PL 046

STATOIL - ESSO - NORSK HYDRO

COMPLETION REPORT

WELL 15/9-2

TABLE OF CONTENTS

I GENERAL INFORMATION

GENERAL INFORMATION

1. Well data record.

a) Well designation: 15/9-2

b) Well classification: Wildcat

c) Well location:

i. Country: Norway North sea

ii. Licence: PL 046

iii. Latitude: 58° 25' 34,06" N

Longitude: 01° 42' 28,20" E

iv. Seismic location: Shotpoint no: 785

Line No: 510 - 314

v. Water depth: 108 m

d) Rig data:

i. Rig name: "Ross Rig"

ii. Drilling draft: 21,3 m

iii. RKB - MSL: 25 m

2. Purpose of well.

Well 15/9-2 was drilled on the 15/9-2 Beta structure located in the north western part of Block 15/9. The primary objective of the well was to penetrate sandstones of Middle Jurassic age and evaluate their content of hydrocarbons.

3. Results of well.

15/9-2 proved the presence of gas in sandstones of Middle Jurassic age. Logs and RFT samples obtained from the well indicate a gas/water contact between 3652 m and 3654 m KB. (See VI Testing operations and results). Due to technical problems encountered during drilling, the well was not production tested.

Total depth was 3764 m which is 41 m into rocks of Triassic age. A total of 11 cores were recovered from 3498 m to 3692 m KB.

4. Well history.

a. General:

i) Spud date: April, 12th 1978

ii) Rig released: June 18th, 1978

iii) Status: Plugged and abandoned.

b) Contractors:

i) Drilling platform: "Ross Rig"
ii) Drilling contractor: Ross Drilling Company A/S
iii) Cementing: Dowell-Schlumberger
iv) Casing: Weatherford
v) Well testing: Schlumberger
vi) Electric logging contractor: Schlumberger
vii) Mudlogging contractor: Baroid
viii) Mud Contractor: Anchor Drilling Fluids A/S
ix) Supply Boats: Grieg Offshore: "Ibis One"
Karmøy Supply: "Karmøy Boy"
x) Helicopters: Helikopter Service A/S
xi) Rig positioning Contractor: A/S Geoteam
xii) Diving: Three-X
xiii) Turbodrilling:
xiv) Conventional coring: Christensen Diamond
xv) Core analysis: GECO/Corelab
xvi) Sample analysis: Robertson Research

c) Casing

i) 30" at 171 m
ii) 20" at 399 m
iii) 13 3/8" at 1181 m
iv) 9 5/8" at 2788 m
v) 7" liner at 3762,5 m

d) Coring

1. Conventional coring (Description attached)
Core No. 1: 3498 m - 3515 m
recovered 16,5 m, 97%
Core No. 2: 3515 m - 3533,3 m
recovered 18,3 m, 100%
Core No. 3: 3533,3 m - 3551,6 m
recovered 18, 3 m, 100%
Core No. 4: 3551,6 m - 3569,9 m
recovered 18,3 m, 100%

Core No. 5: 3569,9 - 3588,2 m
recovered 18,3 m, 100%

Core No. 6: 3588,2 - 3606,5 m
recovered 18 m, 98,5%

Core No. 7: 3606,5 - 3624,5 m
recovered 17,7 m, 98,3%

Core No. 8: 3624,5 m - 3642,8 m
recovered 17,8 m, 97,4 %

Core No. 9: 3642,8 m - 3661,1 m
recovered 18,3 m, 100%

Core No. 10: 3661,1 - 3669,9 m
recovered 7,9 m, 100%

Core No. 11: 3674 m - 3692 m
recovered 16,9 m, 97%

e. Sidewall coring

49 samples of 56 shots were recovered (87,5%)
Average core length: 2,8 cm.

f. Logging.

