PL 050

STATOIL - NORSK HYDRO - SAGA PETROLEUM

COMPLETION REPORT

WELL 34/10-1

TABLE OF CONTENTS

III DRILLING REPORT

IV MARINE REPORT

I GENERAL INFORMATION

GENERAL INFORMATION

1. Well data record

a. Well designation: 34/10-1

b. Well classification: Wildcat

c. Well location:

- i) Country: Norway, North Sea
- ii) Licence: PL 050
- iii) Latitude: 61° 10' 46,84" N
  Longitude: 02° 12' 43,67" E
- iv) Seismic location: Shotpoint no. 1373
  Line no. ST 24,5
- v) Water depth: 138 m

d. Rig data:

- i) Rig name: "Ross Rig"
- ii) Drilling draft: 21,3 m
- iii) RKB-MSL: 25 m

2. Purpose of the well:

Well 34/10-1 was drilled on the Delta structure situated in the north-eastern part of Block 34/10. The primary objective of the well was to penetrate sandstones of Middle and Lower Jurassic age and to evaluate their possible content of hydrocarbons.

3. Results of the well:

Well 34/10-1 proved the presence of oil in sandstones of Middle Jurassic age (Brent Group). The oil/water contact is not observed in the well. The well was production tested (See VI Testing operations and results).

Total depth was 2460 m RKB which is 68 m into rocks of Triassic age. A total of 12 cores were recovered in the interval from 1782,0 to 1951,1 m and one core from 2232,5 to 2250,5 m RKB.

4. Well history:

a. General:

- i) Spud date: June 20th 1978
- ii) Rig released: September, 8th 1978
- iii) Status: Plugged and abandoned

b. Contractors:

- i) Drilling platform: "Ross Rig"
- ii) Drilling Contractor: Ross Drilling Co. A/S
- iii) Cementing: Dowell - Schlumberger
- iv) Casing: Weatherford
- v) Well testing: Otis/Flopetrol/Haliburton/Sperry Sun
- vi) Electric logging: Schlumberger
- vii) Mud logging: Baroid
- viii) Mud contractor: Dresser Magcobar
- ix) Supply boats: Grieg offshore: "Ibis one"
  Karmøy supply: "Karmøy Boy"
- x) Conventional coring: Christensen Diamond
- xi) Turbo Drilling: Hunting
- xii) Diving: Three-X
- xiii) Helicopters: Helikopter Service A/S
- xiv) Core analysis: GECO
- xv) Sample analysis: Robertson Research
  IKU (Continental Shelf Institute)

c. Casing:

- i) 30" at 213,5 m
- ii) 20" at 488 m
- iii) 13 3/8" at 1441 m
- iv) 9 5/8" at 1765 m
- v) 7" liner at 1969 m

d. Coring

1) Conventional coring (description attached).

CORE NO.	INTERVAL (m)	RECOVERED (m)	RECOVERED (%)
1	1782 - 1790,5	3,85	45
2	1790,5 - 1802,5	2,26	18,8
3	1802,5 - 1819,2	13,0	78
4	1819,2 - 1835,8	16,6	100
5	1835,8 - 1853,3	17,4	~100
6	1853,3 - 1865,4	9,0	74
7	1865,4 - 1875	8,4	87
8	1875 - 1893,5	14,6	79
9	1893,5 - 1911,35	17,85	100
10	1911,35 - 1923,1	11,5	97
11	1923,1 - 1938,7	15,6	100
12	1938,7 - 1951,1	12,4	100
13	2232,5 - 2250,5	12,0	67

2) Sidewall coring

47 samples of 60 shots were recovered (78,3%).

f. Logging

1) Baroid, ADT unit including the following data:

i) Drilling rate (ROP)
ii) Lithology
iii) Cutting gas
iv) Mud gas
v) Chromatograph
vi) H_2S detector
vii) Shale density
and 20 other parameters.

2) Schlumberger

Type of log	Run No.	INTERVAL (meters)
ISF/SONIC-GR-SP	1	213,5 - 490
	2	487 - 1454,5
	3	1439,5 - 1676,6
	4	1439,5 - 1740,3
	5	1761 - 1970
	6	1969 - 2460
FDC/CNL-GR-CAL	1	1439,5 - 1740,4
	2	1700 - 1969,8
	3	1969 - 2460
FDC-GR-CAL	1	487 - 1454
DLL/MSFL - GR	1	1725 - 1969,2
LSS - GR	1	487 - 1454,5
	2	1751,5 - 1965,6
MLL/MC - CAL	1	1969 - 2460
NGS	1	1765 - 2457,5
HDT	1	1763,8 - 1970
	2	1969 - 2460
TDT (OPEN HOLE)	1	80 - 1735
CBL - GR	1	1400 - 1771,2
CBL/VDL - GR - CCL	1	1725 - 1950
	2	1760 - 1925
GEODIP	1	1776 - 1970
MECH. PROP. LOG	1	1765 - 1960
	2	1764 - 1960

g. Velocity survey

The velocity survey was conducted by SSL. 28 checkshots with levels from 500 m to 2460 m.

II GEOLOGICAL REPORT

GEOLOGICAL REPORT

1. Stratigraphy

a. Table of chronostratigraphy (all depths in m below KB)

Chronostratigraphic tops	IKU	Robertson Research
Quaternary		
Pleistocene	210	
Tertiary		
Pliocene	330	210
Pliocene - Miocene	560	
Upper Miocene		420
Middle Miocene		470
?Lower Miocene		800
Miocene - Late Oligocene	810	
Oligocene	? 910	850
Eocene	1080	1250
?Eocene	1513	
?Lower Eocene		1350
Paleocene	1594	1501/07
Cretaceous		
Maastrichtian	1678	
Maastrichtian - late Campanian		1678
Campanian	1717	
Early Campanian - Santonian	1741	
Middle Upper Cretaceous	1780	

Table of Chronostratigraphy (page 2)

Chronostratigraphic tops	IKU	Robertson Research
Jurassic		
Middle Jurassic		
?Bathonian	1787,6	
Middle - Early Bajocian		1781,5/82,6
Bajocian - (?Aalenian)	1826	
Lower Jurassic		
Late Toarcian		1939,75
Early Toarcian		2010
Toarcian	1939,58	
Late Pliensbachian		2070
Pliensbachian	2113/16	
?Pliensbachian	2232	
Pliensbachian - Late Sinemurian		2124
Late Sinemurian		2196
Hettangian - Pliensbachian	2375	
Triassic - Lower Jurassic		2156
(Triassic)		2424
(Triassic or unfossiliferous Jurassic)	2390	

b. Table of lithostratigraphy (all depths in m below KB)

Lithostratigraphic tops	depths	Thickness (m)
Shetland Group	1678	105
Brent Group	1783	163
? Tarbert Formation	1783	15
Ness Formation	1798	35
Etive Formation	1833	39
Rannoch Formation	1872	64
Broom Formation	1936	10
Dunlin Group	1946	322
Drake Formation	1946	76
Cook Formation	2022	60
Burton Formation	2082	38
Amundsen Formation	2120	148
Lower Jurassic		
Statfjord Formation	2268	145
Nansen Member	2268	22
Eirikson Member	2290	123
Triassic		
Cormorant Formation	2413	47
TD	2460	

2. Lithological description

Summary

Due to the fact that two different companies have been involved in the biostratigraphic interpretation of data from this well, the chronostratigraphic classification of one of them, namely the IKU, has been chosen in the following description of the Quaternary and the Tertiary sequences.

QUATERNARY (138 - 330 m)

Pleistocene (210 - 330 m)

The sediments of this interval are alternating soft clays and loose sands. The clay is bluish and light to medium grey, sticky, slightly calcareous and mostly silty to very silty.

The quartzitic sand grains are white to clear, partly yellow - brown and fine to very coarse in size. Traces of lignite, wood fragments and different types of fossils have been recorded throughout the sequence.

TERTIARY (330 - 1678 m)

Pliocene (330 - 560 m)

The lithologic difference between this interval and that above, is that the sand beds are more scattered. Also limestone stringers have been found in this section. The limestone is white and light to medium grey, moderately hard to hard and partly argillaceous.

Traces of pyrite and shell fragments have been recorded throughout and in the lower part also glauconite.

Pliocene - Miocene (560 - 810 m)

In the upper part of this interval there are clays with thin sand beds of almost the same types as those above. In the lower part, however, thin layers of siltstone are recorded frequently. The siltstone is medium grey, hard, argillaceous, micaceous, non calcareous and pyritic in parts.

Traces of limestone, pyrite, glauconite, foraminifera and shell fragments are common throughout the interval.

Miocene - Late Oligocene (810 - 910? m)

Above approximately 850 m, the lithology is comparable to that of the lower part of the previous section. Below this depth sand sominates with only thin layers of clay and limestone. The sand ranges from very fine to coarse in grain size and is moderately sorted. Traces of mica, pyrite, glauconite, lignite and fossils are recorded throughout.

?Oligocene (910? - 1080 m)

In this sequence interbedded claystones and sands dominate. The claystones are greyish and brownish, firm and non to slightly calcareous.

The amount of sand increases downwards and it is occasionally calcareous cemented.

Eocene (1080 - 1513 m)

The Eocene deposits are mainly sands and claystones with limestone and siltstone beds of different thicknesses. Soft and sticky clays are also common. The claystones are varicolored and ranges from light to medium grey, brown, light green and brownish grey. They are non to slightly calcareous, silty to very silty in parts, and firm.

The limestones are white and medium to dark grey, argillaceous and in the lowermost part occasionally dolomitic. The first trace of tuffaceous material is recorded at 1501 m.

The tuff is white and light grey, dark spotted and slightly calcareous.

?Eocene (1513 - 1594 m)

Interbedded clay, claystone, limestone and sandstone are also the main rock types of this interval. Tuffaceous material is frequent in the samples down to 1585 m. The colours of the tuff varies from light to medium and bluish grey, and it is non to slightly calcareous.

Paleocene (1594 - 1678 m)

In addition to almost a similar lithology as in the sequence above, beds of firm to hard shale occur sporadically in the Paleocene. The shale is light to dark grey, sandy and silty and non calcareous. Traces of pyrite and glauconite are common throughout this interval.

CRETACEOUS (1678 - 1783 m)

SHETLAND GROUP (1678 - 1783 m)

The Shetland Group extends from the base of the Tertiary and down to the top of the Tarbert Formation in the Brent Group.

It has a mixed lithology in the upper part with interbedded marls and mainly dolomitic limestones in addition to clays, silts and traces of sand, pyrite and glauconite. The soft to firm marls vary in colour from white to light and medium grey and brown. The limestones are light to medium grey and light brown, hard and argillaceous. The clay is light to medium grey, mostly silty and sandy, soft and calcareous. The light grey and light brown silt layers are soft, but mostly calcite cemented.

In the lower part of the section clay of the same type as above dominates together with thin beds of sand. The sand of the lower part of the Shetland Group is clear to milky quartz, mainly very fine to fine grained. Traces of pyrite and limestone are present throughout.

JURASSIC (1783 - 2413 m)

BRENT GROUP (1783 - 1946 m)

The Brent Group consists mainly of sands of Middle Jurassic age. All five formations are present.

Tarbert Formation (1783 - 1798 m)

The Tarbert Formation consists almost entirely of medium to coarse grained sandstone except for a shaly bed of app. 1,5 m's thickness. The sandstone is a clear to light brown quartz with rounded to subangular grains. It is mostly loose but some tight calcite cemented layers were found. Pyrite and mica occur sporadically. The sorting is good to moderate. The shale bed is medium grey with dark grey coal lamina. It is hard to firm and non calcareous. Both mica and pyrite are abundant accessories throughout. Wood fragments are also present.

Ness Formation (1798 - 1833 m)

This sequence consists of interbedded shale and sandstone, and in the lower part there are coal layers. The shale is mostly medium to dark grey, hard to firm and non calcareous. The shale is generally very micromicaceous with abundant coal and wood fragments. Pyrite occur occasionally. Burrows are seen throughout the shale layers. The sandstone is mostly of medium grain size but very fine to fine grained layers also occur. Sedimentary structures in the sandstone intervals are crossbedding and ripple marks. Also burrows occur occasionally. The coal beds in the lower part of the formation are black with abundant wood fragments and pyrite.

Etive Formation (1833 - 1872 m)

This formation consists of a loose to friable sandstone. It is very homogenous with medium to coarse, occasionally very coarse, clear to light brown quartz grains. In the upper part some siderite cementation occurs, while the rest of the interval is partly siliceous cemented. The sand grains are subangular to subrounded and well sorted. Mica occurs occasionally throughout the sandstone. Very few sedimentary structures are seen except for a thin crossbedded layer.

Rannoch Formation (1872 - 1936 m)

Also this sequence consists mainly of a homogenous sandstone. It is mostly very fine to fine grained, however, with sporadic silt and shale lamina. In the lower part of the formation lamina and thin layers of coal frequently occur together with limestone stringers.

Mica is abundant throughout the interval while pyrite and siderite rarely occur. The sandstone of this interval is mainly silica cemented. From a depth of app. 1925 m calcite cementation dominates. Common sedimentary structures are parallel lamination and crossbedding and in the lower part burrows are present.

Broom Formation (1936 - 1946 m)

The formation is a shaly sequence with scattered layers of limestone and coarse to very coarse grained sandstone. The shale is medium to dark grey and in the lower part black, hard, fissile and mostly both sandy and silty, often grading to siltstone. Mica, pyrite and lignite are frequently found and the shale is slightly to very calcareous. Glauconite occurs occasionally. The limestone is medium grey, very hard, argillaceous and contains coal fragments. Burrows are common throughout the interval.

DUNLIN GROUP (1946 - 2268 m)

The dominating rocks in the Dunlin Group are dark clay and shales with layers of different thicknesses of marl, limestone, siltstone and sand. The limestone is occasionally dolomitic.

Drake Formation (1946 - 2022 m)

A soft, sticky, medium grey clay totally dominates this interval. It is silty to very silty in parts, slightly micaceous and non to slightly calcareous. Traces of dark grey shale occur. It is fissile and non calcareous. Also small amounts of fine to very fine sand and grey to brown siltstone are found. Lignite and pyrite are common.

Cook Formation (2022 - 2082 m)

The Cook Formation has a mixed lithology with thick sand beds in the upper part. Downwards there are marls and limestones together with clays and siltstones and scattered sand stringers. The sand is clear - white to yellow quartz, fine to coarse grained and poorly sorted. It is calcite cemented in parts. The clay and the siltstone are similar to those of the Drake Formation. The marl is white to light grey, soft and often silty, while the limestone is brownish and hard. Mica, lignite and pyrite occur occasionally.

Burton Formation (2082 - 2120 m)

This interval is similar to the formation above. It is, however, less sandy, and clay and siltstone are the main types of sediment. Traces of grey, laminated, fissile shale are found.

Amundsen Formation (2120 - 2268 m)

Especially in the upper part interbedded clay and siltstone dominate. In addition there are thin layers of sand, marl and limestone. Streaks of shale appear occasionally. Downwards the amount of sandstone increases. The clay, siltstone and marl are similar to those above while the limestone is light grey to light brown, hard, microcrystalline and partly dolomitic. The sand is a greyish quartz, very fine to fine grained, very micaceous, silty, argillaceous and poorly sorted. Traces of glauconite, pyrite, mica, lignite and fossile fragments are present throughout.

Statfjord Formation (2268 - 2413 m)

The lithology of the Statfjord Formation consists of interbedded sand and claystone with scattered limestone layers.

Nansen Member (2268 - 2290 m)

A very fine to fine grained clear, white to light grey quartzitic sandstone dominates this interval. The sandstone is often silty and micaceous and calcite cementation is common. The grains are generally subangular to subrounded. Traces of pyrite are found occasionally.

Eiriksson Member (2290 - 2413 m)

This interval also includes relatively thick sandy beds of almost the same type as the sand above. In addition to the sand, clay and claystone are important rock types. The claystone is varicoloured and grades to shale. The colours are light to dark grey, brick red, brownish red, dark brown and greenish grey. The claystone is also firm, silty and non calcareous. The clay is light grey and light brown. It is soft, usually slightly silty and non calcareous. Thin white to light yellow limestone stringers are recorded occasionally throughout the interval. Traces of pyrite, mica, glauconite and coal fragments also appear in this section.

The lowermost part of the Eiriksson Member consists of a clear, occasionally yellow, pink and smokey quartzitic sandstone. It is mostly fine to medium grained and well sorted. The grains are subangular to subrounded.

TRIASSIC (2413 - 2460 m)

Cormorant Formation (2413 - 2460 m)

The Triassic sediments are shaly claystones interbedded with limestone, siltstone and sand stringers. The claystones are varicoloured and non to slightly calcareous. Dark red brown, purple, light to dark grey and bluish grey are common colours. The sandstone is much the same as the sandstone described above, while the siltstone is light to medium grey and yellow green, firm an micromicaceous.
The limestone is white to light yellow, firm to moderate hard and usually cryptocrystaline. Throughout the sequence traces of pyrite, lignite and glauconite occur.

Page 1 of 53

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½ (pilot)
GEOLOGIST: O. Aga
DATE: 24 June 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
220	60	clay, bluish gy sft, stky, sl slty	cmt in smpls also
	35	sd, wh-clr, fine-v crs, poor srtd	mica fm mud
	5	shell frags	
	tr	other fossil frags, abundant	
	tr	amber	
230	60	clay, bluish gy-med gy, soft, silty, sl calc	
	35	sd, a/a	
	5	shell frags	
	tr	wood frags	
	tr	other fossils	
240	65	clay, slty-v slty, else a/a	
	35	sd,partly yel brn, else a/a, also rock frags	
	tr	shell frags, oolites, wood frags	
250	70	clay a/a	
	25	sd a/a	
	5	shell frags a/a	also through desander
260	80	clay a/a	
	20	sd a/a	
	tr	shell frags, wood, lign	
270	90	clay a/a	
	10	sd a/a	
	tr	a/a	
280		a/a	
290	100	clay a/a	
	tr	sd a/a	
	tr	shell frags, wood, lign, other fossils	
300	100	clay, md gy-lt gy, else a/a	
	tr	sd a/a	
	tr	fossils a/a	
310	100	clay a/a	
	tr	sd a/a, also some rock frags	
	tr	fossils a/a	
320	50	clay a/a	
	50	sd, clr qtz, fine-v crs, mostly med-crs, subang-rnd	
	tr	lst, wh, mod hd	

SLA 7215

Page 2 of 53

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT

WELL NO.: 34/10-1

COORDINATES: 61° 10'46,84"N ; 02° 12'43,67" E

K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 17½ (pilot) **GEOLOGIST:** O. Aga **DATE:** 24 June 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
330	50	sd, clr, qtz, med-crs, occ v crs, sub rnd-rnd, occ subang	
	50	clay, lt gy-med gy, soft, stky, sl calc	
	tr	lst, wh, med hd, partly arg	
	tr	shell frags, microfossils	
	tr	rock frags (amphibol, feldspar)	
340	50	sd a/a	
	50	clay a/a	
	tr	a/a + pyr	
350	70	clay a/a	
	30	sd, a/a	
	tr	shell frags, and microfossils	
360	90	clay a/a	
	10	sd a/a	
	tr	a/a	
370		a/a + tr pyr	
380	95	clay a/a	
	5	sd a/a	
	tr	shell frags, pyr	
390	95	clay, lt gy-med gy, occ v slty	
	5	sd a/a	
	tr	a/a	
400	95	clay a/a	
	5	sd a/a	
	tr	shell frags	
	tr	lst, wh, lt gy-med gy, hd, occ lam	
410		a/a	60 units gas
420	100	clay a/a	
	tr	sd w/rock frags	
	tr	shell frags	
	tr	lst a/a	
430		a/a	110 units
440	90	clay a/a	
	10	sd a/a	
	tr	shell frags a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-1

COORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 17½(pilot) | GEOLOGIST: O. Aga/R. Kræmer | DATE: 24/25 June 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
450	95	clay, lt gy-med gy, soft, stky, sl calc, partly slty	
	5	sd, f-med-crs, clr qtz, subang-rnd	
	tr	lst, wh, gy, lt brn, hd, prtly arg	
	tr	shell frags	
460	95	clay a/a	
	5	sd a/a	
	tr	lst a/a, shell frags, pyr	
470		a/a	
480	85	clay a/a	
	15	sd a/a	
	tr	a/a	
490	95	clay a/a	
	5	sd a/a	
	tr	a/a	
500		a/a	
510	100	clay, lt gy, sft, stky, non calc, occ sl calc, occ slty	mostly cmt in smpl
	tr	sd, f-crs, clr qtz, subang-rnd	
	tr	ls, wh, occ lt gy, hd, partly arg	
	tr	sh frags	
520	100	clay a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	shell frags	
530	100	clay a/a	
	tr	sd a/a	
	tr	ls, wh-lt brn, v hd-hd, occ arg, microxln	
	tr	shell frags	
540	100	clay a/a	
	tr	sd, v f-f, else a/a	
	tr	ls a/a	
	tr	shell frags	

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K. B. E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 30 June 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
550	100	clay, med gy, sft, sl stky, non-sl calc, occ stky and sdy	
	tr	sd, vf-med, occ crs-v crs, clr qtz, subang-rnd	
	tr	ls, wh-lt brn, v hd-hd, occ arg, microxln	
	tr	shell frags, forams, glauc	
560	95	clay a/a	
	5	sd, occ mlky, else a/a	
	tr	ls a/a	
	tr	shell frags, forams, glauc	
570	95	clay a/a	
	5	sd a/a	
	tr	shell frags, forams, glauc	
580	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	shell frags, forams, glauc	
590	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	shell frags, forams, glauc	
600	85	clay a/a	
	10	rock debris	
	5	sd a/a	
	tr	ls a/a	
	tr	shell frags, forams, glauc	
610	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	shell frags, forams, glauc	
620	100	clay a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	pyr, glauc	
	tr	shell frags, forams	

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WELL NO.: 34/10-1
COORDINATES: 61° 10'46,84"N ; 02° 12'43,67" E
K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½" **GEOLOGIST:** R. Kræmer **DATE:** 30 June 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
630	95	clay, med gy, sft, stky, non-sl calc, occ slty & sdy	
	5	sd, clr qtz, occ mlky, vf-med, occ crs, subang-rnd	
	tr	ls, wh-lt brn, v hd-hd, occ arg, microxln	
	tr	rock debris	
	tr	shell frags, forams	
	tr	glauc, pyr	
640	95	clay, a/a	
	5	sd, occ lt brn, else a/a	
	tr	ls a/a	
	tr	shell frags, forams	
	tr	glauc, pyr	
650	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	rock debris	
	tr	shell frags	
	tr	pyr	
660	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	rock debris	
	tr	shell frags	
	tr	pyr, glauc	
670	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	rock debris	
	tr	shell frags, forams	
	tr	pyr, glauc	
680	100	clay a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	shell frags, forams	
	tr	glauc	

SLA 7213

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-1

CO ORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 17½" | GEOLOGIST: R. Kræmer | DATE: 1 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
690	100	clay, lt-med gy, sft, stky, sl calc, slty	
	tr	sd, clr qtz, vf, subang-subrnd	
	tr	shell frags	
	tr	pyr, glauc	
700	100	clay a/a	
	tr	sd a/a	
	tr	shell frags	
	tr	pyr	
	tr	ls, wh-brnish, v hd, occ arg, microxln	
710	90	clay a/a	
	10	sltst, med gy, hd, arg, micac, pyritic, non calc	
	tr	sd a/a	
	tr	shell frags	
	tr	pyr	
	tr	ls a/a	
	tr	rock debris	
720	90	clay a/a	
	10	sltst a/a	
	tr	sd a/a	
	tr	rock debris	
	tr	shell frags, forams	
730	90	clay a/a	
	10	sltst a/a	
	tr	rock debris	
	tr	sd a/a	
	tr	ls a/a	
	tr	pyr	
	tr	shell frags, forams	
740	85	clay a/a	
	10	sltst, occ wh-lt brn, else a/a	
	5	rock debris	
	tr	ls a/a	
	tr	sd a/a	
	tr	shell frags, forams	
	tr	pyr	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-1

COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 17½" | GEOLOGIST: R. Kræmer | DATE: 1 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
750	80	clay, lt-med gy, sft, sticky, non-sl calc, slty	
	15	rock debris	
	5	sltst, med gy, hd, arg, non calc, micac, occ pyritic	
	tr	ls, wh-lt brn, v hd-hd, occ arg, microxln	
	tr	sd, clr qtz, vf, subang	
	tr	glauc	
	tr	shell frags	
760	85	clay, a/a	
	10	rock debris	
	5	sltst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	glauc, pyr	
	tr	shell frags	
770	85	clay a/a	
	10	rock debris	
	5	sltst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	glauc, pyr	
	tr	shell frags	
780	80	clay, a/a	
	15	sltst a/a	
	5	rock debris	
	tr	ls a/a	
	tr	sd a/a	
	tr	glauc, pyr	
	tr	shell frags, forams	
790	90	clay a/a	
	5	sltst a/a	
	5	rock debris	
	tr	ls a/a	
	tr	sd a/a	
	tr	glauc, shell frags	

SLA 7215

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E
K. B. E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 1 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
800	90	clay, lt-med gy, sft, stky, sl calc, slty	
	5	ls, wh-lt brn - med gy, hd-v hd, occ arg, microxln	
	5	rock debris	
	tr	sd, clr qtz, vf-f, subang-rnd	
	tr	sltst, med gy, hd, arg, non calc, micromicac occ pyritic	
	tr	shell frags	
	tr	pyr, glauc	
810	100	clay a/a	
	tr	sltst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	rock debris	
	tr	shell frags, pyr, glauc	
820	100	clay a/a	
	tr	sltst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	shell frags, pyr, glauc	
830	90	clay a/a	
	10	sltst a/a	
	tr	rock debris	
	tr	ls a/a	
	tr	sd a/a	
	tr	shell frags, pyr, glauc	
840	100	clay, non calc, else a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	shell frags, pyr, glauc	
850	100	clay, a/a	
	tr	ls a/a	
	tr	sd, also v crs, else a/a	
	tr	shell frags, pyr, glauc	
	tr	sltst a/a	

Page 9 of 53

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 1 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
860	60	clay, lt-med gy, sft, sticky, sl calc, slty	
	40	sd, clr qtz, occ mlky-lt brnish, vf-crs, subang-rnd	
	tr	ls, wh-brnish, hd, occ sl arg, microxln	
	tr	calcite, clr-yel, firm-hd	
	tr	sltst, lt brnish gy, hd, arg, sl micromicac	
	tr	glauc, pyr	
	tr	foss frags	
870	80	sd a/a	
	15	clay a/a	
	5	ls a/a	lignite mica } ?
	tr	calc, sltst a/a, glauc, pyr, foss frags, mica, lign	
880	80	sd a/a	
	10	clay a/a	
	10	ls a/a	
	tr	calcite, sltst a/a, glauc, pyr, mica, lign, foss frags	
890	90	sd a/a	
	5	clay a/a	
	5	ls a/a	
	tr	calcite, sltst a/a, glauc, pyr, mica, lign, foss frags	
900	80	sd a/a	
	15	ls a/a	
	5	clay a/a	
	tr	calcite, sltst a/a, glauc, pyr, mica, lign, foss frags	
910	60	sd a/a	
	20	clayst, dk gy-brn, occ dk brn and med gy	
		firm, slty, sl micromicac, non-sl calc	
	10	clay a/a	
	10	ls a/a	
	tr	sltst a/a	
	tr	calcite, glauc, pyr, mica, lign, foss frags	

SLA 7215

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT

WELL NO.: 34/10-1

CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E

K.B.E.: 25 **meters** **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 17½" **GEOLOGIST:** R. Kræmer **DATE:** 1 Juli 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
920	85	clayst, med gy-brn, occ dk gy-dk brn, firm, slty, sl micromicac, non calc	
	10	sd, clr qtz, occ mlky-lt brnish, subang-subrnd,v f-crs	
	5	clay, lt-med gy, sft, slty, sticky, non calc	
	tr	glauc	
	tr	ls, wh, hd, microxln	
930	90	clst a/a	
	5	sd a/a	
	5	clay a/a	
	tr	ls a/a	
	tr	glauc	
940	100	clayst a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	glauc	
950	100	clayst a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	glauc	
960	100	clayst a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	glauc	
970	100	clayst a/a	
	tr	sd a/a	
	tr	sltst, wh, firm-hd, calc cmt, sdy	
	tr	foss frags	
	tr	glauc	
980	100	clst a/a	
	tr	sltst a/a	
	tr	sd a/a	
990	80	clayst a/a	
	20	sd a/a	
	tr	sltst a/a	
	tr	glauc	
	tr	pyr	
	tr	foss frags	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 1 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1000	95	clayst, med gy-brn, occ lt gy, dk gy and brnish gy firm, slty, sl micromicac, non calc	
	5	sd, clr-mlky qtz, vf-crs, ang-rnd, occ calc cmt	
	tr	glauc	
	tr	ls, wh-brnish red, hd, microxln	
1010	90	clayst a/a	
	10	sd (sst occ gy) else a/a	
	tr	ls a/a	
	tr	glauc	
1020	90	clayst a/a	
	10	sd a/a	
	tr	ls a/a	
	tr	glauc	
1030	100	clay, lt-med gy, sft, sticky, non calc, sl slty	
	tr	sd, clr qtz, vf- med, subang-rnd	
	tr	ls, wh-lt brnish, hd, microxln, occ arg	
1040	80	clay a/a	
	20	clayst, med gy-brn, occ lt gy, else a/a	
	tr	sd a/a	
1050	80	clay a/a	
	20	clayst a/a	
	tr	sd a/a	
1060	90	clay a/a	
	10	clayst a/a	
	tr	sd a/a	
1070	90	clay a/a	
	10	clayst a/a	
	tr	sd a/a	
1080	80	clay a/a	
	20	clayst a/a	
	tr	sd a/a	
1090	85	clay a/a	
	10	clayst a/a	
	5	sd a/a	
	tr	mica	

SLA 7215

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Den norske stats oljeselskap a.s
Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 1 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1100	75	clay, lt-med gy, sft, sticky, non calc, slty	
	15	sd, clr-mlky qtz, vf-med, subang-rnd	
	10	clayst med gy-brn, occ lt gy, firm, non calc, sl micromicac, slty	
	tr	glauc, mica, pyr	
1110	70	sd, clr-wh-lt brnish qtz, med-crs, occ f, subang-rnd	
	20	clay a/a	
	10	clayst a/a	
	tr	glauc, mica, pyr	
1120	90	sd a/a	
	5	clay a/a	
	5	clayst a/a	
	tr	ls, wh-gy, hd, occ arg, microxln	
	tr	glauc, mica	
1130	90	sd a/a	
	5	clay a/a	
	5	clayst a/a	
	tr	ls a/a	
	tr	mica, glauc, pyr	
1140	100	sd a/a	
	tr	clayst a/a	
	tr	ls a/a	
	tr	pyr, glauc, mica	
1150	95	sd a/a	
	5	clayst a/a	
	tr	ls a/a	
	tr	pyr, glauc, mica	
1160	100	clay a/a	
	tr	sd a/a	
	tr	glauc, pyr, mica	
1170	60	clay a/a	
	35	clayst a/a	
	5	sd a/a	
	tr	glauc, pyr, mica	

statoil
Den norske stats oljeselskap a.s
Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 1 - 2 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1180	50	clay, lt-med gy, sft, stky, slty, non calc	
	50	clayst, med gy-brn, occ lt gy, firm,	
		non calc, sl micromicac, slty	
	tr	sd, clr-mlky qtz, med-crs, subang-rnd	
	tr	mica, pyr, glauc	
1190	90	sd a/a	
	5	clayst a/a	
	5	clay a/a	
	tr	glauc, pyr, mica	
	tr	foss frags	
1200	90	clay a/a	
	10	clayst a/a	
	tr	sd a/a	
	tr	glauc, pyr, mica, foss frags	
1210	90	clay a/a	
	10	clayst a/a	
	tr	sd a/a	
	tr	glauc, pyr, mica, foss frags	
1220	60	clay a/a	
	40	clayst a/a	
	tr	sd a/a	
	tr	glauc, pyr, mica, foss frags	
1230	40	sd a/a	
	30	clay a/a	
	30	clayst a/a	
	tr	glauc, mica, pyr, foss frags	
1240	90	clay a/a	
	10	clayst, v micromicac, else a/a	
	tr	sd a/a	
	tr	glauc, mica	
1250	70	clay a/a	
	20	clayst a/a	
	10	sd a/a	
	tr	glauc, mica	

SLA 7213

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT

WELL NO.: 34/10-1

CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E

K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 17½" **GEOLOGIST:** R. Kræmer **DATE:** 2 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1260	50	clayst, lt-med gy, occ brn and grnish, firm, sl micromicac, non calc, v slty	
	40	clay, lt-med gy, sft, stky, non calc	
	10	sd, clr qtz, occ mlky, med-crs, subang-rnd , lse	
	tr	glauc, mica, pyr	
1270	80	clayst a/a	
	15	clay a/a	
	5	sd a/a	
	tr	glauc, mica, pyr	
	tr	ls, wh, firm, arg, microxln	
1280	70	clayst a/a	
	25	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	glauc, mica, pyr	
1290	70	clayst a/a	
	20	clay a/a	
	10	sd, occ calc cmt, else a/a	
	tr	ls a/a	
	tr	glauc, mica, pyr	
1300	80	clay a/a	
	10	clayst a/a	
	10	sd a/a	
	tr	mica, glauc, pyr	
	tr	ls, wh-lt gy, hd, occ arg, microxln	
1310	60	clayst a/a, slty in parts	
	30	clay a/a	
	10	sd a/a	
	tr	mica, glauc, pyr	
	tr	ls, wh-lt gy, hd, occ arg, microxln	
1320	70	clayst a/a	
	20	clay a/a	
	10	sd a/a	
	tr	ls a/a	
	tr	mica, glauc, pyr	

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 2 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1330	70	clayst, lt-med gy, lt grn, occ brnish gy, firm,	
		sl micromicac, non calc, slty-occ v slty,	
		shly in parts	
	25	clay, lt-med gy, sft, sticky, non calc	
	5	sd, clr-mlky qtz, subang-rnd, med-crs, occ f, lse,	
		occ calc cmt	
	tr	ls, wh-gy, firm-hd, occ arg, microxln	
	tr	pyr, glauc, mica	
1340	80	clayst, occ sl calc, else a/a	
	10	clay a/a	
	5	ls, occ brnish yel, else a/a	
	5	sd a/a	
	tr	sltst, brnish red, hd, arg, calc cmt	
	tr	pyr, glauc	
1350	75	clayst a/a	
	15	clay a/a	
	10	ls a/a	
	tr	sd a/a	
	tr	pyr, glauc, sltst a/a	
1360	85	clayst a/a	
	10	ls a/a	
	5	clay a/a	
	tr	sd a/a	
	tr	pyr, glauc	↑
	tr	sltst a/a	
1370	80	clayst a/a	pale yel fluor in
	10	ls, occ dk gy, else a/a	ls and sltst
	10	clay a/a	mlky cut, weak
	tr	sd a/a	sl str
	tr	sltst a/a	"
	tr	pyr, glauc	
1380	80	clayst a/a	
	10	ls a/a	"
	10	sltst a/a	
	tr	sd a/a	
	tr	pyr, glauc	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 2 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1390	70	clayst, lt gy-med gy- lt grnish gy, firm, sl slty non calc, occ sl calc, shaly	pale yel fluor weak sl str
	10	clay, lt-med gy, sft, stky, non calc	lt yel-mlky cut
	10	sltst, brnish , hd-firm, occ calc cmt, sl arg	
	10	ls, wh-lt gy-dk gy, occ brnish, hd-firm, occ arg microxln	steady drilling parameters from
	tr	pyr, glauc	1390
1400	80	clayst a/a	
	10	sltst a/a	
	10	ls a/a	pale yel fluor
	tr	pyr, glauc	weak sl str lt
1410	80	clayst a/a	yel-mlky cut
	15	ls a/a	in ls & sltst
	5	sltst a/a	
	tr	pyr, glauc	—— " ——
1420	80	clayst a/a	tuff matr?
	15	ls a/a	wh,sft,dk spotted
	5	sltst a/a	calc
	tr	pyr, glauc, mica	—— " ——
1430	80	clayst a/a	drlg brake 1436
	10	sltst a/a	22-36 m/hr
	10	ls a/a	yel fluor f str
	tr	pyr, glauc, mica	lt yel-mlky cut
			in ls & sltst
1435	70	clayst a/a	—— " ——
	20	ls a/a	
	10	sltst a/a	tuffaceous matr?
	tr	pyr, glauc	wh, sft, dk spotted
			calc
1440	70	clayst a/a	yel fluor, fast
	15	ls a/a	str lt yel-mlky cut
	15	sltst a/a	in ls & sltst
	tr	pyr, glauc	
1450	80	clayst a/a	—— " ——
	15	ls a/a	
	5	sltst a/a	
	tr	pyr, glauc	

statoil
Den norske stats oljeselskap a.s
Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K. B. E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 17½"
GEOLOGIST: R. Kræmer
DATE: 3 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1456	80	clayst,lt-gy-lt grn-grnish gy, occ brnish gy, firm, occ sl slty, non calc, mostly shaly	bottoms up
	15	ls, lt-med gy, occ dk gy and brnish, hd-firm, arg, occ microxln	yel fluor v weak str
	5 tr	sltst, wh-brn, hd-firm, sl arg, occ calc cmt pyr	pale yel-mlky cut in sltst & ls
		POOH to run 13 3/8" casing	13 3/8" CSG at 1445 m
		Bit No. 8, 12 1/4" X1G	
1460	90	clst, lt-med grn, occ gy-brn, firm, slty in parts micromic, sl pyr, non calc, glauc	40% cmt in sample
	5 5	ls, wh-grn, brn, hd, arg sltst, grn, occ wh-gry-grn, non calc, glauc, pyritic	bri gold-orange
	tr	sd vf-f, ang-subrnd, loose	fluor str bri mlky blue cut
1470	80 10	clst, a/a cl, tan-brn, sft, slty, non calc	
	5 5	sltst a/a ls, occ dolomitic else a/a	shows a/a
	tr	sd a/a	
1480	80 10	clst/cl a/a ls, lt-med gy, arg, hd, xln	
	10 tr	sltst a/a pyr & glauc, sd a/a	
1490	80 10	clst/cl a/a ls a/a	
	10 tr	slst a/a sd v f-f, a/a	shows a/a
	tr tr	diss lign ? pyr, glauc	
1494	80 10	cl, lt gy-lt grn, sft, stky, non-sl calc clst a/a	
	tr 10	sltst a/a ls a/a	
	tr	tuff wh-lt gy, dk spotted,sl calc	

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4"
GEOLOGIST: T. Hauge
DATE: 7 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1501	100	cl, lt gy, grnish gy, occ brn, soft, stky, sl-non calc, glauconitic, slty in parts	bri-orange-gold fluor, bri-wh cut
	tr	sd, vf-f, subang-subrnd	
	tr	ls, lt-med gy, hd, xln	
	tr	tuff, wh-lt gy, dk spotted, sl calc	
1507	100	cl, a/a	
	tr	sd a/a	shows a/a
	tr	ls a/a	
	tr	tuff a/a	
1513	100	cl, bcming more silty, else a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	tuff a/a	
1519	100	clay a/a	
	tr	sd a/a	fluor a/a
	tr	ls a/a	no cut
1525	100	clay a/a	
	tr	ls a/a	
	tr	sd a/a	
1531	100	clay a/a	
	tr	ls a/a	
	tr	sd a/a	
1537	90	clay, lt gy, grnish gy, occ brn, soft, occ firm, sl-non calc, slty	
	5	ls, lt-med gy, occ brn, occ grn, hd, xln, dolomitic in parts, arg	
	5	tuff, gy-bluish gy, soft, specked, non-v sl calc	
	tr	sd a/a	
	tr	pyr, glauc	
1543	80	clay, a/a	
	10	sltst, gy-med brn, sft-firm	
	10	ls a/a	
	tr	tuff a/a	
	tr	pyr, glauc	
	tr	sd, vf-f, qtz	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4" **GEOLOGIST:** Hauge/Jakobsson **DATE:** 8 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1549	90	clay, lt-med gy, grnish gy, occ brn, soft, sticky, slty, non-v sli calc	bri gold fluor
	10	sltst, gy-brn, sft, firm, non calc, occ sdy	no cut
	tr	ls, lt-med gy, grnish gy, hd, xln	
	tr	tuff, lt-med gy, bluish gy, soft, non-v sli calc	
	tr	glauc, pyr	
1555	70	clay, lt-med gy, brn, occ grn, sft, stcy, slty, non-v sli calc	in sltst: tr live oil
	20	sltst, med brn, firm-hd, occ sdy	bri gold fluor,
	10	tuff a/a	bri w cut
	tr	ls a/a	
	tr	pyr, glauc	
1561	90	clay a/a	
	5	sltst a/a	
	5	ls a/a	
	tr	sd, vf-f, loose, subang-subrnd	
	tr	pyr, glauc	
1567	90	clay a/a	
	10	sltst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	pyr, glauc a/a	
1573	90	clay, med-dk gy, soft-firm, slty, occ sticky, non-sl calc	
	10	sltst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	pyr, glauc	
1576	80	clay, a/a	
	20	shale, lt-dk gy, hd, subfiss, non calc, v slty, occ sdy	
	tr	ls a/a	
	tr	sd a/a	
	tr	sltst a/a	
	tr	pyr, glauc	

SLA 7215

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Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA** NORTH SEA **FIELD** WILDCAT

WELL NO.: 34/10-1

CO ORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 ' 43,67 " E

K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 12 1/4" **GEOLOGIST:** Hauge/ Jakobsson **DATE:** 8 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1579	70	shale, med-dk gy, hd, brittle, subfiss, v slty, sdy, non calc	no shows
	10	sltst, gy-brn, firm-hd, non calc	
	20	clay, gy, sft-firm, sticky	
	tr	sd, v f-f, loose, qtz, subang-subrnd	
	tr	ls, wh-dk gy, occ grn, hd, xln	
	tr	pyr, glauc	
	tr	tuff, lt gy-bluish gy, soft, non calc	
1582	85	shale a/a	no shows
	10	sltst a/a	
	5	sd, vf-med, loose, ang-subrnd qtz	
	tr	ls a/a	
	tr	tuff a/a	
	tr	pyr, glauc	
1585	100	clay, gy-brn, soft, stky, non calc, occ slty	
	tr	sd a/a	
	tr	ls a/a	
	tr	pyr, glauc	no shows
1588	100	clay, gy, soft, non calc, occ slty	
	tr	sd a/a	
	tr	ls a/a	
	tr	pyr, glauc a/a	
1591	90	clay a/a	no shows
	10	sh a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	pyr, glauc a/a	
1597	90	clay, lt-med gy, grnish gy, soft, stky, glauconitic, non calc	no shows
	10	shale a/a	
	tr	sd a/a	
	tr	ls a/a	
	tr	pyr, glauc a/a	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4"
GEOLOGIST: Hauge/Jakobsson
DATE: 8 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1598	60	clay, lt-med gy, sft, sticky, sl calc, glauconitic	shows in ls
	20	shale, med-dk gy, firm-hd, slty, sdy	& sst:
	10	sltst, lt-med gy, firm, glauconitic	dull yel fluor
	10	ls, wh-gy brn, argl, hd, dolomitic	
	tr	sst, f-med, hd, well cmtd	bri wh cut
	tr	glauc, pyr	
1601		clay a/a	
		slt a/a	shows a/a
	tr	glauc, pyr	
1609	90	clay, slty, occ sdy, else a/a	shows a/a
	10	sltst a/a	
	tr	sd, f-med, ang-subrnd, clr qtz, loose	
1615	90	clay, occ grnish gy, else a/a	
	5	sd, f-crs, ang-subrnd, clr and milky qtz, loose	
	5	sltst a/a	
	tr	ls, gy, brn, hd, arg, dolomitic	
1618	75	clay a/a	
	5	sd a/a	
	20	ls a/a	
	tr	sltst	
	tr	glauc, pyr	
1621	90	clay a/a	shows a/a
	5	ls a/a	
	tr	sd a/a	
	tr	sltst	
	tr	glauc, pyr	
1627	100	clay, non calc, else a/a	
	tr	ls a/a	
	tr	pyr, glauc	

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4"
GEOLOGIST: Hauge/Jakobsson
DATE: 9 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1633	100	clay, lt-med gy, grnish gy, soft, occ firm, sticky non-v sl calc, glauconitic, silty	dull yel fluor
	tr	sl, lt gy-brn, hd, xln, argl	no cut
	tr	sd, vf-med, clr and milky qtz, loose	
	tr	pyr, glauc	
1639	100	clay a/a	
	tr	ls a/a	shows a/a
	tr	sd a/a	
	tr	pyr, glauc	
1645	100	clay, v slty, occ grading to slt, else a/a	shows a/a
	tr	ls a/a	
	tr	sd a/a	
	tr	pyr, glauc	
1651	100	clay, v slty, a/a	
	tr	sd a/a, incr amount	shows a/a
	tr	ls a/a	
	tr	glauc	
1657	95	clay, grading to slt a/a	shows a/a
	5	sd, v f, clr qtz, loose, subrnd, some med grns	
	tr	ls a/a	
	tr	glauc	
1663	90	clay grading to slt a/a	
	10	sd v f, qtz, loose, subrnd	shows a/a
	tr	ls a/a	
	tr	glauc	
1669	65	clay a/a, slty, sdy	
	20	marl, lt gy, brn, grn, firm	shows a/a
	10	ls, dolomitic, lt-med gy, brn, hd, xln, arg	
	5	sd a/a	
	tr	pyr, glauc	
1675	50	clay a/a	bri yel fluor, fast wh cut
	40	marl a/a	
	10	ls a/a	
	tr	sd	
	tr	pyr	

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Den norske stats oljeselskap a.s
Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4"
GEOLOGIST: Hauge/Jacobsson
DATE: 10 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1678	70	clay, lt-med gy, soft, v slty, occ sdy	dull yel fluor
	30	ls, lt-med gy, brn, hd, arg, dolomitic	no cut
1680	90	clay a/a	oil in mud
	10	sd, v f-f, occ med-crs, subrnd, loose, dk qtz	bri yel gold fluor
			inst mlky blue cut
1681	80	clay, a/a	
	20	sd a/a	shows a/a
	tr	ls a/a	
1684	90	sltst, v arg, lt gy, lt brn, soft, calc, sdy, (vf-f)	shows a/a
	10	sd a/a	
	tr	ls a/a	
1687	50	marl, wh, lt-med gy, brn, sft-firm	shows a/a
	50	sltst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	sh, grn, firm, fiss, non calc	(cavings?)
1690	60	sltst, v arg, lt gy, lt brn, soft, calc	
	40	marl a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	sh, grn-lt gy, soft, non calc	
1693	60	marl a/a	
	40	sltst a/a	
	tr	ls a/a	
	tr	sh a/a	
	tr	sd a/a	

SLA 7215

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Den norske stats oljeselskap a.s
Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4"
GEOLOGIST: Hauge/Jacobsson
DATE: 10 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1696	80	marl, lt gy, lt brn, firm, blocky grades to ls in prts	bri yel-wh fluor
	15	clay, lt-med gy, soft, calc	inst bri wh cut
	5	pyr	cuttings bleeding
	tr	sd, vf-med, clr qtz, subang	oil
	tr	glauc	
1699	80	marl a/a	
	20	clay a/a	
	tr	pyr	
	tr	sd a/a	
1702	70	marl	
	20	ls, lt gy, lt brn, hd, arg motled	shows a/a
	10	clay a/a	
	tr	pyr	
1705	70	marl a/a	
	20	ls a/a	shows a/a
	10	clay a/a	
	tr	pyr	
1708	70	marl a/a	
	20	ls a/a	shows a/a
	10	clay a/a	
	tr	pyr	
1711	50	marl a/a	
	50	ls getting dkr, v arg else a/a	shows a/a
	tr	clay	
	tr	pyr	
1714	50	ls a/a	
	40	marl a/a	shows a/a
	10	clay a/a	
	tr	pyr	
1717	60	ls a/a	
	40	marl a/a	shows a/a
	10	clay a/a	
	tr	pyr	
1720	60	marl a/a	
	20	ls a/a	
	20	clay a/a	
	tr	pyr	
1723	50	clay a/a	
	30	marl a/a	
	20	ls a/a TR: pyr	

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Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4"
GEOLOGIST: Hauge/Jakobsson
DATE: 11 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1726	50	clay, lt-med gy, soft, v slty, non-sl calc	bri yel fluor
	40	marl, lt gy-lt brn, sft-firm	slow milky blue
	10	ls, lt gy-med gy, lt brn, hd, mottled, arg	cut
	tr	pyr	
1729	70	marl, lt-dk gy, brn, firm-hd, mottled	shows a/a
	20	ls a/a	
	10	clay a/a	
	tr	pyr	
1732	70	marl a/a	
	20	ls a/a	shows a/a
	10	clay a/a	
	tr	pyr	
1735	50	clay a/a	
	30	marl a/a	
	10	ls a/a	
	10	sd v f-f, qtz	
	tr	pyr	
1738	60	clay a/a	
	30	marl a/a	
	10	sd a/a	
	tr	pyr	
1741	90	clay a/a	
	10	marl a/a	
	tr	ls a/a	
	tr	sd a/a	
		POOH FOR LOGGING	
1745	100	clay, lt-med gy, lt brn, soft, v slty, occ sdy, calc	
	tr	sd vf-f, occ med, clr and milky qtz, subang-subrnd, loose	
	tr	ls a/a	
	tr	marl a/a	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 12 1/4"
GEOLOGIST: Hauge/Jakobsson
DATE: 12 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1747	95	clay, lt-med gy, lt brn, soft, v slty, occ sdy, calc	two different fluor colors
	5	sd, vf-f, occ med, clr and milky qtz, subang-subrnd, loose	
	tr	ls, lt gy, brn, hd, arg, xln	in sample gold and bri wh
	tr	pyr	bri wh str cut
1750	95	clay a/a	
	5	sd a/a	
	tr	pyr	shows a/a
1753	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	pyr	
1756	95	clay a/a	
	5	sd a/a	shows a/a
	tr	ls a/a	
	tr	pyr	
1759	95	clay a/a	
	5	sd a/a	
	tr	ls a/a	
	tr	pyr	
1762	100	clay, v slty grading to slt, else a/a	
	tr	sd	
	tr	pyr	
1765	100	clay a/a	
	tr	sd a/a	shows a/a
	tr	pyr a/a	
1768	100	clay a/a	
	tr	sd a/a	
	tr	pyr a/a	
1771	100	clay a/a	
	tr	sd a/a	shows a/a
	tr	pyr a/a	
1774	100	clay a/a	
	tr	sd a/a less amount	
	tr	pyr	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT

WELL NO.: 34/10-1

COORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E

K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 12 1/4" **GEOLOGIST:** Hauge/Jakobsson **DATE:** 12 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1777	100 tr	clay, lt-med gy, occ lt brn, soft, silty, occ sdy,calc sd, v f - f, occ med, clr and mlky qtz, lse	
	tr tr	marl, wh - lt gy, soft, slty ls, lt gy, lt brn, hd	
		DRILLING BREAK	
		CIRC. BOTTOMS UP	bri gold fluor bri wh cut
1780	100	sd, med, occ subrnd, occ subang, occ subrnd, clr qtz, well srt, lse	
	tr	clay a/a	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 8½" **GEOLOGIST:** Kræmer/Elvsborg **DATE:** 26 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1780-1951		SEE CORE DESCRIPTIONS	
1951	100	clay, med gy, slty, stcky, sl calc, sft, sl micac	T.G. 90 units
	tr	lign	
	tr	sd, qtz, clr-mlky, subang, vf-f	
	tr	sltst, brn, sft, oil stain	bri yel fluor,
1952	100	clay a/a	fast str mlky
	tr	lign	bluish cut in sltst
	tr	sltst a/a	clay=hydr.clayst.
	tr	sd a/a	(sh)
1953	100	clay a/a	
	tr	lign	
	tr	sltst a/a	
	tr	sd a/a	
1956	100	clay a/a	
	tr	lign & pyr	
	tr	sltst a/a	
	tr	sd a/a	
1959	100	clay a/a	
	tr	lign & pyr	
	tr	sltst a/a	
	tr	sd a/a	
1962	100	clay, v slty, else a/a	
	tr	lign & pyr	
	tr	sd a/a	
1965	100	clay a/a	
	tr	lign	weak fluor, weak
	tr	sd a/a	cut in sltst
1968	100	clay a/a	
	tr	lign	
	tr	sd a/a	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 8½" 6"
GEOLOGIST: ELVSBORG/EVENSEN/SYRSTAD
DATE: 26 July 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1970	100	cl: med gy, slty, stky, sl calc, sl micac	dull yel fluor, mid mlky bluish
	tr	lign	
	tr	sd, qtz, clr, vf-f	cut in sltst
1974	100	mostly cmt in smpl	
	tr	cl, med gy, occ gy-grn, slty	6" hole size
	tr	sd, qtz a/a	
	tr	lign & slt	
1977	100	cl: med gy, occ lt gy-gy/grn, sft, stky, non calc, occ sl calc, slty	
	tr	sh: dk gy, fiss, sft-frm, non calc	
	tr	ls: wh-lt yel-lt brn, xln, hd	
	tr	slt	
1980	90	cl: a/a non calc, sl micac	
	tr	sh a/a	
	tr	ss: clr qtz, vf, subrnd-subang	dull fluor in sltst
	10	sltst: lt gy-gy, sft	mod cut " "
	tr	pyr	
	tr	ls a/a	
	tr	lign	
1983	90	cl a/a	
	5	sltst a/a	
	tr	sh a/a	
	tr	sst a/a	
	tr	pyr	
	tr	ls	
1986	70	cl: a/a	dull yel fluor
	15	sst: a/a	slow-mod str milky
	5	sh a/a	cut
	10	sltst: a/a	
1989	65	cl: a/a v slty	
	25	sltst: med gy-gy, occ lt gy and dk gy	
		sft-frm, non calc	a/a
	10	sst: clr qtz, occ f-med a/a	
	tr	sh: a/a alty	
	tr	pyr	
	tr	lign	

