A.S. NORSKE SHELL

31/2 - 7

MUD LOGGING REPORT

A.S. NORSKE SHELL

31/2 - 7

MUD LOGGING REPORT

GENERAL WELL DATA

CLIENT	:	NORSKE SHELL		
WELL	:	31/2-7		
COUNTRY	:	NORWAY		
DISTRICT	:	NORTH SEA		
BLOCK	:	31		
FIELD	:	TROLL (FLAT TOP)		
LOCATION –				
LATITUDE	:	60° 51' 26"		
LONGITUDE	:	03° 27' 09"		
UTM NORTH	:			
UTM EAST	:			
DRILLING CONTRACTOR	:	DOLPHIN SERVICES A/S		
RIG	:	BORGNY DOLPHIN		
ELEVATION KELLY BUSHING	:			
ELEVATION K.B. A.M.S.L.	:	25m		
SEAWATER DEPTH	:	363m		
PROPOSED T.D.	:	1660	T.V.D.	:
ACTUAL T.D.	:	1660	T.V.D.	:
T.D. FROM ELECTRIC LOGS	:	1660.7	T.V.D.	:
SPUDDED ON	:	22/IV/82		
REACHED T.D. ON	:	18/V/82		
RIG RELEASED ON	:			
WELL STATUS	:			
ENGINEERS	:	J QUINCY M WATSON R McAINSH S DOUGLASS		

CUTTINGS ANALYSIS

REMARKS

Mud Logging sample catching began on 25/IV/82, below the 30" casing shoe. A 17 1/2" pilot hole was drilled From 465-775m, samples being taken every 10m. This was then reamed out and the 20" casing set.

Deviation surveys:

Depth	
569	0.25°N 64°ET.
670	0.25°N 34°ET.
764	Misrun

REMARKS

SIDEWALL CORES FOR THIS SECTION:

858m: CLST:(brn), (hygroturgid)/hygroclastic, cmb Brk, cons, sft, calc, ((slt)), mic, (lig).

915m: CLST:(brn), hygrofissile, cmb Brk, cons, sft, calc, ((slt)).

972m: CLST:(brn)/(gy), hygroclastic/hygrofissile, cmb Brk, cons, sft, ((calc)), (glauc), mic, (lig).

1020m: CLST:(brn)/brn lam, hygroturgid, cmb Brk, cons, sft, (calc) slt, mic, lig.

DEPTH	LITHOLOGY 1	2	3	4	5	6	POROSITY	FLUORESCENCE	CAVINGS	2	1	DESCRIPTION/REMARKS
470	100	x	xx						x			(1)CL: Med gy, earthy, hygroturgid, sft calc.
480	100	x	x						0	3		(2)S: clr-orng, mSU-crsSL, rnd, (srt), uncons.
490	100	x	x						x			(3)LST: Wh, I copt wkst, sft-mod hd.
500	70	30	x	x	x				x			(4)LIG.
510	90	10	x	x	x	x			0.	13		(5)SST: Dk gy/(gn), fSL-fSU, (rnd), (srt), cmt,
520	90	10			x				x			(6)Foss Frags calc.
530	90	10			x	x			x			
540	90	10			x	x			x			
550	90	10							x			
560	100	xx							x			
570	100	xx							x			
580	100	x				x			x			
590	100								0.	24		(1)Bec CLST: med gy, earthy, hygroturgid, occ
600	100								0.	28		(hygroclastic), sft, occ sft,s,
610	100								0.	30		(carb), (slt), (calc)
620	100								0.	31		
630	100								0.	50		
640	100								0.	51		
650	100								0.	45		
660	100								0.	61		
670	100								0.	62		
680	100								0.	36		
690	100								0.	38		
700	100								0.	36		
710	100								0.	20		(1)A/A bec. glauc, foss.
720	100								0.	15		
730	100								x			
740	100								x			

LITHOLOGY 1	2	3	4	5	6	POROSITY FLUORESCENCE CAVINGS C	1	DESCRIPTION/REMARKS
100						0.	20	(1)CLST:Med cy(gn)-((brn)) earthy, hygroturgid,
100						x		sft, slt, glauc, mic foss, (calc)-((calc))
100						x		
100						x		
100						x		
100						x		
100						0.	2	
100						1.	5	
80	20	x				x		(2)SST:Clr/mlk wh, occ pnk, mSU-crsSL
100	x	x				x		(3)SST:Dk cy/blk, mott wh, fSL-mSL, hd, occ
100	x	x				0.	40	((calc))
100	x	x				0.	50	
100	x					0.	20	
100						0.	70	
100						0.	40	
100						0.	30	
100						0.	60	())Bec; slt, hd.
100						0.	30	
90			10			0.	20	(4)LST:lcont pkst,Wh, f-f, cmt, hd, mmm bd occ,
100			x			0.	20	((py)).
100						0.	30	
100						0.	50	
100						0.	10	
100						0.	20	
100				x		0.	30	(5)SST:(por), lt brn-rd, fSL-fSU, srt, (ang),
100						0.	50	cmt, calc.
90					10	0.	20	(6)CLST:Wh/(brn), hygroturgid, sft, (slt), calc.
100				xx	xx			Tr:Dol;(brn),cmt, hd

REMARKS

From 1270m, samples were taken every three metres, to the final depth of the 17 1/2" phase: 1517m

SIDEWALL CORES FOR THIS SECTION:

1070: CLST:(brn), cmb Brk, non swell/(cryptofissile), cons, sft, (calc), (mic).

1120: CLST:med brn, hygroturgid/hygroclastic, cmb brk, cons, sft, slt, ((glauc)), mic.

1134: CLST:brn, hygrofissile, cmb Brk, cons, sft, slt, (mic), mmm bd lam.

1145: CLST:(gn), cmb Brk, hygroturgid, cons, sft, glauc.

1154: CLST:(gn), cmb Brk, hygroturgid, cons, sft, glauc, mic.

1165.9: CLST:(gn), cmb Brk, hygroturgid, cons, sft, glauc, ((slt))

1205: CLST:(gn), cmb Brk, hygroturgid, cons, sft, glauc, (slt), (mic).

1241: CLST:(gn), earthy, hygroturgid, cons, sft, glauc, (slt), (mic).

1271.9: CLST:(brn), cmb Brk, hygroturgid, cons, sft, (calc), ((mic)), (slt).

LITHOLOGY 1	2	3	4	5	6	POROSITY	FLUORESCENCE	CAVINGS	C1	DESCRIPTION/REMARKS
100					x				0.10	(6) Dol;A/A;
100					x				0.10	
100					x				0.25	
100					x				0.20	(1)CLST:brn/(gy)/(gn), earthy, hygroturgid,
100									0.30	occ non swell, sft, slt, ((calc)), occ
100									0.30	hd, glauc-py.
100									0.25	
100									0.30	
100									0.30	(1)CLST:Bec glauc
100									0.35	
100									0.30	
70	30								0.30	(2)CLST:med brn, non swell, sft, occ mod hd,slt;
50	50								0.40	
90	10								0.30	
100	xxx								0.35	
100	xxx								0.70	
100									0.60	
100									0.50	
100									0.30	
100									0.50	
100									0.80	
100									0.70	
100									1.50	
100									2.50	
100									3.20	
100									2.10	
100									2.00	
100									1.50	

REMARKS

SIDEWALL CORES FOR THIS SECTION:

1310: CLST:(gn), cmb Brk, hygroturgid, cons, sft, glauc, (slt), mic, (py).

1342.5: CLST:brn, gn, cmb Brk, hygroclastic, cons, sft, glauc ((mic)), (calc).

1361: CLST:(brn), earthy, hygrofissile/hygroclastic, cons, sft, ((mic)), ((lig)).

DEPTH	LITHOLOGY 1	2	3	4	5	6	POROSITY	FLUORESCENCE	CAVINGS C1	DESCRIPTION/REMARKS
1282	100								3.20	
1285	100								2.20	
1288	100								2.60	
1291	100								2.60	
1294	90	10							2.10	(2)CLST:(brn)/gy, sft,hygroturgid, slt, (calc).
1297	90	10							3.80	
1300	90	10							2.00	
1303	90	10							2.00	
1306	90	10							1.40	
1309	90	10							1.30	
1312	80	20							1.50	
1315	80	20							1.40	
1318	80	20							1.30	
1321	50	50							1.30	
1324	40	60							1.50	
1327	20	80							1.60	
1330	xx	100							1.50	
1333	xx	100							1.30	
1336	xx	100							1.50	
1339		100							0.60	
1342		100							0.40	
1345		100							0.35	
1348		100							0.35	
1351		100							0.57	
1354		100							0.40	
1357		100							0.45	
1360		100							0.25	
1363		100							0.40	

REMARKS

SIDEWALL CORES FOR THIS SECTION:

1364: MARL:gy/blk/brn, earthy, non swell, cons, sft, slt,(carb)

1369: CLST:gy/gy, earthy, non swell, cons, sft, slt, lig.

