C) Casing

1. 30" at 154.5 m
2. 20" at 398.9 m
3. 13 3/8" at 1533.1 m
4. 9 5/8" at 2872.1 m

D) Mud Program

Initial drilling from the sea floor to 399 m was with seawater and gel.

A lignosulphonate-seawater mud system has been used from drilling out the 20" casing to T.D. Mud weight was raised in three steps: to 10.3 ppg at 2499 m, to 11.5 ppg at 3018 m, and to 12.0 ppg at 3048 m due to pressure indications from the R.O.P. curve. The F.I.T. indicated a

formation pressure of 6108 psi at 3142.5 m, equivalent to 11.4 ppg. The formation pressure estimates developed by the Baroid ADT-unit has shown good accuracy.

The pH of the mud has been kept relatively high, i.e. approximately 11.0 after entering sloughing shales.

H) Testing

On the basis of log analysis, two points for FIT tests (Formation Interval Tester) were picked. One point at 3142.5 m (Ø = 23%, SW = 66%) and one point at 3126.5 m (Ø = 11.2%, SW = 31%).

Test 1 3142.5 m produced: .3 liter mud
9.9 " water
Total of 10.2 liter

A light skim of oil occurred on the sample, but this probably came from the FIT tools hydraulics.

Following pressures were measured with Amarada pressure bombs:

Initial Formation pressure	4926	psi
Final " "	4718	"
Final Shut in pressure	6103	"
Final hydrostatic pressure	6535	"

Total chlorides measured 10 500 ppm which seem a bit fresher than calculated by the logs. Rw formation water was calculated to be .03 at BHT = 230° F. NaCl 85,000 ppm. This difference indicates the sample contained a large percentage of filtrate.

Test 2 (3125.5) and test 3 (3126.5) were failures due to tight formation.

GEOLAB NOR

Geochemical Report for

Well NOCS 15/12-1

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Chapter 1

INTRODUCTION

1.1 General Comments

NOCS well 15/12-1 was drilled in 1975 as a wildcat with Statoil as operator. The well was plugged and abandoned with oil shows in the Middle Jurassic.

1.2 Analytical Program

Analysis type	No of samples	Figures	Tables
Lithology description	156	2-6	1
TOC	52	2	1,2
Rock-Eval pyrolysis	52	3-6	2
Thermal extraction GC (GHM, S_1)	25	7a-j	
Pyrolysis GC (GHM, S_2)	25	8a-1,9	3
Soxtec Extraction of organic matter	10		
MPLC/HPLC separation	10		4a-e
Saturated hydrocarbon GC	10	10a-g	5
Aromatic hydrocarbon GC	10	11a-h	6
Vitrinite reflectance	22	12	7
Visual kerogen microscopy	11	13	7,8
Isotope composition C_{15+} fractions	6	14-15	9a-b
GC - MS of saturated and aromatic hydrocarbon fractions	6	16a-p	10a-i