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: SYRSTAD/EVENSEN
DATE: 6 Aug. 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1992	85	cl: gy, occ lt gy and dk gy, sft, stky, non calc slty, sl micac	
	10	sltst: gy-dk gy, sft-firm, non calc	
	5	sst: clr qtz, v f grn, subang	
	tr	pyr	
1995	90	cl: a/a	
	10	sltst: a/a, lt gy	yel fluor
	tr	sst: a/a	
	tr	pyr: a/a	
	tr	foss frags	
2002	85	cl: a/a	
	10	sltst: a/a	
	5	sst: a/a	
	tr	sh: dk gy, fiss, sft-firm, non calc	
2004	80	cl: a/a	
	15	sltst: a/a	
	5	sst: a/a	
	tr	sh: a/a	
	tr	pyr	
2007	85	cl: a/a	dull yel fluor mod str milky cut
	10	sltst: a/a	
	5	sst a/a	
	tr	sh	
2010	85	cl: a/a sl calc	
	10	sltst: a/a	
	5	sst: v f grains	
2013	85	cl: a/a	
	5	sltst: a/a	
	10	sst: v f gs, occ calc cmt	
	tr	pyr	
2016	85	cl: a/a	
	10	sltst: a/a	
	5	sst: a/a	
2019	85	cl: a/a	
	10	sltst: a/a	
	5	sst: a/a, sl calc cmt	
	tr	pyr	

statoil
Den norske stats oljeselskap a.s
Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: SYRSTAD/EVENSEN
DATE: 6 Aug. 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2022	40	sst: clr qtz, wh, occ lt yel brn	
		f-crs, occ v crs, subang, occ subrnd,	
		poorly srtd, loose	poor fluor
	20	sltst: lt gy-dk gy, occ lt brn, sft-firm, occ med	weak cut
		occ calc cmt, arg	no gas
	40	cl: lt gy-gy, sft, stky, non calc	
	tr	pyr	
	tr	glauc	
2025	60	sst: a/a	
	20	sltst: a/a	a/a
	20	cl: a/a	
	tr	pyr(occ repl org material)	
	tr	glauc	
	tr	mica	
2028	65	sst: a/a occ calc cmt	
	15	sltst: a/a occ calc cmt	poor fluor
	20	cl a/a	
	tr	coal: blk, brit, wood frags	
	tr	mica	
	tr	pyr	
2031	45	sst: a/a	occ shows in sltst
	30	sltst a/a	
	20	cl: a/a	lt yel fluor
	tr	coal: a/a	mod yel cut
	tr	pyr	
	tr	glauc	
2034	50	sst: a/a b vf-f gr, occ crs,occ calc cmt	"
	25	sltst: a/a occ calc cmt	
	25	cl: a/a	
	tr	coal: a/a	
	tr	pyr	
	tr	sh, gy-dk gy, fiss, firm, sl calc	
2037	50	sst: a/a occ calc cmt	poor fluor
	30	sltst: a/a occ calc cmt	
	20	cl: a/a	
	tr	coal: a/a	
	tr	pyr	

SLA 7213

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: SYRSTAD/EVENSEN
DATE: 7 Aug. 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2040	30	sst: clr-wh, v f-f, occ m-crs, prly sorted subang-subrnd, loose	spotted dull yel
	45	sltst: gy-dk gy, sft-frm, occ hd, non-sl calc, arg	fluor
	5	marl, lt gy, sft	slow milky cut
	20	cl: lt gy, fiss, firm, sl calc-non calc	
	tr	pyr	
	tr	lign	
2043	25	sst: a/a (v f-med, occ crs)	occ spotted dull
	30	sltst: a/a	fluor
	tr	marl a/a	
	5	sh: a/a	
	40	cl: a/a	
	tr	pyr	
2046	60	sst: clr-wh, vf-med, occ crs, prly sorted, ang-subrnd, occ sl cmt, occ calc cmt, pyr in poresp	
	15	sltst: a/a	
	tr	ls, lt brn-gy brn, hd, m-xln	
	20	cl: a/a	
	5	pyr	
	tr	lign	
2049	40	sst: a/a occ cmt, w/pyr	
	30	sltst: a/a occ cmt w/ pyr	few (spotted) yel
	8	marls a/a	dull fluor
	tr	ls: a/a	
	5	pyr	
	18	cl a/a	
	tr	lign	
	tr	glauc	
	tr	mica	
2052	40	cl: a/a	
	35	sltst: a/a	
	25	sst	– " –
	5	marl	
	tr	sh	
	tr	ls	
	tr	mica, pyr	

statoil
Den norske stats oljeselskap a.s
Postboks 300. 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6
GEOLOGIST: Syrstad/Evensen
DATE: 7th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2055	40	cly: ltgy-dkgy, sft, stcky, slty non calc, occ sl calc. occ micac.	Spotted yel.
	30	sltst: gy-dk gy, sft-frm, occ md non calc, arg.	Fluor. No cut.
	20	sst : v f - f, occ med. ang-srnd, prly srt. occ si-cem, occ calc cem.	
	10	marl : wh-ltgy, sft, slty.	
	tr	pyr	
	tr	ls, lt brn-brn, hd.	
	tr	lign.	
2058	45	cly : a/a	Fluor. No cut.
	30	sltst: a/a	yel.milky cut
	15	sst : a/a	
	10	marl :	
	tr	ls	
	tr	lign	
	tr	pyr	
2061	50	cly : a/a	
	20	sltst: a/a	
	10	ss : a/a	
	20	marl : a/a	
	tr	ls : a/a	
	tr	lign	
2064	30	cly : a/a	No fluor
	30	sltst: a/a	
	35	ss : a/a	
	5	marl : a/a	
	tr	lign	
	tr	glauc	
	tr	pyr	
	tr	mic	
2067	40	cly : a/a	
	30	sltst: a/a	
	25	ss : a/a	
	5	marl : a/a	
	tr	lign	
	tr	pyr	
	tr	mic	

Page 34 of 53

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-1

COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 6" | GEOLOGIST: Syrstad/Evensen/Barrow | DATE: 7th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2073	40	cly, ltgy-dkgy, sft, stcky, non calc	
	40	sltst gy-dkgy, sft, non calc	
	20	ss vf - f , ang-srnd, poorly srt, occ calc cem	
	tr	marl gy, sft	
	tr	mica	
	tr	pyr	
	tr	lign	
2076	35	cly a/a	
	35	sltst a/a	
	25	sst , occ calc cmt	occ yell fluor, weak cut
	5	marl a/a	
	tr	pyr	
	tr	mica	
	tr	lign	
2079	30	cly a/a	
	35	sltst a/a	
	30	sst vf -med	
	5	marl a/a	
	tr	pyr	
	tr	mica	
	tr	lign	
2082	40	cly a/a	
	30	sltst a/a	
	25	ss a/a	yell fluor, sl str milky cut
	5	marl a/a	
	tr	pyr	
	tr	mica	
	tr	lign	
2088	40	cly a/a	No fluor
	35	sltst a/a	
	20	ss a/a	
	5	marl a/a	
	tr	pyr	
	tr	mica	
	tr	lign	
2091	40	cly a/a	
	40	sltst a/a	No fluor
	15	ss a/a	
	5	marl a/a	
	tr	pyr	
	tr	mic	

SLA 7213

Page 35 of 53

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Syrstad/Evensen/Barrow
DATE: 7th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
	60	cly dkgy-gy, soft, stcky, sli calc	
2094	40	sltst gy, soft, slicalc.cem	
	tr	ss a/a	
	tr	lign	
2097	65	cly a/a	
	35	sltst a/a	
	tr	ss a/a	
	tr	lign	
	tr	sh: gy, lam,	
2100	70	cly a/a	
	30	sltst	
	tr	ss a/a	
	tr	sh a/a	
	60	cly a/a	
2103	30	sltst	
	10	ss a/a	
	tr	sh a/a	
	tr	pyr	
2106			
	50	cly a/a	
	30	sltst a/a	
	20	ss f-vf	
	tr	pyr	
	tr	sh	
2109	50	cly a/a	
	20	sltsn a/a	
	30	ss f-m	
	tr	pyr	
	tr	glauc	
	tr	lign	
	50	cly a/a	
2112	25	sltst a/a	
	25	ss, vf-f, occ med, sub ang,	
	tr	pyr	
	tr	glauc	
	tr	foram. tests	

SLA 7213

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Syrstad/Evensen/Barrow
DATE: Aug. 7th 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2115	50	cly, gy, sft, stcky	
	30	ss, clr qtz grn, sub ang, f-m	
	20	sltst, gy, sft, sli calc cem	
	tr	pyr	
	tr	lign	
2118	60	cly, a/a	
	20	ss, a/a	
	20	sltst, a/a	
	tr	pyr	
	tr	lign	
	tr	sh, gy, lam	
2127	40	cly, lt gy-gy, sft, stcky, sli calc, slty	Occ spott yel fluor.
	40	sltst, gy-dk gy, sft-frm, sli calc, arg	
	20	ss, a/a	
	tr	sh, dk gy-gy, fiss	
	tr	marl, wh-lt gy, sft, slty	
	tr	pyr	
	tr	ls, lt brn-tan, hd, micxln	
2130	40	cly, a/a	
	40	sltst, a/a	
	20	ss, v f grn, occ f -med	
	tr	sh, a/a	
	tr	marl, a/a	
	tr	pyr	
2133	40	cly, a/a	– " –
	35	sltst, a/a	
	25	ss, a/a	
	tr	sh, a/a	
	tr	marl, a/a	
2136	40	cly, a/a	
	40	sltst, a/a	
	20	ss, a/a	
	tr	sh, a/a	
	tr	marl, a/a	
	tr	pyr	

SLA 7213

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K. B. E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Syrstad/Evensen/Barrow
DATE: Aug. 8th 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2139	40	cly, lt gy-gy, sft, stcky, sli calc	
	35	sltst, gy, sli calc, arg	Occ yel fluor
	25	ss, fn-med, sub ang	weak milky cut
	tr	sh, dk gy-gy	
	tr	marl, lt gy, sft	
	tr	pyr	
2142	45	cly, a/a	
	35	sltst, a/a	
	20	ss, fn grn	
	tr	marl	
	tr	sh	
	tr	pyr	
	tr	ls, lt brn-tan, micxln, hd	
2145	50	cly, a/a	
	35	sltst, a/a	
	15	ss, a/a	
	tr	sh, sdy, fiss	
	tr	marl	
	tr	pyr	
2148	50	cly, a/a	
	35	sltst, a/a	Occ yel fluor
	15	ss, a/a occ lt brn sd grn	
	tr	sh, a/a	
	tr	pyr	
2151	50	cly, a/a	
	30	sltst, a/a	
	20	ss, f , lt brn, sub ang-rnd	
	tr	lst, lt gry, calc mudstn	
	tr	pyr	
	tr	mica	
2154	50	cly, a/a	
	30	sltst, a/a	
	20	ss, a/a	
	tr	lst	
	tr	pyr	
	tr	mic	

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters **COMPANY:** STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6" **GEOLOGIST:** Syrstad/Evensen/Barrow **DATE:** 8th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
	70	cly, gry, sft, stcky, sli calc	occ vis. oil
2172	25	sltst, gry-dkgy, sli calc, sft, arg.	yellow fluor.
	5	ls, lt gry, hd, microxln, occ dolomitic	
	tr	pyr	
	tr	ss	
	tr	mica	
2175	70	cly a/a	
	30	sltst a/a micac	
	tr	marl, wh-ltbrn, sft.	
	tr	ls a/a arg.	
	tr	ss	A/A
	tr	mica	milky cut
	tr	pyr	
	tr	sh dk gy, fiss	
2178	80	cly a/a	
	15	sltst a/a Occ rd-brn.	
	tr	ls a/a	
	5	ss a/a	
	tr	marl a/a	A/A
	tr	sm a/a	
	tr	pyr	
	tr	foss frags	
2181	75	cly a/a	
	20	sltst a/a	
	tr	ls-dolomitic a/a	
	5	ss	
	tr	sh	
	tr	pyr	
	tr	mica	
	tr	foss frags & wood.	
2184	65	cly a/a	
	20	sltst a/a	
	5	marl wh-ltcy, occbuffå sft.	NS.
	5	ls a/a dolomitic	
	5	ss a/a	
	tr	sh	
	tr	pyr, glauc	
	tr	foss frags	

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Syrstad/Evensen/Barrow
DATE: 9th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
	70	cly: gy, stcky, sftå sli calc	
2190	25	sltst: arg, gy-dkgy, sft	
	3	ss : gy occ lt yel brn, sub ang-rnd	
	2	sh : gy-dkgy, fiss	NS
	tr	marl : wh-lt brn, sft	
	tr	dolomitic-ls, lt brn - wh	
	tr	pyr	
	65	cly : a/a	
2193	25	sltst: a/a	
	5	ss : a/a	
	5	sh : a/a	
	tr	marl :	
	tr	pyr	
2196	70	cly : a/a	
	25	sltst: a/a	
	5	sh : a/a	
	tr	ss : a/a	
	tr	marl	
	tr	pyr	
	tr	dol ls	
2199	75	cly : a/a	
	25	sltst: a/a	
	tr	ss : a/a	
	tr	sh : a/a	
	tr	pyr	
2202	75	cly : a/a	
	20	sltst: a/a	
	3	marl wh-lt brn, sft	
	2	ss : gy occ lt yel brn-brn, vf-f	
		sub ang - sub rnd	NS
	tr	sh : a/a	
	tr	pyr	
2205	65	cly : a/a	
	25	sltst: a/a	
	5	ss : a/a, vf grn	
	5	marl a/a	
	tr	sh : a/a	
	tr	pyr, (glauc)	

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Syrstad/Evensen/Barrow
DATE: 9th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
	65	cly, gy, stcky,sft, sli calc	
2208	25	sltst: gy-dkgy, sft, occ caåc cmt hd	
	7	ss : gy occ lt yel brn vf,sub ang-sub rnd,sli calc cut	
	3	marl : wh-lt brn, sft	
	tr	sh : gy, fiss	
	tr	pyr	
2211	50	cly : a/a	
	25	sltst: a/a	
	25	ss : gy, vf grn, slty	No shows
	tr	sh : a/a	
	tr	pyr	
	tr	marl : a/a	
	45	cly : a/a ltgy, occ gy	
2214	25	sltst: a/a	
	30	ss : a/a	
	tr	sh : a/a	
	tr	marl : a/a	
	tr	pyr	
2217	40	ss: clr-lt tan,wh, vf-f, occ med-crs	
		s ang-srnd, mod sort, kaolinitic,micac	
	55	cly : a/a, v.silty	
	5%	sltst: a/a	
	tr	glauc	occ spotted
	tr	pyr	yel fluor
	60	ss : a/a micac	
2220	20	cly : a/a	
	20	sltst	
	tr	pyr	lt yel cut.
	tr	glauc	
	tr	dolomitic ls	
2223	70	ss : a/a slty	occ spotted
	10	cly : a/a	
	20	sltst: a/a	yel fluor
	tr	pyr	Dull yel fluor lt shiny cut.

SLA 7215

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 ' 43,67 "
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Syrstad/Evensen/Barrow
DATE: 9 - 10 Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2226	80	ss: clr-wh, occ lt tan, vf - f, slty, kaolinitic ang - subrnd, med srt, micac, sl calc	
	10	slt, lt gy, sl calc, occ red brn	
	10	clay, lt gy, sft, stky	
	tr	pyr	
2229	80	ss, a/a, occ calc cmt	dull yel fluor, v weak cut
	10	clay, a/a, calc	
	10	slt, a/a	
	tr	pyr	
	tr	foss frags	
	tr	glauc	
	tr	mica	
2232	80	ss, a/a	
	10	sltst a/a	
	10	clay, a/a	
	tr	glauc	
	tr	mica	
		SEE CORE DESCRIPTION	2232 - 2250 CORE NO. 13
2253	60	clay, lt gy - gy, sft, stky, slty, sl calc	
	20	sltst a/a	
	20	ss, lt gy, occ lt yel brn, vf - f, subang, sl calc micac	
	tr	coal	
	tr	ls	
2256		aa/a (in hole)	BIT CHANGE NOT CIRC UP
2259	40	sltst, lt gy, sft - firm, grdng to clayst, micac sl calc	weak fluor, weak milky cut
	40	ss, lt gy - clr, occ lt brn, vf - f, occ med qtz	
	20	clay - clayst, lt med gy, frim - sft, subfiss, sl calc	
	tr	glauc	
	tr	pyr	
	tr	coal	
	tr	ls, wh - lt yel, mod hd	
2262	60	ss, a/a	
	25	sltst, a/a	
	15	clay - clayst a/a	
	tr	pyr, coal, ls	

Page 43 of 53

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84" N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim/Evensen
DATE: 11th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2265	70	ss: lt gy to clr wh, occ lt yel brn, vf-f, occ med, sang-srnd, slty, micac	
	20	sltst: gy, occ calc cem, micac	
	10	cly : lt gy-gy, sft	
	tr	pyr	
	tr	ls : wh-lt yel, mod hd	
	tr	glauc	
2268	65	ss : a/a	
	20	sltst: a/a	
	15	cly : a/a	
	tr	pyr	
	tr	glauc	
2271	80	ss : a/a	Dull yel fluor v weak cut
	10	sltst: a/a	
	10	cly-clst, soft, subfiss, sli calc	
	tr	pyr	
	tr	ls	
2274	75	ss : a/a	Weak fluor weak milky cut
	20	sltst: a/a	
	15	cly : a/a	
	tr	pyr	
	tr	ls	
2277	70	ss : a/a	
	25	sltst: a/a	
	5	cl : a/a	
	tr	pyr	NS
	tr	glauc	
	tr	ls	
2280	70	ss : a/a	
	25	sltst: a/a	
	5	cl : a/a	
	tr	pyr	
	tr	ls	
2283	75	ss : a/a	
	23	sltst: a/a	
	2	cl : a/a	
	tr	pyr	
	tr	ls	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim/Evensen
DATE: 11th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2286	95	ss: clr wh, f-med, occ crs, slty, sli calc, micac, sub ang- sub rnd	
	5	sltst: lt gy, micac, sli calc	v weak fluor
	tr	cl-clst: gy, sft, sub fiss	v weak cut
	tr	pyr	
	tr	mica	
	tr	ls: wh-lt yel, mod hd	
2289	98	ss : a/a	
	2	sltst: a/a	
	tr	mica	
	tr	pyr	
	tr	ls	
2292	98	ss : a/a	
	2	ls : wh-lt yel, mod hd	No shows
	tr	sltst: a/a	
	tr	mica	
	tr	pyr	
2295	90	ss : a/a	
	5	sltst: a/a	No shows
	3	cl-clst: a/a	
	2	ls : a/a	
	tr	mica	
	tr	pyr	
2298	90	ss : a/a	
	5	sltst: a/a	
	3	cl-clst: a/a	
	2	ls : a/a	
	tr	mica	
	tr	pyr	
	tr	coal	
	tr	wood frags	
2301	90	ss : a/a	
	5	sltst: a/a	
	3	cl-clst: a/a	
	2	ls : a/a	
	tr	mica	
	tr	pyr	
	tr	coal	
	tr	wood frags	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA NORTH SEA | FIELD WILDCAT

WELL NO.: 34/10-1

COORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 6" | GEOLOGIST: Aasheim/Evensen | DATE: 11th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2304	90	sst, vf-med, clr, subang-subrnd, mica, sl slty	No shows
	5	clst, lt gry, sft-firm, v slty, sl calc	
	5	ls, wh lt yel, mod hd, sl argil	Lignite in the mud
	tr	pyr	
	tr	glauc, mica	
	tr	coal	
2307	90	sst a/a mostly vf-f	No shows
	10	ls a/a	
	tr	clst a/a grdg to slst	
	tr	pyr	
	tr	coal	
	tr	glauc and mica	
2310	85	sst a/a occ crs	No shows
	15	ls a/a	
	tr	clst a/a	
	tr	pyr	
	tr	glauc and mica	
	tr	coal	
2313	100	sst, vf-med, occ crs, qtz, subrnd, occ calc cmt micac	No shows
	tr	ls a/a	
	tr	pyr	
	tr	coal	
	tr	mica	
2316	95	sst a/a mostly vf-f	
	5	ls a/a	
	tr	pyr	
	tr	coal	
	tr	mica	
2319	90	sst a/a	
	5	ls a/a	
	5	clst: lt gry-gry, firm, sl-v slty, mica sl calc	No shows
	tr	pyr	
	tr	coal	
	tr	mica	

SLA 7218

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 '46,84 " N ; 02 ° 12 '43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim
DATE: 11th Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2322	95	sst, clr, vf-med, occ crs, subang-subrnd	No shows
		occ calc cmt	
	5	cl, lt-med gry, sft-firm, sl slty,non calc	
	tr	pyr	
	tr	coal	
	tr	ls, wh-lt yel, hd-mod hd xln	
2325	50	ssl a/a	
	50	clst, lt gry, lt brn-buff, firm subfiss,non calc	v.weak fluor
		occ sl slty, micro micac	
	tr	pyr	
	tr	ls	
	tr	coal	
2328	90	sst a/a occ crs	No shows
	5	clst a/a occ sl calc	
	5	cl, ltgy-ltbrn, sft,non calc	
	tr	mica	
	tr	coal	
	tr	pyr	
2331	95	ss a/a occ crs,ang-subang, occ calc cmt	
	5	clst a/a occ dk gry v slty, micac	
	tr	ls	
	tr	coal	
	tr	pyr	
	tr	mica, occ glauc	
2334	95	sst a/a,mostly vf-f	No shows
	5	clst, med gry,firm, subfiss, micromica,sl slty	
	tr	cl, lt brn, sft, non calc	
	tr	ls a/a	
	tr	pyr	
	tr	mica	
2337	95	ssl a/a (20 crs)less calc cmt	
	5	clst a/a occ grng to shale	Sample from
	tr	ls a/a	circ.bottums up
	tr	pyr	
	tr	mica	

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-1

COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM

HOLE SIZE: 6" | GEOLOGIST: Aasheim | DATE: 11 - 12 Aug. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2340	80	sst, clr-wh, vf-med, occ crs., subang-subrnd	No shows
	20	clst, lt gry-med gry, occ lt brn, slty, subfiss non calc, micromica	
	tr	ls, wh, ltyel, hd, xln	
	tr	pyr	
	tr	coal	
	90	ssl a/a	
2343	5	lst a/a	
	5	cl, lr gy, sft, sticky, sl slty, non calc	
	tr	pyr	
	tr	coal	
	tr	mica	
2346	90	sst a/a occ crs, subang	
	10	cl a/a	
	tr	clst a/a grdg to shale	
	tr	pyr	
	tr	coal	
	tr	mica	
	80	sst a/a	
2349	10	cl a/a	
	10	cl - clst, rd, red -brn, brick red, sft-firm, sl slty non calc	
	tr	pyr	
	tr	clst/sh a/a	
2352	50	sst a/a and vcrs-grns subang	No shows
	30	cl, rd a/a grdg to clst	
	20	cl, ltgy a/a	
	tr	pyr	
	tr	clst sh a/a	
2355	70	ssl a/a occ vcrs	No shows
	20	cl-clst rd-brn a/a occ lt.brn, brn-gry	
	5	clst/sh, med-dkgy, sl slty firm, subfiss	
	5	ls, wh lt yel, mod hd, sl argill, micromica	
	tr	pyr	
	tr	coal	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 " 10 ' 46,84" N ; 02" 12 ' 43,67" E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim
DATE: 12th Aug-1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2358	30	sst, clr-wh, vf-med, occ crs, qtz, subang	No shows
	45	cl-clst, red-brn, lt-med gry, sl slty micromica	Lignite in the mud
	25	clst-sh, lt-med gy, firm, subfiss-fiss, sl slty micromicac, occ gry-grn banded	
	tr	pyr	
2361	65	clst, lt med gry, occ grn gry, firm, subfiss, grdg to sh, sl calc, sl slty, micromica	Lignite in the mud
	30	clst, red brn-red, brickred, firm, non calc sl slty, micromica	
	5	sst a/a	
	tr	pyr	
	tr	mica	
	tr	grauc	
2364	45	clst/shlt-med gry a/a sl le ss fiss	Lignite in the mud
	30	clst/red a/a	
	25	ssl a/a occ, lt yel-pink, ang-subang	
	tr	pyrite and coal laminated	
	tr	ls,wh - lt-yel, hd-modhd, xln	
2367	65	clst/sh lt-med gy a/a occ dk gy	No shows
	25	clst red - brn-red a/a	
	10	ssl a/a mostly vf-f	
	tr	pyr	
	tr	wal	
2370	80	clst/sh lt-med gy, occ grn gy	No shows
	15	clst red-brn red, slty, a/a	
	5	sst, vf-f a/a	
	tr	pyr	
	tr	coal	

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
CO ORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim
DATE: 12th. August 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2373	55	cl/clst, lt gy-lt brn, sl slty, sft	No show
		non calc	
	45	clst/sh, lt-med gy, brn rd, slty, subfiss	
		frm, non calc, grdg to sh	
	tr	sst, predom clr, occ org, vf-fn, occ med,subang	
	tr	pyr	
2376	85	clst/sh, gy-dk gy, brn rd-dk brn,grn gy, slty, subfiss	
		frm, non calc grdg to sh	No show
	10	cl/clst a/a	
	5	sst, a/a	
	tr	ls, wh, frm, cryptoxln	
	tr	pyr	
2379	70	clst/sh a/a	No show
	20	cl/clst, lt gry-lt brn a/a	
	10	sst, a/a mostly vf	
	tr	pyr	
	tr	ls a/a	
2382	70	~~clst a/a grdg to sh a/a~~	No show
	30	cl ltgry, ltbrn, occ wh a/a	
	tr	ssa a/a occ rasty	
	tr	ls a/a	
	tr	pyr	
2385	70	clst/sh (mostly sh), gry-dk gry, grn gry, subfiss-fiss	
		firm-mod hd,sl calc	
	30	clst, red, brnred, firm, non calc,sl slty,micromica	
	tr	sst a/a	
	tr	pyr	
	tr	ls a/a	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY:	NORWAY	AREA:	NORTH SEA	FIELD:	WILDCAT
WELL NO.:	34/10-1				
COORDINATES:	61 " 10 ' 46,84 " N ; 02 " 12 ' 43,67 " E				
K.B.E.:	25 meters	COMPANY:	STATOIL/NORSK HYDRO/SAGA PETROLEUM		
HOLE SIZE:	6"	GEOLOGIST:	Aasheim	DATE:	13.Aug-1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2388	70	clst/sh, lt gry, grn gy , subfiss-fiss,firm sl calc, occ sl slty	No shows
	20	clst, brn-red, dk brick red, subfiss, firm non calc, sl-c slty, micromica	
	10	cl, lt gry, lf buff, sft, non-sl calc	
	tr	ls, wh-lt yel, hd,xln	
	tr	ssl, vf-f, gtz, subang	
	tr	pyr	
2391	80	clst/sh a/a occ bluish gy	No shows
	10	clst rd-brn/rd a/a	
	10	cl a/a	
	tr	ls a/a	
	tr	sst a/a	
2394	50	clst/sh gry a/a	
	30	clst rd a/a	
	20	ls a/a and grn-yel, argil, firm-mod hd	
	tr	ssl a/a	
	tr	cl a/a	
2397	55	clst/sh,gry a/a	No shows
	30	clst, rd, purple a/a	
	15	ls, wh, grn yel a/a	
	tr	sst, a/a	
	tr	pyr	
2400	75	sst, predom clr, rarely ord-pnk-smoky, med, subang, qtz	No shows
	10	clst/sh gry a/a	
	10	clst, red brn-purple a/a	
	5	ls, wh-lt gy-grn yel a/a	
	tr	pyr	
2403	90	sst, predom dr a/a	No shows
	5	clst/sh, gry a/a	
	5	clst, red-brn a/a	
	tr	ls, wh-lt gy-grn yel a/a	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 " 10 ' 46,84" N ; 02" 12 ' 43,67" E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim
DATE:

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2406	96	sst, predom clr, rarely org, f -med,med	
		well srtd, subang-subrnd,gtz. No visible cmt or	No show
		mtx, good por.	
	2	clst, brn rel-purple, slty ,subfiss, firm non	
		calc, micromica	
	2	clst/sh, gry, grn gry, subfiss-fiss, sft-firm,	
		occ blk mot, non calc	
	tr	ls,wh-lt gy-grn yel, hd, cryptoxln	
	tr	pyr	
2409	50	clst, brn rd-purple a/a occ grdg to cl,sft	No show
	40	clst/sh a/a occ dk gry	
	10	sst a/a	
	tr	ls a/a	
	tr	pyr	
2412	40	clst/sh a/a occ yelgrn sl calc	No show
	30	clst a/a grdy to cl	
	30	sst a/a mostly vf-f	
	tr	ls	
	tr	pyr	
2415	75	ssl a/a vf-med	No show
	15	clst/sh a/a	
	10	cl/clst a/a	
	tr	ls a/a	
	tr	pyr a/a	
2418	50	cl/clst a/a	No show
	40	clst/sh a/a	
	5	sst a/a	
	5	ls a/a	
	tr	pyr	
2421	70	cl/clst a/a mostly lt brn sft.	
	30	clst-sh lt-dk gry, lrn-grd	
	tr	sst a/a	
	tr	ls a/a	
2424	50	cls/sh dk rd-brn, purple, subfiss non calc sl-slty	No show
	25	clst/sh lt blue-bluish gry, slcalc, subfiss	
	20	cl a/a	
	5	clst, yel grn, non calc, micromica	
	tr	sst, ls a/a	

SLA 7215

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO.: 34/10-1
COORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim
DATE: 14 Aug-1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2427	40	cl/clst, predom lt brn, sft, non-sl calc	
	30	clst/sh, lt-med gry, grn yel, bluish grey, occ	No shows
		sl slty, occ blk mot, non-sl calc, sft-firm, occ	
		subfiss	
	30	clst/sh, dk red-brn, purple, subfiss, sl slty	
		non calc-sl calc	
	tr	sltst , lt gy, loose, micaceous	
	tr	sd/sst, clr, vf-c, subang-subrnd	
	tr	ls, variegated, frm-hd, cryptoxln	
2430	35	cl/clst, predom lt brn, a/a	
	35	clst/sh, dk red, brn, purple a/a	
	25	clst/sh, variegated a/a	
	5	ls a/a	
	tr	sd /sst a/a, occ org	
2433	50	clst/sh, dk red brn, purple a/a	
	25	clst/sh, bluish grey, grn yel, lt gy, sft-frm	
		subfiss, non-sl calc	
	20	clst/sh, med gy, blk mot, sl slty, micromica, frm,	
		subfiss, non calc	
	5	ls a/a, ptly arg.	
	tr	sst, clr, vf-f, calc cmt, frm, no por	
	tr	sd/sst a/a	
	tr	pyr	
	tr	cl/clst, predom lt brn a/a	
2436	50	clst/sh, dk red brn, purple a/a	
	20	clst/sh, bluish grey, grn yel, lt gy a/a	
	20	clst/sh, med gy, blk mot a/a	
	5	ls a/a	
	5	sd/sst a/a	
	tr	sltst , lt gy, loose, micaceous	
	tr	pyra	
	tr	glauc	
	tr	carb mat	
2439	60	clst/sh, dk red brn a/a	No shows
	30	clst/sh, med gry a/a	
	5	clst, bluish gry a/a	
	5	ls a/a	
	tr	sd, sst a/a	
	tr	slt a/a	
	tr	pyr	

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Den norske stats oljeselskap a.s
Postboks 300 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY
AREA: NORTH SEA
FIELD: WILDCAT
WELL NO: 34/10-1
COORDINATES: 61 " 10 ' 46,84 " N ; 02 " 12 ' 43,67 " E
K.B.E.: 25 meters
COMPANY: STATOIL/NORSK HYDRO/SAGA PETROLEUM
HOLE SIZE: 6"
GEOLOGIST: Aasheim
DATE: 14.Aug-1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2442	40	clst/sh dk rd, brn-rd purple, firm, subfiss, occ sl slty, sl calc	No shows
	40	clst/sh, dk gry, bluish gry, firm, subfiss-fiss sl calc	
	10	slst, yel grn, gry, firm, micromica	
	5	ls, wh, lt yel, firm-mod hd, crpxln	
	5	sst, clr, pink, qtz, vf-f, subang-subrnd	
	tr	pyr	
2445	65	clst/sh (mostly shaly) mostly bluish gry a/a	No shows
	30	clst dk rd a/a	
	5	clst a/a	
	tr	ls a/a	
	tr	sst a/a	
2448	60	cl/clst, dkrd-brick rd, sft-firm, non calc sl slty	
	30	clst/sh a/a	
	10	clst a/a	
	tr	sst a/a	
2451	50	cl/clst a/a	
	30	clst-sh a/a	
	10	slst, lt gry, gry-grn, micromica	
	10	sst a/a	
	tr	ls a/a	
2454	50	sst a/a mostly vf-f, kaolinitic	
	30	cl/clst a/a	
	20	clst-sh a/a	
	tr	ls a/a	
	90	sst a/a clr, vf-f, occ med, subrnd	
2457	10	cl/clst a/a	No shows
	tr	clst-sh a/a	
	tr	ls a/a	
2460	65	cl/clst dk rd-brick rd a/a	~~No shows~~
	35	clst/sh dk gry-grn gry a/a	
	tr	sst a/a	
	tr	ls a/a	
2462	60	cl/clst dkrd-brkrd. slty	T.D.
	35	clst/sh dkgry-grn gry a/a	
	5	sd/sst a/a tr: ls a/a	

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SIDEWALL CORE DESCRIPTION

COUNTRY: Norway
AREA: North Sea
FIELD: Wildcat
WELL NO.: 34/10-1
RUN NO.: 1
INTERVAL: 1772,5 - 1963,8
CO ORDINATES: 61 ° 10 ' 46,84 " N ; 02 ° 12 ' 43,67 "
K. B. E.: 25 **meters**
COMPANY: Statoil/Norsk Hydro/Saga
HOLE SIZE: 8 ½ "
GEOLOGIST: Elvsborg
DATE: 28 July 1978

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
1772,5	4 cm	Sh, med gy, slty, firm (number 30)		
1772,5	4 cm	Sh a/a (number 14)		
1775,5	4 cm	Sh a/a (number 13)		
1775,5	4 cm	Sh a/a (number 29)		
1778,5	4 cm	Sh a/a (number 28)		
1778,5	4 cm	Sh a/a (number 12)		
1780,0	4 cm	Sh a/a (number 11)		
1780,0	4 cm	Sh a/a (number 27)		
1781,5	4 cm	Sh, lt gy, stky, pyritic (number 10)		
1781,5	4 cm	Sh a/a (number 26)		
1789,0	4 cm	sdst, lt brn qtz, med-f, subang-subrnd, lse (no. 9)	Good	Oil stain good odor
1789,0	4 cm	sdst a/a (number 25)		
1795,5	2,5 cm	sdst, med, else a/a (number 24)	a/a	a/a
1796,5	2 cm	Sh, med gy, sft (number 7)		
1798,5	5 cm	Sh, v slty & sdy, micac, med-lt gy (no.6)		
1798,5	5 cm	Sh a/a (number 22)		
1817,5	3,5 cm	Sh, med brn gy, stky (number 20)		
1955,6	4 cm	Sh, dk gy, sft (number 5)		
1955,6	2 cm	Sh a/a (number 19)		
1956,5	2 cm	Sh a/a (number 17)		
1957,0	5 cm	Sh, dk gy, firm (number 4)		
1957,0	4 cm	Sh a/a (number 18)		

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SIDEWALL CORE DESCRIPTION

COUNTRY: Norway
AREA: North Sea
FIELD: Wildcat
WELL NO.: 34/10-1
RUN NO.: 1
INTERVAL: 1772,5 - 1963,8
CO ORDINATES: 61 ° 10 ' 46,84" N ; 02 ° 12 ' 43,67 "
K. B. E.: 25 meters
COMPANY: Statoil/Norsk Hydro/Saga
HOLE SIZE: 8½"
GEOLOGIST: Elvsborg
DATE: 28 Juli 1978

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
1958,5	4 cm	Sh, dk gy, firm (number 3)		
1959,5	2,5 cm	Sh a/a (number 16)		
1959,5	5 cm	Sh a/a (number 2)		
1963,8	4 cm	Sh a/a (number 1)		

Page 1 of 1

statoil
Den norske stats oljeselskap a.s

SIDEWALL CORE DESCRIPTION

COUNTRY: NORWAY **AREA:** NORTH SEA **FIELD:** WILDCAT
WELL NO.: 34/10-1 **RUN NO.:** 2 **INTERVAL:** 1980m - 2440m
CO ORDINATES: 61 ° 10 ' 46,84" N ; 02 ° 12 ' 43,67 " E
K.B.E.: 25 meters **COMPANY:** Statoil/Norsk Hydro/Saga Petroleum
HOLE SIZE: 6" **GEOLOGIST:** Asmund Hage **DATE:** 18/8-1978

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
1980	no 15 4 cm	clay stone, med-dk gy-grn mod hd, wxy, non calc		
1980	no 24 poor rec.	same a/a mostly mud cake		
2000	no 14 4 cm	claystone, med gy -grnish mod hd, slty, waxy micac. non calc		
2095	no 12 +no 23	mostly mud-cake, tr. clayst. a/a poor rec.		
2125	no 11 3 cm	claystone, med gy, mod hd, sl fis, sl slty sl. calc-calc		
2195	no 22 poor rec.	claystone, rust brn, mod hd, slty, non calc mud cake		
2150	no 10 3 cm	clayst, med gy, hd, sl fis, slty, calc		
2200	no 21 3 cm	clayst, med gy, hd, wxy, sl slty, non calc		
2263	no 8 3 cm	sltst sndy, vf snd, hd, med gy, micaceous	v.poor	-
2263	no 20 2,5 cm	siltstone	v.poor	-
2325	no 7 2,5 cm	claystone, mud-lt gy, wxy, hd, non calc		
2375	no 6 4,5 cm	claystone, gn-gy, rd spotted, mod hd, wxy non calc		
2390	no 5 2,5 cm	sltst v arg, hd, micaceous, red-brn	no por	-
2390	no 19 3 cm	sltst	no por	
2395	no 4 2 cm	, slty, red-brn, firm, wxy, mica, calc		
2420	no 3 3 cm	claystone, lt gy-brn, wxy, mod hd, non calc		
2420	no 18 3 cm	claystone		
2435	no 2 4,5 cm	claystone, mud gy-gn, mod hd-wxy, non calc - sl calc		
2435	no 17 3,5 cm	claystone		
2440	no 1 3 cm	claystone, slty,red-brn, mod hd, micacous non calc		
2440	no 16 1 cm	claystone		

4.00.15

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Den norske stats oljeselskap a.s

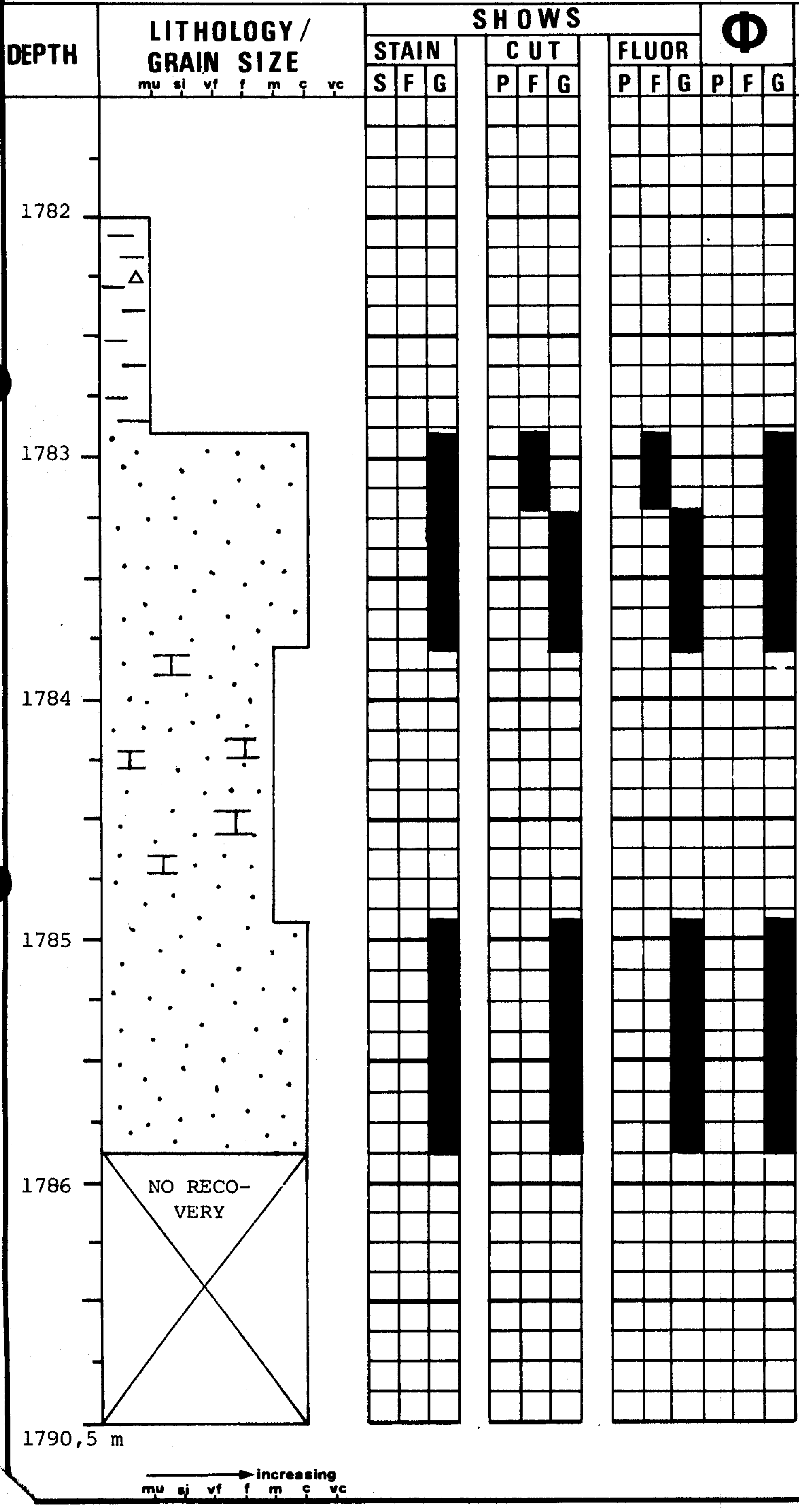
PAGE 1 OF 1.

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 1 | INTERVAL from 1782,0 m to 1790,5 m | CORED 8,5 m | REC 3,85 m | 45 %

FORM. BRENT | GEOLOGIST MÆHLE/GLOPPEN | DATE 20 July 78



LITHOLOGIC DESCRIPTION	MISC.
shale, light - medium grey, firm, fissile, occasional calcareous, occasional chert	
sandstone, clear - brown quartz, medium - coarse, loose, subrounded - subangular, moderate sorted	dull yellow fluor, fast streaming milky cut
sandstone, clear quartz medium, hard, subrounded - subangular, tight calcite cemented	no shows
sandstone, clear-brown quartz, coarse - fine, loose, subrounded-subangular, moderate sorted	dull yellow fluor, fast streaming milky cut

PAGE 1 OF 1.

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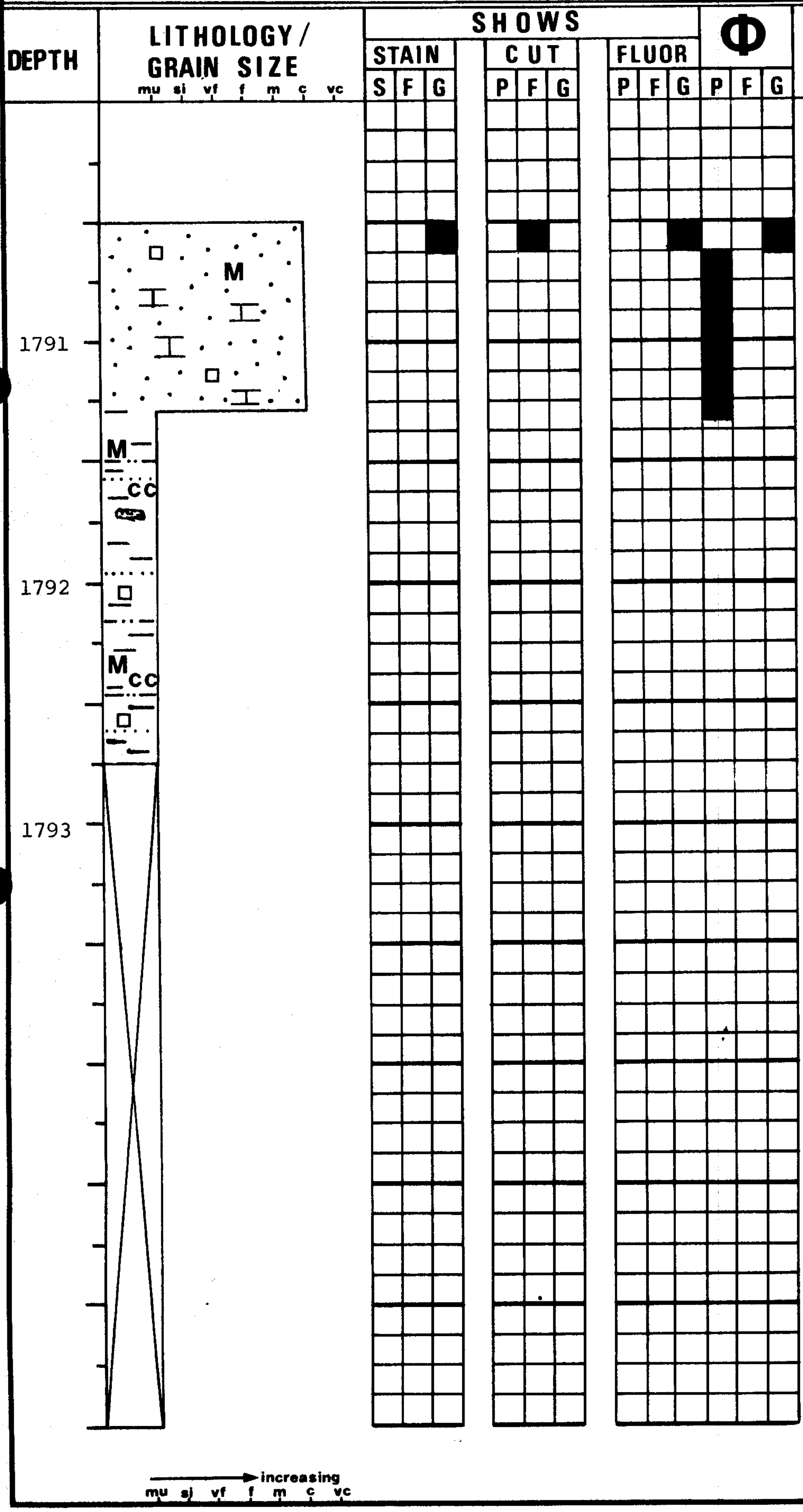
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 2 | INTERVAL from 1790,5 to 1802,5 | CORED 12,0 m | REC 2,26 m | 18,8 %

FORM. BRENT | GEOLOGIST MÆHLE/GLOPPEN | DATE 20 July 78



LITHOLOGIC DESCRIPTION

Upper 0,1 m:
sandstone, clear - light brown quartz medium - coarse, loose subangular - subrounded well sorted, pyritic, micaceous
sandstone, clear occasional milky quartz coarse, hard, subangular, well sorted, tight calcite cemented pyritic
shale, medium grey, occasional dark grey, hard - firm, non calcareous, micaceous, pyritic, coal and wood fragments

MISC.

dull yellow fluor, moderate fast streaming milky cut

no shows

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Den norske stats oljeselskap a.s

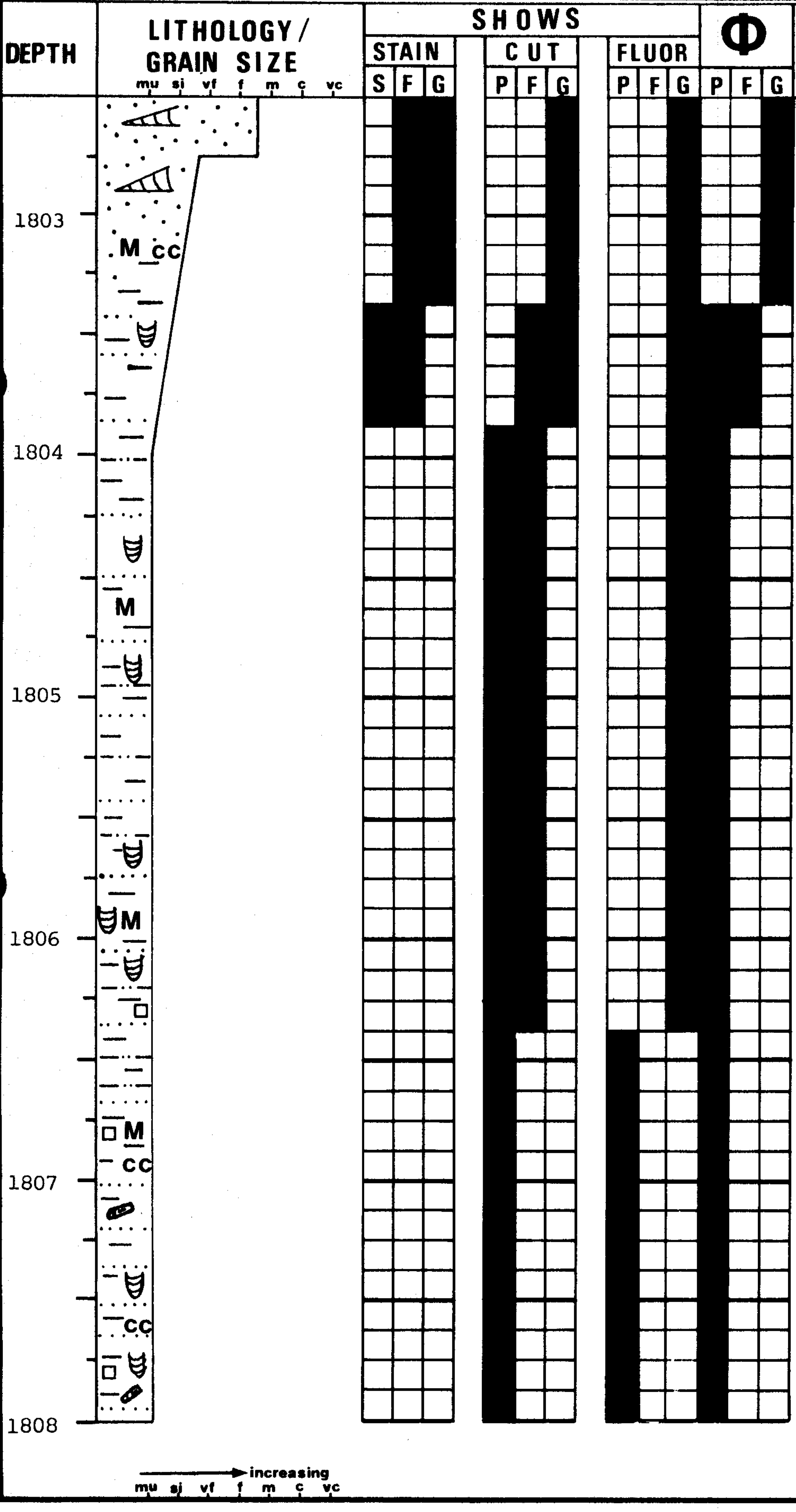
PAGE 1 OF 3.

