2/4–17 OPEN HOLE WIRELINE LOGGING SUMMARY

Tool String	Run No.	Log Date	Top Logged Interval	Bottom Logged Interval	Bit Size	BHT degF	Hrs. Since Circ.	Mud Weight lbs/gal	Mud Type	Remarks
DLL/MSFL/SLS/GR	1	12 Aug 91	1508'	7034'	17 1/2"	156	8.5	13.5	Water	
VSP	1	03 Sep 91	3000'	13025'	12 1/4"	270	16.5	14.8	Water	
DLL/MSFL/BHC/GR	2	07 Sep 91	6766'	13628'	12 1/4"	264	15.8	14.8	Water	
FMS/GR	1	07 Sep 91	9950'	13640'	12 1/4"	269	25.0	14.8	Water	
RFTB/GR	1	08 Sep 91	10239'	12898'	12 1/4"	–	–	14.8	Water	12 tight, 5 no seals.
MSCT/GR	1,2	09 Sep 91	10246'	12901'	12 1/4"	–	–	14.8	Water	Run 1 – 4 cores, run 2 – 17 cores. Problems with thick mudcake.
DLL/BHC/GR	3	14 Oct 91	13610'	15350'	8 1/2"	301	11.8	17.6	Water	Toolstring failed after down log. BHC Sonic log acceptable.
DLL/MSFL/GR/GPIT	4	15 Oct 91	13610'	15350'	8 1/2"	307	17.6	17.6	Water	GPIT recorded on seperate pass.
DLL/MSFL/NGL	5	19 Nov 91	13610'	16485'	8 1/2"	331	18.3	17.6	Water	NGL failed before main log.
LDL/CNL/GR	1	20 Nov 91	13610'	16498'	8 1/2"	332	26.4	17.6	Water	LDL badly effected by barite (398 lbs/ bbl).
RFTB/GR	2	21 Nov 91	14244'	14423'	8 1/2"	–	–	17.6	Water	10 pressures, 2 tight, 2 supercharged.
RFTB/GR	3,4,5	22 Nov 91	14288'	15132'	8 1/2"	–	–	17.6	Water	18 pressures, 1 tight, 2 s'charged. Samples @ 14503', 14288' & 14384'.
RFTB/GR	6,7	24 Nov 91	14835'	15384'	8 1/2"	–	–	17.6	Water	19 pressures, 1 tight, 1 s'charged. Sample @ 15120'.
SDT/NGL	1	25 Nov 91	13610'	16484'	8 1/2"	340	16.5	17.6	Water	Waveforms recorded.
FMS/GR	2	26 Nov 91	13610'	16485'	8 1/2"	345	48.5	17.6	Water	TD to 14550' logged at 900 ft/hr, 14550' to 13610 logged at 1500 ft/hr.

Table 3.1

1. DST#1 - RESULTS AND CONCLUSIONS

1. The gross interval from 14,840' to 15,215' (4,523-4,638 m) was successfully drill stem tested yielding the following main results:

   kh = 5,643 mDft
   k_w = 16.5 md
   skin = 2.8
   P^* = 13,094 psia (Corrected to midpoint perforations at 15,027.5'/4,580 m)
   Temperature = 348 °F (176 °C)

   The interval produced only water with a thin film of hydrocarbons seen in the samples recovered from DST#1.

3. PRESSURES FROM THE REPEAT FORMATION TESTING TOOL

RFT pressures were taken during the logging of the 8 1/2 inch hole section.

RFT water samples were obtained from 15,120' (4,609 m).

6. DST#2 - RESULTS AND CONCLUSIONS

1. The gross interval from 14,242′ to 14,395′ RKB (4,341-4,388 m) was successfully drillstem tested yielding the following main results:

   k = 65 mD
   S = 4
   Pbar = 12,682 psi at 13,948′ RKB (4,251 m)
   Temp = 320° F (160°C) at 13,948′ RKB (4,251 m)

The rates at the end of the main flow period were measured at 3,460 STBPD (550 Sm^3 oil/day) and 21.34 MMSCFD (604 Sm^3 gas/day). Average GOR was 6,160 SCF/BBL (1,097 Sm^3/Sm^3), oil specific gravity 45.2 API (0.800 g/cm^3), gas specific gravity 0.735, 15 ppm H_2S and 3.5% CO_2.

8. PRESSURES FROM THE REPEAT FORMATION TESTING TOOL

RFT pressures were taken during the logging of the 8 1/2 inch hole section. Three logging runs were made over the section, using the backup tool for the two last runs. This caused a slight shift in the gradient between run one and runs two and three. A clear gradient of 0.2 psi/ft can be seen over the pay section. Below the pay section a gradient of 0.5 psi/ft is observed.

Three segregated hydrocarbon samples at 14,288′, 14,384′ and 14,392′ (4,355, 4,384 and 4,387 m), respectively were attempted over the interval. The sample at 14,392′ (4,387 m) was damaged due to a seal failure, and the sample at 14,384′ (4,384 m) was not segregated, again due to a seal failure. The sample at 14,288′ (4,355 m) was successful. The two hydrocarbon samples were sent to the laboratory for analysis. However, measurement of the opening pressures revealed that the chambers hardly contained any gas, such that the samples were not representative of the reservoir fluid. One water sample was also obtained at 14,503′ (4,421 m). The salinity of this sample was measured to approximately 70,000 ppm.

2/4-17 Rotliegendes RFT DATA IN 8 1/2 INCH HOLE SECTION

Survey date: November 25, 1991

Measured Depth-ft	Vertical Depth-ft	Form. Pressure psig	Final Hydrost. Pressure psia	k/u md/cp	Note
Run 5 and 6:					
14,837	14,827	12,963.7	13,396.3	716.91	Valid test R5
14,835	14,825	12,963.3	12,395.2	132.46	Valid test R5
14,840	14,830	12,966.2	13,393.5	0.82	Valid test R6
14,843	14,834	12,968.1	13,397.1	14.69	Valid test R6
15,030	15,020	-	13,566.2	-	Dry R6
15,040	15,030	13,104.8	13,578.4	0.38	Supercharged R5
15,040	15,030	13,101.8	13,585.0	0.72	Supercharged R5
15,047	15,037	13,093.4	13,581.9	23.57	Valid test R6
15,047	15,037	13,094.7	13,589.8	17.84	Valid test R5
15,048	14,038	-	13,582.8	0.06	Aborted,tight R6
15,055	15,045	13,099.7	13,588.9	0.29	Valid test R6
15,055	15,045	13,093.3	13,592.3	6.84	Valid test R5
15,055	15,045	13,095.8	13,596.5	12.56	Valid test R5
15,056	15,046	13,095.7	13,595.4	6.54	Valid test R5
15,095	15,085	13,121.9	13,625.4	1.20	Valid test R6
15,108	15,098	13,126.4	13,643.1	5.56	Valid test R5
15,120	15,110	13,131.8	13,653.5	0.06	Valid test R6 *
15,120	15,110	13,131.2	13,649.1	5.23	Valid test R5
15,132	15,122	13,133.8	13,658.7	1602.40	Valid test R6 **
15,132	15,122	13,134.1	13,664.2	19.23	Valid test R5
15,168	15,158	13,157.4	13,692.5	12.03	Valid test R6
15,184	15,174	13,163.7	13,706.9	5.56	Valid test R6
15,195	15,185	-	13,717.1	-	No seal R6
15,190	15,180	13,166.7	13,713.2	6.16	Valid test R6
15,242	15,232	13,175.7	13,760.9	32.95	Valid test R6
15,242	15,232	13,173.8	13,762.2	11.89	Valid test R5
15,246	15,236	-	13,763.9		No seal R6
15,256	15,246	13,191.2	13,773.7	0.51	Valid test R6
15,284	15,274	13,197.2	13,799.5	4.10	Valid test R6
15,307	15,297	13,204.7	13,821.0	5.12	Valid test R6
15,328	15,318	13,212.7	13,842.7	1.73	Valid test R5
15,332	15,322	13,213.4	13,844.3	3.98	Valid test R6
15,339	15,329	13,216.3	13,850.7	8.54	Valid test R6
15,348	15,338	13,221.8	13,859.9	5.14	Valid test R5
15,356	15,346	13,225.8	13,866.7	1.64	Valid test R6
15,356	15,346	13,225.8	13,866.7	1.42	Valid test R5
15,361	15,351	13,229.6	13,871.7	2.35	Valid test R6
15,373	15,363	13,237.1	13,883.1	3.48	Valid test R6
15,374	15,364	13,243.6	13,883.2	0.61	Supercharged R5
15,380	15,370	13,239.9	13,889.2	5.64	Valid test R5
15,381	15,371	13,243.4	13,890.9	1.48	Valid test R6
15,384	15,374	13,243.5	13,892.9	0.18	Valid test R5

** Not included in the average permeability measurement

* Segregated sample

50.92.D\RM1021

Table 4.1

2/4-17 Rotliegendes RFT DATA IN 8 1/2 IN. HOLE SECTION

Survey date: November 22/23, 1991

Measured Depth-ft	Vertical Depth-ft	Form. Pressure psig	Final Hydrost. Pressure psia	k/u md/cp	Note
Run 2,3 and 4:					
14,271	14,265	12,741.8	13,008.1	181.86	Valid test R2
14,288	14,282	12,749.3	13,015.1	0.27	Vt,segr.samp R4
14,292	14,286	12,746.4	13,027.9		Valid test R2
14,344	14,337	12,780.0	13,075.5	0.28	Supercharged R2
14,353	14,346	12,789.4	13,084.3	0.71	Supercharged R2
14,384	14,377	12,767.5	13,107.9	0.26	Vt,nonseg s.R3
14,384	14,377	12,764.9	13,112.1	17.35	Valid test R2
14,396	14,389	12,769.0	13,118.2	0.13	Vt, samp.att.R3
14,396	14,389	12,766.6	13,122.3	10.79	Valid test R2
14,414	14,406	12,773.0	13,138.8	173.77	Valid test R2
14,418	14,410	12,775.1	13,142.2	170.43	Valid test R2
14,425	14,417	12,778.5	13,148.6	83.21	Valid test R2
14,503	14,495	12,817.0	13,216.8	0.14	Vt,segr.samp R2
14,506	14,498	12,819.0	13,220.5	29.20	Valid test R2
14,513	14,505		13,226.5		No seal R2
14,517	14,509		13,230.5		No seal R2
14,565	14,556		13,271.4		No seal R3
14,566	14,557	12,852.7	13,272.8	0.29	Valid test R3
14,571	14,562	12,854.2	13,276.1	31.05	Valid test R3
14,577	14,568		13,281.4		Dry test R3
15,108	15,099	13,144.4	13,760.4	86.31	Valid test R3
15,113	15,104	13,146.0	13,764.6	96.30	Valid test R3
15,124	15,115	13,150.5	13,774.8	35.37	Valid test R3
15,132	15,122	13,152.7	13,782.3	26.35	Valid test R3

Average k/μ = 35.5 md/cp from runs 2, 3, 4, 5 and 6.

50.92.D\RM1021

Table 4.2

2/4-17 JURASSIC RFT DATA IN 8 1/2 IN. HOLE SECTION

Survey date: November 21 & 22, 1991

Measured Depth-ft	Vertical Depth-ft	Form. Pressure psig	Hydrost. Pressure	k/u	Note
Run 1:					
14,244	14,238	-	12986.5	-	Dry test
14,247	14,241	12728.0	12989.3	2.39	Valid test
14,250	14,244	12750.0	12992.6	0.43	Supercharged
14,254	14,248	12742.5	12996.9	0.99	Supercharged
14,256	14,250	-	12999.4	-	No seal
14,264	14,258	12730.5	13006.1	-	Valid test
14,267	14,261	12731.1	13008.9	3.88	Valid test
14,271	14,265	12731.8	13012.2	32.73	Valid test
14,279	14,272	12733.8	13019.4	19.42	Valid test
14,288	14,281	12735.5	13027.2	24.22	Valid test
14,298	14,291	12738.2	13035.7	4.84	Valid test
14,303	14,296	-	13040.5	-	No seal
14,306	14,299	-	13041.5	-	Dry test
14,313	14,306	-	13048.5	-	No seal
14,343	14,336	-	13075.1	-	No seal
14,347	14,340	-	13078.9	-	No seal
14,353	14,346	-	13083.5	-	No seal
14,359	14,352	-	13088.4	-	No seal
14,380	14,373	-	13107.5	-	No seal
14,378	14,371	-	13105.3	-	No seal
14,384	14,376	-	13110.8	-	No seal
14,392	14,384	12756.2	13117.6	N/A	Valid test
14,396	14,388	12758.2	13122.0	N/A	Valid test
14,414	14,406	-	13138.5	-	No seal
14,418	14,410	-	13142.1	-	No seal
14,423	14,415	-	13146.7	-	No seal
14,271	14,265	12733.0	13010.5	N/A	Valid test
Run 2:					
14,271	14,265	12741.8	13008.1	181.90	Valid test
14,292	14,285	12746.4	13027.9	1189.00	Valid test
14,344	14,337	12780.0	13075.4	0.28	Supercharged
14,353	14,346	12789.4	13084.3	0.71	Supercharged
14,384	14,376	12764.9	13112.1	17.35	Valid test
14,396	14,388	12766.6	13122.3	10.79	Valid test
14,414	14,406	12773.0	13138.8	173.74	Valid test
14,418	14,410	12775.1	13142.2	170.46	Valid test
14,425	14,417	12778.5	13148.6	83.22	Valid test
14,503	14,495	12817.0	13216.8	N/A	Valid test
14,513	14,505	-	13226.5	-	No seal
14,506	14,498	12819.0	13220.6	29.20	Valid test
14,517	14,509	-	13230.5	-	No seal

50.92.D\RM1021

Table 4.13

Run 3:

14,396	14,388	12769.0	13118.4	N/A	Valid test
14,384	14,376	12767.5	13108.0	N/A	Valid test
14,565	14,556	-	13271.5	-	No seal
14,566	14,557	12852.7	13273.0	0.29	Valid test
14,577	14,568	-	13281.4	-	Dry test
14,571	14,562	12854.2	12276.1	31.05	Valid test

50.92.D\RM1021

Table 4.14

2/4-17 SAMPLING LIST DST2

SAMPLING DATES: 15-19 JAN 1992

WELLHEAD SAMPLES

START DD HHMM	END DD HHMM	SAMPLE NUMBER	BOTTLE NUMBER	APPROXIMATE FWHP PSIG	WHT degF	BHP PSIA	RATE B/D	COMMENT
15 1710	15 1720	1	x-merc69	9400	158	12534	1375	E
16 1040	16 1050	2	x-merc68	9336	180	12360	1433	ANA
16 1120	16 1135	3	x-merc69	9302	175	12379	1496	RET
16 1155	16 1207	4	x-merc378	9305	172	12393	1504	RET
18 1505	18 1540	5	x-merc379	7702	224	12083	3399	ANA
16 1610	16 1745	6	x-merc382	7697	224	12075	3429	KEEP

SEPARATOR PVT SAMPLES

SET	START DD HHMM	END DD HHMM	SAMPLE NUMBER	BOTTLE NUMBER	SEP P/T PSIG/degF	BHP PSIA	RATE STBOD	STREAM	COMMENT
1	18 2110	18 2130	1	x-merc4	482 / 158	12050	3462	OIL	KEEP
			1	A-17305	482 / 158			GAS	KEEP
			2	A-17341	482 / 158			GAS	KEEP
	18 2150	18 2215	3	A-17330	482 / 158			GAS	KEEP
			4	A-17314	482 / 158			GAS	KEEP
2	18 2325	19 0030	1	x-merc36	482 / 158	12043	3464	OIL	ANA
	18 2325	18 2345	1	A-17302	482 / 158			GAS	ANA
			2	A-17312	482 / 158			GAS	ANA
	19 0008	19 0030	3	A-17326	482 / 158			GAS	ANA
			4	A-17646	482 / 158			GAS	ANA
3	19 0340	19 0325	1	x-merc124	482 / 156	12027	3493	OIL	ANA
	18 2325	19 0352	1	A-17276	482 / 156			GAS	ANA
	19 0412	19 0430	2	A-17285	482 / 156			GAS	ANA
	19 0538	19 0630	3	A-17287	482 / 156			GAS	ANA
			4	A-17344	482 / 156			GAS	ANA

COMMENTS:

ANA = Analyzed by Core Laboratories
E = Emptied and refilled
KEEP = Kept in Storage in Tananger
RET = Returned and not analyzed

Well Name: NW TOR 2/4-17 | PHILLIPS PETROLEUM COMPANY | PAGE 1

API NUMBER: NO | FIELD: NW TOR | DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
1	07/17/91											/											/		
2	07/18/91											/											/		
3	07/19/91											/											/		
4	07/20/91	0	GEL/SW	8.60	200	10	0	0	0	0.00	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
5	07/21/91	630	GEL/SW	8.60	200	0	0	0	0	10.00	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
6	07/22/91	678	GEL/SW	8.60	150	0	0	0	0	10.00	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
7	07/23/91	678	GEL/SW	8.60	150	0	0	0	0	10.00	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
8	07/24/91	1350	GEL/SW	9.40	48	0	0	0	0	9.00	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
8	07/24/91	1530	GEL/SW	10.00	60	0	0	0	0	9.50	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
9	07/25/91	0	GEL/SW	9.40	47	0	0	0	0	9.00	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
9	07/25/91	1375	GEL/SW	9.50	40	0	0	0	0	9.50	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
10	07/26/91	0	GEL/SW	9.40	47	0	0	0	0	9.00	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
10	07/26/91	1508	GEL/SW	9.50	38	0	0	0	0	9.50	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
11	07/27/91	1530	GEL/SW	9.50	38	0	0	0	0	9.50	0.0	0/	0.0	0	0.00	0.00	0	0	0.0	0.0	0	0.00	0/0	0	H2S: 0
12	07/28/91	1542	KCL	9.50	38	13	7	2	4	10.00	0.0	0/	0.0	6	0.40	1.10	74000	700	0.0	6.0	0	7.50	0/94	0	H2S: 0
13	07/29/91	2340	KCL	9.80	70	17	25	3	4	9.40	4.8	0/	0.0	1	0.30	1.20	66000	820	0.0	7.0	0	5.00	0/93	0	H2S: 0
13	07/29/91	2956	KCL	9.90	88	25	28	6	8	9.30	5.4	0/	0.0	1	0.30	1.10	66000	820	0.0	8.0	0	5.00	0/92	0	H2S: 0
14	07/30/91	3620	KCL	10.30	68	23	20	5	7	8.50	4.4	0/	0.0	1	0.20	0.90	57000	900	0.0	9.0	0	7.50	0/91	0	H2S: 0
14	07/30/91	4200	KCL	10.50	65	23	24	5	7	8.70	4.6	0/	0.0	1	0.30	1.00	54000	900	0.0	10.0	0	7.50	0/90	0	H2S: 0
15	07/31/91	4937	KCL	11.10	69	23	25	5	8	8.90	4.8	0/	0.0	1	0.30	1.10	57000	900	0.0	14.0	0	10.00	0/86	0	H2S: 0
15	07/31/91	5130	KCL	12.00	69	29	22	6	13	8.60	4.8	0/	0.0	1	0.20	1.00	56000	900	0.0	16.0	0	12.50	0/84	0	H2S: 0
16	08/01/91	5930	KCL	12.50	74	28	23	6	12	8.50	4.6	0/	0.0	1	0.20	0.80	55000	920	0.0	18.3	0	17.50	1/81	0	H2S: 0
16	08/01/91	6390	KCL	12.50	74	36	24	16	48	8.50	4.6	0/	0.0	1	0.10	0.40	55000	940	0.0	18.0	0	20.00	1/81	0	H2S: 0
17	08/02/91	6823	KCL	12.60	70	35	23	9	16	8.70	4.6	0/	0.0	1	0.20	0.60	54000	1000	0.0	18.0	0	20.50	1/81	0	H2S: 0
17	08/02/91	6823	KCL	12.60	74	36	24	9	16	8.50	4.6	0/	0.0	1	0.10	0.40	55000	940	0.0	18.0	0	20.00	1/81	0	H2S: 0

Well Name: NW TOR 2/4-17
API NUMBER: NO
FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
18	08/03/91	6827	KCL	12.60	72	35	24	9	16	8.60	4.6	0/	0.0	1	0.10	0.50	55000	940	0.0	18.0	0	20.50	1/81	0	H2S: 0
18	08/03/91	6827	KCL	12.90	77	36	24	9	16	8.50	4.6	0/	0.0	1	0.10	0.40	55000	940	0.0	19.0	0	20.00	1/80	0	H2S: 0
19	08/04/91	6827	KCL	13.00	68	31	24	8	25	8.50	4.6	0/	0.0	1	0.10	0.50	55000	960	0.0	22.0	0	21.00	1/77	0	H2S: 0
19	08/04/91	6827	KCL	13.00	77	36	24	9	21	8.60	4.6	0/	0.0	1	0.10	0.40	55000	940	0.0	22.0	0	20.00	1/77	0	H2S: 0
20	08/05/91	6827	KCL	13.00	75	35	24	8	25	8.60	4.6	0/	0.0	1	0.10	0.40	55000	940	0.0	22.0	0	20.00	1/77	0	H2S: 0
20	08/05/91	6827	KCL	13.00	80	36	24	9	25	8.60	4.6	0/	0.0	1	0.10	0.40	54000	920	0.0	22.0	0	20.00	1/77	0	H2S: 0
21	08/06/91	0	KCL	13.00	69	32	24	8	25	8.60	4.8	0/	0.0	1	0.10	0.40	55000	920	0.0	22.0	0	20.00	1/77	0	H2S: 0
21	08/06/91	5300	KCL	13.00	80	36	24	9	25	8.60	4.6	0/	0.0	1	0.10	0.40	54000	920	0.0	22.0	0	20.00	1/77	0	H2S: 0
22	08/07/91	5300	KCL	13.00	80	35	24	8	25	8.60	5.0	0/	0.0	1	0.10	0.40	59000	1000	0.0	21.0	0	21.00	37/0	8	H2S: 0
22	08/07/91	5300	KCL	13.00	80	35	24	8	25	8.60	5.0	0/	0.0	1	0.10	0.40	59000	1000	0.0	21.0	0	21.00	37/0	8	H2S: 0
22	08/07/91	5376	KCL	13.00	74	31	20	7	32	8.70	5.4	0/	0.0	1	0.10	0.40	62000	1440	0.0	19.0	0	23.00	39/0	8	H2S: 0
22	08/07/91	5376	KCL	13.00	74	31	20	7	32	8.70	5.4	0/	0.0	1	0.10	0.40	62000	1440	0.0	19.0	0	23.00	39/0	8	H2S: 0
23	08/08/91	5560	KCL	13.00	75	35	27	9	33	8.70	5.0	0/	0.0	1	0.10	0.70	65000	1000	0.0	21.5	0	24.00	40/0	9	H2S: 0
23	08/08/91	5890	KCL	13.00	73	35	31	12	39	8.50	5.4	0/	0.0	1	0.10	0.40	64000	1080	0.0	20.0	0	23.00	42/0	9	H2S: 0
24	08/09/91	0	KCL	13.00	75	35	27	12	40	8.60	5.4	0/	0.0	1	0.10	0.60	64000	1000	0.0	21.0	0	23.00	43/0	8	H2S: 0
24	08/09/91	5890	KCL	13.20	91	47	32	18	55	8.40	5.3	0/	0.0	1	0.10	0.30	72000	1040	0.0	23.0	0	25.00	47/0	8	H2S: 0
25	08/10/91	4900	KCL	13.50	95	39	34	15	55	8.50	5.4	0/	0.0	1	0.10	0.40	72000	1040	0.0	22.0	0	24.00	46/0	8	H2S: 0
25	08/10/91	6187	KCL	13.50	118	50	36	22	58	8.40	4.2	0/	0.0	1	0.10	0.50	78000	880	0.0	23.0	0	25.00	41/0	8	H2S: 0
26	08/11/91	4500	KCL	13.50	100	46	34	20	60	8.50	4.4	0/	0.0	1	0.10	0.50	75000	920	0.0	22.0	0	24.00	42/0	8	H2S: 0
26	08/11/91	6500	KCL	13.50	66	35	28	9	52	8.40	4.7	0/	0.0	1	0.10	0.40	71000	880	0.0	22.0	0	21.00	40/0	8	H2S: 0
27	08/12/91	6820	KCL	13.50	60	33	29	10	45	8.50	4.5	0/	0.0	1	0.10	0.50	67000	880	0.0	22.0	0	22.00	41/0	8	H2S: 0
27	08/12/91	7040	KCL	13.50	55	31	26	9	42	8.50	4.4	0/	0.0	1	0.10	0.40	64000	840	0.0	22.0	0	20.00	40/0	8	H2S: 0
28	08/13/91	7040	KCL	13.50	56	29	14	8	26	8.20	4.8	0/	0.0	1	0.10	0.40	64000	880	0.0	23.0	0	22.00	38/0	8	H2S: 0
28	08/13/91	7040	KCL	13.50	55	28	18	9	23	8.50	4.3	0/	0.0	1	0.10	0.40	66000	960	0.0	22.0	0	20.00	38/0	8	H2S: 0
29	08/14/91	7040	KCL	13.60	47	28	16	8	20	8.20	4.2	0/	0.0	1	0.10	0.40	64000	880	0.0	22.0	0	20.00	38/0	8	H2S: 0