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
3280.00								0001
			70	S/Sst	:	lt gy, f		0001-1L
			10	Ca	:	w, fos		0001-2L
			10	Sh/Clst	:	v col		0001-3L
			10	Cont	:	prp, ns, fib		0001-4L
3370.00								0002
			80	S/Sst	:	lt gy, f		0002-1L
			10	Ca	:	w, fos		0002-2L
			5	Sh/Clst	:	v col		0002-3L
			5	Cont	:	fib		0002-4L
3430.00								0003
			80	S/Sst	:	lt gy, f		0003-1L
			10	Ca	:	w, fos		0003-2L
			5	Sh/Clst	:	v col		0003-3L
			5	Cont	:	fib		0003-4L
3500.00								0004
			80	S/Sst	:	lt gy, f, ign		0004-1L
			10	Sh/Clst	:	m gy		0004-2L
			5	Ca	:	w		0004-3L
			5	Cont	:	fib		0004-4L
3560.00								0005
			90	Sh/Clst	:	lt ol gy to lt brn gy, brn gy, drk red, slt, s		0005-1L
			10	Cont	:	fib		0005-2L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
3620.00							0027
		100	Sh/Clst:		lt brn gy to brn gy		0027-1L
		tr	Cont	:	fib		0027-2L
3680.00							0028
		100	Sh/Clst:		lt brn gy to brn gy		0028-1L
		tr	Cont	:	fib		0028-2L
3740.00							0029
		100	Sh/Clst:		lt brn gy to brn gy		0029-1L
		tr	Cont	:	fib		0029-2L
3830.00							0006
		100	Sh/Clst:		lt brn gy to brn gy, slt, s		0006-1L
3920.00							0007
		100	Sh/Clst:		lt brn gy to brn gy, gy brn, slt, s		0007-1L
3950.00							0025
	2.27	100	Sh/Clst:		lt brn gy to brn gy		0025-1L
4040.00							0008
		100	Sh/Clst:		lt brn gy to brn gy, gy brn, slt, s		0008-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
4070.00							0009
		90	Sh/Clst:		lt brn gy to brn gy, gy brn, slt, s		0009-1L
		5	S/Sst	:	lt gy, f		0009-2L
		5	Ca	:	w		0009-3L
4160.00							0010
		90	Sh/Clst:		lt brn gy to brn gy, gy brn, slt, s		0010-1L
		5	S/Sst	:	lt gy, f		0010-2L
		5	Ca	:	w		0010-3L
4220.00							0011
		100	Sh/Clst:		lt brn gy to brn gy, gy brn, slt, s		0011-1L
4280.00							0012
		100	Sh/Clst:		brn gy to drk y brn, calc, slt		0012-1L
4340.00							0013
		100	Sh/Clst:		brn gy to drk y brn, slt, mic		0013-1L
4400.00							0014
		100	Sh/Clst:		brn gy to drk y brn, slt, mic		0014-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
4460.00							0015
		100	Sh/Clst:		brn gy to drk y brn, slt, mic, fos		0015-1L
4550.00							0016
		100	Sh/Clst:		brn gy to drk y brn, slt, mic, fos		0016-1L
4610.00							0017
		100	Sh/Clst:		brn gy to drk y brn, slt, mic, fos		0017-1L
4670.00							0018
		100	Sh/Clst:		dsk brn, brn gy, slt, mic, fos		0018-1L
4730.00							0019
	4.11	100	Sh/Clst:		dsk brn, brn gy, slt, mic, fos		0019-1L
4790.00							0020
	5.02	100	Sh/Clst:		dsk brn, brn gy, slt, mic, fos		0020-1L
4880.00							0021
	6.05	100	Sh/Clst:		brn blk, drk y brn, mic		0021-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
4940.00								0022
		5.87	100	Sh/Clst: brn blk, mic				0022-1L
			tr	Ca : lt brn gy				0022-2L
5000.00								0023
			100	Sh/Clst: brn blk, mic				0023-1L
			tr	Sh/Clst: lt brn gy				0023-2L
			tr	Ca : lt brn gy				0023-3L
5060.00								0024
			60	Sh/Clst: drk brn gy, mic				0024-1L
			40	Cont : cem				0024-2L
5120.00								0026
			100	Sh/Clst: lt brn gy to brn gy				0026-1L
			tr	Cont : cem				0026-2L
5180.00								0030
			100	Sh/Clst: brn gy, m gy				0030-1L
			tr	Cont : prp				0030-2L
5270.00								0031
			100	Sh/Clst: brn gy to m gy				0031-1L
5330.00								0032
			100	Sh/Clst: brn gy to m gy				0032-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
5390.00							0033
		100	Sh/Clst: brn gy to m gy				0033-1L
5450.00							0034
		100	Sh/Clst: brn gy to m gy				0034-1L
5540.00							0035
		100	Sh/Clst: brn gy to m gy				0035-1L
5600.00							0036
		100	Sh/Clst: brn gy to m gy				0036-1L
5660.00							0037
		100	Sh/Clst: brn gy to m gy				0037-1L
5720.00							0038
		100	Sh/Clst: lt brn gy to m gy				0038-1L
5780.00							0039
		100	Sh/Clst: lt brn gy to m gy				0039-1L
5840.00							0040
		100	Sh/Clst: lt brn gy to m gy				0040-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
5930.00							0041
		100	Sh/Clst: lt brn gy to m gy				0041-1L
5990.00							0042
		100	Sh/Clst: lt brn gy to m gy				0042-1L
6050.00							0043
	1.63	100	Sh/Clst: lt brn gy to m gy				0043-1L
6110.00							0044
		100	Sh/Clst: lt brn gy to m gy				0044-1L
6170.00							0045
		100	Sh/Clst: lt brn gy to m gy				0045-1L
6260.00							0046
		100	Sh/Clst: lt brn gy to m gy				0046-1L
6320.00							0047
		100	Sh/Clst: lt brn gy to m gy				0047-1L
6380.00							0048
		100	Sh/Clst: lt brn gy to m gy				0048-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
6440.00								0049
			100	Sh/Clst: lt brn gy to m gy				0049-1L
6530.00								0050
			100	Sh/Clst: lt brn gy to m gy				0050-1L
6590.00								0051
			100	Sh/Clst: lt brn gy to m gy				0051-1L
6650.00								0052
			100	Sh/Clst: lt brn gy to m gy				0052-1L
6710.00								0053
			100	Sh/Clst: lt brn gy to m gy				0053-1L
6770.00								0054
			100	Sh/Clst: lt brn gy to m gy, lt ol gy				0054-1L
6830.00								0055
			100	Sh/Clst: lt brn gy to m gy, lt ol gy				0055-1L
6920.00								0056
			100	Sh/Clst: lt brn gy to m gy, lt ol gy, gn gy				0056-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
6980.00								0057
		1.13	100	Sh/Clst: lt brn gy to brn gy, m gy, gn gy, lt ol gy				0057-1L
7040.00								0058
			100	Sh/Clst: gn gy, brn gy, lt ol gy				0058-1L
7130.00								0059
			100	Sh/Clst: gn gy, brn gy, lt ol gy				0059-1L
7160.00								0060
			100	Sh/Clst: gn gy, brn gy, lt ol gy				0060-1L
7250.00								0061
			100	Sh/Clst: gn gy, brn gy, lt ol gy				0061-1L
7310.00								0062
			100	Sh/Clst: gn gy, brn gy, lt ol gy				0062-1L
7370.00								0063
			100	Sh/Clst: gn gy, brn gy, lt ol gy				0063-1L
7430.00								0064
			100	Sh/Clst: gn gy, brn gy, lt ol gy				0064-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
7490.00							0065
		100	Sh/Clst: gn gy, brn gy, lt ol gy				0065-1L
7580.00							0066
		100	Sh/Clst: gn gy, brn gy, lt ol gy				0066-1L
		tr	Cont : dd				0066-2L
7640.00							0067
		100	Sh/Clst: gn gy, ol gy, brn gy				0067-1L
7700.00							0068
		100	Sh/Clst: gn gy, ol gy, brn gy				0068-1L
7760.00							0069
		100	Sh/Clst: gn gy, ol gy, brn gy				0069-1L
7820.00							0070
		100	Sh/Clst: gn gy, ol gy, brn gy				0070-1L
7910.00							0071
		100	Sh/Clst: gn gy, ol gy, brn gy				0071-1L
7970.00							0072
		100	Sh/Clst: gn gy, ol gy, brn gy				0072-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age	Trb	Lithology description	Sample
8020.00									0073
			100					Sh/Clst: gn gy, ol gy, m brn gn to gy red	0073-1L
8090.00									0074
			100					Sh/Clst: gn gy, ol gy, m brn gn to gy red	0074-1L
8160.00									0075
			100					Sh/Clst: gn gy, m gy, brn gy	0075-1L
8230.00									0076
		1.21	100					Sh/Clst: gn gy, m drk gy	0076-1L
8290.00									0077
			100					Sh/Clst: gn gy, m drk gy	0077-1L
8350.00									0078
			100					Sh/Clst: gn gy, m drk gy	0078-1L
8420.00									0079
			100					Sh/Clst: gn gy, ol gy	0079-1L
8480.00									0080
			100					Sh/Clst: gn gy, ol gy	0080-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
8550.00							0081
		100	Sh/Clst: gn gy, ol gy				0081-1L
		tr	S/Sst : w, f				0081-2L
8570.00	ccp						0082
	0.10	100	S/Sst : lt gy, calc, f				0082-1L
8602.00	ccp		Roga		Palaeocene		0083
		100	Sh/Clst: drk gn gy				0083-1L
8642.00	ccp						0084
		100	S/Sst : lt gy, w, f, crs				0084-1L
8650.00	ccp						0085
	0.03	100	S/Sst : lt gy, w, f, crs				0085-1L
8666.00	ccp						0086
		100	S/Sst : lt gy, w, calc				0086-1L
8682.00	ccp						0087
	0.13	100	Ca : w, sil				0087-1L
8698.00	ccp						0088
	0.08	100	Ca : w				0088-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
8730.00							0089
		70	Ca	: w			0089-1L
		30	Sh/Clst	: drk gn gy			0089-2L
8790.00							0090
		70	Ca	: w			0090-1L
		30	Sh/Clst	: drk gn gy			0090-2L
8860.00							0091
		80	Ca	: w			0091-1L
		20	Sh/Clst	: drk gn gy			0091-2L
8930.00							0092