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 3 | INTERVAL from 1802,5 to 1819,2 | CORED 16,7 m | REC 13,0 m | 78 %

FORM. BRENT | GEOLOGIST R. Kræmer | DATE 20 July 78



LITHOLOGIC DESCRIPTION	MISC.
sandstone, clr - light brown quartz, medium, occasional fine, subangular - subrounded well sorted, loose, non calcareous, cross-bedded	good odor bright yellow fluor, fast streaming milky cut
sandstone, light brown -clear quartz, very fine, friable, subangular well sorted, very micaceous, non calcareous, occasional coal lamina	
shale, medium - dark grey, firm, non - slightly calcareous, very micromicaceous occasional burrows, sand and silt lamina	bright yellow fluor, slow streaming bluish cut in silt and sand lamina
shale, medium - dark grey, firm - hard, non calcareous, coal and wood fragments, occasional pyritic, occasional burrows sand and silt lamina	very weak yellow fluor, very slow streaming bluish cut in silt and sand lamina

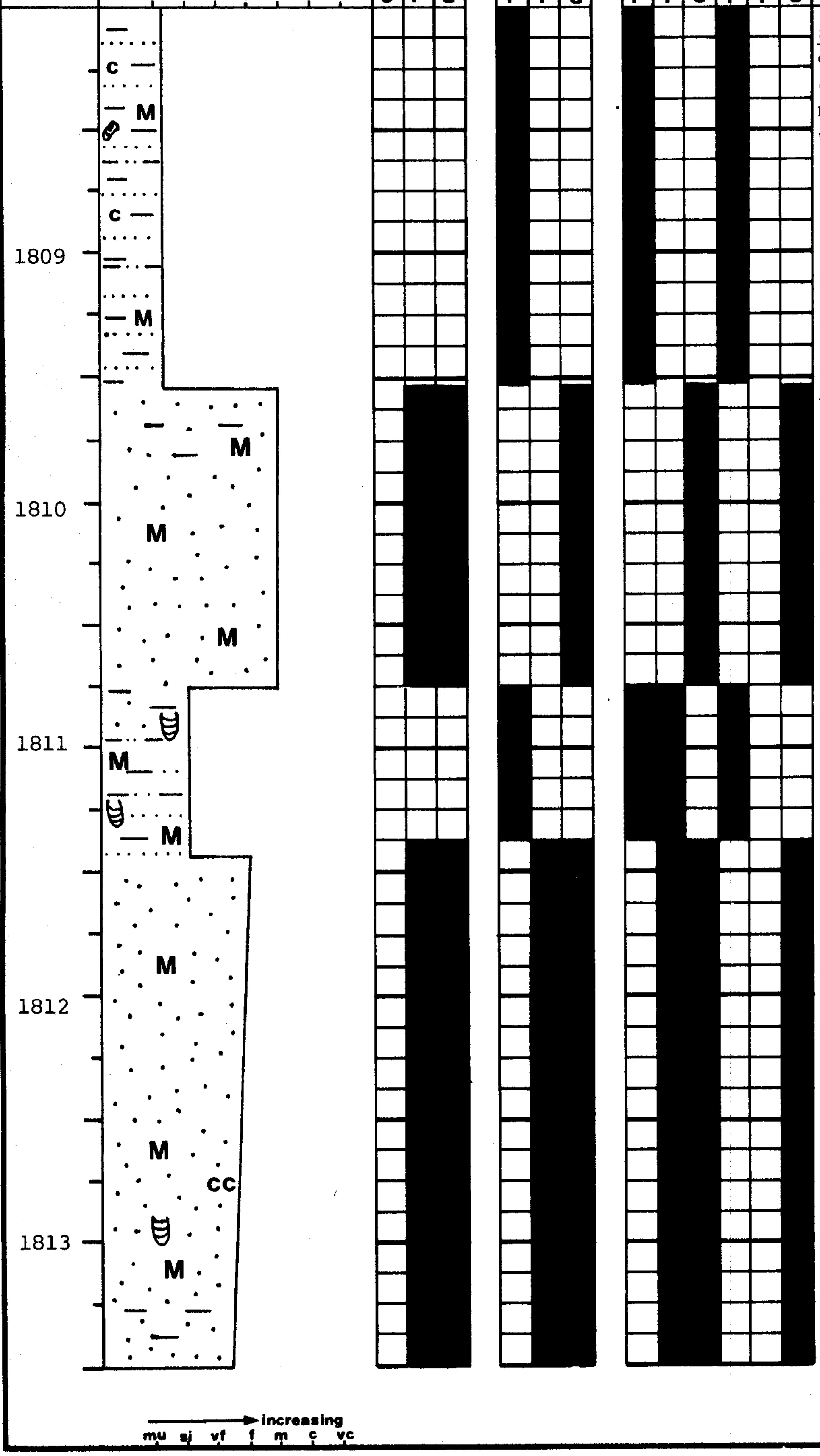
PAGE 2 OF 3.

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 3
INTERVAL from 1802,5 to 1819,2 m
CORED 16,7 m
REC 13,0 m
78 %
FORM. BRENT
GEOLOGIST R. Kræmer
DATE 20 July 78

DEPTH | LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc) | SHOWS: STAIN (S F G), CUT (P F G), FLUOR (P F G) | Φ (P F G)



LITHOLOGIC DESCRIPTION	MISC.
shale, medium - dark grey, firm - hard, non calcareous, very micro-micaceous, coal and wood fragments sand and silt lamina	very weak yellow fluor, very slow streaming bluish cut in silt and lamina
sandstone, light brown - clr quartz, medium, loose, angular - subrounded, micaceous, non calcareous shale lamina in upper part	good odor bright yellow fluorå fast streaming milky cut
shale, light brown, firm, sandy, silty, very micromicaceous, non calcareous, sand and silt lamina, occasional burrows	good odor dull yellow fluor moderate streaming milky cut
sandstone, clear - light brown quartz, very fine - fine, occasional medium, friable, angular - subrounded, micaceous, non calcareous, non calcareous, occasional coal fragments, occasional burrows	
shale lamina	

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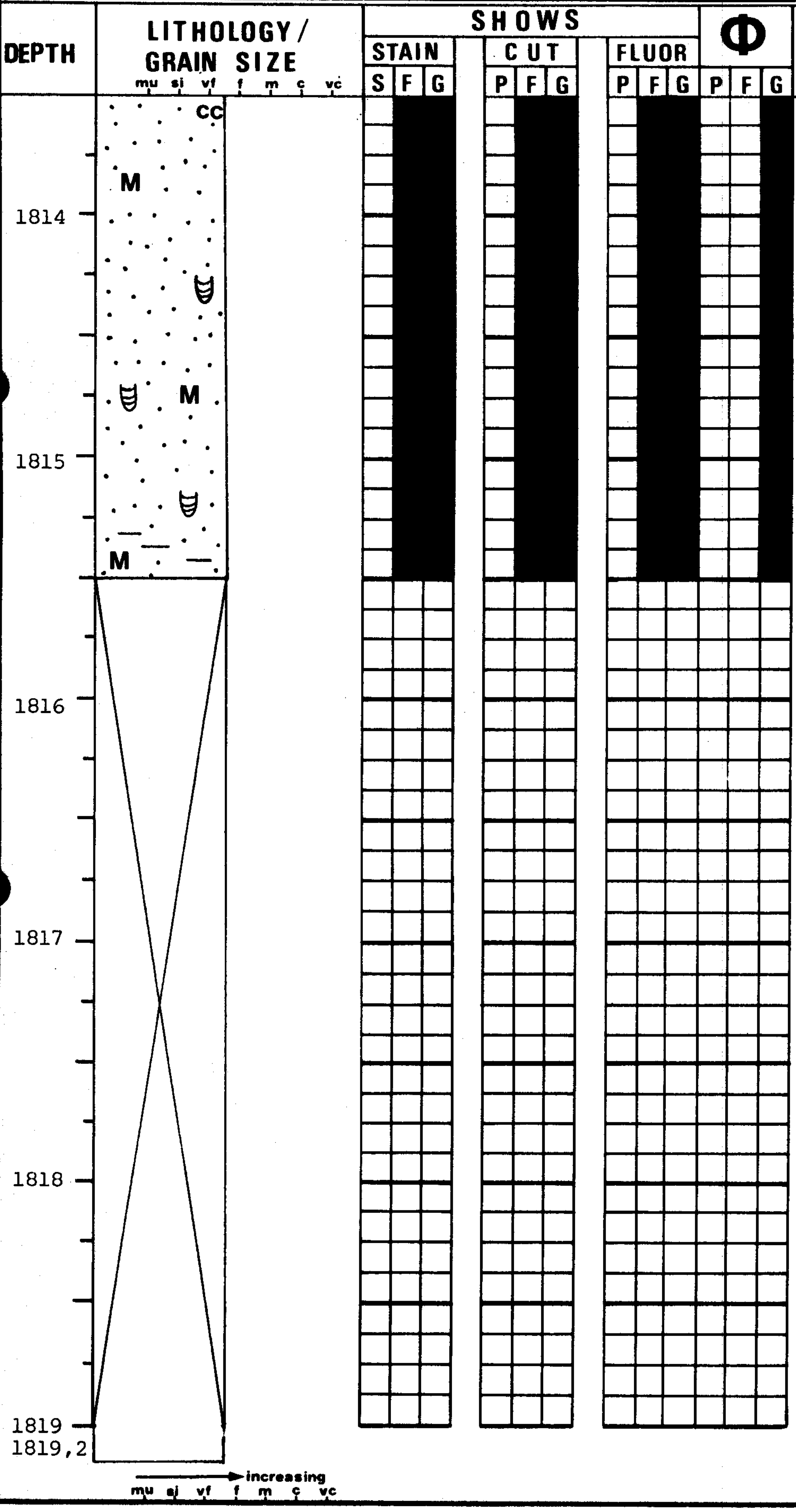
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA
CORE NO. 3 | INTERVAL from 1802,5 to 1819,2 m | CORED 16,7 m | REC 13,0 m | 78 %
FORM. BRENT | GEOLOGIST R. Kræmer | DATE 20 July 78

DEPTH	LITHOLOGY/ GRAIN SIZE	SHOWS	Φ	LITHOLOGIC DESCRIPTION	MISC.



LITHOLOGIC DESCRIPTION

sandstone, light brown - clear quartz, very fine - fine, occasional medium, friable, angular - subrounded, micaceous, non calcareous, occasional burrows, occasional coal lamina

shale lamina

MISC.

good odor
dull yellow fluor
moderate streaming milky cut

PAGE 1 OF 4.

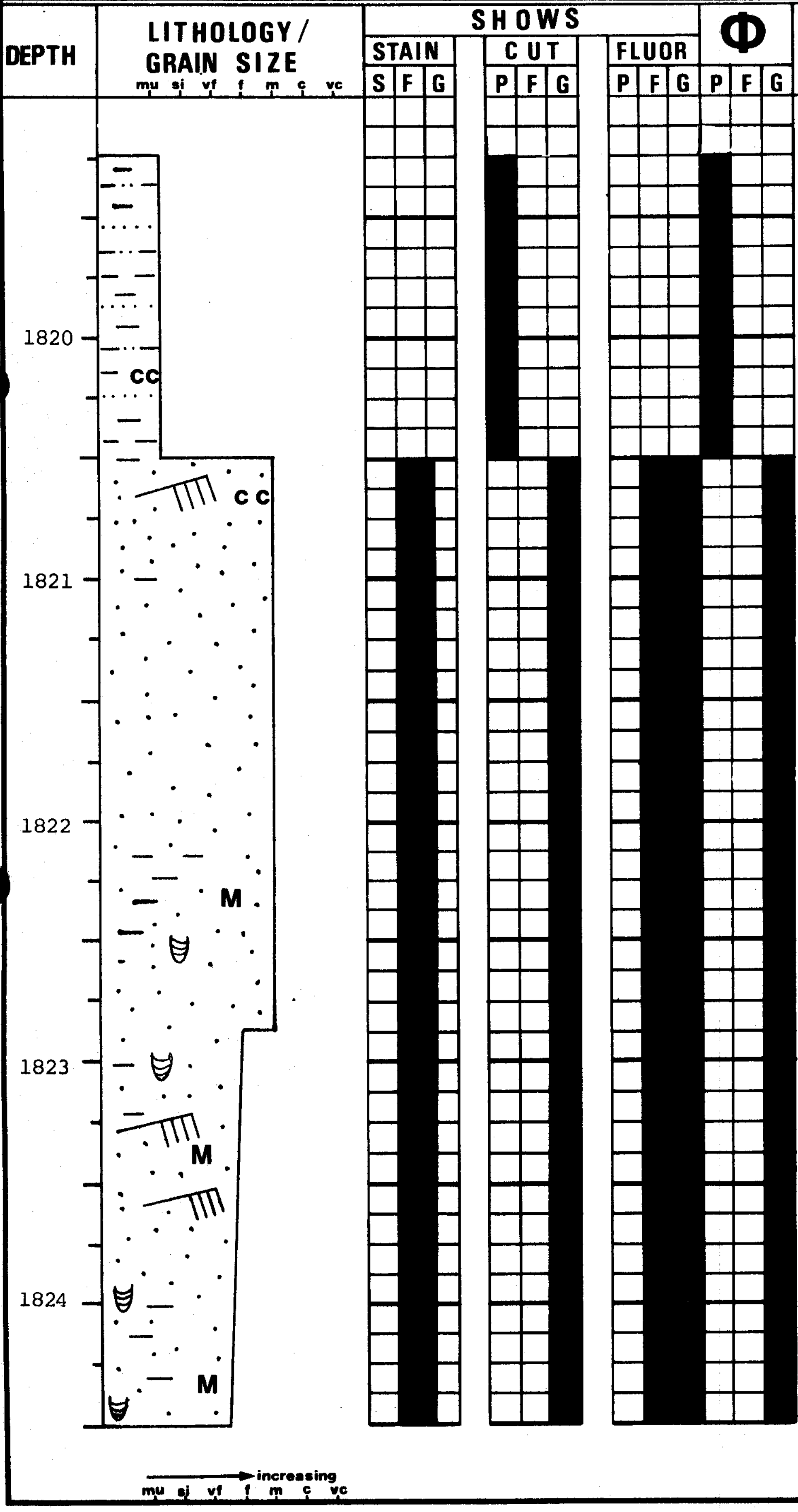
statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA

CORE NO. 4 **INTERVAL from** 1819,2 **to** 1835,8 m **CORED** 16,6 m **REC** 16,6 m 100 %

FORM. BRENT **GEOLOGIST** KRÆMER/ELVSBORG **DATE** 21 July 78



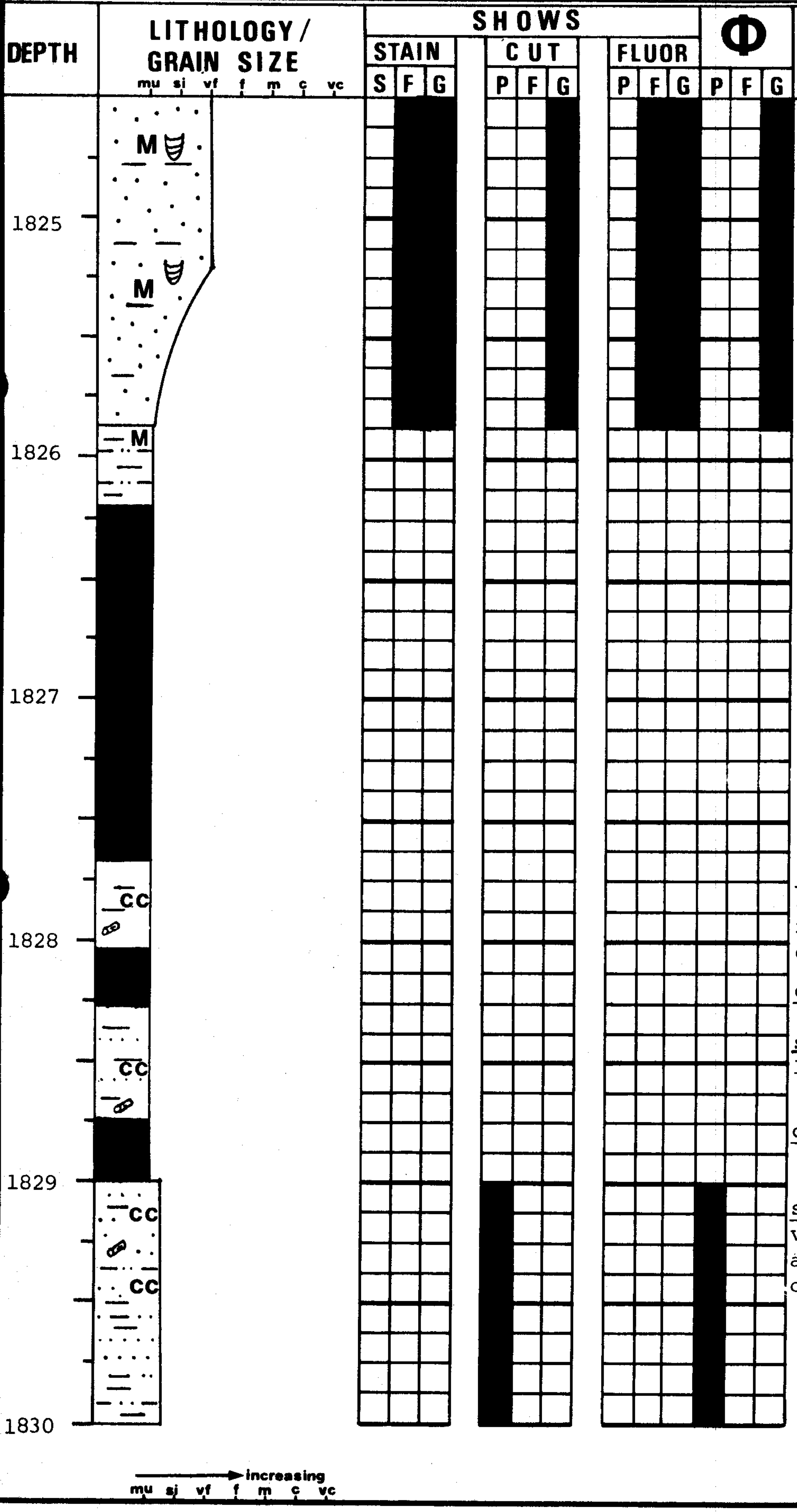
LITHOLOGIC DESCRIPTION	MISC.
shale, medium grey, firm, silty, non calcareous, sand and silt lamina, occasional coal lamina	no fluor very weak slow streaming milky bluish cut in silt and sand lamina
sandstone, clear - light brown quartz, medium, occasional fine, loose, subangular - subround, well sorted non calcareous, occasional shale and coal lamina, ripple marks	good odor dull yellow fluor fast - moderate streaming milky bluish cut
sandstone, medium, friable, micaceous, else a/a occasional burrows	
sandstone, fine, loose else a/a occasional ripple marks	shows a/a
sandstone, very fine - fine, friable, else a/a	

statoil
Den norske stats oljeselskap a.s

PAGE 2 OF 4.

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA
CORE NO. 4 **INTERVAL from** 1819,2 **to** 1835,8 m **CORED** 16,6 m **REC** 16,6 m 100 %
FORM. BRENT **GEOLOGIST** KRÆMER/ELVSBORG **DATE** 21 July 78



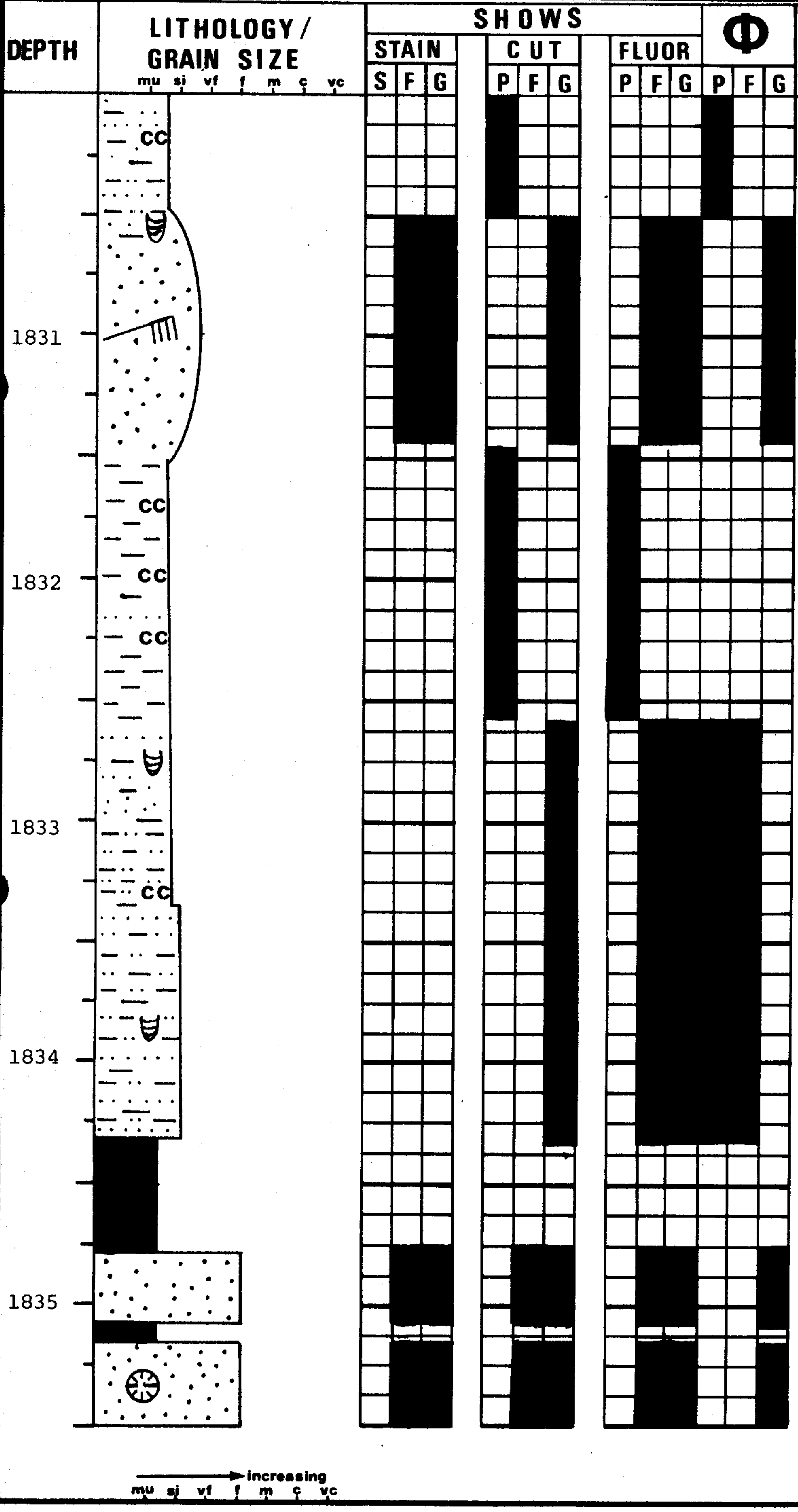
LITHOLOGIC DESCRIPTION	MISC.
sandstone, clear - light brown quartz, very fine, friable, subangular, micaceous, non calcareous, occasional shale lamina, occasional burrows	good odor dull yellow fluor, fast streaming milky bluish cut
sandstone, very fine - fine, very silty, loose, else a/a	
shale, dark grey, firm - hard, silty, micromicaceous, non calcareous, frequently silt lamina	
coal, black, unmatured, wood fragments, pyritic	
shale, brownish grey, firm, wood and coal fragments, tight, non calcareous	no shows
coal, a/a	
shale, light grey, sand lamina, else a/a	no shows
coal a/a	
shale, light grey, firm very silty, sandy, coal and wood fragments, non calcareous	no fluor very weak slow streaming milky bluish cut

PAGE 3 OF 4.

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 4
INTERVAL from 1819,2 to 1835,8
CORED 16,6 m
REC 16,6 m
100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 21 July 78



LITHOLOGIC DESCRIPTION	MISC.
shale a/a	
sandstone, clear - light brown quartz, hard - friable, fine occasional medium, subangular, occasional burrows, occasional ripple marks	good odor dull yellow fluor fast streaming milky - bluish cut
shale, medium grey, hard, non calcareous, occasional coal fragments	
siltstone, light brownish grey, hard - friable, argillaceous, sandy, non calcareous, occasional coal lamina occasional burrows	dull yellow fluor fast streaming milky cut
coal, black, unmatured brittle, wood fragments	no shows
sandstone, clear - light brown quartz, fine, loose - friable, subangular - subrounded non calcareous, siderite cemented	dull yellow fluor, moderate - fast strea ming, milky cut

statoil
Den norske stats oljeselskap a.s

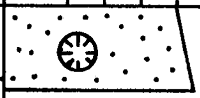
PAGE 4 OF 4.

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA

CORE NO. 4 **INTERVAL from** 1819,2 **to** 1835,8 **CORED** 16,6 m **REC** 16,6 m 100 %

FORM. BRENT **GEOLOGIST** KRÆMER/ELVSBORG **DATE** 21 July 78

DEPTH	LITHOLOGY / GRAIN SIZE mu si vf f m c vc	SHOWS STAIN S	STAIN F	STAIN G	CUT P	CUT F	CUT G	FLUOR P	FLUOR F	FLUOR G	Φ P	Φ F	Φ G	LITHOLOGIC DESCRIPTION	MISC.
			■	■		■	■		■	■			■	sandstone, fine - medium, else a/a	good odor shows a/a
1836															

→ increasing
mu si vf f m c vc

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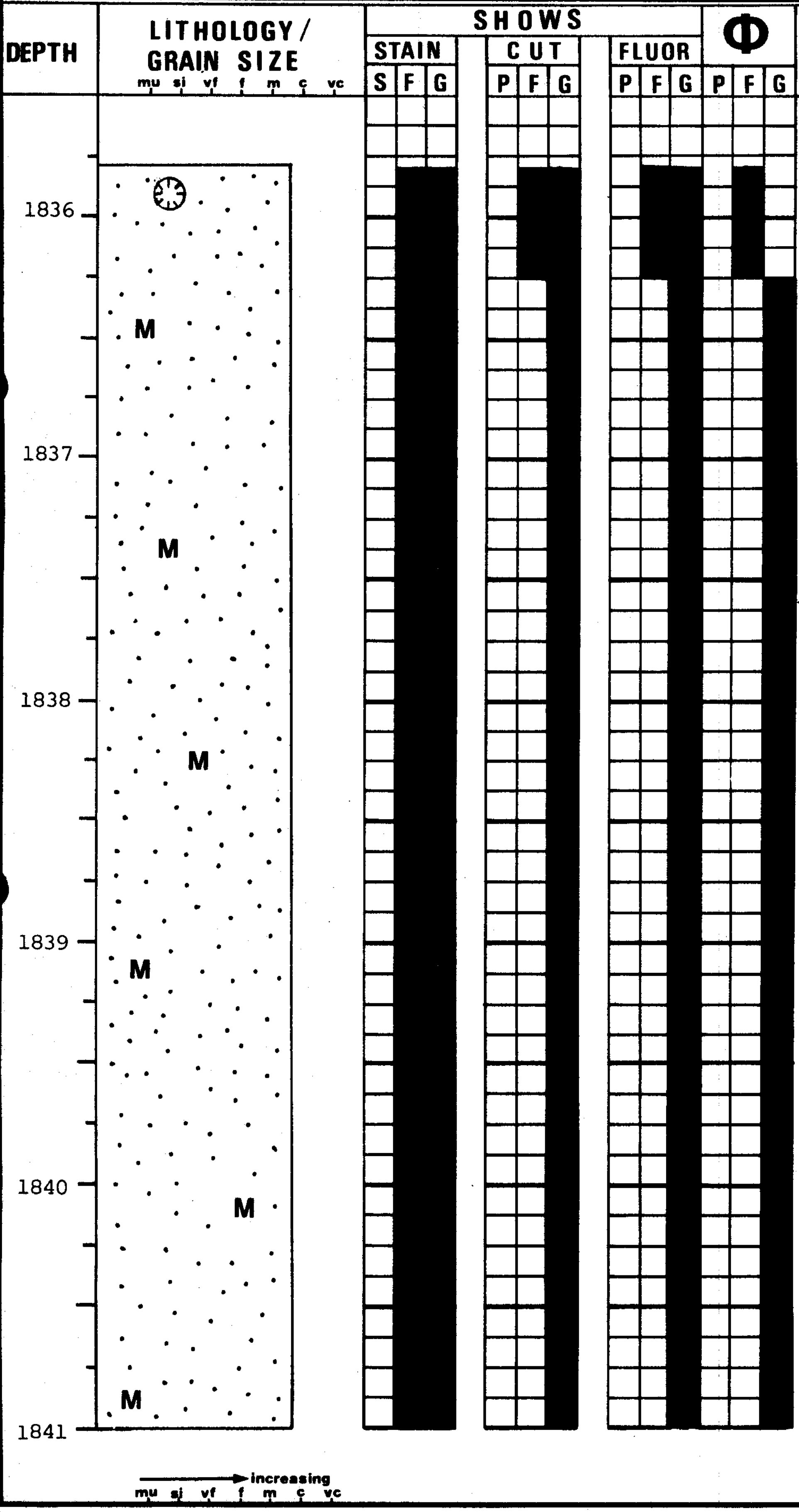
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 5
INTERVAL from 1835,8 to 1853,3 m
CORED 17,5 m
REC 17,4 m
~100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 22 July 78



LITHOLOGIC DESCRIPTION	MISC.
	good odor
sandstone, clear - light brown quartz, occasional milky, friable - loose, medium - coarse, angular - subrounded, well sorted, occasional micaceous, sideritic cemented down to 1836,3 meters, non calcareous	
sandstone, subangular - subrounded, else a/a	dull yellow fluor, fast streaming milky - bluish cut
sandstone a/a	

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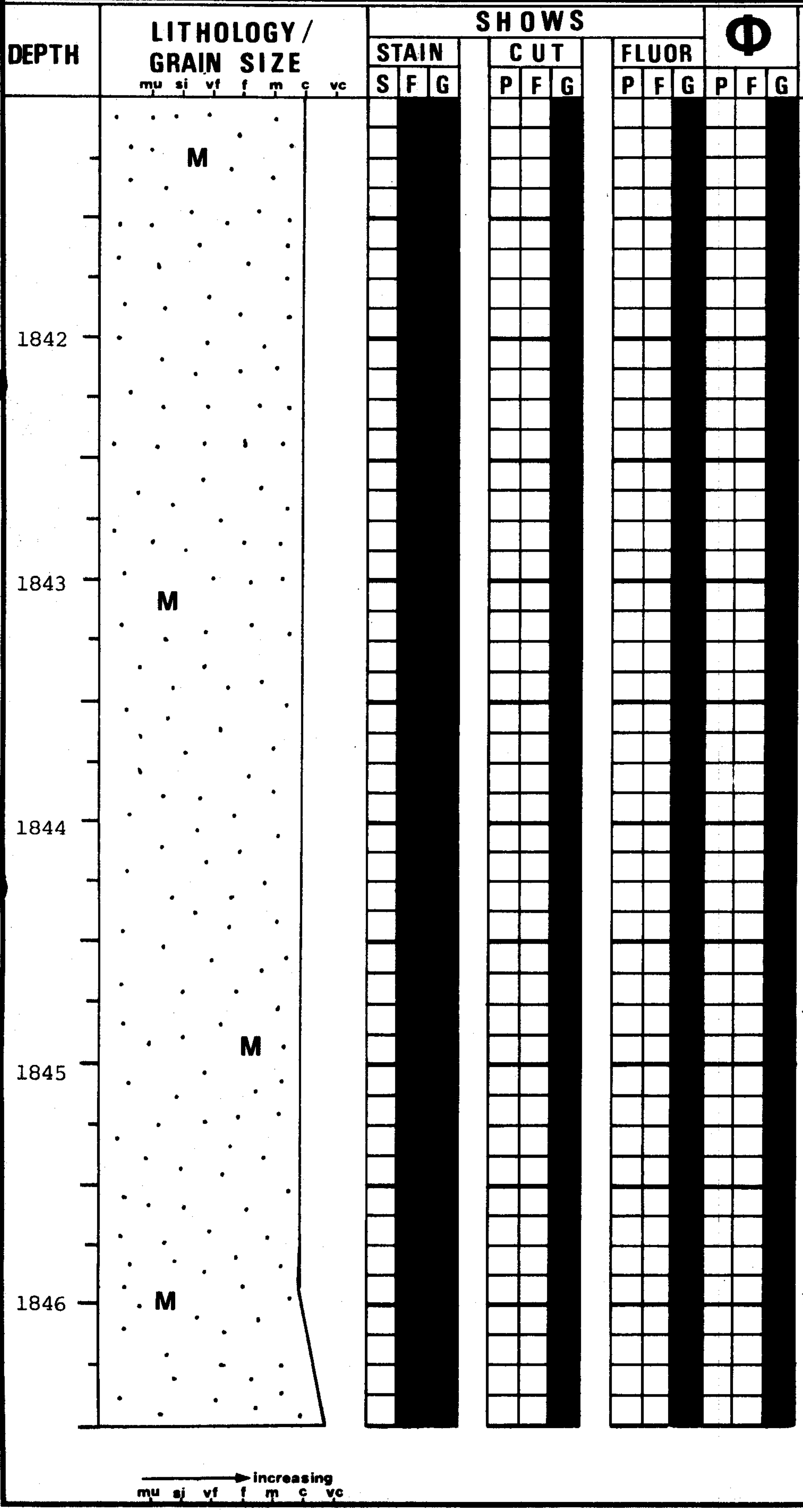
CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 5
INTERVAL from 1835,8 to 1853,3 m
CORED 17,5 m
REC 17,4 m
~100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 22 July 78

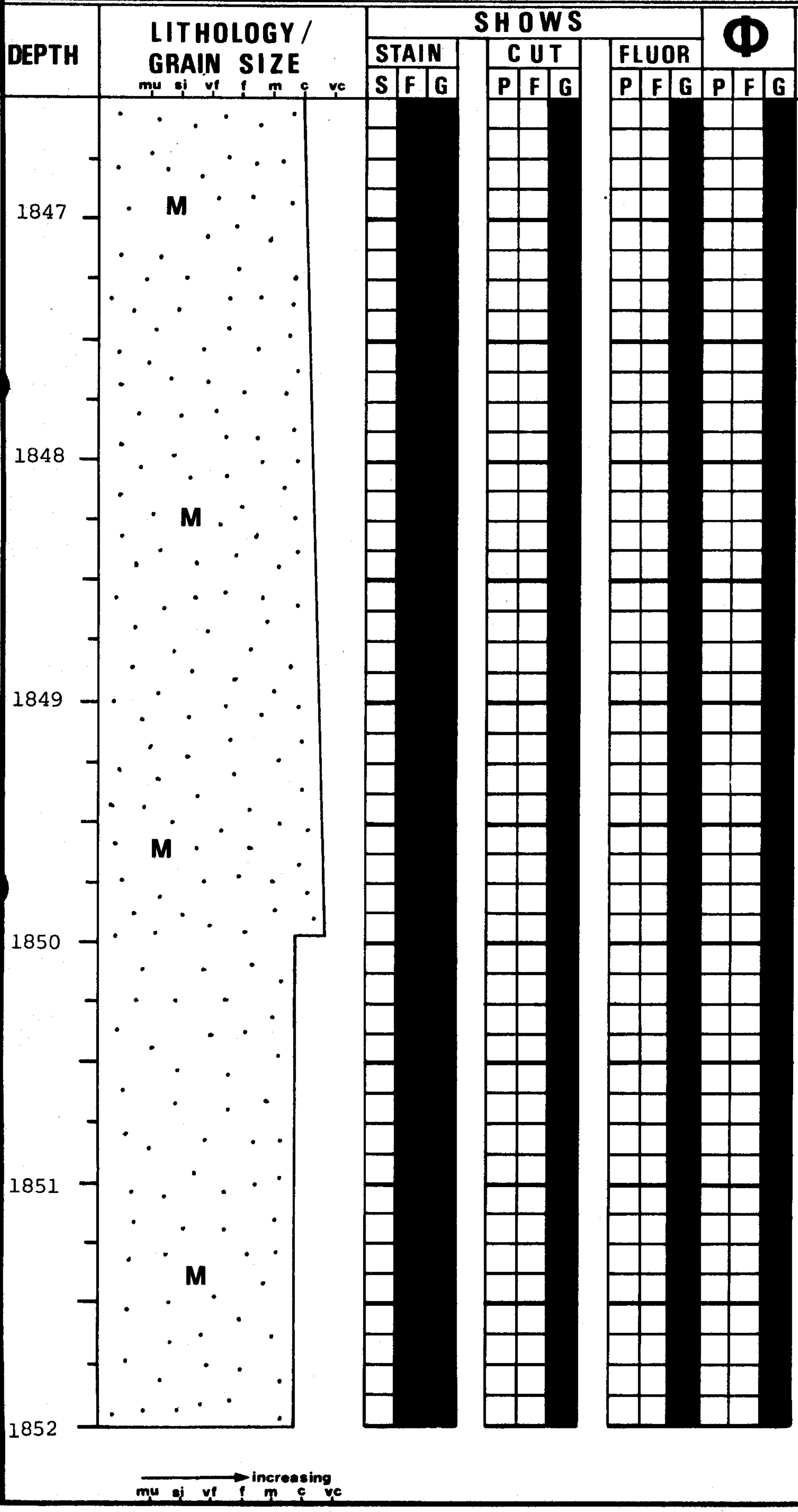


LITHOLOGIC DESCRIPTION	MISC.
	good odor
sandstone, light brown - clear quartz, occasional milky, medium - coarse, friable - loose subangular - subrounded well sorted, silica cemented	
sandstone a/a	dull yellow fluor fast streaming milky - bluish cut
sandstone, coarse, subangular, else a/a	
sandstone, coarse - very coarse, else a/a	

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 5
INTERVAL from 1835,8 to 1853,3 m
CORED 17,5 m
REC 17,4 m
~100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 22 July 78



LITHOLOGIC DESCRIPTION

sandstone, light brown - clear quartz, coarse, subangular, friable - loose, well sorted, non calcareous, occasional micaceous, occasional silica cemented

sandstone, coarse - very coarse, else a/a

sandstone, coarse, else a/a

MISC.

good odor

dull yellow fluor, fast streaming milky bluish cut

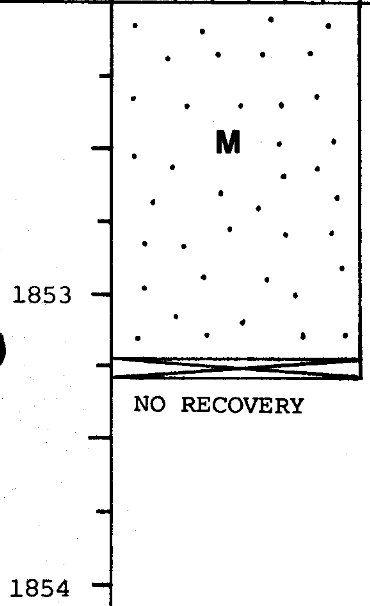
PAGE 4 OF 4.

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA
CORE NO. 5 **INTERVAL from** 1835,8 **to** 1853,3 m **CORED** 17,5 m **REC** 17,4 m ~100 %
FORM. BRENT **GEOLOGIST** KRÆMER/ELVSBORG **DATE** 22 July 78

DEPTH	LITHOLOGY / GRAIN SIZE (mu si vf f m c vc)	SHOWS: STAIN (S F G)	SHOWS: CUT (P F G)	SHOWS: FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
						<u>sandstone</u>, light brown - clear quartz, coarse, friable - loose, subangular, well sorted, non calcareous, occasional micaceous, occasional silica cemented	good odor dull yellow fluor fast streaming milky bluish cut



increasing
mu si vf f m c vc

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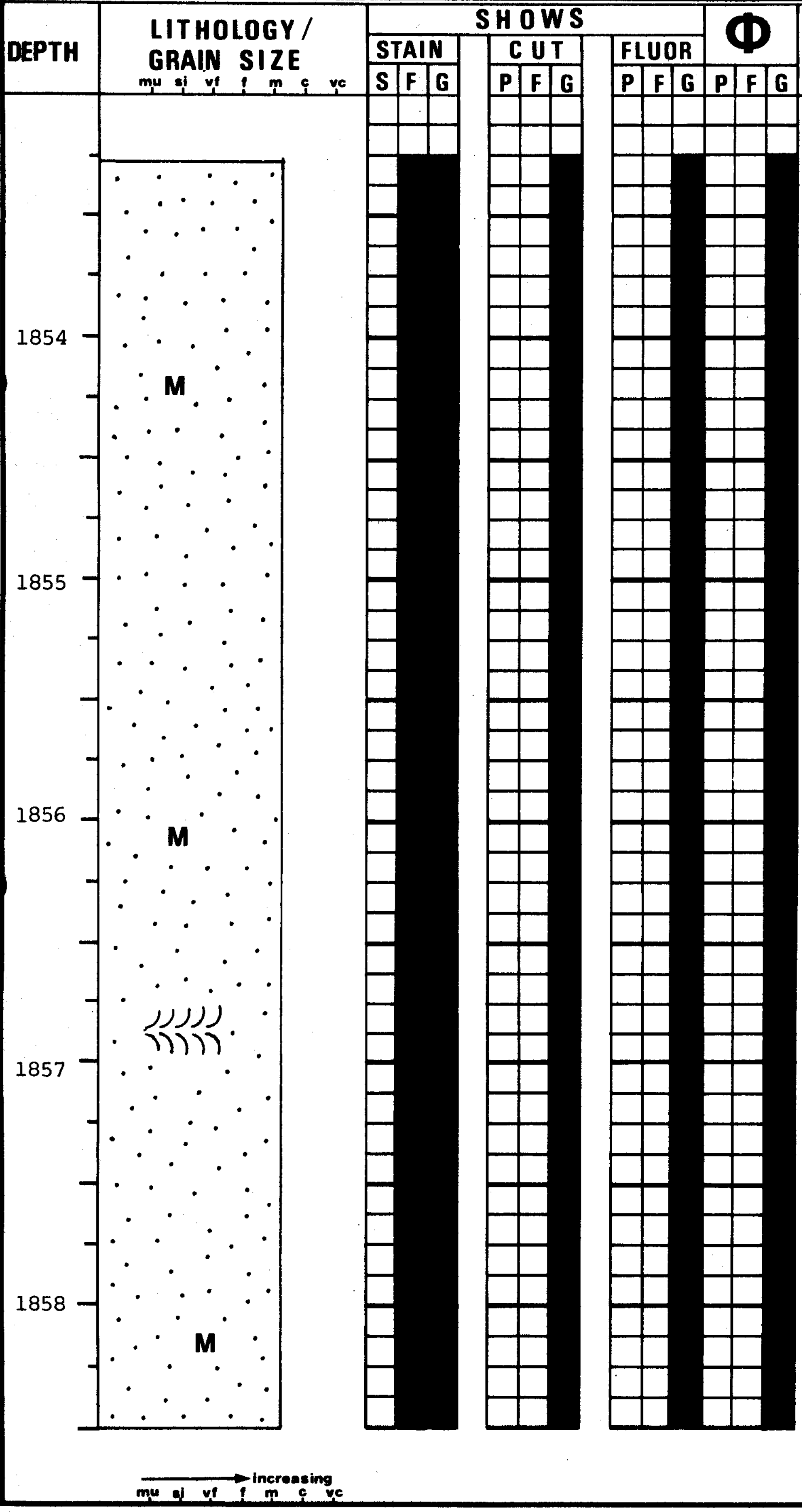
CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 6
INTERVAL from 1853,3 to 1865,4
CORED 12,1 m
REC 9,0 m
74 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 22 July 78



LITHOLOGIC DESCRIPTION

sandstone, light brown - clear quartz, medium occasional coarse, loose - friable, angular - subangular, well sorted, non calcareous, occasional silica cemented, occasional micaceous

sandstone, occasional very coarse, else a/a crossbedding

MISC.

good odor

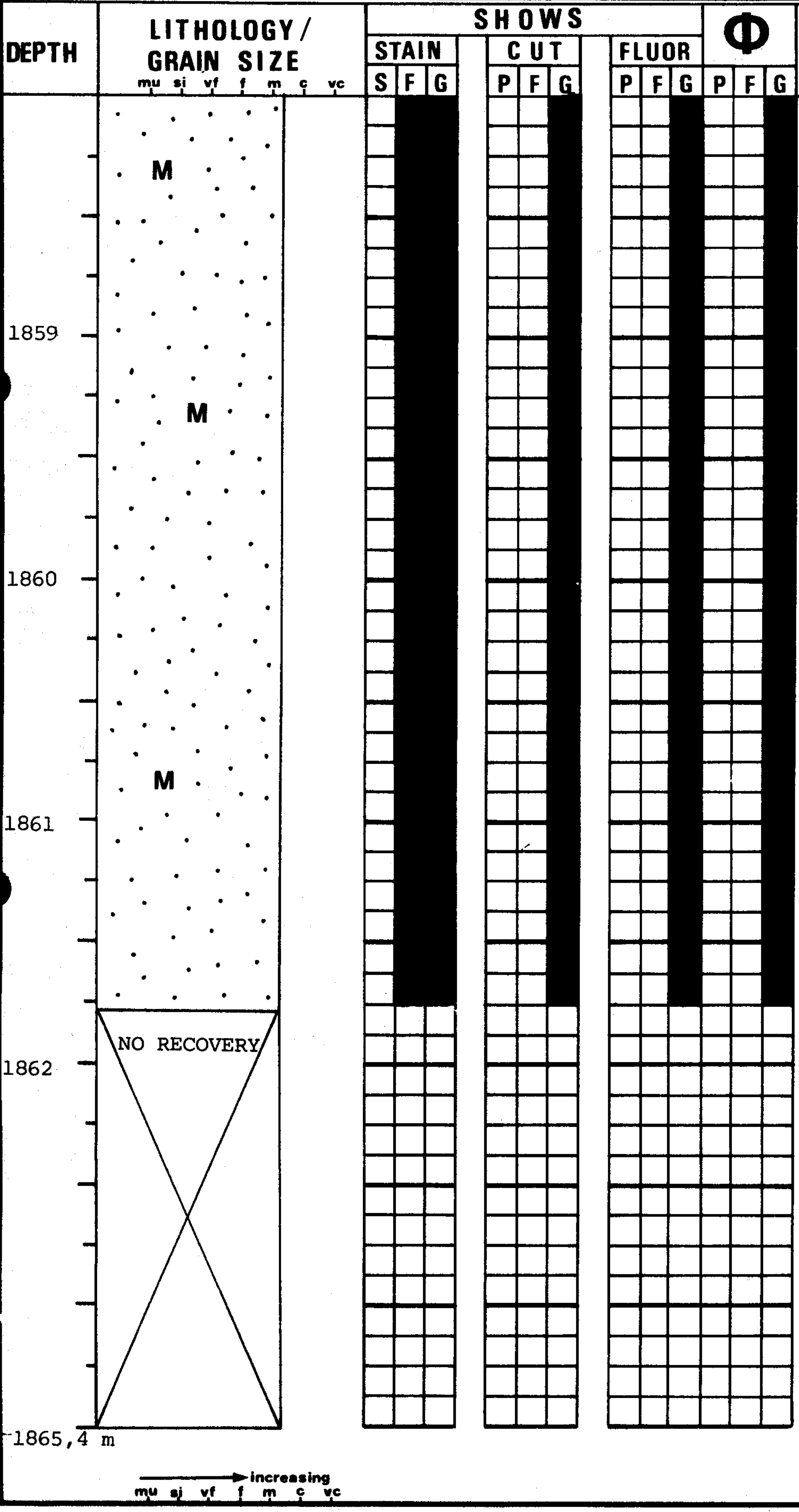
dull yellow fluor fast streaming milky bluish cut

PAGE 2 OF 2

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 6
INTERVAL from 1853,3 to 1865,4
CORED 12,1 m
REC 9,0 m
74 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 22 July 78



LITHOLOGIC DESCRIPTION	MISC.
sandstone, light brown - clear quartz, medium, occasional coarse, loose - friable, angular - subangular, well sorted, non calcareous, occasional silica cemented, occasional micaceous	good odor dull yellow fluor fast streaming milky bluish cut
sandstone a/a	

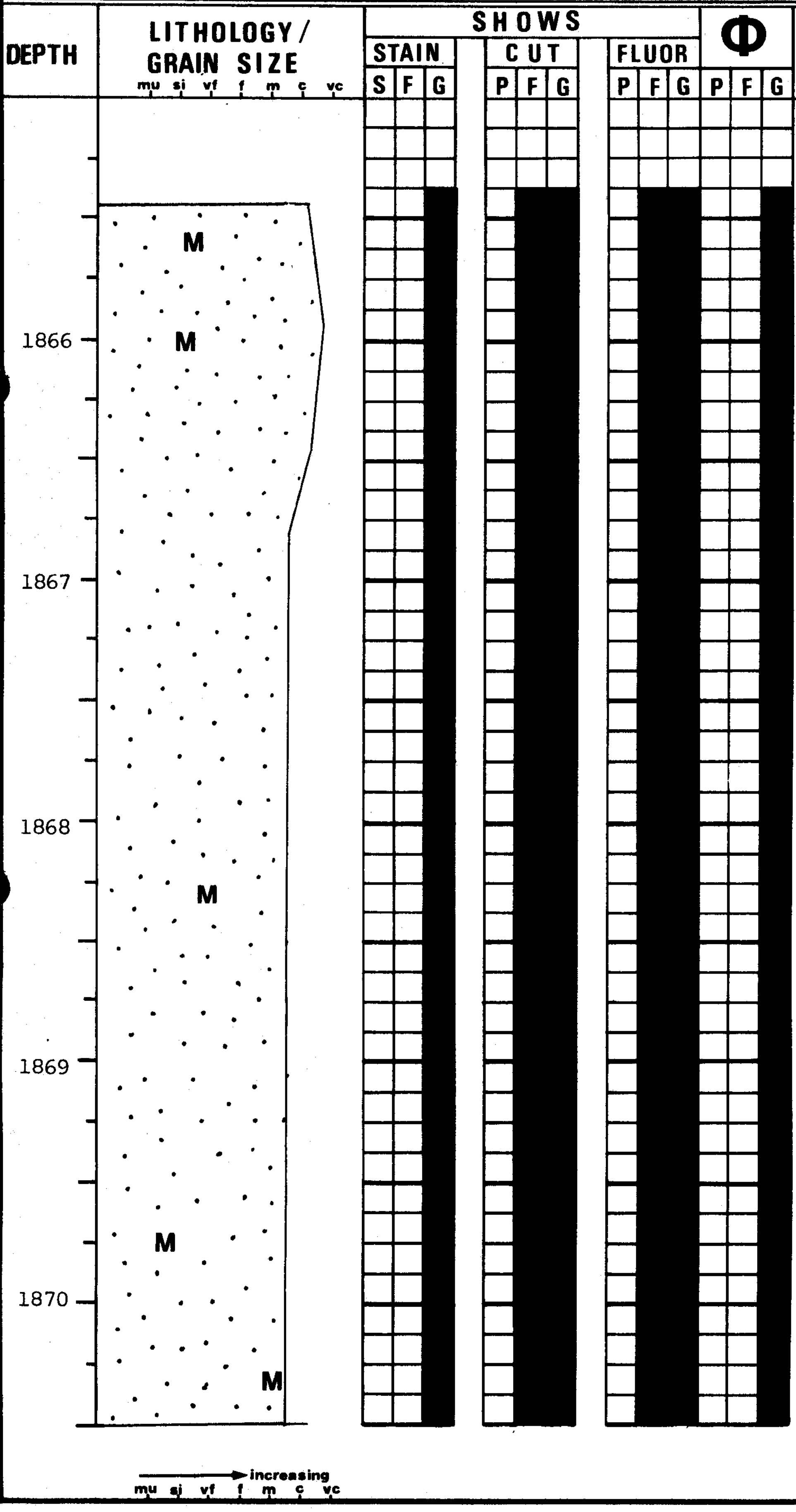
statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 7 | INTERVAL from 1865,4 to 1875,0 m | CORED 9,6 m | REC 8,4 m | 87 %

FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 23 July 78



LITHOLOGIC DESCRIPTION

sandstone, light brown - clear quartz, coarse occasional very coarse loose - friable, angular - subangular, micaceous, non calcareous, well sorted, silica cemented

sandstone, very coarse occasional coarse, slightly micaceous else a/a

sandstone, medium occasional coarse, occasional fine, fair sorting, else a/a

sandstone, medium - coarse, well sorted, occasional micaceous, else a/a

sandstone, medium, occasional fine, fair sorting, micaceous, else a/a

MISC.