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
29	08/14/91	7040	KCL	13.60	47	28	16	7	20	8.20	4.2	0/	0.0	1	0.10	0.30	63000	880	0.0	22.0	0	20.00	38/0	8	H2S: 0
30	08/15/91	7040	KCL	13.60	55	27	19	7	21	8.20	4.2	0/	0.0	1	0.10	0.40	63000	880	0.0	22.0	0	20.00	38/0	2	H2S: 0
30	08/15/91	6998	KCL	13.60	62	34	24	12	34	8.80	5.4	0/	0.0	1	0.20	0.50	65000	1160	0.0	22.0	0	20.00	35/0	8	H2S: 0
31	08/16/91	7040	SOLTEX	13.60	62	34	24	12	34	8.80	5.4	0/	0.0	1	0.20	0.50	65000	1160	0.0	22.0	0	20.00	38/0	9	H2S: 0
31	08/16/91	7040	SOLTEX	13.60	70	27	11	3	7	8.00	4.0	0/	0.0	1	0.20	0.70	28000	800	0.0	20.0	0	8.00	0/0	8	H2S: 0
32	08/17/91	7040	SOLTEX	13.60	70	27	11	3	7	8.00	4.0	0/	0.0	1	0.30	0.70	28000	800	0.0	20.0	0	8.00	38/0	8	H2S: 0
32	08/17/91	7040	SOLTEX	13.60	65	19	9	3	7	8.00	4.0	0/	0.0	1	0.20	0.70	20000	800	0.0	20.0	0	8.00	0/0	8	H2S: 0
33	08/18/91	7040	SOLTEX	13.60	65	19	9	3	7	8.00	4.0	0/	0.0	1	0.20	0.70	20000	800	0.0	20.0	0	8.00	0/0	8	H2S: 0
34	08/19/91	7040	SOLTEX	13.60	65	19	9	3	7	0.00	4.0	0/	0.0	1	0.20	0.70	20000	800	0.0	21.0	0	8.00	0/0	0	H2S: 0
34	08/19/91	6714	SOLTEX	13.60	53	14	24	9	26	0.00	6.8	0/	0.0	1	0.30	0.80	58000	1040	0.0	22.0	0	13.00	0/0	0	H2S: 0
35	08/20/91	7131	SOLTEX.	13.90	52	26	16	3	14	8.70	4.3	0/	0.0	1	0.20	0.90	29000	720	0.0	23.0	0	17.00	0/0	8	H2S: 0
35	08/20/91	7604	SOLTEX.	14.00	54	26	14	5	21	8.50	4.6	0/	0.0	1	0.30	0.80	35000	800	0.0	24.0	0	16.00	0/0	8	H2S: 0
36	08/21/91	8213	SOLTEX.	14.20	84	53	32	11	49	8.00	4.8	0/	0.0	1	0.00	1.30	29000	920	0.0	27.0	0	27.50	0/0	0	H2S: 0
36	08/21/91	8400	SOLTEX.	14.20	76	36	39	12	40	8.00	5.0	0/	0.0	1	0.00	1.00	27000	640	0.0	26.0	0	27.00	0/0	0	H2S: 0
37	08/22/91	8470	SOLTEX/DRI	14.20	74	28	25	15	42	8.00	6.0	0/	0.0	1	0.00	1.20	23000	740	0.0	26.0	0	28.00	0/0	0	H2S: 0
37	08/22/91	8575	SOLTEX/DRI	14.20	45	20	12	4	12	8.00	5.0	0/	0.0	1	0.00	0.90	19000	880	0.0	24.0	0	13.00	0/0	0	H2S: 0
38	08/23/91	8740	SOLTEX/DRI	14.20	45	19	13	3	15	8.00	5.0	0/	0.0	1	0.00	1.00	18000	880	0.0	25.0	0	13.00	0/0	0	H2S: 0
38	08/23/91	9344	SOLTEX/DRI	14.20	62	24	28	15	40	7.50	6.2	0/	0.0	1	0.00	0.50	19000	920	0.0	26.0	0	20.00	0/0	0	H2S: 0
39	08/24/91	9570	SOLTEX/DRI	14.20	51	18	21	12	33	9.00	6.5	0/	0.0	1	0.30	1.40	18000	920	0.0	26.0	0	18.00	0/0	0	H2S: 0
39	08/24/91	9733	SOLTEX/DRI	14.30	51	22	23	15	35	9.00	6.5	0/	0.0	1	0.30	1.00	19000	740	0.0	26.0	0	18.00	0/0	0	H2S: 0
40	08/25/91	9840	SOLTEX/DRI	14.40	51	21	26	16	45	9.30	6.6	0/	0.0	2	0.30	1.30	17000	740	0.0	27.0	0	18.00	0/0	0	H2S: 0
40	08/25/91	9970	SOLTEX/DRI	14.40	45	19	28	17	46	9.50	6.8	0/	0.0	2	0.60	1.50	18000	300	0.0	27.0	0	18.00	0/0	0	H2S: 0
41	08/26/91	10240	SOLTEX/DRI	14.40	51	21	26	16	45	9.30	6.6	0/	0.0	2	0.30	1.30	17000	740	0.0	27.0	0	18.00	0/0	0	H2S: 0
41	08/26/91	10407	SOLTEX/DRI	14.40	67	28	28	17	46	9.00	7.0	0/	0.0	2	0.30	1.50	18000	300	0.0	28.0	0	18.00	0/0	0	H2S: 0
42	08/27/91	10430	SOLTEX/DRI	14.40	49	29	26	18	49	9.20	6.8	0/	0.0	2	0.20	1.30	16000	520	0.0	29.0	0	19.00	0/0	0	H2S: 0

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
42	08/27/91	10430	SOLTEX/DRI	14.40	43	22	29	17	46	8.70	6.8	0/	0.0	2	0.30	1.40	17000	500	0.0	28.0	0	19.00	0/0	0	H2S: 0
43	08/28/91	10456	SOLTEX/DRI	14.40	57	25	30	18	50	8.90	6.6	0/	0.0	2	0.20	1.30	18000	600	0.0	29.0	0	16.00	0/0	0	H2S: 0
43	08/28/91	10725	SOLTEX/DRI	14.50	52	16	27	20	51	9.50	9.0	0/	0.0	1	0.60	1.50	18000	550	0.0	28.0	0	16.00	0/0	0	H2S: 0
44	08/29/91	10915	SOLTEX/DRI	14.50	55	20	38	20	44	9.50	7.0	0/	0.0	1	0.70	1.50	18000	350	0.0	28.0	0	14.00	0/0	0	H2S: 0
44	08/29/91	10926	SOLTEX/DRI	14.50	56	27	32	20	47	9.00	6.4	0/	0.0	1	0.60	1.40	19000	240	0.0	28.0	0	14.00	0/0	0	H2S: 0
45	08/30/91	10926	SOLTEX/DRI	14.50	79	26	27	21	52	9.10	6.4	0/	0.0	1	0.30	1.30	17000	440	0.0	28.0	0	14.00	0/0	0	H2S: 0
45	08/30/91	11103	SOLTEX/DRI	14.50	50	20	19	15	43	9.00	6.2	0/	0.0	1	0.30	0.80	19000	280	0.0	27.0	0	12.00	0/0	0	H2S: 0
46	08/31/91	11438	SOLTEX/DRI	14.60	48	24	30	20	48	9.00	6.0	0/	0.0	1	0.30	1.20	17000	520	0.0	28.0	0	11.00	0/0	0	H2S: 0
46	08/31/91	11674	SOLTEX/DRI	14.60	47	25	30	23	56	9.60	6.4	0/	0.0	2	0.40	1.40	18000	460	0.0	27.0	0	13.00	0/0	0	H2S: 0
47	09/01/91	11870	SOLTEX/DRI	14.60	62	25	32	23	48	10.00	7.4	0/	0.0	2	0.40	2.00	20000	260	0.0	28.0	0	12.00	0/0	0	H2S: 0
47	09/01/91	12215	SOLTEX/DRI	14.80	51	25	27	14	38	10.00	7.4	0/	0.0	2	0.60	1.90	20000	460	0.0	27.0	0	11.00	0/0	0	H2S: 0
48	09/02/91	12593	SOLTEX/DRI	14.80	54	24	29	19	44	9.80	6.8	250/	22.0	2	0.40	2.10	20000	460	0.0	28.0	0	11.00	0/0	0	H2S: 0
48	09/02/91	12743	SOLTEX/DRI	14.80	51	21	23	14	35	9.70	6.2	250/	17.0	2	0.50	1.80	19000	420	0.0	28.0	0	9.00	0/0	0	H2S: 0
49	09/03/91	12990	SOLTEX/DRI	14.80	55	24	28	33	54	10.10	6.2	250/	17.2	2	0.50	1.40	19000	480	0.0	28.0	0	10.00	0/0	0	H2S: 0
49	09/03/91	13025	SOLTEX/DRI	14.80	52	21	29	24	49	10.10	5.8	250/	15.4	2	0.50	1.50	19000	480	0.0	28.0	0	10.00	0/0	0	H2S: 0
50	09/04/91	13025	SOLTEX/DRI	14.80	74	23	30	32	59	9.60	6.0	250/	16.8	2	0.30	1.30	19000	480	0.0	28.0	0	10.00	0/72	0	H2S: 0
50	09/04/91	13025	SOLTEX/DRI	14.80	78	21	30	24	50	9.70	6.0	250/	16.8	2	0.40	1.20	19000	460	0.0	28.0	0	10.00	0/72	0	H2S: 0
51	09/05/91	13035	SOLTEX/DRI	14.80	85	21	27	20	42	9.70	8.2	250/	20.0	3	0.40	1.20	19000	440	0.0	28.0	0	12.00	0/0	0	H2S: 0
51	09/05/91	13083	SOLTEX/DRI	14.80	54	21	28	22	44	9.70	8.0	250/	18.0	3	0.40	1.40	19000	440	0.0	28.0	0	12.00	0/0	0	H2S: 0
52	09/06/91	13180	SOLTEX/DRI	14.80	46	18	20	19	39	9.80	5.6	250/	19.6	2	0.40	1.80	22000	400	0.0	28.0	0	11.00	0/0	0	H2S: 0
52	09/06/91	13306	SOLTEX/DRI	14.80	44	14	19	10	38	9.80	5.4	250/	18.8	2	0.40	1.80	22000	420	0.0	28.0	0	11.00	0/0	0	H2S: 0
53	09/07/91	13526	SOLTEX/DRI	14.80	46	18	16	16	41	10.00	5.4	250/	20.6	2	0.60	2.00	22000	400	0.0	26.0	0	10.00	0/0	10	H2S: 0
53	09/07/91	13620	SOLTEX/DRI	14.80	48	18	19	17	42	10.00	5.5	250/	20.8	2	0.60	1.90	23000	380	0.0	26.0	0	10.00	0/0	10	H2S: 0
54	09/08/91	13620	SOLTEX/DRI	14.80	69	19	17	18	43	9.60	5.6	250/	21.0	2	0.40	1.80	23000	380	0.0	26.0	0	10.00	0/0	0	H2S: 0
54	09/08/91	13620	SOLTEX/DRI	14.80	70	19	18	17	43	9.60	5.5	250/	21.0	2	0.40	1.80	23000	380	0.0	26.0	0	10.00	0/0	0	H2S: 0

Well Name: NW TOR 2/4-17 | PHILLIPS PETROLEUM COMPANY | PAGE 5

API NUMBER: NO | FIELD: NW TOR | DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
55	09/09/91	13620	SOLTEX/DRI	14.80	74	18	18	18	44	9.60	5.5	250/	21.4	2	0.40	1.80	23000	380	0.0	26.0	0	10.00	0/0	0	H2S: 0
55	09/09/91	13620	SOLTEX/DRI	14.80	73	18	19	17	43	9.60	5.6	250/	21.0	2	0.40	1.80	23000	400	0.0	25.0	0	10.00	0/0	0	H2S: 0
56	09/10/91	13620	SOLTEX/DRI	14.80	74	19	17	18	43	9.60	5.5	250/	21.4	2	0.40	1.80	23000	380	0.0	26.0	0	10.00	0/0	0	H2S: 0
56	09/10/91	13620	SOLTEX/DRI	14.80	74	18	18	17	44	9.60	5.4	250/	21.6	2	0.40	1.80	23000	400	0.0	26.0	0	10.00	0/0	0	H2S: 0
57	09/11/91	13620	SOLTEX/DRI	14.80	45	15	12	8	26	9.40	5.4	250/	21.0	2	0.30	1.70	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
57	09/11/91	13620	SOLTEX/DRI	14.80	48	14	11	9	32	9.40	5.4	250/	21.0	2	0.30	1.70	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
58	09/12/91	13620	SOLTEX/DRI	14.80	48	14	11	9	32	9.40	5.4	250/	21.6	2	0.30	1.70	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
58	09/12/91	13620	SOLTEX/DRI	14.90	66	14	16	13	43	9.40	5.6	250/	22.0	2	0.30	1.70	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
59	09/13/91	13620	SOLTEX/DRI	14.90	63	13	19	21	45	9.40	5.4	250/	21.6	2	0.30	1.70	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
59	09/13/91	13620	SOLTEX/DRI	14.80	47	14	15	12	37	9.20	5.6	250/	22.0	2	0.30	1.50	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
60	09/14/91	13620	SOLTEX/DRI	14.80	49	15	15	13	39	9.00	5.8	250/	24.0	2	0.20	1.80	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
61	09/15/91	13620	HTHT	14.80	49	15	15	13	39	9.00	5.8	250/	24.0	2	0.20	1.80	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
62	09/16/91	13620	HTHP	14.80	49	15	15	13	39	9.00	5.8	250/	24.0	2	0.20	1.80	23000	380	0.0	26.0	0	10.00	0/0	9	H2S: 0
63	09/17/91	13620	HTHP	17.50	61	25	14	5	31	6.20	0.0	0/	0.0	0	0.00	1.80	143000	720	0.0	37.0	0	0.00	0/0	6	H2S: 0
63	09/17/91	13620	HTHP	17.50	61	30	10	5	22	6.20	6.0	250/	47.0	2	0.00	1.80	140000	720	0.0	37.0	0	0.00	0/0	6	H2S: 0
64	09/18/91	13620	HTHP	17.50	63	34	10	6	28	7.20	5.8	250/	56.0	2	0.00	1.40	145000	400	0.0	37.3	0	5.00	0/0	7	H2S: 0
64	09/18/91	13575	HTHP	17.00	55	2	21	3	19	7.70	4.8	250/	60.0	2	0.00	1.90	105000	720	0.0	36.5	0	0.00	0/0	8	H2S: 0
65	09/19/91	13620	HTHP	17.00	53	22	20	3	16	7.50	5.2	250/	56.0	2	0.00	1.60	110000	600	0.0	35.0	0	5.00	0/0	7	H2S: 0
66	09/20/91	13646	Native	17.00	54	22	10	2	16	8.30	3.4	250/	49.0	1	0.00	2.50	120000	480	0.0	35.0	0	6.00	0/0	8	H2S: 0
67	09/21/91	13646	HTHP	17.00	50	19	17	2	6	8.30	5.0	250/	56.0	2	0.10	2.30	143000	520	0.0	35.5	0	7.00	0/0	8	H2S: 0
67	09/21/91	13758	HTHP	17.00	46	27	10	2	6	8.10	6.1	250/	54.0	2	0.00	2.30	135000	320	0.0	36.0	0	6.00	0/0	8	H2S: 0
68	09/22/91	13790	HTHP	17.10	47	29	5	3	7	7.90	6.0	350/	48.0	2	0.00	2.00	138000	420	0.0	36.0	0	6.00	0/0	8	H2S: 0
68	09/22/91	13925	HTHP	17.00	44	28	11	3	9	7.60	6.0	350/	50.0	2	0.00	2.30	136000	320	0.0	36.0	0	6.00	0/0	8	H2S: 0
69	09/23/91	13940	HTHP	17.00	45	30	8	3	12	7.70	5.8	350/	48.0	2	0.00	2.10	142000	360	0.0	36.3	0	8.00	0/0	8	H2S: 0
69	09/23/91	14065	HTHP	17.20	45	33	12	3	12	7.80	6.2	350/	42.0	2	0.00	1.80	134000	280	0.0	38.0	0	8.00	0/0	8	H2S: 0

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
70	09/24/91	14088	HTHP	17.30	53	36	12	5	15	7.60	5.4	350/	38.0	2	0.00	1.90	145000	320	0.0	37.5	0	8.00	0/0	8	H2S: 0
70	09/24/91	14139	HTHP	17.20	45	31	11	4	13	7.40	6.0	350/	44.0	2	0.00	1.50	132000	520	0.0	37.5	0	9.00	0/0	7	H2S: 0
71	09/25/91	14227	Salt Mud	17.20	54	30	13	4	16	7.60	5.6	350/	32.0	2	0.00	2.40	132000	320	0.0	38.0	0	10.00	0/0	0	H2S: 0
71	09/25/91	14139	HTHP	17.20	45	31	11	4	13	7.40	6.0	350/	44.0	2	0.00	1.50	132000	520	0.0	37.5	0	9.00	0/0	7	H2S: 0
72	09/26/91	14235	HPHT	17.40	53	33	17	6	19	7.40	6.5	350/	39.0	2		2.30	132000	400		38.0		10.00	/		
73	09/27/91	14235	HTHP	17.40	54	34	13	22	41	7.40	6.2	350/	46.0	2		2.00	129000	480		38.0		10.00	/		
73	09/27/91	14235	HTHP	17.40	70	34	15	5	23	7.30	5.4	350/	38.0	2		1.60	130000	400		38.0		10.00	/		
74	09/28/91	14295	HTHP	17.40	60	37	11	4	25	7.20	6.4	350/	42.0	5		1.60	124000	520		38.0		10.00	/		ADDING 2 SX LIQUID CSG /HR
75	09/29/91	14295	HTHP	17.60	58	26	16	6	27	7.40	7.4	350/	46.0	2		1.80	105000	520		39.0		10.00	/		ADDING LCM TO SYSTEM.
76	09/30/91	14295	HTHP	17.60	58	26	15	5	25	7.80	7.8	350/	48.0	3		1.30	104000	480		39.0		10.00	/		ADDING LCM TO CURE LOSSES.
76	09/30/91	14295	HTHP	17.60	54	28	12	5	25	7.00	7.0	350/	44.0	2		1.80	102000	480		39.0		10.00	/		ADDING LCM TO CURE LOSSES.
77	10/01/91	14295	HTHP	17.60	53	27	14	5	24	7.20	7.4	350/	42.0	3		1.50	101000	480		39.0		10.00	/		
77	10/01/91	14295	HTHP	17.60	54	28	12	5	25	7.20	7.0	350/	44.0	2		1.80	102000	480		39.0		10.00	/		
77	10/01/91	14295	HTHP	17.60		32	24	6	24		7.8	350/	46.0	3									/		HOT ROLL SAMPLE.
78	10/02/91	14295	HTHP	17.60	69	29	12	5	24	7.10	7.6	350/	50.0	3		1.60	101000	480		39.0		10.00	/		STRING OUT OF HOLE.
78	10/02/91	14295	HTHP	17.60	52	29	9	4	24	7.30	7.8	350/	60.0	3		1.90	90000	520		39.0		9.00	/		ADD ZINC OXIDE DUE TO H2S
79	10/03/91	14323	HTHP	17.50	52	26	13	4	18	8.40	8.4	350/	60.0	3	0.10	1.80	85000	480		39.0		9.00	/		KEMSEAL & ANCOTEMP TO REDUCE FLUID LOSS
79	10/03/91	14440	HTHP	17.50	57	36	12	4	20	7.80	7.8	350/	54.0	3	0.12	2.00	83000	440		39.0		8.50	/		
79	10/03/91	14310	HTHP - HOT	17.50		26	17	6	24		8.0	350/	54.0	3									/		
80	10/04/91	14462	HTHP	17.50	65	39	14	7	30	8.00	5.0	350/	30.0	5		1.50	81000	480		39.0		8.00	/		
80	10/04/91	14470	HTHP	17.50	58	33	11	5	16	7.80	5.0	350/	22.0	4		1.60	80000	580		39.0		7.50	/		
80	10/04/91	14500	HTHP	17.50	59	33	13	4	16	8.40	5.2	350/	32.0	4	0.20	2.00	79000	540		39.0		7.50	/		
81	10/05/91	14533	HTHP	17.50	60	37	12	4	16	8.90	3.2	350/	16.0	4	0.13	2.00	73000	540		39.0		7.50	/		
81	10/05/91	14593	HTHP	17.50	74	43	14	4	15	7.90	3.2	350/	26.0	5		1.80	70000	580		39.0		10.00	/		
82	10/06/91	14600	HPHT	17.50	70	39	13	6	22	8.50	3.0	350/	19.0	4	0.05	2.00	69000	580		38.0		10.00	/		

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
82	10/06/91	14608	HTHP	17.50	66	38	13	6	22	8.40	2.8	350/	20.0	4	0.02	1.90	66000	480		38.0		9.00	/		
82	10/06/91	14632	HTHP	17.50	74	38	16	5	16	8.50	2.2	350/	18.0	4	0.02	1.80	66000	460		38.0		8.00	/		
83	10/07/91	14656	HTHP	17.50	80	50	16	4	15	8.50	2.3	350/	19.0	4	0.02	1.70	64000	480		38.0		8.50	/		
83	10/07/91	14695	HTHP	17.50	64	48	12	4	14	8.60	2.2	350/	16.0	4	0.10	2.10	63000	520		37.0		10.00	/		
84	10/08/91	14745	HTHP	17.50	75	49	14	4	14	8.60	2.2	350/	16.0	4	0.10	1.70	62000	540		37.0		10.00	/		ADD NACL TO INCREASE SALINITY
84	10/08/91	14780	HTHP	17.50	64	44	12	4	11	8.50	2.0	350/	14.0	4	0.08	1.90	65000	580		37.0		10.00	/		
85	10/09/91	14780	HTHP	17.50	64	44	12	4	11	8.50	2.0	350/	14.0	4	0.08	1.90	65000	580		37.0		10.00	/		
85	10/09/91	14832	HPHT	17.50	63	46	13	4	14	86.00	2.2	350/	14.0	4	0.10	1.70	71000	540		37.0		10.00	/		
85	10/09/91	14849	HPHT	17.60	60	45	11	4	13	8.40	2.4	350/	15.0	3	0.04	1.90	66000	480		37.0		10.00	/		
86	10/10/91	14849	HPHT	17.60	60	45	11	4	13	8.40	2.4	350/	15.0	3	0.04	1.90	66000	480		37.0		10.00	/		
86	10/10/91	14849	HPHT	17.60	64	48	14	4	13	8.40	2.4	350/	15.0	4	0.04	1.90	72000	520		37.0		10.00	/		
86	10/10/91	14849	HPHT	17.60	74	49	14	4	14	8.30	2.4	350/	16.0	4	0.04	1.90	71000	480		37.0		10.00	/		
87	10/11/91	14849	HPHT	17.60	74	49	14	4	14	8.30	2.4	350/	16.0	4	0.04	1.90	71000	480		37.0		10.00	/		
87	10/11/91	14849	HPHT	17.60	64	48	14	4	13	8.40	2.4	350/	15.0	4	0.04	1.90	72000	520		37.0		10.00	/		
87	10/11/91	14910	HPHT	17.50	74	47	11	4	14	8.60	2.4	350/	15.0	4	0.06	2.10	75000	400		37.0		9.00	/		
88	10/12/91	14910	HPHT	17.50	74	47	11	4	14	8.60	2.4	350/	15.0	4	0.06	2.10	75000	400		37.0		9.00	/		
88	10/12/91	15019	HPHT	17.50	62	40	12	4	13	8.50	2.4	350/	15.0	4	0.04	1.90	70000	480		37.0		10.00	/		
88	10/12/91	15076	HPHT	17.50	63	42	12	4	14	8.10	2.4	350/	15.0	4		2.00	71000	520		37.0		10.00	/		
88	10/12/91	15166	HPHT	17.50	80	58	20	7	20	7.80	3.2	350/	20.0	5		1.30	72000	700		38.0		9.00	/		FOUND TRACES OF ANHYDRITE IN CUTTINGS.
89	10/13/91	15166	HPHT	17.50	80	58	20	7	20	7.80	3.2	350/	20.0	5		1.30	72000	700		38.0		9.00	/		FOUND TRACES OF ANHYDRITE IN CUTTINGS.
89	10/13/91	15166	HPHT	17.60	80	54	20	6	24	8.40	2.4	350/	15.0	4	0.01	1.60	65000	620		38.0		10.00	/		
89	10/13/91	15236	HPHT	17.60	78	48	17	7	26	9.30	2.6	350/	16.0	5	0.50	0.80	55000	480		38.0		11.30	/		
89	10/13/91	15290	HPHT	17.50	90	52	39	28	49	9.30	2.4	350/	15.0	4	1.20	3.20	47000	320		38.0		11.30	/		
90	10/14/91	15290	HPHT	17.50	90	52	39	28	49	9.30	2.4	350/	15.0	4	1.20	3.20	47000	320		38.0		11.30	/		

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
90	10/14/91	15328	HPHT	17.50	60	40	13	5	19	8.70	2.6	350/	22.0	5	0.65	2.20	72000	440		38.0		7.50	/		
90	10/14/91	15346	HPHT	17.60	54	34	14	4	18	8.50	2.8	350/	23.0	5	0.20	1.80	73000	400		38.0		7.50	/		
90	10/14/91	15346	HPHT	17.60	56	37	11	5	26	8.60	3.0	350/	28.0	5	0.30	3.00	72000	360		38.0		8.30	/		
91	10/15/91	15346	HPHT	17.60	56	37	11	5	26	8.60	3.0	350/	28.0	5	0.30	3.00	72000	360		38.0		8.30	/		
91	10/15/91	15346	HPHT	17.60	56	32	10	4	19	8.40	2.6	350/	24.0	5	0.40	3.40	74000	400		38.0		7.50	/		
91	10/15/91	15346	HPHT	17.60	56	31	10	4	15	8.40	2.5	350/	22.0	5	0.30	2.90	68000	360		38.0		8.30	/		
92	10/16/91	15346	HPHT	17.60	56	31	10	4	15	8.40	2.5	350/	22.0	5	0.30	2.90	68000	360		38.0		8.30	/		
92	10/16/91	15346	HPHT	17.40	60	31	10	4	16	8.20	2.5	350/	24.0	5		2.50	64000	360		37.0		8.30	/		
92	10/16/91	15346	HPHT	17.50	60	32	9	4	17	8.20	2.6	350/	25.0	5		2.50	65000	360		37.0		8.30	/		
93	10/17/91	15346	HPHT	17.50	60	32	9	4	17	8.20	2.6	350/	25.0	5		2.50	65000	360		37.0		8.30	/		
93	10/17/91	15346	HPHT	17.50	57	34	12	4	17	8.40	2.6	350/	25.0	5	0.20	2.80	64000	360		37.0		7.50	/		
93	10/17/91	15366	HPHT	17.50	58	36	11	4	18	8.20	2.6	350/	25.0	5		2.50	65000	360		37.0		8.30	/		
94	10/18/91	15366	HPHT	17.50	58	36	11	4	18	8.20	2.6	350/	25.0	5		2.50	65000	360		37.0		8.30	/		
94	10/18/91	15395	HPHT	17.50	57	31	9	3	17	8.30	2.6	350/	20.0	5	0.30	2.80	70000	400		37.0		8.30	/		
94	10/18/91	15408	HPHT	17.50	56	34	9	3	17	8.30	2.6	350/	18.0	4	0.10	3.50	62000	280		37.0		8.30	/		
94	10/18/91	15500	HPHT	17.50	57	37	16	5	20	8.00	3.0	350/	25.0	5	0.30	3.00	62000	360		37.0		8.30	/		
95	10/19/91	15500	HPHT	17.50	57	37	16	5	20	8.00	3.0	350/	25.0	5	0.30	3.00	62000	360		37.0		8.30	/		
95	10/19/91	15500	HPHT	17.60	58	34	10	3	18	7.90	2.6	350/	20.0	4	0.20	3.00	61000	400		37.0		7.50	/		
95	10/19/91	15500	HPHT	17.50	56	33	7	3	18	7.90	2.8	350/	20.0	4		3.50	60000	360		37.0		7.50	/		
95	10/19/91	15500	HPHT	17.50	58	32	10	5	18	8.40	2.5	350/	16.0	4	0.10	2.00	54000	360		36.6		7.50	/		
96	10/20/91	15500	HPHT	17.50	58	32	10	5	18	8.40	2.5	350/	16.0	4	0.10	2.00	54000	360		36.6		7.50	/		
96	10/20/91	15500	HPHT	17.60	58	31	11	3	17	8.40	2.4	350/	16.0	4	0.10	2.10	51000	360		37.0		7.50	/		
96	10/20/91	15500	HPHT	17.50	62	33	10	4	22	8.10	2.5	350/	19.0	4	0.25	2.50	56000	360		36.6		7.50	/		
97	10/21/91	15500	HPHT	17.50	62	33	10	4	22	8.10	2.5	350/	19.0	4	0.25	2.50	56000	360		36.6		7.50	/		
97	10/21/91	15500	HPHT	17.60	60	35	10	5	18	8.00	2.4	350/	15.0	4		2.50	52000	360		37.0		7.50	/		

