3

U1-707

SIMON PETROLEUM TECHNOLOGY **WELL:** 2/7-27S.

Print: 15369.1. **Units:** M [✓ F]

Length: 36 **FT** **Initials:** CS

Top	Bottom	Scale	TD
327	15770	1:500	15758

DIGITAL WIRELINE LOGS PACKAGE
1995
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SIMON PETROLEUM TECHNOLOGY

COMPLETION LOG

Phillips Petroleum Company Norway

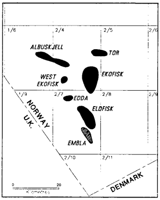
Country : Norway Area : EMBLA Licence No : 018

Well : 2/7-27S

Composite Log 1/500

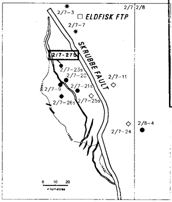
14 JAN. 1993
REGISTRERT
OLJEDIREKTORATET

LOCATION MAP GENERAL



Surface Co-ordinates	56deg 19min 59.8sec N 03deg 14min 53.18sec E
T.D. Co-ordinates	56deg 20min 41.28sec N 03deg 14min 31.42sec E
Elevation :	95ft (29m)
Water Depth :	232ft (70.7m)
Well Type :	APPRAISAL/PRODUCTION
Date Spudded	9 NOVEMBER 1991
Date Reached T.D. :	18 APRIL 1992
Date Completed :	17 JUNE 1992
Total (MDRKB) Depth (TVDSS)	15750ft (4801m) DRILLER, 15758ft (4803m) LOGGER -14512ft (-4423m) DRILLER, -14519ft (-4425m) LOGGER
T.D. Formation	INDETERMINATE (PRE-JURRASIC)
Status :	SUSPENDED
Drilling Co. :	SMEDVIG DRILLING 'WEST DELTA'
Wireline Co. :	SCHLUMBERGER
Mud Type :	WATER BASED 0-1680' KCL WATER BASED 1680'-12450', SARANEX/THERMADRILL 12450'-TD
Wellsite Geologists:	G. HANCOCK / A. THORSEN
Mud Logging Co. :	EXLOG
Digitally Drafted by:	[illegible]
Date :	[illegible]

LOCATION MAP - DETAILED

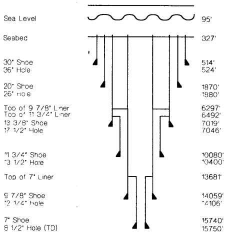


OPERATOR: Phillips Petroleum Company Norway	PARTICIPANTS : PHILLIPS PETROLEUM Co NORWAY (36.96%) NORSKE FINA A/S (30.00%) NORSK AGIP A/S (13.04%) ELF AQUITAINE NORGE A/S (7.594%) NORSK HYDRO PRODUKSJON A/S (6.70%) TOTAL NORGE A/S (3.547%) STATOIL A/S (1.00%) ELF REP A/S (0.456%) ELF REX A/S (0.399%) COFRANORD A/S (0.304%)

OPEN HOLE ELECTRIC LOGGING

LOG	RUN	INTERVAL	DATE	MAX REC TEMP, °F
DLL/MSFL/BHC/GR	1	7012' - 10388'	03/JAN/92	195
LDL/CNL/GR	1	7012' - 10200'	03/JAN/92	205
DLL/MSFL/BHC/GR	2	10088' - 14101'	24/FEB/92	246
BGL/GR	1	10088' - 13982'	02/MAR/92	235
DIL/MSFL/GR	1	14070' - 15748'	18/APR/92	297
SDT/NGT	1	14655' - 15760'	22/APR/92	285
LDL/CNL/GR	2	14675' - 15767'	22/APR/92	296
FMS/GR	1	FAILED	23/APR/92	-
RFT/GR	1	FAILED	26/APR/92	-

WELL ENGINEERING



CORING

CORE NO.	INTERVAL (DRILLER)	INTERVAL (LOGGER)	REC	CORE SHIFT
1	10410' - 10460'	10415' - 10465	52	+5
2	10715' - 10745'	10724' - 10754'	30' 2'	+9
3	15039' - 15055'	15047' - 15063'	17' 3'	+8
4	15055' - 15075'	15063' - 15083'	19' 6'	+8

TESTING

TEST No.	INTERVAL (MDRKB)	FLOW RATE	CHOKE	WHP	API	GOR	REMARKS
1	14710 ft - 15554 ft (gross)	9400 STBOPD 14 MMSCFPD	40/64"	4560 psia	45	1489 scf/stb	end of cleanup flow BHP 10576 psia BHT 321 deg F
		3660 STBOPD 6.37 MMSCFPD	20/64"	7640 psia	45	1740 scf/stb	end of main flow BHP 11398 psia BHT 319 deg F

REMARKS

CHRONOSTRATIGRAPHIC SUB-DIVISIONS ARE BASED ON THE BIOSTRATIGRAPHY OF THE ADJACENT WELL 2/7-23S

LITHOLOGICAL SYMBOLS

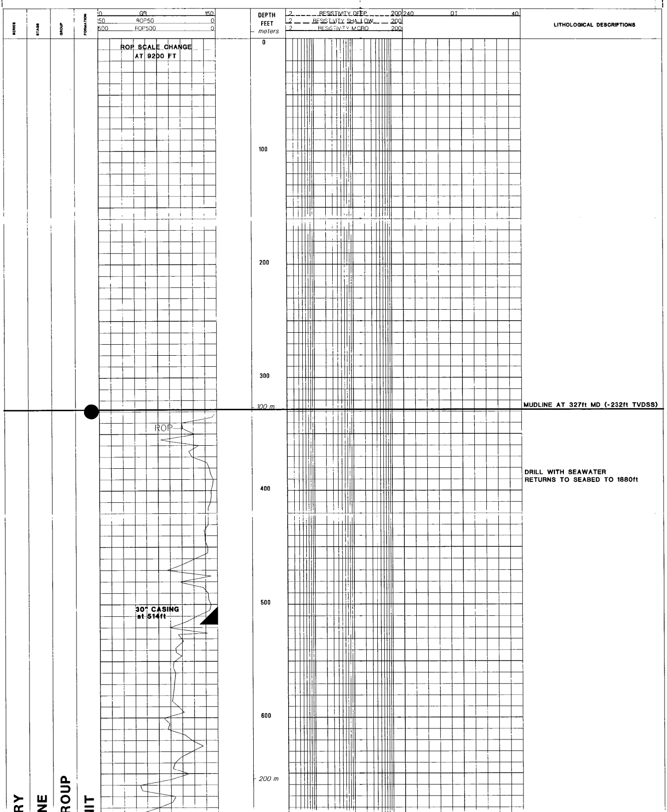
☐	Sand	▨	Dolomite	▲▲▲	Chert
▤	Siltstone	▨	Dolomitic Limestone	○○	Conglomerate
▤	Claystone	▨	Calcareous Dolomite	■	Coal
▨	Marl	^^^	Anhydrite	▨	Intrusive
▦	Limestone	▦	Salt	▨	Extrusive

LITHOLOGICAL QUALIFIERS

• • • •	Sandy	☐	Pyrite
—••—	Silty	G	Glauconite
—	Argillaceous	ᵐ	Mica
⊥	Calcareous	⌒	Shell Debris
∠	Dolomitic	ꝏ	Fossiliferous
∧ ∧ ∧	Anhydritic	Ca	Calcite
F	Ferruginous	▬	Carbonaceous
▲	Chert		