good odor

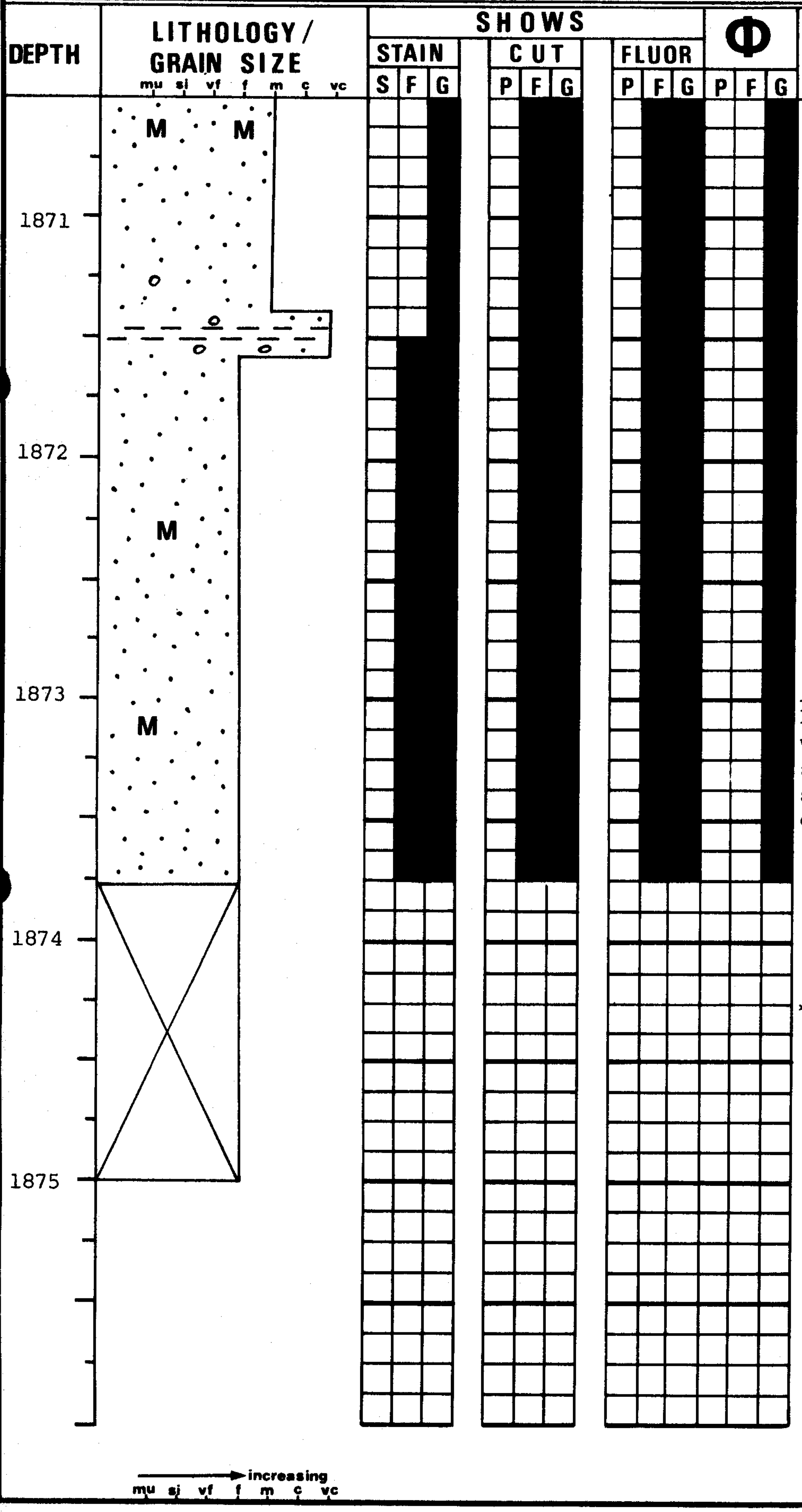
dull yellow fluor, moderate fast streaming bluish milky cut

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 7 | INTERVAL from 1865,4 to 1875,0 m | CORED 9,6 m | REC 8.4 m | 87 %

FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 23 July 78



LITHOLOGIC DESCRIPTION

sandstone, light brown - clear - milky quartz fine - coarse, poor sorting, very micaceous angular - subangular silica cemented, non calcareous ← *

shale, (thin layer) mainly mica, pebbles below and above

sandstone, occasional very fine, else a/a

sandstone, clear-light brown quartz, fine, well sorted, friable, subangular - subrounded silica cemented, non calcareous, micaceous

*sandstone, occasional very coarse, else a/a

MISC.

good odor
dull yellow fluor
moderate fast streaming bluish - milky cut

— " —

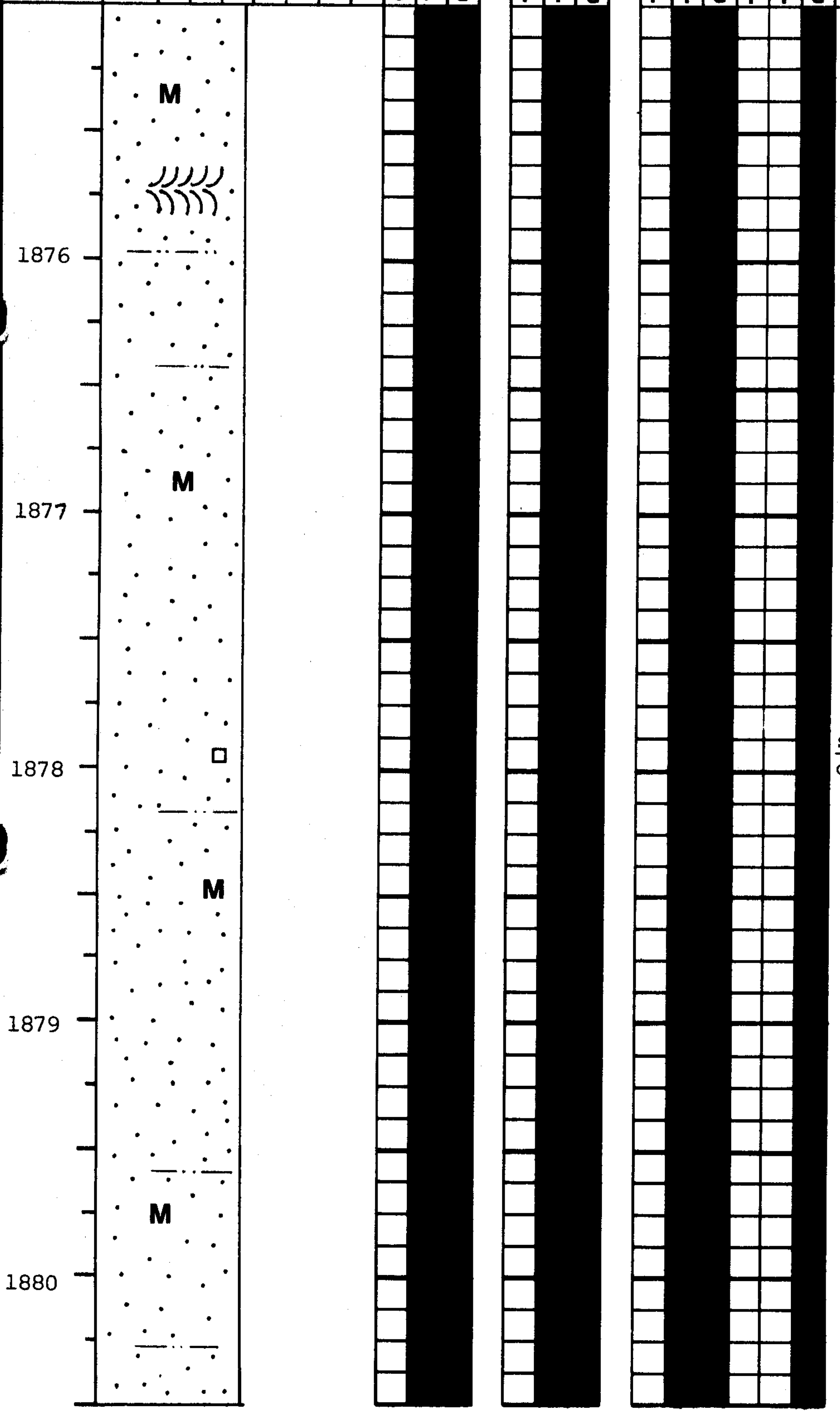
PAGE 1 OF 3.

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 8
INTERVAL from 1875,0 to 1893,5 m
CORED 18,5 m
REC 14,6 m
79 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 24 July 78

DEPTH | LITHOLOGY/GRAIN SIZE (mu si vf f m c vc) | SHOWS: STAIN (S F G), CUT (P F G), FLUOR (P F G) | Φ (P F G) | LITHOLOGIC DESCRIPTION | MISC.



LITHOLOGIC DESCRIPTION

sandstone, clear - light brown quartz, fine - very fine, subangular, fair sorting, friable-loose, micaceous, non calcareous, silty, silica cemented, occasional crossbedding

sandstone, a/a occasional wood fragments

sandstone a/a occasional pyrite

MISC.

good odor

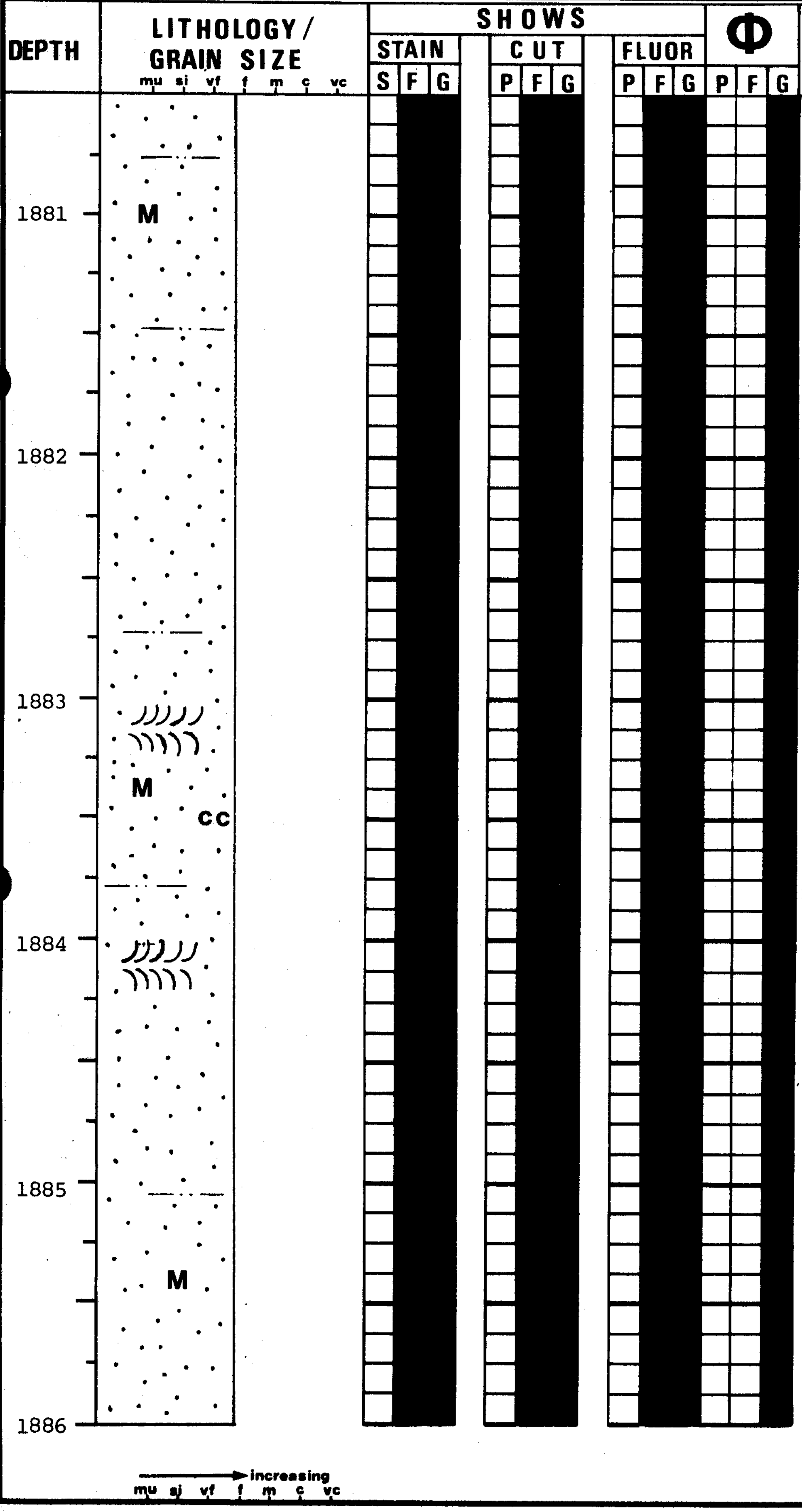
dull yellow fluor, fast streaming milky bluish cut

increasing →
mu si vf f m c vc

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 8
INTERVAL from 1875,0 to 1893,5 m
CORED 18,5 m
REC 14,6 m
79 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 24 July 78



LITHOLOGIC DESCRIPTION

sandstone, clear - light brown quartz, fine - very fine, subangular, fair sorting, friable - loose, silty, micaceous non calcareous, silica cemented, occasional crossbedding, occasional coal fragments

MISC.

good odor

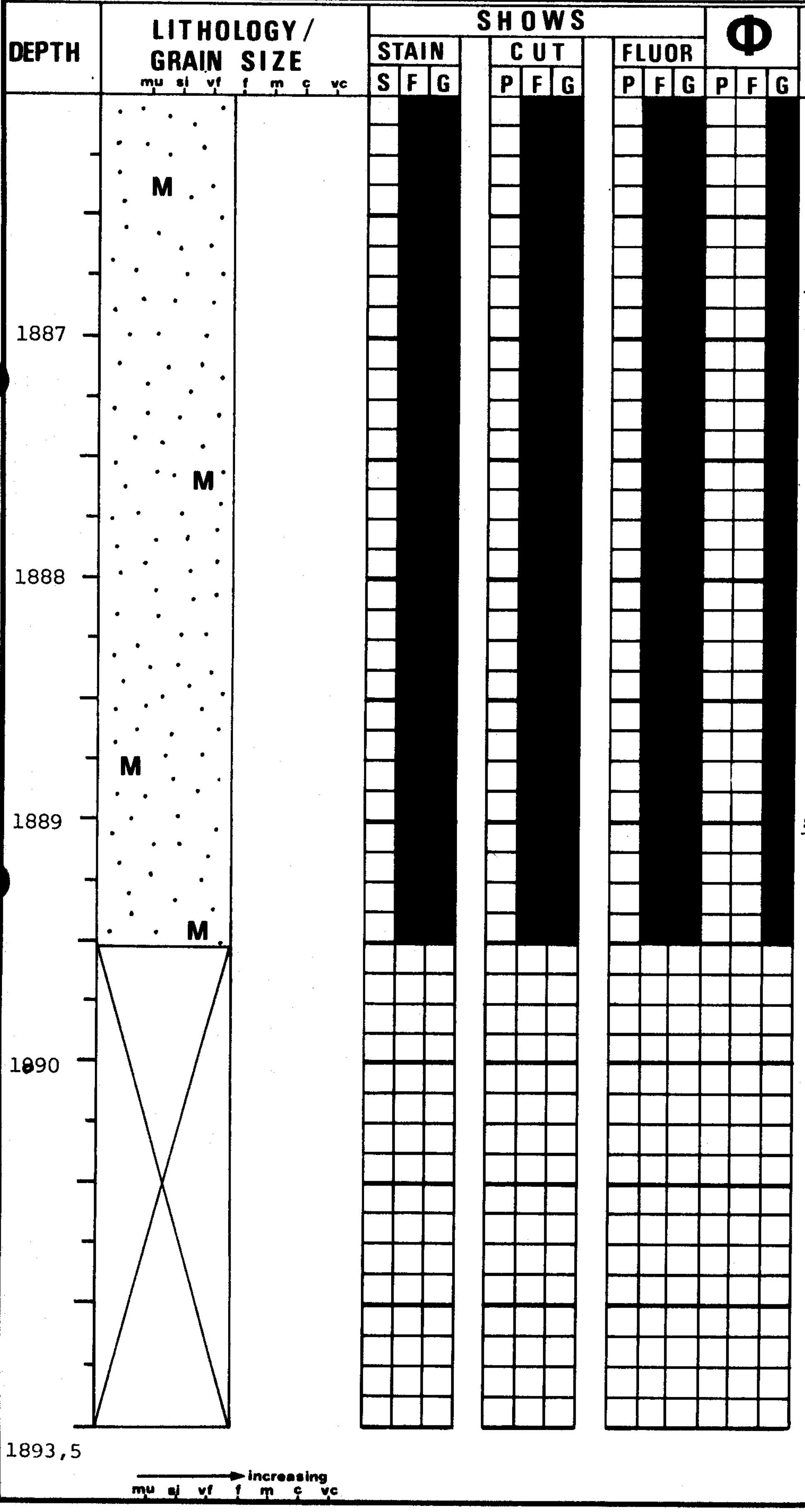
dull yellow fluor, fast streaming milky bluish cut

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA

CORE NO. 8 **INTERVAL from** 1875,0 **to** 1893,5 m **CORED** 18,5 m **REC** 14,6 m 79 %

FORM. BRENT **GEOLOGIST** KRÆMER/ELVSBORG **DATE** 24 July 78



LITHOLOGIC DESCRIPTION

sandstone, light brown - clear quartz, fine - very fine, subangular, fair sorting, friable - loose, silty, micaceous, non calcareous, silica cemented

sandstone a/a

MISC.

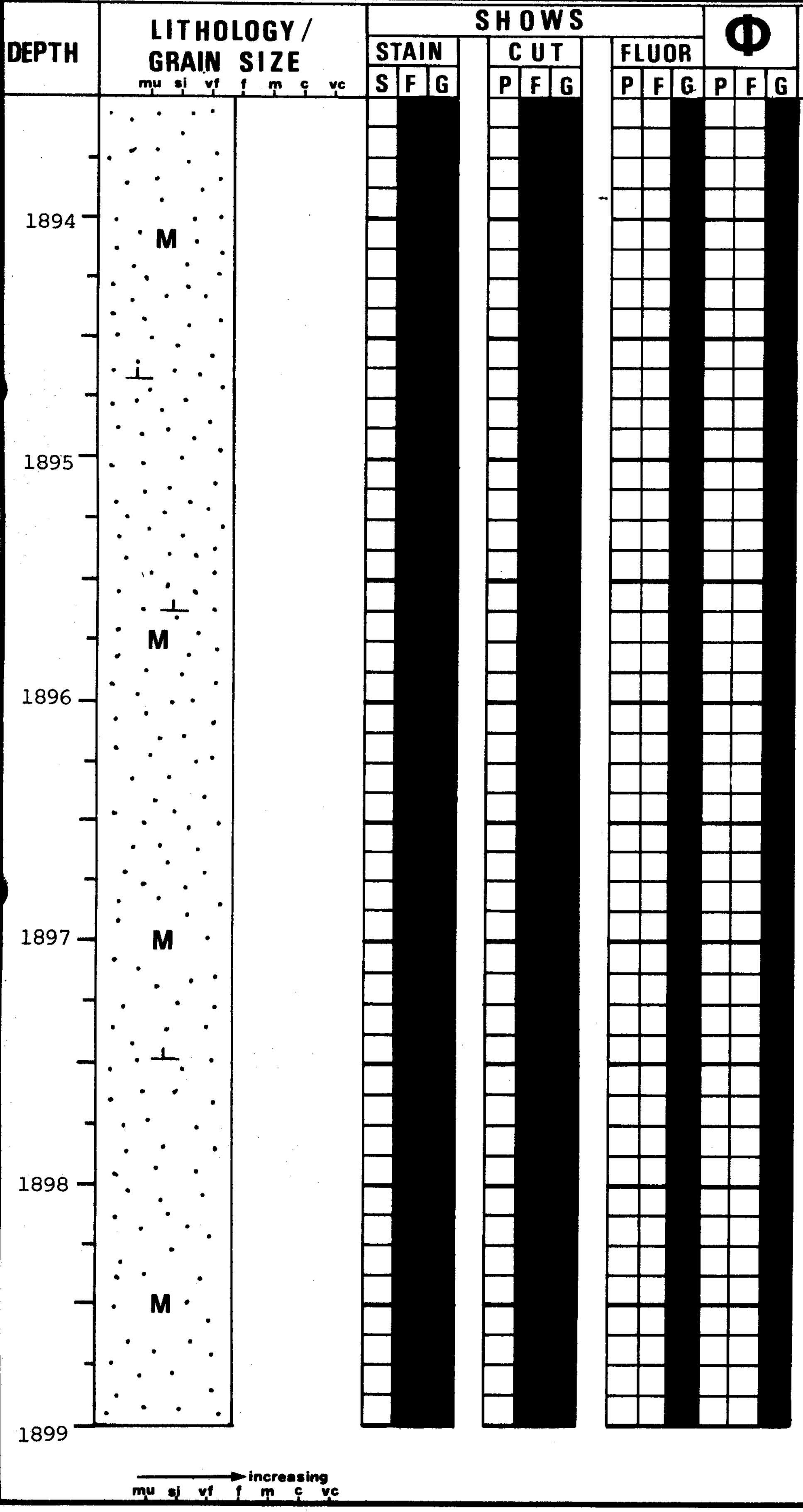
good odor

dull yellow fluor fast streaming milky bluish cut

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 9
INTERVAL from 1893,5 to 1911,35
CORED 17,85 m
REC 17,85 m
100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 24 July 78



LITHOLOGIC DESCRIPTION

sandstone, light brown - clear quartz, fine - very fine, occasional medium, friable, slightly silty, angular - subangular, occasional subrounded, fair sorting, micaceous slightly calcareous

sandstone a/a

MISC.

good odor

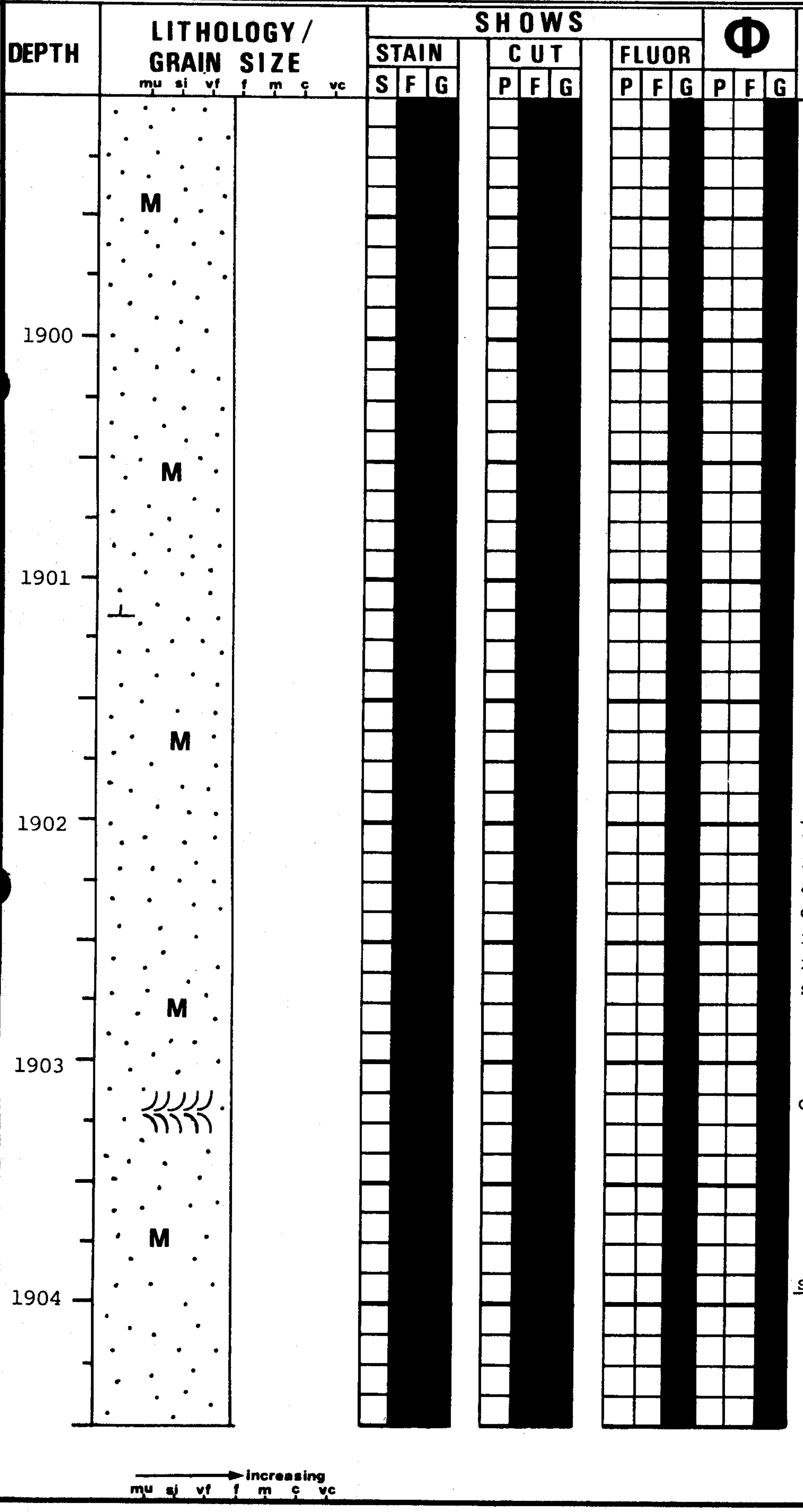
dull yellow fluor
moderate fast streaming milky bluish cut

"

Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 9
INTERVAL from 1893,5 to 1911,35
CORED 17,85 m
REC 17,85 m
100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 24 July 78



LITHOLOGIC DESCRIPTION	MISC.
	good odor dull yellow fluor moderate - fast streaming bluish milky cut
sandstone, light brown - clear quartz, very fine - fine, silty, angular - subangular, occasional subrounded, friable, very micaceous fair sorting, non - slightly calcareous	
occasional crossbedding	
sandstone a/a	—— " ——

statoil
Den norske stats oljeselskap a.s

PAGE 3 OF 4.

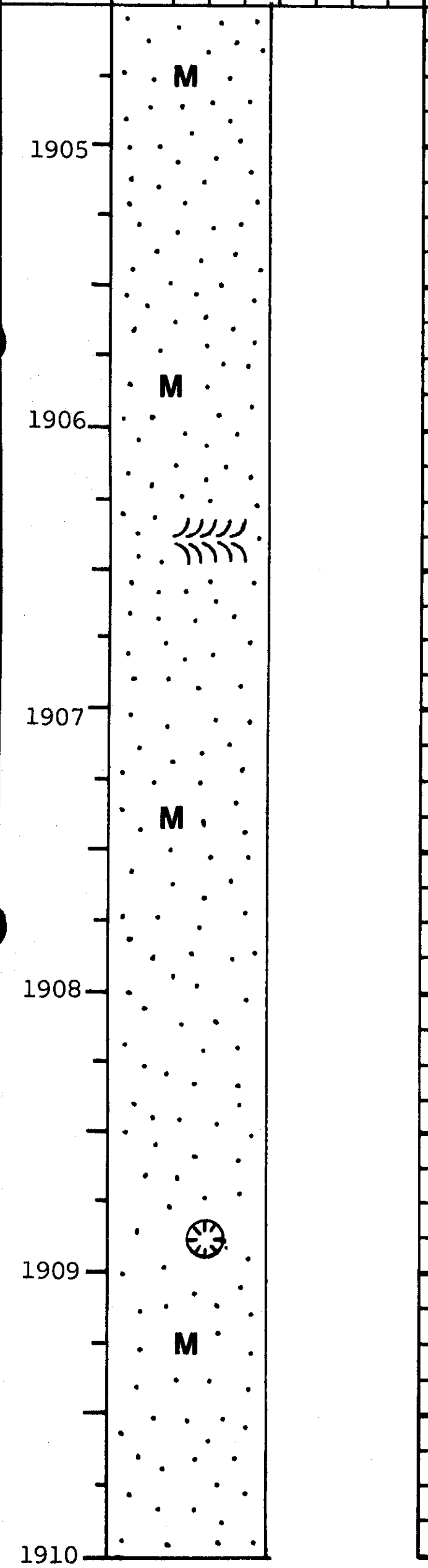
CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 9 | INTERVAL from 1893,5 to 1911,35 | CORED 17,85 m | REC 17,85 | 100 %

FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 24 July 78

DEPTH	LITHOLOGY / GRAIN SIZE	SHOWS: STAIN S F G / CUT P F G / FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.



Lithologic description	Misc.
sandstone a/a	good odor dull yellow fluor moderate - fast streaming milky bluish cut
occasional crossbedding	
sandstone, light brown - clear quartz, very fine, occasional fine, silty, angular - subangular, occasional subrounded, well sorted, micaceous, friable, slightly calcareous occasional sideritic cement	—— " ——
sandstone, a/a	

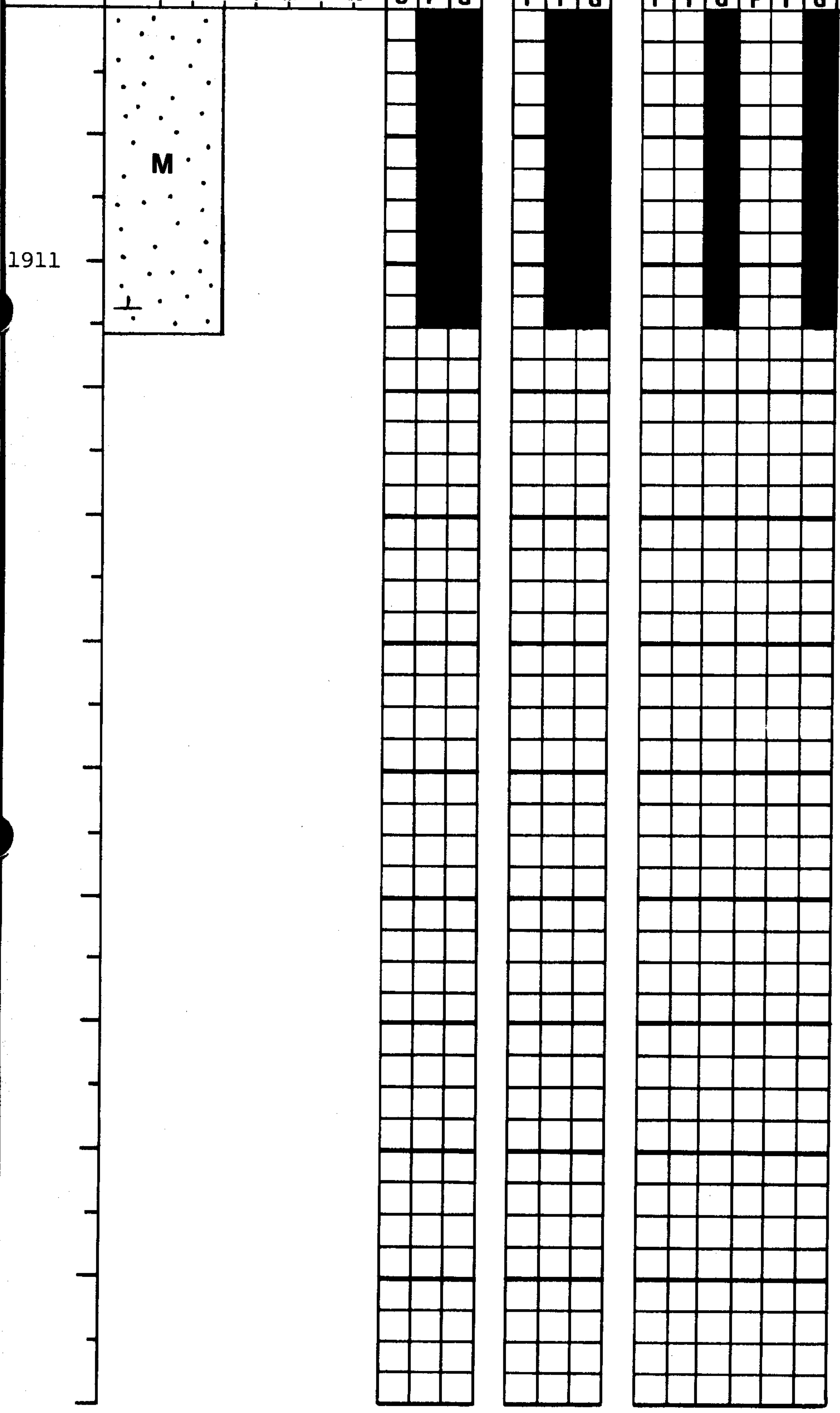
PAGE 4 OF 4.

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 9
INTERVAL from 1893,5 to 1911,35
CORED 17,85 m
REC 17,85 m
100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 24 July 78

DEPTH	LITHOLOGY / GRAIN SIZE	SHOWS: STAIN S F G	SHOWS: CUT P F G	SHOWS: FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
						<u>sandstone</u>, clear - light brown quartz, very fine - fine, angular - subrounded, silty, friable, fair sorting, micaceous, slightly calcarous	good odor dull yellow fluor moderate fast streaming milky bluish cut



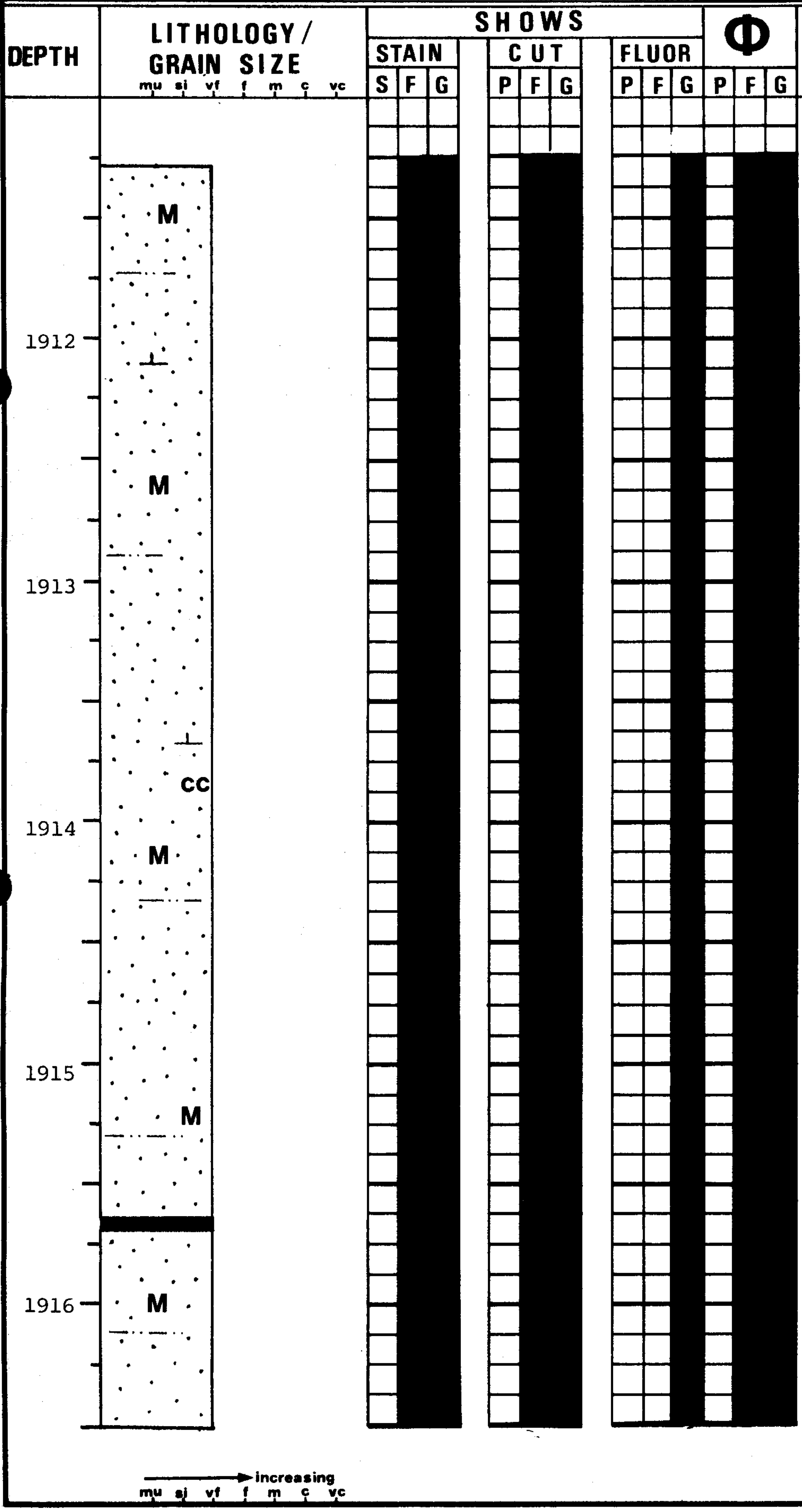
increasing
mu si vf f m c vc

statoil
Den norske stats oljeselskap a.s

PAGE 1 OF 3.

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA
CORE NO. 10 | INTERVAL from 1911,35 to 1923,1 | CORED 11,8 m | REC 11,5 m | 97 %
FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 25 July 78



LITHOLOGIC DESCRIPTION

sandstone, clear - light brown quartz, very fine, silty, moderately sorted, subangular, non - slightly calcareous friable, micaceous

sandstone, very fine - fine, slightly calcareous, occasional coal lamina, else a/a

sandstone, very fine, else a/a

coal, black, brittle, wood fragments, unmatured

sandstone, very fine - fine, else a/a

MISC.

good odor
dull yellow fluor
moderate fast streaming milky cut

PAGE 2 OF 3.

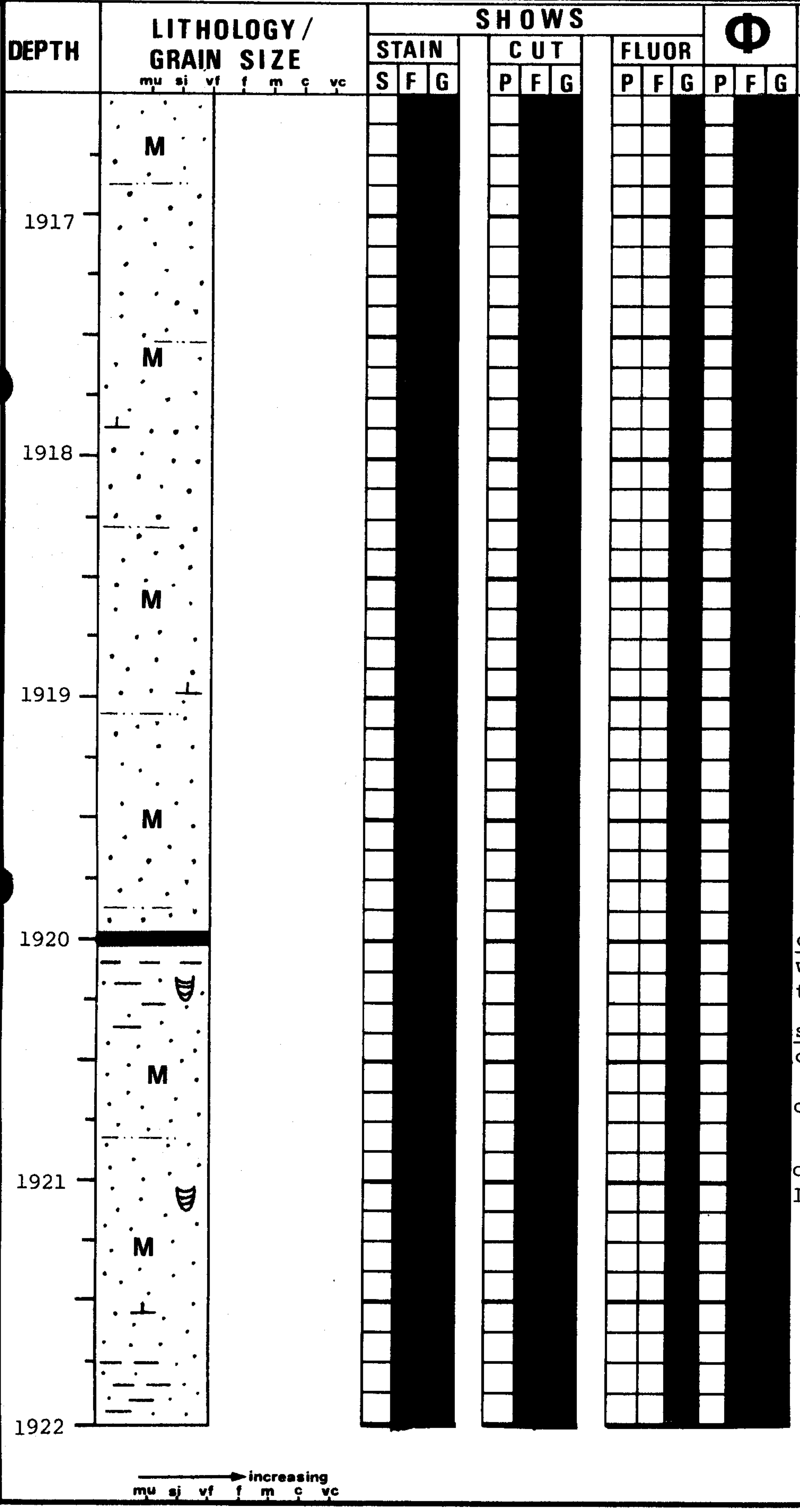
statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 10 | INTERVAL from 1911,35 to 1923,1 | CORED 11,8 | REC 11,5 | 97 %

FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 25 July 78



LITHOLOGIC DESCRIPTION

sandstone, clear - light brown quartz, very fine, silty, moderately sorted, subangular, slightly calcareous, friable, micaceous

sandstone, calc cementation , else a/a

sandstone a/a

coal, black, brittle, wood fragments, unmatured

sandstone, slightly calcareous, else a/a

occasional burrows

occasional shale lamina

MISC.

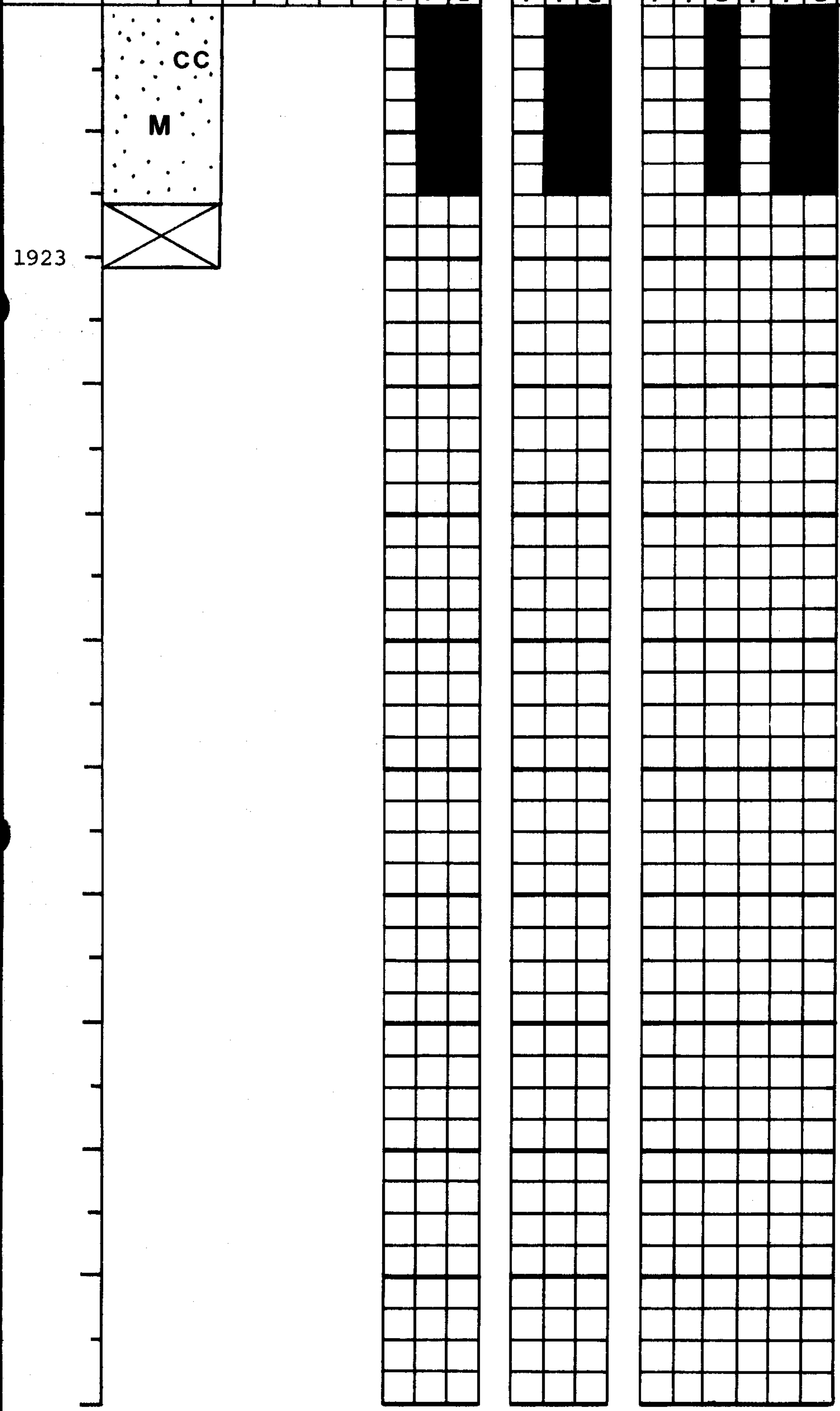
good odor
dull yellow fluor
fast - moderate streaming milky-bluish cut

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA
CORE NO. 10 **INTERVAL from** 1911,35 **to** 1923,1 **CORED** 11,8 **REC** 11,5 m 97 %
FORM. BRENT **GEOLOGIST** KRÆMER/ELVSBORG **DATE** 25 July 78

DEPTH	LITHOLOGY / GRAIN SIZE	SHOWS: STAIN (S F G)	SHOWS: CUT (P F G)	SHOWS: FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
						sandstone, clear - light brown quartz, very fine, silty, moderately sorted, subangular, calc cementation , friable, micaceous, occasional coal lamina .	good odor dull yellow fluor fast moderate streaming milky-bluish cut



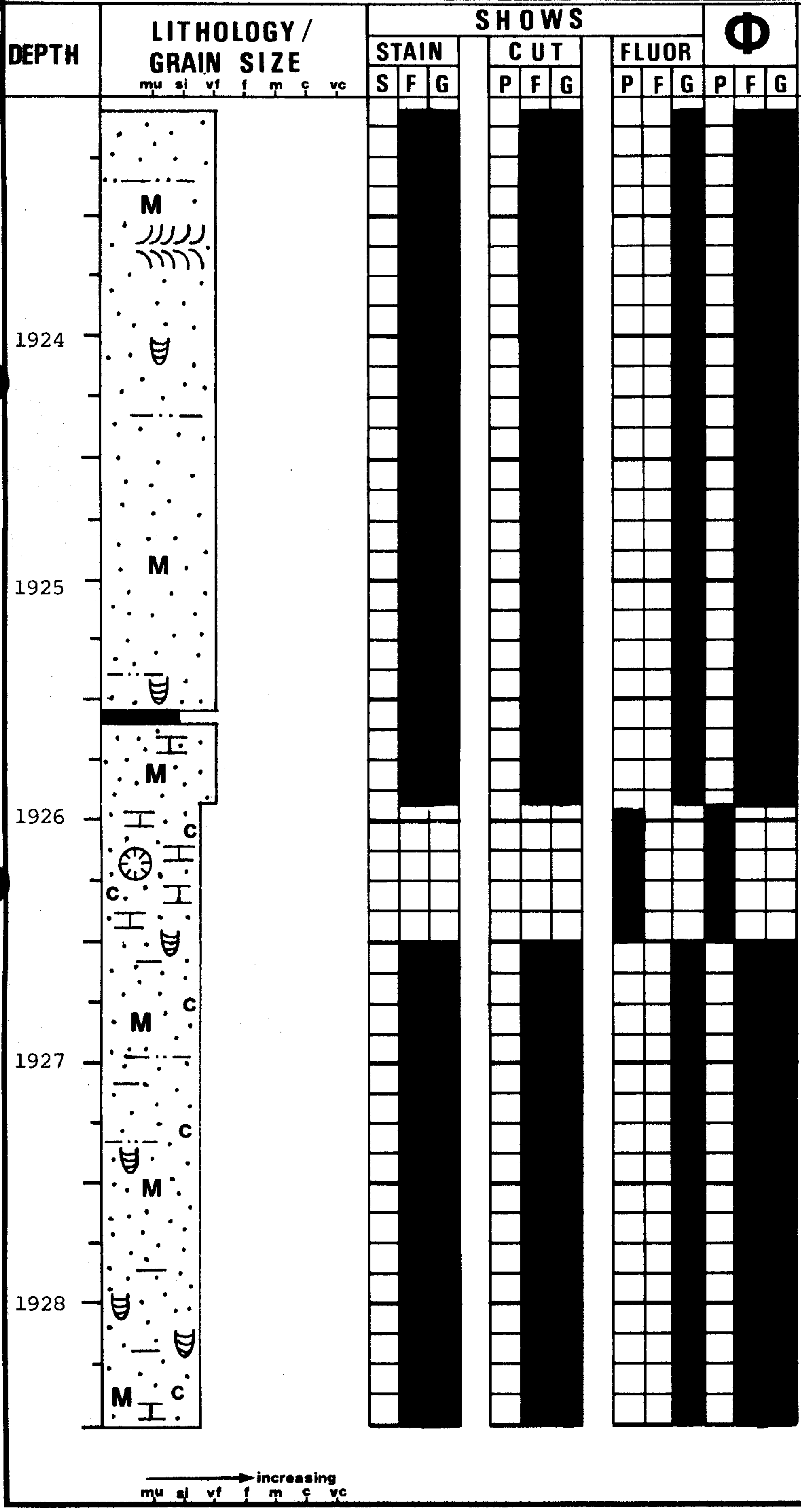
increasing
mu si vf f m c vc

statoil
Den norske stats oljeselskap a.s

PAGE 1 OF 3.