		50	Ca	: w			0092-1L
		50	Sh/Clst	: drk gn gy			0092-2L
8990.00							0093
		80	Ca	: w			0093-1L
		20	Sh/Clst	: drk gn gy			0093-2L
9060.00							0094
		90	Ca	: w			0094-1L
		10	Sh/Clst	: drk gn gy			0094-2L
9120.00							0095
	0.14	90	Ca	: w			0095-1L
		10	Sh/Clst	: drk gn gy			0095-2L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
9190.00								0096
			90	Ca	: w			0096-1L
			10	Sh/Clst	: drk gn gy			0096-2L
9260.00								0097
			90	Sh/Clst	: drk gn gy, ol gy, brn gy, gy brn			0097-1L
			10	Ca	: w			0097-2L
9320.00								0098
			90	Sh/Clst	: drk gn gy, m gy to drk gy, ol gy, brn gy, gy brn			0098-1L
			10	Ca	: w			0098-2L
9390.00								0099
		0.85	95	Sh/Clst	: drk gn gy, m gy, gy brn			0099-1L
			5	Ca	: w			0099-2L
9460.00								0100
			90	Ca	: w			0100-1L
			5	Sh/Clst	: drk gn gy, m gy			0100-2L
			5	Cont	: prp			0100-3L
9520.00								0101
			90	Ca	: w			0101-1L
			5	Sh/Clst	: drk gn gy, m gy			0101-2L
			5	Cont	: prp			0101-3L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
9590.00							0102
		95	Ca		: w, dsk red		0102-1L
		5	Cont		: prp		0102-3L
	0.30		bulk				0102-0B
		tr	Sh/Clst		: drk gn gy, m gy		0102-2L
9650.00							0103
		95	Ca		: w, gy pi		0103-1L
		5	Cont		: prp		0103-3L
		tr	Sh/Clst		: drk gn gy, m gy		0103-2L
9720.00							0104
		100	Ca		: w, gy pi, lt gy, s, mic, glauc		0104-1L
	0.26		bulk				0104-0B
		tr	Sh/Clst		: m gy		0104-2L
		tr	Cont		: prp		0104-3L
9740.00							0105
		100	Ca		: w, lt gy, s, mic, glauc		0105-1L
9750.00							0106
		100	Ca		: w, lt gy, s, mic, glauc		0106-1L
9760.00							0107
		100	Ca		: lt gy, s, mic, glauc		0107-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
9780.00							0108
		100	Ca		: lt gy, s, mic, glauc, cly		0108-1L
9790.00							0109
		100	Ca		: lt gy, s, mic, glauc, cly		0109-1L
9800.00							0110
		100	Ca		: lt gy, w, lt gy pi, s, mic, glauc, cly		0110-1L
	0.47		bulk				0110-0B
		tr	Cont		: prp		0110-2L
9810.00							0111
		100	Ca		: lt gy, w, lt gy pi, s, mic, glauc, cly		0111-1L
		tr	Sh/Clst		: dsk brn		0111-2L
9830.00							0112
		90	Ca		: w, lt gy pi, s, mic, glauc, cly		0112-1L
		10	Sh/Clst		: lt gn gy, dsk brn		0112-2L
9840.00							0113
		50	Ca		: w, lt gy pi, glauc		0113-1L
		45	Sh/Clst		: m brn, lt gn gy		0113-2L
		5	Sh/Clst		: gy blk		0113-3L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Lithology description	Grp	Frm	Age	Trb	Sample
9860.00									0114
			80	Sh/Clst: m brn, lt gn gy, lt ol gy					0114-1L
			15	Ca : w					0114-2L
		5.80	5	Sh/Clst: gy blk					0114-3L
9880.00									0115
		6.67	80	Sh/Clst: brn blk, calc, carb, slt					0115-1L
			10	Cont : prp, fib					0115-4L
			5	Ca : w					0115-2L
			5	Sh/Clst: lt brn gy, m brn					0115-3L
9890.00									0116
		6.24	50	Sh/Clst: brn blk					0116-1L
			20	Sh/Clst: lt brn gy, m brn					0116-2L
			20	Ca : lt gy					0116-3L
			10	Cont : prp, fib					0116-4L
9910.00									0117
		6.37	50	Sh/Clst: brn blk					0117-1L
			20	Sh/Clst: lt brn gy, m brn					0117-2L
			20	Ca : lt gy					0117-3L
			10	Cont : prp, fib					0117-4L
9920.00									0118
		5.79	70	Sh/Clst: brn blk					0118-1L
			10	Sh/Clst: lt brn gy, m brn					0118-2L
			10	Ca : lt gy					0118-3L
			10	Cont : prp, fib					0118-4L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
9940.00								0119
		4.25	90	Sh/Clst: brn blk, mic				0119-1L
			5	Sh/Clst: lt brn gy, m brn				0119-2L
			5	Ca : lt gy				0119-3L
			tr	Cont : prp, fib				0119-4L
9970.00								0120
		3.34	90	Sh/Clst: brn blk, mic				0120-1L
			5	Sh/Clst: lt brn gy, m brn				0120-2L
			5	Ca : lt gy				0120-3L
			tr	Cont : prp, fib				0120-4L
9990.00								0121
		3.52	90	Sh/Clst: brn blk, mic				0121-1L
			5	Sh/Clst: lt brn gy, m brn				0121-2L
			5	Ca : lt gy				0121-3L
			tr	Cont : prp, fib				0121-4L
10010.00								0122
		2.65	95	Sh/Clst: brn blk				0122-1L
			5	Sh/Clst: lt brn gy, m brn				0122-2L
			tr	Ca : lt gy				0122-3L
			tr	Cont : prp, fib				0122-4L
10020.00								0123
		2.52	95	Sh/Clst: brn blk				0123-1L
			5	Sh/Clst: lt brn gy, m brn				0123-2L
			tr	Ca : lt gy				0123-3L
			tr	Cont : prp, fib				0123-4L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
10040.00							0124
	2.52	95	Sh/Clst: brn blk				0124-1L
		5	Sh/Clst: lt brn gy, m brn				0124-2L
		tr	Ca : lt gy				0124-3L
		tr	Cont : prp, fib				0124-4L
10063.00 ccp							0125
	4.54	100	Sh/Clst: brn blk, mic				0125-1L
10078.00 ccp							0126
	4.61	100	Sh/Clst: brn blk, mic				0126-1L
10120.00							0127
	4.03	95	Sh/Clst: brn blk, carb				0127-1L
		5	Cont : fib				0127-4L
		tr	Sh/Clst: m brn				0127-2L
		tr	Ca : w				0127-3L
10130.00							0128
	3.66	95	Sh/Clst: brn blk, slt				0128-1L
		5	Cont : fib				0128-4L
		tr	Sh/Clst: m brn				0128-2L
		tr	Ca : w				0128-3L
10150.00							0129
	3.09	85	Sh/Clst: brn blk, slt				0129-1L
		10	Sh/Clst: brn gy, f				0129-2L
		5	Cont : fib				0129-4L
		tr	Ca : w				0129-3L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
10160.00								0130
		3.76	55	Sh/Clst: brn blk, slt				0130-1L
			40	S/Sst : brn gy, carb, slt, cly, f				0130-2L
			5	Cont : fib				0130-4L
			tr	Ca : w				0130-3L
10180.00								0131
		3.67	55	Sh/Clst: brn blk, slt				0131-1L
		0.89	40	S/Sst : brn gy, carb, slt, cly, f				0131-2L
			5	Cont : fib				0131-4L
			tr	Ca : w				0131-3L
10200.00								0132
		2.89	55	Sh/Clst: brn blk, slt				0132-1L
		0.56	40	S/Sst : brn gy, carb, pyr, slt, cly, f				0132-2L
			5	Cont : fib				0132-4L
			tr	Ca : w				0132-3L
10210.00								0133
		3.51	55	Sh/Clst: brn blk, slt				0133-1L
			40	S/Sst : brn gy, carb, pyr, slt, cly, f				0133-2L
			5	Cont : fib				0133-4L
			tr	Ca : w				0133-3L
10230.00								0134
		3.58	55	Sh/Clst: brn blk, slt				0134-1L
			40	S/Sst : brn gy, carb, pyr, slt, cly, f				0134-2L
			5	Cont : fib				0134-4L
			tr	Ca : w				0134-3L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
10240.00							0135
	0.45	60	S/Sst	:	brn gy, slt, f		0135-1L
		35	Sh/Clst	:	brn blk, slt		0135-2L
		5	Cont	:	fib		0135-4L
		tr	Ca	:	w		0135-3L
10255.00 ccp							0136
	0.10	100	S/Sst	:	lt gy to m gy, calc, dol, f		0136-1L
10268.00 ccp							0137
	0.66	100	S/Sst	:	pl y gy, slt, mic, f		0137-1L
10284.00 ccp							0138
	0.43	100	S/Sst	:	pl y gy, slt, mic, f		0138-1L
10300.00 ccp							0139
	0.38	100	S/Sst	:	brn gy, cly, mic, lam, f		0139-1L
10316.00 ccp							0140
		100	S/Sst	:	brn gy, cly, mic, lam		0140-1L
10332.00 ccp							0141
		100	S/Sst	:	brn gy, cly, mic, lam		0141-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
10353.00	ccp						0142
	72.65	100	Coal	: blk			0142-1L
10358.00	ccp						0143
	0.50	100	S/Sst	: brn gy, calc, carb, cly			0143-1L
10367.00	ccp						0144
		100	Coal	: blk			0144-1L
10380.00	ccp						0145
		40	Sh/Clst	: brn gy, carb, wx			0145-1L
		40	S/Sst	: w, f, carb			0145-2L
		20	Coal	: blk			0145-3L
10396.00	ccp						0146
	0.40	100	S/Sst	: lt brn gy to brn gy, cly, lam			0146-1L
10412.00	ccp						0147
	0.58	100	Sh/Clst	: brn gy, mic, carb			0147-1L
10428.00	ccp						0148
		100	Coal	: blk			0148-1L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
10438.00	ccp						0149
	74.90	100	Coal	: blk			0149-1L
10490.00							0150
		80	Coal	: blk			0150-1L
		20	Sh/Clst	: brn blk			0150-2L
	41.66		bulk				0150-0B
		tr	S/Sst	: lt brn gy, f			0150-3L
10530.00							0151
		60	S/Sst	: w, lt brn gy, carb, cly, f			0151-1L
		30	Sh/Clst	: brn blk, m gy to drk gy, carb			0151-2L
		10	Coal	: blk			0151-3L
10570.00							0152
		80	S/Sst	: w, lt brn gy, carb, cly, f			0152-1L
		20	Sh/Clst	: brn blk, m gy to drk gy, carb			0152-2L
		tr	Coal	: blk			0152-3L
10600.00							0153
	0.13	95	S/Sst	: w, pl or, calc			0153-1L
		5	Sh/Clst	: drk gy			0153-2L
10630.00							0154
		100	S/Sst	: w, pl or, calc			0154-1L
		tr	Sh/Clst	: drk gy			0154-2L
		tr	Coal	: blk			0154-3L