ENGINEERING SYMBOLS

✶	Flourescence	◢	Casing Shoe
☼	Gas Shows	<	RFT (Pressure)
●	Oil Shows	◀	RFT (Sample)
		←●	SWC (Recovered)
		←○	SWC (Lost)
⊣	Formation Flow	▨	(Recovered) Conventional Core (Not Recovered)
Z	Lost Circulation		Test

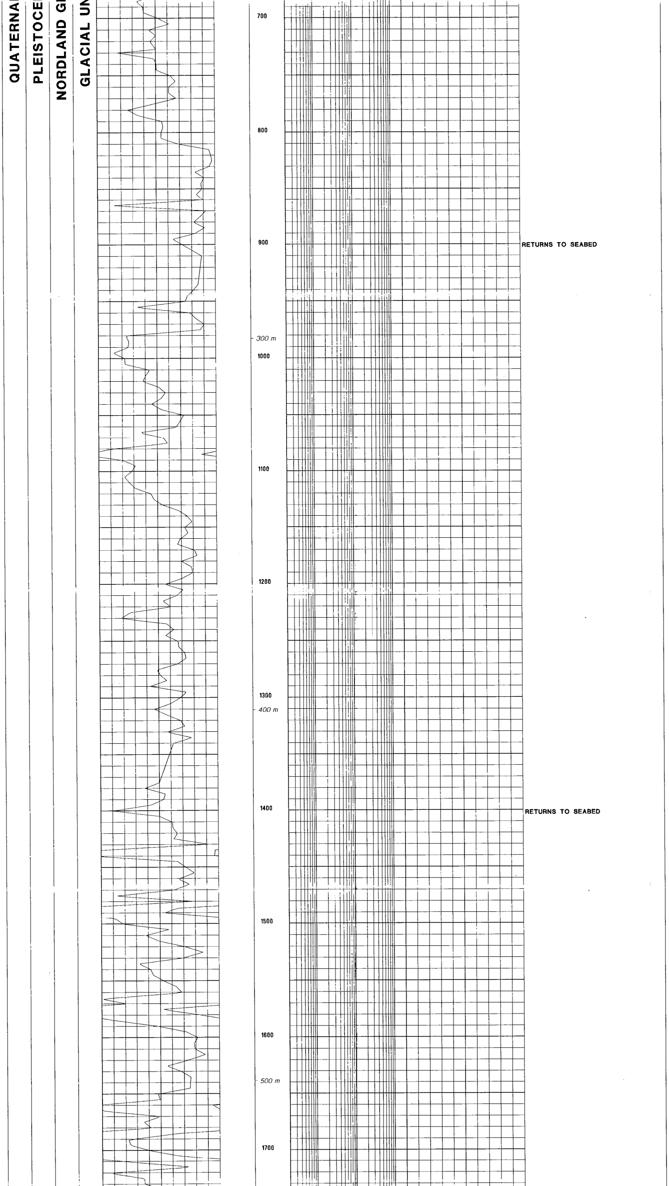


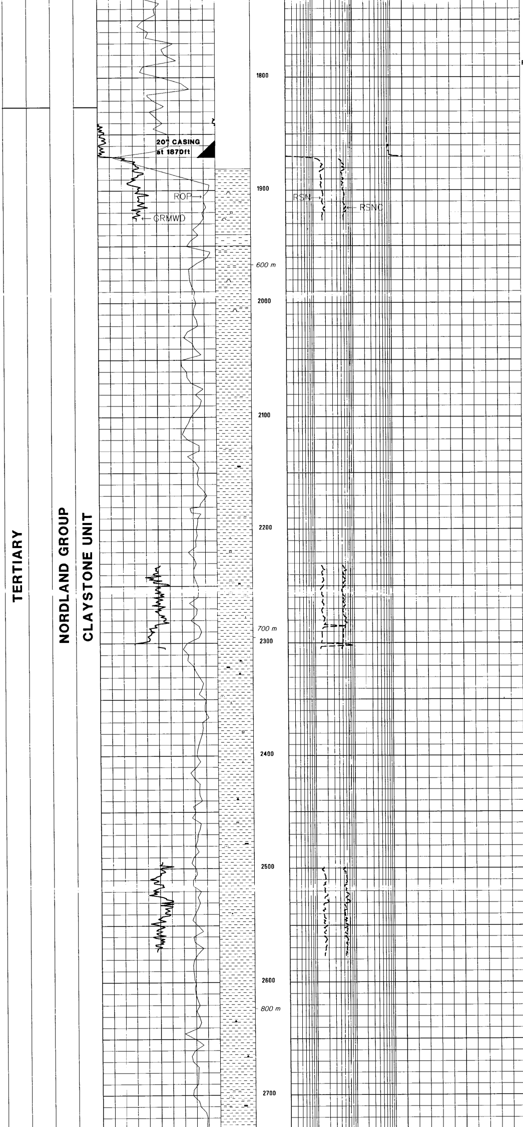
ROP SCALE CHANGE AT 9200 FT

MUDLINE AT 327ft MD (-232ft TVDSS)

DRILL WITH SEAWATER RETURNS TO SEABED TO 1880ft

30" CASING at 514ft





RETURNS TO SEABED

RETURNS TO SURFACE FROM 1880 ft

DISPLACE TO KCL POLYMER MUD

***CLAYSTONE:** Light to medium grey, medium blue grey, very soft, sticky, amorphous, hygroturgid, silty in part, occasionally with medium to fine sand grains, occasionally pyritic, trace shell fragments.*

MW 11.5 ppg

***CLAYSTONE:** Light to medium grey, very soft, sticky, hygroturgid, silty, dark carbonaceous streaks and laminations, non to slightly calcareous.*

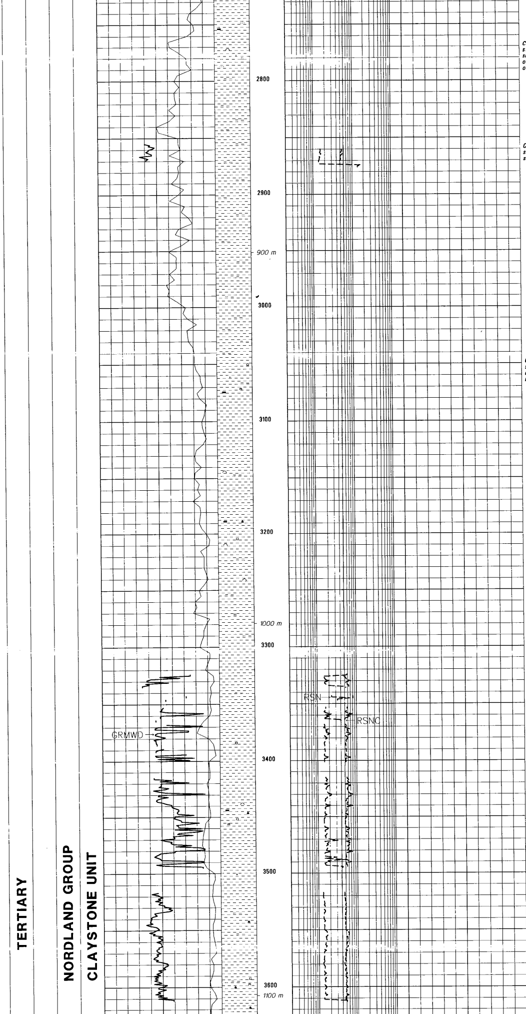
MW 11.1 ppg

***CLAYSTONE:** Light to medium olive grey, very soft, sticky, hygroturgid, amorphous, silty, slightly to moderately calcareous, micropyritic, micromicaceous, occasionally with floating sand grains, in part very sandy, and grading to silty sandstone.*

***CLAYSTONE:** Light to medium grey, very soft, sticky, amorphous, hygroturgid, silty, slightly to moderately calcareous, micropyritic, micromicaceous, occasional black carbonaceous streaks, occasional forams.*

***CLAYSTONE:** Light to medium grey, light to olive grey, very soft, sticky, amorphous, hygroturgid, occasionally silty, non to very slightly calcareous, micromicaceous, occasional black carbonaceous specks and streaks, trace glauconite.*

***CLAYSTONE:** Light to medium grey, occasionally light brownish grey, very soft, sticky, amorphous, hygroturgid, very silty, very sandy in part, non calcareous, dark carbonaceous streaks.*



CLAYSTONE: Light to medium grey, very soft, sticky, amorphous, hygroturgid, silty, non to very slightly calcareous, soft, black carbonaceous specks, occasional hard microcrystalline pyrite aggregates, occasional floating very fine to medium sand grains.