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 11
INTERVAL from 1923,1 to 1938,7 m
CORED 15,6 m
REC 15,6 m
100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 25

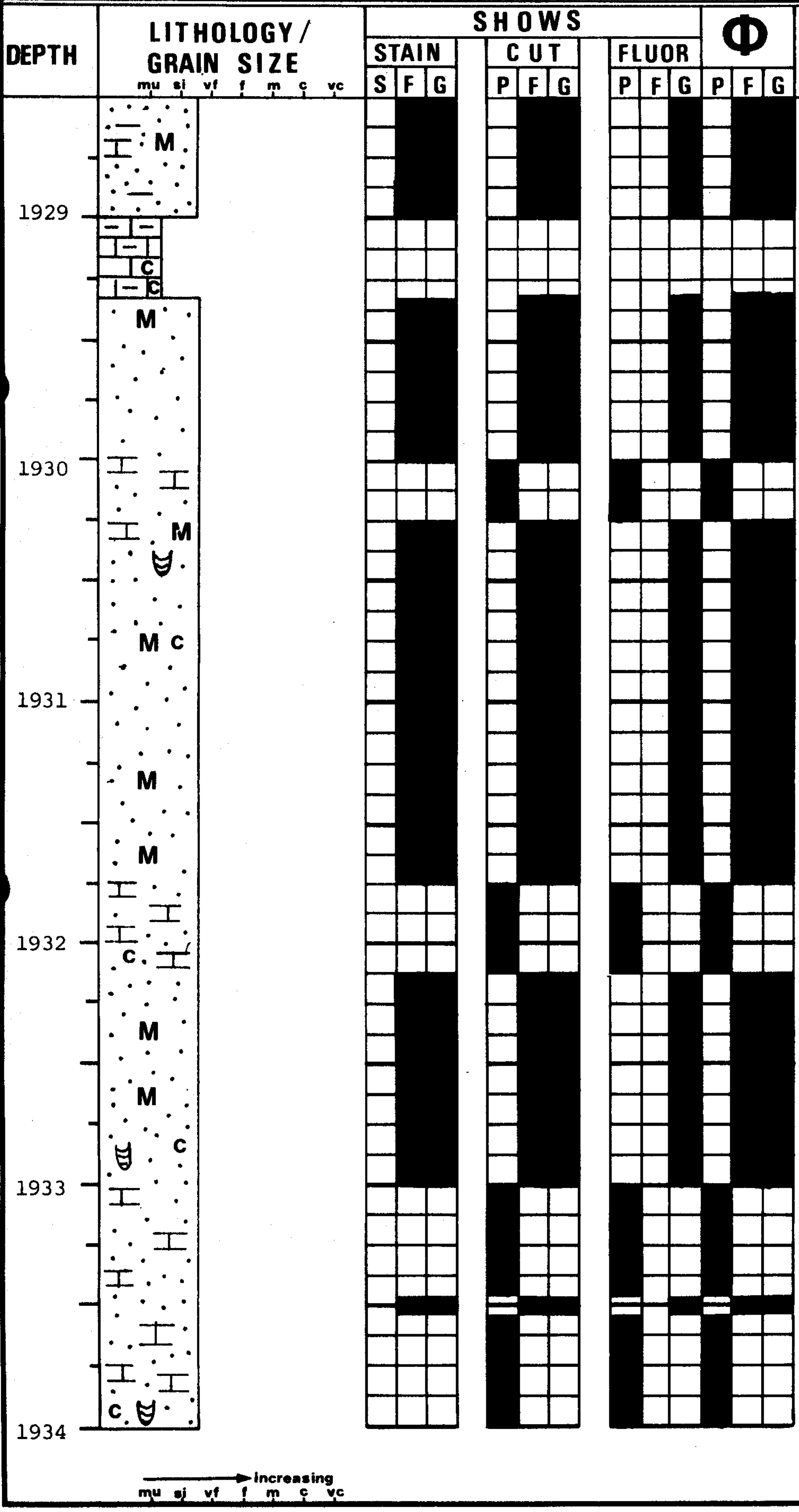


LITHOLOGIC DESCRIPTION	MISC.
sandstone, clear-light brown quartz, very fine grained, silty, subangular, friable, moderately sorted, micaceous, occasional crossbedding, occasional burrows.	good odor dull yellow fluor fast streaming, milky-bluish cut
sandstone a/a	
coal, black, brittle, unmatured sandstone, a/a becoming calcite cemented	
sandstone, clear quartz, very fine grained, silty, subangular, very hard, moderately sorted, tight calc cemented, coal fragments, occasional siderite lamina, occasional burrows	very weak yellow fluor no cut
sandstone, friable, slightly calc cemented, else a/a occasional with mica and coal lamina	dull yellow fluor, fast streaming milky-bluish cut
sandstone, occasional wery micaceous, else a/a	

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA
CORE NO. 11 | INTERVAL from 1923,1 to 1938,7 m | CORED 15,6 m | REC 15,6 m | 100 %
FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 25



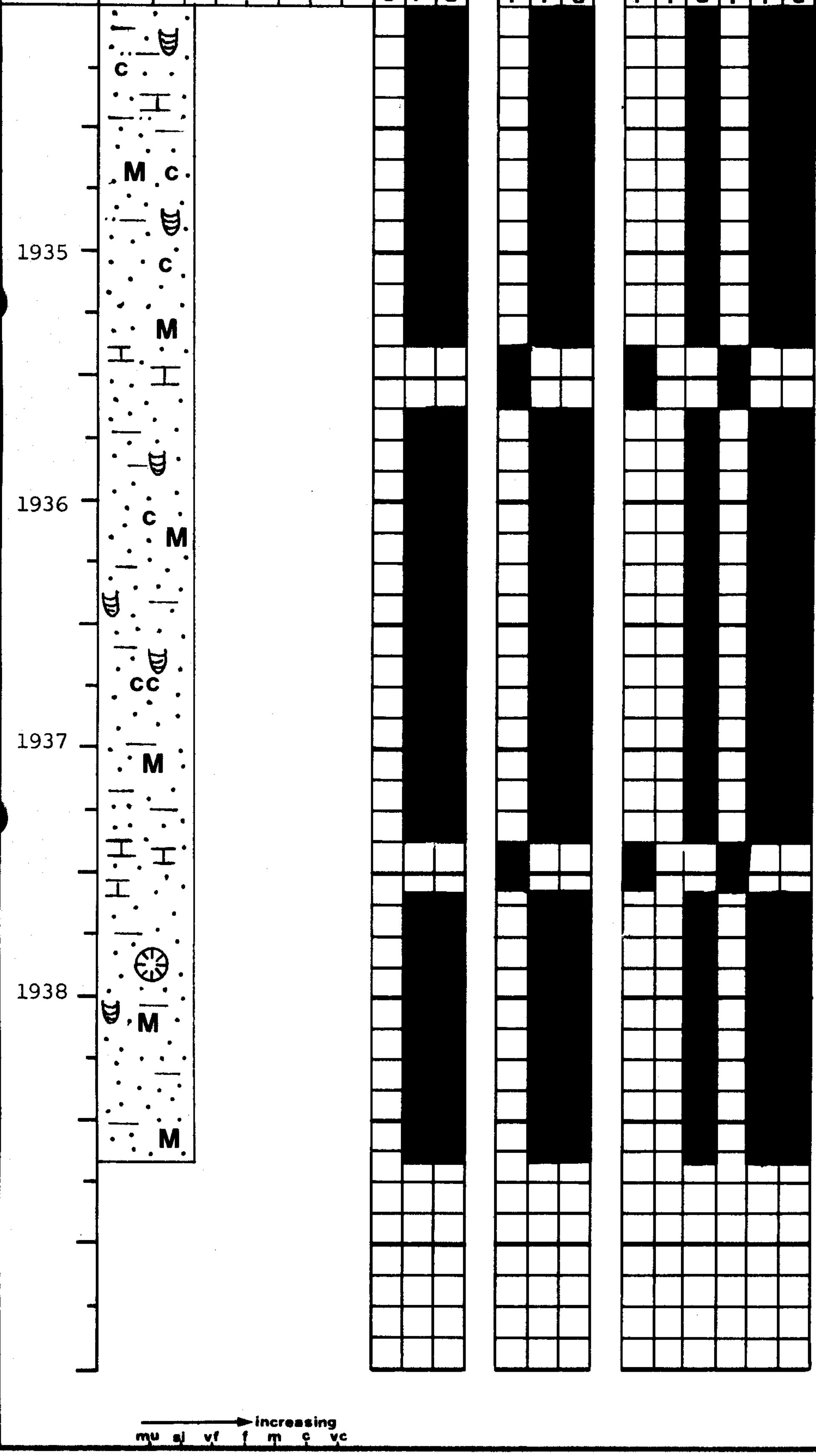
LITHOLOGIC DESCRIPTION	MISC.
sandstone, a/a	good odor
limestone, medium grey very hard, argillaceous coal fragments	
sandstone a/a	
sandstone, very hard, tight calcite cemented else a/a	weak yellow fluor, very slow streaming milky - bluish cut
	dull yellow fluor, fast - moderate streaming milky - bluish cut
sandstone a/a	
sandstone a/a	

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT
WELL NO. 34/10-1
AREA NORTH SEA
CORE NO. 11
INTERVAL from 1923,1 to 1938,7 m
CORED 15,6 m
REC 15,6 m
100 %
FORM. BRENT
GEOLOGIST KRÆMER/ELVSBORG
DATE 25

DEPTH | LITHOLOGY / GRAIN SIZE | SHOWS: STAIN (S F G), CUT (P F G), FLUOR (P F G), Φ (P F G)

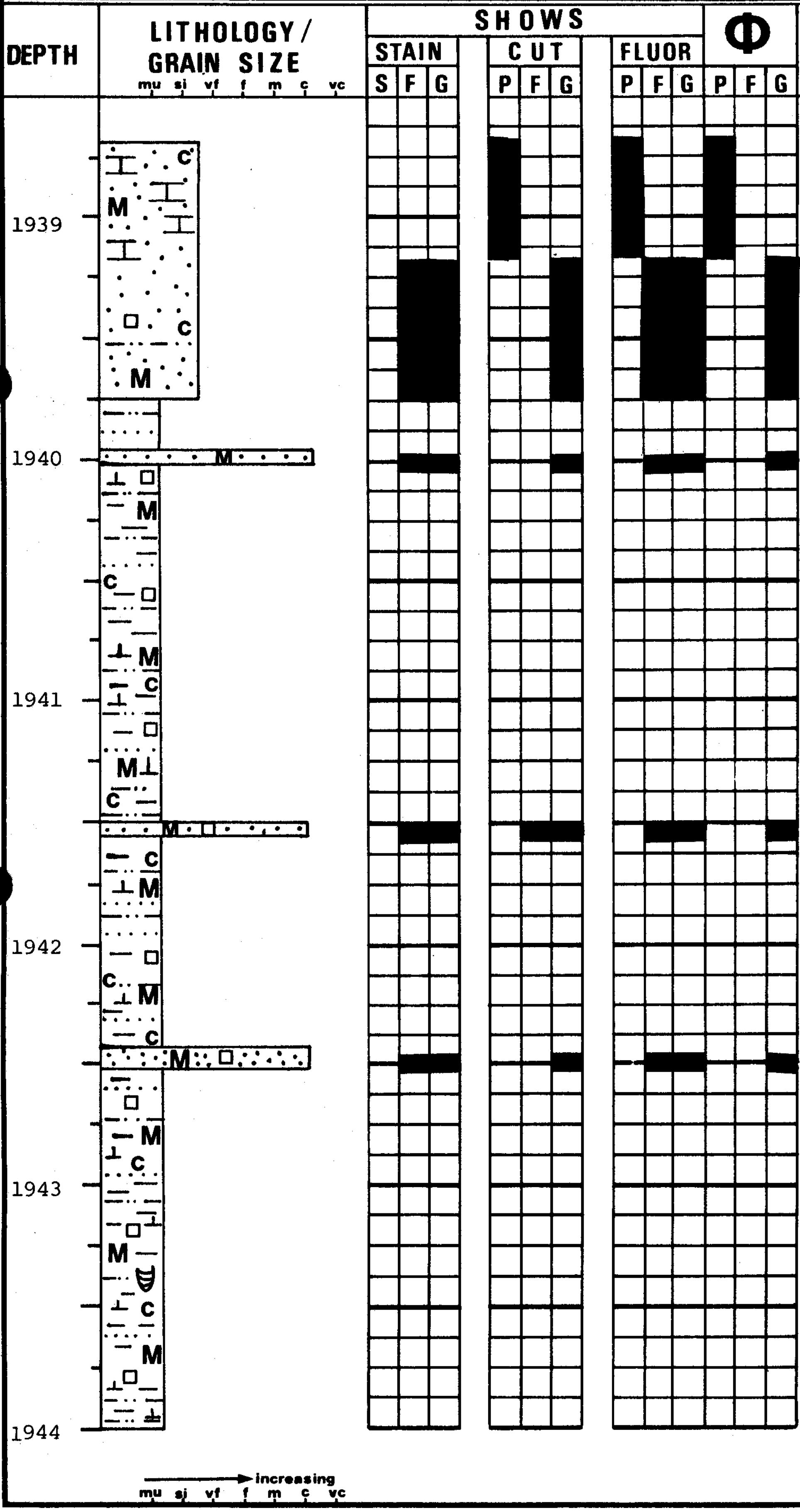


LITHOLOGIC DESCRIPTION	MISC.
sandstone, light brown clear quartz, very fine grained, silty, subangular, friable, moderate sorted, micaceous, slightly calcareous, shale and mica lamina, occasional coal lamina and fragments	good odor dull yellow fluor fast streaming milky-bluish cut
sandstone, very hard, tight calcite cemented, else a/a	very weak yellow fluor, very slow streaming milky-bluish cut
sandstone a/a	
thin siderite layer	
sandstone, friable, slightly calcareous, else a/a	

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA
CORE NO. 12 | INTERVAL from 1938,7 to 1951,1 m | CORED 12,4 | REC 12,4 m | 100 %
FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 26 July 78



LITHOLOGIC DESCRIPTION

sandstone, clear quartz very fine - fine grained, angular - subangular, very hard, moderate sorted, very micaceous, tight, calcite cemented, coal fragments

sandstone, clear quartz very fine - fine grained, occasional silty lamina, angular - subangular, friable, ←* micaceous, slightly calcareous, coal fragments, occasional pyritic

shale, medium grey, sandy, silty, hard, calcareous, very micaceous, coal fragments grading to siltstone in parts, fissile, pyr.

*sandstone, coarse - very coarse, else a/a

sandstone, coarse - very coarse, subangular -subrounded, else a/a

shale, a/a

sandstone a/a

occasional burrows

shale a/a

MISC.

very weak yellow fluor, very slow streaming milky cut

PAGE 2 OF 3 .

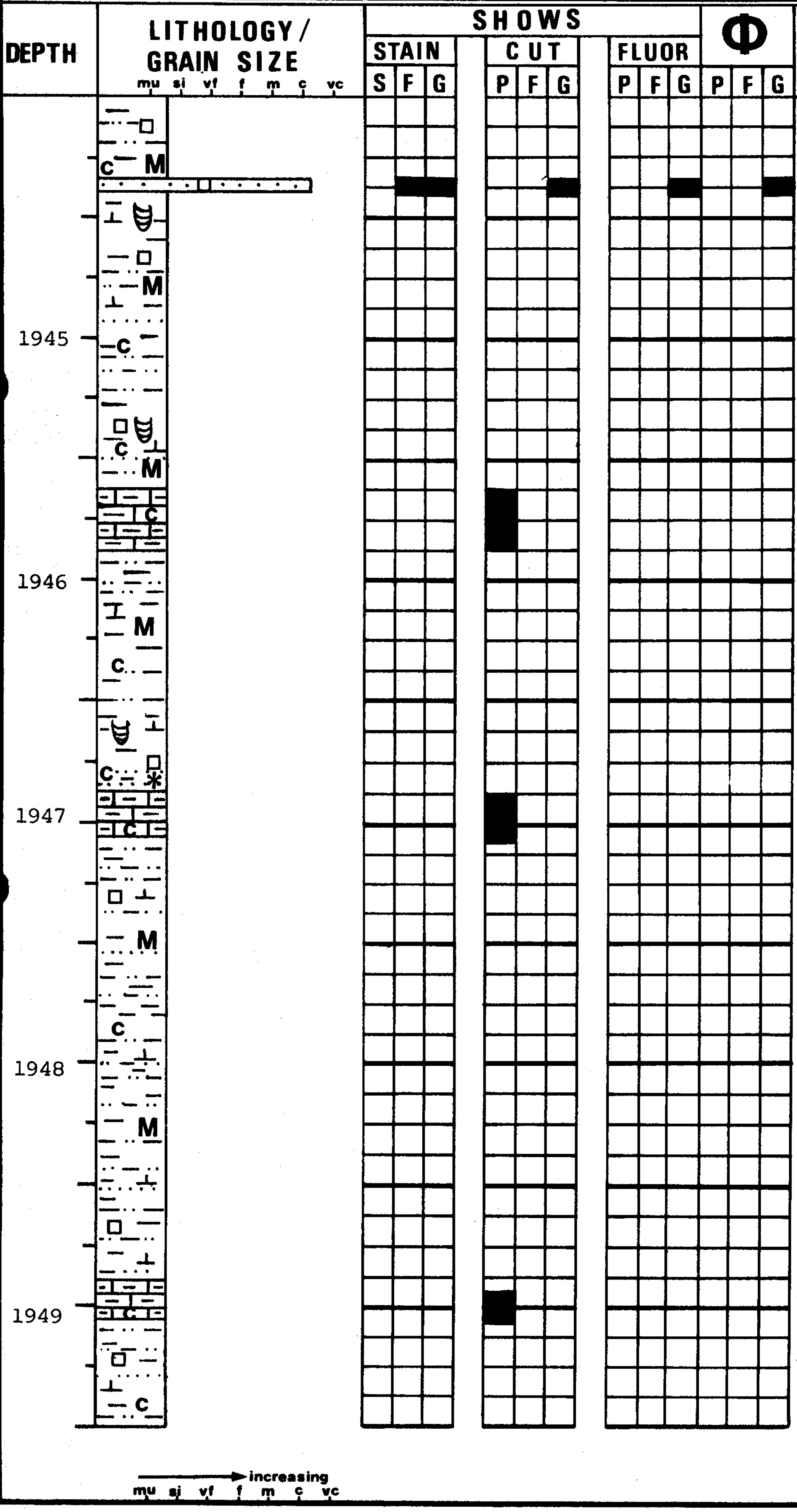
statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 12 | INTERVAL from 1938,7 to 1951,1 | CORED 12,4 | REC 12,4 | 100 %

FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 26 July 78



LITHOLOGIC DESCRIPTION

sandstone, light brown, coarse - very coarse, occasional medium grained, subangular-subrounded, friable, well sorted, slightly calcareous, pyritic

shale, medium - dark grey, very silty, slightly sandy, hard, calcareous, pyritic, micromicaceous, fissile, coal fragments, occ burrows

limestone, medium grey, very hard, argillaceous coal fragments

shale, black, firm-hard silty, occ sandy, micaceous, pyritic, coal fragments, occasional glauconitic

limestone a/a

shale a/a

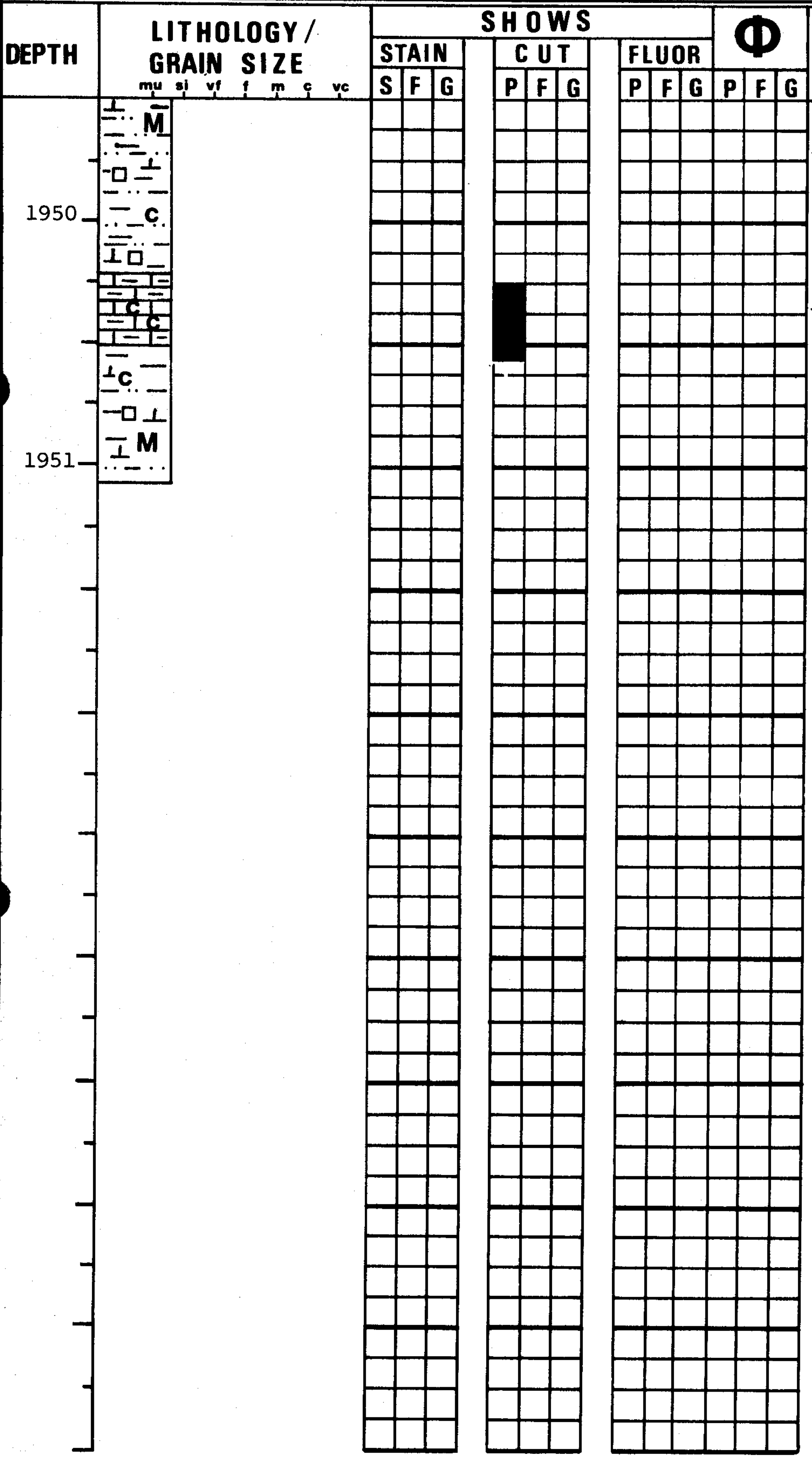
MISC.

no fluor
very weak
streaming
light
bluish
cut in
limestone

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA
CORE NO. 12 | INTERVAL from 1938,7 to 1951,1 | CORED 12,4 m | REC 12,4 m | 100 %
FORM. BRENT | GEOLOGIST KRÆMER/ELVSBORG | DATE 26 July 78



LITHOLOGIC DESCRIPTION	MISC.
shale a/a	
	no fluor very weak streaming light bluish cut in lime- stone
limestone a/a	

increasing →
mu si vf f m c vc

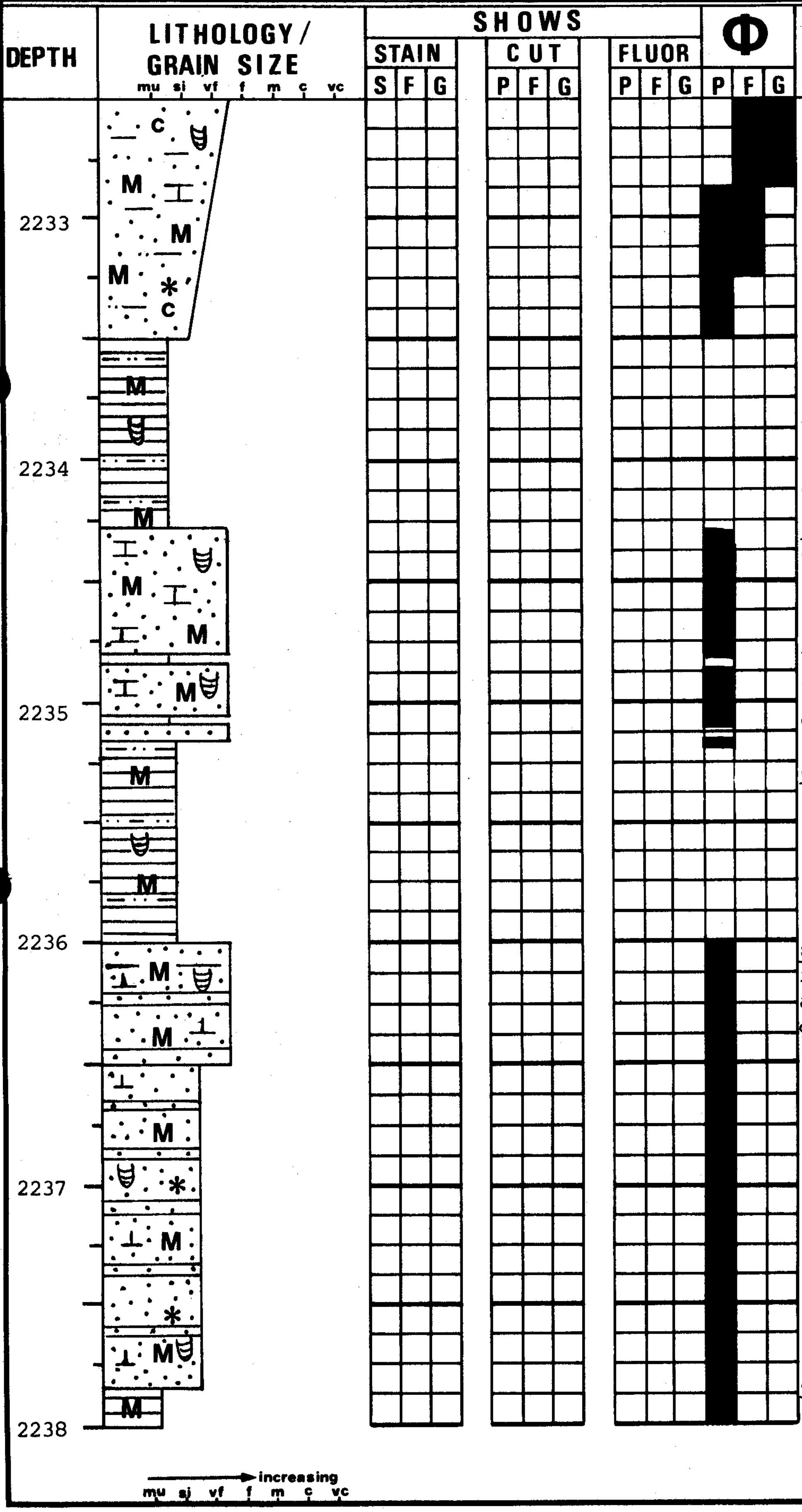
statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA

CORE NO. 13 **INTERVAL from** 2232,5 **to** 2250,5 m **CORED** 18,0 m **REC** 12,0 m 67 %

FORM. DUNLIN **GEOLOGIST** SYRSTAD/EVENSEN **DATE** 10 Aug. 78



LITHOLOGIC DESCRIPTION

MISC.

sandstone, light grey -grey quartz, very fine - medium, loose, subangular - subrounded, silty, argillaceous, very micaceous, occasional calcite cementaion, occasional glauconite and coal fragments, occasional burrows

no shows

clay, grey - dark grey, silty, sticky, slightly calcareous, micaceous, occasional burrows

sandstone, light grey-grey quartz, very fine - fine grained, hard, subangular - subrounded silty, argillaceous, very micaceous, calcite cemented

occ burrows

clay a/a

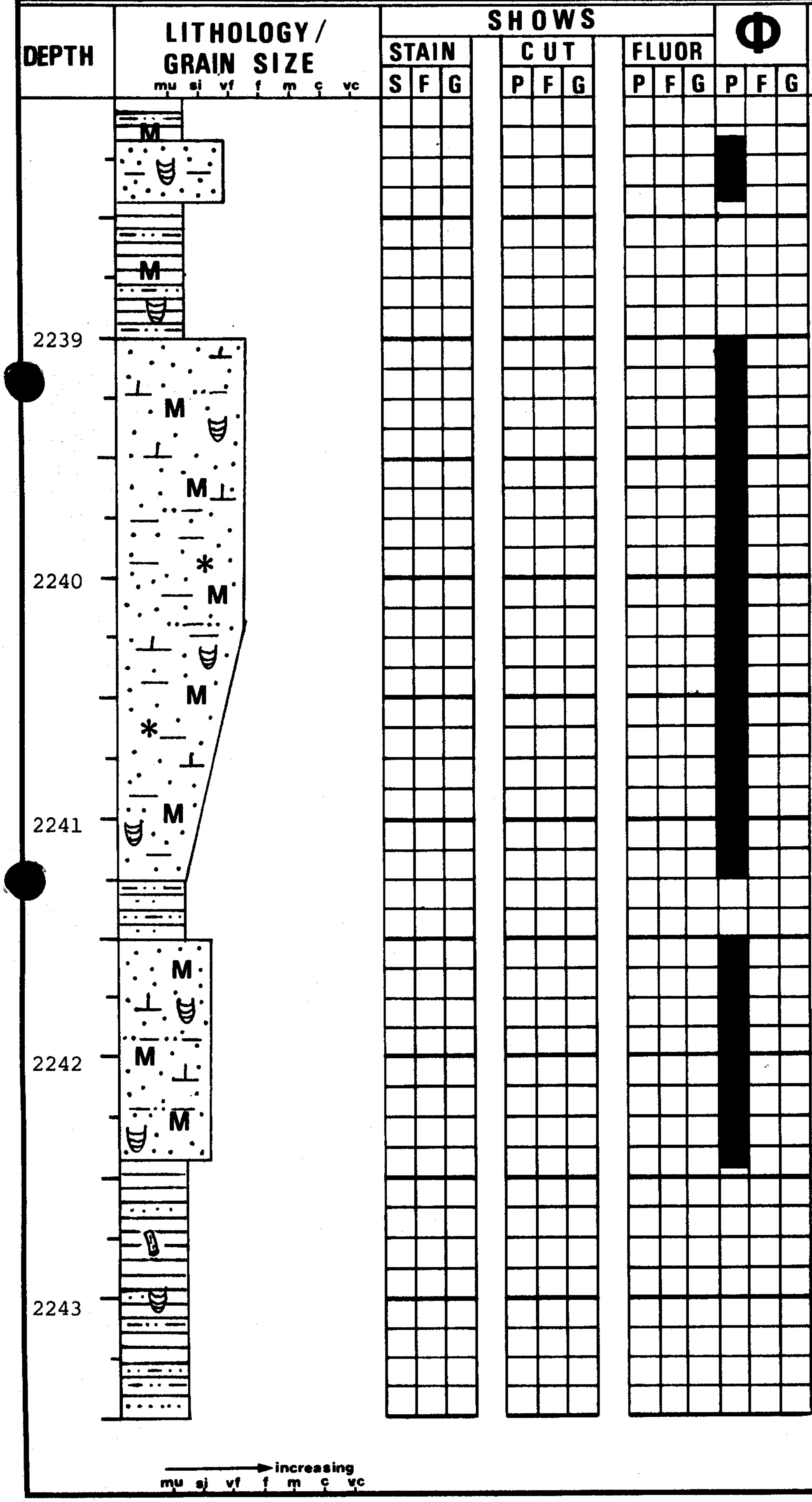
sandstone a/a interbedded with clay a/a, occasional glauconitic

clay a/a

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT **WELL NO.** 34/10-1 **AREA** NORTH SEA
CORE NO. 13 **INTERVAL from** 2232,5 **to** 2250,5 m **CORED** 18,0 **REC** 12,0 67 %
FORM. DUNLIN **GEOLOGIST** SYRSTAD/EVENSEN **DATE** 10 Aug. 78



LITHOLOGIC DESCRIPTION

clay, grey - dark grey, silty, sticky, slightly calcareous, micaceous

occ burrows

sandstone, light grey - grey quartz, very fine - fine grained, subangular, silty, hard, slightly calcareous, very micaceous, occasional glauconite

occ burrows

sandstone a/a

sandstone, fine, very silty, else a/a

clay, occasional sandy occasional wood fragments, becoming more silty downwards

MISC.

no shows

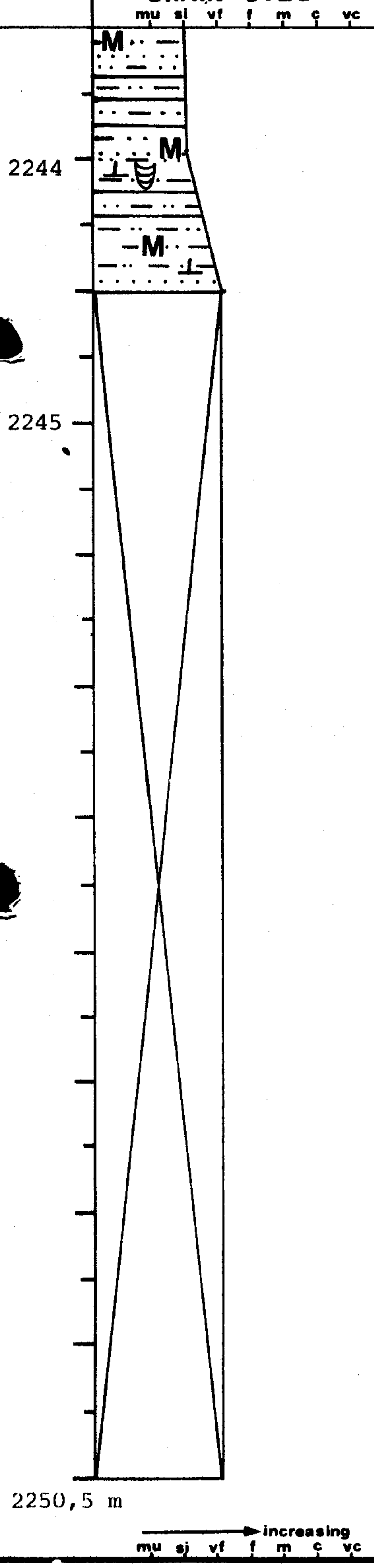
statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD WILDCAT | WELL NO. 34/10-1 | AREA NORTH SEA

CORE NO. 13 | INTERVAL from 2232,5 to 2250,5 | CORED 18,0 m | REC 12,0 m | 67 %

FORM. DUNLIN | GEOLOGIST SYRSTAD/EVENSEN | DATE 10 Aug. 78

DEPTH / LITHOLOGY / GRAIN SIZE	SHOWS: STAIN S F G	SHOWS: CUT P F G	SHOWS: FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
					siltstone, dark grey - grey, sandy, clayey in parts, calcareous very micaceous	no shows

III DRILLING REPORT

III 1. SUMMARY

34/10-1 was a wildcat well designed to test possible hydrocarbon accumulations in the Delta-closure in the north-eastern part of Block 34/10.

The primary objective was the Brent formation (Middle Jurassic).

The 30" casing was set after considerable difficulty in getting through a section of boulders.

The rest of the drilling and the coring went quite well apart from the influx of formation fluids at 1780m.
(See special report)

The turbine run in 6" hole was not successful, but this was probably due to the fact that it was pulled prematurely.

The riser should be run when opening up the 17 1/2" pilot-hole to 26" in this area due to shallow gas.

III 2. Drilling operation in intervals

36" hole, 163 - 214m

The well was spudded at 0800 hrs. 20. June 1978.
The final position was 61° 10' 48,84" N, 02° 12' 43,67" E.
The water depth was 138m.
The 36" hole was drilled with much difficulty due to boulders locking the 26" bit thus causing the bit to "walk" away from the vertical.
The 30" casing had to be run twice and was cemented on the second run with the shoe at 213.5m.

26" hole, 214 - 504m

This interval was first pilot-drilled by a 17 1/2" bit and logged.
Due to presence of gas the section was then underreamed to 26" thus allowing the riser and diverter system to be used in the event of a gas influx.
The 20" casing was run and cemented without problems at 488m.

17 1/2" hole, 504 - 1456m

The 20" shoe was drilled out and a leak-off test was attempted in the rathole at 489m without success.
After squeezing the shoe and then drilling to 507m a leak-off of 1.53 sp.gr. was obtained.
The 17 1/2" hole was then drilled to 1456m.

The formation was mainly clay/claystone with some sand throughout the Miocene and Oligocene and into the Eocene.

The average penetration rate was around 30 m/hr. in the Miocene/ Oligocene slowing down to around 20 m/hr in the Eocene at approx. 1300m. The sands were drilled at around 80 m/hr. The background gas was approx. 10-60 units and the pore pressure seemed constant down to approx. 1050m.

Below this the pore pressure seemed to be steadily increasing. The hole was then logged and 13 3/8" casing was run and cemented without problems to 1441m.

12 1/4" hole, 1456 - 1780m

The 13 3/8" casing shoe and 3m of new hole was drilled to 1459m, A leak-off of 1.86 sp.gr. was obtained at this point.
The hole was drilled to 1622m. The background gas had been steadily increasing to a max of 1267 units from bottoms up.
The mud weight was raised to 1.68 sp.gr.
A leak-off of 1.81 sp.gr. was obtained.
The hole was drilled to 1677m, the mud weight was raised to 1.72 sp.gr. and a logging run was made. After that a leak-off test was taken to 1.81 sp.gr.

The well was drilled to 1741m and another logging run was made.
The gas readings kept at a high level.
The well was then drilled to 1780m with a drilling break at 1779m.
After circulating bottoms up with max gas of 1823 units, the well started flowing and was shut in.
The influx was circulated out and the well stabilized. The mud weight was raised to 1.79 and another leak-off test of 1.81 was taken.
A cement plug was set from T.D. to 1697m and was drilled out to 1770m.

The 9 5/8" casing was run and cemented at 1765m. There was some pressure build up and flow on the annulus side, but the well became stable after some time.

8 1/2" hole, 1780 - 1970m

The cement and casing shoe were drilled out and coring started from 1782m.

Twelve cores were taken down to 1947m. The recovery was poor on the first cores due to unconsolidated sands, but improved to 100% as the sand became more consolidated with depth.

The hole was then reamed/drilled to 1970m and logged.

The 7" liner was set at 1968m and cemented.

6" hole, 1970 - 2462m

The shoe and 5m of new formation was drilled and a leak-off of 2.34 sp.gr. obtained.

The hole was drilled into the Statfjord formation to 2232m and one core was taken.

A turbine was run from 2250-2257m, but was pulled due to poor penetration rate.

The hole was then drilled with conventional BHA into the Triassic to a T.D. of 2462m.

The hole was then logged and tested and subsequently plugged back and permanently abandoned.

III 3. EXTRACT OF DAILY ACTIVITIES 34/10-1

17.6.78	Under tow to location.
18.6.	Under tow to location.
19.6.	Arrive location - drop anchors - made up 36" bha.
20.6.	Drill 36" hole to 179m, ream and wash.
21.6.	Wash and ream, rih 26" bit no 2, drill 26" hole to 214m. Rih w/36" H.O. open 26" hole to 36".
22.6.	Spud hole, pooh, run 30" csg, problems, pull csg, ream hole, run 30" csg.
23.6.	Land 30" csg at 214m, cement, wash wellhead, rih w/26" bit, drill cmt., run riser.
24.6.	Rih w/17½"bha, test diverter, drill 17½" hole to 491m, wiper trip, pooh, logging ISF/SONIC/GR.
25.6.	Rih, drill 17½" hole to 504m, pooh, rih w/26" underreamer, underream to 475m.
26.6	Underream to 504m, circ., pooh, pull riser. Rih w/26" bit, displ. hole, pooh, run 20" csg.
27.6.	Run and cement 20" csg, wash wellhead, jump divers, test and run BOP on riser.
28.6.	Test BOP, pull LMRP. Change seal rings, run LMRP, test BOP - ok. Rih w/17½" bha.
29.6.	Wash down and drill cement, circ., FIT, pooh, rih w/open ended DP, squeeze, cement.
30.6.	Pooh, WOC, rih w/bit no 5. Drill cmt + 3m new hole, FIT - ok. Drill 17½" hole to 821m.
1.7.	Drill 17½" hole to 1308m.
2.7.	Drill 17½" hole to 1346m. Pooh, pick up 3x8" DC. Rih, drill to 1456m, circ.
3.7.	Wiper trip, circ, pooh, logging, rih w/bit no 6RR.
4.7.	Circ, wiper trip, circ, pooh run 13 3/8" csg to 1441m. Circ.
5.7.	Cmt. csg, wash wellhead and BOP, test BOP, made up 12 1/4" bha. Rih.
6.7.	Change hose on compensator, drill cmt, test csg, FIT. Circ, raise MW to 1.49. Drill 12 1/4" hole to 1524m.
7.7.	Raise MW to 1.62, WO baryte, wiper trip, WO baryte, drill 12 1/4" hole to 1536m.
8.7.	Drill to 1662m, raise MW to 1.68, wiper trip, circ, wiper trip. Circ., FIT, drill to 1635m.
9.7.	Drill to 1660m, circ, raise MW to 1.70, wiper trip, circ. Wiper trip, circ, pooh, run log.
10.7.	Rih, circ, wiper trip, circ, wiper trip. FIT, drill to 1701m. Circ, drill to 1741m, circ wiper trip.

11.7.	Circ, pooh, logging ISF/SONIC/FDC/CNL-RFT-WST. Rih w/bit no 9.
12.7.	Drill to 1780m, check flow - ok. Circ, well flowing, shut in, hang off, start kill, lose return, shut in, pump to well on DP side.
13.7.	Open ram, circ, well static, install kelly, circ, wiper trip, circ.
14.7.	Wiper trip, circ, wiper trip, circ. cond mud, wiper trip, circ, wiper trip, circ, observe well - ok.
15.7.	3 x wiper trip, circ. & cond. mud, pooh, rih w/open ended DP, circ.
16.7.	Pump cement plug, pooh, rih w/ bit no 9, drill cmt, circ, wiper trip.
17.7.	Circ, wiper trip, circ, pooh, run and land 9 5/8" csg at 1765m, WOC, oberve well.
18.7.	Observe well, static, run temp. log, test BOP, lay down 12 1/4" bha, rih w/8½"bha, drill cmt.
19.7.	Drill cmt, pooh, rih. Core no 1 to 1791m, pooh, rec.45%, rih.
20.7.	Core no 2 to 1802m. Pooh, rec. 16%, rih, core no 3 to 1819m. Pooh, rec. 78%.
21.7.	Rih, core no 4 to 1835m. Pooh, rec. 100%, rih, core no 5 to 1853m. Pooh.
22.7.	Rec. 100%, rih, core no 6 to 1865m. Pooh, rec 76%, rih, circ.
23.7.	Core no 7 to 1875m. Pooh, rec. 87%, rih, core no 8 to 1893m. Pooh, rec 79%, rih, circ.
24.7.	Core no 9 to 1911m, pooh, rec 100%, rih, core no 10 to 1923m, pooh, rec. 97%, rih.
25.7.	Core no 11 to 1937m. Pooh, rec.100%, test BOP, rih, circ.
26.7.	Core no 12 to 1947m. Pooh, rec.100%, rih w/bit no.12, ream. Drill to 1970m, Pooh, logging.
27.7.	Run logs ISF/SONIC-FNC/CNL-CBL/GR-LSS/GR-HDT-RFT
28.7.	Log DLL/SRS/GR-CST, rih, circ., wiper trip. Pooh, run 7" liner.
29.7.	Run and land liner at 1968m. Cem., rih, test liner, pooh, rih w/open ended DP to 1671m. Cementing.
30.7.	Circ., pooh, rih, test csg, pooh, rih w/bridge plug, pooh, pull riser, change rams on BOP.
31.7.	Change to 3½ piperams on BOP, jump divers, wellhead - ok.
1.8.	Test BOP, repairs, run BOP, rih w/3½" DP.
2.8.	Test BOP. rih, retrieve bridge plug, pooh, lay down 5" DP, 6½" DC, rih.
3.8.	Drill cmt, pooh, change bit, rih, drill cmt.
4.8.	Circ, pooh, rih w/scraper, pooh, test csg, rih w/RTTS packer, test csg.

5.8.	Pooh w/RTTS, rih w/bit 16, drill cmt, rih to 1975m, FIT, pooh, rih w/new bha, drill to 1979m.
6.8.	Drill 6" hole to 2001m, circ, pooh, rih w/new bit, drill to 2075m, circ, drill to 2085m.
7.8.	Drill to 2125m, pooh, rih w/new bit, drill 6" hole to 2136m.
8.8.	Drill to 2190m. Pooh, rih w/new bit, drill to 2232m, circ, for sample.
9.8.	Pooh, rih w/core barr., core no 13 to 2250m, pooh, rec.67%. Rih w/turbine assy.
10.8.	Circ. drill to 2257m, pooh, lay down turbine, rih w/new bit. Drill to 2320m.
11.8.	Drill to 2324m, pooh, change bit, rih, drill to 2361m, pooh. Rih w/new bit, drill to 2364m.
12.8.	Drill to 2407m, circ, pooh, H2S check negative.
13.8.	Test BOP, rih w/new bit, drill to 2242m.
14.8.	Drill to 2462m, circ, wiper trip, circ, pooh, run log ISF/SONIC/G.RAY/FDC/CLN.
15.8.	Run log NGS/CBL. Rih, ream, wash and circ, wiper trip, pooh.
16.8.	Run log MLL/HDT/RFT, rih, ream, wash, wiper trip, pooh.
17.8.	Run log SSL/SWC. Rih w/open ended DP. Set cmt plugs, pooh.
18.8.	Rih, drill cmt to 1960m, pooh, set bridge plug at 1951m. Rih, circ.
19.8.	Raise MW to 1.83, pooh, test BOP, perforate at 1935m, rih w/test assy.
20.8.	Rih w/test string, open APR test valve, run press. recorder flow period, shut in, second flow period.
21.8.	Flow well, shut in, open lubricator, rih w/test sampler. Open well, kill well w/samples inside.
22.8.	Pooh w/SST, rih w/junk mill to 1932m. Pooh, rih w/packer at 1927m. Rih w/stinger, cement.
23.8.	Pooh, perforate at 1844m, rih w/test string, test same - ok. Flow 1 and 2 on test 2.
24.8.	Catch bottom hole samples, flow no 3, plug burners, reverse circ.
25.8.	Circ, pooh w/test string, rihw/bit to 1926m, pooh, set retainer at 1835m. Squeeze cmt.
26.8.	Perforate at 1792m, rih w/test string, test same.
27.8.	Test string leaking, pooh, service valves, rih.
28.8.	Rih w/tubing, APR does not open, pooh w/test string, service BHA, rih w/3½" DP.
29.8.	Test test string - ok. Flow 1 and 2 on test 3, catch b.h. samples. Flow 3. w.o. daylight.

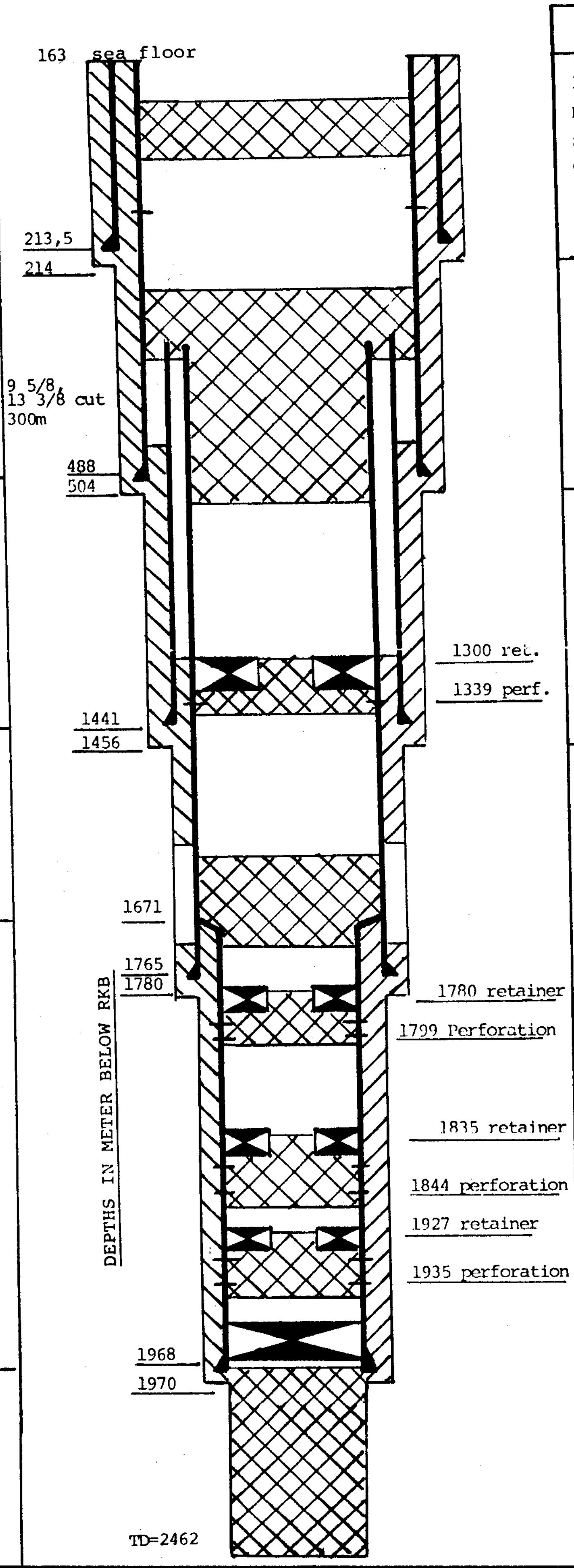
30.8.	Circ, pooh w/test string, rih w/bit, circ. Pooh, set packer at 1785m, rih w/stinger.
31.8.	Squeeze cmt, pooh, rih open ended, set plug, pooh, rih open ended, woc, test cmt. Ok.
1.9.	Perforate at 1339m, rih, set cmt plug at 1657m, set retainer at 1300m, squeeze cmt, Perf. at 460m.
2.9.	Perf. at 460m, 2 misruns, set packer at 452m, circ. Pooh w/packer.
3.9.	Lay down 3½" DP, cut 9 5/8" csg. at 503m, misrun, cut at 455m, pooh w/csg. cutter.
4.9.	Cut no 2 misrun, cut no 3 at 427m, misrun, cut no 4 at 300m - ok. Circ, retr. 9 5/8" and 13 3/8" csg.
5.9.	Lay down csg, rih to 510m, set cement plug, pooh, laying down DP and DC, perf. 20" csg. at 200m.
6.9.	Cement, cem. plug at 270m, displace riser, pull riser and BOP, rih w/charge, moving rig.
7.9.	Fire charge, pull 20" csg, rih w/charge, will not enter 30" csg. Rih w/26" bit.
8.9.	Ream to 7m below wellhead, run charge, move rig, fire charge. Retr. 30" csg w/guide base, jump divers - ok. Pull anchors.

III 4. WELLBORE SCHEMATIC

RKB-MSL: 25m

WATER DEPTH: 138m

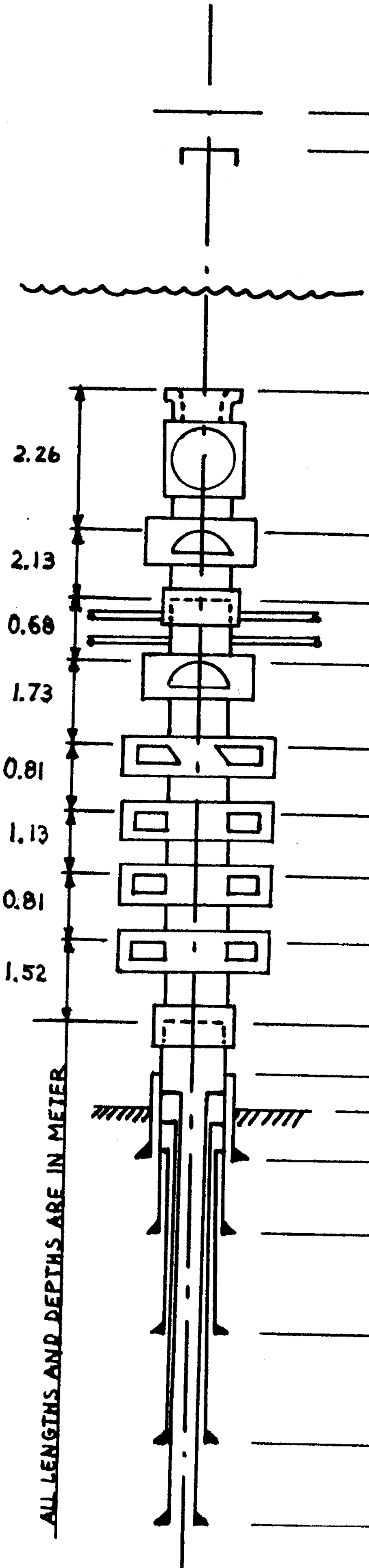
Holes	Casing
36"	30"
26"	20"
17½"	13 3/8"
12 1/4"	9 5/8"
8½"	7"
6"	



Casing cement	Plugs/Squeeze
16,5 tons "G" ^{W}/5301ts D75+15.3m^3 saltwater Sp.gr. 1.56 Tail: 13 tons "G" w/130 kg $CaCl_2$ + 5.59 m3 Saltwater. sp.gr.1.90	170 cement plug 185 squeezed 20 tons "G" in perf.at 200m
59.84 tons "G" ^{W}/55,6m^3 seawater + 19m^3 D75 Sp.gr.1.56 Tail: 13 tons "G" ^{W}/5.7m^3 Seawater sp.gr. 1.90	270 Cement plug 510
71.4 tons "G" ^{W}/65m^3 Seawater, 2.28m^3 D.75 Sp.gr. 1.56 Tail: 13 tons "G" ^{W}/5.7m^3 Seawater 260 ltr D80. Sp.gr. 1.90	Squeezed 20 tons "G" cement
21.85 tons "G" ^{W}/19.87 m^3 Seawater 700ltr D75 437 ltr D80 Tail: 17.07 tons "G" ^{W}/7.85 m^3 freshwater 375 ltr D80	1540 Cement plug 1710 Squeezed 150 sxs "G" 0,2gal/sx D-73 D-80
9.388 tons "G" w/3.83 m^3 freshwater 167 ltr D73 191 ltr D80 83 ltr D81 Sp.gr. 1.89	Squeezed 150 sxs"G" w/0,2 gal/sx D-73 D-80 Sp.gr.-1.89 Squeezed 150 sxs "G" Sp.gr. 1.89 Bridge plug 1951
	1960 Cement plug 2400

III 5.