Well Name: NW TOR 2/4-17
API NUMBER: NO
FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
97	10/21/91	15500	HPHT	17.60	62	35	9	4	19	8.00	2.4	350/	15.0	4	0.25	2.50	54000	360		37.0		7.50	/		
98	10/22/91	15500	HPHT	17.60	62	35	9	4	19	8.00	2.4	350/	15.0	4	0.25	2.50	54000	360		37.0		7.50	/		
98	10/22/91	15500	HPHT	17.60	59	34	11	1	17	7.90	2.5	350/	17.0	4		2.80	55000	320		37.0		7.50	/		
98	10/22/91	15500	HPHT	17.60	62	32	10	4	24	8.40	2.6	350/	20.0	4	0.25	2.70	51000	640		37.0		7.50	/		
99	10/23/91	15500	HPHT	17.60	62	32	11	4	20	8.40	2.6	350/	20.0	4	0.20	2.80	52000	480		37.0		7.50	/		
99	10/23/91	15500	HPHT	17.50	68	30	9	3	17	8.30	2.6	350/	16.0	4	0.40	2.80	54000	620		36.6		7.50	/		
100	10/24/91	15500	HPHT	17.60	56	32	12	3	14	11.40	3.2	350/	24.0	4	1.50	3.60	57000	320	4.9	37.0		7.50	/		
100	10/24/91	15500	HPHT	17.60	58	32	10	4	16	12.00	3.0	350/	24.0	4	1.60	3.40	56000	720	7.3	36.6		7.50	/		
101	10/25/91	15500	High Temp	17.60	56	31	6	3	10	11.90	3.6	350/	24.0	4	1.00	3.30	56000	520	5.3	36.5		7.00	/		
101	10/25/91	15500	High Temp	17.60	58	30	8	4	14	11.40	3.3	350/	24.0	4	1.00	2.70	58000	600	5.8	36.0		7.50	/		
102	10/26/91	14035	High Temp	17.50	52	32	6	3	11	11.50	4.8	350/	32.0	1	1.20	3.60	57000	680	10.7	36.5		7.50	/		
102	10/26/91	14530	High Temp	17.50	58	40	14	5	17	11.50	3.3	350/	30.0	1	1.50	3.70	58000	560	14.9	37.0		7.00	/		
103	10/27/91	14530	High Temp	17.60	63	39	12	6	20	12.10	3.1	350/	32.0	4	1.30	4.00	61000	360	13.3	37.0		6.80	/		
103	10/27/91	14530	High Temp	17.60	62	39	11	5	19	12.10	3.0	350/	32.0	4	1.30	3.90	60000	380	13.0	37.0		6.80	/		
104	10/28/91	14530	High Temp	17.60	69	34	11	5	16	12.20	2.7	/			1.20	3.80			12.6	37.0		7.50	/		
104	10/28/91	14530	High Temp	17.60	61	35	9	5	13	11.70	2.8	350/	22.0	4	0.70	3.40	56000	600	9.7	36.0		7.50	/		
104	10/28/91	14530	High Temp	17.60	60	37	13	5	23	12.50	3.8	350/	43.0	5	3.90	4.50	66000	180	15.5	37.0		7.00	/		
105	10/29/91	14530	High Temp	17.60	69	34	11	5	16	12.20	2.7	/		1	1.20	3.80				37.0		7.00	/		
105	10/29/91	14530	High Temp	17.60	63	39	13	5	17	12.40	3.5	350/	36.0	1	1.90	3.90	64000	300		37.0		7.00	/		
105	10/29/91	14530	High Temp	17.60	69	39	16	6	22	12.50	3.5	350/	36.0	1	2.00	3.50	62000	320	2.5	37.0		6.30	/		
106	10/30/91	14530	High Temp	17.60	57	34	12	6	17	12.20	2.7	/		1	1.20	3.80	60000	480	1.9	37.0		7.00	/		
106	10/30/91	14530	High Temp	17.60	64	36	12	5	20	12.40	3.0	350/	36.0	2	1.90	3.60	58000	500	1.6	37.0		6.50	/		
106	10/30/91	14530	High Temp	17.60	70	36	13	6	22	12.50	3.0	350/	34.0	2	2.00	3.40	57000	320	1.4	37.0		6.50	/		
107	10/31/91	14530	High Temp	17.60	53	30	6	3	9	11.30	2.6	350/	35.0	1	0.80	2.20	59000	620	1.2	37.0		5.00	/		
107	10/31/91	14531	High Temp	17.50	54	50	44	4	12	11.10	4.6	350/	44.0	2	0.90	3.60	62000	600		36.0		7.00	/		

Well Name: NW TOR 2/4-17
API NUMBER: NO
FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
108	11/01/91	14532	High Temp	17.50	53	30	9	3	7	10.50	3.4	350/	46.0	1	0.85	3.10	60000	680	0.6	36.0		6.00	/		
108	11/01/91	14534	High Temp	17.50	56	36	8	3	7	10.10	2.0	350/	22.0	1	0.90	2.60	55000	780	0.6	37.0		5.50	/		
108	11/01/91	14541	High Temp	17.50	57	38	11	3	8	10.30	2.4	350/	32.0	1	0.95	2.70	57000	760	0.6	37.0		7.50	/		
109	11/02/91	14541	High Temp	17.50	62	39	12	4	14	9.40	1.8	350/	30.0	1	0.50	2.70	54000	980	0.6	37.0		9.00	/		
109	11/02/91	14541	High Temp	17.50	70	39	15	4	15	9.60	2.0	350/	32.0	1	0.60	2.70	55000	960	0.6	37.0		9.00	/		
110	11/03/91	14542	High Temp	17.50	57	37	9	4	15	9.20	1.8	350/	20.0	1	0.60	3.20	55000	1480	0.6	37.0		10.00	/		
110	11/03/91	14542	High Temp	17.60	60	37	8	5	16	9.80	1.8	350/	16.0	1	0.70	3.10	54000	1320	0.5	37.0		9.50	/		
110	11/03/91	14542	High Temp	17.60	74	37	10	5	17	9.70	1.8	350/	16.0	1	0.65	2.90	54000	1320	0.6	37.0		9.50	/		
111	11/04/91	14543	High Temp	17.50	61	37	9	5	22	9.70	1.8	350/	17.0	1	0.60	2.90	54000	1320	0.6	37.0		10.00	/		
111	11/04/91	14552	High Temp	17.50	60	35	10	5	20	9.70	2.0	350/	20.0	1	0.65	2.80	54000	1300	0.5	37.0		9.50	/		
111	11/04/91	14557	High Temp	17.50	64	42	16	6	24	9.30	1.6	350/	18.0	1	0.55	2.60	54000	1040	0.6	37.0		7.50	/		
112	11/05/91	14592	High Temp	17.50	58	35	12	5	32	9.20	1.8	350/	22.0	1	0.50	2.60	49000	1000	0.6	37.0		7.50	/		
112	11/05/91	14597	High Temp	17.50	58	38	13	5	27	9.20	1.6	350/	18.0	1	0.55	2.60	50000	800	0.4	37.0		7.50	/		
112	11/05/91	14621	High Temp	17.50	57	38	12	6	28	9.20	1.6	350/	20.0	1	0.55	2.50	55000	720	0.3	38.0		7.50	/		
113	11/06/91	14660	High Temp	17.50	55	36	11	24	42	9.20	1.6	350/	21.0	4	0.55	2.60	54000	860		37.0		7.50	/		ADD HI TEMP CHEMS. ADD UP TO 8 BPH WATER
113	11/06/91	14680	High Temp	17.50	54	32	14	4	25	9.10	1.4	350/	16.0	3	0.50	2.70	53000	640		37.0		7.50	/		
113	11/06/91	14749	High Temp	17.50	53	36	9	4	20	9.00	1.6	350/	24.0	4	0.55	2.60	54000	1040		37.0		7.50	/		
114	11/07/91	14770	High Temp	17.50	57	38	11	4	21	9.00	1.4	350/	21.0	4	0.55	2.60	54000	860		37.0		7.50	/		
114	11/07/91	14770	High Temp	17.60	64	36	9	6	24	9.00	1.6	350/	24.0	4	0.55	2.60	54000	1040		37.0		7.50	/		
115	11/08/91	14770	High Temp	17.60	70	38	14	6	24	8.90	1.6	350/	24.0	4	0.55	2.60	54000	900		37.0		7.50	/		
115	11/08/91	14770	High Temp	17.60	68	39	11	5	22	8.90	1.6	350/	24.0	4	0.55	2.60	54000	920		37.0		7.50	/		
116	11/09/91	14772	High Temp	17.60	98	42	16	6	32	9.20	1.6	350/	19.0	4	0.65	3.00	54000	960		38.0		7.50	/		
116	11/09/91	14860	High Temp	17.50	54	34	17	6	30	9.20	1.6	350/	18.0	4	0.60	2.90	53000	940		37.0		7.50	/		
116	11/09/91	14958	High Temp	17.50	62	32	19	16	49	9.30	1.8	350/	21.0	4	0.65	3.00	51000	1140		38.0		7.50	/		DILUTE W/WATER AND ADD SODA ASH.

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
117	11/10/91	14958	High Temp	17.50	64	30	31	21	45	9.50	1.8	350/	22.0	4	0.80	3.50	50000	780	0.3	38.0		5.00	/		TREAT OUT CARBONATE WITH LIME
117	11/10/91	14958	High Temp	17.50	45	23	10	5	19	11.00	1.8	350/	25.0	4	1.50	4.00	48000	1000	0.3	38.0		5.00	/		TREAT OUT CARBONATE WITH LIME.
117	11/10/91	14981	High Temp	17.60	52	25	10	4	16	10.80	2.0	350/	28.0	4	1.40	3.50	49000	580	0.2	38.0		5.50	/		DILUTE ACTIVE MUD/BUILD NEW MUD.
118	11/11/91	14981	High Temp	17.60	50	26	11	6	23	10.60	1.8	350/	28.0	4	1.40	3.50	50000	780	0.3	38.0		5.00	/		
118	11/11/91	14981	High Temp	17.60	57	27	15	8	20	10.60	2.4	350/	32.0	4	1.40	3.60	49000	600	0.2	38.0		5.00	/		
119	11/12/91	14981	High Temp	17.50	46	21	7	3	15	10.60	1.8	350/	15.0	3	0.85	3.50	42000	980	0.3	38.0		5.00	/		CIRC PRIOR TO POOH.
119	11/12/91	14981	High Temp	17.60	50	22	10	4	17	10.60	1.8	350/	18.0	4	0.90	3.20	44000	880	0.3	38.0		5.00	/		POOH. FOUND STRING PARTED AT TOP STAB
120	11/13/91	14981	High Temp	17.60	52	22	13	6	25	9.80	1.8	350/	18.0	4	0.65	3.20	42000	920	0.2	38.0		5.00	/		CIRC PRIOR TO ENTER OVER FISH.
120	11/13/91	14981	High Temp	17.60	53	22	14	6	27	9.80	1.8	350/	18.0	4	0.60	3.10	42000	960	0.2	38.0		5.00	/		RECOVER FISH.
121	11/14/91	14981	High Temp	17.60	62	23	16	17	37	10.30	1.9	350/	19.0	4	0.52	2.90	37000	880	0.3	37.0		7.50	/		
121	11/14/91	15005	High Temp	17.60	108	17	34	23	52	9.60	2.2	350/	22.0	4	0.33	2.60	40000	1140	0.2	38.0		8.50	/		BOTTOMS UP.
121	11/14/91	15060	High Temp	17.60	52	28	12	9	24	9.40	1.8	350/	20.0	4	0.26	2.50	35000	880	0.3	37.0		7.50	/		
122	11/15/91	15320	High Temp	17.60	51	28	7	3	9	8.90	1.9	350/	39.0	5	0.45	2.70	46000	960	0.1	36.0		7.50	/		
122	11/15/91	15390	High Temp	17.60	49	26	5	3	7	8.60	1.9	350/	9.0	4	0.30	2.90	50000	880	0.2	36.0		7.50	/		
122	11/15/91	15480	High Temp	17.60	51	31	8	3	5	8.60	1.6	350/	8.0	4	0.30	2.80	51000	960	0.2	36.0		6.70	/		
122	11/15/91	15502	High Temp	17.70	95	45	22	3	6	8.60	1.6	350/	16.0	4	0.30	2.80	46000	880	0.1	37.0		6.70	/		TRIPPING TO CHANGE BIT & P/U MWD & TURB.
123	11/16/91	15587	High Temp	17.60	66	44	12	3	5	8.40	1.5	350/	18.0	3	0.40	2.70	52000	880	0.1	36.0		7.50	/		
123	11/16/91	15650	High Temp	17.60	60	47	12	3	5	8.40	1.5	350/	14.0	3	0.40	3.30	47000	1040	0.1	36.0		6.50	/		RUN CENTRIFUGE TO REMOVE SAND & FINES
123	11/16/91	15695	High Temp	17.60	61	46	10	3	5	6.25	1.5	350/	15.0	3	0.20	2.70	45000	1160	0.1	37.0		8.30	/		
124	11/17/91	15915	High Temp	17.60	63	44	11	3	3	8.20	1.5	350/	15.0	3	0.20	2.90	42000	1040	0.1	36.0		6.30	/		
124	11/17/91	16050	High Temp	17.60	61	48	12	3	4	8.00	1.4	350/	12.0	3		2.60	39000	960	0.1	37.0		6.30	/		
125	11/18/91	16305	High Temp	17.60	68	53	15	3	4	8.00	1.4	350/	12.0	3		2.60	40000	880		37.0		7.00	/		

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
125	11/18/91	16477	High Temp	17.60	66	51	14	3	4	8.00	1.3	350/	13.0	3		2.60	42000	1120		38.0		6.70	/		
126	11/19/91	16477	High Temp	17.60	112	72	25	4	6	8.00	1.3	350/	13.0	2		2.70	42000	800		37.0		6.50	/		
127	11/20/91	16477	High Temp	17.60	111	55	25	4	7	8.40	1.5	350/	14.0	2		2.00	37000	900		32.0		6.00	/		
128	11/21/91	16477	High Temp	17.60	98	62	25	5	8	8.60	1.6	360/	15.0	3		2.40	35000	1100		38.0		6.50	/		
129	11/22/91	16477	High Temp	17.60	110	52	23	5	7	8.10	1.5	350/	13.0	3		2.70	35000			37.0		6.50	/		
130	11/23/91	16477	High Temp	17.60	128	54	22	5	7	8.10	1.5	350/	14.0	3		2.80	34000			38.0		7.00	/		
131	11/24/91	16477	High Temp	17.60	87	50	20	4	6	8.15	1.6	350/	16.0	3		3.00	34000	1200		39.0		5.00	/		
132	11/25/91	16477	High Temp	17.60	85	50	20	4	6	8.15	1.6	350/	16.0	3		3.00	34000	1200		39.0		5.00	/		
133	11/26/91	16477	High Temp	17.60	60	54	24	4	6	8.10	1.5	350/	16.0	1	0.00	8.00	34000	1200		39.0			/		
134	11/27/91	16477	High Temp	17.60	65	45	10	3	4	7.80	2.1	350/	19.0	1			28000	720		39.0		6.20	/		
134	11/27/91	16477	High Temp	17.60	75	55	14	3	4	7.80	2.1	350/	20.0	1			30000	800		39.0		6.50	/		
134	11/27/91	16477	High Temp	17.60	66	44	12	3	4	7.90	1.8	350/	20.0	1			32000	680		39.0		6.20	/		
135	11/28/91	16477	High Temp	17.60	72	51	15	4	6	8.10	1.6	350/	18.5	1		2.80	30000	800		36.0		7.50	/		
135	11/28/91	16477	High Temp	17.60	78	51	17	4	6	8.00	1.8	350/	18.0	1		2.50	27000	880		36.0		7.00	/		
135	11/28/91	16477	High Temp	17.60	90	61	28	4	6	7.80	1.9	350/	19.0	1		2.00	29000	800		38.0		7.00	/		
136	11/29/91	16477	High Temp	17.60	75	57	22	5	7	7.90	1.8	350/	18.0	1		2.50	28000	800		38.0		7.00	/		
136	11/29/91	16477	High Temp	17.60	78	56	20	4	5	7.80	1.7	350/	18.0	1		2.10	28000	800		38.0		7.00	/		
136	11/29/91	16477	High Temp	17.60	78	44	17	3	5	7.80	1.8	350/	18.0	1		2.00	28000	800		38.0		7.00	/		
137	11/30/91	16477	High Temp	17.60	60	37	14	3	4	7.90	1.7	350/	17.0	1		2.00	28000	760		38.0		7.00	/		
138	12/01/91	16477	High Temp	17.60	68	40	10	3	5	7.60	1.9	350/	19.0	1		2.10	27000	680		36.0		7.00	/		
138	12/01/91	16477	High Temp	17.60	57	36	9	3	4	9.30	2.0	350/	19.0	1	0.10	2.00	29000	880		36.0		7.00	/		
139	12/02/91	16477	High Temp	17.60	59	35	11	4	5	7.40	1.9	350/	19.0	1		2.00	29000	800		36.0		7.00	/		TODAYS MUDCOST IS INVENTORY CORRECTION.
140	12/03/91	16477	High Temp	17.60	57	36	11	4	5	7.50	1.9	350/	19.0	1		2.10	28000	780		36.0		7.00	/		
140	12/03/91	16477	High Temp	17.60	64	36	10	3	6	10.90	2.1	350/	21.0	1	0.55	2.20	29000	980		36.0		7.00	/		
141	12/04/91	16477	High Temp	17.60	54	34	12	3	4	10.80	1.9	350/	30.0	1	0.50	2.30	29000	1000		36.0		7.00	/		

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
142	12/05/91	16477	High Temp	17.60	61	36	11	4	5	10.60	2.0	350/	22.0	1	0.40	2.10	28000	880		36.0		7.50	/		
143	12/06/91	16477	High Temp	17.60	59	36	10	4	5	10.40	2.4	350/	24.0	1	0.40	1.90	27000	1020		36.0		7.50	/		VOLUME CORRECTION.
144	12/07/91	16477	High Temp	17.60	62	34	12	3	4	10.60	2.8	350/	24.0	1	0.60	2.20	27000	1040		36.0		7.50	/		
145	12/08/91	16477	High Temp	17.60	61	36	11	4	5	10.70	2.8	350/	24.0	2	0.60	2.20	26000	1040		36.0		7.50	/		
146	12/09/91	16477	High Temp	17.60	61	37	11	4	6	10.70	2.9	350/	25.0	2	0.50	2.10	26000	1040		36.0		7.50	/		
146	12/09/91	16477	High Temp	17.60	64	32	10	3	21	11.20	4.4	350/	46.0	2	0.70	2.60	26000	1100		37.0		6.00	/		AT 2200 HRS:CMT CONT,BTM UP.START CENT.F
147	12/10/91	16477	High Temp	17.50	71	39	14	6	54	9.40	3.1	350/	37.0	4	0.10	0.70	30000	1300		37.0		6.30	/		
147	12/10/91	16487	High Temp	17.50	63	40	13	5	19	9.40	3.6	350/	34.0	4	0.20	0.70	28000	960		37.0		5.00	/		
148	12/11/91	16487	High Temp	17.50	64	39	14	4	19	9.30	3.6	350/	34.0	4	0.20	0.60	28000	980		37.0		5.00	/		
149	12/12/91	16487	High Temp	17.50	59	35	8	3	11	8.30	2.2	350/	25.0	4		0.15	24000	860		36.0		5.00	/		
150	12/13/91	16531	High Temp	17.00	60	35	7	3	5	9.20	2.2	350/	26.0	4	0.02	0.50	24000	780		33.0		6.50	/		CUT MUDWT FROM 17.5 PPG.
150	12/13/91	16569	High Temp	16.50	64	36	8	3	4	9.10	2.1	350/	30.0	4	0.09	0.60	32000	720		32.0		7.00	/		
150	12/13/91	16633	High Temp	16.50	65	36	10	4	5	9.10	2.0	350/	16.0	4	0.08	0.60	34000	680		32.0		7.00	/		
151	12/14/91	16660	High Temp	16.50	57	37	8	2	4	8.70	1.6	350/	14.0	3	0.02	0.36	30000	800		30.0		6.50	/		
151	12/14/91	16680	High Temp	16.50	62	37	9	3	4	8.70	1.8	350/	16.0	4	0.10	0.45	31000	720		30.0		6.50	/		
151	12/14/91	16753	High Temp	16.50	66	39	10	3	4	8.80	1.6	350/	14.0	4	0.02	0.48	39000	440		30.0		6.00	/		
152	12/15/91	16770	High Temp	16.50	63	43	11	3	4	9.00	1.4	350/	13.0	3	0.05	0.51	38000	840		30.0		6.00	/		
152	12/15/91	16780	High Temp	16.50	76	51	13	4	6	8.90	1.4	350/	13.0	3	0.05	0.50	39000	880		31.0		5.50	/		
153	12/16/91	16782	High Temp	16.50	76	38	12	3	5	8.80	1.4	350/	16.0	3	0.02	0.41	37000	820		30.0		5.80	/		
153	12/16/91	16814	High Temp	16.50	73	43	11	4	5	8.90	1.4	350/	16.0	3	0.03	0.54	38000	400		31.0		5.30	/		
153	12/16/91	16846	High Temp	16.50	65	39	8	4	5	8.70	1.4	350/	15.0	3	0.02	0.50	37000	380		31.0		5.50	/		
154	12/17/91	16874	High Temp	16.50	63	38	9	3	4	8.80	1.3	350/	16.0	3	0.01	0.43	35000	780		30.0		5.30	/		
154	12/17/91	16902	High Temp	16.50	64	40	10	4	5	8.80	1.2	350/	14.0	3	0.01	0.39	35000	760		30.0		5.30	/		
154	12/17/91	16990	High Temp	16.50	68	43	13	4	5	8.60	1.1	350/	12.0	2	0.02	0.49	36000	440		30.0		5.00	/		
155	12/18/91	17025	High Temp	16.50	65	40	12	4	5	8.50	1.2	350/	13.0	3	0.01	0.45	36000	720		30.0		5.00	/		

Well Name: NW TOR 2/4-17 | PHILLIPS PETROLEUM COMPANY | PAGE 14

API NUMBER: NO | FIELD: NW TOR | DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
155	12/18/91	17060	High Temp	16.50	66	39	12	4	6	8.60	1.1	350/	13.0	2	0.02	0.40	36000	740		31.0		5.00	/		
155	12/18/91	17131	High Temp	16.50	63	38	14	4	7	8.40	1.4	350/	14.0	2		0.39	36000	620		31.0		5.00	/		
156	12/19/91	17155	High Temp	16.50	62	38	11	3	6	8.50	1.6	350/	12.0	2	0.01	0.38	36000	640		31.0		6.50	/		
156	12/19/91	17175	High Temp	16.50	62	34	11	4	6	8.40	1.4	350/	12.0	2	0.01	0.35	36000	760		31.0		6.50	/		
156	12/19/91	17246	High Temp	16.50	59	39	12	4	8	8.25	1.3	350/	13.0	2		0.60	38000	600		32.0		6.00	/		
157	12/20/91	17252	High Temp	16.50	62	35	11	4	12	8.30	1.2	350/	13.0	2	0.01	0.39	39000	760		31.0		6.30	/		
158	12/21/91	17252	High Temp	16.50	78	37	17	4	16	8.25	1.4	350/	14.0	2		0.50	38000	640		32.0		6.00	/		RUNNING SCHLUMBERGER LOGS
159	12/22/91	17252	High Temp	16.50	74	38	16	4	16	8.30	1.2	350/	14.0	2	0.01	0.50	36000	620		33.0		6.00	/		LOGGING
160	12/23/91	17252	High Temp	16.50	70	39	12	5	7	8.20	1.3	350/	14.0	2		0.50	38000	680		33.0		6.00	/		FISHING.RIH TO RETRIEVE LOST "CST"
161	12/24/91	17252	High Temp	16.50	61	38	12	5	11	8.10	1.0	350/	13.0	2		0.50	36000	600		33.0		6.00	/		
161	12/24/91	17252	High Temp	16.50	60	36	15	5	12	8.10	1.2	350/	13.0	2		0.40	37000	600		33.0		6.00	/		
162	12/25/91	17252	High Temp	16.50	60	32	10	3	10	8.10	1.4	350/	14.0	2		0.40	36000	640		30.0		6.00	/		
163	12/26/91	17252	High Temp	16.50	62	36	12	4	10	8.00	1.4	350/	14.0	2		0.50	36000	640		30.0		6.00	/		
164	12/27/91	17252	High Temp	16.60	85	36	21	10	23	10.50	2.4	350/	40.0	4									/		
164	12/27/91	17252	High Temp	16.50	60	32	11	4	10	9.00	1.6	350/	15.0	2	0.20	1.50	38000	760		30.0		5.00	/		
165	12/28/91	17252	High Temp	16.50	74	29	13	6	18	9.00	1.6	350/	24.0	3	0.20	1.60	39000	760		30.0		5.00	/		
166	12/29/91	17252	High Temp	16.50	78	31	13	7	19	9.00	1.6	350/	25.0	3	0.20	1.40	37000	720		30.0		5.00	/		
167	12/30/91	17252	High Temp	16.50	75	34	13	6	19	9.00	1.6	350/	28.0	3	0.20	1.60	36000	600		30.5		6.00	/		
168	12/31/91	17252	High Temp	16.50	78	32	16	7	16	9.00	1.6	350/	25.0	3	0.20	1.60	36000	800		30.0		6.00	/		
169	01/01/92	16280	High Temp	16.50	80	34	14	6	20			/											/		
169	01/01/92	16280	High Temp	17.20	74	43	11	3	11	8.40	1.7	350/	13.0	2	0.15	1.30	36000	1080		32.0		7.00	/		
170	01/02/92	16280	High Temp	17.20	77	42	14	4	14	8.60	1.6	350/	14.0	2	0.20	1.50	36000	960		32.0		7.50	/		
171	01/03/92	16280	High Temp	17.20	81	40	12	5	22	8.30	1.3	350/	13.0	2	0.02	1.30	37000	800		33.0		7.50	/		
172	01/04/92	16280	High Temp	17.20	81	41	11	5	21	8.30	1.3	350/	13.0	2	0.02	1.40	37000	800		33.0		7.50	/		
173	01/05/92	16280	High Temp	17.20	75	40	9	4	15	8.30	1.4	350/	14.0	2	0.02	1.30	36000	800		32.0		7.50	/		

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
174	01/06/92	14834	High Temp	17.20	96	47	22	7	24	7.90	1.4	350/	14.0	2		0.90	35000	680		32.0		7.50	/		
175	01/07/92	17252	High Temp	17.20	63	36	10	4	16	7.70	1.5	350/	15.0	2		1.30	32000	720		32.0		7.50	/		
176	01/08/92	17252	High Temp	17.20	62	35	12	4	15	7.60	1.5	350/	15.0	2		1.30	32000	720		32.0		7.50	/		
177	01/09/92	17252	High Temp	17.20	64	35	13	4	16	7.60	1.4	350/	15.0	1		1.30	32000	640		32.0		7.60	/		
178	01/10/92	17252	High Temp	17.70	66	37	13	4	17	8.20	1.5	350/	16.0	1	0.10	1.60	32000	680		33.0		7.30	/		
179	01/11/92	17252	High Temp	17.70	65	36	14	5	20	8.20	1.5	350/	16.0	2	0.10	1.60	33000	680		33.0		7.30	/		
180	01/12/92	14565	High Temp	17.70	74	38	10	5	20	8.20	1.5	350/	14.0	1	0.02	1.40	33000	680		34.0		7.50	/		
181	01/13/92	14565	High Temp	17.70	76	37	14	5	21	8.20	1.5	350/	14.0	2	0.01	1.30	34000	680		34.0		7.50	/		
182	01/14/92	14565	High Temp	17.70	68	38	11	5	19	8.00	1.4	350/	14.0	2	0.01	1.30	34000	680		34.0		7.50	/		BACKLOADED:49 KEMSEAL.30 SODA ASH .
183	01/15/92	14565	High Temp	17.70	54	30	6	4	11	7.70	1.8	350/	19.0	1	0.01	0.90	29000	680		35.0		7.50	/		
184	01/16/92	14565	High Temp	17.70	58	31	9	5	13	7.70	1.6	350/	17.0	1		0.80	29000	680		35.0		7.50	/		
185	01/17/92	14565	High Temp	17.70	56	31	8	5	13	7.60	1.6	350/	17.0	1	0.00	0.80	29000	680		35.0		7.50	/		FIN.PITS:193 BBL 19.5 PPG. 207 BBL 18.5
186	01/18/92	14565	High Temp	17.70	51	31	8	4	12	7.20	1.8	350/	15.0	1		1.80	33000	720		36.0		7.50	/		
187	01/19/92	14565	High Temp	17.70	55	31	10	5	13	7.90	1.6	350/	15.0	1	0.20	2.00	33000	720		36.0		7.70	/		
188	01/20/92	14565	High Temp	17.70	54	32	7	4	12	7.60	1.7	350/	15.0	1		0.18	33000	720		36.0		7.50	/		
189	01/21/92	14552	High Temp	17.90	57	32	11	4	20	7.60	3.0	350/	18.0	3		0.15	35000	800		36.0		7.00	/		WELL ON DST #2.
190	01/22/92	17252	High Temp	17.70	50	31	8	3	18	7.70	3.0	350/	14.0	2		1.70	34000	800		36.0		7.00	/		DST #2.
191	01/23/92	17252	High Temp	17.70	57	31	13	4	18	7.60	0.0	350/	15.0	4		1.60	33000	720		36.0		6.00	/		DST #2
192	01/24/92	17252	High Temp	17.70	53	32	10	4	19	7.60		350/	15.0	4		1.70	34000	720		36.0		7.00	/		DST #2
193	01/25/92	17252	High Temp	17.70	58	31	13	3	18	7.30	2.2	350/	16.0	4		1.20	30000	840		36.0		6.00	/0		POOH WITH DST #2.
194	01/26/92	14175	High Temp	17.70	58	32	12	3	17	7.30	2.2	350/	17.0	4		1.60	30000	640		36.0		6.00	/		OOH W/DST #2. PIPE PARTED AT PACKER.
195	01/27/92	14141	High Temp	17.70	63	33	14	3	16	7.20	2.1	350/	17.0	4		1.70	30000	640		36.0		6.00	/		DRESS OFF TOF AT 14,141'.
196	01/28/92	14141	High Temp	17.70	55	31	14	3	15	7.10	2.0	350/	17.0	4		1.20	31000	640		36.5		6.00	/		RUN CMT STINGER & PLUG BACK AT 13,000'.