1. Baroid, ADT unit including the following data:

i) Drilling rate
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
ISF-Sonic	1	171 - 388,8 m
	2	399 - 1188,2 m
	3	1178,3-2804,5 m
	4	2784,5 - 3570,8 m
	5	3450 - 3760,5 m
LSC-Sonic	1	2784,5 - 3750 m
FDC-GR	1	399 - 1190,5 m
	2	1178,3 - 2800 m
FDC/CNL-GR	3	2784,5 - 3760 m
HDT	1	2784,5 - 3760 m
GEODIP	1	3476 - 3660 m
CBL-GR	1	399 - 1176 m
	2	1108 - 2785 m
CBL-VDL-CCL-GR	3	2686 - 2721,5 m
CPI	1	3460 - 3750 m
DLL-MSFL-GR	1	3450 - 3675 m
MLL	1	3475 - 3760,5 m
NGS	1	3450 - 3760,5 m
TDT (open hole)	1	3475 - 3758,9 m

g) Velocity survey.

The velocity survey was conducted by SSL.
28 checkshots from 630 m to 3760 m.

II GEOLOGICAL REPORT

GEOLOGICAL REPORT

1. Stratigraphy

a) Table of chronostratigraphy (all depths in meter)

Chronostratigraphic tops	Drill depth (KB)	Subsea depth
Tertiary		
Pliocene	520	-495
Miocene	805	-780
Oligocene	1303	-1278
Eocene	1687	-1662
Paleocene	2277	-2252
Danian	2735	-2710
Upper Cretaceous		
Maastrichtian	2800	-2775
Lower Cretaceous		
Albian-Aptian	3310	-3285
Barremian	3345	-3320
Upper Jurassic		
Volgian	3397	-3372
Middle Jurassic		
Bathonian	3483	-3458
?Bathonian ?Bajocian	3650	-3625
Lower Jurassic	3692	-3666
Triassic	3723	-3698
TD	3764	-3739

b) Table of lithostratigraphy (All depths in meter)

Lithostratigraphic tops	KB depth	Subsea depth	Thickness(m)
Nordland Group	133	-108	1054
Utsira Formation	862	-837	325
Hordaland Group	1187	-1162	1090
Frigg Formation	1900	-1875	377
Rogaland Group	2277	-2252	485
Balder Formation	2277	-2252	47
Sele Formation	2324	-2299	64
Lista Formation	2388	-2353	35
Heimdal Formation	2423	-2398	234
Maureen Formation	2657	-2632	105
Chalk Group	2762	-2737	548
Ekofisk Formation	2762	-2737	38
Tor Formation	2800	-2775	173
Hod Formation	2973	-2948	242
Plenus Marl Formation	3215	-3190	50
Hidra Formation	3265	-3240	45
Cromer Knoll Group	3310	-3285	87
Rødby Formation	3310	-3285	20
Valhall Formation	3330	-3305	67
Humber Group	3397	-3372	86
Kimm. Clay Formation	3397	-3372	72
Heather Formation	3469	-3444	14
Brent Group	3483	-3458	209
Undif. fluviodeltaic	3483	-3458	131
Beryl Formation	3614	-3593	36
Sleipner Formation	3650	-3625	42
Lower Jurassic			
Statfjord Formation	3692	-3666	31
Triassic			
Skagerak Formation	3723	-3698	41+
TD	3764	-3739	

2. LITHOLOGICAL DESCRIPTION

a) SUMMARY

NORDLAND GROUP (133 - 1187 m)

The Nordland Group extends from seabottom down to 1187 m at the base of Middle Miocene. Dominant lithology is clay and claystone which is light grey to light brown with abundant fossil and shell fragments. The clay is silty and sandy in parts. Especially the upper 150 m consist of sand, which is medium to very coarse grained, subangular to rounded and very loose. Also the sands have abundant fossil and shell fragments.

Utsira Formation (862 - 1187 m)

Utsira Formation consists of sand with thin beds of clay, claystone a/a, grading downward to siltstone and claystone at the base. Sand of Utsira Formation is very fine to fine grained and is well cemented in parts. Abundant shells, foraminiferas, gastropods, corals and other fossil fragments has been observed. Trace of pyrite is present in this formation.

HORDALAND GROUP (1187 - 2277 m)

The Hordaland Group has a mixed lithology of claystone, sand and shale. Both sands and claystones are very similar to those of the Nordland Group, but the presence of glauconite is more marked. Sand beds in the upper part varies from 5 to 25 m in thickness, and the sand is usually a clear quartz, very fine to fine grained.

Claystones of this group are medium to dark grey, slightly silty and contains trace of white to light yellow limestone and trace of dark grey to brown grey dolomite.