Table 1 : Lithology description for well NOCS 15/12-1

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
10660.00								0155
			100	S/Sst	: w, pl or, calc			0155-1L
			tr	Sh/Clst	: drk gy			0155-2L
			tr	Coal	: blk			0155-3L
10690.00								0156
			100	S/Sst	: w, pl or, calc			0156-1L
			tr	Sh/Clst	: drk gy			0156-2L
			tr	Coal	: blk			0156-3L
			tr	Sh/Clst	: lt gn gy			0156-4L

Table 2 : Rock-Eval table for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3950.00	cut	Sh/Clst: lt brn gy to brn gy	0.47	3.31	1.72	1.92	2.27	146	76	3.8	0.12	419	0025-1L
4730.00	cut	Sh/Clst: dsk brn, brn gy	0.36	3.00	3.57	0.84	4.11	73	87	3.4	0.11	408	0019-1L
4790.00	cut	Sh/Clst: dsk brn, brn gy	0.41	3.99	4.07	0.98	5.02	79	81	4.4	0.09	409	0020-1L
4880.00	cut	Sh/Clst: brn blk, drk y brn	0.34	4.17	4.65	0.90	6.05	69	77	4.5	0.08	413	0021-1L
4940.00	cut	Sh/Clst: brn blk	0.38	4.08	4.73	0.86	5.87	70	81	4.5	0.09	410	0022-1L
6050.00	cut	Sh/Clst: lt brn gy to m gy	0.22	2.00	0.98	2.04	1.63	123	60	2.2	0.10	424	0043-1L
6980.00	cut	Sh/Clst: lt brn gy to brn gy, m gy, gn gy, lt ol gy	0.07	0.56	0.62	0.90	1.13	50	55	0.6	0.11	422	0057-1L
8230.00	cut	Sh/Clst: gn gy, m drk gy	0.09	0.78	0.39	2.00	1.21	64	32	0.9	0.10	417	0076-1L
8570.00	ccp	S/Sst : lt gy	0.06	0.03	0.18	0.17	0.10	30	180	0.1	0.67	413	0082-1L
8650.00	ccp	S/Sst : lt gy, w	0.01	0.01	0.09	0.11	0.03	33	300	-	0.50	417	0085-1L
8682.00	ccp	Ca : w	0.05	0.03	0.21	0.14	0.13	23	162	0.1	0.63	324	0087-1L
8698.00	ccp	Ca : w	0.04	0.03	0.25	0.12	0.08	38	313	0.1	0.57	402	0088-1L
9120.00	cut	Ca : w	0.03	0.01	0.32	0.03	0.14	7	229	-	0.75	-	0095-1L
9390.00	cut	Sh/Clst: drk gn gy, m gy, gy brn	0.10	0.50	0.47	1.06	0.85	59	55	0.6	0.17	422	0099-1L

Table 2 : Rock-Eval table for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
9590.00	cut	bulk	0.11	0.33	0.78	0.42	0.30	110	260	0.4	0.25	421	0102-0B
9720.00	cut	bulk	0.10	0.12	0.47	0.26	0.26	46	181	0.2	0.45	404	0104-0B
9800.00	cut	bulk	0.15	0.32	0.77	0.42	0.47	68	164	0.5	0.32	420	0110-0B
9860.00	cut	Sh/Clst: gy blk	1.65	18.77	0.63	29.79	5.80	324	11	20.4	0.08	434	0114-3L
9880.00	cut	Sh/Clst: brn blk	2.72	29.23	0.82	35.65	6.67	438	12	31.9	0.09	427	0115-1L
9890.00	cut	Sh/Clst: brn blk	1.94	24.62	1.09	22.59	6.24	395	17	26.6	0.07	427	0116-1L
9910.00	cut	Sh/Clst: brn blk	2.00	27.39	1.03	26.59	6.37	430	16	29.4	0.07	430	0117-1L
9920.00	cut	Sh/Clst: brn blk	2.00	22.77	1.09	20.89	5.79	393	19	24.8	0.08	426	0118-1L
9940.00	cut	Sh/Clst: brn blk	1.92	15.84	0.59	26.85	4.25	373	14	17.8	0.11	428	0119-1L
9970.00	cut	Sh/Clst: brn blk	1.32	11.75	0.58	20.26	3.34	352	17	13.1	0.10	432	0120-1L
9990.00	cut	Sh/Clst: brn blk	1.39	13.73	0.66	20.80	3.52	390	19	15.1	0.09	433	0121-1L
10010.00	cut	Sh/Clst: brn blk	1.18	9.78	0.73	13.40	2.65	369	28	11.0	0.11	434	0122-1L
10020.00	cut	Sh/Clst: brn blk	1.03	8.27	0.68	12.16	2.52	328	27	9.3	0.11	435	0123-1L
10040.00	cut	Sh/Clst: brn blk	1.00	8.65	0.62	13.95	2.52	343	25	9.6	0.10	434	0124-1L
10063.00	ccp	Sh/Clst: brn blk	1.89	19.72	0.67	29.43	4.54	434	15	21.6	0.09	438	0125-1L

Table 2 : Rock-Eval table for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
10078.00	ccp	Sh/Clst: brn blk	2.19	20.20	0.81	24.94	4.61	438	18	22.4	0.10	433	0126-1L
10120.00	cut	Sh/Clst: brn blk	1.48	16.38	0.97	16.89	4.03	406	24	17.9	0.08	432	0127-1L
10130.00	cut	Sh/Clst: brn blk	1.35	14.72	0.95	15.49	3.66	402	26	16.1	0.08	433	0128-1L
10150.00	cut	Sh/Clst: brn blk	1.36	10.58	0.91	11.63	3.09	342	29	11.9	0.11	435	0129-1L
10160.00	cut	Sh/Clst: brn blk	1.34	11.66	0.94	12.40	3.76	310	25	13.0	0.10	434	0130-1L
10180.00	cut	Sh/Clst: brn blk	1.80	14.06	0.58	24.24	3.67	383	16	15.9	0.11	432	0131-1L
10180.00	cut	S/Sst : brn gy	0.25	0.79	0.59	1.34	0.89	89	66	1.0	0.24	430	0131-2L
10200.00	cut	Sh/Clst: brn blk	1.18	9.00	0.64	14.06	2.89	311	22	10.2	0.12	436	0132-1L
10200.00	cut	S/Sst : brn gy	0.14	0.49	0.38	1.29	0.56	88	68	0.6	0.22	431	0132-2L
10210.00	cut	Sh/Clst: brn blk	1.44	11.06	0.61	18.13	3.51	315	17	12.5	0.12	433	0133-1L
10230.00	cut	Sh/Clst: brn blk	1.74	15.68	0.67	23.40	3.58	438	19	17.4	0.10	433	0134-1L
10240.00	cut	S/Sst : brn gy	0.16	0.43	0.43	1.00	0.45	96	96	0.6	0.27	434	0135-1L
10255.00	ccp	S/Sst : lt gy to m gy	0.09	0.04	0.25	0.16	0.10	40	250	0.1	0.69	429	0136-1L
10268.00	ccp	S/Sst : pl y gy	3.76	1.27	0.36	3.53	0.66	192	55	5.0	0.75	415	0137-1L
10284.00	ccp	S/Sst : pl y gy	2.10	0.79	0.34	2.32	0.43	184	79	2.9	0.73	419	0138-1L