Well Name: NW TOR 2/4-17
API NUMBER: NO
FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
197	01/29/92	12359	High Temp	17.70	76	31	21	15	45	8.50	6.0	350/	32.0	6	0.20	1.10	31000	720		37.0		6.00	/		DRESS OFF CMT PLUG AT 12,359'.
198	01/30/92	12359	High Temp	17.70	64	32	18	15	50	8.80	2.6	350/	30.0	6	0.10	0.80	37000	240		37.0		5.00	/		CUT 7" LINER AT 6,000'.
199	01/31/92	12359	High Temp	17.70	68	33	16	14	50	8.90	2.6	350/	50.0	6			26000	280		37.0		5.00	/		RECOVER 7" LINER.
200	02/01/92	7530	High Temp	17.70	70	33	16	16	54	8.90	2.6	350/	50.0	6	0.10	0.70	28000	240		37.0		5.00	/		CUTTING & RETRIEVING 7" LINER.
201	02/02/92	7530	High Temp	17.70	68	32	16	14	50	8.80	2.7	350/	50.0	6	0.10	0.80	26000	280		37.0		5.00	/		RETRIEVING 7" TIE BACK LINER
202	02/03/92	14141	High Temp	17.70	70	32	17	15	50	8.80	2.7	350/	50.0	6	0.10	0.70	27000	280		37.0		5.00	/		RETRIEVING 7" LINER
203	02/04/92	14141	High Temp	17.70	70	31	14	14	48	8.30	2.8	350/	50.0	6	0.00	0.60	26000	280		37.0		5.00	/		
204	02/05/92	14141	High Temp	17.70	71	32	12	13	45	8.30	2.7	350/	50.0	6		0.60	26000	280		37.0		5.00	/		
205	02/06/92	14141	Polymer	17.70	63	33	13	14	47	8.30	2.8	350/	50.0	8		0.40	25000	320		37.0		5.00	/		
206	02/07/92	12550	High Temp	17.70	53	34	15	13	44	8.60	3.0	350/	50.0	8	0.08	0.50	24000	440		38.0		5.00	/		
206	02/07/92	12636	High Temp	17.70	62	31	14	12	43	8.40	3.0	350/	50.0	8		0.38	24000	380		38.0		3.50	/		
207	02/08/92	12923	High Temp	17.70	63	36	16	14	45	8.30	3.2	350/	50.0	8		0.26	24000	360		38.0		3.00	/		
207	02/08/92	14131	High Temp	17.70	66	37	17	18	50	8.30	3.4	350/	50.0	8		0.24	23000	340		37.0		3.00	/		
208	02/09/92	14157	High Temp	17.70	17	35	17	16	47	8.40	3.6	350/	50.0	8		0.24	23000	320		37.0		3.00	/		
209	02/10/92	14280	High Temp	17.70	72	36	16	15	46	8.30	3.6	350/	50.0	8		0.20	22000	340		37.0		4.00	/		
209	02/10/92	14280	High Temp	17.70	69	36	16	16	47	8.20	3.6	350/	50.0	8		0.18	22000	360		37.0		3.50	/		
210	02/11/92	14290	High Temp	17.70	55	30	18	15	40	8.00	5.8	500/	50.0	4		0.02	16000	240		36.0		2.50	/		
210	02/11/92	14290	High Temp	17.70	66	33	25	22	48	8.10	6.2	350/	50.0	4		0.10	15000	300		37.0		3.00	/		
210	02/11/92	7000	High Temp	17.70	46	23	9	6	24	7.90	6.6	350/	50.0	4			16000	320		36.0		3.50	/		
211	02/12/92	14280	High Temp	17.70	54	29	14	9	29	8.00	7.0	350/	50.0	5		0.06	18000	350		36.0		3.50	/		
212	02/13/92	14291	High Temp	17.70	49	31	15	10	31	8.10	7.2	350/	50.0	5		0.05	18000	340		36.0		3.50	/		
213	02/14/92	14180	High Temp	17.70	48	30	16	11	33	8.10	7.0	350/	50.0	5		0.04	18000	320		36.0		3.50	/		
214	02/15/92	14565	High Temp	17.70	50	28	13	9	22	8.30	7.2	350/	50.0	6		0.08	17000	400		36.0		3.50	/		ADD IRON SPONGE T/ACTIVE EQUIV T/4.1 PPB

Well Name: NW TOR 2/4-17
API NUMBER: NO FIELD: NW TOR

PHILLIPS PETROLEUM COMPANY
DRILLING MUD RECAP

REPT NO	DATE	DEPTH	TYPE	MW	VIS	PV	YP	GELS 10S	GELS 10M	PH	API WL	HTHP TEMP	HTHP FL	FLT CKE	PF	MF	CL	CA	EXC LIME	S'LDS TOTAL	OIL %	MBT	O/W RATIO	ES	COMMENTS
215	02/16/92	13945	High Temp	17.70	46	31	15	11	21	8.60	7.2	350/	50.0	6	0.02	0.10	19000	480		36.0		3.50	/		
216	02/17/92	13909	High Temp	17.70	48	33	16	12	24	8.50	7.4	350/	50.0	6	0.01	0.08	19000	440		36.0		3.50	/		
217	02/18/92	8300	High Temp	17.70	47	32	14	11	23	8.80	7.6	350/	50.0	6	0.20	0.42	20000	510		36.0		3.50	/		"LOST" 265 BBLS MUD BELOW CMT PLUG # 3.
218	02/19/92	7800	High Temp	15.00	41	20	8	4	6	7.40	9.0	350/	50.0	7			19000	480		27.0		2.00	/		
219	02/20/92	6350	High Temp	15.00	38	14	10	4	13	9.50		/						600					/		CORRECTIONS ON USAGE FOR BENTONITE.
220	02/21/92	550	High Temp	15.00		14	10	4	13	10.00		/											/		
221	02/22/92											/											/		
222	02/23/92											/											/		
223	02/24/92											/											/		
224	02/25/92											/											/		
225	02/26/92											/											/		
226	02/27/92											/											/		
227	02/28/92											/											/		
228	02/29/92											/											/		
229	03/01/92											/											/		
230	03/02/92											/											/		
231	03/03/92											/											/		
232	03/04/92											/											/		

Schlumberger GECO-PRAKLA

GEOLAB NOR

Geochemical Report for

Well NOCS 2/4-17

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Chapter 1

INTRODUCTION

1.1 General Comments

The organic geochemical study for NOCS 2/4-17 was carried on behalf of Phillips Petroleum Norway, with emphasis on detailed geochemical analyses of potential source rocks as well as migrated hydrocarbons. The well NOCS 2/4-17 is situated in the 2/4 block to the NW of the Tor Field, located at 56°41'02.6"N, 03°13'45.2"E, in the Central Trough. The well was drilled to a total depth of 17252 ft after sidetracking was carried out. A total of approximately 700 canned samples were sent by Phillips Petroleum Company Norway, 6 core chip samples, one oil sample (DST 2) and two gas samples (DST 1 and DST 2) covering the interval from 10920 ft to 17250 ft A total of 307 samples were selected, including 301 cuttings samples, for washing and lithologic description. Selection of samples for screening analyses was based on taking the samples at fairly equidistant depth intervals in the entire sample interval. All follow up analyses were based on the Rock-Eval and TOC data. Cuttings, core chips and one drill stem test sample (DST 2) were selected for the detailed follow up analytical program.

The report is presented chapter and section wise, in a chronological order of analyses carried out, beginning with lithologic descriptions, screening analyses and followed by the detailed follow-up analyses. Within each section the results are discussed in a stratigraphic context (top to bottom). The aromatic hydrocarbon GC and GC-MS analyses, however, are presented as potential source rocks and migrated hydrocarbons.

1.2 Analytical Program

In accordance with the contract, sample availability and the screening analyses results, the following analytical program was executed for well NOCS 2/4-17 in the section from 10920 ft. to 17250 ft. (TD):

Analysis type	No of samples	Figures	Tables
Washing	301		
Lithology description	307	1	1
Rock-Eval pyrolysis	148	2,3,4	2a-b
Thermal extraction GC (GHM, S_1)	58	5a-h	
Pyrolysis GC (GHM, S_2)	58	6a-k,7	3
Gas analyses	2		4
Soxhlet Extraction of organic matter	12		
Whole oil GC	1		
MPLC/HPLC separation	13		5a-d
Saturated hydrocarbon GC	13	8a-e	6
Aromatic hydrocarbon GC	13	9a-i	7
Vitrinite reflectance	11	10	8
Visual kerogen microscopy	11	11	9
GC - MS of saturated HC	6	12a-j	10a-d

All the cuttings samples were supplied by Phillips Petroleum Norway as wet canned samples and core chip samples, and the stratigraphy was also supplied by the client. The stratigraphic informations in this report are based on the information tops contained therein.

Appendix 1

Tables

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
10920.00							0001
		50	Sh/Clst		gy brn to brn gy, pyr, mic, lam		0001-1L
		30	Sh/Clst		gn gy to lt gn gy		0001-2L
		10	Sltst		dsk y gn		0001-3L
		10	Ca		w, chk		0001-4L
		tr	Cont		prp		0001-5L
		tr	Cont		blk, Coal-ad		0001-6L
10940.00							0003
	0.06	80	Ca		w, st, chk, trbofgs		0003-1L
		10	Sh/Clst		lt gn gy		0003-2L
		10	Sh/Clst		gy brn to lt gn gy		0003-3L
		tr	Marl		lt ol gy		0003-4L
		tr	Cont		prp		0003-5L
10960.00							0005
		85	Ca		w to lt gy w, st, chk, trbofgs		0005-1L
		5	Sh/Clst		gy brn to brn gy, mic, st		0005-2L
		5	Sh/Clst		lt bl gn		0005-3L
		5	Sh/Clst		m gy to drk gy, carb, st		0005-4L
10980.00							0007
		95	Ca		w to lt pi, chk, trbofgs		0007-1L
		5	Sh/Clst		gn gy to lt gn gy to brn gy to gy brn		0007-2L
		tr	Sh/Clst		drk gy		0007-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
11010.00								0145
			95	Ca		: w to lt pi, chk, trbofgs		0145-1L
			5	Sh/Clst		: lt gy to drk gy to lt gn gy		0145-2L
			tr	Sh/Clst		: gy brn		0145-3L
11020.00								0010
		0.01	95	Ca		: w to lt pi, pyr, fos, st, chk, trbofgs		0010-1L
			5	Sh/Clst		: gn gy to lt brn gy, mic		0010-2L
			tr	Sh/Clst		: m gy		0010-3L
			tr	Cont		: prp		0010-4L
11050.00								0012
			90	Ca		: w to lt pi, fos, st, chk, trbofgs		0012-1L
			5	Sh/Clst		: m gy to brn gy to gy brn, slt, mic		0012-2L
			5	Sh/Clst		: gy gn to lt gy gn		0012-3L
			tr	Cont		: prp		0012-4L
11080.00								0013
			70	Ca		: w to lt pi, cly, st, chk, trbofgs		0013-1L
			15	Sh/Clst		: brn gy to gy brn, mic		0013-2L
			15	Sh/Clst		: lt gy to m gy to gn gy, mic		0013-3L
			tr	Chert		: lt gy to m gy		0013-4L
11110.00								0014
		0.04	95	Ca		: w to lt pi, cly, st, chk, trbofgs		0014-1L
			5	Sh/Clst		: gn gy to lt ol gy to drk gy, mic		0014-2L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
11130.00								0015
			90	Ca	:	w to lt pi, st, chk, trbofgs		0015-1L
			10	Sh/Clst	:	brn gy to gn gy to m gy, mic		0015-2L
			tr	Sh/Clst	:	m gy to drk gy		0015-3L
11150.00								0017
			85	Ca	:	w to lt pi, st, chk, trbofgs		0017-1L
			10	Sh/Clst	:	lt gy to brn gy to gn gy to gy brn, mic		0017-2L
			5	Cont	:	blk, Mica-ad		0017-3L
			tr	Cont	:	bar		0017-4L
11170.00								0018
			80	Ca	:	w to lt pi, st, chk, trbofgs		0018-1L
			15	Sh/Clst	:	m gy to gn gy, mic		0018-2L
			5	Cont	:	Mica-ad		0018-3L
			tr	Cont	:	bar		0018-4L
			tr	Cont	:	prp		0018-5L
			tr	Sh/Clst	:	gy brn, slt, mic		0018-6L
11190.00								0019
		0.18	95	Ca	:	w to lt pi, chk, trbofgs		0019-1L
			5	Sh/Clst	:	m gy to lt gy to gn gy, mic		0019-2L
			tr	Cont	:	blk, Mica-ad		0019-3L
			tr	Cont	:	bar		0019-4L
11210.00								0020
			50	Sh/Clst	:	lt gy to m gy to gn gy		0020-1L
			20	Cont	:	blk, Mica-ad		0020-2L
			20	Ca	:	w to lt pi, chk		0020-3L
			10	Sh/Clst	:	gy brn		0020-4L
			tr	Cont	:	bar		0020-5L
			tr	Cont	:	prp		0020-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
11230.00								0021
			90	Ca		: w to lt pi, cly, st, chk, trbofgs		0021-1L
			5	Sh/Clst		: gn gy to m gy to lt gy		0021-2L
			5	Sh/Clst		: gy brn to lt brn gy, mic		0021-3L
			tr	Cont		: Mica-ad		0021-4L
			tr	Cont		: bar		0021-5L
			tr	Cont		: prp		0021-6L
11260.00								0023
		0.04	100	Ca		: w to lt pi, st, chk, trbofgs		0023-1L
			tr	Sh/Clst		: gn gy to brn gy to lt gy		0023-2L
			tr	Sh/Clst		: gy brn		0023-3L
			tr	Cont		: prp		0023-4L
11280.00								0025
			95	Ca		: w to lt pi, chk, trbofgs		0025-1L
			5	Sh/Clst		: gn gy to lt gy to brn gy		0025-2L
			tr	Sh/Clst		: gy brn		0025-3L
			tr	Cont		: blk, Mica-ad		0025-4L
			tr	Cont		: bar		0025-5L
11300.00								0026
			95	Ca		: w to lt pi, st, chk, trbofgs		0026-1L
			5	Sh/Clst		: gn gy to lt gy to brn gy		0026-2L
			tr	Sh/Clst		: gy brn		0026-3L
			tr	Cont		: blk, Mica-ad		0026-4L
11320.00								0027
			90	Ca		: w to lt pi, st, chk, trbofgs		0027-1L
			5	Sh/Clst		: lt gy to brn gy to drk gy to m bl gy		0027-2L
			5	Sh/Clst		: gy brn		0027-3L
			tr	Cont		: Mica-ad		0027-4L
			tr	Sltst		: gy gn, glauc		0027-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
11340.00								0028
		0.01	95	Ca		: w to lt pi, st, chk, trbofgs		0028-1L
			5	Sh/Clst		: lt gy to gn gy to m bl gy		0028-2L
			tr	Sh/Clst		: gy brn to drk y brn		0028-3L
			tr	Cont		: blk, Mica-ad		0028-4L
			tr	Cont		: prp		0028-5L
11360.00								0030
			95	Ca		: w to lt pi, Coal-ad, chk, trbofgs		0030-1L
			5	Sh/Clst		: lt gy to gn gy to brn gy		0030-2L
			tr	Sh/Clst		: gy brn to m brn		0030-3L
			tr	Cont		: blk, Mica-ad		0030-4L
11380.00								0031
			90	Ca		: w to lt pi, chk, trbofgs		0031-1L
			5	Sh/Clst		: m gy to lt gy to lt gn gy to dsk y gn		0031-2L
			5	Cont		: blk, Mica-ad		0031-3L
			tr	Cont		: prp		0031-4L
			tr	Cont		: bar		0031-5L
11400.00								0032
			95	Ca		: w to lt pi, chk, trbofgs		0032-1L
			5	Sh/Clst		: lt gy to lt gn gy to gn gy to drk gy		0032-2L
			tr	Sh/Clst		: gy brn		0032-3L
			tr	Cont		: Mica-ad		0032-4L
			tr	Cont		: prp		0032-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
11420.00							0034
	0.04	95	Ca		: w to lt pi, st, chk, trbofgs		0034-1L
		5	Sh/Clst		: lt gn gy to gn gy to dsk y gn		0034-2L
		tr	Sh/Clst		: gy brn to drk gy		0034-3L
		tr	Cont		: prp		0034-4L
11440.00							0035
		95	Ca		: w to lt pi, st, chk, trbofgs		0035-1L
		5	Sh/Clst		: gn gy to lt gn gy to lt gy		0035-2L
		tr	Sh/Clst		: gy brn to drk gy		0035-3L
		tr	Cont		: Mica-ad		0035-4L
11460.00							0037
		100	Ca		: w to lt pi, st, chk, trbofgs		0037-1L
		tr	Sh/Clst		: lt gn gy to gn gy		0037-2L
		tr	Sh/Clst		: drk gy		0037-3L
11480.00							0038
		100	Ca		: w to lt pi, chk, trbofgs		0038-1L
		tr	Sh/Clst		: dsk y gn		0038-2L
		tr	Sh/Clst		: drk gy		0038-3L
11510.00							0040
	0.01	100	Ca		: w to lt pi, chk, trbofgs		0040-1L
		tr	Sh/Clst		: drk gy		0040-2L
		tr	Cont		: Mica-ad		0040-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
11550.00								0041
			100	Ca		: w to lt pi, st, chk, trbofgs		0041-1L
			tr	Sh/Clst		: gn gy to m gy		0041-2L
			tr	Sh/Clst		: gy brn to drk gy		0041-3L
			tr	Cont		: Mica-ad		0041-4L
11570.00								0043
			85	Ca		: w to lt pi, st, chk, trbofgs		0043-1L
			10	Sh/Clst		: m gy to lt gn gy to lt gy		0043-2L
			5	Sh/Clst		: gy brn to pl y brn		0043-3L
			tr	Chert		: m gy, hd, ang		0043-4L
			tr	Cont		: Mica-ad		0043-5L
11590.00								0045
	0.01		90	Ca		: w to lt pi, st, chk, trbofgs		0045-1L
			5	Sh/Clst		: lt gn gy to m gy to gn gy		0045-2L
			5	Sh/Clst		: gy brn to pl y brn		0045-3L
			tr	Cont		: Mica-ad		0045-4L
			tr	Cont		: prp		0045-5L
			tr	Cont		: bar		0045-6L
11610.00								0046
			95	Ca		: w to lt pi, st, chk, trbofgs		0046-1L
			5	Sh/Clst		: drk gy to lt gn gy to lt gy		0046-2L
			tr	Sh/Clst		: gy brn		0046-3L
			tr	Cont		: Mica-ad		0046-4L
			tr	Cont		: prp		0046-5L
11630.00								0047
			100	Ca		: w to lt pi, st, chk, trbofgs		0047-1L
			tr	Sh/Clst		: lt gn gy to gn gy to m gy		0047-2L
			tr	Sh/Clst		: gy brn		0047-3L
			tr	Cont		: Mica-ad		0047-4L
			tr	Cont		: prp		0047-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
11660.00							0048
		100	Ca	:	w to lt pi, chk, trbofgs		0048-1L
		tr	Sh/Clst	:	brn gy to lt gn gy		0048-2L
		tr	Cont	:	Mica-ad		0048-3L
		tr	Cont	:	prp		0048-4L
11670.00							0049
	0.06	95	Ca	:	w to lt pi, st, chk, trbofgs		0049-1L
		5	Sh/Clst	:	lt gn gy to gn gy, pyr		0049-2L
		tr	Sh/Clst	:	lt gy brn		0049-3L
		tr	Cont	:	Mica-ad		0049-4L
11690.00							0051
		95	Ca	:	w to lt pi, st, chk, trbofgs		0051-1L
		5	Sh/Clst	:	m gy to drk gy to gn gy, glauc		0051-2L
		tr	Sh/Clst	:	gy brn		0051-3L
		tr	Cont	:	prp		0051-4L
11710.00							0052
		90	Ca	:	w to lt pi, chk, trbofgs		0052-1L
		5	Sh/Clst	:	gn gy to m gy to drk gy		0052-2L
		5	Cont	:	prp		0052-3L
		tr	Cont	:	Mica-ad		0052-4L
11730.00							0053
		95	Ca	:	w to lt pi, st, chk, trbofgs		0053-1L
		5	Sh/Clst	:	m gy to lt gy		0053-2L
		tr	Cont	:	prp		0053-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
11750.00							0054
	0.01	100	Ca		: w to lt pi, chk		0054-1L
		tr	Sh/Clst		: gn gy to m gy		0054-2L
		tr	Cont		: Mica-ad		0054-3L
11780.00							0055
		95	Ca		: w to lt pi, cly, chk, trbofgs		0055-1L
		5	Sh/Clst		: m gy to drk gy to gy blk		0055-2L
		tr	Cont		: Mica-ad		0055-3L
		tr	Cont		: prp		0055-4L
11800.00							0056
		100	Ca		: w to lt pi, st, chk, trbofgs		0056-1L
		tr	Sh/Clst		: gn gy to lt gy to brn gy, glauc		0056-2L
		tr	Cont		: ns		0056-3L
11820.00							0058
	0.01	100	Ca		: w, chk, trbofgs		0058-1L
		tr	Sh/Clst		: m gy		0058-2L
		tr	Cont		: blk, Mica-ad		0058-3L
		tr	Cont		: bar		0058-4L
11850.00							0060
		95	Ca		: w to lt pi, chk, trbofgs		0060-1L
		5	Sh/Clst		: lt gy to drk gy to lt gn gy to brn gy, glauc		0060-2L
		tr	Cont		: Mica-ad		0060-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
11870.00								0061
			100	Ca		: w to lt pi, cly, st, chk, trbofgs		0061-1L
			tr	Sh/Clst		: drk gy to brn gy		0061-2L
			tr	Cont		: prp		0061-3L
11900.00								0063
		0.02	100	Ca		: w to lt pi, st, chk, trbofgs		0063-1L
			tr	Sh/Clst		: m gy		0063-2L
11920.00								0064
			95	Ca		: w, chk		0064-1L
			5	Cont		: blk, Mica-ad		0064-2L
			tr	Sh/Clst		: lt gy to m gy		0064-3L
11940.00								0066
			100	Ca		: w to lt pi, cly, st, chk, trbofgs		0066-1L
			tr	Sh/Clst		: drk gy to gy blk		0066-2L
			tr	Cont		: blk, Mica-ad		0066-3L
			tr	Cont		: bar		0066-4L
11950.00								0067
			95	Ca		: w, chk, trbofgs		0067-1L
			5	Cont		: blk, Mica-ad		0067-2L
11980.00								0069
		0.01	100	Ca		: w to lt pi, cly, chk		0069-1L
			tr	Sh/Clst		: brn gy to drk gy to gn gy		0069-2L
			tr	Cont		: blk, Mica-ad		0069-3L
			tr	Cont		: bar		0069-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
12000.00								0071
			100	Ca		: w to lt pi, chk		0071-1L
			tr	Sh/Clst		: m gy		0071-2L
			tr	Cont		: Mica-ad		0071-3L
12020.00								0073
			100	Ca		: w, st, chk, trbofgs		0073-1L
			tr	Sh/Clst		: m gy		0073-2L
			tr	Cont		: Mica-ad		0073-3L
12040.00								0075
			100	Ca		: w to lt pi, cly, st, chk		0075-1L
			tr	Cont		: Mica-ad		0075-2L
12060.00								0077
		0.03	100	Ca		: w, pyr, cly, chk		0077-1L
			tr	Sh/Clst		: drk gy to m gy		0077-2L
			tr	Cont		: blk, Mica-ad		0077-3L
			tr	Cont		: bar		0077-4L
12080.00								0079
			100	Ca		: w, chk, trbofgs		0079-1L
			tr	Sh/Clst		: lt gn gy to lt brn gy		0079-2L
			tr	Cont		: blk, Mica-ad		0079-3L
12100.00								0081
			100	Ca		: w to m brn, chk, trbofgs		0081-1L
			tr	Sh/Clst		: lt gn gy to brn gy to gy brn		0081-2L
			tr	Cont		: blk, Mica-ad		0081-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
12120.00							0083
		95	Ca		: w to lt gy w, chk, trbofgs		0083-1L
		5	Sh/Clst		: lt gy to lt gn gy to drk gy		0083-2L
		tr	Cont		: blk, Mica-ad		0083-3L
		tr	Sh/Clst		: gy brn		0083-4L
12140.00							0085
	0.05	95	Ca		: w to lt gy w to lt pi, st, chk, trbofgs		0085-1L
		5	Sh/Clst		: lt gn gy to m gy, glauc		0085-2L
		tr	Sh/Clst		: gy brn to drk gy		0085-3L
		tr	Cont		: Mica-ad		0085-4L
12160.00							0087
		95	Ca		: w to lt gy w, st, chk, trbofgs		0087-1L
		5	Sh/Clst		: lt gn gy to gn gy to m gy		0087-2L
		tr	Sh/Clst		: gy brn		0087-3L
		tr	Sh/Clst		: drk gy		0087-4L
		tr	Cont		: Mica-ad		0087-5L
12180.00							0089
		100	Ca		: w to lt pi, chk, trbofgs		0089-1L
		tr	Sh/Clst		: lt gn gy		0089-2L
		tr	Sh/Clst		: gy brn to lt brn gy		0089-3L
		tr	Cont		: Mica-ad		0089-4L
		tr	Cont		: bar		0089-5L
12200.00							0091
		80	Ca		: w to lt pi to lt gy w, chk		0091-1L
		15	Sh/Clst		: gn gy to lt gn gy to drk gy, glauc		0091-2L
		5	Sh/Clst		: gy brn to pl y brn		0091-3L
		tr	Cont		: Mica-ad		0091-4L
		tr	Cont		: prp		0091-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
12220.00								0092
		0.02	90	Ca		: w to lt gy w to lt w, chk, trbofgs		0092-1L
			5	Sh/Clst		: lt gn gy to lt gy to m gy, glauc		0092-2L
			5	Cont		: ns		0092-3L
			tr	Sh/Clst		: drk gy		0092-4L
12250.00								0094
			90	Ca		: lt gy w to lt pi, chk, trbofgs		0094-1L
			5	Sh/Clst		: m gy to drk gy to gy blk		0094-2L
			5	Cont		: ns		0094-3L
			tr	Cont		: prp		0094-4L
12270.00								0096
			95	Ca		: w to lt gy w to lt pi, st, chk, trbofgs		0096-1L
			5	Cont		: ns		0096-2L
			tr	Sh/Clst		: m gy to gn gy		0096-3L
12290.00								0098
		0.12	95	Ca		: w to lt gy w to lt pi, st, chk, trbofgs		0098-1L
			5	Cont		: ns		0098-2L
			tr	Sh/Clst		: m gy to lt gn gy to lt gy		0098-3L
12320.00								0100
			90	Ca		: w, chk, trbofgs		0100-1L
			10	Cont		: ns		0100-2L
			tr	Sh/Clst		: m gy to drk gy		0100-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
12340.00								0101
			90	Ca		: w to lt pi to lt gy w, st, chk, trbofgs		0101-1L
			10	Cont		: ns		0101-2L
			tr	Sh/Clst		: drk gy to lt blk		0101-3L
			tr	Cont		: prp		0101-4L
12360.00								0102
		0.13	95	Ca		: w to lt gy w, st, chk, trbofgs		0102-1L
			5	Cont		: ns		0102-2L
			tr	Sh/Clst		: brn gy to m gy		0102-3L
12380.00								0104
		0.14	95	Ca		: w to lt pi, st, sil, chk, trbofgs		0104-1L
			5	Cont		: ns		0104-2L
			tr	Sh/Clst		: m gy to gn gy		0104-3L
			tr	Cont		: prp		0104-4L
12400.00								0105
		0.14	90	Ca		: w to lt pi, st, chk, trbofgs		0105-1L
			10	Cont		: ns		0105-2L
			tr	Sh/Clst		: drk gy to gn gy		0105-3L
			tr	Cont		: blk, Coal-ad		0105-4L
12410.00							trb	0106
		0.46	75	Ca		: w to lt gy w, st, chk, trbofgs		0106-1L
			20	Cont		: ns		0106-2L
			5	Sh/Clst		: lt gy to brn gy to drk gy		0106-3L
			tr	Cont		: blk, fib		0106-4L
			tr	Cont		: prp		0106-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
12420.00							0107
	0.53	90	Ca	:	w, cly, st, chk, trbofgs		0107-1L
		5	Cont	:	ns		0107-2L
		5	Sh/Clst	:	m gy to brn gy to lt gn gy		0107-3L
		tr	Cont	:	prp		0107-4L
12430.00						trb	0108
	0.24	90	Ca	:	w to lt pi, st, chk, trbofgs		0108-1L
		10	Cont	:	ns		0108-2L
		tr	Sh/Clst	:	lt gy to drk gy		0108-3L
		tr	Cont	:	prp		0108-4L
12440.00							0109
		45	Cont	:	ns		0109-1L
	0.31	40	Ca	:	w to lt pi, chk, trbofgs		0109-2L
		10	Sh/Clst	:	lt gn gy to drk gy to drk gn gy to brn gy, pyr		0109-3L
		5	Cont	:	prp		0109-4L
12450.00						trb	0110
	0.10	80	Ca	:	w to lt gy w, st, chk, trbofgs		0110-1L
		15	Cont	:	ns		0110-2L
		5	Sh/Clst	:	lt gy to m gy to brn gy		0110-3L
12470.00							0111
	0.08	95	Ca	:	w to lt pi, chk		0111-1L
		5	Cont	:	ns		0111-2L
		tr	Sh/Clst	:	drk gy to drk gn gy		0111-3L
		tr	Cont	:	prp		0111-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
12480.00						trb	0112
	0.12	95	Ca		: w to lt pi, st, chk, trbofgs		0112-1L
		5	Cont		: ns		0112-2L
		tr	Cont		: prp		0112-3L
12490.00							0113
	0.12	100	Ca		: lt gy w to lt pi, chk, trbofgs		0113-1L
		tr	Sh/Clst		: m gy to drk gy		0113-2L
		tr	Cont		: ns		0113-3L
12510.00							0115
		100	Ca		: w to lt pi, cly, st, chk, trbofgs		0115-1L
		tr	Cont		: ns		0115-2L
		tr	Sh/Clst		: m gy		0115-3L
12530.00							0117
		90	Ca		: w, st, chk, trbofgs		0117-1L
		10	Cont		: ns		0117-2L
		tr	Cont		: brn blk, fib		0117-3L
12550.00							0119
	0.02	90	Ca		: w to lt gy w, chk, trbofgs		0119-1L
		10	Cont		: ns		0119-2L
		tr	Cont		: brn blk, fib		0119-3L
12570.00							0121
	0.08	70	Ca		: w to lt gy w, chk, trbofgs		0121-1L
		15	Cont		: ns		0121-2L
		10	Sh/Clst		: lt gn gy to m gy		0121-3L
		5	Cont		: brn blk, fib		0121-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
12580.00								0359
		0.17	95	Ca	:	w to lt gy w, cly, st, chk, trbofgs		0359-1L
			5	Cont	:	ns		0359-2L
			tr	Sh/Clst	:	lt gy to m gy, calc, slt		0359-3L
12590.00								0123
			75	Ca	:	w to lt gy w, cly, chk, trbofgs		0123-1L
			20	Cont	:	ns		0123-2L
			5	Cont	:	brn blk, fib		0123-3L
			tr	Sh/Clst	:	m gy to drk gy		0123-4L
12610.00								0124
			95	Ca	:	w, cly, chk, trbofgs		0124-1L
			5	Cont	:	ns		0124-2L
			tr	Sh/Clst	:	drk gy to m gy to gn gy		0124-3L
			tr	Sltst	:	m bl gy, glauc		0124-4L
12630.00								0126
			95	Ca	:	w to lt gy w, st, chk, trbofgs		0126-1L
			5	Cont	:	ns		0126-2L
			tr	Cont	:	brn blk, fib		0126-3L
12640.00								0127
		0.06	95	Ca	:	w to lt gy w, fos, chk, trbofgs		0127-1L
			5	Cont	:	ns		0127-2L
			tr	Sh/Clst	:	brn gy to m gy		0127-3L
			tr	Cont	:	brn blk, fib		0127-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
12660.00								0129
		0.12	85	Ca		: w to lt gy w, cly, st, chk, trbofgs		0129-1L
			15	Cont		: ns		0129-2L
			tr	Sh/Clst		: lt gn gy to gn gy to m gy		0129-3L
			tr	Sh/Clst		: gy brn		0129-4L
			tr	Cont		: brn blk, fib		0129-5L
12680.00								0131
		0.91	90	Ca		: w to lt gy w, cly, chk		0131-1L
			10	Cont		: ns		0131-2L
			tr	Sh/Clst		: m gy to lt gy to brn gy		0131-3L
			tr	Cont		: brn blk, fib		0131-4L
12700.00								0133
			90	Ca		: w to lt gy w, cly, chk, trbofgs		0133-1L
			5	Sh/Clst		: m gy to drk gy to brn gy		0133-2L
			5	Cont		: ns		0133-3L
			tr	Cont		: brn blk, prp		0133-4L
			tr	Cont		: bar		0133-5L
12720.00								0135
		0.12	95	Ca		: w to lt gy w to bl w, cly, st, chk, trbofgs		0135-1L
			5	Cont		: ns		0135-2L
			tr	Sh/Clst		: m gy to brn gy to drk gy		0135-3L
			tr	Cont		: bar		0135-4L
12730.00								0136
			95	Ca		: w to lt gy w to bl w, cly, st, chk, trbofgs		0136-1L
			5	Cont		: ns		0136-2L
			tr	Sh/Clst		: m gy to brn gy to drk gy		0136-3L
			tr	Cont		: bar		0136-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
12740.00								0137
			100	Ca		: w to lt gy w, cly, st, chk, trbofgs		0137-1L
			tr	Sh/Clst		: brn gy to lt gy to m gy, pyr		0137-2L
			tr	Cont		: ns		0137-3L
12760.00								0139
		0.08	85	Ca		: w to lt gy w, cly, chk, trbofgs		0139-1L
			15	Cont		: ns		0139-2L
			tr	Sh/Clst		: m gy to lt gn gy		0139-3L
			tr	Cont		: brn blk, fib		0139-4L
12770.00							trb	0140
		0.19	50	Ca		: w to lt gy, st, chk, trbofgs		0140-1L
			50	Cont		: ns		0140-2L
			tr	Sh/Clst		: brn gy		0140-3L
			tr	Sltst		: gn, glauc		0140-4L
12780.00								0141
		0.17	95	Ca		: w to lt gy w, cly, st, chk, trbofgs		0141-1L
			5	Cont		: ns		0141-2L
			tr	Sh/Clst		: brn gy to lt gn gy		0141-3L
			tr	Cont		: brn blk, fib		0141-4L
12790.00							trb	0142
		0.20	70	Ca		: w to lt gy w, cly, st, chk, trbofgs		0142-1L
			25	Cont		: ns		0142-2L
			5	Sh/Clst		: lt gy to brn gy to drk brn gy		0142-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
12800.00								0143
		0.15	90	Ca		: w to lt gy w, st, chk, trbofgs		0143-1L
			10	Cont		: ns		0143-2L
			tr	Sh/Clst		: m gy to brn gy to lt gy		0143-3L
			tr	Cont		: prp		0143-4L
12810.00								0144
		0.31	100	Ca		: w to lt gy w to lt gn gy, cly, glauc, st, chk, trbofgs		0144-1L
			tr	Sh/Clst		: m gy		0144-2L
			tr	Cont		: ns		0144-3L
12820.00								0146
			85	Ca		: w to lt gy w, cly, st, chk, trbofgs		0146-1L
			15	Cont		: brn, ns		0146-2L
			tr	Sh/Clst		: dsk brn		0146-3L
12840.00								0147
		0.21	80	Ca		: w to lt gy w, cly, st, chk, trbofgs		0147-1L
			20	Cont		: brn, ns		0147-2L
			tr	Sh/Clst		: dsk brn to drk gy		0147-3L
12870.00								0148
		0.34	90	Ca		: w to lt gy w, cly, st, chk, trbofgs		0148-1L
			10	Cont		: brn, ns		0148-2L
			tr	Sh/Clst		: lt gy, calc		0148-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
12900.00								0149
		0.94	75	Ca	:	lt gy w to gy pi, cly, st, chk, trbofgs		0149-1L
			20	Cont	:	brn, ns		0149-2L
			5	Sh/Clst	:	m gy to drk gy, calc		0149-3L
12930.00								0150
		0.36	85	Ca	:	lt gy w to gy pi, cly, st, chk, trbofgs		0150-1L
			15	Cont	:	brn, ns		0150-2L
			tr	Sh/Clst	:	m gy to drk gy, calc		0150-3L
12960.00								0151
		0.81	85	Ca	:	w to lt gy w, cly, st, chk, trbofgs		0151-1L
			15	Cont	:	brn, ns		0151-2L
			tr	Sh/Clst	:	m gy to drk gy, calc		0151-3L
13000.00								0152
		0.90	80	Ca	:	w to lt gy w, cly, st, chk, trbofgs		0152-1L
			20	Cont	:	brn, ns		0152-2L
			tr	Sh/Clst	:	m gy to drk gy, calc		0152-3L
13030.00								0153
		3.60	45	Sh/Clst	:	lt brn gy to m brn gy, pyr, slt, fos		0153-1L
			25	Sh/Clst	:	lt gy to m gy, slt		0153-2L
			15	Ca	:	w, fos, st, chk		0153-3L
			10	Cont	:	brn, ns		0153-4L
			5	Sh/Clst	:	gn gy, glauc		0153-5L
			tr	Cont	:	prp		0153-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
13060.00								0154
		0.77	90	Ca		: lt gy w to lt gy, cly, st, chk, trbofgs		0154-1L
			10	Sh/Clst		: lt gy to brn gy to gy brn, slt		0154-2L
13120.00								0155
		0.72	90	Ca		: lt gy w, cly, st, chk, trbofgs		0155-1L
			10	Sh/Clst		: lt gy to brn gy to gy gn, slt		0155-2L
			tr	Cont		: prp		0155-3L
13160.00								0156
		0.32	90	Ca		: lt gy w, cly, st, chk, trbofgs		0156-1L
			10	Sh/Clst		: lt gy to brn gy to gy gn, slt		0156-2L
			tr	Cont		: Mica-ad		0156-3L
13190.00								0157
		0.29	95	Ca		: lt gy w to lt gy, cly, st, chk, trbofgs		0157-1L
			5	Sh/Clst		: lt gy to brn gy to gy gn, slt		0157-2L
			tr	Cont		: Mica-ad		0157-3L
13230.00								0158
		0.38	100	Ca		: lt gy w to lt gy, cly, st, chk, trbofgs		0158-1L
13270.00								0159
			100	Ca		: lt gy w to lt gy, cly, st, chk, trbofgs		0159-1L
			tr	Sh/Clst		: lt brn gy, slt		0159-2L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
13300.00								0160
		1.12	95	Ca		: lt gy w to lt gy to lt gy pi, cly, st, chk, trbofgs		0160-1L
			5	Sh/Clst		: lt gy to m gy to lt brn gy, slt		0160-2L
13330.00								0161
		0.81	100	Ca		: lt gy w to lt gy to gy pi, cly, st, chk, trbofgs		0161-1L
			tr	Sh/Clst		: lt gy to lt brn gy, slt		0161-2L
13360.00								0162
		0.84	100	Ca		: lt gy w to lt gy to gy pi, cly, st, chk, trbofgs		0162-1L
			tr	Sh/Clst		: lt gy to lt brn gy, slt		0162-2L
13400.00								0163
		0.72	100	Ca		: lt gy w to lt gy to gy pi, cly, st, chk, trbofgs		0163-1L
			tr	Sh/Clst		: lt gy to lt brn gy, slt		0163-2L
13430.00								0164
		0.53	95	Ca		: lt gy w to lt gy to gy pi, st, chk, trbofgs		0164-1L
			5	Sh/Clst		: m gy to gy blk, slt		0164-2L
13460.00								0165
		0.46	95	Ca		: lt gy w to lt gy to gy pi, st, chk, trbofgs		0165-1L
			5	Sh/Clst		: m gy to brn gy, slt		0165-2L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
13490.00								0166
		0.52	95	Ca		: lt gy w to lt gy to gy pi, st, chk, trbofgs		0166-1L
			5	Sh/Clst		: m gy to brn gy to gn gy, slt		0166-2L
13520.00								0167
		0.52	100	Ca		: lt gy w to lt gy to gy pi, st, chk, trbofgs		0167-1L
			tr	Sh/Clst		: m gy to drk brn gy, slt		0167-2L
13550.00								0168
		0.50	95	Ca		: lt gy w to lt gy to gy pi, st, chk, trbofgs		0168-1L
			5	Sh/Clst		: m gy to drk gy to brn gy, slt		0168-2L
13580.00								0169
		0.55	95	Ca		: lt brn gy to lt gy w, st, chk, trbofgs		0169-1L
			5	Sh/Clst		: m gy to drk gy to brn gy, slt		0169-2L
13610.00								0170
		0.55	100	Ca		: gy pi to lt gy w, st, chk, trbofgs		0170-1L
			tr	Sh/Clst		: m gy to lt brn gy, slt		0170-2L
13640.00								0175
		0.60	60	Ca		: lt gy w to lt gy to or gy, cly, st, hd, chk		0175-1L
			20	Sltst		: gy pi, calc, st		0175-2L
			10	Cont		: w, f, bar		0175-3L
			5	Sh/Clst		: lt bl gn, calc		0175-4L
			5	Cont		: prp		0175-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
13660.00						0176
	0.47	90	Ca	: lt gy w to lt gy, cly, st, chk, trbofgs		0176-1L
		5	Cont	: fib		0176-2L
		5	Cont	: prp		0176-3L
13680.00						0177
	0.46	90	Ca	: lt gy w to lt gy, cly, st, chk, trbofgs		0177-1L
		5	Cont	: fib		0177-2L
		5	Cont	: prp		0177-3L
		tr	Sh/Clst	: drk gy, slt		0177-4L
13700.00						0178
	0.39	90	Ca	: lt gy w to lt gy, cly, st, chk, trbofgs		0178-1L
		5	Cont	: fib		0178-2L
		5	Cont	: prp		0178-3L
13720.00						0179
	0.75	90	Ca	: lt gy w to lt gy to m gy, cly, st, chk, trbofgs		0179-1L
		10	Cont	: prp		0179-2L
13730.00						0180
	0.43	95	Ca	: lt gy w to lt gy, cly, st, chk, trbofgs		0180-1L
		5	Cont	: prp		0180-2L
		tr	Cont	: fib		0180-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age	Trb	Sample	Lithology description
13740.00								0181	
			45	Ca				0181-1L	: lt gy w to lt gy, cly, st, chk, trbofgs
			45	Sh/Clst				0181-2L	: gy blk, calc, slt, st
			10	Cont				0181-3L	: prp
			tr	Cont				0181-4L	: fib
13750.00								0182	
			45	Ca				0182-1L	: lt gy w to lt gy, cly, st, chk, trbofgs
		4.26	45	Sh/Clst				0182-2L	: gy blk, calc, slt, st, trbofgs
			10	Cont				0182-3L	: prp
			tr	Cont				0182-4L	: fib
			tr	Sltst				0182-5L	: or gy, calc
13755.00								0183	
		6.58	90	Sh/Clst				0183-1L	: gy blk, calc, slt, st, trbofgs
			5	Ca				0183-2L	: lt gy w to lt gy, chk
			5	Cont				0183-3L	: prp
13760.00								0184	
		7.38	85	Sh/Clst				0184-1L	: gy blk, calc, slt, st, trbofgs
			10	Ca				0184-2L	: w to lt gy w, chk
			5	Cont				0184-3L	: prp
13770.00								0185	
		5.31	90	Sh/Clst				0185-1L	: gy blk, calc, slt, st, trbofgs
			5	Ca				0185-2L	: w to lt gy w, chk
			5	Cont				0185-3L	: prp
			tr	Cont				0185-4L	: w, bar