1372: CLST:gy, earthy, hygroclastic, cons, sft, ((slt)),glauc, mic, (lig).

1377.5: CLST:gy, cmb Brk, non swell, cons, sft, ((slt)), mm-inter bd: CLST:gy, earthy, non swell, cons, sft, slt, lig.

1394: CLST:(gy), cmb Brk, cryptofissile, sft, ((slt)), mic, mm bd lig.

1409: CLST:gy, earthy, hygroturgid, cons, sft, slt.

1425.5: CLST:(gy)/(gn), cmb Brk, hygroturgid/hygroclastic, cons, sft, (py).

1437.5: CLST:(gy), cmb Brk, hygroclastic, cons, sft, ((slt)) ((mic)).

DEPTH	LITHOLOGY 1	2	3	4	5	6	POROSITY	FLUORESCENCE	CAVINGS	C 1	DESCRIPTION/REMARKS
1366	100									0.45	(1)CLST:gy/(gn)/(brn), sft, slt, hygroturgid,
1369	100									0.75	(calc), glauc.
1372	100									0.95	
1375	100									1.50	
1378	100									1.30	
1381	100									1.00	
1384	100									1.10	
1387	100									2.00	
1390	100									1.40	
1393	100									1.10	
1396	100									1.20	
1399	100									1.95	
1402	100									1.30	
1405	100									1.00	
1408	100									1.10	(1)CLST:bec. gy.
1411	100									1.20	
1414	100									1.20	
1417	100									0.80	
1420	100									1.30	
1423	100									0.70	
1426	100									1.10	
1429	100									1.30	
1432	100									1.30	
1435	100									1.40	
1438	100									0.80	
1441	100									0.40	
1444	100									0.40	
1447	100									0.40	

REMARKS

SIDEWALL CORES FOR THIS SECTION:

1455: CLST:(gy), cmb Brk/occ earthy, hygroclastic, cons, sft, (slt)/slt lens, mic.

1470: CLST:gy, earthy, hygroturgid, cons, sft, slt, ((mic))

1485: CLST:(gy), cmb Brk, hygroturgid, cons, sft, ((slt)), mic.

1499: CLST:gy, cmb Brk, hygroturgid, cons, sft, mic, slt lens.

1501.6: CLST:gy, cmb Brk/occearthy, hygroturgid, cons, sft/occ (hd), mic, slt, lig/glauc/slt/mic bd lens.

DEPTH	LITHOLOGY 1	2	3	4	5	6	POROSITY FLUORESCENCE CAVINGS	C 1	DESCRIPTION/REMARKS
1450	100							0.50	Colour variations in the claystones, occur throughout, varying from predominantly grey greens, to earthy brown greys.
1453	100							0.60	
1456	100							0.70	
1459	100	xx						0.60	(2)LST:II chk Mdst, Wh/(gy), cmt, hd.
1462	100	x						0.60	
1465	100							0.50	
1468	100							0.40	
1471	100							0.40	
1474	100							0.40	
1477	100							0.40	
1480	100							0.30	
1483	100							0.60	
1486	100							0.70	
1489	100							0.60	
1492	100							0.50	
1495	100							0.50	
1495	100							0.50	
1498	100							0.40	
1501	100							0.50	
1504	100							0.35	
1507	100							0.40	
1510	100							0.40	
1513	100							0.35	
1516	100							0.40	1517m 13 3/8" Casing point.

REMARKS

CORING: From 1547-1635, six cores were taken in this interval, sampling recommencing with the 1635-1636 sample, cuttings collections every subsequent three metres.

DEPTH	LITHOLOGY 1	2	3	4	POROSITY	FLUORESCENCE	CAVINGS	C_1	C_2	DESCRIPTION/REMARKS
1636	40	10	xxx	50				0.60	0.06	(1) CLST: gy, earthy/ang brk, hygroclastic-non swell, (slt), non calc.
1639	30	10	xxx	70				1.50	0.06	
1642	30	10	xxx	70				1.50	0.06	(2) LST:IIA chk mudst, arg, sft, (S),-grading to mrl; pa gy, sft.
1645	10	xxx	xxx	90				1.00	0.06	
1648	xxx	xxx	xxx	100				0.60	0.04	(3) S: lse, clr, frosted, ang-(rnd), mSU-crsSU, mic, (elong),-sph.
1651	xxx	xxx	xxx	100				0.17	0.02	
1654	xxx	xxx	xxx	100				0.17	x	(4) CLST: med gy, occ ((brn)), occ (gn)gy, earthy ~~hygroturgid-hygroclastic, slt, mic, (S) (calc)-calc.~~
1657	xx	xxx	xx	100				0.31	x	
1660	x	xxx	x	100				0.35	x	

CORE DESCRIPTION

DATE : 15/V/82 CORE NO : 1

DRILLED FROM : 1547.00 TO : 1556.50 LENGTH RECOVERED : 9.5m RECOVERY % : 100%

CORE BIT TYPE : Cb 303 DIAMETER : 4" AV. ROP : 25 min/m

DRILLING PARAMETERS : W/B 15 Klbs, RPM 80, SPP 575, spm 40

REMARKS :

PACKING METHOD : Fibre glas sleeve, sawn in 90cm lengths, capped , and padded in core boxes.

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
47.00	No Fluorescence, No stain, No cut.	1547.00		Sst, clear-dk gy, fSU-mSL, srt, (ang), lse-fri, (mic).
47.50				
48.40		1548.00		Sst, clr-gy, fSL-fSU, srt, (ang), fri-mod hd, (mic),(calc), occ wh grns-poss; alt fsp/mic.
49.30		1549.00		
50.20		1550.00		
51.10		1551.00		Sst, a/a wh grns comm.
52.00		1552.00		Sst, (wh grns).
52.90		1553.00		
53.80		1554.00		Sst, a/a fSU-mSL.
54.70		1555.00		Sst, clr-gy,fSU-fSL, srt, (ang), fri-mod hd, (mic)
55.60		1556.00		
56.50				Sst, a/a

CORE DESCRIPTION

DATE : 15/V/82 CORE NO : 2

DRILLED FROM : 1556.50 TO : 1559.00 LENGTH RECOVERED : 0m RECOVERY % : 0%

CORE BIT TYPE : Cb 303 DIAMETER : 4" AV. ROP : 4.5min/m

DRILLING PARAMETERS :

REMARKS : No recovery due to collapse of fibreglass sleeve.

PACKING METHOD :

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION

CORE DESCRIPTION

DATE : 16/V/82 CORE NO : 3

DRILLED FROM : 1559.00 TO : 1577.80 LENGTH RECOVERED : 15.80m RECOVERY % : 84%

CORE BIT TYPE : C303 DIAMETER : 4" AV. ROP : 17min/m

DRILLING PARAMETERS : W/B:25,000lbS, RPM:90, SPP:600, Md Wt:1.18, SPM: 40

REMARKS :

PACKING METHOD : Plastic capped fibreglass sleeves, boxed in rag packing.

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
		1559.00		
		1560.00		NO RECOVERY;
		1561.00		
		1562.00		
62.50				Sst:clr-gy, mSL, srt, (ang), clean;
		1563.00		
63.40				Sst: a/a (mic)
		1564.00		
64.30				
		1565.00		
65.20				
		1566.00		
66.10				Sst: clr-gy, fSU, srt, (ang), (mic)-mic.
67.00		1567.00		Sst: clr-gy, fSL-fSU, srt, (ang), mi.
67.90	X			Sst: yel-gy, fSL-fSU, srt, (ang), mi.
		1568.00		
68.80	X			

CORE DESCRIPTION

DATE :

CORE NO : 3 cont.

DRILLED FROM : TO : LENGTH RECOVERED : RECOVERY % :

CORE BIT TYPE : DIAMETER : AV. ROP :

DRILLING PARAMETERS :

REMARKS : _____

_____

PACKING METHOD : _____

_____

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
		1569.00		
69.70	X			
		1570.00		Sst: yel-brn, fSU-mSL, srt, (ang), (mic). d.f. yel, cut streaming, yel/brn.
70.60	X			
		1571.00		
71.50	X			
		1572.00		
72.40	X			
		1573.00		
73.30	X			
		1574.00		
74.20	X			Sst: a/a
		1575.00		
75.10	X			
		1576.00		
76.00	X			
		1577.00		
76.90	X			Sst: a/a
		1577.80		
77.00	X			

DRILLED FROM : 1578.00 TO : 1597.00 LENGTH RECOVERED : 9.5m RECOVERY % : 50%

CORE BIT TYPE : Cb 502-Stratapax DIAMETER : 4" AV. ROP : 10 min/m

DRILLING PARAMETERS : W/B 10Klbs, RPM 130, SPP. 300, Md Wt 1.18+, SPM 40;

REMARKS : Unrecovered interval assumed to be at top.