ROSS RIG SUBSEA ASSEMBLY 34/10-1



0	RKB
3.81	DIVERTER RISER CONNECTOR
25	MEAN SEA LEVEL
149,88	BALL JOINT RISER CONNECTOR FLANGE
152,39	UPPER ANNULAR RUBBER TOP (CLOSED)
154,52	LOWER STACK ASSEMBLY TOP
155,2	LOWER ANNULAR RUBBER TOP (CLOSED)
156,93	SHEAR RAMS TOP
157,74	U.P. RAMS TOP
158,87	M.P. RAMS TOP
159,68	L.P. RAMS TOP
161,2	18 3/4" WELLHEAD TOP
161,7	30" HOUSING TOP
168	MUD LINE
213,5	30" SHOE
488	20" SHOE
1441	13 3/8" SHOE
1765	9 5/8" SHOE
1969	7" SHOE

III 6. FORMATION INTEGRITY TESTS

statoil

FORMASJONSSTYRKETEST

Dato: 30.6.78

Brønn nr.: 34/10-1 **Dybde:** Brønn: 507 Foring: 488 Test: 507

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25 Over sjøb.: 138

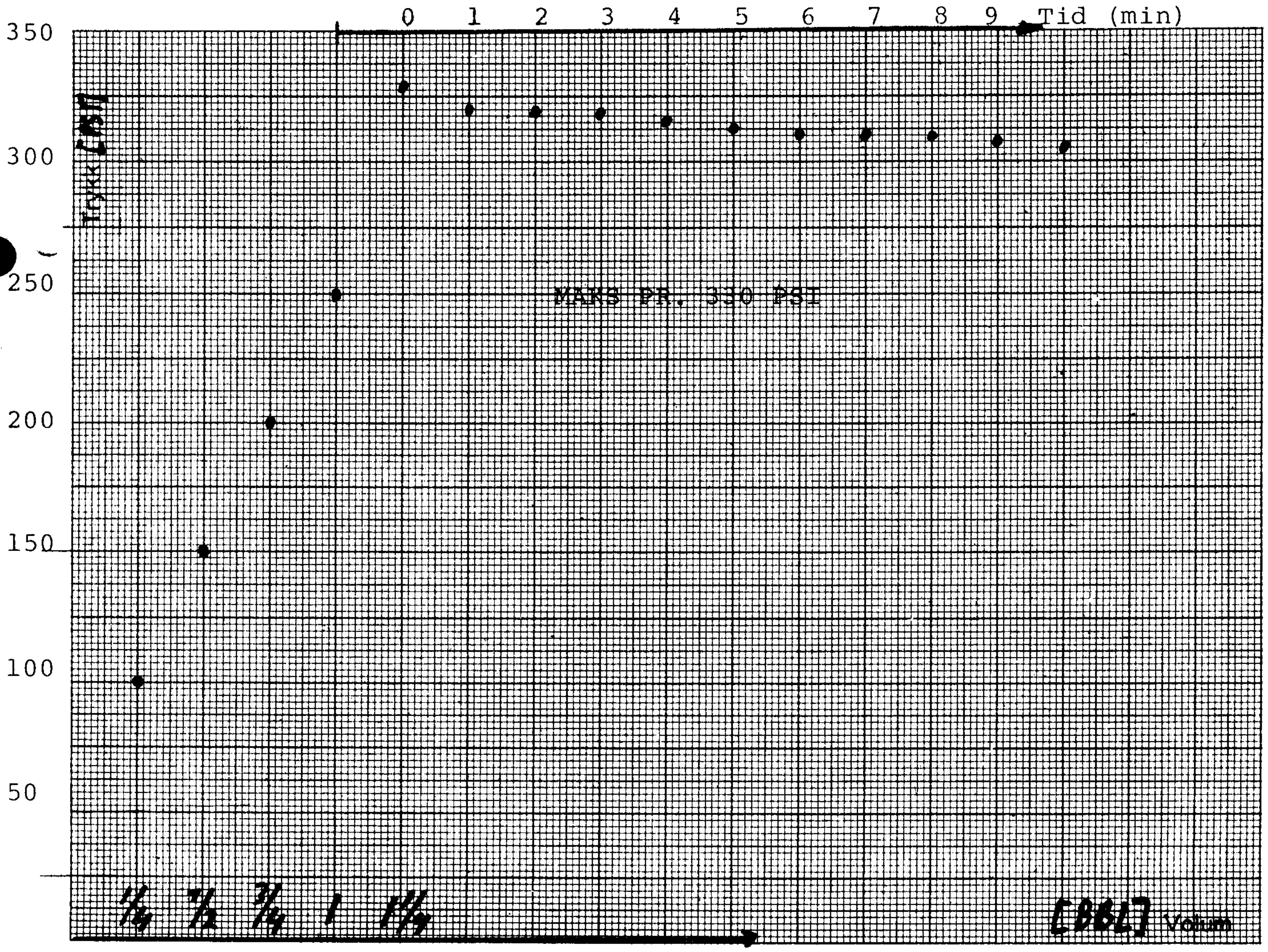
Foring: Diam.: 20" Tyngde: 94 Grad: 3-55 Maks. trykk:

Boreslam: Tetthet: 1.08 Vis: 48 P.V.: 15 Y.P.: 12 Filt: 11.8 Gel.: 6/24

Pumpe: Type: Cmt.unit Kapasitet: Vol./tidsenh.: Tilb.str.:

Antatt styrke: Obs. spr. trykk: Ekv. formasj. styrke: 1.53

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
		0	330	8	308	Pumped 1 1/4 bbl
		1	320	9	307	Bleed back 1 1/4 bbl
		2	318	10	305	
		3	317			
		4	315			
		5	312			
		6	310			Sign.: T.Gjedrem
		7	310			



statoil

FORMASJONSSTYRKETEST #1

Dato: 6 Juli 1978

Brønn nr.: 34/10-1 **Dybde:** Brønn: 1459 Foring: 1441 Test: 1459

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25 Over sjøb.: 163

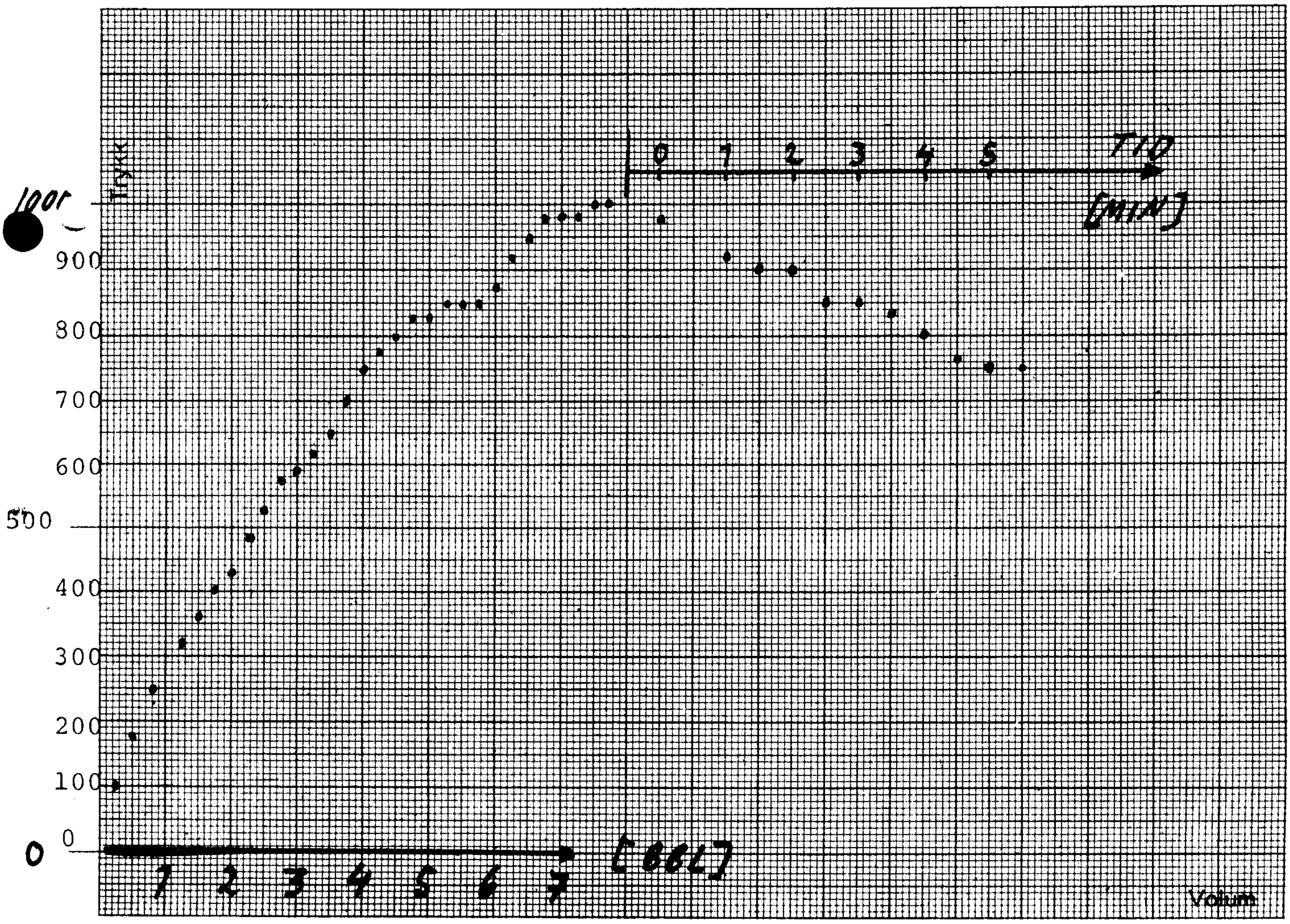
Foring: Diam.: ______ Tyngde: ______ Grad: ______ Maks. trykk: ______

Boreslam: Tetthet: 11.3 Vis: 45 P.V.: 23 Y.P.: 13 Filt: 12 Gel.: 4/18

Pumpe: Type: Dowell Kapasitet: ______ Vol./tidsenh.: 1/4bbl/min Tilb.str.: 3

Antatt styrke: ______ Obs. spr. trykk: Nei Ekv. formasj. styrke: ______

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
						Se test nr. 2
						som ble kjørt med
						1/2 bbl/min.
						Sign.: R.Thoresen



statoil

FORMASJONSSTYRKETEST #1

Dato: 6.Juli 1978

Brønn nr.: 34/10-1 **Dybde:** Brønn: 1459 Foring: 1441 Test: 1459

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25m Over sjøb.: 163

Foring: Diam.: 13 3/8 Tyngde: 68 og 72* Grad: K55og N80 Maks. trykk: 1100

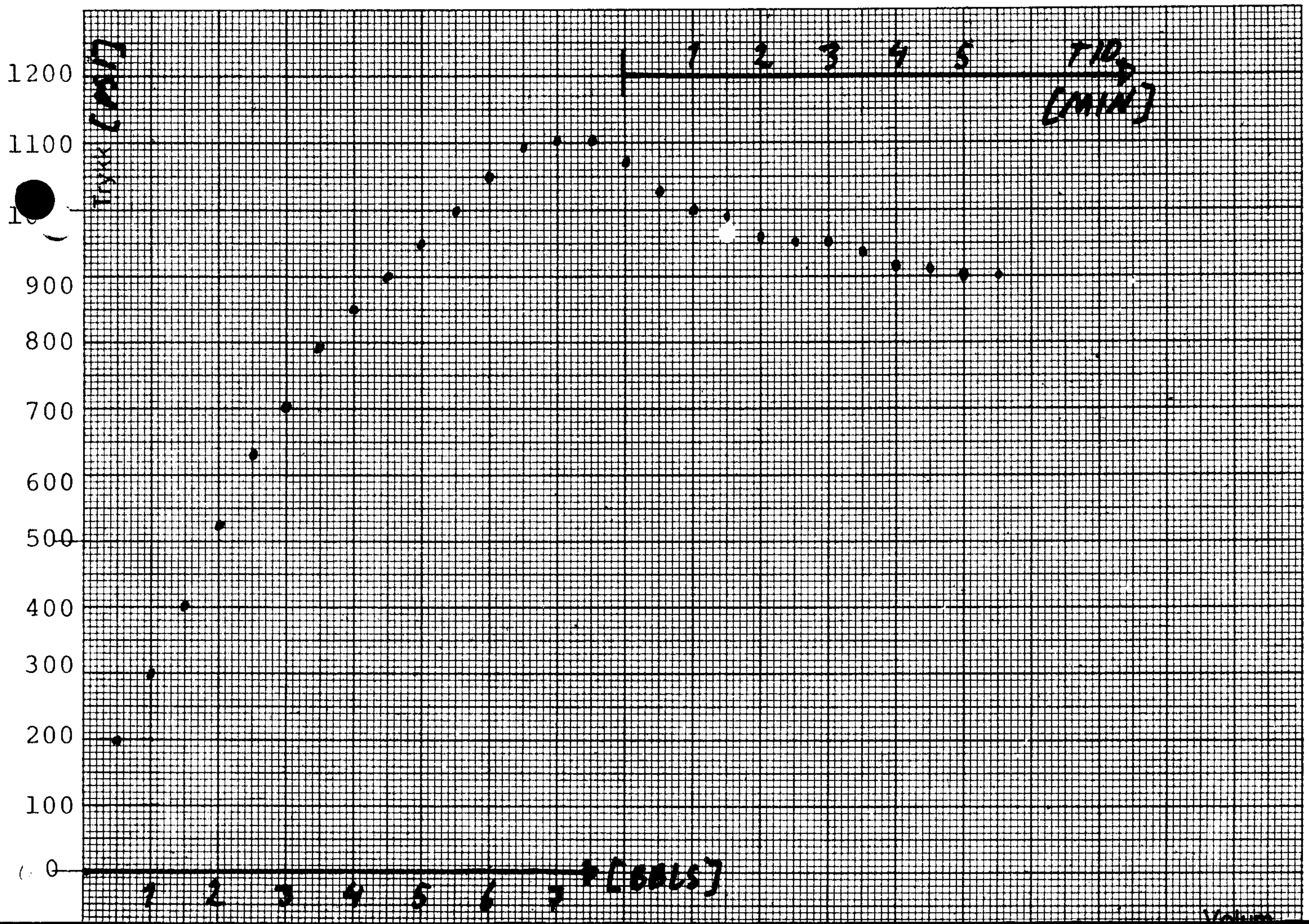
Boreslam: Tetthet: 11,3ppg Vis: 45 P.V.: 23 Y.P.: 13 Filt: 12 Gel.: 4/18

Pumpe: Type: Dowell Kapasitet: Vol./tidsenh.: 1/2bbl/min Tilb.str.: 4 1/2 bbl

Antatt styrke: Obs. spr. trykk: 1070 Ekv. formasj. styrke: 15.65 ppg

*se casingrapport

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
0.5	200	4.5	900	0 min	1070	
1.0	300	5.0	950	0.5 "	1020	
1.5	410	5.5	1000	1 "	1000	
2.0	530	6.0	1050	2 "	960	
2.5	630	6.5	1090	3 "	950	
3.0	700	7.0	1100	4 "	910	
3.5	790	7.5	1100	5 "	900	Sign.: R.Thoresen
4.0	850					



statoil

FORMASJONSSTYRKETEST

Dato: 9.7.78

Brønn nr.: 34/10-1 **Dybde:** Brønn: 1622m Foring: 1441 m Test: 1622m

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25m Over sjøb.: 163m

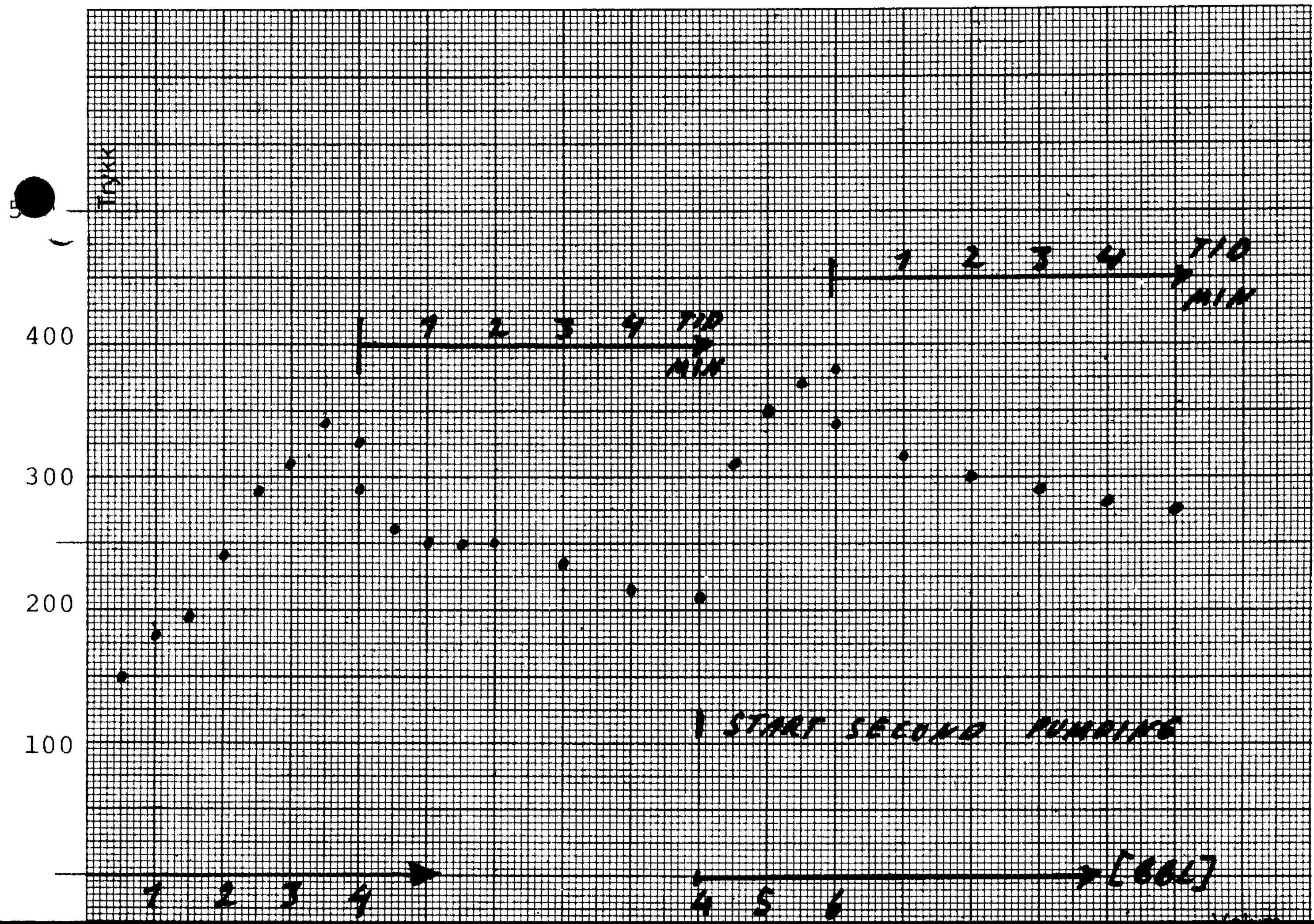
Foring: Diam.: 13 3/8 Tyngde: 68 og 72 Grad: N80 og K55 Maks. trykk:

Boreslam: Tetthet: 14 ppg Vis: 51 P.V.: 30 Y.P.: 16 Filt: 6.6 Gel.: 3/19

Pumpe: Type: Dowell Kapasitet: Vol./tidsenh.: 1/2bbl/min Tilb.str.: 4bbls

Antatt styrke: Obs. spr. trykk: Ekv. formasj. styrke: 15,1 ppg

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
0.5bbl	150 psi	0 min	290psi	4,5bbl	310 psi	4,0 min 280
1.0	180 psi	0.5"	260"	5.0 "	350 "	5.0 min 275
1.5	190 psi	1.0"	250	5.5 "	370 "	
2.0	240 psi	1.5"	250	6.0 "	380 "	
2.5	290 "	2.0"	250	0.0 min	340 "	
3.0	310 "	3.0"	235	1.0 "	315 "	
3.5	340 "	4.0"	215	2.0 "	300 "	Sign.: M.Grinrød
4.0	325 "	5.0"	210	3.0 "	290 "	



statoil

FORMASJONSSTYRKETEST

Dato: 10.7.78

Brønn nr.: 34/10-1 **Dybde:** Brønn: 1677 Foring: 1441 Test: 1677

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25 Over sjøb.: 163

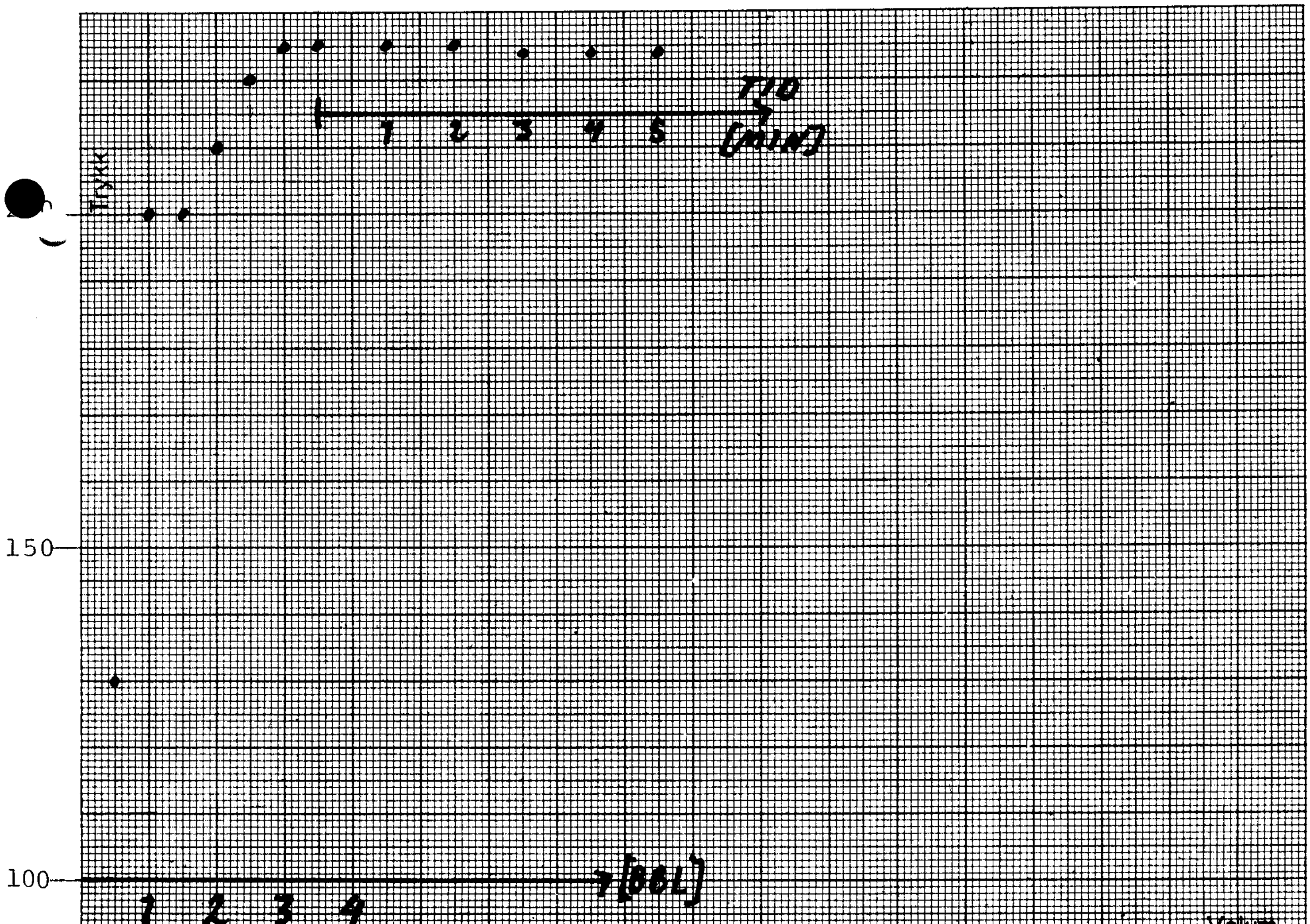
Foring: Diam.: 13 3/8" Tyngde: 68/72 Grad: N80/k55 Maks. trykk:

Boreslam: Tetthet: 14.4 Vis: 48 P.V.: 34 Y.P.: 17 Filt: 7.6 Gel.: 4/18

Pumpe: Type: Dowell Kapasitet: Vol./tidsenh.: 1/2bbl/min Tilb.str.: 1 1/4 bbl

Antatt styrke: Obs. spr. trykk: Ekv. formasj. styrke: 15.1 ppg at td

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
1/2 bbl	130 psi	0 min	225			
1.0 bbl	200 "	1 "	225			
1.5 "	200 "	2 "	225			
2.0 "	210 "	3 "	224			
2.5 "	220 "	4 "	224			
3.0 "	225 "	5 "	224			
3.5 "	225 "					Sign.:



statoil

FORMASJONSSTYRKETEST

Dato: 15.7.78

Brønn nr.: 34/10-1 **Dybde:** Brønn: 1780 Foring: 1441 Test:

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25 Over sjøb.: 163

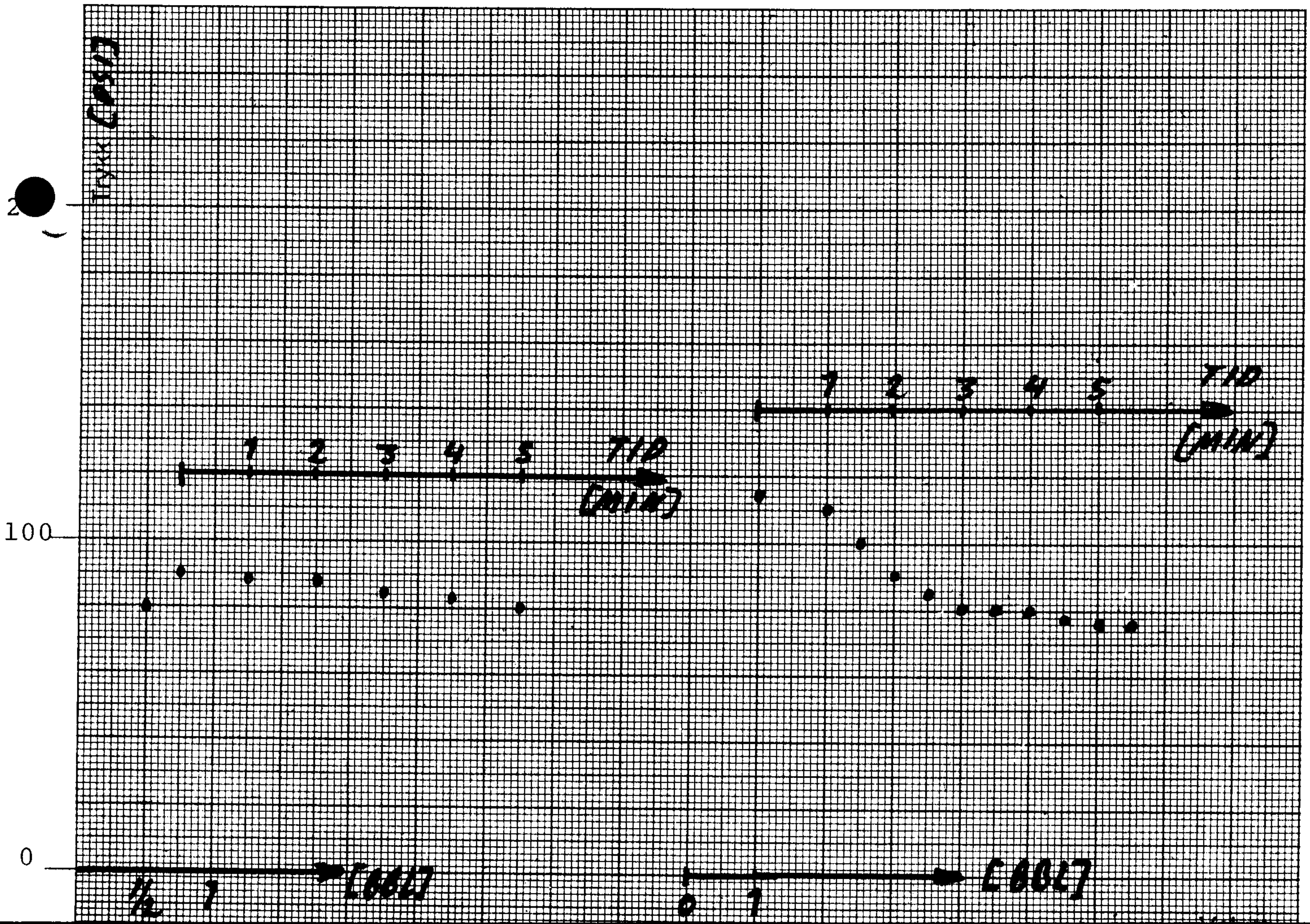
Foring: Diam.: 13 3/8" Tyngde: 68/72 Grad: N80/k55 Maks. trykk:

Boreslam: Tetthet: 14.9 Vis: P.V.: Y.P.: Filt: Gel.:

Pumpe: Type: Dowell Kapasitet: Vol./tidsenh.: 1/2bbl/min Tilb.str.: 1/8 bbl

Antatt styrke: 15,1+ppg Obs. spr. trykk: Ekv. formasj. styrke:

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
						Sign.: T.Gjedrem



statoil

FORMASJONSSTYRKETEST

Dato: 19.7.78

Brønn nr.: 34/10-1 **Dybde:** Brønn: 1770 Foring: 1765 Test: 1770

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25 Over sjøb.: 163

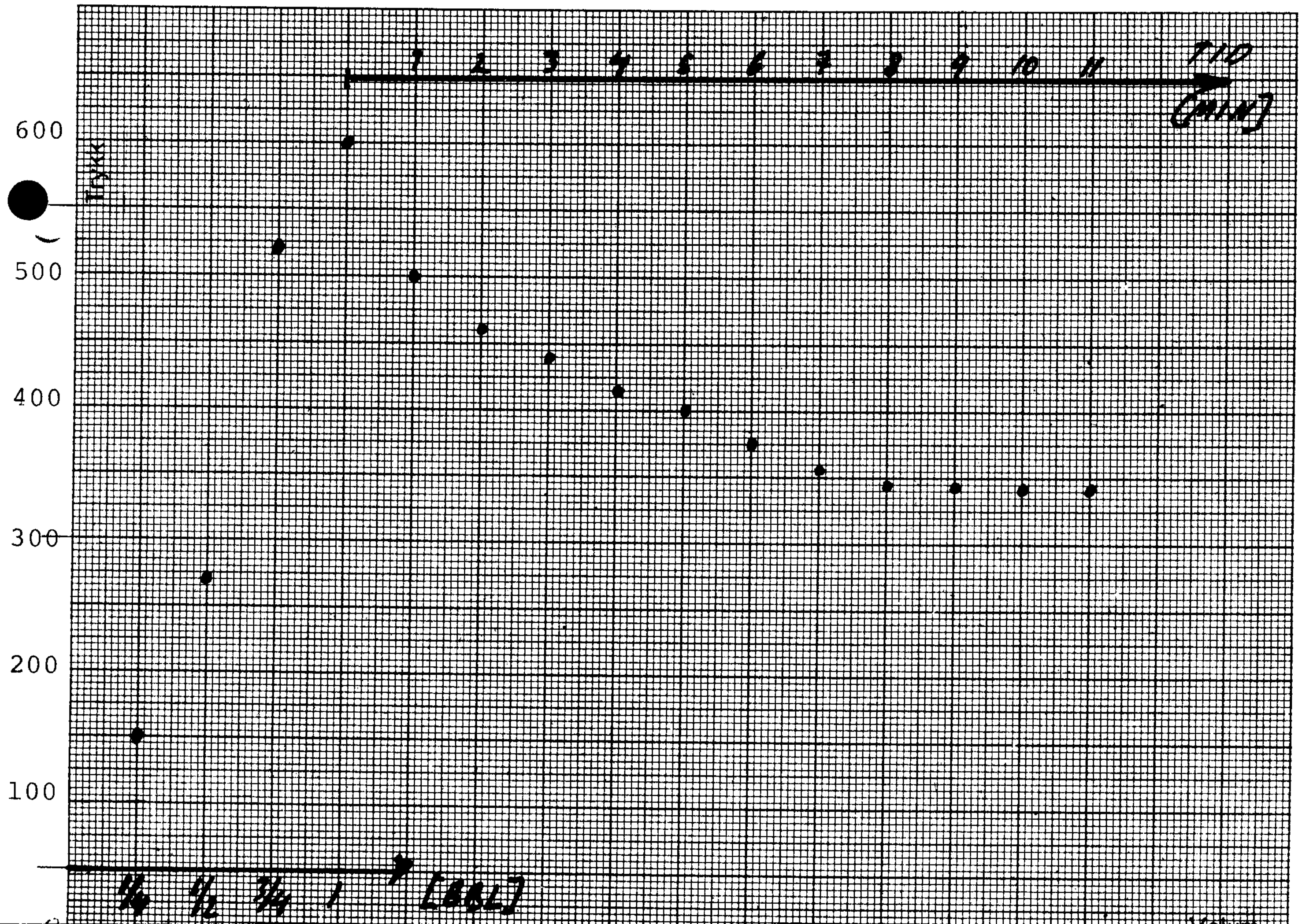
Foring: Diam.: 9 5/8" Tyngde: 47 Grad: N-80 Maks. trykk: 600 psi

Boreslam: Tetthet: 15,2 ppg Vis: 59 P.V.: 39 Y.P.: 11 Filt: 7,2 Gel.: 1/9

Pumpe: Type: Dowell Kapasitet: Vol./tidsenh.: 1/8bbl/min Tilb.str.: 1/2 bbl

Antatt styrke: Obs. spr. trykk: Ekv. formasj. styrke: 16,36 ppg

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
1/4 bbl	150					
1/2 bbl	270					
3/4 bbl	520					
1 "	600					
						Sign.:



statoil

FORMASJONSSTYRKETEST

Dato: 5/8-78

Brønn nr.: 34/10-1 **Dybde:** Brønn: 1973 Foring: 1969 Test: 1973

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25m Over sjøb.: 163m

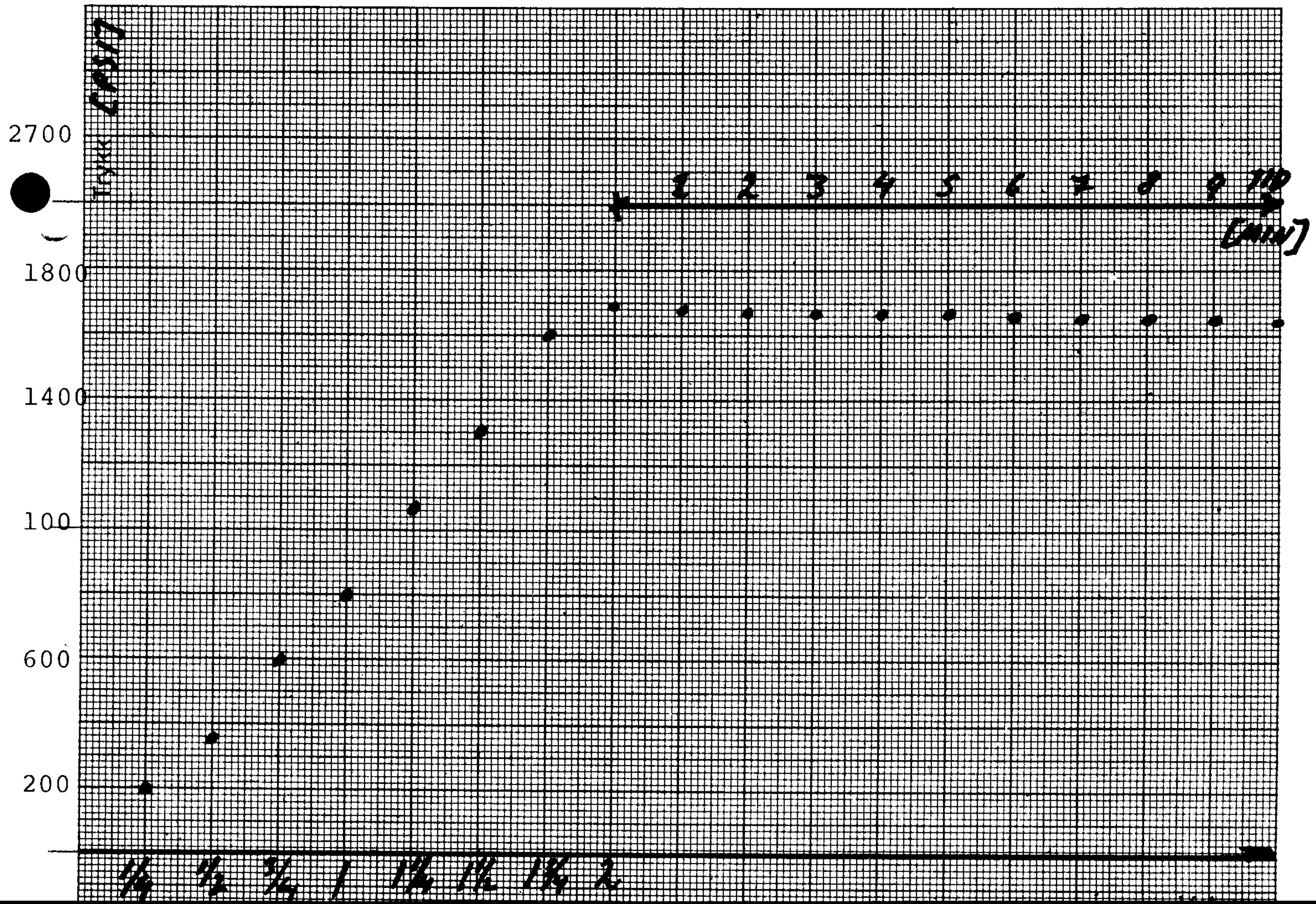
Foring: Diam.: 7" Tyngde: 29 Grad: N-80 Maks. trykk: 1690 psi

Boreslam: Tetthet: 14,7 Vis: 50 P.V.: 30 Y.P.: 13 Filt: 4,7 Gel.: 3/12

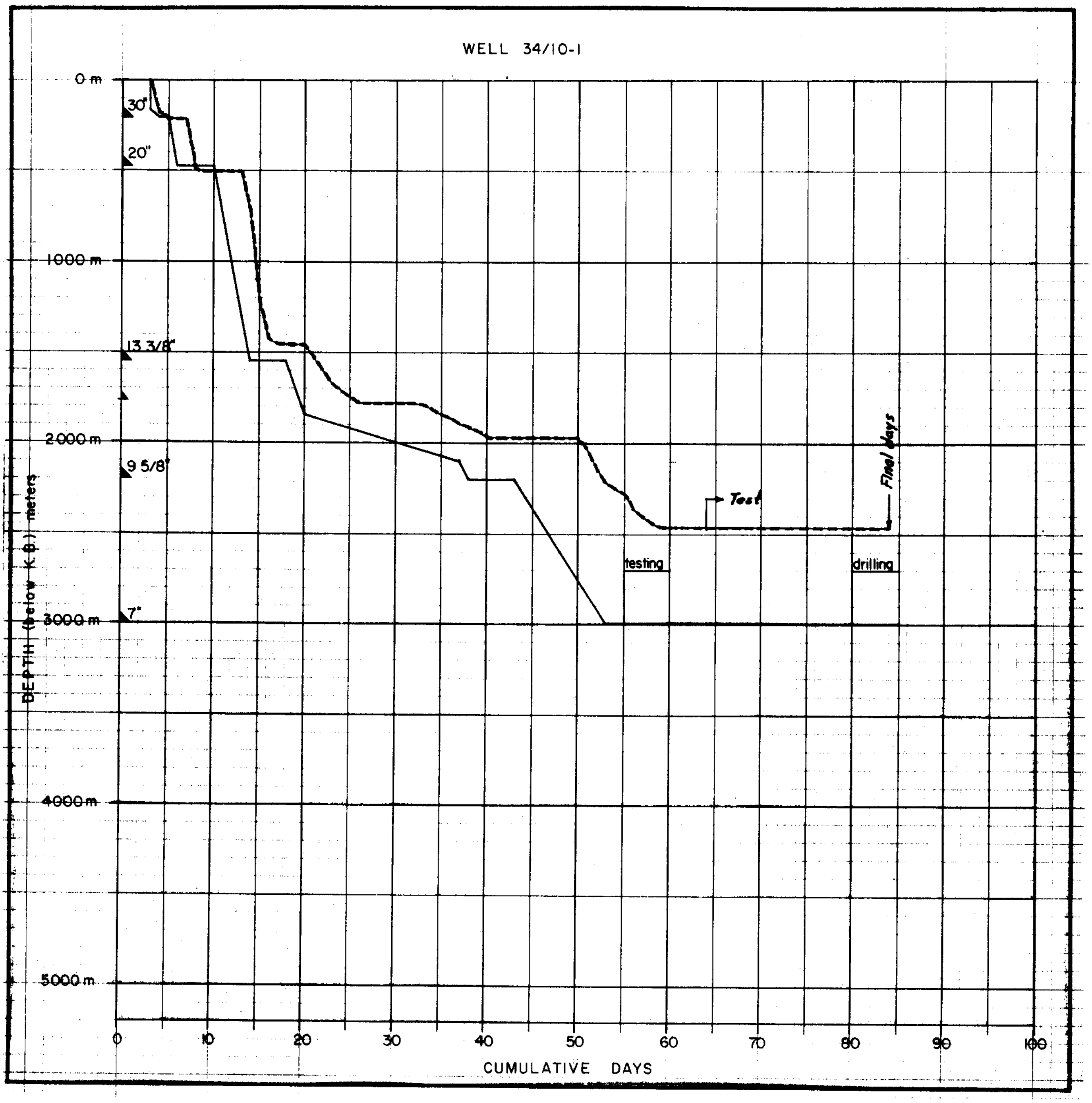
Pumpe: Type: Dowell Kapasitet: Vol./tidsenh.: 1/10bbl/min Tilb.str.: 1 3/4

Antatt styrke: Obs. spr. trykk: 1650 psi Ekv. formasj. styrke: 19,6 ppg

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
						Sign.: T. Gjedrem

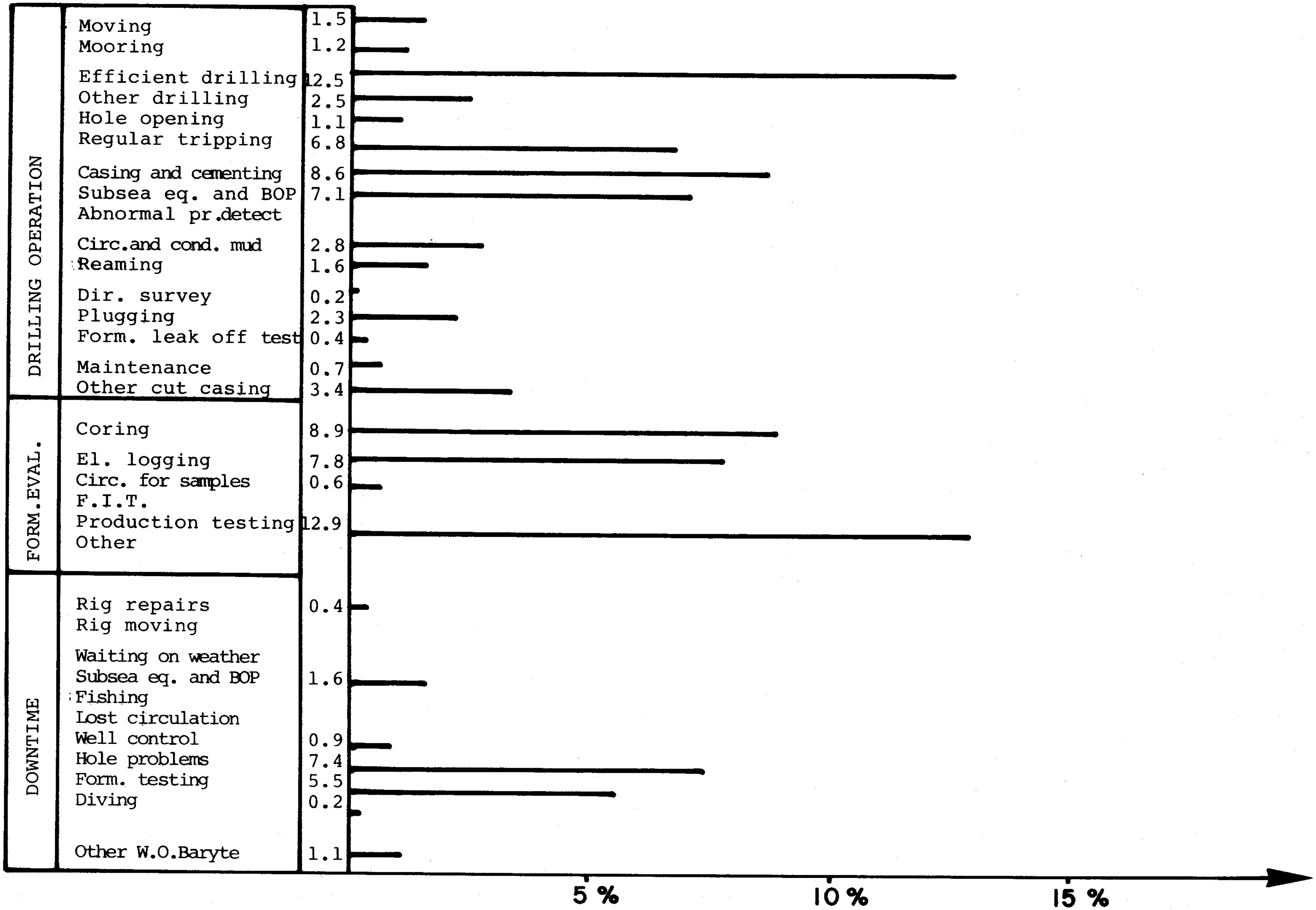


III 7. TIME VS. DEPTH CURVE

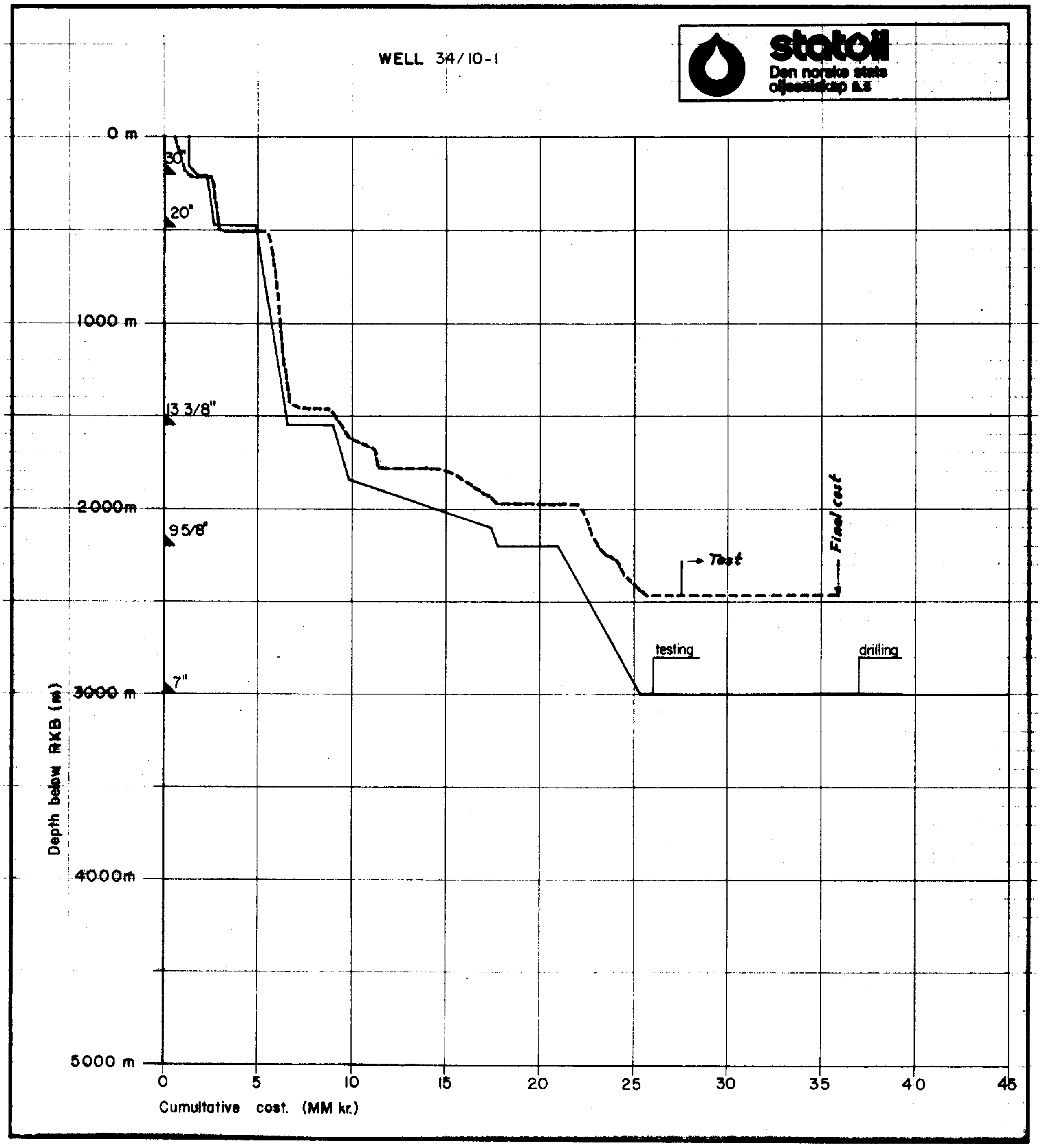


III 8. RIG TIME DISTRIBUTION WELL 34/10-1

Percent of total 1974 hours



III 9. COST VS. DEPTH CURVE



III 10. BIT RECORD

statoil

BORKRONEDATA

Brønn nr.: 34/10-1

Nr.	B. k. Nr.	Diam.	Type	Fabr.	Dyser 1/32"	V.p.b.	O.p.m.	Pumpe			Dybde ut	Frem-drift	Rot. tid	Total rot.tid	Bore-hast.	Tilstand			Anmerkninger
								Trykk	V.grad	V/t.						T	B	G	
	1	26"	OSC3A		3x20	5-20	60/100	76		3600	176	13	16		0.8	8	8		UNDER GAUGE 5" DP
	2	26"	TSC1C3		"	2-5	60/100	76		3800	214	38	5		7.6	2	3	1	SHANKS WORN
	3	26"	OSC3AJ		"	5-20	60/88	76		4000	215	1	½		2	2	2	1	REAM + DRILL CMT
	4	17½	OSC4AJ		3x18	5-20	20/80	180		3720	504	289	13½		21.4	6	5	1/8	
	5	"	OSC3AJ		"	10-30	115	180		3510	1346	842	45½		18.5	6	7	1	
	6	"	DT3		3x16 1x18	10-30	100	193		3510	1456	110	6½		17	4	4	1	
	7	"	X1G		3x15	10-35	110	207		2270	1677	221	20½		10.8	4	4	1	
	8	12 1/4	XV		"	12-18	110	207		2270	1742	65	8		8.1	2	2	1	
	9	"	XDV		3x16	15-30	110	207		2450	1780	38	5		7.6	4	3	1	
	10	"	XV		3x15	15-20	80	207		2060	1782	2	7½		0.3	3	2	5	
	11	8½	C22			12-30	110	35		515	1947	165	77		2.1				CORING
	12	8 15/32	X1G		3x15	30	90	207		1860	1970	23	3		7.7	3	2	1	
	13	8½	X1G		open	20	70	207		1216	1593	6	5		1.2	3	2	1	DRILL CMT
	14	"	X1G		3x12	40	60	207		1110	1671	78	7½		10.4	2	2	1	" "
	15	"	OWV		open	12	50	138		1110	1933	1	½		2	2	4	1	Drill flapper v +cmt.change to 3½"DP
	16	6	OWV		3x12	20	60	207		950	1975	42	5		8.4	5	5	1	Drill cmt+4m hole
	17	"	OWV		3x11	12-20	50-80	207		800	2001	26	8		3.2	2	5	1	
	18	"	J3		3x11	20	80	207		870	2125	124	19		6.5	7	7	1	
	19	"	J4		3x11			207		870	2190	65	15½		4.2	3	5	1	

statoil

BORKRONEDATA

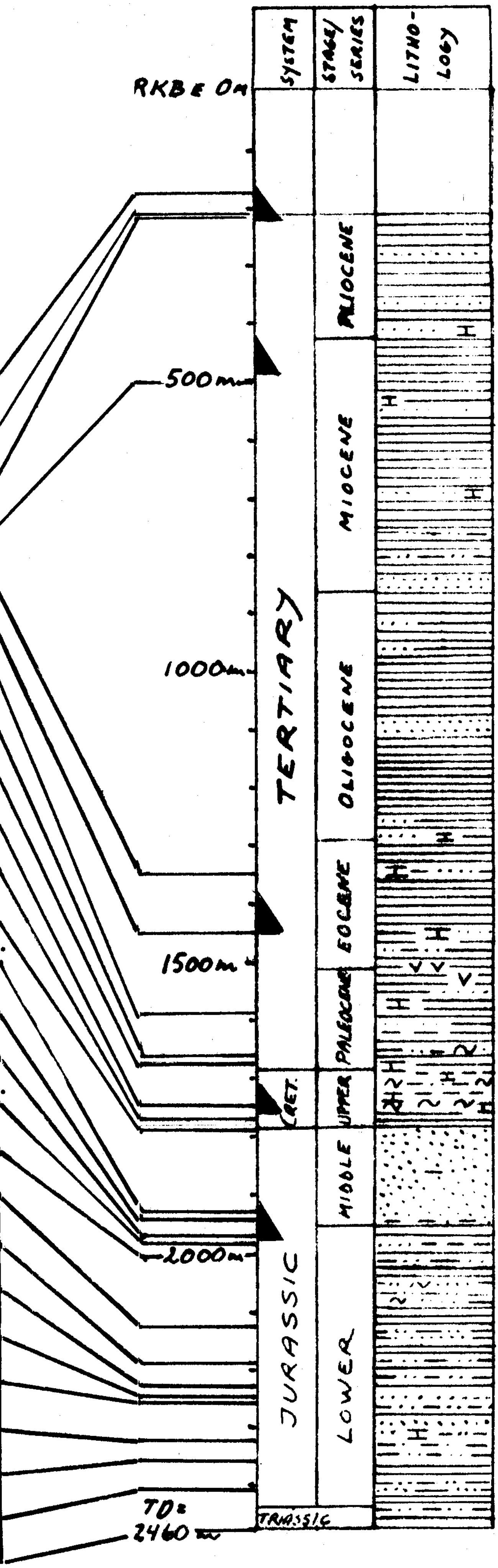
Brønn nr.: 34/10-1

Nr.	B. k. Nr.	Diam.	Type	Fabr.	Dyser 1/32"	V.p.b.	O.p.m.	Pumpe			Dybde ut	Frem-drift	Rot. tid	Total rot.tid	Bore-hast.	Tilstand			Anmerkninger
								Trykk	V.grad	V/t.						T	B	G	
	20	6"	OWV		3x11			207		870	2233	43	8		5.4	3	7	1	
	21	5 31/32	C18					100/ 104		450	2250	17	6½		2.6				CORING
	22	5 31/32	ACCST					250/ 290		800	2257	7	4½		1.5				TURBO AS NEW
	23	6"	J3		3x11			207		830	2324	67	11		6.1	7	5	1	
	24	"	J4		3x11			207		870	2361	37	9		4.1	5	5	1	
	25	"	J33		3x11			207		870	2408	47	21.5		2.2	2	5	1	
	26	"	J33		3x11			207		870	2462	54	24		2.25	2	5	1	Plus wiper trips

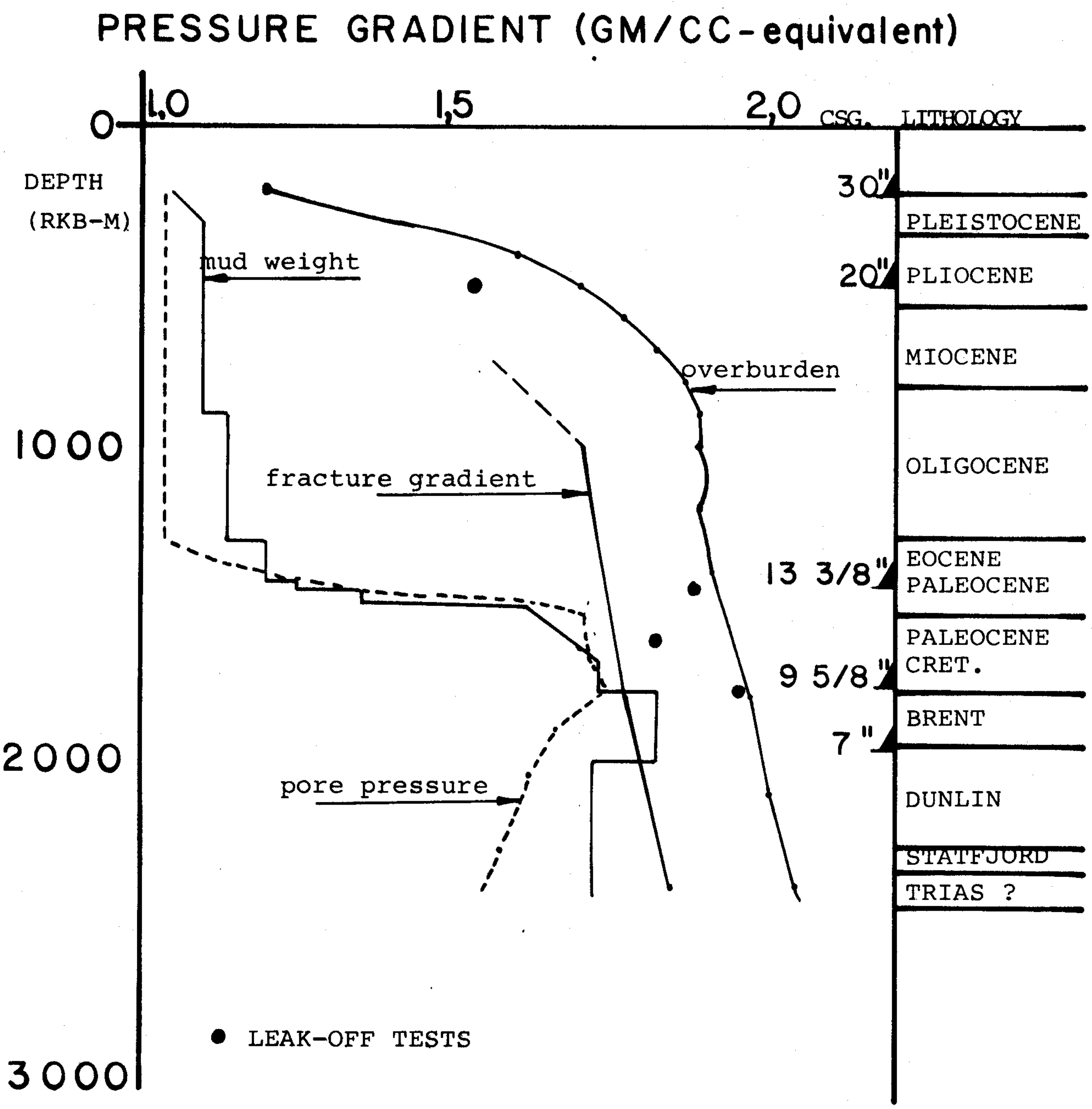
III 11.