Frigg Formation (1900 - 2277 m)

Frigg Fromation is the more sandy development in the lower part of the Hordaland Group. Sandbeds which are from 10 to 30 m thick are inbedded with shales and claystone. The sand is a clear quartz, fine to medium grained, well sorted and subrounded.

Shales of this formation display numerous colours, green grey, bluish grey, brown grey and occasionally redish brown in lower part. Trace of limestone, glauconite, pyrite and siderite is present throughout. The intervals 1970 to 2040 m and 2200 to 2277 contain trace of a white to light yellow to light green tuff.

ROGALAND GROUP (2277 - 2762 m)

The group in its entirety consists of shales and sandstones. The upper formations are mostly shales which are separated on basis of log-characters.

Balder Formation (2277 - 2324 m)

This formation consists of greenish grey, brownish grey and redish brown shales. They are fissile, firm and slightly calcareous. These shales contain trace of tuff as described in the overlying formation.

Sele Formation (2324 - 2388 m)

Shales of the Sele Formation are grey of various shades, but also brick red to pink colours are common. They are usually micro-micaceous and slightly calcareous.

Trace of fine to very fine sand, glauconite, pyrite and lignite have been observed.

Lista Formation (2388 - 2423 m)

Shales of Lista Formation are thought to be present between the basal log-character of the Sele Formation and the sandstones of the Heimdal Formation. These shales are mostly light to medium green, otherwise very similar to those of the Sele Formation. Thin beds of very fine sandstone are also present here.

Heimdal Formation (2423 - 2657 m)

The dominant lithology of the Heimdal Formation, is sand with only subordinate amounts of shale. Sands are fine to coarse grained, subrounded to subangular. Calcite cementation occurs in parts of the sequence. Trace of pyrite and fossil fragments have been recorded as well as stringers of limestone and dolomite.

Numerous coloured shales occur as thin beds. Most common are shades of grey and green, but also redish shales occur.

Maureen Formation (2657 - 2762 m)

Maureen Formation holds a mixture of lithologies such as limestone, shale, marl and sands.

A general upward increase in grainsize is supposed based on the pattern of the gamma ray - and sonic log.

Silty and slightly calcareous shales associated with marls are present in the lower part of the formation. Sands similar to those of the Heimdal Formation occur in the upper part. Therefore the upper boundary is not easily determined, due to its transitional nature.

CHALK GROUP (2762 - 3397 m)

Ekofisk Formation (2762 - 2800 m)

The Ekofisk Formation in this area consists of interbedded chalky limestone, shale and sandstone.

Limestones are tan to white, slightly argillaceous and microcrystaline in parts. Sandstones are very fine to fine grained and calcareous cemented. The Ekofisk Formation is marked by a relative low gamma ray response and a high sonic log response compared to the overlying formations.

Tor Formation (2800 - 2973 m)

This formation in its entirety consists of chalk with subordinate amounts of shales and marls. Chalk is white to light buff, firm, pure and microcrystaline in parts. Thin streaks of light to medium grey marl and medium grey, fissile calcareous shales occur. Gamma-ray readings are generally low across the interval. The lower boundary is questionable, but a faint decrease in sonic log response was picked as base of the formation.

Hod Formation (2973 - 3215 m)

Characteristic for the Hod Formation in relation to the Tor formation, is the less chalky appearance and the higher content of marl. The marl is white to light and medium grey, with thin argillaceous or silty laminae. Trace of pyrite, glauconite, mica and fine to medium grained sand has been observed.

Plenus Marl Formation (3215 - 3265 m)

This interval is easily recognized on the wireline logs and correlatable over large areas. The lithology is mostly marls as described above. Only thin beds of limestone occur.

Hidra Formation (3265 - 3310 m)

The Hidra Formation displays similar lithofacies as the overlying formation. However, pyrite and glauconite seem more abundant here.

The log-character is easily correlatable with nearby wells.

CROMER KNOLL GROUP (3310 - 3397 m)

This group constitutes a sequence of shales, marls, limestones and claystones of Lower Cretaceous age. Two formations have been separated on basis of log-character mainly.

Rødby Formation (3310 - 3330 m)

Marls and limestones as above are present here. However, a Lower Cretaceous age is suggested by paleo analysis and correlation from well 15/9-1. The lower boundary is well marked on the sonic log as a decrease in velocity.