PACKING METHOD : As previously

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
		1578.0		
		1587.0 N		NO RECOVERY.
87.5				
88.0	X	1588.0		Sst: brn/gy, mSL, srt, (ang), (mic), d.f. yel, stream yel-brn.
				Sst: a/a fSU-MSL
88.90	X	1589.0		
89.8	X			Sst: a/a
		1590.0		
90.7	X			
		1591.0		
91.6	X			
		1592.0		
92.5	X			
		1593.0		
93.4	X			Sst: a/a fSU, srt. d.f. a/a
		1594.0		
94.3	X			
		1595.0		
95.2	X			
96.1	X	1596.0		Sst: gy, fSL, fSU, srt, (ang), mic. d.f. a/a.
97.0	X	1597.0		

CORE DESCRIPTION

DATE : 17/V/82 CORE NO : 5

DRILLED FROM : 1597.0 TO : 1616.0 LENGTH RECOVERED : 18.76m RECOVERY % : 99%

CORE BIT TYPE : Cb 303 DIAMETER : 4" AV. ROP : 10 min/m

DRILLING PARAMETERS : W/B 18Klbs, RPM:110, SPP:600, Md Wt:1.19, SPM:40.

REMARKS :

PACKING METHOD : AS PREVIOUSLY.

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
97.0		1597.0		Sst:gy, fsl-fSU, srt, (ang), mic. calc-10-20%. fluor:yel/wh,80%?,streaming cut, lt yel.
97.66	X			
		1598.0		
98.66	X			Sst:gy, fSU-fSL, srt, (ang), mic. mod fluor, yel, 70%, blooming cut, lt yel.
		1599.0		
99.56	X			
		1600.0		Sst:a/a;60% blooming cut.
00.46	X			
		1601.0		
01.36	X			Sst:a/a;weak fluor,slow cut, colourless.
		1602.0		
02.26	X			
		1603.0		
03.16	X			
04.06	X	1604.0		Sst:gy, fSL-fSU, srt, (ang), mic, calc-10/20%, (slt). fluor: a/a.
04.96	X			
		1605.0		
05.86	X			
		1606.0		
06.76	X			Sst: a/a- bec mod hd.
		1607.0		

DRILLED FROM : TO : LENGTH RECOVERED : RECOVERY % :

CORE BIT TYPE : DIAMETER : AV. ROP :

DRILLING PARAMETERS :

REMARKS :

PACKING METHOD :

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
		~~1607.0~~		
07.66		1608.0		Sst:gy, fSU-fSL, srt, (ang), mic, calc:(5-10%). No d.f.
08.56		1609.0		
09.46	(X)			CALC NOD: Hd, cmt.
10.36		1610.0		Sst:gy, fSU-fSL, srt, (ang), mic, calc lo-20%; Weak fluor, slow cut, colourless.
11.26	(X)	1611.0		
12.16	(X)	1612.0		CALC NOD: Hd, cmt.
13.06		1613.0		Sst: (silty), gy, fSL-fSU, srt, (ang) mic, calc, 10-20%. No d.f.
13.96		1614.0		Sst: a/a- mod hd.
14.86	(X)	1615.0		Sst: a/a weak fluor.
15.76	((X))	1616.0		Sst: a/a- very weak fluor.

CORE DESCRIPTION

DATE : 17/V/82 CORE NO : 6

DRILLED FROM : 1616.00 TO : 1635.00 LENGTH RECOVERED : 18.69m RECOVERY % : 98%

CORE BIT TYPE : Cb303 DIAMETER : 4" AV. ROP : 10min/m

DRILLING PARAMETERS : W/B 15Klbs, RPM:40, SPP:600, Md Wt 1.18, SPM:40

REMARKS : _____

PACKING METHOD : AS PREVIOUSLY.

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
16.00	(X)	1616.00		Sst:gy, fSU-fSL, srt, ang; fri, mic, calc. Fluor: weak streaky, slow stream cut.
16.69	(X)			
		1617.00		
17.59	(X)			Sst: a/a.
		1618.00		
18.49	(X)			Sst:a/a mod hd. weak streaky fluor, slow cloud cut.
		1619.00		
19.39	(X)			
		1620.00		Sst:a/a.
20.29	(X)			
		1621.00		
21.19	(X)			
22.09	(X)	1622.00		
22.99	(X)	1623.00		Sst: gy, fSU, srt, fri, mic, calc. weak streaky fluor, no cut.
23.89	(X)			Sst: a/a, slow/weak clod cut.
		1624.00		
24.79	(X)			Sst: a/a; calc,
		1625.00		
25.69	(X)			Sst: a/a; mod hd.

DATE :

CORE NO : 6 cont.

DRILLED FROM : TO : LENGTH RECOVERED : RECOVERY % :

CORE BIT TYPE : DIAMETER : AV. ROP :

DRILLING PARAMETERS :

REMARKS :

PACKING METHOD :

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION
26.59	(X)	1627.00		Sst: gy, fSL-fSU, mod hd, mic, calc, weak patchy fluor, slow weak clou cut.
27.49	(X)			
		1628.00		
28.39	(X)			Sst: a/a srt.
		1629.00		
29.29	(X)			
		1630.00		
30.19	(X)			
31.09	(X)	1631.00		Sst: a/a tr: cut.
31.99	(X)	1632.00		
32.89	(X)			
		1633.00		
33.79	(X)			
		1634.00		
34.69	(X)			Sst: a/a, patchy fluor, tr cut.
		1635.00		

CORE DESCRIPTION

DATE :

CORE NO :

DRILLED FROM :

TO :

LENGTH RECOVERED :

RECOVERY % :

CORE BIT TYPE :

DIAMETER :

AV. ROP :

DRILLING PARAMETERS :

REMARKS : _____

_____

PACKING METHOD : _____

_____

SAMPLE POINTS	SHOWS O GAS ● OIL X FLUO	DEPTH	LITH	DESCRIPTION

FORMATION TOPS

FORMATION	PROGNOSED		ACTUAL		REMARKS
	DEPTH	TVD	DEPTH	TVD	
Seabed		363		363	Cl, Clst, Sst.
Oligocene		760		775	Clst
Eocene		1315		1320	Tf Clst.
Palaeocene		1355		1370	Clst, Mrl
Cretaceous		1520		1525	Mdst, Lst.
Top Reservoir					
Upper Jurassic Sst (Zone 1a)		1545		1547	Sst uncons.
GOC		1572		1567	
Zone 1b		1590		1594	SSt med uncons.
OWC		1593		1596	
Zone 2		1625		1623	SSt cons mic.

BIT RECORD

BIT NO.	TYPE	SIZE	NOZZLES	DEPTH		RUN	DRILL TIME	ROP AV.	WOB AV.	RPM AV.	BIT WEAR			FLOW RATE	PUMP PRESS	MW	BIT $	TRIP TIME	REMARKS
				IN	OUT						T	B	G						
(IRR	HTC OSC3AJ	26"	14 14 14		455	92	14½	6.3	0.5	60	3	3	I		2800	SW			VISC SLUGS
(HO	SERVCO 15000	36"	14 14 14		454	91	14½	6.3	0.5	60	2	7	I		2800	SW			
(2	SMITH DGJ	17½"	14 14 14		465	10	½	10	5–10	60	1	1	I		2100	SW			
(HO	SERVCO 15000	26"	16 16 16		464	9	½	10	5–10	60	1	1	i		2100	SW			
2RR	SMITH DGJ	17½"	18 18 18		823	359	24½	14.7	10–25	135	4	4	I		1500	1.10			1" CENTRE NOZZLE WASHED
(RR3	SMITH DSJ	17½"	1414 14 15		823	–	18½		0–15	110	3	3	I		2000	SW			
(HO	SERVICE 1500	26"	16 16 16		822	358	18½		0–15	110	5	8	I		2000	SW			LOST ONE CONE
RRIRR	HTC OSC 3AJ	26"	14 14 14		825	2	½	4	0–10	140	3	3	I		3200	SW			
4	SMITH DSJ	17½"	18 18 18 16		1139	351	45	7.8	30–45	150	6	6	0½		3300	1.30			
5	SMITH DSJ	17½"	18 18 18 16		1517	378	22	17.2	40	140	2	2	1		3600	1.30			
6	HTC X3	12¼"	13 13 13		1547	30	3½	8.6	25	140	1	1	I		3400	1.19			
CH1	DBC 303	8½"	–		1564.5	9.5	4	2.4	10–20	110		100%			500	1.18			
CH1RRA	DBC 303	8½"	–		1569	2.5	1½	1.7	10–20	110		95%			500	1.18			COLLAPSED INNER BARREL
CH1RRB	DBC 303	8½"	–		1578	19	8½	2.2	10–20	100		95%			500	1.18			
CH 2	DBC 502	8½	–		1589	19	5½	3.5	5–20	130		100%			600	1.18			
CH1RRC	DBC303	8½	–		1616	19	4	4.8	20	120		95%			700	1.18			
CH1RRD	DBC 303	8½	–		1635	19	3½	5.4	20	120		95%			700	1.18			
7	SMITH 50GJ	12¼"	13 13 13		1660	113	9	12.6	25	140	4	4	1		1700	1.18			TD