BIT SEQUENCE AND LITH. COLUMN
WELL 34/10-1

Nr	Type	Dybde ut	Fremdrift	Rotasj. tid
1	OSC-3A	176	13	16
2	TSC IC3	214	38	5
3	OSC-3AJ	215	1	Drlg. cmt.
4	OSC-4AJ	504	289	13 ½
5	OSC-3AJ	1346	842	45 ½
6	DT-3	1456	110	6 ½
13	X1G	1593	6	Drlg. cmt
14	X1G	1671	78	Drlg. cmt
7	X1G	1677	221	20 ½
8	XV	1742	65	8
9	XDV	1780	38	5
10	XV	1782	2	7 ½
15	OWV	1933	1	Drlg. cmt.
11	C-22	1947	77	Coring
12	X16	1970	23	3
16	OWV	1975	42	Drlg. cmt.
17	OWV	2001	26	8
18	J3	2125	124	19
19	J4	2190	65	15½
20	OWV	2233	43	8
21	C18	2250	17	Coring
22	ACCST	2257	7	Coring
23	J3	2324	67	11
24	J4	2361	37	9
25	J33	2408	47	21 ½
26	J33	2462	54	24



III 12. PRESSURE FROFILES

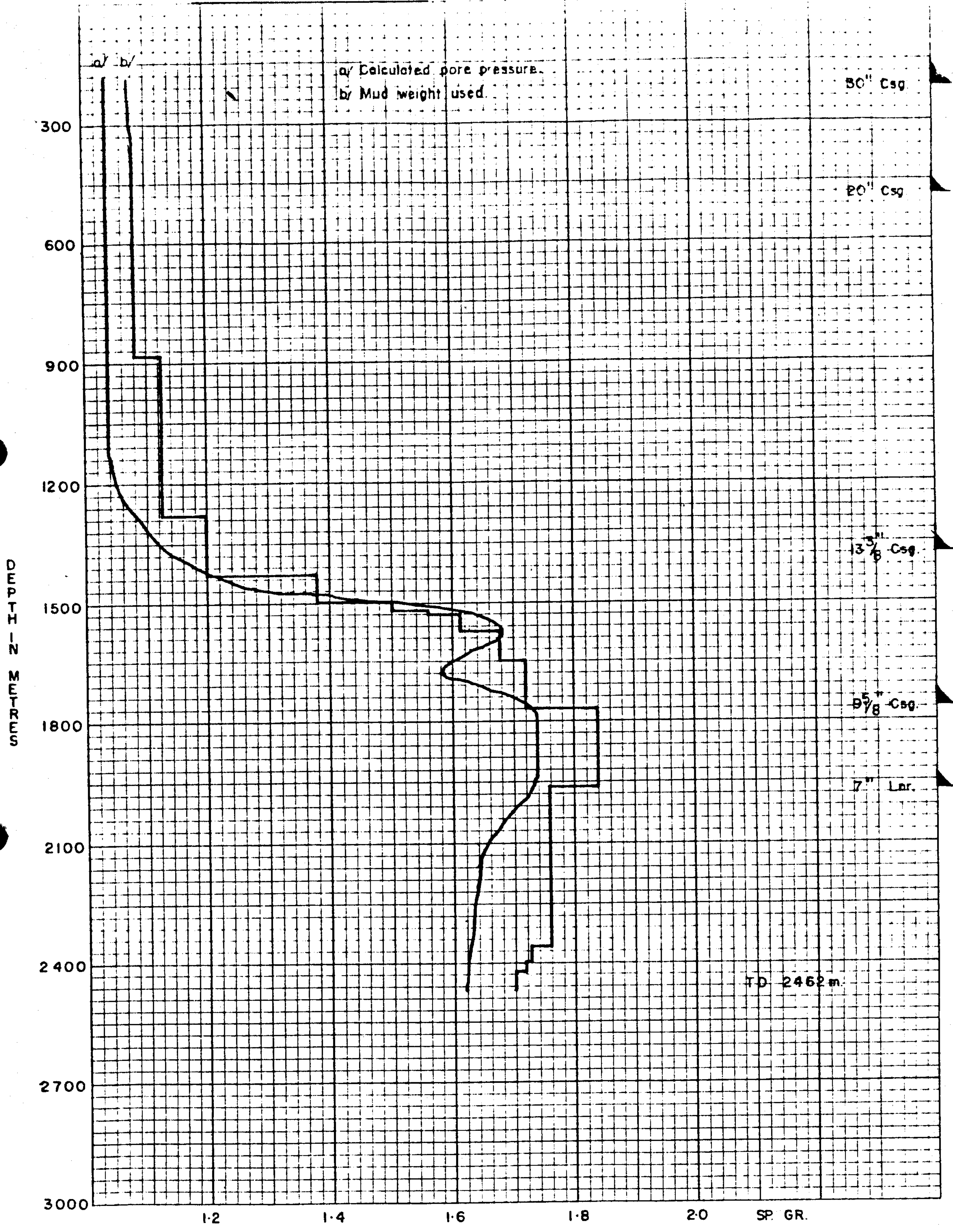


WELL 34/10-1

GRAPH SHOWS: PORE PRESSURE GRADIENT
FRACTURE GRADIENT (BIOT´s STRESS/STRAIN RELATIONSHIP)
OVERBURDEN GRADIENT (FROM FDC)
MUD WEIGHT
LEAK-OFF TESTS

JRa 21.2.79

PRESSURE PROFILE FROM ADT UNIT



III 13. DRILLING FLUID SUMMARY
ADDITIVES AND PROPERTIES

Magcobar
DRILLING FLUID SERVICES

DRESSER

WELL SUMMARY

Statoil's well 34/10-1 was spudded on June 30, 1978. The well was completed on September 7, 1978.

36" Hole Interval

A 26" hole was drilled to 214 meters. Drilling progressed slowly due apparently to the unconsolidated formations bridging into the well bore. High Viscosity mud was spotted to aleviate the problem. The 26" hole was the opened to 36". Prior to running the casing a high viscosity pill followed by a 10 ppg pill was circulated into the hole. The 30" casing was then set to 212 meters. Prehydrated bentonite floculated with line was utilized for this interval.

26" Hole Interval

A 17 1/2" hole was drilled to 504 meters and then opened up to 26". While drilling gas cut mud was circulated. The hole was logged and 20" casing set at 488 meters.800 bbl of mud was lost to the formation during the casing operation.

17 1/2" Hole Interval

1250 bbls of 9.0 ppg. Spersene/Bentonite mud was mixed for this interval. The casing was displaced to mud and drilling commenced. A 17 1/2" hole was drilled to 1456 meters. Prehydrated Bentonite was utilized for the base mud and C.M.C. (LV) used for fluid loss control. Additions of Spersene were used to control the flow properties. Maximum use was made of all solids control equipment to minimize solids build-up. The mud density was increased to 10.5 ppg during this section of the hole. The hole was logged

Cont'd.......

and 13 3/8" casing set to 1441 meters. While running casing the mud cleaner was run on the active system to reduce the solids content prior to drilling the next interval.

12 1/4" Hole Interval

Drilling of the 12 1/4" interval commenced and the mud density was increased from 11.3 ppg to 12.5 ppg as per compny orders. Drilling continued and then the mud density was increased to 13.5 ppg and later to 14.0 ppg. Nut Plug (Fine) and Mica (Fine) were added to the system to prevent loss circulation. Gas cut mud was calculated and the mud density increased to 14.4 ppg. Drilling continued to 1780 meters and a drilling break was circulated out. The well started flowing and procedures were undertaken to bring the well under control. The mud density was increased to 14.9 ppg and still the gas readings remained high. A leak off test was ran which indicated a formation break down of 15.1 ppg. It was then decided to set a cement plug at 1780 meters. The plug was cleaned out to 1770 meters and 9 5/8" casing set to 1756 meters. A total of 250 bbls of mud was lost during the cement operation.

During this interval Mica (Fine) and Nut Plug (Fine) were added to assist in the control of losses. C.M.C. (LV) was utilized as the primary fluid loss control agent. Spersene was used to control the flow properties.

8 1/2" Hole Interval

Prior to drilling out the 9 5/8" casing the mud density was increased to 15.2 ppg. The cement was drilled, and a leak of test run which indicated a formation fracture of 16.3 ppg. 2 meters of hole was drilled and a coring operation started. A total of 12 core runs were made. The hole was reamed from 1780 meters to 1970 meters after coring was completed. Logs were then run with no problems. A 7" liner was then set to 1769 meters. The mud and the basic additions remained the same as utilized in the previous intervals.

6" Hole Interval

A 6" hole was then drilled to a T.D. of 2462 meters. The mud density was reduced to 14.7 ppg. One core was taken at 2250 meters. The mud density was then reduced to 14.2 ppg. Drilling continued. The hole was logged and cement plugs were then set. The mud system utilized for this interval remained the some as in the previous sections of the hole. Chemical additions consisted only of Spersene, C.M.C. (LV) and prehydrated Bentonite. Caustic Soda and Lime were used to maintain the alkalinity.

TESTING

The mud density was increased to 15.3 ppg prior to the commencement of testing procedures. The well was circulated whenever control procedures were required. Small treatments of Spersene, Bentonite, and Seawater were required to control any changes in flow properties as per company orders. The testing period began on August 21 and was completed on August 31, 1978. The plugging and abandoning operations were completed on September 7, 1978. The mud density of the system was reduced from 15.3 ppg to 10.4 ppg with prehydrated Bentonite and seawater additions. Later the density was further reduced to 9.3 ppg and the final cement plug set. The Engineer was released on Septemeber 7, 1978.

WELL DATA SHEET

MAG-545-A

PAGE 1

OPERATOR Statoil	SURVEY SEC. T R	CASING SIZE 30	DEPTH 212.5	DRLG. DAYS 2	BIT SIZE 26"
WELL 34/10-1	FIELD Gold Block	SURFACE 20	488	4	26"
CONTRACTOR Ross	COUNTY	INTERMEDIATE 13 3/8	1441	3	17 1/2"
ENGINEER Bissett/Gillies/Odum/Stringer	STATE Bergen COUNTRY Norway	PRODUCTION 9 5/8"	1770	12	12 1/4"

DATE	Meters DEPTH	WT.	VISCOSITY SEC.	VISCOSITY CPS.	CORR. 115°F PV	CORR. 115°F YP	GELS 0	GELS 10	pH BECK ☐ STRIP ☐	FLUID LOSS 100 PSI API	FLUID LOSS 500 PSI 300 °F HT-HP	CL ☐ CACL ☐ NACL ☐	ALKALINITY PF	ALKALINITY PM	ALKALINITY MF	CA ppm	Mg ppm	RETORT % OIL	RETORT % SOL	RETORT % WATER	ACTIVITY As	ACTIVITY Am	RATIO OIL	RATIO H2O	# Bbl CEC
20/6	Spud	8.8	200						9.0																
21	179	8.8	200						9.0																
22	214	8.8	200						9.0																
23	214	8.8	200						9.5																
24	216	8.7	41						9.0																
25	491	9.2	54						9.5																
26	504	9.2	40						10.0																
27	504	9.6	41						9.0																
28	504	8.9	48						9.0																
29	504	9.0	44		18	12	1	4	9.5	20			1.5	3.5		200			2	98					
30	489	9.0	44		10	13	3	11	9.5	22		11.000	1.5	3.5		260			3	97					
1/7/78	782	9.2	45		12	10	4	16	10.5	12.3		29.000	1.4.	3.8		120			10	90					18
2	1288	10.0	51		16	22	11	24	10.0	10.6		18.000	1.3	3.6		160			18	82					16
3	1454	10.4	50		20	24	12	23	10.5	10.4		18.000	1.4	4.0	2.0	180			19	81					18
4	1456	10.4	53		16	20	3	18	10.5	10.3		18.000	1.2	3.8	1.8	160			17	83					17
5	1456	10.3	65		21	23	12	23	9.5	10.0		19.600	1.0	3.3	1.4	120			15	85					18
6	1456	11.3	47		19	11	3	14	10.5	8.4		19.000	1.4	3.8	2.2	180			17	83					18
7	1554	12.5	45		23	13	4	18	11.0	12.0		18.500	1.2	4.2	1.5	260		1	20	79					19
8	1554	13.5	48		30	18	4	16	10.5	7.4		19.000	1.6	4.2	2.2	160			25	75					24
9	1622	14.0	51		30	16	3	19	10.5	6.6	21.0	18.000	1.4	4.0	2.3	240		Tr.	30	70					23
10	1677	14.4	48		34	17	4	18	11.0	7.6	20.0	18.500	1.2	4.0	.2.0	200			30	70					22
11	1741	14.4	48		33	15	3	14	11.0	6.4	29.4	18.500	1.6	4.2	2.4	140			31	69					21
12	1741	14.4	47		36	13	3	18	11.0	6.2	29.4	19.000	1.2	4.0	2.0	120			29	71					21
13	1780	14.9	47		30	15	3	16	11.0	5.0	19.0	19.000	1.3	4.2	2.3	80			28	72					20
14	1780	14.9	51		33	16	2	16	11.0	5.8	-	18.000	1.1	3.6	2.0	120			29	71					19
15	1780	14.9	52		38	14	2	12	11.5	5.4	-	16.500	1.5	3.5	2.3	Te			28	72					15
16	1780	14.9	47		33	13	2	11	11.5	5.5	-	16.500	0.8	3.6	1.5	Te			27	73					16.5

DATE SPUD: DATE T.D.: B.H.T. COMPLETION FLUID TYPE: COST:

PACKER MUD TYPE: COST:

WELL DATA SHEET

MAG-545-A

PAGE 1

OPERATOR Statoil	SURVEY SEC. T R		
WELL 34/10-1	FIELD Gold Block		
CONTRACTOR Ross	COUNTY		
ENGINEER Bissett/Gillies/Odum/Stringer	STATE Bergen	COUNTRY Norway	

CASING SIZE	DEPTH	DRLG. DAYS	BIT SIZE
30	212.5	2	26"
SURFACE 20	488	4	26"
INTERMEDIATE 13 3/8"	1441	3	17 1/2"
PRODUCTION 7 Liner	1770-1970m	13 days	8 1/2"

	DATE	DEPTH	WT.	VISCOSITY SEC.	VISCOSITY CPS.	CORR. 115°F PV	CORR. 115°F YP	GELS 0	GELS 10	pH BECK ☐ STRIP ☐	FLUID LOSS 100 PSI API	FLUID LOSS 500 PSI 300 °F HT-HP	CL ☐ CACL ☐ NACL ☐	ALKALINITY PF	ALKALINITY PM	ALKALINITY MF	CA ppm	Mg ppm	RETORT % OIL	RETORT % SOL	RETORT % WATER	ACTIVITY A_s	ACTIVITY A_m	RATIO OIL	RATIO H_2O	# Bbl CEC
July	17	1770	14.9	46		32	12	1	10	11.5	6.5	-	15.500	2.3	4.8	3:3	Tr			27	73					15
	18	1765	14.9	54		38	14	2	14	11.5	5.9	-	15.000	1.3	3.5	2:5	120			27	73					18
	19	1765	15.2	53		37	14	2	13	12.0	7.2	-	11.000	1.9	3.7	2.7	120			31	69					18
	20	1820	15.2	54		40	11	1	10	11.5	5.6	-	13.400	1.9	3.8	2.6	40			31	69					17.5
	21	1853	15.2	53		42	11	1	9	11.5	5.2	18.4	14.500	2.0	4.0	2.8	Tr			28	72					17.5
	22	1866	15.2	51		38	10	1	8	11.5	4.6	16.0	14.000	1.8	4.2	2.7	Tr			27	73					25.0
	23	1893	15.2	52		38	9	1	7	11.5	4.8	15.0	14.500	1.8	4.4	2.9	Tr			29	71					22.5
	24	1922	15.2	52		38	10	1	7	11.5	4.4	15.0	14.500	2.1	4.0	3.2	Tr			30	70					21.0
	25	1948	15.2	49		36	10	1	7	11.5	4.2	14.2	15.400	2.0	4.2	3.2	Tr			27	72					20.0
	26	1970	15.2	50		36	8	1	6	11.5	3.6	13.8	16.500	1.8	3.9	2.9	Tr		1	27	72					22.5
	27	1970	15.2	54		39	10	1	8	12.0	3.4	13.6	16.500	1.4	4.3	2.7	Tr		1	26	73					22.5
	28	1970	15.2	51		39	10	1	8	12.0	3.4	13.6	17.000	1.4	4.3	2.7	Tr		1	26	73					225
	29	1969	15.2	54		33	14	2	10	12.0	3.8	14.8	17.000	1.2	3.6	2.1	Tr		1	28	73					20.0
	30	1969	15.2	56		31	11	3	10	12.0	3.8	14.8	17.000	1.5	5.0	2.4	Tr		2	29	69					20.0
	31	1969	15.2	52		31	13	3	12	12.0	3.8	16.0	17.000	1.3	5.0	2.3	Tr		2	29	69					20.0
Aug.	1	1969	15.2	52		31	13	3	12	12.0	3.8	16.0	17.000	1.8	5.0	2.3	Tr		2	29	69					20.0
	2	1969	15.2	52		31	13	3	12	12.0	3.8	16.0	17.000	1.8	5.0	2.3	Tr		2	29	69					20.0
	3	1969	15.2	50		31	13	3	12	12.0	3.8	16.0	17.000	1.8	5.0	2.3	Tr		2	29	69					20.0
	4	1969	14.9	49		40	20	3	12	12.5	4.5	16.2	17.000	2.0	6.5		9.0		2	30	68					21.0
	5	1969	15.0	52		30	13	3	12	12.5	4.7	16.4	17.000	3.0	7.0		140		2	30	68					21.0
	6	1976	14.7	50		47	14	2	10	12.0	7.0	17.4	17.000	2.5	11.0		240		2	24	74					20.0
	7	2080	14.7	49		43	19	2	10	11.0	5.5	17.0	17.000	2.5	11.5		200		2	24	74					20.0
	8	2158	14.7	49		40	17	2	10	10.5	5.5	16.5	16.000	2.0	7.0		200		1	25	74					20.0
	9	2232	14.7	48		24	13	2	8	10.5	4.4	16.0	16.000	1.8	6.0		200		1	24	75					20.0
	10	2250	14.7	49		24	13	2	10	11.0	4.9	18.0	16.000	1.0	7.0		150		1	24	75					19.0
	11	2315	14.3	48		32	7	2	8	10.5	4.8	18.8	15.200	1.10	9.0		140		1	22	77					18.0

DATE SPUD:

DATE T.D.:

B.H.T.

COMPLETION FLUID TYPE:

COST:

PACKER MUD TYPE:

COST:

Dresser Magcobar

WELL DATA SHEET

MAG-545-A

OPERATOR Statoil	SURVEY SEC.	T	R	CASING SIZE 30	DEPTH 212.5	DRLG. DAYS 2	BIT SIZE 26"
WELL 34/10-1	FIELD Golden Block			SURFACE 20	488	4	26"
CONTRACTOR Ross	COUNTY			INTERMEDIATE 13 3/8	1441	3	17 1/2"
ENGINEER Bissett/Gillies/Odum/Stringer	STATE Bergen	COUNTRY Norway		PRODUCTION			

				VISCOSITY		CORR. 115°F		GELS		pH	FLUID LOSS			ALKALINITY					RETORT			ACTIVITY		RATIO		# Bbl	
	DATE	DEPTH	WT.	SEC.	CPS.	PV	YP	0	10	BECK ☐ STRIP ☐	100 PSI API	500 PSI 300 °F HT-HP	CL ☐ CACL ☐ NACL ☐	PF	PM	MF	CA ppm	Mg ppm	% OIL	% SOL	% WATER	As	Am	OIL	H2O	CEC	
Aug	12	2361	14.2	48		20	14	2	10	11.5	5.0	18	15000	1.5	8.5		100		1	22	77					17	
	13	2407	14.2	47		21	7	2	10	11.7	4.4	19	14800	2.0	6.0		80		TR	23	77					16	
	14	2440	14.2	49		19	16	2	15	11.7	4.4	17.8	16000	2.0	6.0		100		TR	23	77					17	
	15	2462	14.2	57		37	25	2	24	12	4.8	15	15000	1.5	5.0		80		TR	23	77					17	
	16	2462	14.2	55		39	19	2	24	12	4.4	15	15000	1.0	5.2		80		TR	23	77					16	
	17	2462	14.2	57	29.5	42	17	2	19	12	4.8	18	14000	1.5	5.0		100		TR	24	76					17	
	18	2462	14.2	50	29.5	23	13	2	17	12	4.8	18.4	13033	1.6	5.4		120		TR	24	76					17.5	
	19	2462	14.2	50	29	24	10	3	19	12.0	6.2	18.8	13033	2.4	6.4		80		NIL	25	75					15 lbs/bb	
	20	2462	15.3	50	31.5	27	9	3	16	12.0	5.8	19.6	13033	1.9	8.0		80		NIL	28	72					15 lbs/bb	
	21	2462	15.3	52	32	28	8	2	12	12.0	6.0	18.4	13033	1.9	8.0		80		NIL	28	72					15 lbs/bb	
	22	2462	15.3	52	32.5	28	9	2	13	12.0	6.0	18.8	13033	1.9	7.8		80		NIL	28	72					15 lbs/bb	
	23	2462	15.3	52	32.5	28	9	4	17	12.0	6.2	19.6	13033	1.7	7.4		80		NIL	28	72					17.5lbs/b	
	24	2462	15.3	53	30	26	8	4	20	12.0	6.2	18.8	13033	1.8	7.8		160		TR	28	72					20 lbs/bb	
	25	1927	15.3	48	25	22	6	4	28	12.0	6.2	18.8	13000	1.5	7.8		120		TR	28	72					20 lbs/bb	
	26	1926	15.3+	52	27	24	6	3	23	12.0	6.0	18.8	13000	1.2	8.0		80		TR	27	73					20 lbs/bb	
	27	1792	15.3	60	32.5	28	9	4	28	12.0	6.2	19.0	13000	1.2	7.8		80		TR	27	73					20 lbs/bb	
	28	1792	15.3	50	27.5	25	5	3	31	12.0	6.6	19.0	13000	1.0	7.8		80		TR	27	73					20 lbs/bb	
	29	1792	15.3+	52	26	26	6	4	30	12.0	6.4	19.0	13000	.9	6.4		80		TR	27	73					20 lbs/bb	
	30	1792	15.3	52	26	25	8	4	30	12.0	6.4	19.0	13000	.9	6.4		80		TR	27	73					20 lbs/bb	
	31	1792	15.3	54	27	23	14	4	30	12.0	6.4	19.0	13000	.9	6.4		80		TR	27	73					20 lbs/bb	
Sept	1																										
	2	1300	15.3	52		22	13	3	28	10.5	6.4		12000	.8	5.1		TR		0	27	73					19 lbs/bb	
	3	452	15.3	53		24	12	4	28	10.5	6.9		13000	.8	5.0		TR		0	27	73					19 bls/bb	
	4	452	15.3	53		23	11	4	28	10.5	7.0		12000	.8	5.0		TR		0	27	73					19 lbs/bb	
	5		15.3	54		25	12	4	28	10.5	7.0		13000	.8	5.0		TR		0	27	73					19 lbs/bb	
	6	200	15.3	43		7	14	3	21	10.5	NC		4000	.8	4.6				0	9	91					20 lbs/bb	
	7				Plugging and abandoning Operations completed																						

DATE SPUD: June 20	DATE T.D.: Aug. 14/78	B.H.T.	COMPLETION FLUID TYPE:	COST:
			PACKER MUD TYPE:	COST:

DRESSER

DAILY MATERIALS CONSUMPTION

WELL 34/10-1

PAGE 1

DATE	Meters DEPTH	Magcobar Bulk	Magcogel 100 lbs	Spersene	XP-20	Caustic	CMC L.V.	Lime	Al Sterate	D.D.	Soda Ash	Mica	Nut Plug	Magcogel Bulk m/ton	Total MUD COST	REMARKS
June 20	179	3				6		1			3	15	15	15	4247.56	Spud mud - Spud in 26" O.H.
21	212	17	22			3		1			1	10	10	5	3672.04	Drlg. 26" O.H.
22	214	9	294			4					4	10	10		5249.93	Open 26" O.H. to 36"
23	216		100			1					1				1329.70	Cond. for 30" csng. Cmt. same
24	491	13	50			19									2380.81	Run BOP and Riser-Drill 17½ O.H.
25	504		38			14								2	992.94	Logging-Ream from 17½ ro 26" for
26	504	25	120			8						30	25		5295.05	Run 20" csg. Cmt. Same
27	504	23	24	52		6					4			23	8906.96	Lost ±800 bbls mud during csng.
28	504															RIH and displace with mud
29	504															WOC
30	504	26	80			2	4		5	2	8				4987.02	Drlg. 3m - leak of test - drlg.
July 1	782		41	32		5	9				17				1706.99	Drlg. at 30-40m/hr
2	1288	17	108	118		18	22	5	2	1					6616.43	Drlg.
3	1454	28	60	43		19	21	14	2	1					6304.67	Drlg. Cond. for logs
4	1456	22	20	26		3	13		1						3822.75	Finish logging-Cond. for 13 3/8" Cs
5	1456	16		22		4	2			1					2689.76	Pull out for csg. Run same
6	1456	11	20	50		6	3	2		1					2814.82	Condition all mud for drlg.
7	1554	87	20	40		13	3	3	2		5				11079.52	Drlg. cond. mud inc. wt to 12.5 to13
8	1554	166	40	33		15	20		1	1	3				21377.97	wt.up syst. to 13.5 Reserve 15.0lb/
9	1622	125	30	54		11	12	4		1		52	82		18402.71	Drlg.wt.up ro 14.0lb/gal Circ lek.15
10	1677	51		27	20	10									6696.26	Drlg.circ out gas inc wt.to. 14.4lb/
11	1741	18		28	20	8		6		1					3384.02	Drlg circ. out gas.short trip cond l
12	1741	6		18	18	14		3							1517.10	Logging drlg. well blew in -
13	1780		20	43	20	9	2		2		4			1	1689.54	Circ. with well inder control
14	1780	103	115	10		6	17					8	179	2	17397.14	Circ. and short trip. Reduce gas con
15	1780			15		15	7	13				13	33		1572.02	Short trips - attempts reducing gas

DAILY MATERIALS CONSUMPTION

WELL 34/10-1

PAGE 2

DATE	Meters DEPTH	Magcobar Bulk M/T	Magcobar 100 lbs	Magcogel 100 lbs	Spersene	XP-20	Caustic	CMC LV	Lime	Soda Ash	Mica	Nut Plug			Total MUD COST	REMARKS
July 16	1780	53		45	3		12	4		2					7028.72	Circ. Short trip . 4 off test Trip
17	1780	2			15		4			7					607.99	Set cmt Plug. Trip
18	1780	15		30	15		4			1	10	10			2663.60	Run & Cmt. 9 5/8" csg.
19	1780	115		100	11		3			3	24	26			1571.20	Run Temp. Test BOP's RIH Build wt
20	1780	39			76	39		11		2					6290.36	Drill Out - Trip Cut core no 1
21	1817	19			48	42	3	7							4113.72	Cut cores no 2 and 3
22	1847	7			20	10	9	7							1784.44	Cut cores no 4 and 5
23	1865	4	29		20	10	6	6							1477.78	Cut cores no 6 and 7
24	1893	1	30		1		5								328.34	Cut cores no 8 RIH for core no 9
25	1922	1			10	5		5							628.62	Cut core no 9 and 10
26	1948	3			1		10	5							761.03	Cut core no 11 test BOP's cmt core
27	1970	15	30		12	5	5	16	3						3052.89	Cut core no 12 Drill to 1970m POOH
28	1970														-	Logging
29	1970	5	8		12	7	13								1163.77	POOH - Logging Run 7" Liner
30	1969				8	4									196.72	Land liner at 1769. Cmt. Set plug o
31	1969		8		7	2				6					380.87	Tag plug at 1586m Hange
Aug.																
1	1969														-	Set bridge plug at 1500m Pull stack
2	1969														-	Change to 3½ rams - test stack
3	1969			25											-	Pick up 3 1/2" D.P.
4	1969														190766.26	Drill cement
5	1969	23													193364.57	Drill cement - Test casing
6	1976	3		9											193796.18	
7	2080	6		10	10	10		20							196004.29	
8	2138	17		20	20			10							199610.29	Drilling ahead
9	2214	9		40	40										201569.47	Drilling ahead

DRESSER

DAILY MATERIALS CONSUMPTION

WELL 34/10-1

PAGE 3

DATE	DEPTH	Magcobar Bulk	Magcogel 100 lbs	Spersene	XP-20	Caustic	CMC L.V.	Lime	Al-Sterate	D.D.	Soda Ash	Mica	Nut Plug	Magcogel Bulk M/Ton	DAILY MUD COST	REMARKS
Aug. 10	2250	3			20	6									202399,93	Cut core
11	2282	2	40				4								203360,87	Run in ruebo- Wouldn't drill
12	2361			10		10	5								203912,32	Lowering mud wt. to 14.2
13	2407	2		20		10	5								204833,41	
14	2440	5	32			1		1							205843,26	
15	2462	23	30			1		1							208860,57	Circulate to log
16	2462														208860,57	Logging
17	2462	13	35			1		1							210813,88	POH,LOG,RIH,Circ. short wiper trip,ci
18	2462	9		20		5		1							212202,91	Cont.POH,Log v/sch,RIH set bridge plu
19	2462	4		5				2							212758,44	Poh,drlg. cmt,poh, sei bridge plug
20	2462	56		20	10										219576,56	RIH, circ. Increased mud wt to 153 pp
21	2462	20													221835,96	RIH w/test string, pressure test equp
22	462	3		10	5										221835,96	Test well, shut in, flow, shut in, fl
23	462														222420,77	Flow,shut in,kill,circ,poh,rig,circ,p
24	2462							1							222463,67	cmt & squeeze perr. RIH w/test string
25	1927														222463,67	Shut well in flowed through the separ
26	1926	15	14	14				1							224530,30	Kill well reverse circ. and then circ
27	1792	12	10	1											226030,31	Squeezed displace w/mud RIH and perf.
28	1792	8	8	2											227066,81	Checked for leak.
29	1792			3											227109,99	Test drill pipe and string.
30	1792		10												227239,99	Flowed well, shut in and killed well
31	1792	3		5											227649,75	RIH w/bit and scraper. POOH. Test per
Sept 1																
2	1300	16	15	24		2		1								
3	452			3												Plugging and abandoning well
4				3												Plugging and abandoning well
5															230083.76	Pulling 9 5/8" casing
6		10	150	2		4					1				230083.76	Pulling 9 5/8" casing
7			70	3		3	6				1				233263.30	Complete and condition mud.
8															234597.41	Reduced Mud weight to 9.6 lbs/ga
																Plugging and abandoning program
																Complete.

WELL 34/10-1

6 - SPEED VG READING

DATE				R.P.M.		
	600	300	200	100	6	3
June 30, 1978	33	23	18	12	4	3
July 1, 1978	34	22	17	11	3	2
July 2, 1978	54	38	28	19	5	4
July 3, 1978	64	44	33	24	6	5
July 4, 1978	52	36	22	18	8	6
July 5, 1978	65	44	24	22	9	7
July 6, 1978	49	30	20	16	5	3
July 7, 1978	59	36	21	18	6	5
July 8, 1978	78	48	24	22	9	7
July 9, 1978	76	46	22	20	7	5
July 10, 1978	85	51	29	25	8	7
July 11, 1978	81	48	28	22	7	5
July 12, 1978	85	49	29	24	8	6
July 13, 1978	75	45	22	20	7	5
July 14, 1978	82	49	27	23	7	6
July 15, 1978	90	52	32	26	9	8
July 16, 1978	79	46	18	16	6	4
July 17, 1978	76	44	17	15	5	3
July 18, 1978	90	52	26	22	7	5
July 19, 1978	No Check					
July 20, 1978	91	51	26	22	7	5
July 21, 1978	95	53	27	22	6	5
July 22, 1978	86	48	24	18	5	4
July 23, 1978	85	47	24	17	5	4
July 24, 1978	86	48	24	18	5	4
July 25, 1978	82	46	22	18	5	3
July 26, 1978	80	44	21	17	4	3
July 27, 1978	88	49	23	18	5	4
July 28, 1978	88	49	23	18	5	4

Magcobar
DRILLING FLUID SERVICES

DRESSER

WELL SUMMARY

DATE	R.P.M.					
	600	300	200	100	6	3
July 29, 1978	80	47	21	16	4	3
July 30, 1978	73	42	18	15	5	3
July 31, 1978	73	43	18	16	5	4
Aug. 1, 1978	73	43	18	16	5	4
Aug. 2, 1978	73	43	18	16	5	4
Aug. 3, 1978	73	43	18	16	5	4
Aug. 4, 1978	100	60	32	24	10	6
Aug. 5, 1978	73	43	18	16	5	4
Aug. 6, 1978	108	61	32	25	6	4
Aug. 7, 1978	105	62	32	26	9	6
Aug. 8, 1978	97	57	27	22	6	4
Aug. 9, 1978	61	37	16	14	4	2
Aug. 10, 1978	61	37	16	14	4	2
Aug. 11, 1978	71	39	16	13	5	3
Aug. 12, 1978	92	55	22	18	6	3
Aug. 13, 1978	56	34	15	14	4	2
Aug. 14, 1978	57	32	14	12	3	1
Aug. 15, 1978	57	37	15	11	3	1
Aug. 16, 1978	118	71	22	18	6	4
Aug. 17, 1978	115	67	22	19	6	5
Aug. 18, 1978	Cementing Casing					

No further 6 speed VG meter reading were taken after this date.

Magcobar
DRILLING FLUID SERVICES

DRESSER

MATERIAL CONSUMPTION BY INTERVAL

30" and 20" Casing Interval

Hole Size	:	36" to 214m
		26" to 504m
Casing Dept	:	30" at 212m
		20" at 488m

PRODUCTS	UNIT SIZE	UNITS	COST
Magcobar (Bulk)	Metric Ton	90 x $ 112.97	$ 10,167.30
Magcogel (Bulk)	Metric Ton	45 x $ 221.87	$ 9.984.15
Spersene	50 lbs	52 x $ 14.37	$ 747.24
Caustic Soda	25 kg	21 x $ 13.80	$ 703.80
Lime	40 kg	2 x $ 6.50	$ 13.00
Soda Ash	50 kg	13 x $ 15.90	$ 206.70
Magcogel	100 lbs	648 x $ 13.00	$ 8.424.00
Mica Fine	25 kg	65 x $ 13.38	$ 902.20
Nut Plug Fine	25 kg	60 x $ 15.36	$ 921.60
		Total Interval Cost	$ 32.069.99

Days : 8 days

Cost per day : $ 4,008.74

Cost per meter : $ 63.63

Magcobar DRILLING FLUID SERVICES DRESSER

MATERIAL CONSUMPTION BY INTERVAL

13 3/8" Casing Interval

Hole Size : 17 1/2" to 1456 Meters
Casing Depth : 13 3/8" to 1441 Meters

PRODUCTS	UNIT SIZE	UNITS	COSTS
Magcobar (Bulk)	Metric Ton	109 x $ 112.97	$ 12,313.73
Magcogel	100 lbs	309 x $ 13.00	$ 4,017.00
Spersene	50 lbs	241 x $ 14.37	$ 3,463.17
Caustic Soda	25 kg	51 x $ 13.80	$ 703.80
C.M.C. L.V.	25 kg	71 x $ 53.95	$ 3,830.45
Lime	40 kg	19 x $ 6.50	$ 123.50
Al Stearate	10 kg	10 x $ 15.04	$ 150.40
D.D.	55 gal	5 x $ 390.00	$ 1,950.00
Soda Ash	50 kg	25 x $ 15.90	$ 397.50
		Total Interval Cost	$ 26,949.55

Days : 7 days
Cost per day : $ 3,849.94
Cost per meter : $ 28.30

MATERIAL CONSUMPTION BY INTERVAL

9 5/8" Casing Interval

Hole Size : 12 1/4" Hole to 1770 meters
Casing Depth : 9 5/8" Casing to 1765 meters

PRODUCTS	UNIT SIZE	UNITS	COSTS
Magcobar (Bulk)	Metric Ton	626 x $ 112.97	$ 70,719.22
Magcogel	100 lbs	300 x $ 13.00	$ 3,900.00
Spersene	50 lbs	301 x $ 14.37	$ 4,325.37
XP-20	50 lbs	78 x $ 20.44	$ 1,594.32
Caustic	25 kg	121 x $ 13.80	$ 1,669.80
Soda Ash	50 kg	22 x $ 15.90	$ 349.80
C.M.C. L.V.	25 kg	65 x $ 53.95	$ 3,506.75
Drispac Reg.	50 lbs	3 x $ 131.05	$ 393.15
Lime	40 kg	29 x $ 6.50	$ 188.50
Aluminium Stearate	10 kg	5 x $ 15.04	$ 75.20
Mica Fine	25 kg	83 x $ 13.88	$ 1,152.04
Nut Plug Fine	25 kg	304 x $ 15.36	$ 4,669.44
D.D.	55 gal	2 x $ 390.00	$ 780.00
		Total Interval Cost	$ 93,323.59

Days : 12 days
Cost per day : $ 7,709.47
Cost per meter : $ 294.63

Some Magcogel on mud reports charged of at $ 10.30 instead of $ 13.00. All Magcogel above was charged as $ 13.00, otherwise difference would be as stated, $ 903.00

7" Liner Interval

Hole size : 8 1/2" hole to 1970 meters
Casing Depth : 7" liner to 1969 meters.

PRODUCTS	UNIT SIZE	UNITS	COST
Magcobar(Bulk)	Metric Ton	209 x $ 112.97	$ 23,610.73
Magcobar	100 lbs	89 x $ 4.40	$ 391.60
Magcogel	100 lbs	116 x $ 13.00	$ 1,508.00
Spersene	50 lbs	226 x $ 14.37	$ 3,247.62
XP-20	50 lbs	124 x $ 20.44	$ 2,534.56
Caustic Soda	25 kg	54 x $ 13.80	$ 745.20
Soda Ash	50 kg	11 x $ 15.90	$ 174.90
CMC LV	25 kg	57 x $ 53.95	$ 3,075.15
Lime	40 kg	3 x $ 6.50	$ 19.50
Nut Plug Fine	25 kg	26 x $ 15.36	$ 399.36
Mica Fine	25 kg	24 x $ 13.88	$ 333.12
		Total Interval Cost	$ 36,039.74

Days : 13 days
Cost per day : $ 2,772.29
Cost per meter : $ 180.20

6" HOLE INTERVAL

Hole Size : 6" Hole to 2462 meters
Casing Depth : None ran

PRODUCT	UNIT SIZE	UNITS	COSTS
Magcobar (Bulk)	Metric Ton	93 x $ 112.97	$ 10,506.21
Magcogel	100 lb	146 x $ 13.00	$ 1,898.00
Spersene	50 lb	100 x $ 14.37	$ 1,437.00
XP-20	50 lb	90 x $ 20.44	$ 1,839.60
Soda Ash	50 kg	2 x $ 15.90	$ 31.80
Caustic Soda	25 kg	28 x $ 13.80	$ 386.40
C.M.C. L.V.	25 kg	44 x $ 53.90	$ 2,373.80
		Total Interval Cost	$ 18,472.81

Days : 15 days
Cost per day : $ 1,231.52
Cost per meter : $ 37.47

Magcobar
DRILLING FLUID SERVICES

DRESSER

MATERIAL CONSUMPTION BY INTERVAL

TESTING INTERVAL

PRODUCT	UNIT SIZE	UNITS	COSTS
Magcobar (Bulk)	Metric Ton	169 x $ 112.97	$ 19,091.93
Magcogel	100 lb	312 x $ 13.00	$ 4,056.00
Spersene	50 lb	112 x $ 14.37	$ 1,609.44
XP-20	50 lb	15 x $ 20.44	$ 306.60
Caustic Soda	25 kg	15 x $ 13.80	$ 207.00
Soda Ash	50 kg	9 x $ 15.90	$ 143.10
C.M.C. L.V.	25 kg	6 x $ 53.95	$ 323.70
		Total Interval Cost	$ 25,737.77

Days : 22 days
Cost per day : $ 1,169.90

TOTAL MATERIAL CONSUMPTION

PRODUCT	UNIT SIZE	UNITS	COSTS
Magcobar (Bulk)	Metric Ton	1296 x $ 112.97	$ 146,409.12
Magcobar	100 lbs	89 x $ 4.40	$ 391.60
Magcogel	Metric Ton	45 x $ 221.87	$ 9,984.15
Magcogel(Bulk)	Metric Ton	1831 x $ 13.00	$ 23,803.00
Spersene	50 lb	1032 x $ 14.37	$ 14,829.84
XP-20	50 lb	307 x $ 20.44	$ 6,275.08
Drispac	50 lb	3 x $ 131.05	$ 393.15
CMC LV	25 kg	43 x $ 53.95	$ 13,109.85
Caustic Soda	25 kg	320 x $ 13.80	$ 4,416.00
Soda Ash	50 kg	82 x $ 15.90	$ 1,303.80
Lime	40 kg	53 x $ 6.50	$ 344.50
Mica Fine	25 kg	172 x $ 13.88	$ 2,387.36
Nut Plug Fine	25 kg	390 x $ 15.36	$ 5,990.40
Aluminum Stearate	10 kg	15 x $ 15.04	$ 225.60
D.D.	55 gal	7 x $ 390.00	$ 2,730.00
		Total Cost	$ 232,593.45

Days : 80 days

Cost per day : $ 2,907.42

Cost per meter : $ 94.47

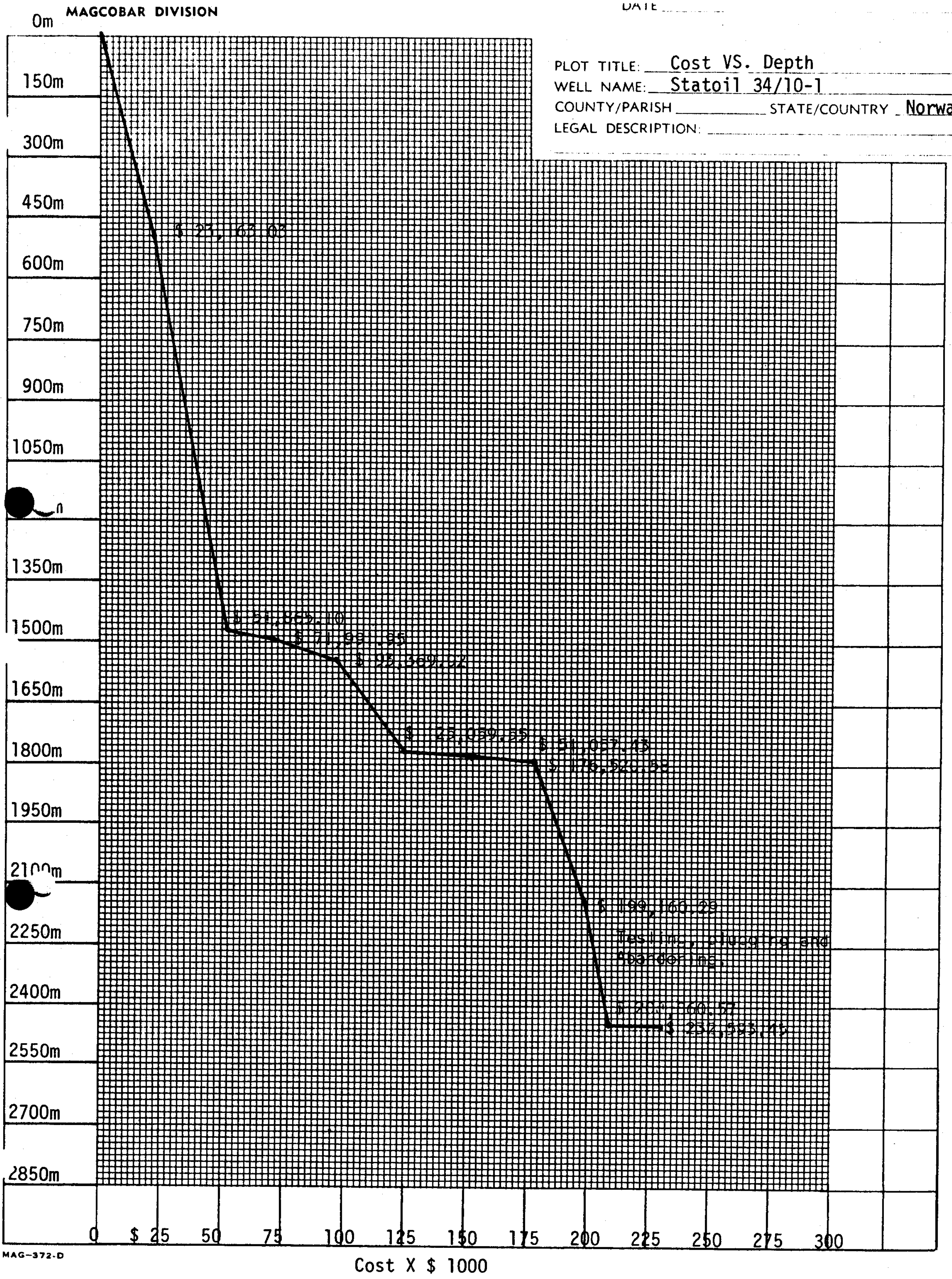
MATERIAL CONSUMPTION BREAKDOWN

Product	Material consumption Cost breakdown %
1. Barite	63.11%
2. Bentonite	14.52%
3. Spersene	6.37%
4. XP-20	2.69%
5. Drispac	00.16%
6. CMC LV	5.63%
7. Caustic Soda	1.89%
8. Soda Ash	00.56%
9. Lime	00.14%
10. Mica Fine	1.02%
11. Nut Plug Fine	2.57%
12. Aluminum Stearater	00.09%
13. D.D.	1.17%

MAGCOBAR DIVISION

DATE

PLOT TITLE: Cost VS. Depth
WELL NAME: Statoil 34/10-1
COUNTY/PARISH STATE/COUNTRY Norway
LEGAL DESCRIPTION:

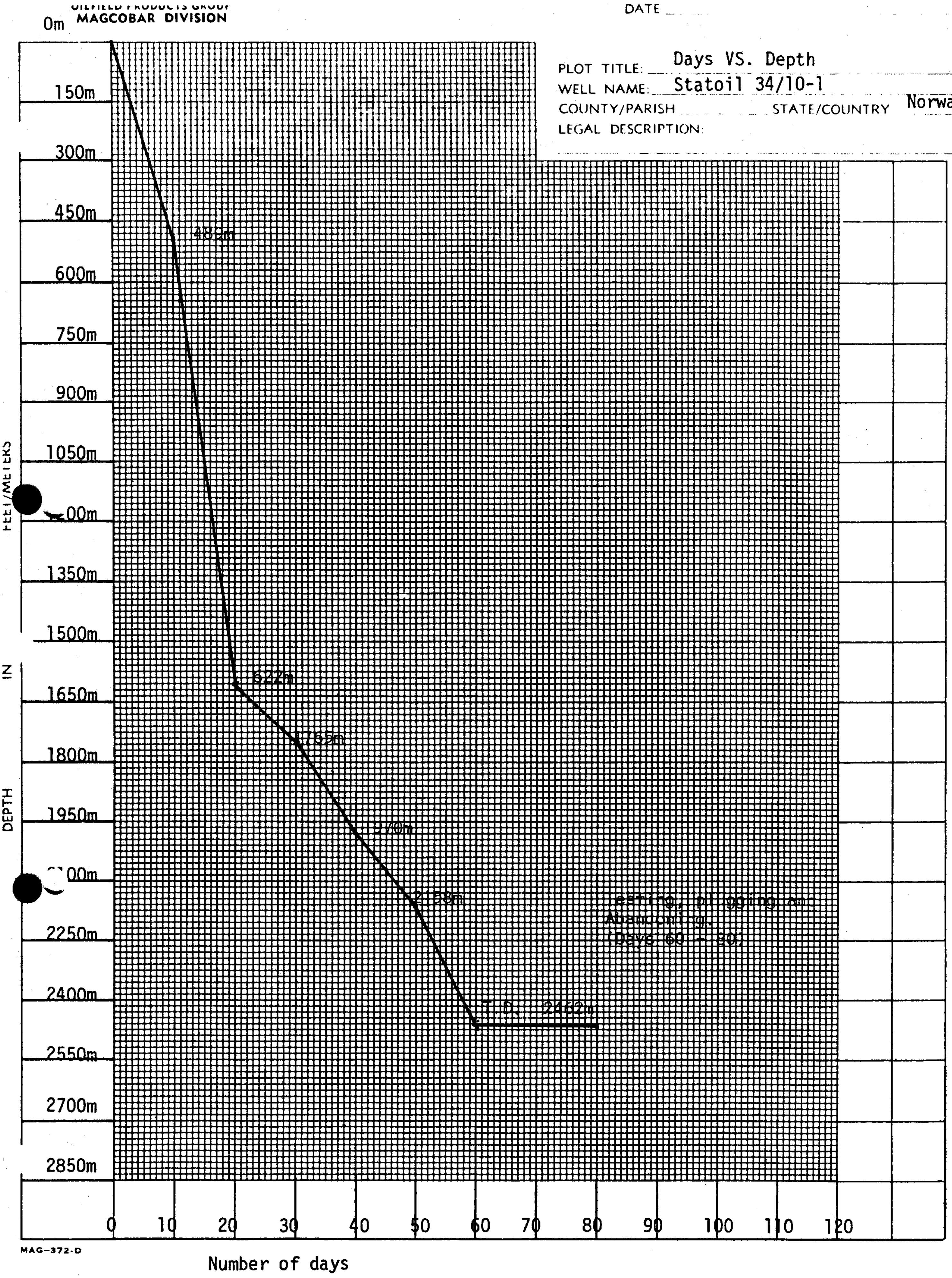


MAG-372-D

OILFIELD PRODUCTS GROUP
MAGCOBAR DIVISION

DATE

PLOT TITLE: Days VS. Depth
WELL NAME: Statoil 34/10-1
COUNTY/PARISH STATE/COUNTRY Norway
LEGAL DESCRIPTION:



MAG-372-D

III 14. DIRECTIONAL SURVEYS AND WELL PROFILE

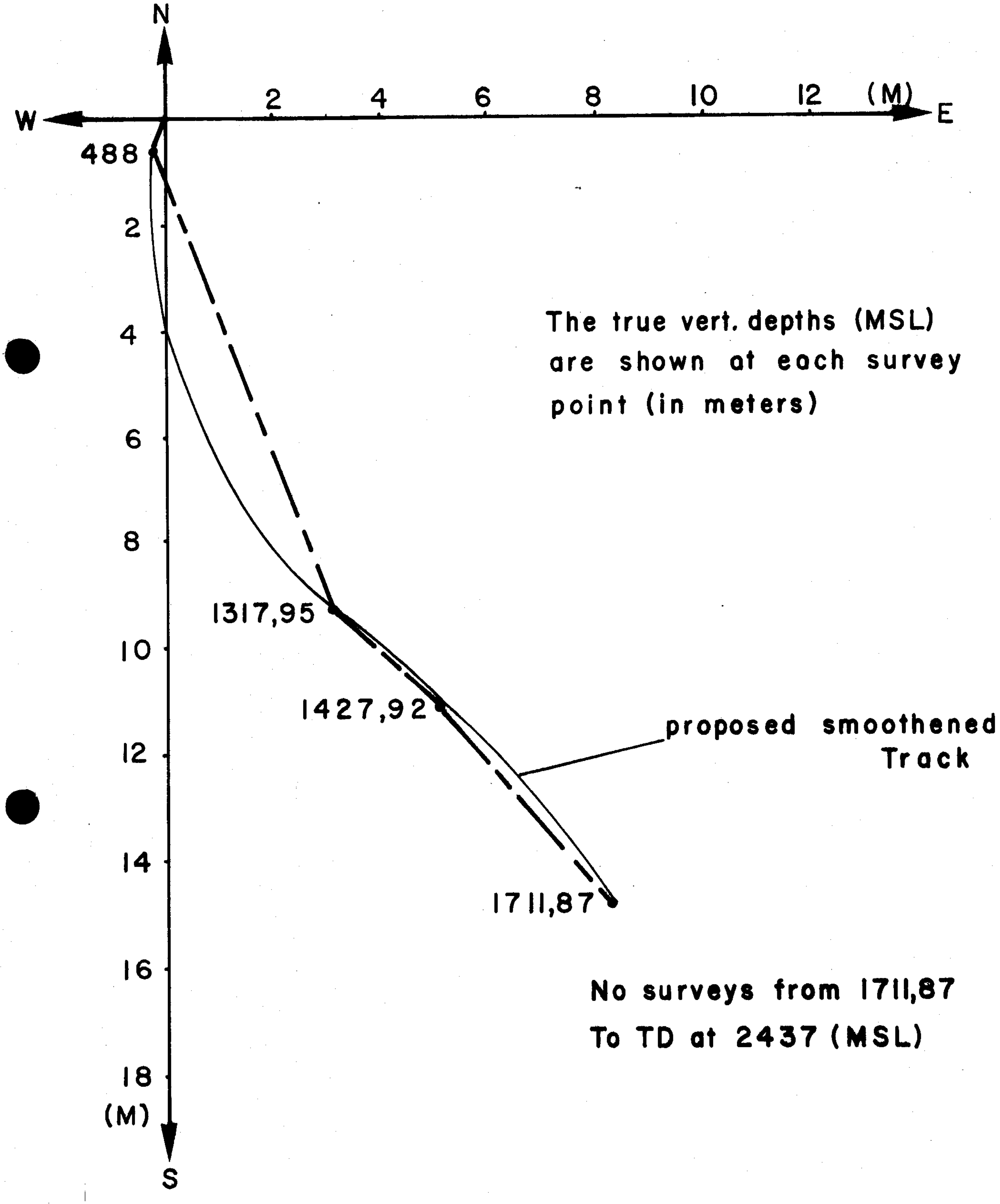
SURVEY INFORMATION
(RKB - Mean Sea Level: 25 m)

AVERAGE TANGENTIAL METHOD 34/10-1

RKB - Depth	MSL Depth	Drilled Interval	Drift Angle	Drift Change	Direction	Azimuth	Drift Angle Data			Azimuth Data			Vertical Distance	True Vert. Depth	Interval Deviation	Dev. to North	Position North	Dev. to East	Position East
M_{RKB}	M	ΔM	i	Δi		a	$\frac{i_1+i_2}{2}$	$\sin\left(\frac{i_1+i_2}{2}\right)$	$\cos\left(\frac{i_1+i_2}{2}\right)$	$\frac{a_1+a_2}{2}$	$\sin\left(\frac{a_1+a_2}{2}\right)$	$\cos\left(\frac{a_1+a_2}{2}\right)$	ΔV	V	ΔD	ΔN	N	ΔE	E
212	187	212	0											212		0		0	
488	463	276	1/4	0.25	S13W	193	0.125	0.0022	1.0000	193	-0.2250	-0.9744	276	488	0.60	-0.59	-0.59	-0.14	-0.14
1343	1318	855	1	0.75	S53E	127	0.625	0.0109	0.9999	160	0.3420	-0.9397	854.95	1342.95	9.33	-8.76	-9.35	+3.19	3.05
1453	1428	110	1.75	0.75	S47E	133	1.375	0.0240	0.9997	130	0.7660	-0.6428	109.97	1452.92	2.64	-1.70	-11.05	2.02	5.08
1737	1712	284	0.25		S35E	145	1.000	0.0175	0.9998	139	0.6561	-0.7547	283.96	1736,87	4.96	-3.74	-14,79	3.25	8.33
1967	1942		1 1/4		Totco														
2125			Misrun																
2462	TD	No surveys																	

WELL No 34/10-1

Horizontal Projection of Well Track



The true vert. depths (MSL) are shown at each survey point (in meters)

No surveys from 1711,87 To TD at 2437 (MSL)

III 15. TURBODRILLING IN 6" HOLE

TURBODRILLING REPORT - CONFIDENTIAL

1. (a) Customer : Statoil
(b) Location : 34/10-1
(c) Date : 10 August, 1978

2. OBJECT

To turbodrill a 6" straight hole from approx. 2250 m to Triassic formation (depth unspecified) using a Neyrfor 5" TFi Turbodrill and Diamond Bit combination.

3. RIG AND EQUIPMENT

(a) Contractor : Ross Drilling Co.
(b) Rig : Ross Rig
(c) Pumps : Two - National 12 P 160 Triplex Pumps fitted with 6" liners - maximum rated pressure 4670 psi
(d) Shakers : Milchem, Screen size 2 x 80 mesh 1 x 60 mesh.
(e) Desander : Derrico 4 x 6" Cones
(f) Desilter : 8 x 4" Cones
(g) 2 Baroid mud cleaners, Screen size 150 mesh, 2 Milchem Centrifuges - inoperative.

4. BOTTOM HOLE ASSEMBLY - TURBODRILL

Diamond Bit (ACC Sharktooth)
Turbodrill
Circ. Sub
Stab.
1 x DC
Stab
2 x DC
Stab
21 x DC
3½" DP

Continued ....

5. RUN PERFORMANCE

	Coring	Turbodrill	Rotary
Depth In (m)	2233	2250	2257
Depth Out (m)	2250	2257	2324
Metres Drilled	17	7	67
Drilling Hours	6½	3¾	11
Average ROP (m/hr)	2.62	1.87	6.09
Turbodrill Cond.	-	No Wear	-
Bit Condition	Good	Good	7/5/I

6. MUD DETAILS

Type : Spersene/XP-20
Mud Wt. : 14.7 lb/gal
Funnel Visc. : 49 sec/qt.
Plastic Visc. : 24
Solids : 24%

7. OPERATION PRIOR TO TURBODRILLING

Prior to turbodrilling a 18m core was cut with a 5 31/32" C18 FD Core Head. The recovered core was mainly sandstone with some plastic claystone at the bottom of the core.

8. TURBODRILL RUN 2250 m - 2257 m

The Neyrfor 5" TFI Turbodrill was assembled and rested on surface. No rotation was evident with various pump strokes up to 230 gpm and the bearing section changed out. Rotation was observed with the second bearing section, using various pump strokes. A 6" ACC Sharktooth TS diamond bit was made up to the turbodrill and the assembly run in the hole. The turbodrill was washed through the cored section and no difficulties were experienced. Upon tagging the hole bottom,'bottoms up' was circulated at Statoil request.

Drilling operations commenced and the diamond bit profile was drilled in with 5000 lb. to 7000 lb. WOB increasing to 12,000 lb. The pump discharge was 200 gpm, pump pressure 3600 psi - 3800 psi. The initial ROP was approx. 4m/hr. As the ROP decreased to 1½ m/hr. various WOB's (7,000 lb - 18,000 lb) were tried in an attempt to increase ROP. After only 7 m had been drilled it was decided by Statoil to pull the turbodrill assembly out of the hole because of the poor ROP. There was no wear on the turbodrill bearing section and negligible wear on the diamond bit, when examined on surface.

Continued ......

9. OPERATION FOLLOWING TURBODRILL RUN

After the turbodrill run, a rock bit (HT J3) was used. This bit drilled 3 m of claystone between 1½ - 3 m/hr. and then drilled into sand which gave a greatly improved ROP.

10. CONCLUSION

Although the ROP was latterly slow with the turbodrill, optimum operating conditions had not yet been established when the turbodrill was pulled out of the hole. It is our opinion that the turbodrill was pulled prematurely and had it been left in the hole, it is envisaged that a successful turbodrill run could have been accomplished.

III 16. TECHNICAL REPORT ON INFLUX OF FORMATION FLUIDS AT 1780M

TABLE OF CONTENT

1.0 INTRODUCTION

This report covers the events leading up to and the action taken during the influx of formation fluids to the wellbore of 34/10-1 and the subsequent remedial action taken in order to stabilize the well.

As is apparent from the attachements a lot of background data has been collected. The intention of this report is therefore to synthesize all the available information into an explanation as to how and why an influx occured.

2.0 SUMMARY OF EVENTS

Well 34/10-1 was spudded on June 19, 1978. This is the first well to be drilled on this block. The objective of the well is to test possible hydrocarbon accumulations in the Middle Jurassic Brent formations that are productive in the Statfjord area.

Although the well is close to the Statfjord field there are many geological aspects that makes this well very different. 34/10-1 was therefore considered as a rank wildcat and treated accordingly.

13 3/8" casing was set at 1441 meters. During the drilling of the 12 1/4" section it became apparent that the Paleocene and the Cretaceous had higher pressure gradients than what had been estimated from wells drilled in the Statfjord area.

In order to verify the pressure estimates calculated from the drilling parameters two intermediate log runs were made. Pore pressures calculated from these log runs and measured by the RFT (Repeatable Formation Tester) agreed well with the values calculated from the drilling parameters.

From these log evaluations and regional pressure studies based upon wells drilled in the Statfjord area it was concluded that:

- Top Paleocene is at 1535 m (agrees well with prognosis)
- Top Cretaceous at approx. 1730 m.
- Velocity check shots confirmed top Jurassic at 1832 m ± 50 m.
- Pore pressure gradients in Statfjord area increase significantly through the Lower Cretaceous. In Jurassic the gradient drops back towards normal.
- In 34/10-1 this pore pressure increase occurs in the Paleocene/Upper Cretaceous due to the absence of Lower Cretaceous.
- No increase in pressure gradient was therefore anticipated in the Jurassic.

The drilling program for this well indicated the 9 5/8" casing depth at ± 2200 m which would be in the Dunlin formation. The program pointed out that this casing would be committed if and when needed, according to the actual conditions encountered during the drilling of the 12 1/4" section.

Drilling proceeded from 1741 m at a controlled drilling rate of ± 10 m/hr. Mudweight used in this interval was 1.72 S.G. (14.4 ppg).

At 1779 - 1780 m a drilling break occured. Circulation was stopped and the kelly picked up in order to observe for flow. No flow was observed by the drilling crew during the five minutes flow check.

Circulation of bottoms up was then initiated at approx. 12.07 hrs. A 7 bbl pit gain was noted by the driller (high pit level alarm). At approx. 12.30 the derrickman reported a 15 bbl increase in the active mud system. Circulation was ordered to continue expecting the increase to peak out as had been noted on several previous gas bubbles circulated up. Some **time later**, the gain had increased to 40 bbls. The closing of the well was then deemed essential. Simultaneously the active mud system was filling to spill over in the ditch, and the flow was diverted into the active and reserve system. At this time, total gain was about 200 bbls. At the same time mud was being lost over the shaker.

From the decision to close in the well to the actual closing, some three to five minutes elapsed and an estimated 450 bbls mud gain observed by the drilling crew.

The well was closed in at approx. 13.10 hrs. The procedure adopted in attempting to stabilize the well is documented in the Action Report. At 06.10 hrs. 13.7 the pipe rams were opened and normal circulation was initiated.

3.0 ANALYSIS

From the analysis of all of the information available which includes ADT plots, statements from Statoil's supervisors and contractor's rig crews, it is apparent that the influx of formation fluid was not detected as early as it should have been due to the following:

1. The influx was assumed to have been drilled up gas based on numerous other drilled up gas bubbles which were circulated out and acted somewhat in the same manner as the one under discussion reaching gas concentration of ± 1000 - 1800 units at their peak.

2. The fact that the influx was oil, apparently undersaturated and having a bubble point pressure much lower than bottom hole pressure, masked the gain further by not noticeably expanding until it reached the bottom of the riser. By this time, gas released from solution and expansion occured very rapidly, and a large gain became inevitable prior to closing in of the well.

In a more thorough analysis of the available information it is apparent that there was an influx of formation fluid during the flow check made after the drilling break between 1779 and 1780 m. This fluid entry is identifiable on the ADT chart by a difference of some 8 barrels greater flow back to the tanks when the pumps were stopped. The supervisors observing the ADT charts missed this difference based on the fact that in the flow check the well appeared to have been stable.

There are several other indicators on the ADT record whose significance became apparent after the fact, but were missed during the actual time all these events were taking place. To name some; on starting the pumps during the middle of the flow check, for reasons still not known, there was no increase in stand pipe pressure indicating that the drill pipe was U-tubing into the annulus meaning that the annulus hydrostatic pressure had been lessened by formation fluid influx. Additionaly from the ADT record of pit level it appears that during the first 20 minutes of circulating bottoms up, the volume in the mud tank shows a slight reduction, probably meaning that this volume was required to completely fill up the drill pipe which had emptied due to the U-tube effect.

From the action log which was started up on a closing in of the well, the information as concerns annulus pressure and drill pipe pressure, the volumes which had been pumped prior to closing in the well and the volumes that were pumped when circulating out the influx of the well, it is fairly certain that approx. 300 barrels of secondary influx had taken place due to the reduction in hydrostatic pressure and the high delivery capacity of the reservoir rock.

4.0 CONCLUSIONS

- The well was not static when the flow check was taken. Approx. 8 bbls of formation fluid entered the wellbore during this period.

- As bottoms up was circulated out, the gas associated with the oil started to expand thereby causing a reduction in the hydrostatic pressure acting on the bottom of the wellbore and allowing more formation fluid to enter.

- By the time the well was shut in approx. 300 bbls of formation fluids had entered the wellbore.
  Based upon the statements collected, there is some uncertainty regarding the exact magnitude of the influx. The ± 450 bbls quoted by the rig crew may just as well have been say 350 bbls, since the exact volume over the shaker is only an estimate.

5.0 RECOMMENDATIONS AND IMPLEMENTATIONS

Is is apparent from the statements by the drilling crews and the ADT logs that the major fraction of the influx happened over a relatively short time interval and that initial influx was not noted by the drilling crew. In the future the following procedure will be added to the Drilling Operations Manual.

- If hole conditions permit a flow check after a drilling break will be extended to 10 minutes. A second five minutes flow check will be implemented after 2/3 of the annulus volume have been circulated out. No swab check will be permitted when checking for flow.

- The deployment of an additional flow line indicator system will be investigated.

- An overlay of a typical flowback pattern of mud during a flow check will be constructed by the ADT personnel for easy reference if an abnormal situation is suspected.

- The flow recording systems, the pit volume totalizer system, the efficiency of gas trap will be checked out under conditions simulating a high rate of flowback from the well.

- A pit volume recording system will be installed within easy access to the driller.

- An investigation into the possible deployment of an additional pit volume recording system will be done (e.g. an accoustic system replacing or in addition to the float system).

- More sensitive pressure gauges will be kept available to measure drill pipe pressure under conditions when the well is shut in. (on all rigs as is now done on "Ross Rig").

6.0 TECHNICAL ASSISTANCE GIVER'S TECHNICAL REPORT AND RECOMMENDATIONS

Esso Exploration and Production Norway A/S, as Technical Assistance giver to Statoil on PL-050, block 34/10, was requested by Statoil to prepare a technical report on the influx of formation fluids in well 34/10-1 which would parallell the report prepared by Statoil. Towards this end, Esso made available two specialists from their EPRCO staff in Houston, Texas.

These specialists participated in the meetings which took place with involved rig personnel and the group discussions related to the incident as well as group reviews of all information and records relevant to the operations prior to, during, and after the well control.

The technical and operational review made by Esso is self explanatory and agrees with the result of Statoil's review. The recommendations made by Esso, are both of technical and operational nature. In several cases they are the same as contained in Staoil's own recommendations, and in the others they stress the emphasis that should be placed on already established operating practices.

IV MARINE REPORT

IV 1. WEATHER AND ANCHOR TENSION SUMMARY

There was no downtime due to weather as the well was drilled in the summer season.

The maximum wind speed measured was in the range of 15 - 20 m/sec., and occured twice, from SSE and SE.

The main wind direction was N, variable in strength, but mostly below 10 m/sec.

Wave heights in the range 5 - 7 m were encountered 3 times, direction N.

The predominant wave height was 1-2m, direction N.

Anchor tension never exceeded 132 m/t. This occurred on July 6th and 4th.

IV 2.

LOCATION WEATHER DATA SUMMARY

statoil
Den norske stats oljeselskap a.s

WELL: 34 /10-1 RIG: Ross Rig
TIME PERIOD: FROM 17.6 TO 8.9 -19
READINGS PR. MONTH:

WIND

dir. \ m/sec.	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	> 30	total
N	5	10	10					25
NNE	1		4					5
NE	4	7	1					12
ENE								
E	4	1						5
ESE		1						1
SE		1	2	1				4
SSE			3	1				4
S	8	3	1					12
SSW	1	1						2
SW	3	5						15
WSW								
W	2		1					3
WNW								
NW	1		1					2
NNW		1						1
total								

WAVE

dir. \ height (m)	0 - 1	1 - 2	2 - 3	3 - 5	5 - 7	7 - 10	> 10	total
N	7	15	4		3			29
NNE		1						1
NE	3	4		1				8
ENE								
E	2			1				3
ESE								
SE	1	2	3					6
SSE		2						2
S	8	4	2	1				15
SSW	1							1
SW	4	2						6
WSW								
W	1	1						2
WNW								
NW	1		1					2
NNW								
total								

27 June - 1978
MS/GL

IV 3. NAVIGATION REPORT

RIG MOVE OF "ROSS RIG" FROM 15/9-2 TO 34/10-1.

1. Final position 23 June 1978.

   Lat.: 61°10'46,84"N Lon.: 02°12'43,67"E

   Rig heading: 318°

   Deviation from intended location: 14 m - 112°

   Accuracy: ± 10 m

2. Navigation/positioning method

   a) Final positioning: JMR, satellite positioning system.
   b) Navigation: Pulse/8 navigation system with computer and plotter.

   Navigation contractor: Decca Survey Norway A/S
   Navigation engineers : Mangerøy, Bjørnø.

3. Duration of move

Navigation equipment and personnel dept. Forus	: 16 June 1978 at 0700 hours
Start from 15/9-2	: 18 June 1978 at 0300 hours
Start run-in	: 19 June 1978 at 0840 hours
First anchor (no. 5) set	: 19 June 1978 at 0900 hours
Stop anchor handlung due to unstable Pulse/8	: 19 June 1978 at 1130 hours
Start anchor handling again	: 19 June 1978 at 1345 hours
Last piggy-back anchor set	: 19 June 1978 at 2045 hours
All anchor tensioned	: 20 June 1978 at 0515 hours

Total time from start of move
till all anchors tensioned : 50 hours, 15 min.
Down time due to unstable Pulse/8 : 2 hours, 15 min.
Effective time from setting first
anchor till last piggy-back anchor
set : 9 hours, 30 min.

4. Techniques/problems

To ensure good and continuous navigation control during run-in a Pulse/8 receiver interfaced with computer and plotter was used. The Pulse/8 system performed well indicating move of the rig of less than 10-15 meters. The satellite navigation system was to be used for final positioning.

As the wind was easterly it was decided to drop anchor no. 5 at the run-in, then anchors no. 7 and 1 to keep the rig up against the wind. However, due to problems with ancor no. 7 anchor no. 8 was set. To keep the rig at location during this period one supply boat had to tug the rig by anchor no. 1 to compensate for the wind. This method was very successfull. After having set anchors no. 5, 8 and 1 it was decided to stop anchor-handling due to unstable Pulse/8.

After 2 hours, 15 min. down-time anchors no. 7, 4, 2, 6 and 3 were set with piggy-back.

Discrepancy between Pulse/8 and Satnav is 5 m 111°. (Pulse/8 5 m ESE of Satnav).

Nindor Skaar

IV 4. SEABED CLEARANCE CERTIFICATE

3X
three X
diving company ltd.

8 September 1978.

Ross Rig

Observation dive was made to ascertain the clearance of the seabed on completion of operations at block 34/10-1 on the 8 September 1978.

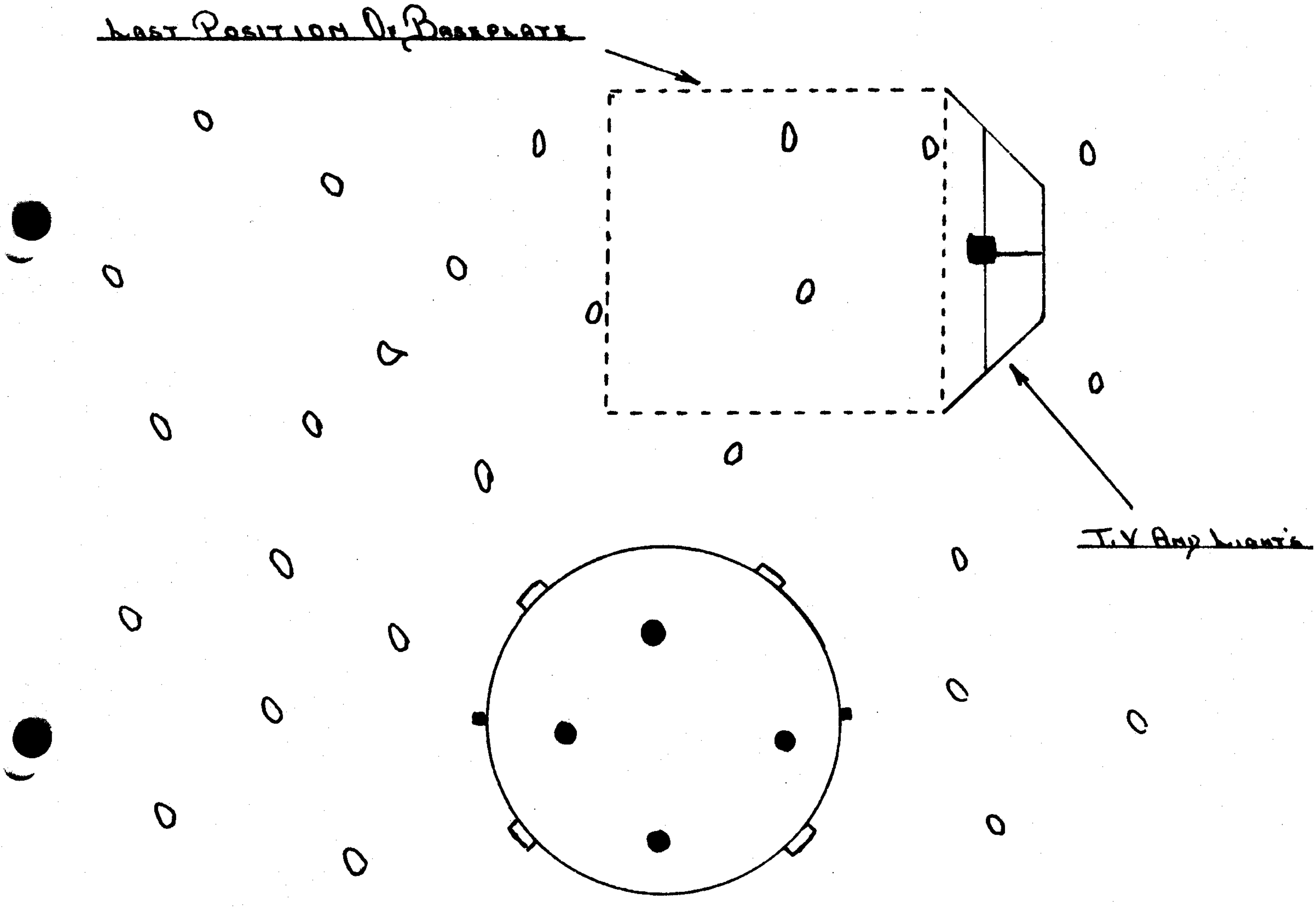
No obstructions or projections were visable, seabed a few stones 6to9in", and coarse sand.

3X Supervisor R.Bennett

RWBennett

8/9/78

BASE RIG LOCATION 34/10-1



VISIBILITY 30FT

SEABED

STONES 6 TO 9 IN

COARSE SAND

V SUMMARY OF PETRO-PHYSICAL PROPERTIES

SUMMARY OF PETROPHYSICAL PROPERTIES

Abstract

The petrophysical properties of Jurassic formations have been calculated based on log, core, RFT and DST-data. Log and core data have been digitized and evaluated on computer.

Summary

The evaluation shows that Brent formation is hydrocarbonbearing while Dunlin, Statfjord and Triassic (?) are waterbearing. Brent encounters 127.5 m of net productive sand.

Average porosity is 31.5% and average watersaturation is 15.1%. Oil-water contact can not be seen in this well.

Average parameters have been calculated for TARBERT, NESS, ETIVE, RANNOCH, BROOM, DUNLIN and STATFJORD formations and presented in the table on the following page.

AVERAGE PETROPHYSICAL PARAMETERS IN WELL 34/10-1

Zone	Interval	Net pay	Gross	Net	Gross	Net	Gross	Net	Net/gross	Remarks
			Average Ø(%)		Average SW(%)		Average Vsh(%)			
TARBERT	1781.5-1798	14.75	27.5	29.9	14.2	6.4	8.4	1.3	.894	Trans-gression Reworked
NESS	1798 -1834	15.75	19.7	29.4	38.9	14.9	43.6	14.4	.438	Swamp/Delta Plain
ETIVE	1834 -1872	38.0	33.6	33.6	6.5	6.5	1,0	1.0	1.0	Channel sands
RANOK	1872 -1936	59.0	30.1	31.2	27.9	22.9	4.5	3.0	.922	Shallow marine
BROOM	1936 -1947	0	-	-	-	-	-	-	0	Foreshore
TOTALT	1781.5-1947	127.50	27.0	31.5	28,7	15.1	16.0	3.6	.770	
DUNLIN "SAND"	2020 -2082	16.5*	14.6	23.4	100	100	47.3	31.0		
STATFJORD FM.	2268 -2350	61.75*	21.3	25.8	100	100	19.6	7.5	.753	

Cut - off criterion: Vsh > 40%

Φ < 12%

Sw > 65%

* NET SAND Net pay = Net sand

VI TESTING OPERATIONS AND RESULTS

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NNE	1		4					5
NE	4	7	1					12
ENE								
E	4	1						5
ESE		1						1
SE		1	2	1				4
SSE			3	1				4
S	8	3	1					12
SSW	1	1						2
SW	3	5						15
WSW								
W	2		1					3
WNW								
NW	1		1					2
NNW		1						1
total								

WAVE

dir. \ height (m)	0 - 1	1 - 2	2 - 3	3 - 5	5 - 7	7 - 10	> 10	total
N	7	15	4		3			29
NNE		1						1
NE	3	4		1				8
ENE								
E	2			1				3
ESE								
SE	1	2	3					6
SSE		2						2
S	8	4	2	1				15
SSW	1							1
SW	4	2						6
WSW								
W	1	1						2
WNW								
NW	1		1					2
NNW								
total								

27 June - 1978
MS/GL

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2 - Navigation report

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(Pulse/8 5 m ESE of Satnav).

Nindor Skaar

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3X
three X
diving company ltd.

8 September 1978.

Ross Rig

Observation dive was made to ascertain the clearance of the seabed on completion of operations at block 34/10-1 on the 8 September 1978.

No obstructions or projections were visable, seabed a few stones 6to9in", and coarse sand.

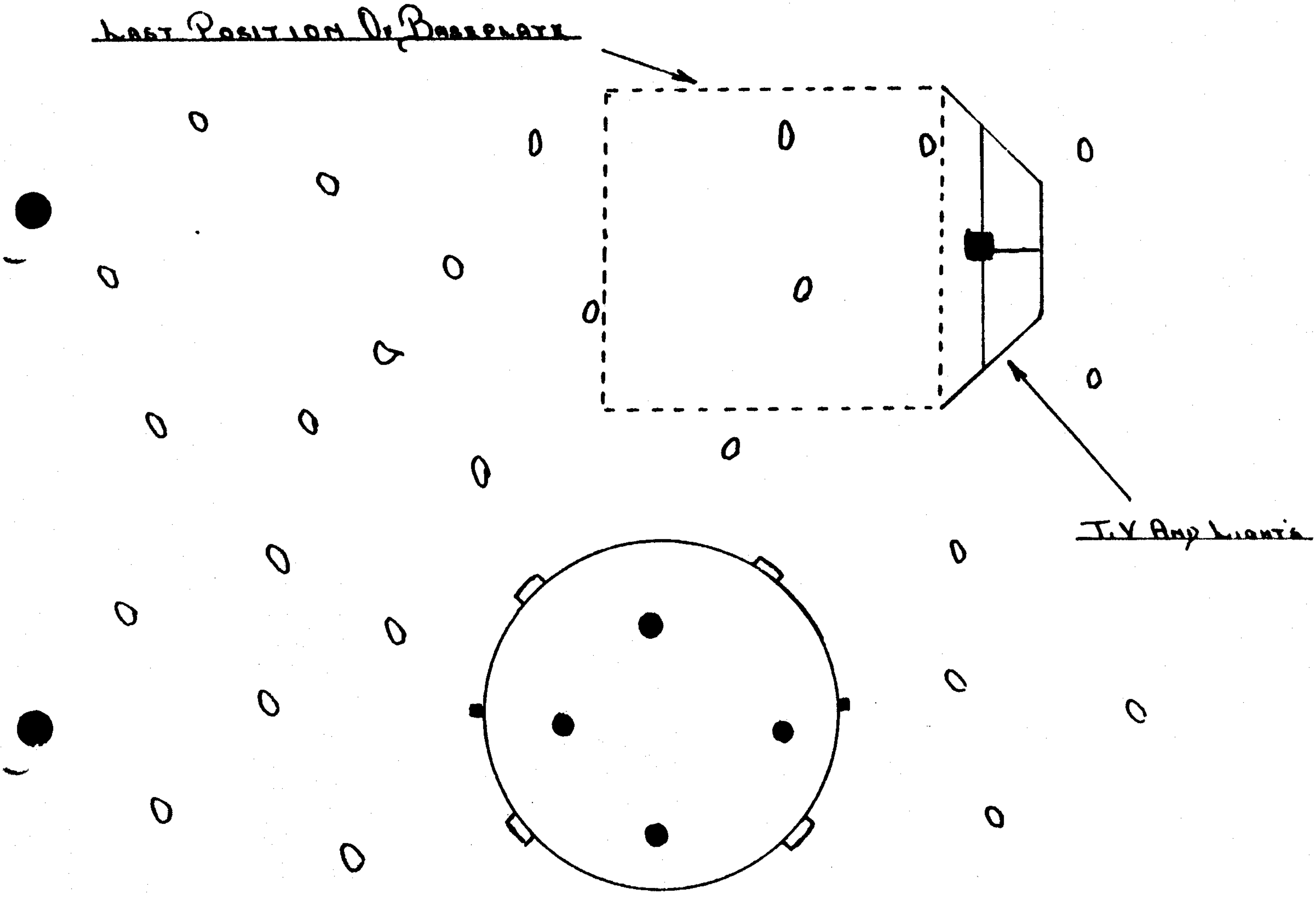
3X Supervisor R.Bennett

R.W.Bennett

3X three X diving company ltd.

8/9/78

Ross Rig Location 34/10-1



Visibility 30ft

Seabed

Stones 6 to 9"in

Coarse Sand

VII ENCLOSURES

12605

III 7

15P1

15P02

statoil / NORSK HYDRO / SAGA PETR.

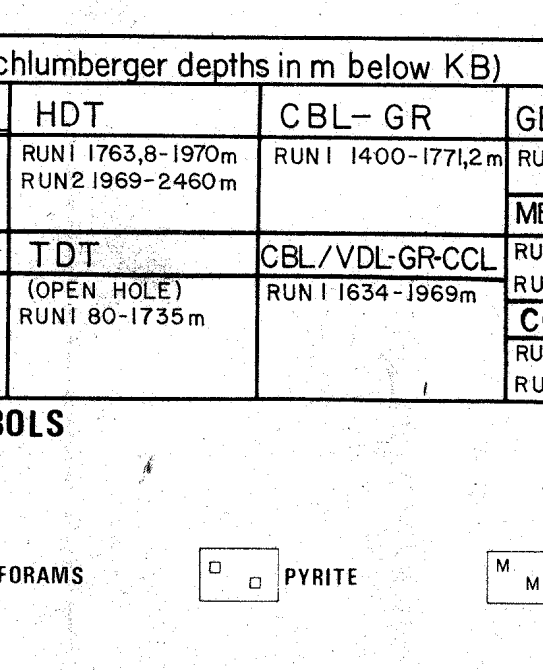
34/10-1

COMPLETION LOG
Scale 1:500

COORDINATES: 61° 10' 46,84" N
02° 12' 43,67" E
K.B.: 25 m
WATER DEPTH: 138m
TOTAL DEPTH: 2460m (KB)
DEEPEST FORM. PEN.: CORMORANT FM? (TRIASSIC)
SPUD DATE: JUNE, 20th 1978
RIG RELEASE DATE: SEPT. 8th 1978
WELL STATUS: P & A
RIG: ROSS RIG
CONTRACTOR: ROSS DRILLING Co. A/S
GEOLOGISTS: O.J. AGA T. HAUGE R. KRÆMER S. MÆHLE S.O. SYRSTAD S.M. AASHEIM
PREPARED BY: R. KRÆMER

CASING DATA:
30" at 213.5m
20" at 488 m
13 3/8" at 1441 m
9 5/8" at 1765 m
7" at 1969 m

LOCATION PLAT



DATE: MARCH, 8th 1979
REVISED, June, 20th 1979

VELOCITY SURVEY: 28 checkshots, levels from 500 m to 2460m by SSL

LOGS RUN (Schlumberger depths in m below KB)

ISF/SONIC-GR-SP	FDC/CNL-GR-CAL	LSS-GR	MLL/MC-CAL	HDT	CBL-GR	GEODIP
RUN 1 213,5-490m RUN 2 487-1454,5m (W/LSS) RUN 3 1439,5-1676,6m RUN 4 1439,5-1740,3m RUN 5 1761-1970m RUN 6 1969-2460m	RUN 1 1439,5-1740,4m RUN 2 1700-1969,8m RUN 3 1969-2460m	RUN 1 487-1454,5m (W/ISF) RUN 2 1751,5-1965,6	RUN 1 1969-2460m	RUN 1 1763,8-1970m RUN 2 1969-2460m	RUN 1 1400-1771,2m	RUN 1 1776-1970m
	FDC-GR-CAL	DLL-MSFL-GR	NGS	TDT	CBL/VDL-GR-CCL	MECH.PROP LOG
	RUN 1 487-1454m	RUN 1 1725-1969,2m	RUN 1 1765-2457,5m	(OPEN HOLE) RUN 1 80-1735m	RUN 1 1634-1969m	RUN 1 1765-1960m RUN 2 1764-1960m
						CCL-PR
						RUN 1 1725-1950m RUN 2 1760-1925m

LITHOLOGIC SYMBOLS

SAND SANDSTONE	LIMESTONE	ANHYDRITE	FORAMS	PYRITE	MICA
SILT SILTSTONE	CHALK	COAL LIGNITE	WOOD FRAGS	GLAUCONITE	STYLOLITES
CLAY CLAYSTONE	DOLOMITE	TUFF	FOSSILS, GEN'L	CHERT	BURROWS
SHALE	MARL	SALT	SHELL FRAGS	SIDERITE	FRACTURES

◔ SHOW OR STAIN ◔ HYDROCARBON CUT ◑ FLUORESCENCE ☼ GAS SHOW

SIDEWALL CORES: ○→ REC. ●→ REC. W/SHOW
CORES: CORE NO.
DST ①
CASING SHOE/LINER
BIT

tr limestone, a/a, pyr, lign & mica

claystone, mostly red brn - brick red, else a/a

TOP TRIASSIC 2367 m RKB
2342 m SS

claystone, lt - dk gy, brnish red - dk brn, grnish gy, firm, slty, subfiss, non calc, grdng to shale

clay, lt gy - lt brn, sft, sl slty, non calc

sandstone, clr, occ yel, pink and smoky qtz, f - med, subang - subrnd, well srt

claystone, dk red brn, purple lt - dk gy, bluish gy, soft - firm, subfiss, sl slty, non - sl calc, grdng to shale thin layers of sandstone a/a and of siltstone, lt-med gy, yel grn, firm, micromicac limestone, wh - lt yel, firm mod hd, cryptoxln tr pyr, lign

TESTS:

DST 1: (1930 - 1935 m RKB)	DST 2: (1839 - 1844 m RKB)	DST 3: (1788 - 1792 m RKB)
Choke : 32/64"	Choke : 17/64"	Choke : 17/64"
Oil rate : 1200 STBOPD	Oil rate : 1789 STBOPD	Oil rate : 2032 STBOPD
Gas rate : 726 x 10^3 Scf/D	Gas rate : 917 x 10^3 Scf/D	Gas rate : 1037 x 10^3 Scf/D
GOR : 605 Scf/STB	GOR : 512,7 Scf/STB	GOR : 510 Scf/STB
ρ OIL : 28,9° API	ρ OIL : 29,4° API	ρ OIL : 29° API
ρ GAS : 0,632 (rel. to air)	ρ GAS : 0,626 (rel. to air)	ρ GAS : 0,62 (rel. to air)
	Choke : 38/64"	
	Oil rate : 6600 STBOPD	
	Gas rate : 3070 x 10^3 Scf/D	
	GOR : 465 Scf/STB	
	ρ OIL : 28,4° API	
	ρ GAS : 0,61 (rel. to air)	

RFT:

DEPTH (m RKB)	CORR. PRESSURE (psi)	DEPTH (m RKB)	CORR. PRESSURE (psi)
1926,4	4468	1847	4382
1922,5	4462	1842,5	4377
1915,5	4454	1837,5	4370
1910,5	4442	1820	4350
1905	4446	1813,5	4345
1896	4437	1810,5	4343
1883,5	4421	1801,5	4331
1878,5	4417	1793	4321
1868	4404	1787	4317
1860	4396	1782,5	4310
1852,5	4387		

PRESSURE GRADIENT: 1,12 psi/m

BAROID DIVISION
NL INDUSTRIES
P.O. BOX 1675 HOUSTON TEXAS 77001

MUD LOG

WISE

WELL INFORMATION SYSTEMS AND ENGINEERING

BAROID DIVISION
NL INDUSTRIES
P.O. BOX 1675 HOUSTON TEXAS 77001

IIV 7

COMPANY STATOIL

API No

WELL 34/10-1

FIELD WILDCAT

COUNTY NORWAY STATE

Location Lat. 61·10·45·810 Long. 02·12·43·550

Sec Twp Rge

Other Services H$_2$S DETECTOR

Permanent Datum SEA FLOOR , Elev —

Log Measured From K.B. , 163 M. Above Perm. Datum

Drilling Measured From AIR GAP 25 M

Logged 214 M. 2462 M

Date Logged 20/6/78 To 14/8/78

Depth Measured From

Elev. K.B.

D.F.

G.L.

Supv. Eng. N DOUGLAS Unit No 8857

Type Muds SPUD 163 To 214 M.
F.W. GEL 214 To 504 M.
SW/GEL/SPER 504 To 1971 M.
SW/SPER/XP20 1971 To 2462 M.

Logging Engs.
F OSBON
C KROEGER
D THOMPSON
A STEWART

LEGEND

ABBREVIATIONS

NB NEW BIT
NCB NEW CORE BIT
CO CIRCULATED OUT
DST DRILL STEM TEST
LAT LOGGED AFTER TRIP
TG TRIP GAS
NR NO RETURNS
DS DIRECTIONAL SURVEY
DC DEPTH CORRECTION
CKF CHECK FOR FLOW
TCL TRIP CHLORIDES

MUD CHARACTERISTICS

W WEIGHT ___ LBS/GAL ___ S.G.
V VISCOSITY, API, SECONDS
F FILTRATE, API, CC'S
CK FILTER CAKE
S SALINITY ___ PPM
Rm MUD-RESISTIVITY, OHM-METER
Rmc MUD-CAKE RESISTIVITY, OHM-METER
Rmf MUD-FILTRATE RESISTIVITY, OHM-METER

LITHOLOGY

SAND
SHALE
CLAY
CHERT
SALT
SILTSTONE
CONGLOMERATE
LIMESTONE
OOLITIC LIMESTONE
DOLOMITE
GYPSUM, ANHYDRITE
COAL OR LIGNITE
GRANITE WASH

REMARKS

BAROID LOGGING SYSTEMS

BAROID

PETROLEUM SERVICES

DIVISION N. INDUSTRIES, P.O. BOX 1675 HOUSTON, TEXAS 77001.

WELL 34/10-1

COMPANY STATOIL

NORTH SEA

NORWAY

(ROSS RIG)

LEGEND

DEPTH CORRESPONDS TO DRILL PIPE MEASUREMENTS.

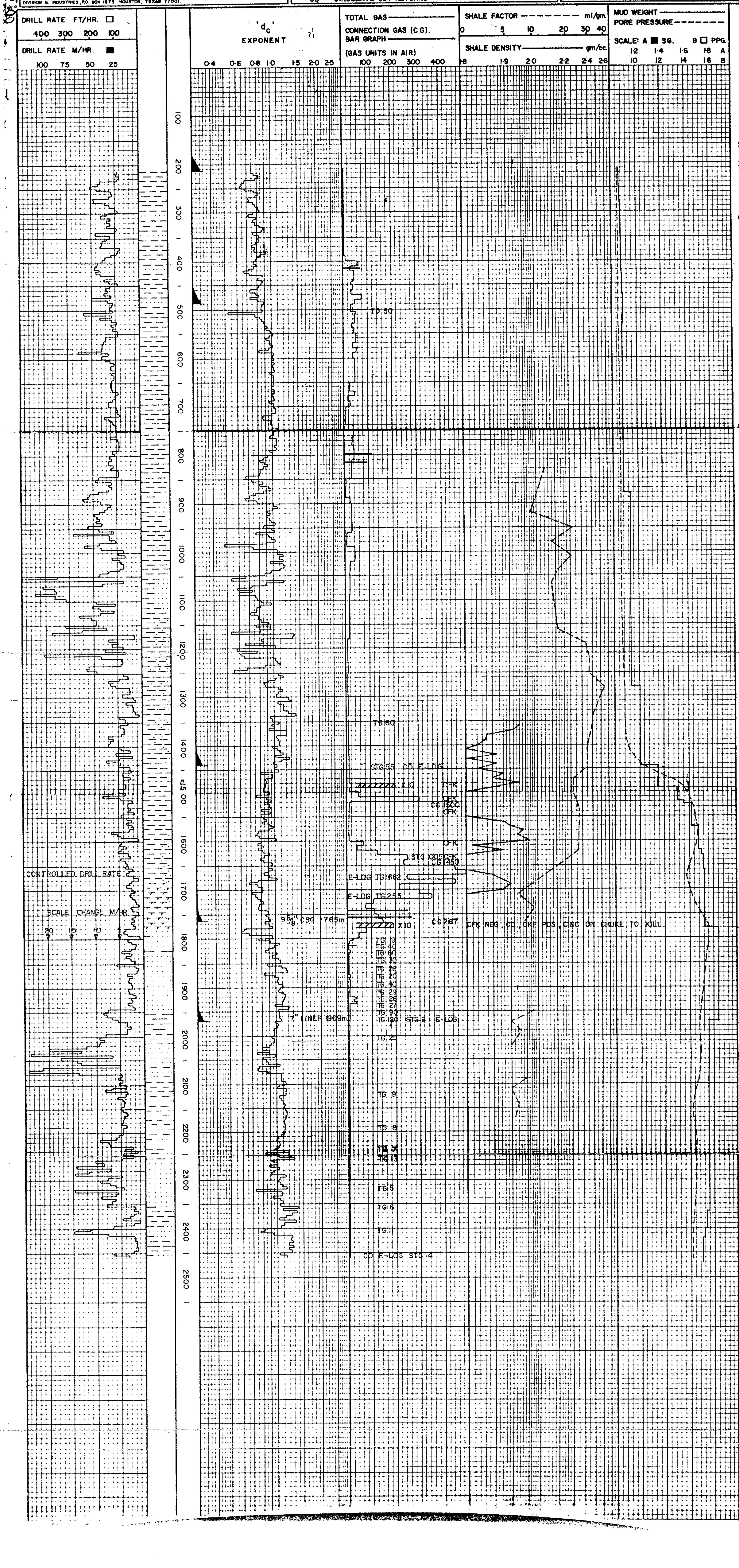
NB	NEW BIT	E-LOG	ELECTRIC LOG
TG	TRIP GAS	NCB	NEW CORE BIT
ST	SHORT TRIP	STG	SHORT TRIP GAS
NR	NO RETURNS	CFK	CHECK FOR FLOW
CO	CIRCULATE OUT RETURNS	DST	DRILL STEM TEST

PERMANENT DATUM M.S.L., ELEV: 25m. ABOVE PERM DATUM

WATER DEPTH 138m.

SAND ⁙ CLAY SHALE LS MARL

ADT LOG



REMARKS

SPUD 08·00HRS 20/6/78

30" CASING AT 213·5m.
NB4 OSC 3AJ

CLY-LT GY, SFT, STKY, SDY, W/ABNT SHELL FRAGS.

20" CASING AT 488m
25/6/78
26-30/6/78
NB 5 OSC.

CLYST-LT DK GY, SFT, SFT, STKY, OCC FRM, TRS SD, PYR, MIC, LIG, & BRN LS.

1/7/78.

CLY/CLYST- A/A BECOM SILTY IN PT.

SD-CLR, RD SUB RD, FAIR SORT, FN MD GNS, W/ABNT FOSS.

CLY/CLST-SILTY A/A

SD - A/A TRS GLAU, MICA, LIG, FOSS FRAGS.

2/7/78.

CLY/SH- LT DK GY, FM.

SLTST- LT GY BRN, SFT, SDY, PALE YEL FLUO CRUSH CUT.
NB 6 DTJ.

TRS LS - LT DK GY, XLN.

3-6/7/78.
NB 7 XIG 13⅜" SHOE 1441m

7/7/78.

8/7/78.

CLYST-LT GY, SFT, STKY, OCC SLTY.

TRS V/FN SD & SST.
9/7/78.
TRS WH LS, YEL FLUOR.
10/7/78.
NB 8 XV.
11/7/78.
NB 9 XVD 12/7/78.
MRL-GY, SFT-FRM, W/ YEL FLUOR.
13-19/7/78.
SD - M-FN GN, SUB ANG SUB RD, UNCONS W/SATU CRUDE OIL, 27° API.
NCB1(1781-1790) 20/7/78
RR CBI C22 1790-1801m.
RR CBI C22 1801-1818m.
RR CBI C22 1818-1837m.
RR CBI C22 1837-1853m.
RR CBI C22 1853-1865m
RR CBI C22 1865-1875m.
RR CBI C22 1875-1893m
RR CBI C22 1893-1911m.
RR CBI C22 1911-1923m.
RR CBI C22 1923-1938m.
RR CBI C22 1938-1951m.
NRB 12 XIG 25/7/78
NRB 17 OWV
NRB 18 J3
7/8/78
CLYST-LT GY, DK GY, FRM.
SST-CLR, M GN, GRDG TO SLTST.

NRB 19 J4
8/8/78

NRB 20 OWV
9/8/78
SD-CLR, F GN, W SRTD.
NCB2 C18 2232 - 2250m
NB 22 ACC TURBO.
10/8/78.
NB 23 J 3 11/8/78.
SD-CLR, FN, FAIR SORT.

NB 24 J4.

NB 25 J33 12/8/78.

13/8/78.

NB 26 J33
CLY ST- RED/BRN, FRM, SLI SLTY.
SD-CLR, SUB ANG, UNCON.