Table 2 : Rock-Eval table for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
10300.00	ccp	S/Sst : brn gy	0.74	0.40	0.30	1.33	0.38	105	79	1.1	0.65	436	0139-1L
10353.00	ccp	Coal : blk	12.34	98.08	4.89	20.06	72.65	135	7	110.4	0.11	445	0142-1L
10358.00	ccp	S/Sst : brn gy	0.24	0.39	0.17	2.29	0.50	78	34	0.6	0.38	444	0143-1L
10396.00	ccp	S/Sst : lt brn gy to brn gy	0.08	0.20	0.30	0.67	0.40	50	75	0.3	0.29	436	0146-1L
10412.00	ccp	Sh/Clst: brn gy	0.31	1.42	1.24	1.15	0.58	245	214	1.7	0.18	440	0147-1L
10438.00	ccp	Coal : blk	12.95	103.40	3.86	26.79	74.90	138	5	116.3	0.11	448	0149-1L
10490.00	cut	bulk	12.14	198.09	5.00	39.62	41.66	475	12	210.2	0.06	444	0150-0B
10600.00	cut	S/Sst : w, pl or	0.05	0.09	0.15	0.60	0.13	69	115	0.1	0.36	436	0153-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
3950.00	cut	Sh/Clst: lt brn gy to brn gy	5.23	19.28	55.91	19.58	3.31	0025-1L
4790.00	cut	Sh/Clst: dsk brn, brn gy	7.50	13.04	57.62	21.83	3.99	0020-1L
4940.00	cut	Sh/Clst: brn blk	6.85	14.10	55.13	23.93	4.08	0022-1L
6050.00	cut	Sh/Clst: lt brn gy to m gy	7.76	17.02	63.75	11.46	2.00	0043-1L
8570.00	ccp	S/Sst : lt gy	11.57	37.73	47.44	3.26	0.03	0082-1L
8682.00	ccp	Ca : w	10.67	37.71	49.61	2.01	0.03	0087-1L
9800.00	cut	bulk	8.02	33.00	55.35	3.63	0.32	0110-0B
9860.00	cut	Sh/Clst: gy blk	4.81	14.78	30.60	49.81	18.77	0114-3L
9880.00	cut	Sh/Clst: brn blk	2.84	8.73	33.09	55.34	29.23	0115-1L
9910.00	cut	Sh/Clst: brn blk	3.08	12.34	30.90	53.68	27.39	0117-1L
9970.00	cut	Sh/Clst: brn blk	4.41	7.56	41.11	46.91	11.75	0120-1L
10010.00	cut	Sh/Clst: brn blk	3.28	9.15	38.07	49.49	9.78	0122-1L
10063.00	ccp	Sh/Clst: brn blk	4.87	8.26	33.69	53.18	19.72	0125-1L
10078.00	ccp	Sh/Clst: brn blk	3.76	11.99	29.23	55.01	20.20	0126-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
10150.00	cut	Sh/Clst: brn blk	3.38	12.77	33.39	50.47	10.58	0129-1L
10180.00	cut	Sh/Clst: brn blk	3.11	12.18	32.22	52.49	14.06	0131-1L
10210.00	cut	Sh/Clst: brn blk	3.66	12.17	33.67	50.50	11.06	0133-1L
10255.00	ccp	S/Sst : lt gy to m gy	8.65	27.48	52.10	11.77	0.04	0136-1L
10268.00	ccp	S/Sst : pl y gy	3.20	11.92	23.87	61.01	1.27	0137-1L
10284.00	ccp	S/Sst : pl y gy	4.84	14.93	27.58	52.66	0.79	0138-1L
10300.00	ccp	S/Sst : brn gy	12.79	28.09	40.99	18.12	0.40	0139-1L
10358.00	ccp	S/Sst : brn gy	19.91	24.16	33.60	22.33	0.39	0143-1L
10438.00	ccp	Coal : blk	18.56	13.96	24.49	42.99	103.40	0149-1L
10490.00	cut	bulk	7.20	14.49	25.61	52.70	198.09	0150-0B
10600.00	cut	S/Sst : w, pl or	10.19	29.58	48.88	11.35	0.09	0153-1L

Table 4 a: Weight of EOM and Chromatographic Fraction for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC(e) (%)	Sample
4940.00	com	Composite sample - see table 4 e	4.3	3.8	0.8	0.9	0.4	1.8	1.6	2.2	5.68	0157-0B
9920.00	com	Composite sample - see table 4 e	0.9	5.3	1.6	1.5	0.6	1.5	3.2	2.1	5.24	0158-0B
10020.00	com	Composite sample - see table 4 e	3.9	11.1	3.9	4.1	0.7	2.4	8.0	3.1	3.24	0159-0B
10063.00	ccp	Sh/Clst: brn blk	12.7	39.4	14.9	12.7	3.3	8.5	27.6	11.8	4.92	0125-1L
10160.00	com	Composite sample - see table 4 e	4.5	13.8	5.0	4.2	1.1	3.6	9.2	4.7	3.72	0160-0B
10268.00	ccp	S/Sst : pl y gy	13.1	101.9	42.6	14.6	3.4	41.4	57.1	44.8	0.71	0137-1L
10353.00	ccp	Coal : blk	3.1	63.8	9.1	18.4	27.0	9.3	27.6	36.3	77.10	0142-1L
10358.00	ccp	S/Sst : brn gy	10.8	7.9	2.8	1.8	1.3	2.0	4.7	3.3	0.86	0143-1L
10438.00	ccp	Coal : blk	3.0	67.4	8.7	17.9	30.6	10.1	26.6	40.8	73.80	0149-1L
10490.00	cut	bulk	3.1	76.5	12.1	18.2	30.0	16.1	30.4	46.1	28.20	0150-0B

Table 4 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
4940.00	com	Composite sample - see table 4 e	895	174	209	93	418	383	511	0157-0B
9920.00	com	Composite sample - see table 4 e	5526	1736	1578	631	1578	3315	2210	0158-0B
10020.00	com	Composite sample - see table 4 e	2862	1010	1049	181	621	2059	803	0159-0B
10063.00	ccp	Sh/Clst: brn blk	3094	1168	1001	256	668	2169	924	0125-1L
10160.00	com	Composite sample - see table 4 e	3093	1116	937	237	803	2053	1040	0160-0B
10268.00	ccp	S/Sst : pl y gy	7784	3254	1111	258	3159	4365	3418	0137-1L
10353.00	ccp	Coal : blk	20785	2970	6003	8778	3032	8973	11811	0142-1L
10358.00	ccp	S/Sst : brn gy	731	263	166	120	180	430	300	0143-1L
10438.00	ccp	Coal : blk	22174	2871	5894	10078	3328	8766	13407	0149-1L
10490.00	cut	bulk	24757	3932	5896	9711	5216	9828	14928	0150-0B

Table 4 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
4940.00	com	Composite sample - see table 4 e	15.76	3.07	3.68	1.64	7.37	6.76	9.01	0157-0B
9920.00	com	Composite sample - see table 4 e	105.46	33.15	30.13	12.05	30.13	63.28	42.19	0158-0B
10020.00	com	Composite sample - see table 4 e	88.35	31.18	32.38	5.60	19.19	63.57	24.79	0159-0B
10063.00	ccp	Sh/Clst: brn blk	62.89	23.74	20.36	5.21	13.58	44.10	18.79	0125-1L
10160.00	com	Composite sample - see table 4 e	83.17	30.01	25.20	6.37	21.59	55.21	27.96	0160-0B
10268.00	ccp	S/Sst : pl y gy	1096.42	458.37	156.55	36.48	445.02	614.92	481.50	0137-1L
10353.00	ccp	Coal : blk	26.96	3.85	7.79	11.39	3.93	11.64	15.32	0142-1L
10358.00	ccp	S/Sst : brn gy	85.06	30.68	19.38	14.00	20.99	50.06	34.99	0143-1L
10438.00	ccp	Coal : blk	30.05	3.89	7.99	13.66	4.51	11.88	18.17	0149-1L
10490.00	cut	bulk	87.79	13.94	20.91	34.44	18.50	34.85	52.94	0150-0B