CLAYSTONE: Medium bluish grey, very soft, sticky, amorphous, hygroturgid, very silty, sandy in part, non calcareous.

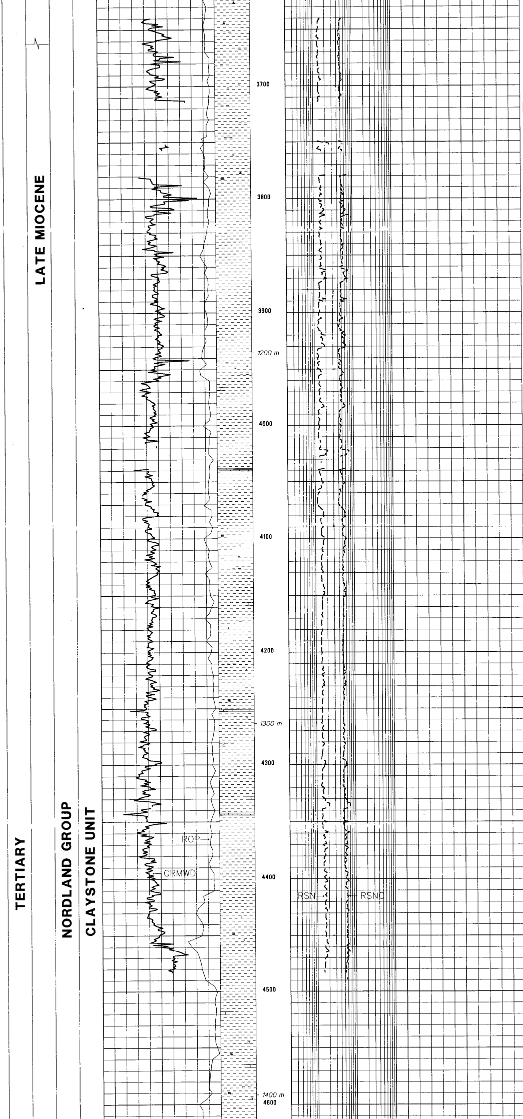
CLAYSTONE: Light to medium grey, very soft, sticky, amorphous, hygroturgid, silty, slightly calcareous, micromicaceous, occasionally micropyritic, black carbonaceous specks.

CLAYSTONE: Light to medium grey, bluish grey, very soft, sticky, amorphous, hygrotrugid, silty in part, slightly calcareous, micropyritic, micromicaceous, black carbonaceous streaks, trace shell fragments and forams.

MW 11.3 ppg

LIMESTONE: Trace, yellow brown, friable.
CLAYSTONE: Light to medium grey, grey brown, light bluish grey, very soft, sticky, amorphous, hygroturgid, non to very slightly calcareous, micromicaceous, occasional black, carbonaceous fragments and streaks, trace fossil fragments and forams.

CLAYSTONE: Medium grey, soft, becoming firm, sticky, silty, sandy in part, moderately calcareous, micromicaceous, occasional black carbonaceous specks, forams locally abundant.



MW 12.1 ppg

CLAYSTONE: Medium grey, soft, occasionally firm, sub blocky, streaky in part, moderately to very calcareous, micromicaceous, occasional black carbonaceous specks, trace glauconite, occasional forams.

CLAYSTONE: Light to medium grey, brownish grey, generally very soft and sticky, silty in part, slightly calcareous, trace of glauconite.

LIMESTONE: Light yellow brown, soft to firm, blocky, argillaceous.

CLAYSTONE: Medium grey, soft to firm, sub blocky, slightly calcareous, micromicaceous, occasionally micropyritic, trace glauconite.

CLAYSTONE: Light grey, very soft, sticky, silty, slightly calcareous, micromicaceous, trace glauconite, trace forams.

LIMESTONE: Yellow brown, soft to firm, blocky, argillaceous.

MW 12.9 ppg

CLAYSTONE: Light grey, medium grey, soft, silty, non to slightly calcareous, micromicaceous, micropyritic.

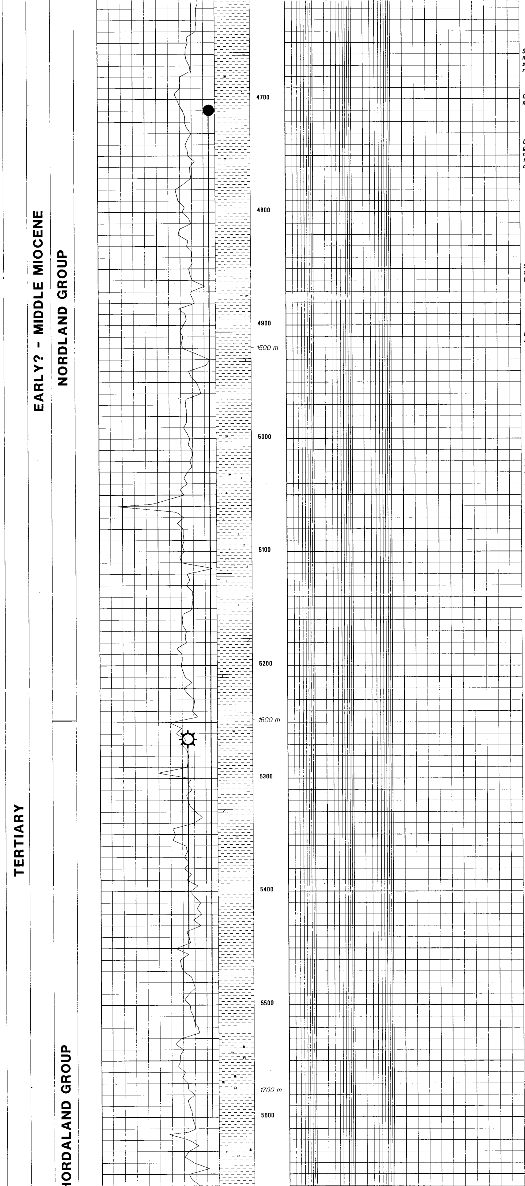
DOLOMITE: Yellow brown, hard, argillaceous.

MW 13.5 ppg

CLAYSTONE: Light grey, medium grey, occasionally brown grey, soft to firm, sub blocky, silty in part, non to slightly calcareous, micromicaceous, occasional glauconite.

CLAYSTONE: Light to medium grey, bluish grey, soft, sub blocky, occasionally silty, non calcareous, micromicaceous, slightly micropyritic.

LIMESTONE: Yellow brown, hard, blocky, argillaceous.



SILTSTONE: Yellow brown, soft, sub blocky, micromicaceous, dull yellow brown fluorescence, slow streaming blue white cut, faint brown residue.