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
13780.00							0186
	4.21	85	Sh/Clst: gy blk, calc, slt, st, trbofgs				0186-1L
		10	Ca : w to lt gy w, chk				0186-2L
		5	Cont : prp				0186-3L
		tr	Sltst : or gy				0186-4L
13790.00							0187
		90	Sh/Clst: gy blk, calc, slt, st, trbofgs				0187-1L
		5	Ca : w to lt gy w, chk				0187-2L
		5	Cont : prp				0187-3L
		tr	Cont : fib				0187-4L
		tr	Cont : w, bar				0187-5L
13800.00							0188
	5.46	85	Sh/Clst: gy blk, calc, slt, st, trbofgs				0188-1L
		5	Ca : w to lt gy w, chk				0188-2L
		5	Cont : prp				0188-3L
		5	Cont : fib				0188-4L
		tr	Cont : w, bar				0188-5L
13810.00							0189
		85	Sh/Clst: gy blk, calc, slt, st, trbofgs				0189-1L
		10	Cont : prp				0189-2L
		5	Ca : lt gy w to lt gy, st, chk				0189-3L
		tr	Cont : fib				0189-4L
13820.00							0190
		80	Sh/Clst: gy blk, calc, slt, st, trbofgs				0190-1L
		10	Cont : prp				0190-2L
		5	Ca : lt gy w to lt gy, st, chk				0190-3L
		5	Cont : fib				0190-4L
		tr	Cont : w, f, bar				0190-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
13840.00								0191
		4.28	90	Sh/Clst:		gy blk, calc, slt, st, trbofgs		0191-1L
			10	Cont	:	prp		0191-2L
			tr	Cont	:	fib		0191-3L
13860.00								0192
			90	Sh/Clst:		gy blk, calc, slt, st, trbofgs		0192-1L
			5	Cont	:	prp		0192-2L
			5	Ca	:	lt gy w to lt gy, chk		0192-3L
			tr	Cont	:	fib		0192-4L
13880.00								0193
			90	Sh/Clst:		gy blk, calc, slt, st, trbofgs		0193-1L
			5	Cont	:	prp		0193-2L
			5	Ca	:	lt gy w to lt gy, chk		0193-3L
			tr	Cont	:	fib		0193-4L
13900.00								0194
		3.82	90	Sh/Clst:		gy blk, calc, slt, st, trbofgs		0194-1L
			10	Cont	:	prp		0194-2L
			tr	Ca	:	lt gy w to lt gy, chk		0194-3L
			tr	Cont	:	fib		0194-4L
13915.00								0195
			75	Sh/Clst:		gy blk, calc, slt, st, trbofgs		0195-1L
			15	Cont	:	prp		0195-2L
			5	Ca	:	lt gy w to lt gy, chk		0195-3L
			5	Cont	:	fib		0195-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
13930.00							0196
		85	Sh/Clst:		gy blk, calc, slt, st, trbofgs		0196-1L
		10	Cont	:	prp		0196-2L
		5	Ca	:	lt gy w to lt gy, chk		0196-3L
		tr	Cont	:	fib		0196-4L
13945.00							0197
	4.38	80	Sh/Clst:		gy blk, calc, slt, st, trbofgs		0197-1L
		15	Cont	:	prp		0197-2L
		5	Ca	:	lt gy w to lt brn gy, chk		0197-3L
		tr	Cont	:	fib		0197-4L
13965.00							0198
		85	Sh/Clst:		gy blk to dsk y brn, calc, slt, st, trbofgs		0198-1L
		10	Cont	:	prp		0198-2L
		5	Marl	:	gn gy		0198-3L
		tr	Ca	:	lt gy w to lt brn gy, chk		0198-4L
13980.00							0199
		55	Sh/Clst:		dsk brn to gy blk, calc, slt, st, trbofgs		0199-1L
		30	Cont	:	prp		0199-2L
		10	Ca	:	lt gy w to lt brn gy, chk		0199-3L
		5	Marl	:	gn gy		0199-4L
		tr	Cont	:	fib		0199-5L
14000.00							0200
	4.01	65	Sh/Clst:		dsk brn to gy blk, calc, slt, st, trbofgs		0200-1L
		20	Cont	:	prp		0200-2L
		10	Ca	:	lt gy w to lt brn gy, st, chk		0200-3L
		5	Marl	:	lt gy		0200-4L
		tr	Cont	:	fib		0200-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
14020.00								0201
			55	Sh/Clst:		drk gy to gy blk, calc, slt, st, trbofgs		0201-1L
			30	Ca	:	w to lt gy, cly, chk, trbofgs		0201-2L
			15	Cont	:	prp		0201-3L
14030.00								0202
		2.78	65	Sh/Clst:		drk gy to gy blk, calc, slt, st, trbofgs		0202-1L
			25	Cont	:	prp		0202-2L
			10	Ca	:	lt gy to lt gy w		0202-3L
14040.00								0203
			65	Sh/Clst:		drk gy to gy blk, calc, slt, st, trbofgs		0203-1L
			25	Cont	:	prp		0203-2L
			10	Marl	:	m gy		0203-3L
			tr	Ca	:	lt gy w to lt brn gy		0203-4L
14050.00								0204
		2.24	50	Sh/Clst:		drk gy to gy blk, calc, slt, st, trbofgs		0204-1L
			25	Cont	:	w, f, bar		0204-2L
			20	Cont	:	prp		0204-3L
			5	Ca	:	w to lt brn gy		0204-4L
14060.00								0205
			50	Sh/Clst:		drk gy to gy blk, calc, slt, st		0205-1L
			25	Cont	:	prp		0205-2L
			20	Marl	:	m gy		0205-3L
			5	Cont	:	w, f, bar		0205-4L
			tr	Cont	:	fib		0205-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
14070.00							0206
	2.96	55	Sh/Clst:		drk gy to gy blk, calc, slt, st		0206-1L
		20	Ca	:	lt gy w to lt gy, cly, st, chk		0206-2L
		15	Marl	:	m gy		0206-3L
		10	Cont	:	prp		0206-4L
		tr	Cont	:	w		0206-5L
14090.00							0207
	3.00	45	Sh/Clst:		drk gy to gy blk, calc, slt, st		0207-1L
		30	Marl	:	m gy		0207-2L
		20	Cont	:	prp		0207-3L
		5	Ca	:	w, s		0207-4L
		tr	Cont	:	fib		0207-5L
14110.00							0208
	2.91	55	Sh/Clst:		gy blk to blk, calc, slt, st		0208-1L
		25	Cont	:	prp		0208-2L
		15	Marl	:	m gy		0208-3L
		5	Ca	:	w to lt gy, chk		0208-4L
		tr	Cont	:	w, bar		0208-5L
14130.00							0209
		70	Cont	:	ns		0209-1L
		20	Cont	:	Mica-ad		0209-2L
		10	Cont	:	fib		0209-3L
		tr	Sh/Clst:		drk gy, slt		0209-4L
14150.00							0210
		95	Cont	:	ns		0210-1L
		5	Cont	:	Mica-ad		0210-2L
		tr	Cont	:	fib		0210-3L
		tr	Sh/Clst:		drk gy, slt		0210-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC% %	Lithology description				
14170.00						0211
	95	Cont	: ns			0211-1L
	5	Cont	: Mica-ad			0211-2L
	tr	Sh/Clst	: dsk y brn, slt			0211-3L
14190.00						0212
	95	Cont	: ns			0212-1L
	5	Cont	: Mica-ad			0212-2L
	tr	Sh/Clst	: gy blk, slt			0212-3L
	tr	Cont	: w, bar			0212-4L
14210.00						0213
	65	Cont	: ns			0213-1L
	25	Cont	: fib			0213-2L
	10	Cont	: Mica-ad			0213-3L
	tr	Sh/Clst	: gy blk, slt			0213-4L
14227.00						0214
	100	Cont	: fib			0214-1L
14235.00						0215
	100	Cont	: fib			0215-1L
	tr	Sh/Clst	: drk gy to gy blk			0215-2L
14241.00 ccp						0353
2.69	100	Sltst	: lt brn gy to brn gy to gy blk, mic, cly, hd			0353-1L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
14242.00		ccp						0354
		2.47	100	Sltst		: brn gy to gy blk, mic, cly, hd		0354-1L
14245.00		ccp						0355
		0.37	100	S/Sst		: drk brn to dsk y brn, crs, pyr, hd		0355-1L
14245.60		ccp						0356
		0.86	100	S/Sst		: drk brn to dsk y brn, crs, mic, hd		0356-1L
14290.10		ccp						0357
		0.98	100	S/Sst		: brn gy to drk brn to dsk y brn, crs, mic, hd		0357-1L
14292.00		ccp						0358
		0.83	100	Sltst		: brn gy to m gy, hd, mic		0358-1L
14300.00								0239
			55	Cont		: ns		0239-1L
			25	Cont		: Mica-ad		0239-2L
			10	Ca		: w, st, chk		0239-3L
			10	Cont		: fib		0239-4L
			tr	Sh/Clst		: blk		0239-5L
			tr	Cont		: w, bar		0239-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
14320.00								0240
			60	Cont		: Mica-ad		0240-1L
			30	Cont		: ns		0240-2L
			5	Sh/Clst		: gy blk, calc		0240-3L
			5	Cont		: fib		0240-4L
			tr	Ca		: w, chk		0240-5L
			tr	Cont		: w, bar		0240-6L
14330.00								0241
			70	Cont		: Mica-ad		0241-1L
			20	Cont		: ns		0241-2L
			5	Cont		: fib		0241-3L
			5	Cont		: w, bar		0241-4L
			tr	Ca		: w, chk		0241-5L
			tr	Sltst		: m gy		0241-6L
14340.00								0242
			50	Ca		: w to lt gy w to lt gy, chk, trbofgs		0242-1L
			15	Cont		: Mica-ad		0242-2L
			10	S/Sst		: brn gy, pyr, glauc, f, l		0242-3L
			10	Cont		: ns		0242-4L
			5	Cont		: prp		0242-5L
			5	Sh/Clst		: gy blk, slt		0242-6L
			5	Cont		: bar		0242-7L
14350.00								0216
			75	Ca		: w to lt gy w, chk, trbofgs		0216-1L
			10	Cont		: Mica-ad		0216-2L
			5	Sh/Clst		: drk gy to gy blk, slt		0216-3L
			5	S/Sst		: lt brn gy to lt gy, f		0216-4L
			5	Cont		: ns		0216-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
14360.00								0217
			60	Cont	:	Mica-ad		0217-1L
			30	Cont	:	ns		0217-2L
			5	Ca	:	lt gy w to lt gy, chk		0217-3L
			5	S/Sst	:	lt brn gy, f		0217-4L
			tr	Cont	:	w, bar		0217-5L
14370.00								0218
			70	Cont	:	Mica-ad		0218-1L
			15	Cont	:	ns		0218-2L
			10	Ca	:	lt gy w to lt gy, chk		0218-3L
			5	Coal	:	blk		0218-4L
14380.00								0219
			55	Coal	:	blk		0219-1L
			20	Cont	:	Mica-ad		0219-2L
			10	Sh/Clst	:	dsk y brn, slt, trbofgs		0219-3L
			5	Ca	:	lt gy w, chk		0219-4L
			5	Cont	:	ns		0219-5L
			5	Cont	:	w, bar		0219-6L
14390.00								0220
			55	Cont	:	Mica-ad		0220-1L
			15	Coal	:	blk		0220-2L
			10	Ca	:	w to lt gy, chk		0220-3L
			10	Cont	:	ns		0220-4L
			5	Cont	:	w, bar		0220-5L
			5	Sh/Clst	:	gy blk, slt		0220-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
14400.00								0243
			60	Cont	:	w, f, bar		0243-1L
			15	Coal	:	blk, trbofgs		0243-2L
			10	Ca	:	w to lt gy w to lt gy, cly, chk		0243-3L
			10	Cont	:	Mica-ad		0243-4L
			5	Cont	:	ns		0243-5L
14410.00								0244
			45	Cont	:	w, f, bar		0244-1L
			30	Cont	:	Mica-ad		0244-2L
			15	Coal	:	blk, trbofgs		0244-3L
			10	Cont	:	ns		0244-4L
			tr	Ca	:	lt gy w to lt gy, cly, chk		0244-5L
			tr	Sh/Clst	:	gy blk		0244-6L
14420.00								0245
			70	Cont	:	Mica-ad		0245-1L
			20	Coal	:	blk, trbofgs		0245-2L
			10	Cont	:	ns		0245-3L
			tr	Ca	:	lt gy w, chk		0245-4L
			tr	Sh/Clst	:	drk gy, slt		0245-5L
			tr	Cont	:	bar		0245-6L
14440.00								0246
			45	Coal	:	blk, trbofgs		0246-1L
			40	Cont	:	w, bar		0246-2L
			10	Cont	:	ns		0246-3L
			5	Ca	:	lt gy w to lt gy, cly, chk		0246-4L
			tr	Sltst	:	brn gy		0246-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
14470.00								0221
			55	Cont		: ns		0221-1L
			20	Cont		: Mica-ad		0221-2L
			20	Cont		: fib		0221-3L
			5	Coal		: blk		0221-4L
			tr	Ca		: lt gy w, chk		0221-5L
14490.00								0222
			50	Cont		: ns		0222-1L
			30	Cont		: fib		0222-2L
			15	Cont		: Mica-ad		0222-3L
			5	Coal		: blk		0222-4L
			tr	S/Sst		: lt gy w to lt brn gy, f		0222-5L
14500.00								0223
			65	Cont		: ns		0223-1L
			25	Cont		: fib		0223-2L
			10	Cont		: Mica-ad		0223-3L
			tr	Coal		: blk		0223-4L
			tr	S/Sst		: lt gy w to lt brn gy, f		0223-5L
14520.00								0224
			60	Cont		: ns		0224-1L
			20	Cont		: fib		0224-2L
			10	Cont		: Mica-ad		0224-3L
			10	Coal		: blk, trbofgs		0224-4L
14540.00								0225
			65	Cont		: ns		0225-1L
			25	Cont		: fib		0225-2L
			10	Cont		: Mica-ad		0225-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
14560.00						0226
		65	Cont	: ns		0226-1L
		10	Cont	: fib		0226-2L
		10	Cont	: Mica-ad		0226-3L
		10	Ca	: w to lt gy, cly, chk		0226-4L
		5	Coal	: blk		0226-5L
		tr	Cont	: w, bar		0226-6L
14580.00						0227
		60	Cont	: ns		0227-1L
		15	Cont	: fib		0227-2L
		15	Cont	: Mica-ad		0227-3L
		5	Ca	: w to lt gy, cly, chk		0227-4L
		5	Coal	: blk, trbofgs		0227-5L
		tr	Cont	: w, bar		0227-6L
14600.00						0228
		75	Cont	: ns		0228-1L
		15	Cont	: Mica-ad		0228-2L
		10	Cont	: fib		0228-3L
		tr	Sltst	: lt gy to or gy		0228-4L
		tr	Cont	: w, bar		0228-5L
14620.00						0229
		70	Cont	: ns		0229-1L
		10	Cont	: Mica-ad		0229-2L
		10	Cont	: fib		0229-3L
		10	Sh/Clst	: drk gy to gy blk, slt, ang, sil		0229-4L
		tr	Sltst	: brn gy		0229-5L
		tr	Cont	: w, bar		0229-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
14640.00								0230
			70	Cont		: ns		0230-1L
			10	Cont		: Mica-ad		0230-2L
			10	Cont		: fib		0230-3L
			5	Ca		: lt gy w to lt gy, cly, chk		0230-4L
			5	Sh/Clst		: drk gy to gy blk, ang, sil		0230-5L
14660.00								0231
			80	Cont		: ns		0231-1L
			15	Cont		: Mica-ad		0231-2L
			5	Cont		: fib		0231-3L
14680.00								0232
			60	Cont		: ns		0232-1L
			35	Cont		: Mica-ad		0232-2L
			5	Cont		: fib		0232-3L
			tr	Sltst		: lt gy, calc		0232-4L
			tr	Sh/Clst		: gy blk, slt		0232-5L
14700.00								0233
			55	Cont		: ns		0233-1L
			35	Cont		: Mica-ad		0233-2L
			5	Cont		: fib		0233-3L
			5	Sltst		: lt gy to m gy, calc		0233-4L
			tr	Sh/Clst		: gy blk, slt		0233-5L
			tr	Cont		: w, bar		0233-6L
14720.00								0234
			55	Cont		: ns		0234-1L
			30	Cont		: Mica-ad		0234-2L
			5	Ca		: w, chk		0234-3L
			5	Sltst		: lt gy to m gy, calc, trbofgs		0234-4L
			5	Cont		: w, bar		0234-5L
			tr	Sh/Clst		: gy blk, slt		0234-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
14740.00								0235
			45	Cont		: ns		0235-1L
			30	Ca		: w to lt gy, cly, chk, trbofgs		0235-2L
			20	Cont		: Mica-ad		0235-3L
			5	Cont		: fib		0235-4L
			tr	Cont		: bar		0235-5L
14760.00								0236
			55	Cont		: ns		0236-1L
			20	Cont		: Mica-ad		0236-2L
			10	Ca		: w to lt gy, cly, chk, trbofgs		0236-3L
			10	Cont		: fib		0236-4L
			5	Sh/Clst		: gy blk, slt, sil		0236-5L
			tr	Cont		: bar		0236-6L
14790.00								0237
			45	Cont		: ns		0237-1L
			35	Cont		: Mica-ad		0237-2L
			10	Ca		: w to lt gy, cly, chk, trbofgs		0237-3L
			10	Sh/Clst		: gy blk, calc, slt		0237-4L
			tr	Cont		: bar		0237-5L
14800.00								0238
			40	Cont		: ns		0238-1L
			25	Ca		: w to lt gy, cly, chk, trbofgs		0238-2L
			20	Cont		: Mica-ad		0238-3L
			10	Cont		: bar		0238-4L
			5	Sh/Clst		: gy blk		0238-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	Grp	Frm	Age / Lithology description	Trb	Sample
14820.00							0171
		0.05	50	S/Sst	: w, crs, rnd, l		0171-1L
			25	Cont	: blk, Mica-ad		0171-2L
			20	Cont	: ns		0171-3L
			5	Ca	: lt gy w to lt gy, cly, chk		0171-4L
			tr	Sh/Clst	: drk gy, slt		0171-5L
14830.00							0172
		0.08	35	S/Sst	: w, crs, rnd, l		0172-1L
			30	Cont	: blk, Mica-ad		0172-2L
			30	Cont	: ns		0172-3L
			5	Ca	: lt gy w to lt gy, cly, chk		0172-4L
14840.00							0173
			45	Cont	: blk, Mica-ad		0173-1L
			35	Cont	: ns		0173-2L
		0.13	20	S/Sst	: w, crs, rnd, l		0173-3L
14850.00							0174
			45	Cont	: ns		0174-1L
		0.09	30	S/Sst	: w, f, crs, rnd, l		0174-2L
			20	Cont	: blk, Mica-ad		0174-3L
			5	Ca	: lt gy w to lt gy, cly, chk		0174-4L
14880.00							0247
		0.38	85	S/Sst	: w, crs, rnd, l		0247-1L
			10	Cont	: ns		0247-2L
			5	Sh/Clst	: drk gy to gy blk		0247-3L
			tr	Cont	: Mica-ad		0247-4L
			tr	Cont	: prp		0247-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Cvd	Type TOC%	%	Grp	Frm	Age / Lithology description	Trb	Sample
14890.00								0248
		0.23	90	S/Sst		: w, crs, rnd, l		0248-1L
			10	Cont		: ns		0248-2L
			tr	Sh/Clst		: drk gy to gy blk		0248-3L
			tr	Cont		: Mica-ad		0248-4L
			tr	Cont		: prp		0248-5L
14910.00								0249
		0.36	75	S/Sst		: w, pyr, crs, rnd, l		0249-1L
			20	Cont		: ns		0249-2L
			5	Sh/Clst		: lt gn gy		0249-3L
			tr	Cont		: prp		0249-4L
14920.00								0250
			85	S/Sst		: w, crs, rnd, l		0250-1L
			5	Cont		: ns		0250-2L
			5	Coal		: blk		0250-3L
			5	Cont		: prp		0250-4L
14930.00								0251
		0.12	85	S/Sst		: w, crs, rnd, l		0251-1L
			5	Cont		: ns		0251-2L
			5	Coal		: blk		0251-3L
			5	Cont		: prp		0251-4L
14940.00								0252
			90	S/Sst		: w, crs, rnd, l, kln		0252-1L
			5	Coal		: blk		0252-2L
			5	Cont		: prp		0252-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
14950.00								0253
			90	S/Sst		: w, crs, rnd, l, kln		0253-1L
			5	Coal		: blk		0253-2L
			5	Cont		: prp		0253-3L
			tr	Cont		: ns		0253-4L
14970.00								0254
		0.11	85	S/Sst		: w, crs, rnd, l, kln		0254-1L
			5	Coal		: blk		0254-2L
			5	Cont		: prp		0254-3L
			5	Cont		: ns		0254-4L
14990.00								0255
			80	S/Sst		: w, crs, rnd, l, kln		0255-1L
			10	Cont		: ns		0255-2L
			5	Cont		: prp		0255-3L
			5	Coal		: blk		0255-4L
15010.00								0256
		0.11	90	S/Sst		: w, f, crs, rnd, l		0256-1L
			5	Cont		: ns		0256-2L
			5	Cont		: prp		0256-3L
15030.00								0257
			90	S/Sst		: w, f, crs, rnd, l		0257-1L
			5	Coal		: blk		0257-2L
			5	Cont		: prp		0257-3L
			tr	Other		: lt brn gy, dol		0257-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
15050.00								0258
		0.11	85	S/Sst	:	w, f, crs, rnd, l		0258-1L
			5	Coal	:	blk		0258-2L
			5	Cont	:	prp		0258-3L
			5	Cont	:	ns		0258-4L
			tr	Sh/Clst	:	lt gn gy		0258-5L
15070.00								0259
			85	S/Sst	:	w, crs, rnd, l		0259-1L
			5	Coal	:	blk		0259-2L
			5	Cont	:	prp		0259-3L
			5	Cont	:	ns		0259-4L
15090.00								0260
		0.14	90	S/Sst	:	w, crs, rnd, l, kln		0260-1L
			5	Coal	:	blk		0260-2L
			5	Cont	:	prp		0260-3L
			tr	Sh/Clst	:	gy blk		0260-4L
15110.00								0261
			85	S/Sst	:	w, f, crs, rnd, l		0261-1L
			10	Cont	:	ns		0261-2L
			5	Cont	:	prp		0261-3L
			tr	Coal	:	blk		0261-4L
			tr	Sh/Clst	:	lt gn gy		0261-5L
15130.00								0262
		0.13	85	S/Sst	:	w, f, crs, rnd, l		0262-1L
			10	Cont	:	ns		0262-2L
			5	Cont	:	prp		0262-3L
			tr	Other	:	lt brn gy, dol		0262-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
15150.00							0263
		90	S/Sst	: w, f, crs, rnd, l			0263-1L
		5	Cont	: ns			0263-2L
		5	Cont	: prp			0263-3L
		tr	Cont	: Mica-ad			0263-4L
		tr	Sh/Clst	: lt gn gy, pyr			0263-5L
15170.00							0264
	0.20	60	S/Sst	: w, crs, rnd, l, kln			0264-1L
		30	Cont	: ns			0264-2L
		5	Cont	: Mica-ad			0264-3L
		5	Cont	: prp			0264-4L
15190.00							0265
		85	S/Sst	: w, crs, rnd, l			0265-1L
		5	Cont	: ns			0265-2L
		5	Cont	: Mica-ad			0265-3L
		5	Cont	: prp			0265-4L
15210.00							0266
	0.09	80	S/Sst	: w, crs, rnd, l			0266-1L
		5	Cont	: ns			0266-2L
		5	Cont	: Mica-ad			0266-3L
		5	Cont	: prp			0266-4L
		5	Coal	: blk			0266-5L
15230.00							0267
		95	S/Sst	: w, crs, rnd, l			0267-1L
		5	Cont	: prp			0267-2L
		tr	Coal	: blk			0267-3L
		tr	Cont	: Mica-ad			0267-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
15250.00							0268
	0.04	95	S/Sst	: w, crs, rnd, l			0268-1L
		5	Cont	: prp			0268-2L
		tr	Coal	: blk			0268-3L
		tr	Cont	: Mica-ad			0268-4L
		tr	Sh/Clst	: gy blk			0268-5L
15270.00							0269
		85	S/Sst	: w, crs, rnd, l			0269-1L
		10	Cont	: prp			0269-2L
		5	Coal	: blk			0269-3L
		tr	Cont	: Mica-ad			0269-4L
15290.00							0270
	0.03	90	S/Sst	: w, crs, rnd, l			0270-1L
		5	Cont	: prp			0270-2L
		5	Coal	: blk			0270-3L
		tr	Cont	: Mica-ad			0270-4L
15310.00							0271
		90	S/Sst	: w, crs, rnd, l			0271-1L
		5	Cont	: prp			0271-2L
		5	Coal	: blk			0271-3L
		tr	Cont	: Mica-ad			0271-4L
		tr	Cont	: ns			0271-5L
15330.00							0272
	0.14	100	S/Sst	: w, crs, rnd, l			0272-1L
		tr	Cont	: prp			0272-2L
		tr	Coal	: blk			0272-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth Int	Depth Cvd	Type TOC%	%	Grp Frm Age Lithology description	Trb	Sample
15340.00						0273
			80	S/Sst : w, crs, rnd, l, kln		0273-1L
			10	Cont : prp		0273-2L
			5	Coal : blk		0273-3L
			5	Sh/Clst: lt gn gy		0273-4L
15370.00						0274
		0.22	65	S/Sst : w, crs, rnd, l, kln		0274-1L
			15	Sh/Clst: lt gn gy, slt		0274-2L
			10	Coal : drk gy to blk		0274-3L
			5	Cont : ns		0274-4L
			5	Cont : prp		0274-5L
15390.00						0275
			80	S/Sst : w, crs, rnd, l, kln		0275-1L
			5	Sh/Clst: lt gn gy, slt		0275-2L
			5	Coal : drk gy to blk		0275-3L
			5	Cont : prp		0275-4L
			5	Cont : ns		0275-5L
15410.00						0276
		0.14	80	S/Sst : w, crs, rnd, l		0276-1L
			10	Coal : drk gy to blk		0276-2L
			10	Cont : prp		0276-3L
15430.00						0277
			75	S/Sst : w, crs, rnd, l		0277-1L
			10	Coal : drk gy to blk		0277-2L
			10	Cont : prp		0277-3L
			5	Cont : ns		0277-4L
			tr	Sh/Clst: lt gn gy		0277-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
15450.00							0278
	0.08	90	S/Sst	: w, crs, rnd, l			0278-1L
		5	Coal	: drk gy to blk			0278-2L
		5	Cont	: prp			0278-3L
		tr	Cont	: ns			0278-4L
		tr	Sh/Clst	: lt gn gy			0278-5L
15470.00							0279
		80	S/Sst	: w, crs, rnd, l			0279-1L
		10	Coal	: drk gy to blk			0279-2L
		10	Cont	: prp			0279-3L
		tr	Cont	: ns			0279-4L
15490.00							0280
	0.27	70	S/Sst	: w, crs, rnd, l			0280-1L
		10	Coal	: drk gy to blk			0280-2L
		10	Cont	: prp			0280-3L
		10	Cont	: ns			0280-4L
15500.00							0291
		100	S/Sst	: w, crs, rnd, l			0291-1L
		tr	Sh/Clst	: blk, slt			0291-2L
		tr	S/Sst	: w to lt gy w, f, kln			0291-3L
15530.00							0292
	0.01	95	S/Sst	: w, crs, rnd, l			0292-1L
		5	Sh/Clst	: drk gy to gy blk, slt			0292-2L
		tr	Coal	: blk			0292-3L
		tr	Cont	: w to blk, Mica-ad			0292-4L
		tr	Kaolin	: w			0292-5L
		tr	Cont	: prp			0292-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
15560.00								0293
		0.01	100	S/Sst	:	w, crs, rnd, l		0293-1L
			tr	Sh/Clst	:	drk gy to gy blk, slt		0293-2L
			tr	Cont	:	w to blk, Mica-ad		0293-3L
			tr	Cont	:	prp		0293-4L
15590.00								0294
			95	S/Sst	:	w, pyr, crs, rnd, l		0294-1L
			5	Sh/Clst	:	drk gy to gy blk, slt		0294-2L
			tr	Cont	:	prp		0294-3L
15610.00								0295
		0.03	95	S/Sst	:	w, pyr, crs, rnd, l		0295-1L
			5	Sh/Clst	:	drk gy to gy blk, slt		0295-2L
			tr	Cont	:	prp		0295-3L
15640.00								0296
			100	S/Sst	:	w, pyr, crs, rnd, l		0296-1L
			tr	Sh/Clst	:	drk gy to gy blk, slt		0296-2L
			tr	Cont	:	prp		0296-3L
15670.00								0297
		0.07	100	S/Sst	:	w, pyr, crs, rnd, l, kln		0297-1L
			tr	Sh/Clst	:	brn gy to gy blk, slt		0297-2L
			tr	Coal	:	blk		0297-3L
			tr	Cont	:	prp		0297-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
15695.00							0298
		100	S/Sst	:	w, pyr, crs, rnd, l, kln		0298-1L
		tr	Sh/Clst	:	gy blk, slt		0298-2L
		tr	Sltst	:	m gy		0298-3L
		tr	Cont	:	blk, Mica-ad		0298-4L
		tr	Cont	:	prp		0298-5L
15710.00							0299
	0.01	100	S/Sst	:	w, pyr, f, crs, rnd, l		0299-1L
		tr	Sh/Clst	:	gy blk, slt		0299-2L
		tr	Cont	:	prp		0299-3L
15740.00							0300
		100	S/Sst	:	w, pyr, f, crs, rnd, l, kln		0300-1L
		tr	Sh/Clst	:	gy blk to blk, slt		0300-2L
		tr	Cont	:	prp		0300-3L
15770.00							0301
	0.03	100	S/Sst	:	w, pyr, f, crs, rnd, l, kln		0301-1L
		tr	Sh/Clst	:	gy blk to blk, slt		0301-2L
		tr	Cont	:	prp		0301-3L
		tr	Cont	:	blk, Mica-ad		0301-4L
15810.00							0302
	0.25	95	S/Sst	:	w, f, crs, rnd, l		0302-1L
		5	Sltst	:	lt gy to lt brn to m brn, cly, fe		0302-2L
		tr	Sh/Clst	:	gy blk to blk, slt		0302-3L
		tr	Cont	:	prp		0302-4L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
15840.00								0303
			85	S/Sst	:	w, f, crs, rnd, l		0303-1L
			10	Sh/Clst	:	gy blk to blk, slt		0303-2L
			5	Cont	:	prp		0303-3L
			tr	Cont	:	ns		0303-4L
15870.00								0304
		0.17	75	S/Sst	:	w, f, crs, rnd, l		0304-1L
			20	Sh/Clst	:	gy blk to blk, slt		0304-2L
			5	Cont	:	prp		0304-3L
			tr	Sltst	:	lt gy to lt brn gy to dsk y brn, st		0304-4L
15900.00								0305
			100	S/Sst	:	w, f, crs, rnd, l		0305-1L
			tr	Sh/Clst	:	gy blk to blk, slt		0305-2L
			tr	Cont	:	ns		0305-3L
15920.00								0306
		0.06	100	S/Sst	:	w, f, crs, rnd, l		0306-1L
			tr	Sh/Clst	:	gy blk to blk, slt		0306-2L
			tr	Cont	:	ns		0306-3L
			tr	Cont	:	prp		0306-4L
15950.00								0307
			100	S/Sst	:	w, f, crs, rnd, l		0307-1L
			tr	Sh/Clst	:	gy blk to blk, slt		0307-2L
			tr	Sltst	:	brn gy to gy blk		0307-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
15980.00							0308
	0.08	100	S/Sst	: w, f, crs, rnd, l			0308-1L
		tr	Sh/Clst	: gy blk to blk, slt			0308-2L
		tr	Cont	: prp			0308-3L
16010.00							0309
		100	S/Sst	: w, f, crs, rnd, l			0309-1L
		tr	Sh/Clst	: gy blk to blk, slt			0309-2L
		tr	Cont	: prp			0309-3L
		tr	Cont	: ns			0309-4L
16040.00							0310
	0.06	100	S/Sst	: w, f, crs, rnd, l			0310-1L
		tr	Sh/Clst	: gy blk to blk, slt			0310-2L
		tr	Cont	: prp			0310-3L
16070.00							0311
		100	S/Sst	: w, f, crs, rnd, l			0311-1L
		tr	Sh/Clst	: gy blk to blk, slt			0311-2L
		tr	Cont	: prp			0311-3L
16100.00							0312
	0.03	100	S/Sst	: w, f, crs, rnd, l			0312-1L
		tr	Sh/Clst	: gy blk to blk, slt			0312-2L
		tr	Cont	: prp			0312-3L
16130.00							0313
		100	S/Sst	: w, f, crs, rnd, l			0313-1L
		tr	Sh/Clst	: gy blk to blk, slt			0313-2L
		tr	Cont	: prp			0313-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
16160.00								0314
		0.04	100	S/Sst	: w, f, crs, rnd, l			0314-1L
			tr	Sh/Clst	: gy blk to blk, slt			0314-2L
16190.00								0315
			100	S/Sst	: w, f, crs, rnd, l			0315-1L
			tr	Sh/Clst	: gy blk to blk, slt			0315-2L
			tr	Cont	: prp			0315-3L
16220.00								0316
		0.10	95	S/Sst	: w, f, crs, rnd, l			0316-1L
			5	Sh/Clst	: gy blk to blk, slt			0316-2L
			tr	Cont	: prp			0316-3L
			tr	Sltst	: lt brn gy			0316-4L
			tr	Cont	: bar			0316-5L
16250.00								0317
			100	S/Sst	: w, f, crs, st, rnd, l			0317-1L
			tr	Sh/Clst	: gy blk to blk, slt			0317-2L
			tr	Cont	: prp			0317-3L
			tr	Sltst	: lt brn gy			0317-4L
16280.00								0318
		0.14	100	S/Sst	: w, f, crs, rnd, l			0318-1L
			tr	Sh/Clst	: gy blk to blk, slt			0318-2L
			tr	Cont	: prp			0318-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
16300.00							0319
		95	S/Sst	:	w, f, crs, rnd, l		0319-1L
		5	Sh/Clst	:	gy blk to blk, slt		0319-2L
		tr	Cont	:	prp		0319-3L
16330.00							0320
	0.02	100	S/Sst	:	w to or gy, f, crs, rnd, l		0320-1L
		tr	Sh/Clst	:	gy blk to blk, slt		0320-2L
		tr	Cont	:	prp		0320-3L
		tr	Cont	:	fib		0320-4L
16360.00							0321
		100	S/Sst	:	w to or gy, f, crs, rnd, l		0321-1L
		tr	Sh/Clst	:	gy blk to blk, slt		0321-2L
		tr	Cont	:	prp		0321-3L
16380.00							0322
	0.16	90	S/Sst	:	w to or gy, f, crs, rnd, l		0322-1L
		5	Coal	:	gy blk to blk		0322-2L
		5	Cont	:	ns		0322-3L
		tr	Cont	:	prp		0322-4L
		tr	Cont	:	fib		0322-5L
16410.00							0323
		65	S/Sst	:	w to or gy, f, crs, rnd, l		0323-1L
		15	Cont	:	gy pi, dd		0323-2L
		5	Sh/Clst	:	drk gy to gy blk, slt		0323-3L
		5	Coal	:	blk		0323-4L
		5	Cont	:	ns		0323-5L
		5	Cont	:	prp		0323-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
16425.00								0324
		2.04	60	S/Sst		: w to or gy, f, crs, rnd, l		0324-1L
			15	Cont		: pi, dd		0324-2L
			10	Sh/Clst		: drk gy to gy blk, slt		0324-3L
			5	Coal		: blk		0324-4L
			5	Cont		: ns		0324-5L
			5	Cont		: prp		0324-6L
16450.00								0325
			80	S/Sst		: w, f, crs, rnd, l		0325-1L
			10	Sh/Clst		: drk gy to gy blk, slt		0325-2L
			5	Coal		: blk		0325-3L
			5	Cont		: prp		0325-4L
			tr	Cont		: blk, Mica-ad		0325-5L
			tr	Cont		: pi, dd		0325-6L
16475.00								0326
			50	Sltst		: pl pu to gy brn, cly, st, fe		0326-1L
			30	S/Sst		: w, crs, rnd, l		0326-2L
			15	Cont		: lt brn gy, dd		0326-3L
			5	Sh/Clst		: gy blk, slt		0326-4L
16500.00								0327
		0.76	70	Sltst		: lt gy, mic, st		0327-1L
			20	Sh/Clst		: drk gy to gy blk, slt		0327-2L
			10	Sh/Clst		: m brn, fe		0327-3L
			tr	S/Sst		: w, crs, l		0327-4L
			tr	Cont		: prp		0327-5L
			tr	Cont		: w, bar		0327-6L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
16530.00								0328
			35	Other	:	lt pu to dsk y brn to gy pi, cly, br		0328-1L
			25	Cont	:	w, f, bar		0328-2L
		2.94	20	Sh/Clst	:	gy blk, slt		0328-3L
			15	Sltst	:	lt gy, mic		0328-4L
			5	Cont	:	prp		0328-5L
16560.00								0329
			60	Cont	:	w, f, bar		0329-1L
			15	Sltst	:	lt gy, mic		0329-2L
			10	Sh/Clst	:	m brn, slt, fe		0329-3L
			10	Sh/Clst	:	gy blk, slt		0329-4L
			5	Cont	:	prp		0329-5L
16590.00								0330
			75	Sh/Clst	:	pl red brn to w, calc, slt, st		0330-1L
			10	Sltst	:	lt gy, mic		0330-2L
		2.62	10	Sh/Clst	:	gy blk, slt		0330-3L
			5	Cont	:	prp		0330-4L
16620.00								0331
			100	Sh/Clst	:	pl red brn to w, calc, slt, st		0331-1L
			tr	Sh/Clst	:	gy blk, slt		0331-2L
16640.00								0332
			95	Sh/Clst	:	pl red brn to w, calc, slt, st		0332-1L
			5	Sltst	:	lt gy, mic		0332-2L
			tr	Sh/Clst	:	gy blk, slt		0332-3L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
16670.00							0333
		95	Sh/Clst:		pl red brn to w, slt, st, kln, trbofgs		0333-1L
		5	Sh/Clst:		gy blk, slt, trbofgs		0333-2L
		tr	Sltst	:	lt gy, mic		0333-3L
		tr	Cont	:	prp		0333-4L
16730.00							0334
		70	Sh/Clst:		pl red brn to w, slt, st, kln, trbofgs		0334-1L
		25	Cont	:	w, f, bar		0334-2L
		5	Sh/Clst:		blk, slt, trbofgs		0334-3L
		tr	Sltst	:	lt gy, mic		0334-4L
16760.00							0335
		50	Sh/Clst:		pl red brn to w, slt, st, kln, trbofgs		0335-1L
		25	Cont	:	w, f, bar		0335-2L
		15	Sh/Clst:		blk, slt, trbofgs		0335-3L
		5	Sltst	:	lt gy, mic		0335-4L
		5	Cont	:	prp		0335-5L
16790.00							0336
	2.39	40	Sh/Clst:		gy blk to blk, slt, trbofgs		0336-1L
		30	Sltst	:	lt gy to m y gy, mic, trbofgs		0336-2L
		15	Sh/Clst:		pl red brn to m brn, slt, fe		0336-3L
		15	Cont	:	prp		0336-4L
		tr	Cont	:	w, bar		0336-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
16820.00							0337
		60	S/Sst	:	pl red brn to lt pu, f, br		0337-1L
		20	Sh/Clst	:	gy blk to blk, slt, fe		0337-2L
		10	Sltst	:	lt gy, mic		0337-3L
		10	Cont	:	prp		0337-4L
16850.00							0338
		70	Sltst	:	lt pu, br		0338-1L
		15	Sh/Clst	:	gy blk to blk, slt, fe		0338-2L
		5	Sltst	:	lt gy, mic		0338-3L
		5	Cont	:	prp		0338-4L
		5	Sh/Clst	:	pl red brn, fe		0338-5L
16880.00							0339
		45	Sh/Clst	:	pl red brn, slt, fe		0339-1L
		40	Sltst	:	lt gy to m gy, mic		0339-2L
		15	Sh/Clst	:	m gy to dsk y brn, slt, fe		0339-3L
		tr	Cont	:	prp		0339-4L
		tr	Cont	:	blk, Mica-ad		0339-5L
16900.00							0340
		60	Sltst	:	lt gy to lt pu to brn gy, mic, fe		0340-1L
		25	Sh/Clst	:	pl red brn to m brn, slt, trbofgs, fe		0340-2L
		10	Sh/Clst	:	gy blk, trbofgs		0340-3L
		5	Cont	:	prp		0340-4L
16930.00							0341
	0.62	50	Sltst	:	lt gy to lt pu to brn gy, mic, fe		0341-1L
		25	Sh/Clst	:	pl red brn to m brn, slt, trbofgs, fe		0341-2L
		10	Sh/Clst	:	gy blk, trbofgs		0341-3L
		10	S/Sst	:	w to gy pi, crs, rnd, l		0341-4L
		5	Cont	:	prp		0341-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
16960.00								0342
			45	S/Sst	:	w to gy pi, crs, rnd, l		0342-1L
			30	Sltst	:	lt gy to lt pu, mic, fe		0342-2L
			10	Sh/Clst	:	pl red brn to dsk red brn, trbofgs, fe		0342-3L
			10	Sh/Clst	:	gy blk, slt, trbofgs		0342-4L
			5	Cont	:	prp		0342-5L
16990.00								0343
			45	Sh/Clst	:	dsk red brn, slt, fe		0343-1L
			40	S/Sst	:	w to dsk red brn, crs, rnd, l		0343-2L
			5	Sh/Clst	:	gy blk, slt, trbofgs		0343-3L
			5	Cont	:	prp		0343-4L
			5	Sltst	:	pu		0343-5L
17020.00								0344
			40	Sh/Clst	:	dsk red brn, slt, fe		0344-1L
		0.47	35	Sltst	:	lt pu to lt gy w		0344-2L
			10	Sh/Clst	:	gy blk to blk, slt, trbofgs		0344-3L
			10	S/Sst	:	w to pl red brn, crs, rnd, l		0344-4L
			5	Cont	:	prp		0344-5L
17040.00								0345
			50	Sltst	:	lt pu to lt gy w, br		0345-1L
			20	Sh/Clst	:	gy blk to blk, slt, trbofgs		0345-2L
			15	S/Sst	:	w to pl red brn, crs, rnd, l		0345-3L
			10	Sh/Clst	:	dsk red brn to pl red brn, slt, fe		0345-4L
			5	Cont	:	prp		0345-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Type		Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description				
17070.00							0346
		50	Sltst	:	lt pu to m gy, br		0346-1L
		25	Sh/Clst	:	gy blk to blk, slt, trbofgs		0346-2L
		10	S/Sst	:	w to pl red brn, crs, rnd, l		0346-3L
		10	Sh/Clst	:	dsk red brn to pl red brn, slt, fe		0346-4L
		5	Cont	:	prp		0346-5L
17100.00							0347
		30	Sltst	:	lt pu, br		0347-1L
		20	Sh/Clst	:	pl red brn, slt, trbofgs, fe		0347-2L
		10	Cont	:	fib		0347-3L
		10	Cont	:	w, bar		0347-4L
		10	Cont	:	prp		0347-5L
		10	Cont	:	ns		0347-6L
		10	Sh/Clst	:	gy blk, slt, trbofgs		0347-7L
		tr	S/Sst	:	w to pl red brn, crs, l		0347-8L
17130.00							0348
	0.29	50	Sltst	:	lt pu, br		0348-1L
		30	Sh/Clst	:	pl red brn, slt, trbofgs, fe		0348-2L
		10	Cont	:	w, bar		0348-3L
		5	Sh/Clst	:	gy blk, slt, trbofgs		0348-4L
		5	S/Sst	:	w to pl red brn, crs, l		0348-5L
17160.00							0349
		30	Sltst	:	lt pu, br		0349-1L
		30	Sh/Clst	:	pl red brn, slt, trbofgs, fe		0349-2L
		30	Cont	:	w, f, bar		0349-3L
		5	Sh/Clst	:	gy blk, slt, trbofgs		0349-4L
		5	S/Sst	:	w to pl red brn, crs, l		0349-5L