BIT RECORD

TYPE	SIZE	NOZZLES	DEPTH		RUN	DRILL TIME	ROP AV.	WOB AV.	RPM AV.	BIT WEAR			FLOW RATE	PUMP PRESS	MW	BIT $	TRIP TIME	REMARKS
			IN	OUT						T	B	G						
HJCO SC3AJ	26"	14 14 14		455	92	14.5	6.3	0-5	60	3	3	I		2800	SW			VISCOUS SLUGS
SERVCO 1500	36"	14 14 14		454	91	14.5	6.3	0-5	60	27	7	I		2800	SW			
SMITH DJG	17.5	14 14 14		465	10	0.5	10	5-10	60	1	1	I		2100	SW			
SERVCO 1500	26"	16 16 16		464	9	0.5	10	5-10	60	1	1	I		2100	SW			
	17.5"	18 18 18		823	359	24.5	14.7	10-25	135	4	4	i		1500	1.19			1" CENTRE NOZZLE WASHED

ELECTRIC LOGGING RUNS

DEPTH		DATE	TYPE OF LOGGING RUN	REMARKS
FROM	TO			
449	823	26/IV/82	ISF/SONIC/SP/GR	GR to seabed.
449	823	26/IV/82	FDC/CNL/CAL/GR	
790	1511	11/V/82	ISF/SONIC/SP/ER	
795	1508	11/V/82	FDC/CNL/GR	
		11/V/82	LSS	Failed
858	1501.6	11/V/82	CST	
1495	1660.7	18/V/82	ISF/SONIC/SP/GR	
			FDC/CNL/CAL/GR	
			LDT/NGT	
			MSFL/DLL/CAL/SP/GR	
			HDT	
			RFT	Difficulty in probe extension.
		19/V/82	CST/	
			CBL	
			Vel Sur.	

ELECTRIC LOGGING RUNS

DEPTH		DATE	TYPE OF LOGGING RUN	REMARKS
FROM	TO			

MASTER LOG

Geoservices

MLMB I

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE NORWAY
FIELD or DISTRIC NORTH SEA
LOCATION lat 60°51'35" long 03°27'09"
ELEVATION KB 25M ABOVE MSL
SPUDDED on 22/IV/82 TD
DEPTH from ______ to ______
SCALE 1: 500° UNIT N°
ENGINEERS BORGNY DOLPHIN

Each horizontal division equal 1 Meter

LEGEND

MUD DATA

- W. Weight in lb Gal
- Viscosity
- WL Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Rm. Mud Resistivity in Ω m m²
- Rmf. Mud Filtrate Resistiv. in Ω m m²

DRILLING LEGEND

- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand, Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale, Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal, Lignite
- Chert
- Metamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C1 rec. 95% — Core N°1 recovery 95%
- DST1 — Drill Stem Test N°1
- Dry
- Water
- Oil
- Gas

USE SHELL "TAPEWORM"

DATE	MUD (Weight, Viscosity, Filtrate)	DRILLING RATE (Scale 1, Scale 2)	DEPTH Meter	Calcimetry / Dolomimetry / Sand Ratio	LITHOLOGY Cuttings %	Age - Formation	LOG	Visual Porosity Fluorescence	HYDROCARBON GAS in mud and cuttings (methane, ethane, propane)	Cores	DESCRIPTIONS ENGINEERING REMARKS	D.S.T.
		SCALE I MINS/M	450						0-1%			
	1.07	SFT 2RR SMITH SDJ 17.5 16/16/16									CL med gy earthy hygrotu rgid sft calc	
											Traces S clr-orng msu-cr ssl rnd(srt)uncons	
		WB 0-20 RPM 110 PP 2700 SPM 210							C1 ONLY		Traces LST wh lt cont wh st sft-mod hd	
											Traces SST dk gy(-m)fsl-fsu(rnd)(srt)calc cmt	
											Traces LIG	
	1.07		500								Traces FOSS FRAGS	
											S clr-orng msu-crsl rnd (srt)uncons	
	1.08		550									

MASTER LOG

Geoservices

MLMB 2

OPERATOR: NORSKE SHELL

WELL: 31/2-7

STATE ____
FIELD or DISTRIC ____
LOCATION lat ____ Longi ____
ELEVATION KB ____
SPUDDED on ____ TD ____
DEPTH from ____ to ____
SCALE 1: 500e ____ UNIT N° ____
ENGINEERS ____

Each horizontal division equal 1 Meter

LEGEND

MUD DATA

- W. Weight in lb/Gal
- V Viscosity
- WL Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Rm. Mud Resistivity in Ω m. m²
- Rmf. Mud Filtrate Resitiv. in Ω m. m²

DRILLING LEGEND

- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W. B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

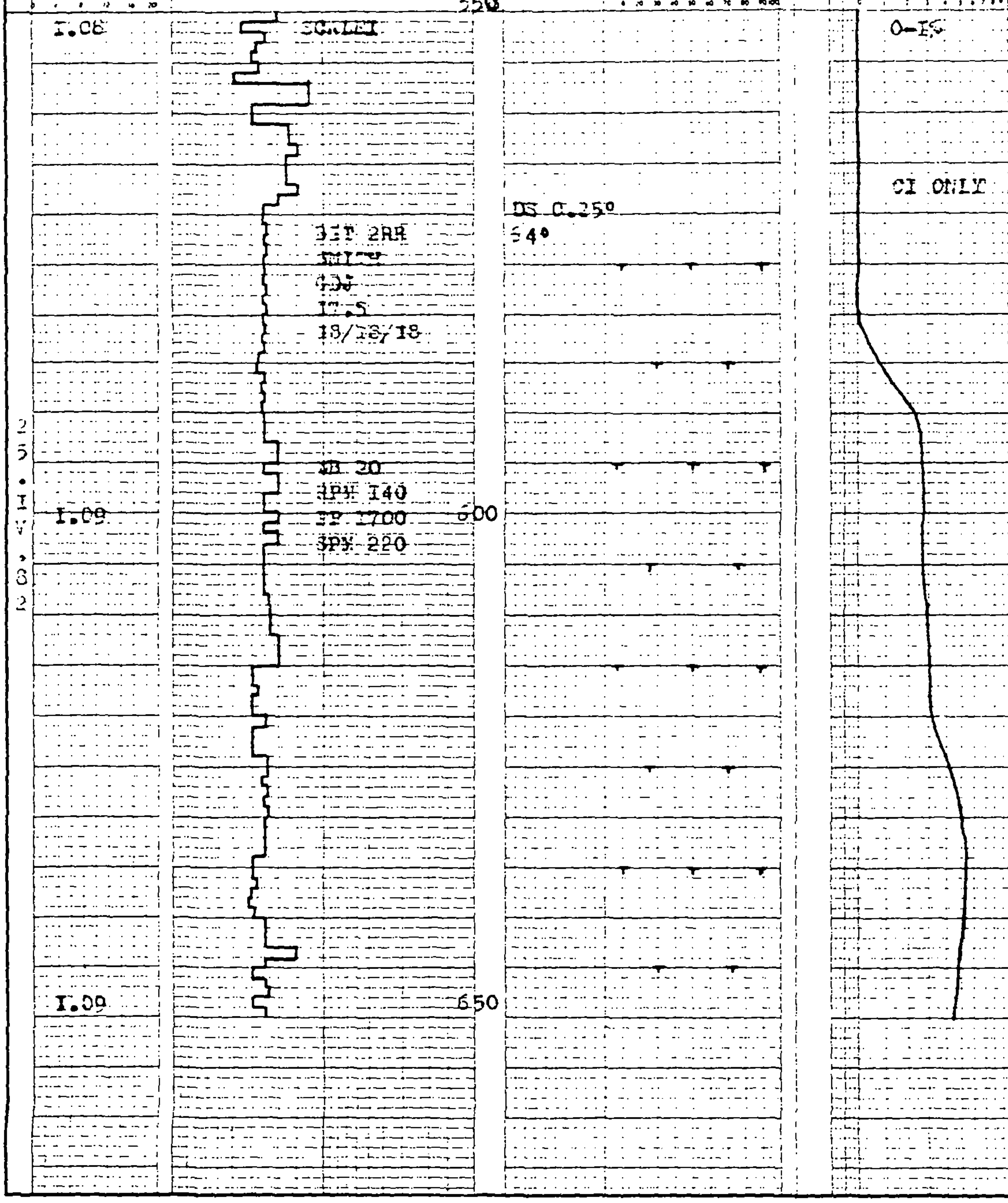
LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt...)
- Intrusive rock (Granite...)