CLAYSTONE: Light grey, very soft, sub blocky, non calcareous, micromicaceous, glauconitic.

CLAYSTONE: Light grey, medium grey, brown grey, silty where brown grey, non calcareous, micromicaceous, 10–40% dull or rare bright yellow fluorescence, no cut or very poor slow streaming cloudy yellow cut.

SHOWS: Trace 4850 – 5000, dull yellow brown fluorescence, no cut or trace slow streaming cloudy yellow orange cut.

LIMESTONE: Off white, soft, amorphous, very argillaceous.

CLAYSTONE: Medium grey, firm, generally non calcareous, occasionally moderately calcareous, micromicaceous, 10–30% dull yellow grown fluorescence 5000–5060, slow streaming cloudy orange yellow fluorescence.
Show: 5060–5240 trace to 5% as above.

CLAYSTONE: Light grey, medium grey, light blue grey, soft occasionally firm, moderate to very calcareous, grading to marl, occasional glauconite.

SANDSTONE: Trace yellow white, very fine, grading to siltstone, friable, well sorted, sub angular.

CLAYSTONE: Brown grey, medium grey, light grey, firm, non to slightly calcareous, micromicaceous.
SHOW: 5240–5300, 80–90% dull to moderately bright yellow fluorescence, flash fast streaming milky yellow cut, hydrocarbon odour.

SHOW: 5300–5450, 30–80% dull yellow brown fluorescence, slow streaming milky yellow cut, orange brown residue.

SHOW: 5450–5600, 10–20% dull yellow brown fluorescence, as above.

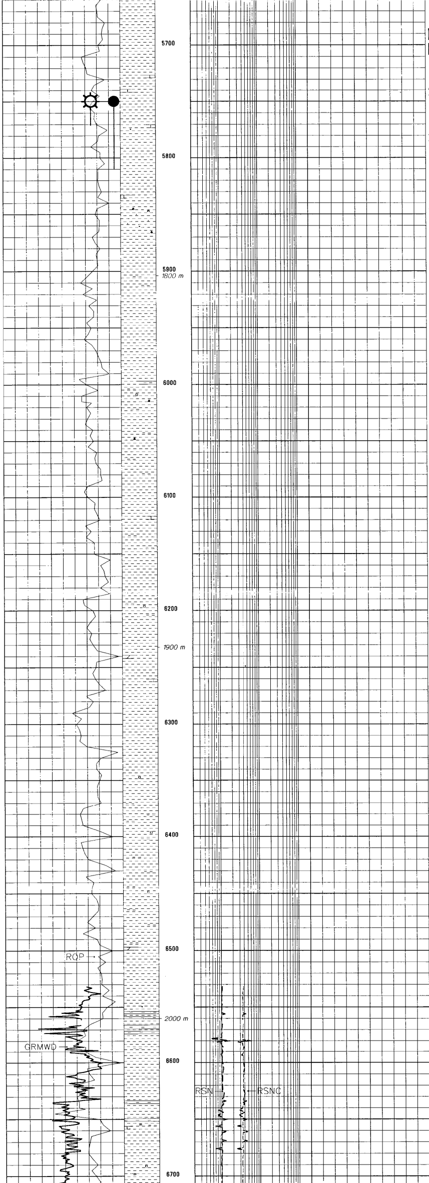
MW 13.7 ppg

CLAYSTONE: brown grey, light to medium grey, blue grey, slightly silty, where brown grey, non calcareous, micromicaceous, pyritic, trace forams.

CLAYSTONE: Medium grey, brown grey, soft to firm, silghtly to moderately calcareous, micromicaceous, occasional glauconite, occasional forams.

EARLY MIOCENE

EARLY? - LATE OLIGOCENE



MW 14.0 ppg

MW 14.2 ppg

LIMESTONE: White, soft, amorphous, argillaceous. Show: 5750–5810, 10–20% dull yellow brown fluorescence, slow streaming cloudy yellow cut.

LIMESTONE: Trace, yellow brown, hard, angular, blocky argillaceous, trace glauconite.

CLAYSTONE: Medium grey, brown grey, light grey, soft to firm, sticky in part, slightly to moderately calcareous, occasionally very calcareous, grading to marl, micromicaceous, occasional glauconite and forams.

SILTSTONE: Trace, yellow brown, firm to hard, non calcareous, micromicaceous, trace glauconite, dull yellow brown fluorescence, slow streaming cloudy cut.

CLAYSTONE: dusky yellowish brown, soft, silty, non calcareous, pyritic, occasional forams.

LIMESTONE: off white, soft, argillaceous, pyritic, also yellow brown, hard, blocky, argillaceous.

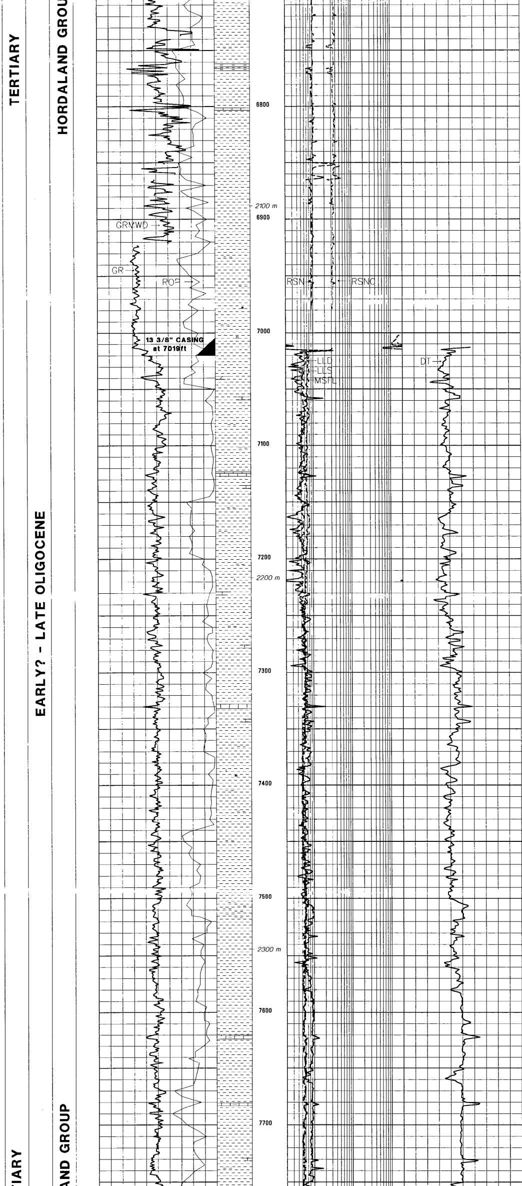
CLAYSTONE: Dusky yellowish brown, soft to firm, silty, generally non calcareous, micropyritic.

DOLOMITE: Yellow brown, hard, blocky, silty.

CLAYSTONE: Dusky brown, yellowish brown, light to medium grey, soft to firm, silty, non calcareous, micropyritic.

SILTSTONE: Light grey to off white, light brown grey, very soft, non calcareous, occasional very fine sand grains, argillaceous, trace glauconite.

CLAYSTONE: Brownish grey, silty in part, non calcareous, micropyritic, occasionally micromicaceous.



SILTSTONE: Light grey, light brown grey, very soft, non calcareous, occasional very fine sand grains, slightly micromicaceous.

CLAYSTONE: Brownish grey, light to medium grey, firm to soft, sub blocky to blocky, silty, generally non calcareous, grading in part to siltstone.