Table 1 : Lithology description for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth		Type		Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description				
17190.00								0350
		0.32	35	Sltst	:	lt pu, br		0350-1L
			35	Sh/Clst	:	pl red brn, slt, trbofgs, fe		0350-2L
			20	Cont	:	w, f, bar		0350-3L
			10	Sh/Clst	:	gy blk, slt, trbofgs		0350-4L
			tr	S/Sst	:	w to pl red brn, crs, l		0350-5L
			tr	Cont	:	prp		0350-6L
17220.00								0351
			85	Cont	:	w, f, bar		0351-1L
			5	Sltst	:	pl pu		0351-2L
			5	Sh/Clst	:	gy blk, slt, trbofgs		0351-3L
			5	Sh/Clst	:	pl red brn, slt, fe		0351-4L
			tr	Cont	:	prp		0351-5L
17250.00								0352
			60	Cont	:	w, f, bar		0352-1L
			25	Sltst	:	dsk red brn, fe		0352-2L
			5	Sh/Clst	:	gy blk, slt, trbofgs		0352-3L
			5	Sh/Clst	:	pl red brn, slt, fe		0352-4L
			5	Cont	:	prp		0352-5L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
10940.00	cut	Ca : w	0.02	0.04	0.44	0.09	0.06	67	733	0.1	0.33	387	0003-1L
11020.00	cut	Ca : w to lt pi	0.03	0.05	0.41	0.12	0.01	500	4100	0.1	0.38	338	0010-1L
11110.00	cut	Ca : w to lt pi	0.06	0.05	0.43	0.12	0.04	125	1075	0.1	0.55	335	0014-1L
11190.00	cut	Ca : w to lt pi	0.03	0.03	0.49	0.06	0.18	17	272	0.1	0.50	-	0019-1L
11260.00	cut	Ca : w to lt pi	0.02	0.01	0.40	0.02	0.04	25	1000	-	0.67	-	0023-1L
11340.00	cut	Ca : w to lt pi	0.01	0.01	0.38	0.03	0.01	100	3800	-	0.50	-	0028-1L
11420.00	cut	Ca : w to lt pi	0.04	0.04	0.45	0.09	0.04	100	1125	0.1	0.50	367	0034-1L
11510.00	cut	Ca : w to lt pi	0.02	0.02	0.36	0.06	0.01	200	3600	-	0.50	-	0040-1L
11590.00	cut	Ca : w to lt pi	0.03	0.04	0.41	0.10	0.01	400	4100	0.1	0.43	321	0045-1L
11670.00	cut	Ca : w to lt pi	0.04	0.03	0.38	0.08	0.06	50	633	0.1	0.57	323	0049-1L
11750.00	cut	Ca : w to lt pi	0.02	0.04	0.33	0.12	0.01	400	3300	0.1	0.33	323	0054-1L
11820.00	cut	Ca : w	0.06	0.05	0.37	0.14	0.01	500	3700	0.1	0.55	416	0058-1L
11900.00	cut	Ca : w to lt pi	0.03	0.03	0.34	0.09	0.02	150	1700	0.1	0.50	323	0063-1L
11980.00	cut	Ca : w to lt pi	0.02	0.03	0.28	0.11	0.01	300	2800	0.1	0.40	328	0069-1L
12060.00	cut	Ca : w	0.01	0.04	0.29	0.14	0.03	133	967	0.1	0.20	436	0077-1L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
12140.00	cut	Ca : w to lt gy w to lt pi	0.03	0.05	0.41	0.12	0.05	100	820	0.1	0.38	433	0085-1L
12220.00	cut	Ca : w to lt gy w to lt w	0.01	0.02	0.39	0.05	0.02	100	1950	-	0.33	436	0092-1L
12290.00	cut	Ca : w to lt gy w to lt pi	0.03	0.05	0.56	0.09	0.12	42	467	0.1	0.38	374	0098-1L
12360.00	cut	Ca : w to lt gy w	0.04	0.08	0.66	0.12	0.13	62	508	0.1	0.33	415	0102-1L
12380.00	cut	Ca : w to lt pi	0.05	0.05	0.53	0.09	0.14	36	379	0.1	0.50	378	0104-1L
12400.00	cut	Ca : w to lt pi	0.16	0.11	0.51	0.22	0.14	79	364	0.3	0.59	416	0105-1L
12410.00	cut	Ca : w to lt gy w	2.58	0.81	0.57	1.42	0.46	176	124	3.4	0.76	415	0106-1L
12420.00	cut	Ca : w	3.65	0.97	0.56	1.73	0.53	183	106	4.6	0.79	417	0107-1L
12430.00	cut	Ca : w to lt pi	0.84	0.38	0.55	0.69	0.24	158	229	1.2	0.69	416	0108-1L
12440.00	cut	Ca : w to lt pi	1.17	0.50	0.59	0.85	0.31	161	190	1.7	0.70	414	0109-2L
12450.00	cut	Ca : w to lt gy w	0.13	0.09	0.41	0.22	0.10	90	410	0.2	0.59	431	0110-1L
12470.00	cut	Ca : w to lt pi	0.04	0.06	0.42	0.14	0.08	75	525	0.1	0.40	433	0111-1L
12480.00	cut	Ca : w to lt pi	0.09	0.06	0.46	0.13	0.12	50	383	0.2	0.60	438	0112-1L
12490.00	cut	Ca : lt gy w to lt pi	0.10	0.11	0.41	0.27	0.12	92	342	0.2	0.48	414	0113-1L
12550.00	cut	Ca : w to lt gy w	0.03	0.07	0.33	0.21	0.02	350	1650	0.1	0.30	429	0119-1L