ENGINEERING LEGEND

- C 1 rec. 95 % — Core N°1 recovery 95 %
- D S T 1 — Drill Stem Test N°1
- ○ Dry
- ⊕ Water
- ● Oil
- ☼ Gas

DATE	MUD WEIGHT / Viscosity / Filtrate	Bit Data	DRILLING RATE Scale 1 / Scale 2	DEPTH Meter	Casing	Calcimetry / Dolomimetry / Sand Ratio	LITHOLOGY Cuttings %	Age · Formation	LOG	Visual Porosity Fluorescence	HYDROCARBON GAS in mud and cuttings (méthane, éthane, propane)	Cores	DESCRIPTIONS ENGINEERING REMARKS	D.S.T.



CLST med gy hygroturgid -(hygroclastic)sft-sft s(carb)(slt)(calc)

M 2512/1-1

MASTER LOG

Geoservices

MLMB 3

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat Longi
ELEVATION KB
SPUDDED on TD
DEPTH from to
SCALE 1: 500* UNIT N°
ENGINEERS

Each horizontal division equal 1 Meter

LEGEND

MUD DATA

- W. Weight in lb. Gal
- V Viscosity
- WL Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Rm. Mud Resistivity in Ω m. m²
- Rmf. Mud Filtrate Resitiv. in Ω m. m²

DRILLING LEGEND

- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W.B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Oal limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C 1 Core N°1
- rec. 95 %. recovery 95 %.
- D S T 1 Drill Stem Test N°1
- Dry
- Water
- Oil
- Gas

MUD
WEIGHT
Viscosity
Filtrate
Bit Data

DRILLING RATE
Scale 1
Scale 2

DEPTH Meter
Casing

Calcimetry
Dolomimetry
Sand Ratio
LITHOLOGY
Cuttings %

Age Formation
LOG

HYDROCARBON GAS
in mud and cuttings
méthane
éthane
propane
Visual Porosity
Fluorescence
Cores

DESCRIPTIONS
ENGINEERING REMARKS
D.S.T.

1.09

SCALE 1

550

DS 0.25°
34°

WT 20
RPM 130
SPP 1600
SPM 220

700

1.10

0-1?

CLST med gy earthy hygro turgid-(hygroclastic)sft s(carb)(slt)(calc)

CLST med gy earthy hygro turgid-(hygroclastic)sft -sft(s)-s(carb)(slt)foss glc(calc)

CI ONLY

1.11

750

MASTER LOG

Geoservices

MLMB 4

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat Longi
ELEVATION KB
SPUDDED on TD
DEPTH from to
SCALE 1: 500e UNIT N°
ENGINEERS

Each horizontal division equal 1 Meter

LEGEND

MUD DATA

- W. Weight in lb/Gal
- V Viscosity
- WL Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Rm. Mud Resistivity in Ω m/m²
- Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C1 rec. 95% — Core N°1 recovery 95%
- DST1 — Drill Stem Test N°1
- ○ Dry
- ⊕ Water
- ● Oil
- ☼ Gas

DATE	MUD WEIGHT / Viscosity / Filtrate	Bit Data	DRILLING RATE Scale 1 / Scale 2	DEPTH Meter	Casing	Calcimetry Dolomimetry / Sand Ratio	LITHOLOGY Cuttings %	Age Formation	LOG	Visual Porosity Fluorescence	HYDROCARBON GAS in mud and cuttings (méthane, éthane, propane)	Cores	DESCRIPTIONS ENGINEERING REMARKS	D.S.T.

750

1.11 — SCALE 1 — 0-1%

BIT 2RR
SMITH
GDJ
17.5
18/18/18

CLST med gy(gn)-((brn)) earthy hygroturgid-occ non swell sft slt glc m ic foss(calc)-((calc))

WB 20
RPM 130
PP1600
SPM 220

C1 ONLY

800

1.10

20" CSG SET AT 511.8m

DS 0.75°
256

TSG 441G

1.25

BIT No 3
SMITH
DSJ
17.5
16/19/...

850

MASTER LOG

Geoservices

MLMB 5

OPERATOR NORSKE SHELL

WELL 31/ -7

STATE
FIELD or DISTRIC
LOCATION lat Longi
ELEVATION KB
SPUDDED on TD
DEPTH from to
SCALE 1: 500° UNIT N°
ENGINEERS

LEGEND

Each horizontal division equal 1 Meter

MUD DATA

- W. Weight in lb/Gal
- Viscosity
- Filtrate in cc
- FC Filter Cake
- Chloride Cont. in ppm
- Mud Resistivity in Ω m/m²
- Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

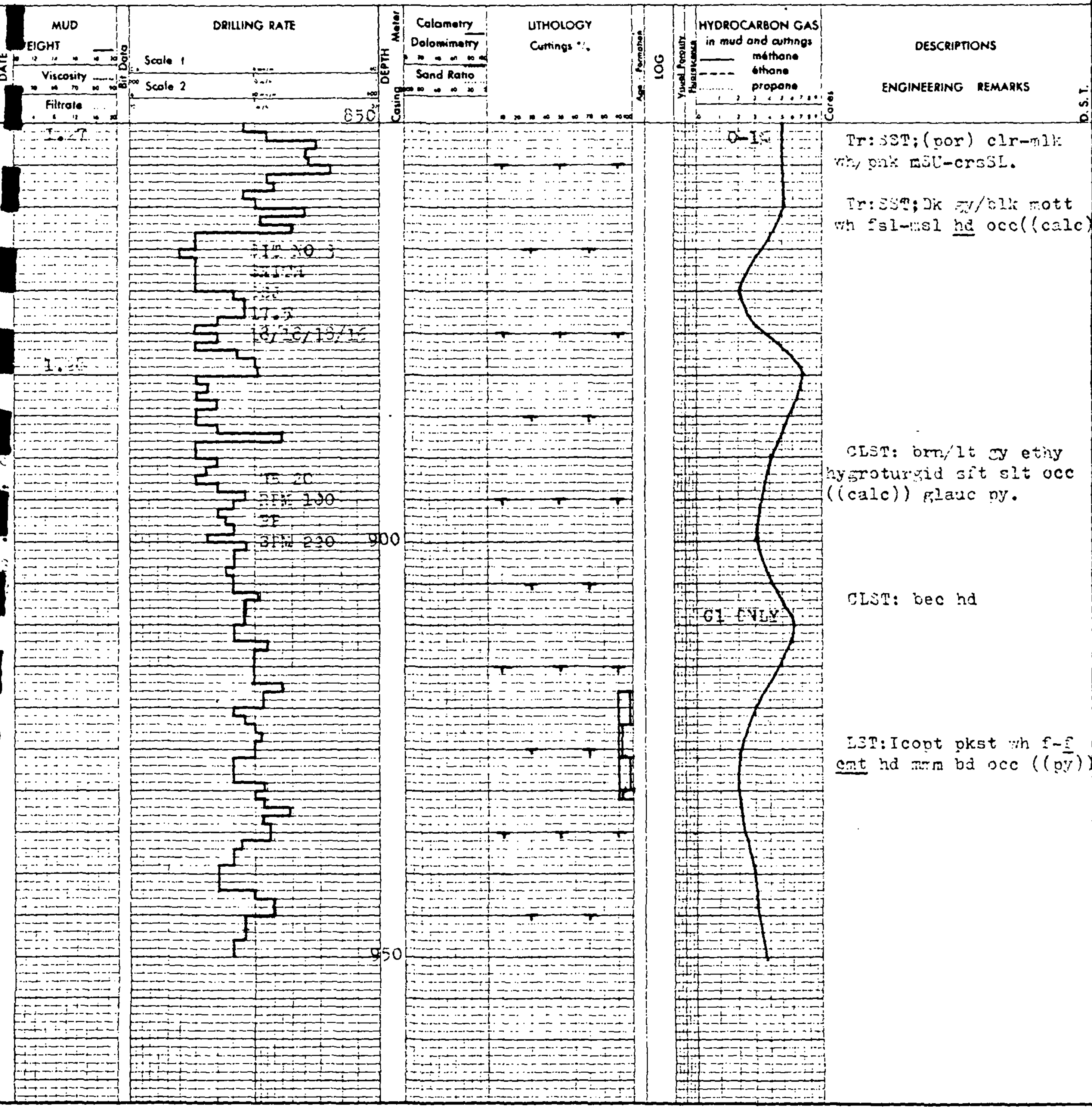
- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C1 rec. 95 % — Core N° 1 recovery 95 %
- DST 1 — Drill Stem Test N° 1
- Dry
- Water
- Oil
- Gas