MW 14.3 ppg

CLAYSTONE: Medium olive grey, brownish grey, soft to firm, sub blocky, non calcareous, silty in part, micromicaceous, pyritic.

CLAYSTONE: Predominantly olive grey, soft, sticky, slightly silty, trace mica, pyrite, also brownish black, firm, blocky, micropyritic.

MW 14.6 ppg

MW 15.2 ppg

CLAYSTONE: Light to medium grey, light olive brown, grey brown, firm, locally amorphous, blocky to sub blocky, non to slightly calcareous.

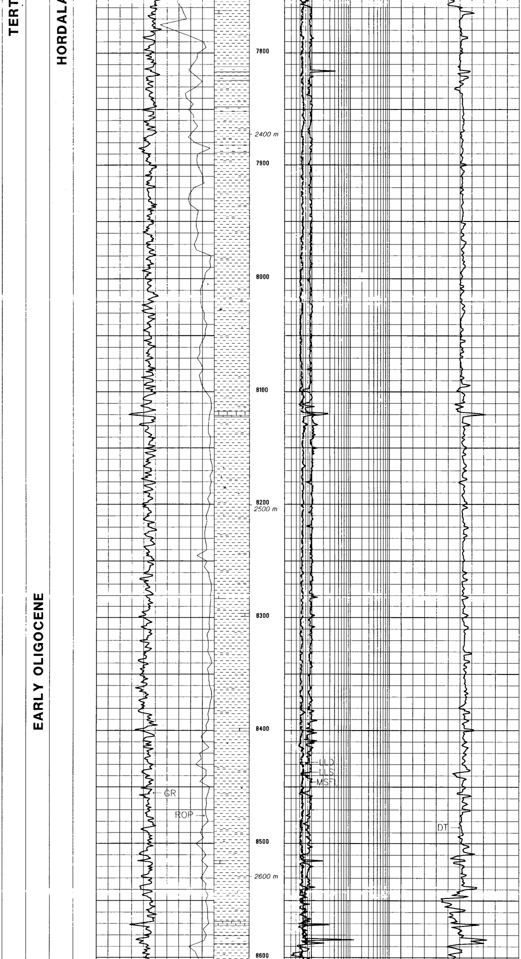
MW 15.5 ppg

LIMESTONE: Light brown, light grey, soft to firm, sub blocky, very argillaceous.

CLAYSTONE: Medium grey brown, medium to light grey, soft to firm, amorphous to sub blocky, moderately silty, grading locally to siltstone, locally micaceous, slightly calcareous.

CLAYSTONE: Light to medium grey brown, medium grey, medium olive brown, firm to soft, sub blocky to amorphous, hygroturgid, silty, locally grading to siltstone, locally micaceous, moderately calcareous, locally with forams.

LIMESTONE: Light buff, cream, light grey to brown, soft, locally firm, amorphous to sub blocky, argillaceous.



SILTSTONE: Light to medium grey brown, medium grey, olive brown, firm to soft, sub blocky to amorphous, hygroturgid, locally micaceous, trace glauconite, moderately calcareous.

MW 15.6 ppg

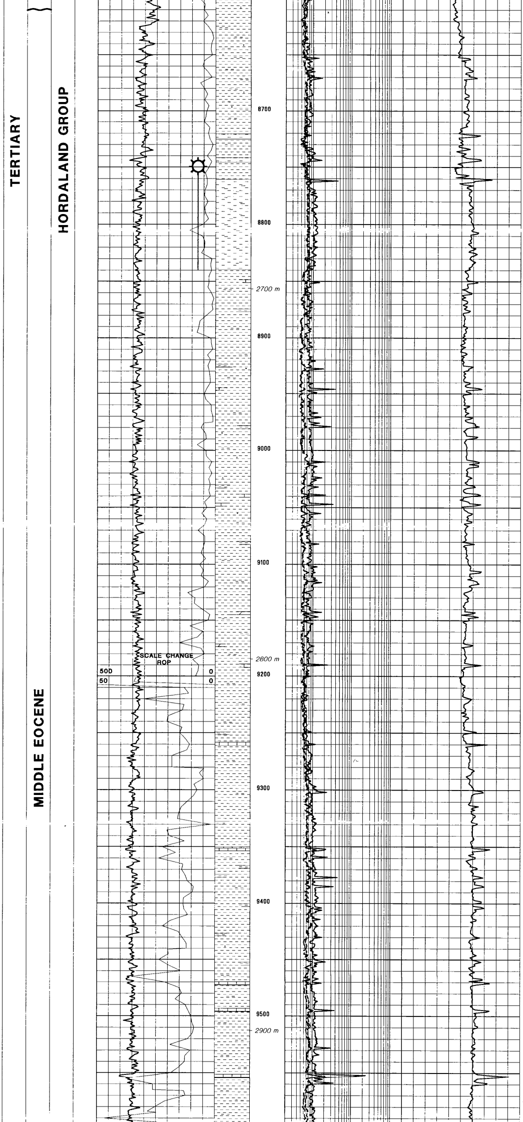
CLAYSTONE: Medium to light grey brown, medium to light grey green, soft to firm, blocky to sub blocky, silty, locally very silty, micromicaceous in part, microglauconitic in part, local pyrite, slightly to moderately calcareous.

CLAYSTONE: Predominantly light grey brown, light olive brown, light to medium grey green, soft to firm, hygroturgid, blocky to amorphous, silty, micromicaceous in part, glauconitic in part, slightly to non calcareous.

LIMESTONE: Light buff, light brown, light grey to brown, locally yellow brown, soft to firm, sub blocky, locally amorphous, argillaceous.

CLAYSTONE: Generally as above, locally grey brown, glauconitic, silty.

CLAYSTONE: As above. Locally light grey to blue, very glauconitic, silty.



CLAYSTONE: Light to medium grey, becoming medium grey green in part, locally grey brown, soft to firm, blocky to sub blocky, locally amorphous, silty and glauconitic.

SILTSTONE: Grey green, medium grey to blue, firm to soft, sub blocky to amorphous, slightly friable, very glauconitic, non calcareous, tuffaceous texture.

SILTSTONE: Generally as above, locally orange brown, dark brick red to purple grey.

CLAYSTONE: Light to medium grey to green, light to medium grey brown, soft to firm, amorphous to blocky, silty, locally very silty, glauconitic, locally with carbonaceous specs, non to slightly calcareous.

LIMESTONE: Light brown, buff, locally soft, sub blocky, argillaceous, locally cryptocrystalline.

CLAYSTONE: As above. Predominantly light to medium grey, locally silty, slightly to non calcareous.

LIMESTONE: Generally as above. Locally as vein calcite.