Table 4 d: Composition of material extracted from the rock (%) for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	Sat EOM	Aro EOM	Asph EOM	NSO EOM	HC EOM	Non-HC EOM	Sat Aro	HC Non-HC	Sample
4940.00	com	Composite sample - see table 4 e	19.48	23.38	10.39	46.75	42.86	57.14	83.33	75.00	0157-0B
9920.00	com	Composite sample - see table 4 e	31.43	28.57	11.43	28.57	60.00	40.00	110.00	150.00	0158-0B
10020.00	com	Composite sample - see table 4 e	35.29	36.65	6.33	21.72	71.95	28.05	96.30	256.45	0159-0B
10063.00	ccp	Sh/Clst: brn blk	37.75	32.37	8.28	21.60	70.12	29.88	116.64	234.69	0125-1L
10160.00	com	Composite sample - see table 4 e	36.08	30.30	7.66	25.96	66.38	33.62	119.09	197.42	0160-0B
10268.00	ccp	S/Sst : pl y gy	41.81	14.28	3.33	40.59	56.08	43.92	292.78	127.71	0137-1L
10353.00	ccp	Coal : blk	14.29	28.88	42.23	14.59	43.18	56.82	49.48	75.98	0142-1L
10358.00	ccp	S/Sst : brn gy	36.08	22.78	16.46	24.68	58.86	41.14	158.33	143.08	0143-1L
10438.00	ccp	Coal : blk	12.95	26.58	45.45	15.01	39.53	60.47	48.72	65.38	0149-1L
10490.00	cut	bulk	15.88	23.82	39.23	21.07	39.70	60.30	66.68	65.84	0150-0B

Table 4 e: List of composite samples appearing in the extraction tables for well NOCS 15/12-1

Depth unit of measure: ft

NOTE: Depths shown in tables 4 a to d correspond to the composite samples' lower depth.

Upper depth	Lower depth	Typ	Sample	Depth	Typ	Lithology	Sample
4880.00	4940.00	com	0157-0B is composed of:	4880.00	cut	Sh/Clst: brn blk, drk y brn, mic	0021-1L
				4940.00	cut	Sh/Clst: brn blk, mic	0022-1L
9890.00	9920.00	com	0158-0B is composed of:	9890.00	cut	Sh/Clst: brn blk	0116-1L
				9910.00	cut	Sh/Clst: brn blk	0117-1L
				9920.00	cut	Sh/Clst: brn blk	0118-1L
10010.00	10020.00	com	0159-0B is composed of:	10010.00	cut	Sh/Clst: brn blk	0122-1L
				10020.00	cut	Sh/Clst: brn blk	0123-1L
10130.00	10160.00	com	0160-0B is composed of:	10130.00	cut	Sh/Clst: brn blk, slt	0128-1L
				10150.00	cut	Sh/Clst: brn blk, slt	0129-1L
				10160.00	cut	Sh/Clst: brn blk, slt	0130-1L

Table 5: Saturated Hydrocarbon Ratios for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	Pristane / nC17	Pristane / Phytane	Pristane/nC17 / Phytane/nC18	Phytane / nC18	CPI1	nC17 / nC17+nC27	Sample
4940.00	com	bulk	0.91	0.97	1.06	0.87	2.27	0.65	0157-0B
9920.00	com	bulk	1.00	1.33	1.12	0.89	1.14	0.89	0158-0B
10020.00	com	bulk	1.12	1.83	1.21	0.93	1.22	0.90	0159-0B
10063.00	ccp	Sh/Clst: brn blk	1.03	2.04	1.56	0.66	1.28	0.87	0125-1L
10160.00	com	bulk	0.98	1.84	1.18	0.83	1.22	0.90	0160-0B
10268.00	ccp	S/Sst : pl y gy	1.00	0.97	1.36	0.74	1.05	0.65	0137-1L
10353.00	ccp	Coal : blk	-	-	-	0.91	1.18	-	0142-1L
10358.00	ccp	S/Sst : brn gy	0.96	3.80	2.31	0.42	1.20	0.94	0143-1L
10438.00	ccp	Coal : blk	-	-	-	2.49	1.31	-	0149-1L
10490.00	cut	bulk	1.78	8.06	6.97	0.26	1.36	0.59	0150-0B

Table 6a: Aromatic Hydrocarbon Ratios for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MPI1	MPI2	Rc	DBT/P	4/1MDBT	(3+2) /1MDBT	Sample
4940.00	com	bulk	-	-	-	-	-	-	-	-	-	-	0157-0B
9920.00	com	bulk	-	0.63	-	0.90	0.63	0.67	0.78	0.20	0.60	0.21	0158-0B
10020.00	com	bulk	0.63	0.59	0.10	0.84	0.52	0.56	0.71	-	1.04	0.40	0159-0B
10063.00	ccp	Sh/Clst: brn blk	1.15	1.63	0.14	0.81	0.50	0.55	0.70	0.08	0.05	0.32	0125-1L
10160.00	com	bulk	0.70	1.30	0.10	0.78	0.53	0.57	0.72	0.07	-	-	0160-0B
10268.00	ccp	S/Sst : pl y gy	-	-	-	0.79	0.73	0.82	0.84	-	-	-	0137-1L
10353.00	ccp	Coal : blk	1.41	1.78	0.05	0.88	0.70	0.85	0.82	-	-	-	0142-1L
10358.00	ccp	S/Sst : brn gy	0.95	1.72	0.07	0.90	0.72	0.83	0.83	-	-	-	0143-1L
10438.00	ccp	Coal : blk	1.37	1.89	0.05	1.10	0.74	0.85	0.84	-	-	-	0149-1L
10490.00	cut	bulk	1.39	1.53	0.04	0.75	0.58	0.68	0.75	-	-	-	0150-0B

Table 6b: Aromatic Hydrocarbon Ratios for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	F1	F2	Sample
4940.00	com	bulk	-	-	0157-0B
9920.00	com	bulk	0.44	0.23	0158-0B
10020.00	com	bulk	0.42	0.23	0159-0B
10063.00	ccp	Sh/Clst: brn blk	0.41	0.22	0125-1L
10160.00	com	bulk	0.41	0.22	0160-0B
10268.00	ccp	S/Sst : pl y gy	0.40	0.23	0137-1L
10353.00	ccp	Coal : blk	0.46	0.28	0142-1L
10358.00	ccp	S/Sst : brn gy	0.46	0.27	0143-1L
10438.00	ccp	Coal : blk	0.49	0.28	0149-1L
10490.00	cut	bulk	0.42	0.24	0150-0B

Table 7 : Thermal Maturity Data for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
4040.00	cut	Sh/Clst: lt brn gy to brn gy, gy brn	0.24	20	0.04	-	-	-	0008-1L
4340.00	cut	Sh/Clst: brn gy to drk y brn	0.24	20	0.04	-	-	-	0013-1L
4670.00	cut	Sh/Clst: dsk brn, brn gy	0.31	13	0.03	-	-	-	0018-1L
4790.00	cut	Sh/Clst: dsk brn, brn gy	0.37	20	0.06	-	3.0-3.5(?)	409	0020-1L
5000.00	cut	Sh/Clst: brn blk	0.35	20	0.05	-	-	-	0023-1L
5330.00	cut	Sh/Clst: brn gy to m gy	0.36	20	0.05	-	-	-	0032-1L
5600.00	cut	Sh/Clst: brn gy to m gy	0.34	19	0.05	-	-	-	0036-1L
5990.00	cut	Sh/Clst: lt brn gy to m gy	0.34	16	0.02	-	-	-	0042-1L
6050.00	cut	Sh/Clst: lt brn gy to m gy	-	-	-	-	4.0-4.5(?)	424	0043-1L
6380.00	cut	Sh/Clst: lt brn gy to m gy	0.43	18	0.03	-	-	-	0048-1L
6830.00	cut	Sh/Clst: lt brn gy to m gy, lt ol gy	0.41	11	0.03	-	-	-	0055-1L
7250.00	cut	Sh/Clst: gn gy, brn gy, lt ol gy	0.41	12	0.04	-	-	-	0061-1L
7640.00	cut	Sh/Clst: gn gy, ol gy, brn gy	0.49	18	0.04	-	-	-	0067-1L