MASTER LOG

Geoservices

MLMB 6

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat Longi
ELEVATION KB
SPUDDED on TD
DEPTH from to
SCALE 1: 500° UNIT N°
ENGINEERS

LEGEND

Each horizontal division equal 1 Meter

MUD DATA

- W. Weight in lb/Gal
- V Viscosity
- WL Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Rm. Mud Resistivity in Ω m/m²
- Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

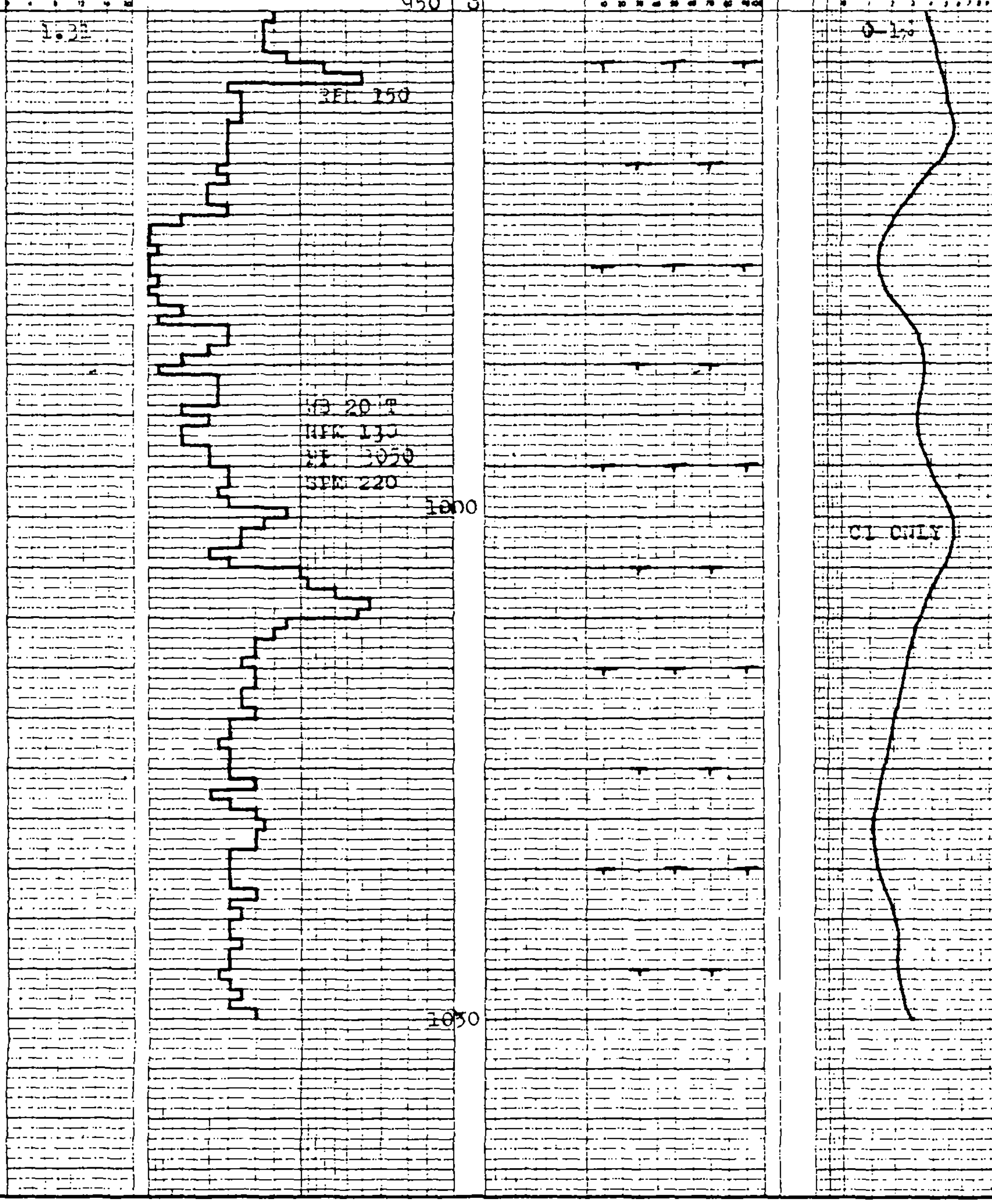
LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C1 rec. 95 % — Core N° 1 recovery 95 %
- DST1 — Drill Stem Test N° 1
- ○ Dry
- ⊕ Water
- ● Oil
- ☼ Gas

DATE	MUD WEIGHT / Viscosity / Filtrate	Bit Data	DRILLING RATE Scale 1 / Scale 2	DEPTH Meter	Casing	Calcimetry Dolomimetry / Sand Ratio	LITHOLOGY Cuttings %	Age - Formation	LOG	Visual Porosity	Fluorescence	HYDROCARBON GAS in mud and cuttings (méthane, éthane, propane)	Cores	DESCRIPTIONS ENGINEERING REMARKS	D.S.T.



Traces:SST;(por)ltbrn/rd,fsl-fsu srt(ang)cmt calc.

CLST:wh/lt brn hygroturgid sft (slty) calc.

MASTER LOG

Geoservices

MLMB 7

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat ____ Longi ____
ELEVATION KB
SPUDDED on ____ TD ____
DEPTH from ____ to ____
SCALE 1: 500 ____ UNIT N° ____
ENGINEERS

Each horizontal division equal 1 Meter

L E G E N D

MUD DATA
- Weight in lb/Gal
- V Viscosity
- Filtrate in cc
- Filter Cake
- C Chloride Cont. in ppm
- Rm Mud Resistivity in Ω m/m²
- Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND
- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Reval/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND
- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND
- C 1 Core N° 1
- rec. 95 °/. recovery 95 °/.
- D S T 1 Drill Stem Test N° 1
- Dry
- Water
- Oil
- Gas

DATE | MUD: WEIGHT, Viscosity, Filtrate | Bit Data | DRILLING RATE: Scale 1, Scale 2 | DEPTH Meter | Casing | Calcimetry, Dolomimetry, Sand Ratio | LITHOLOGY Cuttings °/. | Age - Formation | LOG | Visual Fluorescence | HYDROCARBON GAS in mud and cuttings: méthane, éthane, propane | Cores | DESCRIPTIONS, ENGINEERING REMARKS | D.S.T.

1050

1.31

WOB 20T
RPM 80-120
MUD 3050
SPM 220

1.32

1100

1150

1.31

0-1%

1.41

CLST: lt brn, lt gr, lt gn, non-swell earthy-fiss. sft-plas, occ hd, slt glc

CLST: med brn non-swell sft-occ med hd slt

MASTER LOG

Geoservices

ML MB

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat Longi
ELEVATION KB
SPUDDED on TD
DEPTH from to
SCALE 1: 500 UNIT N°
ENGINEERS

Each horizontal division equal 1 Meter

L E G E N D

MUD DATA

- W. Weight in lb/Gal
- Viscosity
- Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Mud Resistivity in Ω m/m²
- Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C 1 Core N°1
- rec. 95 °/. recovery 95 °/.
- D S T 1 Drill Stem Test N°1
- Dry
- Water
- Oil
- Gas

DATE | MUD (GHT, Viscosity, Filtrate) | Bit Data | DRILLING RATE (Scale 1, Scale 2) | DEPTH Meter | Casing | Calcimetry, Dolomimetry, Sand Ratio | LITHOLOGY Cuttings °/. | Age Formation | LOG | Visual Porosity Fluorescence | HYDROCARBON GAS in mud and cuttings (méthane, éthane, propane) | Cores | DESCRIPTIONS, ENGINEERING REMARKS | D.S.T.

1150

W/B 20-25t
RPM 110-150
PP 3050
SPM 210-220

1200

1250

0-1%

C1 only.