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
12570.00	cut	Ca : w to lt gy w	0.08	0.06	0.49	0.12	0.08	75	613	0.1	0.57	411	0121-1L
12580.00	cut	Ca : w to lt gy w	0.02	0.07	0.42	0.17	0.17	41	247	0.1	0.22	434	0359-1L
12640.00	cut	Ca : w to lt gy w	0.03	0.04	0.48	0.08	0.06	67	800	0.1	0.43	325	0127-1L
12660.00	cut	Ca : w to lt gy w	0.04	0.06	0.50	0.12	0.12	50	417	0.1	0.40	420	0129-1L
12680.00	cut	Ca : w to lt gy w	4.25	1.44	0.59	2.44	0.91	158	65	5.7	0.75	416	0131-1L
12720.00	cut	Ca : w to lt gy w to bl w	0.04	0.05	0.68	0.07	0.12	42	567	0.1	0.44	372	0135-1L
12760.00	cut	Ca : w to lt gy w	0.09	0.16	0.51	0.31	0.08	200	638	0.3	0.36	415	0139-1L
12770.00	cut	Ca : w to lt gy	0.14	0.07	0.62	0.11	0.19	37	326	0.2	0.67	440	0140-1L
12780.00	cut	Ca : w to lt gy w	0.04	0.07	0.61	0.11	0.17	41	359	0.1	0.36	412	0141-1L
12790.00	cut	Ca : w to lt gy w	0.20	0.09	0.64	0.14	0.20	45	320	0.3	0.69	381	0142-1L
12800.00	cut	Ca : w to lt gy w	0.05	0.09	0.59	0.15	0.15	60	393	0.1	0.36	409	0143-1L
12810.00	cut	Ca : w to lt gy w to lt gn gy	0.60	0.41	0.65	0.63	0.31	132	210	1.0	0.59	417	0144-1L
12840.00	cut	Ca : w to lt gy w	0.30	0.30	0.70	0.43	0.21	143	333	0.6	0.50	399	0147-1L
12870.00	cut	Ca : w to lt gy w	0.49	0.29	0.73	0.40	0.34	85	215	0.8	0.63	418	0148-1L
12900.00	cut	Ca : lt gy w to gy pi	5.22	1.18	0.76	1.55	0.94	126	81	6.4	0.82	417	0149-1L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
12930.00	cut	Ca : lt gy w to gy pi	0.37	0.21	0.97	0.22	0.36	58	269	0.6	0.64	421	0150-1L
12960.00	cut	Ca : w to lt gy w	3.61	1.20	0.80	1.50	0.81	148	99	4.8	0.75	417	0151-1L
13000.00	cut	Ca : w to lt gy w	3.80	1.24	0.95	1.31	0.90	138	106	5.0	0.75	418	0152-1L
13030.00	cut	Sh/Clst: lt brn gy to m brn gy	0.55	7.24	0.84	8.62	3.60	201	23	7.8	0.07	433	0153-1L
13060.00	cut	Ca : lt gy w to lt gy	1.61	0.91	1.16	0.78	0.77	118	151	2.5	0.64	418	0154-1L
13120.00	cut	Ca : lt gy w	2.27	0.83	1.00	0.83	0.72	115	139	3.1	0.73	412	0155-1L
13160.00	cut	Ca : lt gy w	0.73	0.33	0.85	0.39	0.32	103	266	1.1	0.69	409	0156-1L
13190.00	cut	Ca : lt gy w to lt gy	0.36	0.14	0.72	0.19	0.29	48	248	0.5	0.72	400	0157-1L
13230.00	cut	Ca : lt gy w to lt gy	0.68	0.36	0.78	0.46	0.38	95	205	1.0	0.65	406	0158-1L
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	3.54	1.78	1.07	1.66	1.12	159	96	5.3	0.67	420	0160-1L
13330.00	cut	Ca : lt gy w to lt gy to gy pi	2.30	1.40	0.89	1.57	0.81	173	110	3.7	0.62	416	0161-1L
13360.00	cut	Ca : lt gy w to lt gy to gy pi	2.81	1.54	0.94	1.64	0.84	183	112	4.3	0.65	421	0162-1L
13400.00	cut	Ca : lt gy w to lt gy to gy pi	2.28	1.12	0.87	1.29	0.72	156	121	3.4	0.67	412	0163-1L
13430.00	cut	Ca : lt gy w to lt gy to gy pi	1.80	0.76	0.97	0.78	0.53	143	183	2.6	0.70	412	0164-1L

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
13460.00	cut	Ca : lt gy w to lt gy to gy pi	1.20	0.58	0.77	0.75	0.46	126	167	1.8	0.67	411	0165-1L
13490.00	cut	Ca : lt gy w to lt gy to gy pi	1.43	0.57	0.66	0.86	0.52	110	127	2.0	0.71	410	0166-1L
13520.00	cut	Ca : lt gy w to lt gy to gy pi	1.45	0.64	0.85	0.75	0.52	123	163	2.1	0.69	412	0167-1L
13550.00	cut	Ca : lt gy w to lt gy to gy pi	0.74	0.47	0.86	0.55	0.50	94	172	1.2	0.61	418	0168-1L
13580.00	cut	Ca : lt brn gy to lt gy w	1.00	0.55	0.65	0.85	0.55	100	118	1.6	0.65	429	0169-1L
13610.00	cut	Ca : gy pi to lt gy w	0.85	0.48	0.75	0.64	0.55	87	136	1.3	0.64	430	0170-1L
13640.00	cut	Ca : lt gy w to lt gy to or gy	0.58	0.45	0.72	0.62	0.60	75	120	1.0	0.56	420	0175-1L
13660.00	cut	Ca : lt gy w to lt gy	0.85	0.71	0.73	0.97	0.47	151	155	1.6	0.54	441	0176-1L
13680.00	cut	Ca : lt gy w to lt gy	0.94	0.60	0.76	0.79	0.46	130	165	1.5	0.61	436	0177-1L
13700.00	cut	Ca : lt gy w to lt gy	1.04	0.52	0.62	0.84	0.39	133	159	1.6	0.67	433	0178-1L
13720.00	cut	Ca : lt gy w to lt gy to m gy	1.23	0.62	0.83	0.75	0.75	83	111	1.9	0.66	433	0179-1L
13730.00	cut	Ca : lt gy w to lt gy	0.71	0.30	0.65	0.46	0.43	70	151	1.0	0.70	429	0180-1L
13750.00	cut	Sh/Clst: gy blk	4.12	4.47	0.68	6.57	4.26	105	16	8.6	0.48	444	0182-2L
13755.00	cut	Sh/Clst: gy blk	4.44	8.54	0.92	9.28	6.58	130	14	13.0	0.34	446	0183-1L
13760.00	cut	Sh/Clst: gy blk	4.68	13.44	0.86	15.63	7.38	182	12	18.1	0.26	449	0184-1L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
13770.00	cut	Sh/Clst: gy blk	5.40	9.46	0.73	12.96	5.31	178	14	14.9	0.36	446	0185-1L
13780.00	cut	Sh/Clst: gy blk	4.39	5.93	0.96	6.18	4.21	141	23	10.3	0.43	445	0186-1L
13800.00	cut	Sh/Clst: gy blk	4.51	6.42	1.31	4.90	5.46	118	24	10.9	0.41	442	0188-1L
13840.00	cut	Sh/Clst: gy blk	3.15	3.95	1.62	2.44	4.28	92	38	7.1	0.44	442	0191-1L
13900.00	cut	Sh/Clst: gy blk	2.92	3.46	1.54	2.25	3.82	91	40	6.4	0.46	444	0194-1L
13945.00	cut	Sh/Clst: gy blk	3.14	4.48	1.44	3.11	4.38	102	33	7.6	0.41	450	0197-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	3.28	4.55	1.52	2.99	4.01	113	38	7.8	0.42	447	0200-1L
14030.00	cut	Sh/Clst: drk gy to gy blk	1.83	1.50	1.54	0.97	2.78	54	55	3.3	0.55	445	0202-1L
14050.00	cut	Sh/Clst: drk gy to gy blk	2.50	3.20	1.03	3.11	2.24	143	46	5.7	0.44	453	0204-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	2.58	3.42	1.15	2.97	2.96	116	39	6.0	0.43	454	0206-1L
14090.00	cut	Sh/Clst: drk gy to gy blk	2.45	3.33	1.18	2.82	3.00	111	39	5.8	0.42	454	0207-1L
14110.00	cut	Sh/Clst: gy blk to blk	2.33	2.76	1.21	2.28	2.91	95	42	5.1	0.46	453	0208-1L
14241.00	ccp	Sltst : lt brn gy to brn gy to gy blk	1.27	2.35	0.06	39.17	2.69	87	2	3.6	0.35	469	0353-1L
14242.00	ccp	Sltst : brn gy to gy blk	1.52	2.22	-	-	2.47	90	-	3.7	0.41	467	0354-1L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
14245.00	ccp	S/Sst : drk brn to dsk y brn	1.20	0.56	0.03	18.67	0.37	151	8	1.8	0.68	450	0355-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	1.68	0.63	0.04	15.75	0.86	73	5	2.3	0.73	454	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	1.57	0.98	0.06	16.33	0.98	100	6	2.6	0.62	454	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	1.97	0.88	0.04	22.00	0.83	106	5	2.9	0.69	456	0358-1L
14300.00	com	bulk	8.28	3.17	1.36	2.33	3.30	96	41	11.4	0.72	455	0283-0B
14350.00	com	bulk	6.21	5.48	1.07	5.12	3.79	145	28	11.7	0.53	451	0284-0B
14390.00	com	bulk	4.70	9.10	1.02	8.92	8.81	103	12	13.8	0.34	465	0285-0B
14420.00	com	bulk	5.06	4.32	1.09	3.96	3.76	115	29	9.4	0.54	457	0286-0B
14520.00	com	bulk	10.09	33.57	4.58	7.33	21.11	159	22	43.7	0.23	473	0287-0B
14640.00	com	bulk	3.50	2.21	0.90	2.46	2.55	87	35	5.7	0.61	459	0288-0B
14720.00	com	bulk	2.92	0.35	1.30	0.27	0.97	36	134	3.3	0.89	381	0289-0B
14800.00	com	bulk	4.78	3.25	0.84	3.87	3.26	100	26	8.0	0.60	455	0290-0B
14820.00	cut	S/Sst : w	0.16	0.05	0.02	2.50	0.05	100	40	0.2	0.76	342	0171-1L
14830.00	cut	S/Sst : w	0.18	0.01	-	-	0.08	13	-	0.2	0.95	-	0172-1L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
14840.00	cut	S/Sst : w	0.36	0.12	0.07	1.71	0.13	92	54	0.5	0.75	405	0173-3L
14850.00	cut	S/Sst : w	0.22	0.04	0.03	1.33	0.09	44	33	0.3	0.85	356	0174-2L
14880.00	cut	S/Sst : w	0.38	0.18	0.37	0.49	0.38	47	97	0.6	0.68	438	0247-1L
14890.00	cut	S/Sst : w	0.13	0.05	0.40	0.13	0.23	22	174	0.2	0.72	418	0248-1L
14910.00	cut	S/Sst : w	0.32	0.20	0.72	0.28	0.36	56	200	0.5	0.62	416	0249-1L
14930.00	cut	S/Sst : w	0.09	0.06	0.17	0.35	0.12	50	142	0.2	0.60	391	0251-1L
14970.00	cut	S/Sst : w	0.04	0.02	0.12	0.17	0.11	18	109	0.1	0.67	328	0254-1L
15010.00	cut	S/Sst : w	0.04	0.02	0.10	0.20	0.11	18	91	0.1	0.67	-	0256-1L
15050.00	cut	S/Sst : w	0.05	0.03	0.09	0.33	0.11	27	82	0.1	0.63	-	0258-1L
15090.00	cut	S/Sst : w	0.08	0.06	0.19	0.32	0.14	43	136	0.1	0.57	402	0260-1L
15130.00	cut	S/Sst : w	0.06	0.01	0.07	0.14	0.13	8	54	0.1	0.86	357	0262-1L
15170.00	cut	S/Sst : w	0.19	0.08	0.13	0.62	0.20	40	65	0.3	0.70	414	0264-1L
15210.00	cut	S/Sst : w	0.04	0.04	0.20	0.20	0.09	44	222	0.1	0.50	385	0266-1L
15250.00	cut	S/Sst : w	0.03	0.03	0.03	1.00	0.04	75	75	0.1	0.50	320	0268-1L
15290.00	cut	S/Sst : w	-	-	-	-	0.03	-	-	-	-	-	0270-1L

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
15330.00	cut	S/Sst : w	0.08	0.08	0.13	0.62	0.14	57	93	0.2	0.50	300	0272-1L
15370.00	cut	S/Sst : w	0.23	0.32	0.23	1.39	0.22	145	105	0.6	0.42	390	0274-1L
15410.00	cut	S/Sst : w	0.06	0.07	0.14	0.50	0.14	50	100	0.1	0.46	334	0276-1L
15450.00	cut	S/Sst : w	0.05	0.03	0.05	0.60	0.08	38	63	0.1	0.63	337	0278-1L
15490.00	cut	S/Sst : w	0.07	0.15	0.43	0.35	0.27	56	159	0.2	0.32	408	0280-1L
15530.00	cut	S/Sst : w	0.01	-	-	-	0.01	-	-	-	1.00	-	0292-1L
15560.00	cut	S/Sst : w	-	-	-	-	0.01	-	-	-	-	-	0293-1L
15610.00	cut	S/Sst : w	0.01	0.01	-	-	0.03	33	-	-	0.50	338	0295-1L
15670.00	cut	S/Sst : w	0.02	0.06	0.07	0.86	0.07	86	100	0.1	0.25	385	0297-1L
15710.00	cut	S/Sst : w	0.01	0.02	-	-	0.01	200	-	-	0.33	352	0299-1L
15770.00	cut	S/Sst : w	0.03	0.04	0.09	0.44	0.03	133	300	0.1	0.43	359	0301-1L
15810.00	cut	S/Sst : w	0.14	0.23	0.31	0.74	0.25	92	124	0.4	0.38	367	0302-1L
15870.00	cut	S/Sst : w	0.12	0.29	0.25	1.16	0.17	171	147	0.4	0.29	374	0304-1L
15920.00	cut	S/Sst : w	0.03	0.07	0.04	1.75	0.06	117	67	0.1	0.30	375	0306-1L
15980.00	cut	S/Sst : w	0.06	0.10	0.13	0.77	0.08	125	163	0.2	0.38	378	0308-1L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
16040.00	cut	S/Sst : w	0.02	0.06	0.07	0.86	0.06	100	117	0.1	0.25	379	0310-1L
16100.00	cut	S/Sst : w	0.01	0.07	0.05	1.40	0.03	233	167	0.1	0.13	391	0312-1L
16160.00	cut	S/Sst : w	0.01	0.05	0.04	1.25	0.04	125	100	0.1	0.17	376	0314-1L
16220.00	cut	S/Sst : w	0.02	0.12	0.16	0.75	0.10	120	160	0.1	0.14	374	0316-1L
16280.00	cut	S/Sst : w	0.09	0.11	0.23	0.48	0.14	79	164	0.2	0.45	376	0318-1L
16330.00	cut	S/Sst : w to or gy	-	0.02	0.04	0.50	0.02	100	200	-	-	322	0320-1L
16380.00	cut	S/Sst : w to or gy	0.17	0.20	0.34	0.59	0.16	125	213	0.4	0.46	383	0322-1L
16425.00	cut	S/Sst : w to or gy	2.97	2.45	2.59	0.95	2.04	120	127	5.4	0.55	368	0324-1L
16500.00	cut	Sltst : lt gy	1.38	1.48	1.31	1.13	0.76	195	172	2.9	0.48	385	0327-1L
16530.00	cut	Sh/Clst: gy blk	3.00	5.29	0.62	8.53	2.94	180	21	8.3	0.36	455	0328-3L
16590.00	cut	Sh/Clst: gy blk	2.85	5.00	0.43	11.63	2.62	191	16	7.8	0.36	456	0330-3L
16790.00	cut	Sh/Clst: gy blk to blk	2.37	3.43	1.01	3.40	2.39	144	42	5.8	0.41	453	0336-1L
16930.00	cut	Sltst : lt gy to lt pu to brn gy	2.14	1.33	0.71	1.87	0.62	215	115	3.5	0.62	440	0341-1L
17020.00	cut	Sltst : lt pu to lt gy w	0.19	0.77	0.65	1.18	0.47	164	138	1.0	0.20	380	0344-2L
17130.00	cut	Sltst : lt pu	0.22	0.40	0.33	1.21	0.29	138	114	0.6	0.35	373	0348-1L

Table 2a: Rock-Eval table for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
17190.00	cut	Sltst : lt pu	0.21	0.37	0.35	1.06	0.32	116	109	0.6	0.36	372	0350-1L

Table 2bList of composite samples appearing in well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

NOTE: Depths shown in results tables correspond to the composite samples' lower depth.