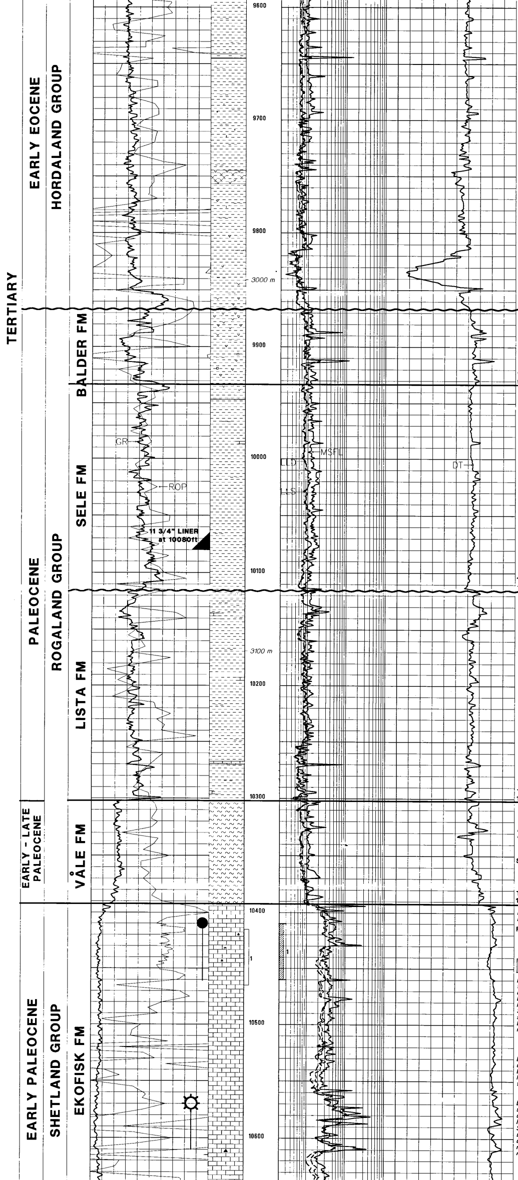
CLAYSTONE: Medium to light grey green, medium grey, locally dark grey brown, soft to firm, locally moderately hard, amorphous to blocky, silty in part, glauconitic in part, slightly to non calcareous.
DOLOMITE: Dark grey brown, firm to hard, blocky, microcrystalline.

CLAYSTONE: Medium to light grey green, medium grey, locally dark grey, soft to firm, locally moderately hard.

Light grey brown, firm, locally soft, sub blocky, argillaceous, locally also as vein calcite.

CLAYSTONE: Medium grey, light grey, soft to firm, amorphous to sub blocky, slightly silty, slightly to non calcareous.

CLAYSTONE: Generally as above. Becoming silty or very silty.



CLAYSTONE: Medium to light grey, locally grey brown, firm, blocky, subfissile, becoming moderately silty, rarely slightly glauconitic, non to slightly calcareous.

TUFF: Medium grey to brown, olive brown, firm, blocky, sub fissile, silty, non to slightly calcareous, locally with pyrite.

WELL SIDETRACKED AT 9815ft AFTER BIT STUCK AT 11386ft

CLAYSTONE: Medium to dark grey brown, firm, blocky, sub fissile, very silty, non to slightly calcareous, tuffaceous texture.

CLAYSTONE: Predominantly brick red, red brown, locally grey green, firm, blocky, locally sub fissile, silty, non calcareous, locally moderately calcareous and micropyritic.

TOP ROGALAND GROUP (BALDER FM)
9867ft (-9564ft TVDSS) 2.896sec

CLAYSTONE: Light to medium grey green, brick red, firm, blocky, sub fissile in part, slightly silty, non calcareous, grading locally to tuff, locally micropyritic.

TOP SELE FM
9933ft (-9622ft TVDSS) 2.910sec

CLAYSTONE: Medium grey, locally light grey, soft to firm, blocky, sub fissile, slightly silty, locally glauconitic, slightly calcareous.

CLAYSTONE: Generally as above.

TOP LISTA FM
10115ft (-9784ft TVDSS) 2.948sec

CLAYSTONE: Light grey green, firm, blocky, slightly silty, locally microglauconitic, non calcareous, locally slightly calcareous.

TOP VÅLE FM
10302ft (-9950ft TVDSS) 2.988sec

MARL: Light grey, soft to firm, blocky to sub blocky, grading to calcareous claystone.

SIDETRACK DATA FROM 10350ft

TOP SHETLAND GROUP (EKOFISK FM)
10392ft (-10029ft TVDSS) 3.005sec

LIMESTONE: Off white, very pale grey, firm, blocky, argillaceous.

FIT TO 15.00 PPG AT 10420ft

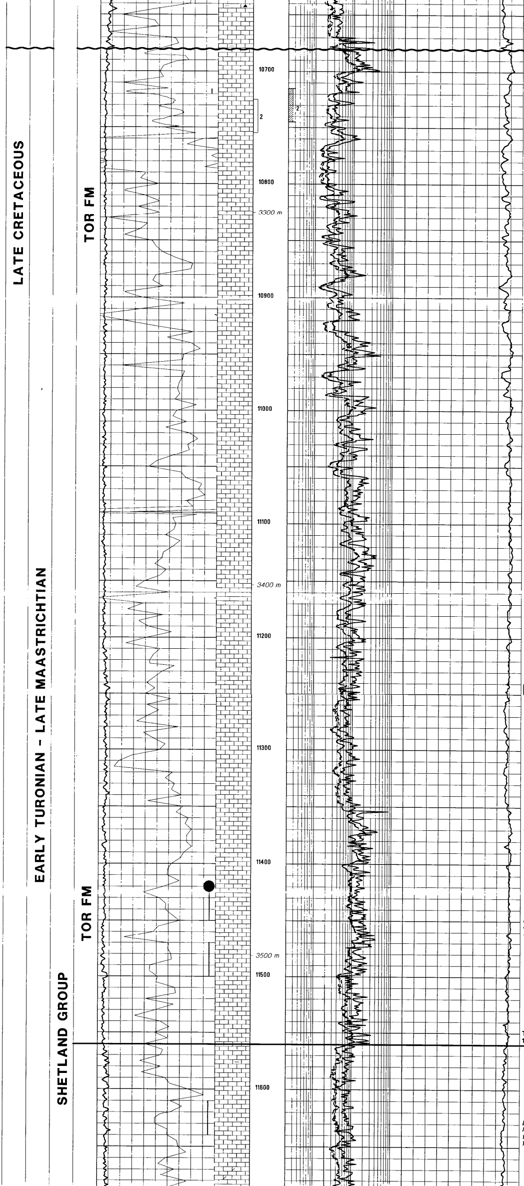
CORE #1 10410 TO 10460ft (Drillers depth)
(10415 TO 10465ft log corrected)
Cut 50.0' Rec 52.00'

MW 13.5 ppg

LIMESTONE: Stained light brown by oil, very firm to slightly hard, cryptocrystalline to microcrystalline, occasionally interbedded with dark grey to light brown beds, poor visible porosity, good hydrocarbon odour.
SHOWS: Gold to pale yellow fluorescence, fast streaming light blue to very light blue cut, very bright yellow cut fluorescence, very light brown residue ring.

LIMESTONE: Off white, very light grey, firm, occasionally firm to hard, blocky, occasionally brittle, crypto to microcrystalline with micro laminations of light grey argillaceous limestone, no fluorescence.

LIMESTONE: Very light brown to brown grey, stained by oil, off white, firm, firm to hard, blocky, cryptocrystalline, poor visible porosity, slight hydrocarbon odour.
SHOWS: Pale yellow to yellow gold fluorescence, slight milky white streaming cut, milky white to dull milky white cut fluorescence, crush cut with milky white cut fluorescence, pale brown residue ring.



TOP TOR FM
10680ft (-10285ft TVDSS) 3.043sec

LIMESTONE: Off white, light grey, firm, occasionally hard, blocky, cryptocrystalline, occasionally microcrystalline, occasionally with microcrystalline dolomite, no fluorescence.

CORE #2 10715 TO 10745ft (Drillers depth)
(10724 TO 10754ft log corrected)
Cut 30.0' Rec 30.17'

LIMESTONE: White to off white, occasionally light grey, occasionally very light brown to light grey, hard to firm, blocky, amorphous, cryptocrystalline, occasionally with grey spots, no fluorescence.

LIMESTONE: White to off white, hard to slightly firm, blocky, occasionally platey, crypto to microcrystalline, occasionally with light grey microspots.