CLST:lt gy-gn earthy hygroturgid-occ hygroclastic sft slt occ hd glauc py

DS 1.0°
0j4°

MASTER LOG

Geoservices

MLMB 9

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE ______
FIELD or DISTRIC ______
LOCATION lat ______ Longi ______
ELEVATION KB ______
SPUDDED on ______ TD ______
DEPTH from ______ to ______
SCALE 1: 500ᵉ ______ UNIT Nᵉ ______
ENGINEERS ______

L E G E N D

Each horizontal division equal 1 Meter

MUD DATA

- W. Weight in lb/Gal
- Viscosity
- Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Mud Resistivity in Ω m/m²
- Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

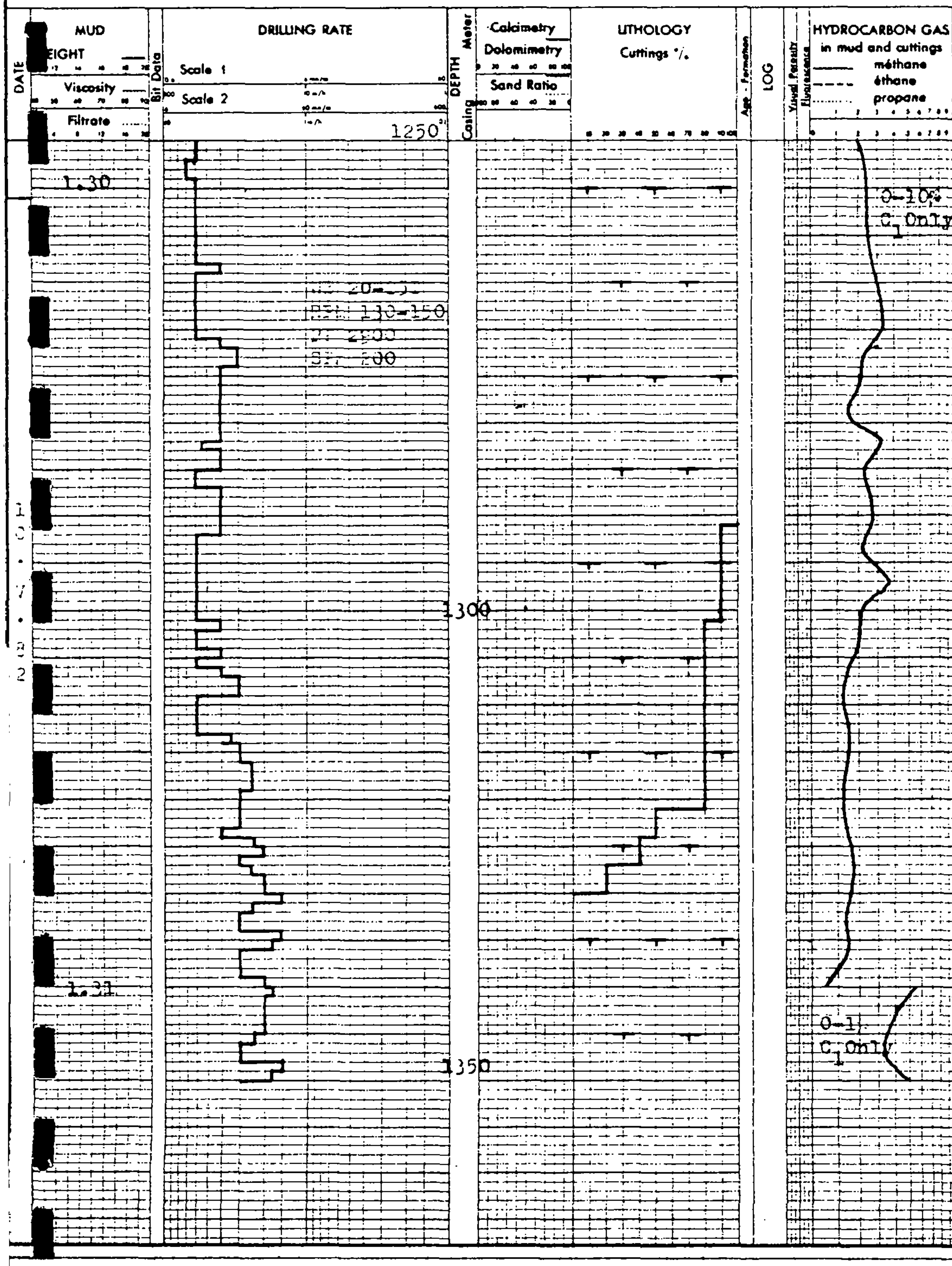
- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C 1 rec. 95 %. — Core Nº 1 recovery 95 %.
- D S T 1 — Drill Stem Test Nº 1
- Dry
- Water
- Oil
- Gas



DESCRIPTIONS

ENGINEERING REMARKS

D.S.T.

CLST: (gn) gy/(brn) hygroturgid sft-occ md hd. glauc.

CLST: (brn)/gy hygro-turgid sft (calc)(slt)

MASTER LOG

Geoservices

MLMB 10

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat ______ Longi
ELEVATION KB
SPUDDED on ______ TD
DEPTH from ______ to
SCALE 1: 500° ______ UNIT N°
ENGINEERS

L E G E N D

Each horizontal division equal 1 Meter

MUD DATA

W. Weight in lb/Gal
V Viscosity
WL Filtrate in cc
FC Filter Cake
Cl Chloride Cont. in ppm
Rm. Mud Resistivity in Ω m/m²
Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

NB New Bit
RRB Rerun Bit
DB Diamond Bit
TB Turbo Drill
CB Core Bit
DCB Diamond Core Bit
DS Deviation Survey
W/B Weight on bit
RPM Rotation (Revol/min)
LC Lost Circulation
NR No Returns
TG Trip Gas

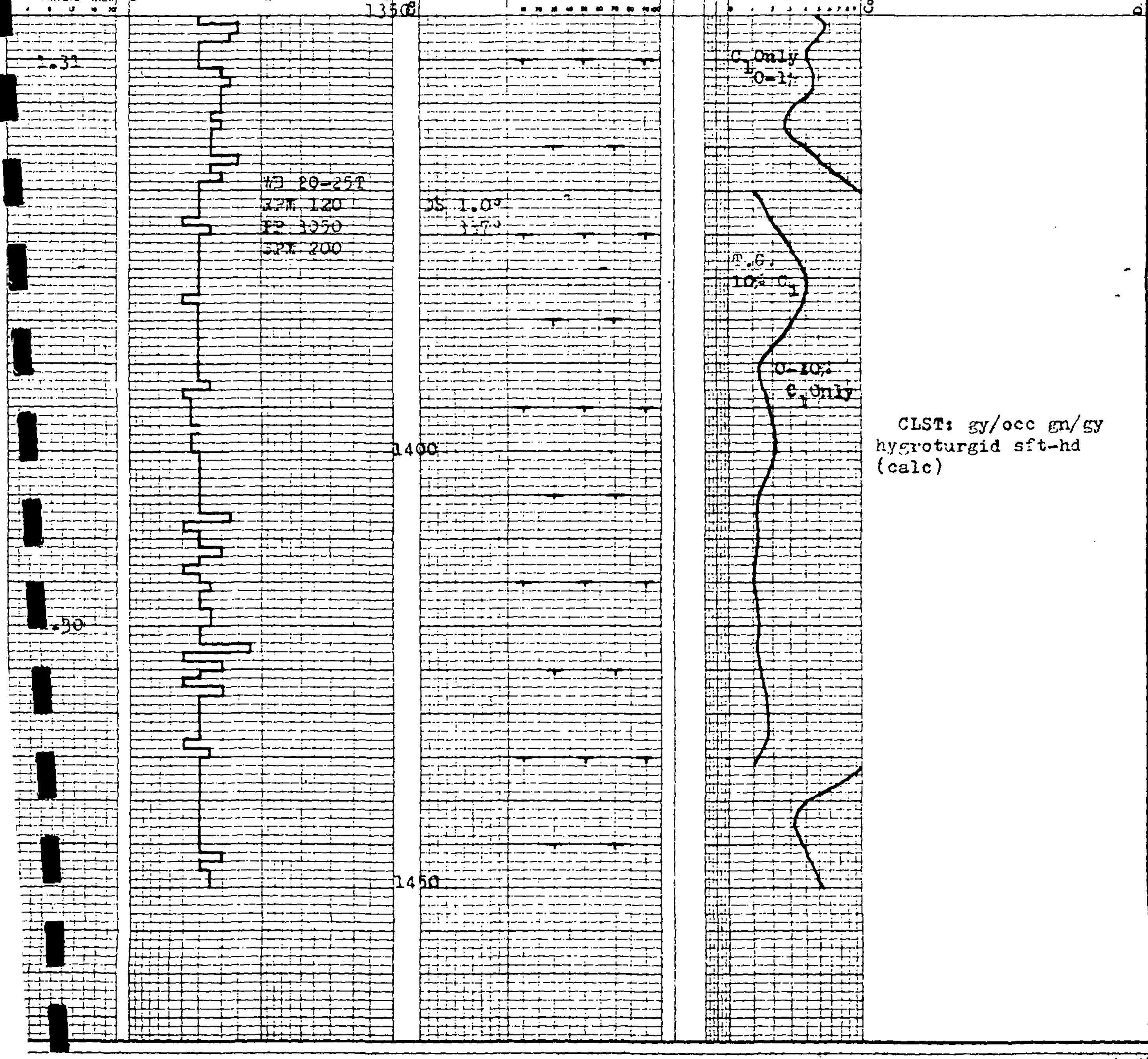
LITHOLOGY LEGEND

Sand. Sandstone
Silt
Quartzite
Conglomerate
Shale. Clay
Silty shale
Limestone
Ool limestone
Dolomite
Salt
Gypsum
Anhydrite
Coal. Lignite
Chert
Métamorphic rock (Gneiss....)
Extrusive rock (Basalt....)
Intrusive rock (Granite....)

