		3.11	9.07	15.25	14.37	7.86					
3691.50		15.57	4.41	22.43	14.53	4.28	3.72	13.46	7.60	8.46	0001-0
		31.58	15.17	7.41	23.72	6.34	4.62	11.17	17.85		
		3.59	11.40	20.64	15.75	11.29					

Table 16h Raw GCMS trioaromatic sterane data (peak height) for Well NOCS 6406/11-1S OILS

Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	Sample
DST 3A		163.24	185.89	104.40	444.61	306.11	199.54	233.71	0002-0
3691.50		23.61	30.06	8.91	58.03	40.49	25.13	32.50	0001-0

Table 16i Raw GCMS monoaromatic sterane data (peak height) for Well NOCS 6406/11-1S OILS

Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	h1	i1	Sample
DST 3A		349.65	208.03	225.85	174.78	418.17	127.92	398.25	165.38	43.64	0002-0
3691.50		58.58	33.15	32.72	21.45	56.01	13.24	39.37	22.89	2.76	0001-0

Table 17 Oil Analysis from GECO-PRAKLA LAB.

	Gravity (15 ^o C) (kg/m ³)	Sulphur Content (wt %)	Ni (mg/l)	V (mg/l)
DST # 3B	884.9	0.07	>0.3	>0.3
>210 ^o C fraction	887.0	-	-	-