MW 13.3 ppg

LIMESTONE: Off white, cream, locally with oil stain, light brown, firm to moderately hard, blocky to platey, crytpto to microcrystalline, also very pale grey, hard, blocky, locally crystalline.

LIMESTONE: Generally as above. Predominantly cream, light brown, locally platey.

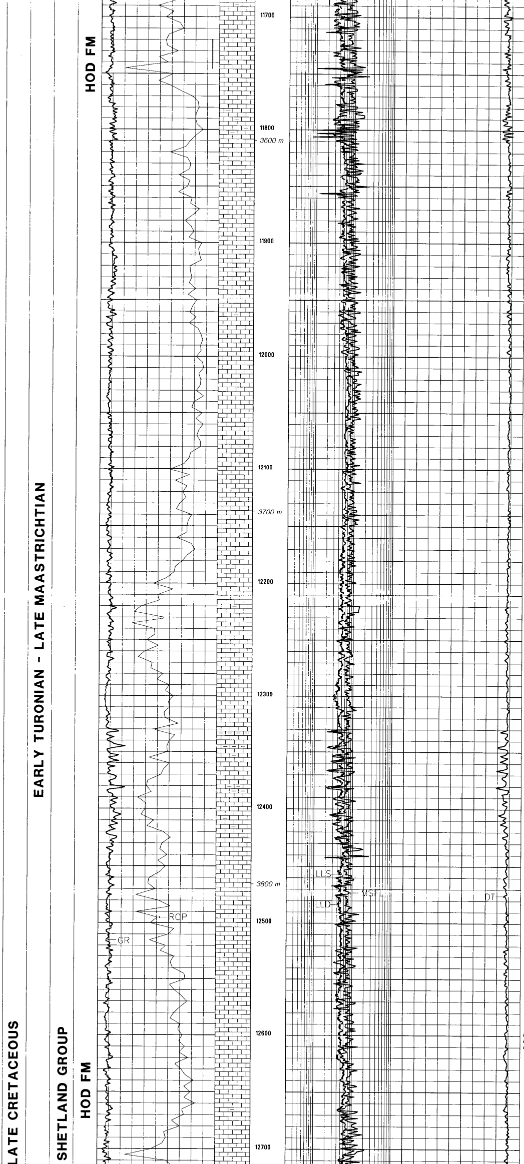
MW 13.1 ppg

LIMESTONE: Very pale brown, cream, off white, firm, locally moderately hard, blocky to platey, crypto to microcrystalline.

LIMESTONE: Generally as above. Locally light brown with oil stain in part, 50% cuttings with pale yellow fluorescence, moderate to fast streaming cut, very pale yellow white cut fluorscence.

TOP HOD FM
11560ft (-11063ft TVDSS) 3.142sec

LIMESTONE: Light grey, off white, firm, blocky, locally platey, argillaceous, 90% cuttings with dull yellow fluorescence, slow crush cut of very pale yellow.



LIMESTONE: Generally as above. Locally cryptocrystalline, no shows.

LIMESTONE: Light brown, light grey brown, soft to firm, blocky, microcrystalline, 70% cuttings with dull yellow gold fluorescence, slow crush cut of yellow white.

MW 13.0 ppg

LIMESTONE: Very pale brown, light brown, firm to moderately hard, crumbly, locally brittle, blocky, platey, microcrystalline, moderately argillaceous.

LIMESTONE: Light brown, light pink brown, firm, crumbly, blocky to platey, microcrystalline, moderately argillaceous.

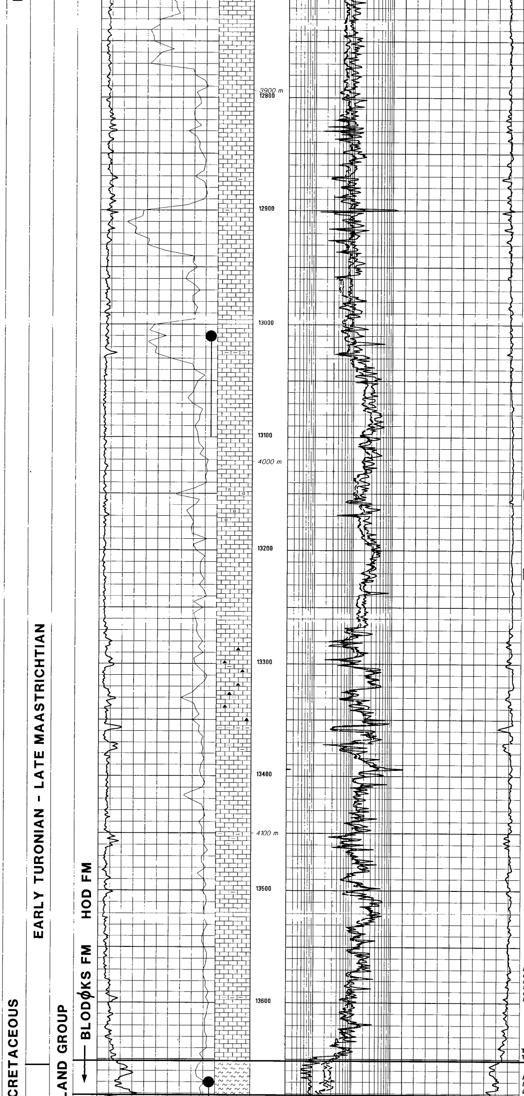
LIMESTONE: Generally as above, with a rare trace of dark grey claystone.

LIMESTONE: Light brown, very pale brown, firm to moderately hard, crumbly to brittle, blocky, cryptocrystalline, argillaceous.

LIMESTONE: Light brown, light pink brown, locally cream, firm to moderately hard, brittle to crumbly, blocky, cryptocrystalline, slightly argillaceous.

CHANGE TO BARANEX/THERMADRILL MUD AT 12450ft

LIMESTONE: Light pink brown, locally light brown, firm to moderately hard, brittle, blocky, rarely slightly argillaceous.



LIMESTONE: Light brown, off white, cream, firm to moderately hard, brittle to crumbly, blocky to platey, cryptocrystalline, rarely slightly argillaceous.

MW 13.2 ppg

LIMESTONE: Off white, cream, rarely light brown, moderately hard, crumbly to brittle, blocky, cryptocrystalline, locally microcrystalline.

MW 13.5 ppg

LIMESTONE: Off white, cream to light grey white, occasionally light brown, moderately hard, blocky, crumbly to brittle, crypto to microcrystalline, rarely with argillaceous streaks.
SHOWS: very pale yellow cream white fluorescence, very slow streaming milky white cut fluorescence, moderate to fast blooming crush cut.