ENGINEERING LEGEND

C 1 rec. 95 % — Core N° 1 recovery 95 %
D S T 1 — Drill Stem Test N° 1
Dry
Water
Oil
Gas

MUD (WEIGHT, Viscosity, Filtrate)	Bit Data	DRILLING RATE (Scale 1, Scale 2)	DEPTH Meter	Casing	Calcimetry, Dolomimetry, Sand Ratio	LITHOLOGY Cuttings %	Age - Formation	LOG	Visual Porosity, Fluorescence	HYDROCARBON GAS in mud and cuttings (méthane, éthane, propane)	Cores	DESCRIPTIONS ENGINEERING REMARKS	D.S.T.



CLST: gy/occ gn/gy hygroturgid sft-hd (calc)

MASTER LOG

Geoservices

MLMB 11

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat Longi
ELEVATION KB
SPUDDED on TD
DEPTH from to
SCALE 1: 500* UNIT N°
ENGINEERS

Each horizontal division equal 1 Meter

LEGEND

MUD DATA

- W. Weight in lb/Gal
- V Viscosity
- WL Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Rm. Mud Resistivity in Ω m/m²
- Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

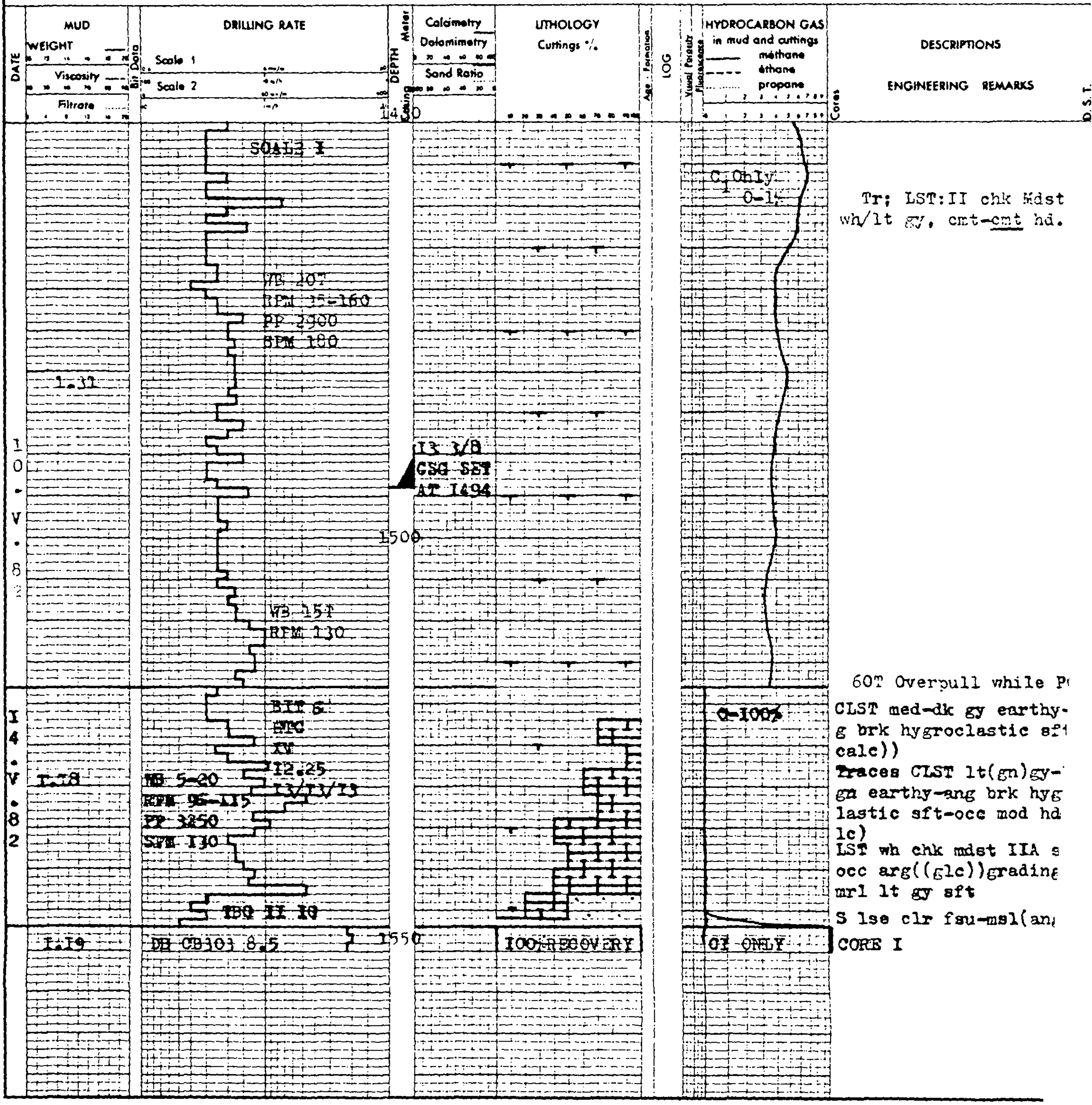
- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Revol/min)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C1 rec. 95 % — Core N°1 recovery 95 %
- DST1 — Drill Stem Test N°1
- Dry
- Water
- Oil
- Gas



MASTER LOG

Geoservices

MLMB I2

OPERATOR NORSKE SHELL

WELL 31/2-7

STATE
FIELD or DISTRIC
LOCATION lat Longi
ELEVATION KB
SPUDDED on TD
DEPTH from to
SCALE 1: 500* UNIT N°
ENGINEERS

Each horizontal division equal 1 Meter

LEGEND

MUD DATA

- W. Weight in lb/Gal
- Viscosity
- WL Filtrate in cc
- FC Filter Cake
- Cl Chloride Cont. in ppm
- Rm. Mud Resistivity in Ω m/m²
- Rmf. Mud Filtrate Resitiv. in Ω m/m²

DRILLING LEGEND

- NB New Bit
- RRB Rerun Bit
- DB Diamond Bit
- TB Turbo Drill
- CB Core Bit
- DCB Diamond Core Bit
- DS Deviation Survey
- W/B Weight on bit
- RPM Rotation (Reval/mn)
- LC Lost Circulation
- NR No Returns
- TG Trip Gas

LITHOLOGY LEGEND

- Sand. Sandstone
- Silt
- Quartzite
- Conglomerate
- Shale. Clay
- Silty shale
- Limestone
- Ool limestone
- Dolomite
- Salt
- Gypsum
- Anhydrite
- Coal. Lignite
- Chert
- Métamorphic rock (Gneiss....)
- Extrusive rock (Basalt....)
- Intrusive rock (Granite....)

ENGINEERING LEGEND

- C1 Core N°1
- rec. 95 °/. recovery 95 °/.
- DST1 Drill Stem Test N°1
- Dry
- Water
- Oil
- Gas

MUD WEIGHT — Viscosity ..... Filtrate ..... | Bit Data | DRILLING RATE Scale 1 Scale 2 | DEPTH Meter | Casing | Calcimetry Dolomimetry Sand Ratio | LITHOLOGY Cuttings °/. | Age Formation | LOG | Visual Fluorescence | HYDROCARBON GAS in mud and cuttings méthane éthane propane | Cores | DESCRIPTIONS ENGINEERING REMARKS | D.S.T.

1550

SCALE I
MB I5 RPM 80 PP 575
DB C303 8.5 C3 IRR
C3 IRR
DB C303 8.5
MB 25
RPM 90
PP 600
SPM 40
CB 2
DB C503 8.5
MB 5-I5
RPM I30
PP 300
SPM 40
CB IRR
DB C303 8.5
MB I8
RPM II0
PP 600
SPM 40
CB IRR
DB C303 8.5
MB I5
RPM 40
PP 600
SPM 40
BIT 7
SMITH MD 30
SDGH RPM I20
I2.25 PP I600
I3/I3/20 SPM I00

1600

1650

I.I9
I.I9
I.I8
I.I8
I.I9
I.I8
I.I9

100%RECOVERY
84%RECOVERY
50%RECOVERY
99%RECOVERY
98%RECOVERY

0-10%

CORE I
CORE 2
CORE 3

FIBERGLASS
SLEAVED
CORES

CORE 4
CORE 5
CORE 6

CLST dk gy earthy-ang br
k hygroclastic-non swell
(slt)nom calc
Traces S lse clr-frosted
msu-crssu ang-(rnd)(elon
g)-sph mic
LST wh-pa gy IIA chk md
t sft arg(s)grading to
mrl pa gy sft
CLST med gy_((brn))gy-(
rn)gy earthy hygroturgi
-hygroclastic slt mic(s
(calc)-calc
TD I660. METRES