Upper depth	Lower depth	Typ	Sample		Depth	Typ	Lithology	Sample
14170.00	14300.00	com	0283-0	is composed of:	14170.00	cut	Sh/Clst: dsk y brn, slt	211-3
					14190.00	cut	Sh/Clst: gy blk, slt	212-3
					14210.00	cut	Sh/Clst: gy blk, slt	213-4
					14235.00	cut	Sh/Clst: drk gy to gy blk	215-2
					14300.00	cut	Sh/Clst: blk	239-5
14320.00	14350.00	com	0284-0	is composed of:	14320.00	cut	Sh/Clst: gy blk, calc	240-3
					14340.00	cut	Sh/Clst: gy blk, slt	242-6
					14350.00	cut	Sh/Clst: drk gy to gy blk, slt	216-3
14380.00	14390.00	com	0285-0	is composed of:	14380.00	cut	Sh/Clst: dsk y brn, slt, trbofgs	219-3
					14390.00	cut	Sh/Clst: gy blk, slt	220-6
14410.00	14420.00	com	0286-0	is composed of:	14410.00	cut	Sh/Clst: gy blk	244-6
					14420.00	cut	Sh/Clst: drk gy, slt	245-5
14470.00	14520.00	com	0287-0	is composed of:	14470.00	cut	Coal : blk	221-4
					14490.00	cut	Coal : blk	222-4
					14520.00	cut	Coal : blk, trbofgs	224-4
14620.00	14640.00	com	0288-0	is composed of:	14620.00	cut	Sh/Clst: drk gy to gy blk, slt, ang, sil	229-4
					14640.00	cut	Sh/Clst: drk gy to gy blk, ang, sil	230-5

Depth unit of measure: ft

NOTE: Depths shown in results tables correspond to the composite samples' lower depth.

Upper depth	Lower depth	Typ	Sample		Depth	Typ	Lithology	Sample
14700.00	14720.00	com	0289-0	is composed of:	14700.00	cut	Sltst : lt gy to m gy, calc	233-4
					14720.00	cut	Sltst : lt gy to m gy, calc, trbofgs	234-4
14760.00	14800.00	com	0290-0	is composed of:	14760.00	cut	Sh/Clst: gy blk, slt, sil	236-5
					14790.00	cut	Sh/Clst: gy blk, calc, slt	237-4
					14800.00	cut	Sh/Clst: gy blk	238-5

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
12410.00	cut	Ca : w to lt gy w	9.36	14.14	45.74	30.76	0.81	0106-1L
12420.00	cut	Ca : w	10.17	20.38	50.98	18.47	0.97	0107-1L
12430.00	cut	Ca : w to lt pi	6.25	23.06	58.52	12.17	0.38	0108-1L
12440.00	cut	Ca : w to lt pi	7.60	12.46	44.81	35.12	0.50	0109-2L
12450.00	cut	Ca : w to lt gy w	11.23	16.41	67.17	5.20	0.09	0110-1L
12680.00	cut	Ca : w to lt gy w	3.58	31.66	58.01	6.76	1.44	0131-1L
12790.00	cut	Ca : w to lt gy w	10.20	21.76	63.84	4.20	0.09	0142-1L
12810.00	cut	Ca : w to lt gy w to lt gn gy	8.38	22.20	50.62	18.80	0.41	0144-1L
12900.00	cut	Ca : lt gy w to gy pi	6.41	29.36	55.39	8.85	1.18	0149-1L
12960.00	cut	Ca : w to lt gy w	5.44	14.87	39.84	39.86	1.20	0151-1L
13000.00	cut	Ca : w to lt gy w	3.40	24.53	56.36	15.71	1.24	0152-1L
13030.00	cut	Sh/Clst: lt brn gy to m brn gy	7.29	14.65	43.69	34.37	7.24	0153-1L
13120.00	cut	Ca : lt gy w	5.91	16.09	37.76	40.24	0.83	0155-1L
13230.00	cut	Ca : lt gy w to lt gy	6.14	14.77	40.19	38.89	0.36	0158-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	6.81	27.46	56.01	9.72	1.78	0160-1L
13330.00	cut	Ca : lt gy w to lt gy to gy pi	6.16	14.79	44.34	34.72	1.40	0161-1L
13360.00	cut	Ca : lt gy w to lt gy to gy pi	13.76	22.88	56.58	6.79	1.54	0162-1L
13400.00	cut	Ca : lt gy w to lt gy to gy pi	6.93	12.03	45.07	35.96	1.12	0163-1L
13430.00	cut	Ca : lt gy w to lt gy to gy pi	9.70	21.37	59.99	8.94	0.76	0164-1L
13490.00	cut	Ca : lt gy w to lt gy to gy pi	6.85	13.68	39.95	39.53	0.57	0166-1L
13520.00	cut	Ca : lt gy w to lt gy to gy pi	12.41	22.81	55.29	9.49	0.64	0167-1L
13580.00	cut	Ca : lt brn gy to lt gy w	17.83	21.51	54.13	6.53	0.55	0169-1L
13660.00	cut	Ca : lt gy w to lt gy	9.46	29.12	58.48	2.94	0.71	0176-1L
13720.00	cut	Ca : lt gy w to lt gy to m gy	9.53	14.89	46.47	29.11	0.62	0179-1L
13750.00	cut	Sh/Clst: gy blk	3.52	18.19	42.77	35.52	4.47	0182-2L
13760.00	cut	Sh/Clst: gy blk	8.11	20.10	45.33	26.46	13.44	0184-1L
13780.00	cut	Sh/Clst: gy blk	4.55	13.37	43.17	38.91	5.93	0186-1L
13840.00	cut	Sh/Clst: gy blk	5.66	27.73	50.17	16.44	3.95	0191-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
13900.00	cut	Sh/Clst: gy blk	4.16	16.18	41.88	37.78	3.46	0194-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	6.03	20.08	42.43	31.45	4.55	0200-1L
14050.00	cut	Sh/Clst: drk gy to gy blk	5.96	18.75	38.69	36.60	3.20	0204-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	5.39	17.85	38.06	38.70	3.42	0206-1L
14090.00	cut	Sh/Clst: drk gy to gy blk	6.89	20.78	41.88	30.46	3.33	0207-1L
14110.00	cut	Sh/Clst: gy blk to blk	5.57	17.11	39.08	38.25	2.76	0208-1L
14241.00	ccp	Sltst : lt brn gy to brn gy to gy blk	21.45	35.64	34.04	8.87	2.35	0353-1L
14242.00	ccp	Sltst : brn gy to gy blk	25.97	28.95	31.53	13.55	2.22	0354-1L
14245.00	ccp	S/Sst : drk brn to dsk y brn	13.14	24.77	48.35	13.75	0.56	0355-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	26.39	38.66	30.64	4.31	0.63	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	18.28	21.33	44.51	15.88	0.98	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	14.29	36.53	42.53	6.66	0.88	0358-1L
14300.00	com	bulk	8.53	29.73	47.82	13.91	3.17	0283-0B

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
14350.00	com	bulk	4.70	10.75	39.30	45.26	5.48	0284-0B
14390.00	com	bulk	23.25	23.66	24.26	28.83	9.10	0285-0B
14420.00	com	bulk	11.16	18.03	36.75	34.06	4.32	0286-0B
14520.00	com	bulk	20.23	16.18	23.41	40.18	33.57	0287-0B
14640.00	com	bulk	10.75	19.18	34.73	35.34	2.21	0288-0B
14720.00	com	bulk	11.47	36.26	46.73	5.54	0.35	0289-0B
14800.00	com	bulk	7.62	12.72	39.67	39.99	3.25	0290-0B
14840.00	cut	S/Sst : w	10.68	26.84	52.79	9.69	0.12	0173-3L
14880.00	cut	S/Sst : w	9.59	26.41	45.20	18.79	0.18	0247-1L
14910.00	cut	S/Sst : w	9.45	21.82	46.42	22.31	0.20	0249-1L
15370.00	cut	S/Sst : w	2.05	13.88	64.94	19.13	0.32	0274-1L
16425.00	cut	S/Sst : w to or gy	9.08	17.30	52.91	20.17	2.45	0324-1L
16500.00	cut	Sltst : lt gy	4.18	32.92	52.22	10.68	1.48	0327-1L
16530.00	cut	Sh/Clst: gy blk	7.95	19.16	44.35	28.54	5.29	0328-3L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
16590.00	cut	Sh/Clst: gy blk	5.08	16.57	37.16	41.18	5.00	0330-3L
16790.00	cut	Sh/Clst: gy blk to blk	5.32	18.52	41.30	34.85	3.43	0336-1L
16930.00	cut	Sltst : lt gy to lt pu to brn gy	1.90	16.05	45.06	37.00	1.33	0341-1L

Table 4: Gaseous Hydrocarbons Data from Nocs 2/4-17

Compound	Sample 1 dst#2 area	Sample 2 dst#2 area
Methane	7632	11154549
Ethane	1650	9257707
Propane	4121	10709723
Isobutane	1449	2833619
Butane	4973	6002286
Neopentane	0	29795
2-Methylbutane	3850	2053689
Pentane	5213	1877148
2,2-Dimethylbutane	0	32524
Cyclohexane	18435	113380
Metylcyclopentane	43610	75774
2-Methylpentane	8732	429678
3-Methylpentane	6837	202513
Hexane	26375	401013
Methylcyclohexane	132683	64716
2-Methylhexane	84033	111782
Heptane	97553	72536
Benzene	0	28125

Table 5 a: Weight of EOM and Chromatographic Fraction for well NOCS 2/4-17, NW-TOR

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
	oil	DST#2	-	63.6	51.8	9.0	1.4	1.4	60.8	2.8	-	0360-0B
12420.00	cut	Ca : w	9.8	43.8	31.0	2.7	1.8	8.3	33.7	10.1	0.11	0107-1L
12900.00	cut	Ca : lt gy w to gy pi	9.8	55.1	39.7	5.6	2.9	6.9	45.3	9.8	0.88	0149-1L
13000.00	cut	Ca : w to lt gy w	10.6	52.6	40.6	6.8	2.5	2.7	47.4	5.2	0.76	0152-1L
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	9.8	47.9	35.2	3.9	2.1	6.7	39.1	8.8	0.88	0160-1L
13770.00	cut	Sh/Clst: gy blk	8.6	55.5	32.4	12.0	1.8	9.3	44.4	11.1	3.40	0185-1L
13840.00	cut	Sh/Clst: gy blk	8.4	46.7	27.6	9.0	3.5	6.6	36.6	10.1	5.21	0191-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	6.4	40.8	25.2	7.9	1.1	6.6	33.1	7.7	3.81	0200-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	2.3	13.2	7.4	2.6	0.9	2.3	10.0	3.2	2.98	0206-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	9.4	23.8	17.4	3.1	1.4	1.9	20.5	3.3	0.91	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	8.4	20.7	14.0	3.3	1.6	1.8	17.3	3.4	1.10	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	9.7	27.4	20.0	3.6	1.7	2.1	23.6	3.8	0.98	0358-1L
16500.00	cut	Sltst : lt gy	8.5	11.3	5.6	1.3	0.9	3.5	6.9	4.4	0.76	0327-1L

Table 5 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
	oil	DST#2	-	-	-	-	-	-	-	0360-0B
12420.00	cut	Ca : w	4478	3169	276	184	848	3445	1032	0107-1L
12900.00	cut	Ca : lt gy w to gy pi	5633	4059	572	296	705	4631	1002	0149-1L
13000.00	cut	Ca : w to lt gy w	4981	3844	643	236	255	4488	492	0152-1L
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	4872	3580	396	213	681	3977	895	0160-1L
13770.00	cut	Sh/Clst: gy blk	6445	3763	1393	209	1080	5156	1289	0185-1L
13840.00	cut	Sh/Clst: gy blk	5546	3277	1068	415	783	4346	1199	0191-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	6335	3913	1226	170	1024	5139	1195	0200-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	5689	3189	1120	387	991	4310	1379	0206-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	2529	1849	329	148	201	2178	350	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	2470	1670	393	190	214	2064	405	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	2818	2057	370	174	216	2427	390	0358-1L
16500.00	cut	Sltst : lt gy	1324	656	152	105	410	808	515	0327-1L

Table 5 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
	oil	DST#2	-	-	-	-	-	-	-	0360-0B
12420.00	cut	Ca : w	4071.39	2881.58	250.98	167.32	771.52	3132.55	938.84	0107-1L
12900.00	cut	Ca : lt gy w to gy pi	640.22	461.28	65.07	33.70	80.17	526.35	113.87	0149-1L
13000.00	cut	Ca : w to lt gy w	655.40	505.88	84.73	31.15	33.64	590.61	64.79	0152-1L
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	553.73	406.92	45.08	24.28	77.45	452.00	101.73	0160-1L
13770.00	cut	Sh/Clst: gy blk	189.59	110.68	40.99	6.15	31.77	151.67	37.92	0185-1L
13840.00	cut	Sh/Clst: gy blk	106.46	62.92	20.52	7.98	15.05	83.43	23.02	0191-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	166.28	102.70	32.20	4.48	26.90	134.90	31.38	0200-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	190.93	107.04	37.61	13.02	33.27	144.64	46.29	0206-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	277.94	203.20	36.20	16.35	22.19	239.40	38.54	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	224.56	151.88	35.80	17.36	19.53	187.68	36.88	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	287.65	209.96	37.79	17.85	22.05	247.75	39.89	0358-1L
16500.00	cut	Sltst : lt gy	174.31	86.38	20.05	13.88	53.99	106.44	67.87	0327-1L

Table 5 d: Composition of material extracted from the rock (%) for well NOCS 2/4-17, NW-TOR

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
	oil	DST#2	81.45	14.15	2.20	2.20	95.60	4.40	575.56	2171.43	0360-0B
12420.00	cut	Ca : w	70.78	6.16	4.11	18.95	76.94	23.06	1148.15	333.66	0107-1L
12900.00	cut	Ca : lt gy w to gy pi	72.05	10.16	5.26	12.52	82.21	17.79	708.93	462.24	0149-1L
13000.00	cut	Ca : w to lt gy w	77.19	12.93	4.75	5.13	90.11	9.89	597.06	911.54	0152-1L
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	73.49	8.14	4.38	13.99	81.63	18.37	902.56	444.32	0160-1L
13770.00	cut	Sh/Clst: gy blk	58.38	21.62	3.24	16.76	80.00	20.00	270.00	400.00	0185-1L
13840.00	cut	Sh/Clst: gy blk	59.10	19.27	7.49	14.13	78.37	21.63	306.67	362.38	0191-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	61.76	19.36	2.70	16.18	81.13	18.87	318.99	429.87	0200-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	56.06	19.70	6.82	17.42	75.76	24.24	284.62	312.50	0206-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	73.11	13.03	5.88	7.98	86.13	13.87	561.29	621.21	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	67.63	15.94	7.73	8.70	83.57	16.43	424.24	508.82	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	72.99	13.14	6.20	7.66	86.13	13.87	555.56	621.05	0358-1L
16500.00	cut	Sltst : lt gy	49.56	11.50	7.96	30.97	61.06	38.94	430.77	156.82	0327-1L

Table 6 : Saturated Hydrocarbon Ratios for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	Pristane nC17	Pristane Phytane	Pristane + Phytane nC17 + nC18	Phytane nC18	CPI	Sample
	oil	DST#2	0.46	1.35	0.43	0.39	1.10	0360-0B
12420.00	cut	Ca : w	0.79	1.05	0.76	0.73	1.09	0107-1L
12900.00	cut	Ca : lt gy w to gy pi	0.61	1.04	0.58	0.55	1.07	0149-1L
13000.00	cut	Ca : w to lt gy w	0.50	1.12	0.48	0.46	1.04	0152-1L
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	0.55	0.85	0.54	0.54	1.07	0160-1L
13770.00	cut	Sh/Clst: gy blk	0.41	1.42	0.38	0.35	1.00	0185-1L
13840.00	cut	Sh/Clst: gy blk	0.39	1.32	0.37	0.34	1.04	0191-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	0.36	1.58	0.32	0.28	1.08	0200-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	0.36	1.49	0.33	0.29	1.07	0206-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	0.50	1.25	0.47	0.43	1.10	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	0.51	1.35	0.48	0.44	1.09	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	0.57	1.27	0.53	0.48	1.11	0358-1L
16500.00	cut	Sltst : lt gy	0.45	1.19	0.43	0.40	1.09	0327-1L

Table 7 : Aromatic Hydrocarbon Ratios for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MPI1	MPI2	Rc	DBT/P	4/1MDBT	(3+2) /1MDBT	Sample
	oil	bulk	2.15	5.04	0.31	2.32	1.39	1.57	1.23	-	-	-	0360-0B
12420.00	cut	Ca : w	1.02	1.43	0.21	0.83	0.73	0.85	0.84	-	6.47	1.10	0107-1L
12900.00	cut	Ca : lt gy w to gy pi	1.05	2.14	0.12	0.91	0.81	0.90	0.89	-	-	-	0149-1L
13000.00	cut	Ca : w to lt gy w	1.04	1.58	0.10	1.01	0.85	0.98	0.91	-	9.27	1.40	0152-1L
13300.00	cut	Ca : lt gy w to lt gy to lt gy pi	1.09	2.50	0.16	0.85	0.79	0.90	0.87	-	9.98	1.54	0160-1L
13770.00	cut	Sh/Clst: gy blk	1.29	2.43	0.17	1.03	0.82	0.93	0.89	-	-	-	0185-1L
13840.00	cut	Sh/Clst: gy blk	1.26	2.59	0.16	0.97	0.72	0.78	0.83	-	-	-	0191-1L
14000.00	cut	Sh/Clst: dsk brn to gy blk	1.37	2.48	0.16	1.06	0.83	0.92	0.90	-	-	-	0200-1L
14070.00	cut	Sh/Clst: drk gy to gy blk	1.39	2.73	0.17	1.12	0.84	0.93	0.90	-	-	-	0206-1L
14245.60	ccp	S/Sst : drk brn to dsk y brn	2.36	5.79	0.30	1.99	1.38	1.62	1.23	-	-	-	0356-1L
14290.10	ccp	S/Sst : brn gy to drk brn to dsk y brn	2.37	6.29	0.32	2.07	1.35	1.58	1.21	-	-	-	0357-1L
14292.00	ccp	Sltst : brn gy to m gy	2.34	5.84	0.31	1.98	1.37	1.61	1.22	-	-	-	0358-1L
16500.00	cut	Sltst : lt gy	1.96	5.48	0.24	2.09	0.98	1.11	0.99	-	-	-	0327-1L

Table 8 : Thermal Maturity Data for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
13030.00	cut	bulk	0.43	4	0.03	-	-	-	0153-0B
13030.00	cut	Sh/Clst: lt brn gy to m brn gy	-	-	-	-	6.5-7.0	433	0153-1L
13730.00	cut	Ca : lt gy w to lt gy	-	-	-	-	NDP	429	0180-1L
13750.00	cut	bulk	NDP	-	-	-	-	-	0182-0B
13755.00	cut	Sh/Clst: gy blk	-	-	-	-	8.5-9.0(?)	446	0183-1L
13840.00	cut	bulk	0.82	2	0.02	-	-	-	0191-0B
13840.00	cut	Sh/Clst: gy blk	-	-	-	-	8.5(?)	442	0191-1L
13945.00	cut	Sh/Clst: gy blk	-	-	-	-	8.5-9.0	450	0197-1L
14000.00	cut	bulk	0.97	4	0.04	-	-	-	0200-0B
14050.00	cut	Sh/Clst: drk gy to gy blk	-	-	-	-	8.5-9.0	453	0204-1L
14110.00	cut	bulk	0.97	5	0.03	-	-	-	0208-0B
14110.00	cut	Sh/Clst: gy blk to blk	-	-	-	-	8.5	453	0208-1L
14390.00	com	bulk	-	-	-	-	8.0	465	0285-0B
14520.00	com	bulk	-	-	-	-	8.5-9.0	473	0287-0B

Table 8 : Thermal Maturity Data for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
14800.00	com	bulk	-	-	-	-	8.5-9.5	455	0290-0B
14880.00	cut	bulk	1.22	3	0.05	-	-	-	0247-0B
15530.00	cut	bulk	1.31	3	0.08	-	-	-	0292-0B
15870.00	cut	bulk	1.35	6	0.09	-	-	-	0304-0B
16220.00	cut	bulk	1.27	5	0.07	-	-	-	0316-0B
16425.00	cut	bulk	1.12	2	0.09	-	-	-	0324-0B
16500.00	cut	bulk	1.30	2	0.00	-	-	-	0327-0B
16530.00	cut	Sh/Clst: gy blk	-	-	-	-	9.0	455	0328-3L

Table 9 : Visual Kerogen Composition Data for well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Typ	Lithology	LIPT %	Amor L	Lip Det	Sp/Pol	Cuticl	Resin	Algae	Dinofl	Acrit	Bit L	INERT %	Fusin	SemFus	IntDet	Micrin	Sclero	Bit I	VITR %	Tellin	Collin	VitDet	Amor V	Bit V	Sample
13030.00	cut	Sh/Clst: lt brn gy to m brn gy	100	*	**	*			*	*			TR			*				TR	*		**			0153-1L
13730.00	cut	Ca : lt gy w to lt gy	NDP	*	**							*	NDP			*				NDP						0180-1L
13755.00	cut	Sh/Clst: gy blk	60	**		*			*				30			*				10	*		**			0183-1L
13840.00	cut	Sh/Clst: gy blk	90	**		*			*				5			*				5			*			0191-1L
13945.00	cut	Sh/Clst: gy blk	50	**		*			*				20			*				30	*		**			0197-1L
14050.00	cut	Sh/Clst: drk gy to gy blk	40	*		**	*		*				30	**	*	*				30	**		*			0204-1L
14110.00	cut	Sh/Clst: gy blk to blk	35	*		**	*		*				35	**	*	*				30	**		*			0208-1L
14390.00	com	bulk	70	**		*			*				10			*				20	*		**			0285-0B
14520.00	com	bulk	50	*		**							20	*	*	*				30	**		*			0287-0B
14800.00	com	bulk	50	*		**				*			30	*	*	*				20	*		*			0290-0B
16530.00	cut	Sh/Clst: gy blk	90	**		*			*				5			*				5	*		**			0328-3L

Table 10A: Variation in Triterpane Distribution (peak height) SIR for Well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Lithology	B/A	B/B+A	B B+E+F	C/E	C/C+E	X/E	Z/E	Z/C	Z/Z+E	Q/E	E/E+F	C+D C+D+E+F	D+F/C+E	J1 J1+J2%	Sample
	DST#2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0360-0
12900.00	Ca	0.14	0.12	0.08	0.35	0.26	0.29	0.03	0.09	0.03	0.20	0.96	0.28	0.08	65.26	0149-1
13770.00	Sh/Clst	-	-	-	0.34	0.25	2.19	0.33	0.96	0.25	1.40	1.00	0.35	0.15	54.85	0185-1
14245.60	S/Sst	-	-	-	-	-	1.36	-	-	-	3.94	1.00	-	-	-	0356-1
14292.00	Sltst	-	-	-	0.85	0.46	1.37	-	-	-	4.17	1.00	0.46	-	-	0358-1
16500.00	Sltst	0.76	0.43	0.20	0.92	0.48	0.07	0.09	0.10	0.08	0.19	0.92	0.48	0.09	62.31	0327-1

Table 10B: Variation in Sterane Distribution (peak height) SIR for Well NOCS 2/4-17, NW-TOR

Depth unit of measure: ft

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
	DST#2	0.94	-	87.27	2.54	1.00	0.87	0.77	0.77	-	3.43	0360-0
12900.00	Ca	0.94	51.84	83.38	1.97	0.83	0.54	0.37	0.72	1.08	5.21	0149-1
13770.00	Sh/Clst	0.96	53.23	81.58	2.09	0.81	0.68	0.47	0.69	1.14	4.74	0185-1
14245.60	S/Sst	0.91	-	86.25	30.11	1.00	0.89	0.76	0.76	-	3.14	0356-1
14292.00	Sltst	0.92	51.95	77.85	2.63	0.77	0.84	0.70	0.64	1.08	3.66	0358-1
16500.00	Sltst	0.79	43.77	77.04	1.62	0.79	0.44	0.31	0.63	0.78	2.98	0327-1

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

Table 10C: Raw GCMS triterpane data (peak height) SIR for Well NOCS 2/4-17, NW-TOR

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			
	DST#2	7898.3	4778.8	0.0	0.0	0.0	2197.6	0.0	0.0	0.0	0360-0
		1352.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		0.0	0.0	0.0	0.0	0.0	0.0	0.0			
12900.00	Ca	16932.5	10805.9	3860.6	8369.0	3720.0	36312.8	4932.4	1620.5	18788.3	0149-1
		15224.1	3085.9	53119.0	2491.6	19553.8	11219.1	3158.9	14330.7		
		7627.6	7387.5	4218.3	3680.0	1923.3	2214.7	1151.9			
13770.00	Sh/Clst	12439.7	8738.7	2472.5	3585.3	2526.2	19798.3	0.0	2057.8	2135.5	0185-1
		13670.4	1261.8	6239.2	0.0	2803.0	1716.1	1994.8	2476.5		
		2038.5	2017.3	1209.6	1027.3	0.0	1147.3	1075.3			
14245.60	S/Sst	9119.8	5077.2	0.0	1396.0	2082.2	3090.0	0.0	0.0	0.0	0356-1
		1758.2	0.0	1289.5	0.0	0.0	0.0	0.0	0.0		
		0.0	0.0	0.0	0.0	0.0	0.0	0.0			
14292.00	Sltst	11363.8	6145.0	3045.6	2882.1	2448.4	3561.0	0.0	0.0	1244.3	0358-1
		2017.0	0.0	1471.9	0.0	0.0	0.0	0.0	0.0		
		0.0	0.0	0.0	0.0	0.0	0.0	0.0			

Table 10C: Raw GCMS triterpane data (peak height) SIR for Well NOCS 2/4-17, NW-TOR

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			
16500.00	Sltst	97108.7	56748.0	31636.7	72995.3	19784.0	107705.5	81915.3	26475.8	277623.5	0327-1
		19793.7	24343.8	300184.5	26894.0	128262.1	81014.3	12952.8	69743.9		
		42189.6	39838.9	24410.5	16988.9	12335.7	14066.6	8017.6			

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					
	DST#2	22272.0	2184.3	15127.1	8583.8	2911.0	2481.4	3518.8	2680.2	1196.2	0360-0
		5129.5	2619.5	885.6	4062.4	1280.6	0.0	973.4	2465.4		
		0.0	0.0	1573.0	1151.9	794.8					
12900.00	Ca	22131.3	4124.3	60081.9	35247.2	12169.6	10906.3	20408.6	10798.4	5925.7	0149-1
		27571.4	13138.1	4111.9	20967.3	5712.3	2992.0	5885.5	9267.5		
		2056.1	3286.3	8704.1	7200.1	3052.6					
13770.00	Sh/Clst	22394.4	2818.0	49654.7	31080.7	13034.6	8907.5	19562.7	12376.2	6867.6	0185-1
		23114.3	11157.9	1898.8	17279.2	4814.9	1630.0	3885.3	6182.0		
		1321.0	1945.3	4342.7	3751.4	1709.4					
14245.60	S/Sst	25646.0	2653.0	15599.4	10680.6	377102.0	3208.5	4802.5	3938.0	1573.1	0356-1
		6040.0	3671.2	1549.2	4551.0	1258.1	0.0	1656.5	2568.7		
		927.0	0.0	1304.4	1276.3	822.7					
14292.00	Sltst	25482.6	2297.3	20100.5	12881.6	3469.2	4210.4	6141.3	3899.8	2068.6	0358-1
		6699.4	4072.4	1682.5	5368.8	1572.9	1122.7	1814.9	2984.2		
		985.4	973.1	1928.9	1363.0	900.1					

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					
16500.00	Sltst	97509.3	41477.3	169861.7	108064.5	39396.0	42233.2	66036.8	40610.3	48170.5	0327-1
		95450.2	68443.2	46199.1	61762.1	23862.4	21581.7	40893.4	46477.7		
		18822.8	28720.9	59729.8	50337.8	36895.0					