MW 13.9 ppg

MW 14.1 ppg

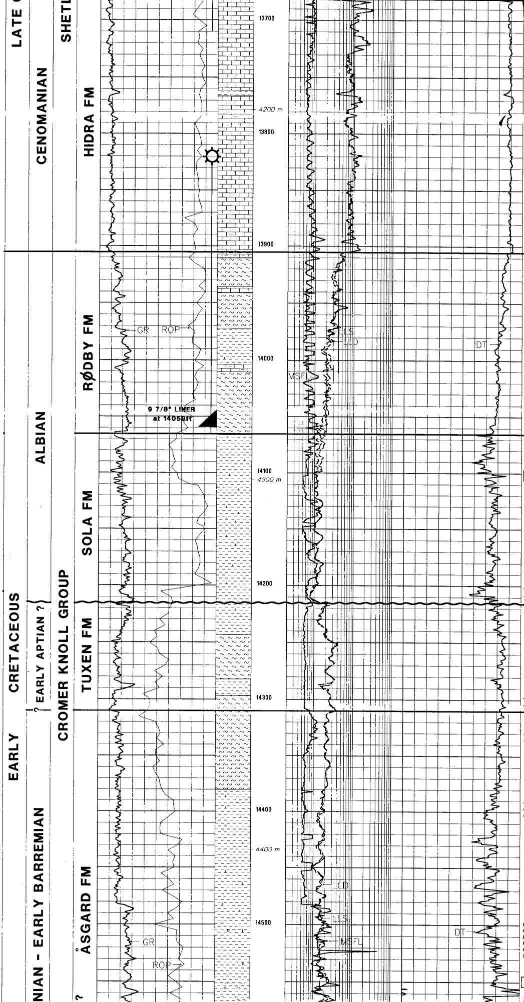
Trace chert

LIMESTONE: Off white, very light grey to grey, hard to moderately hard, blocky to sub platey, crypto to microcrystalline, trace of silt, argillaceous streaks, glauconite, and trace dark grey very hard amorphous chert.

LIMESTONE: Off white to very light grey, occasionally light brown, hard, slightly blocky to moderately rounded, crypto to microcrystalline, slightly argillaceous and silty, trace chert, trace claystone, grey to dark grey, moderately hard, blocky to sub round, calcareous, slightly silty.

TOP BLODØKS FM
13652ft (-12749ft TVDSS) 3.360sec

MARL: Dark grey to black, moderately hard, blocky, slightly fissile, occasionally very argillaceous, grading to claystone.



TOP HIDRA FM
13682ft (-12772ft TVDSS) 3.364sec

LIMESTONE: Light grey, off white, light brown to brown, occasionally grey, firm to moderately hard, occasionally hard, occasionally crumbly, blocky, cryptocrystalline, occasionally microcrystalline, rarely argillaceous with argillaceous microbedding. SHOWS: Light pale yellow dull fluorescence, moderately fast streaming white to milky white cut fluorescence, rare very slow blooming cut fluorescence.

LIMESTONE: Light grey to off white, light brown, grey to dark grey, firm to moderately hard, generally blocky, cryptocrystalline, rarely microcrystalline, rare argillaceous streaks and microbedding, interbedded light grey and light brown limestone, locally very argillaceous, no shows.

LIMESTONE: Light brown, light grey, laminations with dark grey, firm, crumbly, blocky to splintery, locally subfissile, sucrosic, varved texture, argillaceous, locally grading to marl.

CROMER KNOLL GROUP (RØDBY FM)
13905ft (-12951ft TVDSS) 3.387sec

MARL: Red to brown, soft to firm, blocky, slightly silty, also becoming grey brown, light grey green, firm to moderately hard, blocky to platey.
CLAYSTONE: Dark to medium grey, grey brown, firm to moderately hard, blocky to subfissile, very slightly silty, very calcareous, grading locally to marl.

MARL: Light brown, light to medium grey brown, locally grey green, firm to moderately hard, blocky, locally subfissile, grading locally to argillaceous limestone.
CLAYSTONE: light grey, light grey brown, medium grey, soft to firm, crumbly, blocky, varved, very calcareous, grading to marl.

TOP SOLA FM
14065ft (-13080 ft TVDSS) 3.410sec

MW 17.0 ppg

CLAYSTONE: Medium grey brown, locally light grey or dark grey, firm to moderately hard, blocky to splintery, slightly silty, moderate to very calcareous, grading locally to marl, also locally a red brown, firm to moderately hard, locally hard, blocky, moderately calcareous, trace limestone, light brown, off white, cream, moderately hard, blocky, very slightly argillaceous, locally dolomitic.

TOP TUXEN FM
14215ft (-13202ft TVDSS) 3.433sec

MARL: Generally light to medium grey, medium to light grey brown, locally red brown, moderately hard, blocky, grading locally to claystone.

CLAYSTONE: Dark grey, hard to moderately hard, blocky to splintery, non calcareous.

TOP ÅSGARD FM
14310ft (-13280ft TVDSS) 3.445sec

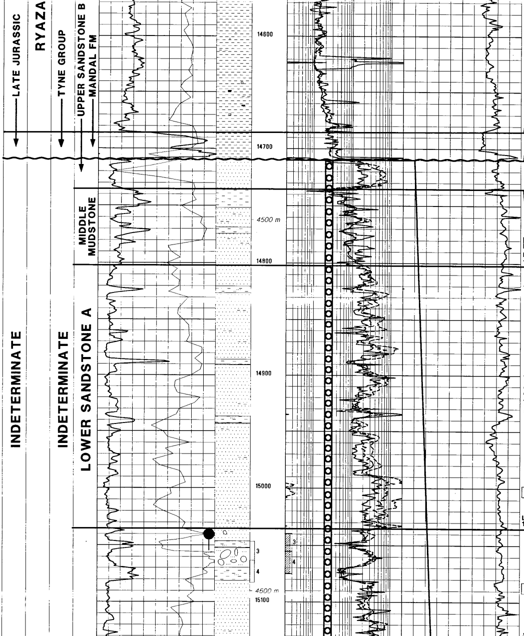
MARL: Generally as above. Light to medium grey brown, firm to moderately hard.

CLAYSTONE: Light grey to brown, light olive brown, locally red brown, firm to moderately hard, blocky, very calcareous, grading locally to marl.

CLAYSTONE: Light to medium grey, light to medium grey brown, firm, locally moderately hard, blocky, very calcareous, grading locally to marl, locally with varved texture, also dark grey, firm to moderately hard, blocky to platey, slightly silty, slightly calcareous.

MW 17.2 ppg

Trace pyrite:



SAND: Colourless, transparent, fine to medium, angular to sub angular, well sorted, loose.

CLAYSTONE: Generally as above, but becoming predominantly medium grey green, slightly calcareous.

TOP TYNE GROUP (MANDAL FM)
14685ft (-13591ft TVDSS) 3.496sec

CLAYSTONE: Dark grey, brown, moderately hard, blocky, locally subfissile, silty, non to slightly calcareous, slightly carbonaceous.

UPPER SANDSTONE B
14709ft (-13611ft TVDSS) 3.499sec

SANDSTONE: Generally colourless, locally very pale red brown, fine to very fine, becoming fine to medium, angular to rounded, generally sub angular to rounded, moderately sorted, loose. Also sandstone: fine to medium, sub angular to sub rounded, moderately sorted, grain supported, well cemented with red brown, slightly calcareous, silt, rarely with dark grey bit silt, poor to moderate visible porosity, very poor show of dull yellow grey fluorescence, very slow cut of dull yellow.

MIDDLE MUDSTONE
14735ft (-13633ft TVDSS) 3.502sec

MW 17.3 ppg

LOWER SANDSTONE A
14802ft (-13689ft TVDSS) 3.510sec

SANDSTONE: Colourless, white, very pale brown, transparent to translucent, fine to medium, locally coarse to very coarse, sub rounded to sub angular, locally angular, poorly sorted, loose. Also as sandstone: generally as above but well cemented with red brown, silty, ankeritic matrix, very poor visible porosity, trace shows.

MW 17.5 ppg

LOWER SANDSTONE B
15035ft (-13889ft TVDSS) 3.538sec

CORE #3 15039 TO 15055ft (Drillers depth)
(15047 TO 15063ft log corrected)
Cut 16.0' Rec 17.25'

CORE #4 15055 TO 15075ft (Drillers depth)
(15063 TO 15083ft log corrected)
Cut 20.0' Rec 19.50'

MW 17.5 ppg

SANDSTONE: Generally loose, translucent