Table 7 : Thermal Maturity Data for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
8602.00	ccp	Sh/Clst: drk gn gy	0.52	5	0.02	-	-	-	0083-1L
8930.00	cut	Sh/Clst: drk gn gy	0.45	9	0.05	-	-	-	0092-2L
9260.00	cut	Sh/Clst: drk gn gy, ol gy, brn gy, gy brn	0.47	15	0.05	-	-	-	0097-1L
9840.00	cut	Sh/Clst: gy blk	0.47	19	0.04	-	-	-	0113-3L
9890.00	cut	Sh/Clst: brn blk	-	-	-	-	6.0(?)	427	0116-1L
9940.00	cut	Sh/Clst: brn blk	-	-	-	-	6.0-6.5	428	0119-1L
10040.00	cut	Sh/Clst: brn blk	-	-	-	-	6.0	434	0124-1L
10063.00	ccp	Sh/Clst: brn blk	0.42	28	0.03	-	-	438	0125-1L
10078.00	ccp	Sh/Clst: brn blk	-	-	-	-	6.5	433	0126-1L
10130.00	cut	Sh/Clst: brn blk	-	-	-	-	6.0-6.5	433	0128-1L
10150.00	cut	Sh/Clst: brn blk	0.45	18	0.03	-	-	435	0129-1L
10200.00	cut	Sh/Clst: brn blk	-	-	-	-	6.0-6.5	436	0132-1L
10353.00	ccp	Coal : blk	-	-	-	-	NDP	445	0142-1L

Depth unit of measure: ft

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
10367.00	ccp	Coal : blk	0.78	18	0.04	-	-	-	0144-1L
10412.00	ccp	Sh/Clst: brn gy	-	-	-	-	6.0(??)	440	0147-1L
10438.00	ccp	Coal : blk	0.74	15	0.04	-	-	448	0149-1L
10490.00	cut	bulk	0.60	29	0.06	-	6.5(?)	444	0150-0B

Table 8 : Visual Kerogen Composition Data for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	LIPT %	Amor L	LipDet	Sp/Pol	Cuticl	Resine	Algae	Dinofl	Acrit	Bit L	INERT %	Fusin	Semfus	Sentdet	Micrin	Sclero	Bit I	VITR %	Telin	Colin	Vitdet	Amor V	Bit V	Sample
4790.00	cut	Sh/Clst: dsk brn, brn gy	90	**	**	*			*	*			5			*				5	*		*			0020-1L
6050.00	cut	Sh/Clst: lt brn gy to m gy	85	**	**	*			*	*			10			*				5			*			0043-1L
9890.00	cut	Sh/Clst: brn blk	85	**	*	*	?		**	*		?	15		*	**				TR			*			0116-1L
9940.00	cut	Sh/Clst: brn blk	80	**	*	*	*		**	*			20		*	**				TR	*		**			0119-1L
10040.00	cut	Sh/Clst: brn blk	60	**	*	**	*		*	*			30	*	*	*				10	*		*			0124-1L
10078.00	ccp	Sh/Clst: brn blk	70	**	*	**	*		*	*			20	*	*	*				10	*		*			0126-1L
10130.00	cut	Sh/Clst: brn blk	80	**	*	*	?		*	*			20		*	**				TR			*			0128-1L
10200.00	cut	Sh/Clst: brn blk	75	**	*	*	*		*	*			20	*	*	*				5	*		*			0132-1L
10353.00	ccp	Coal : blk	TR			*	**						30		*					70	**	*		*		0142-1L
10412.00	ccp	Sh/Clst: brn gy	55	*		**	*		*				20		*	*				25	*		*			0147-1L
10490.00	cut	bulk	45	**		**	*		*				5		**	*				50	**	*	*	*		0150-0B

Table 9a: Tabulation of carbon isotope data for EOM/EOM - fractions for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	EOM	Saturated	Aromatic	NSO	Asphaltenes	Kerogen	Sample
9920.00	com	Composite sample	-	-30.98	-30.14	-30.47	-29.13	-	0158-0
10020.00	com	Composite sample	-	-29.62	-28.58	-28.66	-27.95	-	0159-0
10063.00	ccp	Sh/Clst	-28.33	-28.89	-27.86	-28.37	-27.51	-	0125-1
10268.00	ccp	S/Sst	-28.39	-28.75	-27.57	-27.65	-27.35	-	0137-1
10353.00	ccp	Coal	-24.20	-27.03	-24.21	-24.45	-23.91	-	0142-1
10490.00	cut	Coal	-24.55	-26.81	-24.59	-24.65	-24.22	-	0150-1

Table 9b: Tabulation of cv values from carbon isotope data for well NOCS 15/12-1

Depth unit of measure: ft

Depth	Typ	Lithology	Saturated	Aromatic	cv value	Sample
9920.00	com	Composite sample	-30.98	-30.14	-0.18	0158-0
10020.00	com	Composite sample	-29.62	-28.58	-0.16	0159-0
10063.00	ccp	Sh/Clst	-28.89	-27.86	-0.41	0125-1
10268.00	ccp	S/Sst	-28.75	-27.57	-0.12	0137-1
10353.00	ccp	Coal	-27.03	-24.21	2.99	0142-1
10490.00	cut	Coal	-26.81	-24.59	1.59	0150-1

Table 10a: Variation in Triterpane Distribution (peak height) SIR for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Rat.10	Rat.11	Rat.12	Rat.13	Rat.14	Sample
9920.00	bulk	2.00	0.67	0.18	0.45	0.31	0.05	0.03	0.06	0.02	0.05	0.87	0.31	0.15	58.43	0158-0
10020.00	bulk	3.28	0.77	0.17	0.46	0.31	0.07	0.03	0.07	0.03	0.04	0.86	0.32	0.16	58.40	0159-0
10063.00	Sh/Clst	6.40	0.86	0.21	0.51	0.34	0.07	0.03	0.06	0.03	0.03	0.85	0.34	0.18	59.23	0125-1
10268.00	S/Sst	1.02	0.50	0.13	0.43	0.30	0.06	0.28	0.66	0.22	0.09	0.93	0.31	0.09	61.38	0137-1
10353.00	Coal	87.65	0.99	0.42	0.95	0.49	0.01	0.10	0.11	0.09	0.01	0.78	0.46	0.20	62.57	0142-1
10490.00	bulk	58.08	0.98	0.31	0.94	0.48	0.03	0.01	0.01	0.01	-	0.85	0.47	0.14	59.03	0150-0

List of Triterpane Distribution Ratios

Ratio 1: B / A

Ratio 2: B / B+A

Ratio 3: B / B+E+F

Ratio 4: C / E

Ratio 5: C / C+E

Ratio 6: X / E

Ratio 7: Z / E

Ratio 8: Z / C

Ratio 9: Z / Z+E

Ratio 10: Q / E

Ratio 11: E / E+F

Ratio 12: C+D / C+D+E+F

Ratio 13: D+F / C+E

Ratio 14: J1 / J1+J2 (%)

Table 10b: Variation in Sterane Distribution (peak height) SIR for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
9920.00	bulk	0.55	37.48	51.76	1.62	0.59	0.38	0.26	0.35	0.60	0.86	0158-0
10020.00	bulk	0.62	39.86	51.73	1.35	0.57	0.24	0.17	0.35	0.66	0.89	0159-0
10063.00	Sh/Clst	0.71	43.25	54.86	1.67	0.58	0.31	0.22	0.38	0.76	1.07	0125-1
10268.00	S/Sst	0.83	48.26	81.41	1.58	0.82	0.44	0.28	0.69	0.93	4.23	0137-1
10353.00	Coal	0.71	41.55	56.46	0.12	0.61	0.49	0.41	0.39	0.71	1.11	0142-1
10490.00	bulk	0.62	43.13	59.16	0.32	0.63	0.11	0.08	0.42	0.76	1.27	0150-0

List of Sterane Distribution Ratios

Ratio 1: a / a+j

Ratio 2: q / q+t (%)

Ratio 3: 2*(r+s) / (q+t + 2*(r+s)) (%)

Ratio 4: a+b+c+d / h+k+l+n

Ratio 5: r+s / r+s+q

Ratio 6: u+v / u+v+q+r+s+t

Ratio 7: u+v / u+v+i+m+n+q+r+s+t

Ratio 8: r+s / q+r+s+t

Ratio 9: q / t

Ratio 10: r+s / t

Table 10c: Variation in Triaromatic Sterane Distribution (peak height) for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Sample
9920.00	bulk	0.47	0.40	0.14	0.20	0.18	0158-0
10020.00	bulk	0.36	0.27	0.12	0.15	0.17	0159-0
10063.00	Sh/Clst	0.39	0.28	0.12	0.16	0.16	0125-1
10268.00	S/Sst	0.46	0.43	0.22	0.21	0.30	0137-1
10353.00	Coal	0.53	0.38	0.33	0.30	0.59	0142-1
10490.00	bulk	0.30	0.22	0.19	0.15	0.45	0150-0

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

Table 10d: Variation in Monoaromatic Sterane Distribution (peak height) for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Sample
9920.00	bulk	0.31	0.21	0.21	0.18	0158-0
10020.00	bulk	0.23	0.15	0.14	0.12	0159-0
10063.00	Sh/Clst	0.18	0.10	0.11	0.09	0125-1
10268.00	S/Sst	0.32	0.24	0.21	0.18	0137-1
10353.00	Coal	0.85	0.92	0.63	0.76	0142-1
10490.00	bulk	0.56	0.43	0.30	0.30	0150-0

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 10e: Aromatisation of Steranes (peak height) for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Lithology	Ratio1	Ratio2	Sample
9920.00	bulk	0.20	0.96	0158-0
10020.00	bulk	0.24	0.96	0159-0
10063.00	Sh/Clst	0.27	0.97	0125-1
10268.00	S/Sst	0.28	0.96	0137-1
10353.00	Coal	0.04	0.99	0142-1
10490.00	bulk	0.03	1.00	0150-0

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

Ratio2: g1 / g1 + I1

Table 10f: Raw triterpane data (peak height) m/z 191 SIR for Well NOCS 15/12-1

Depth unit of measure: ft

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				
9920.00	bulk	11722.5	4497.0	3560.8	4414.7	1397.3	10263.2	20537.6	2093.2	36606.8	0158-0
		4509.7	6104.2	82237.8	11993.1	36051.1	22453.3	6616.6	17662.2	12563.8	
		16778.3	11017.3	10178.2	6419.5	14151.0	7648.2				
10020.00	bulk	48614.6	17113.8	14740.1	21878.3	5647.6	31735.6	104174.0	13379.4	203386.9	0159-0
		29863.5	35222.7	442691.8	70002.7	223278.6	136858.1	45275.0	105092.3	74862.9	
		92179.6	60162.4	57137.1	36602.5	60222.9	34967.2				
10063.00	Sh/Clst	12998.2	4553.4	2665.5	6339.5	1135.0	6648.6	42582.8	4023.1	69172.0	0125-1
		9770.0	12326.4	135115.9	24753.3	64623.3	38770.6	14308.1	24748.2	17034.0	
		19081.2	12583.8	13413.4	8624.1	9944.5	4760.2				
10268.00	S/Sst	6918.4	4521.5	2294.0	4226.0	1387.0	7766.0	7905.6	14444.4	21810.8	0137-1
		3186.0	2498.4	50754.5	3735.5	20054.7	11719.0	1937.2	11342.6	7135.9	
		7071.3	4299.4	2752.6	1443.3	2480.9	894.8				
10353.00	Coal	6525.4	2695.7	2012.4	21056.0	276.4	2693.3	236057.1	25803.5	243889.2	0142-1
		3533.0	30664.9	255775.1	70998.5	146731.3	94779.1	36686.9	81895.9	48990.3	
		19915.2	13119.7	9105.7	5187.7	1721.4	815.4				

Table 10f: Raw triterpane data (peak height) m/z 191 SIR for Well NOCS 15/12-1

Depth unit of measure: ft

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				
10490.00	bulk	2291.4	1305.6	1823.9	74077.7	576.5	6084.0	353332.4	7226.7	645439.7	0150-0
		21920.6	67452.2	687290.9	116947.3	350363.7	217955.9	59815.0	178424.5	123850.7	
		55261.7	41180.6	23416.0	15363.7	8224.6	3808.6				

Table 10g: Raw sterane data (peak height) m/z 217 SIR for Well NOCS 15/12-1

Depth unit of measure: ft

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					
9920.00	bulk	20499.7	5204.6	33858.5	21721.1	9146.8	9767.6	15070.9	10579.7	17406.2	0158-0
		18009.3	13166.8	27978.5	13930.9	5841.6	8641.9	8323.9	9268.1		
		13218.7	10421.0	8959.1	5957.0	17379.8					
10020.00	bulk	71550.7	17963.5	203766.1	131616.6	56952.3	56062.0	86437.6	54167.0	92900.1	0159-0
		147337.5	65912.0	124748.7	104288.4	43180.7	42601.6	38130.2	44723.7		
		57589.8	74695.2	61605.3	38784.7	112688.6					
10063.00	Sh/Clst	18243.1	3543.9	54651.7	33788.3	15673.1	15286.4	19356.7	11600.6	18410.7	0125-1
		33158.4	16682.2	21966.1	22824.6	9502.1	7820.1	6203.4	8818.0		
		7965.8	13105.2	11246.6	7166.0	17196.6					
10268.00	S/Sst	11445.6	3271.3	21561.3	13725.1	5411.6	5148.5	8464.0	4969.7	5074.2	0137-1
		12036.7	11091.4	4402.7	8853.2	3108.2	2949.3	5069.0	7186.4		
		1575.7	2879.2	7208.6	5853.6	3087.1					
10353.00	Coal	16938.6	2849.4	363.6	271.7	160.0	166.3	876.9	567.1	531.3	0142-1
		3691.1	932.2	145.6	2366.9	1251.2	5966.2	699.6	1439.9		
		696.3	5278.5	4869.7	3366.5	7425.9					

Table 10g: Raw sterane data (peak height) m/z 217 SIR for Well NOCS 15/12-1

Depth unit of measure: ft

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					
10490.00	bulk	4578.4	914.4	3372.3	2630.5	1368.4	1377.4	3004.7	1648.7	2144.4	0150-0
		12139.1	4745.1	2070.0	8954.6	3717.6	9017.9	2180.1	4694.2		
		2116.8	11416.3	10848.3	8323.7	15051.7					

Table 10h: Raw triaromatic sterane data (peak height) m/z 231 for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	Sample
9920.00	bulk	42283.9	32180.5	76024.8	198206.2	51384.7	69811.8	48456.4	0158-0
10020.00	bulk	25049.7	16438.2	45821.4	120719.8	49217.4	47664.6	44583.8	0159-0
10063.00	Sh/Clst	18665.4	11363.8	38392.6	94621.6	31384.9	36523.9	29463.3	0125-1
10268.00	S/Sst	42729.5	38219.0	25342.7	100526.5	57297.3	50939.9	50723.9	0137-1
10353.00	Coal	12173.5	6642.6	1397.0	8448.1	12879.6	4321.1	10894.8	0142-1
10490.00	bulk	9095.8	5769.0	2862.2	11030.0	24274.4	5495.2	20819.6	0150-0

Table 10i: Raw monoaromatic sterane data (peak height) m/z 253 for Well NOCS 15/12-1

Depth unit of measure: ft

Depth	Lithology	A1	B1	C1	D1	E1	F1	G1	H1	I1	Sample
9920.00	bulk	15229.3	9146.1	17252.9	14888.0	33513.0	6428.2	22965.3	10282.1	2264.5	0158-0
10020.00	bulk	8270.0	4764.6	13760.5	12506.0	27007.1	7570.7	23259.0	12933.9	1678.0	0159-0
10063.00	Sh/Clst	5387.0	2662.5	12847.4	11676.9	24585.1	7809.3	18767.8	10027.4	794.1	0125-1
10268.00	S/Sst	14674.2	10013.1	20355.0	14402.6	31660.7	6538.9	24441.2	12859.4	2092.1	0137-1
10353.00	Coal	1843.0	3707.1	27.8	32.2	331.3	105.6	744.7	473.6	62.1	0142-1
10490.00	bulk	580.0	348.5	89.7	79.0	453.5	83.7	881.8	488.2	87.3	0150-0