Valhall Formation (3330 - 3397 m)

Marl and limestone are more abundant in the lower part while shales and claystones are most abundant in upper part of this formation. Shales and claystones are light to medium grey and greenish grey, occasionally redish, micromicaceous, slightly silty and calcareous. Limestone and marl have characteristics similar to overlying rocks.

HUMBER GROUP (3397 - 3483 m)

Rocks of the Humber Group are characterized by very high gamma ray readings, resulting from the high organic content of the shales in this group.

Kimmeridge Clay Formation (3397 - 3469 m)

This formation contains dark grey to brownish grey shales and claystones. Occasionally brick red examples occur.
The upper boundary is marked on the sonic log as a sharp decrease in velocity. A relative low interval velocity is maintained throughout the formation.

Heather Formation (3469 - 3483 m)

The Heather Formation is here represented as a thin interval separated from the overlying formation on basis of the higher calcareous content of these sediments. This is shown on the sonic log as a slight increase in interval velocity.
Otherwise these rocks are similar to those of the Kimmeridge Clay Formation.

BRENT GROUP (3483 - 3692 m)

The Brent Group consists of sands of Middle Jurassic age.
A general lack of paleoindicators causes uncertainty to the actual age of this group, but a Bathonian to Bajocian age is suggested.

Undif. Fluviodeltaic (3483 - 3614 m)

Rocks of this interval are probably equivalent to the Tarbert and Ness formations in the Statfjord area. However, lateral continuity is not supposed, and consequently those names have not been used.

The sandstones are very fine to very coarse, occasionally conglomeratic. Shale and mudstone streaks are rare. Carbonaceous matter, mica and kaolinite are abundant accessories throughout. Common sedimentary structures are crossbedding, wavy discontinous bedding, bioturbation and slump structures.

Beryl Formation (3614 - 3650 m)

(For reference, see type description at the end of this summary).

This formation consists of sandstones very similar to those above, but due to higher content of carbonate and based on environmental interpretations, sediments of the Beryl Formation were probably deposited under marine conditions. Therefore this rock sequence has been separated.

Sleipner Formation (3650 - 3692 m)

(For reference, see type description at the end of this summary).

Sediments of the Sleipner Formation consists of light to medium brown sandstones and hard, medium grey silty claystones. Sandstones range from fine to pebbly in grainsize.

Coalbeds of 0,5 to 2,5 m thickness are frequently found in this formation.

Statfjord Formation (3692 - 3723 m)

A Lower Jurassic age is suggested to the rocks between the Sleipner Formation and Triassic. A group name has not been assigned to this sequence.

The rocks comprice hard dark grey to black shales and light grey fine to medium grained sandstones. Trace of pyrite and carbonaceous matter exists

TRIASSIC

Skagerak Formation (3723 - 3764+ m)

The well bottomed in rocks of the Skagerak formation. Light grey to brownish sandstones dominate. They are very fine grained and silty, hard and calcareous.

Shales that range in colours from dark grey to brick red and brown occur as interbeds. The Jurassic/Triassic interface is picked lithologically where the first red coloured shales appear, but also the sonic log display a more quiet pattern in the Triaasic.

Beryl Formation, Type Description.

Name

From the Beryl Field in UK sector 9/13. The formation is homotoxical with the Etive Formation of the Brent Group.

Well type section

From UK well 9/13-12 (Mobil).

Well reference section

From UK well 9/19-3 (Conoco).

Thickness

The formation is thickest in the north, in the UK 9, N25 Fields, and decreases towards the Utsira high.

Lithology

Interbedded silty shales and sandstones. The shales are grey to dark brown and black, glauconitic and commonly non to slightly calcareous. The sandstones are white to pale brown, very fine to medium grained, occasionally coarse grained, micaceous and in part argillaceous with calcite cement. The formation is shaly to the north, and becomes more sandy towards the southern part of the Viking Trough.

Boundaries

The Beryl Formation overlies the Sleipner Formation, and the contact is taken at the base of the first marine sand above the coals, the contact is usually marked by a break in the gamma ray log, and a more steady response of the sonic log compared to the underlying Sleipner Formation.

The upper contact is with the "Ness" equivalent Fm of the Brent Group. The contact may be taken at the base of the first continental sandbed above. The sonic log change to a more irregular pattern like the Sleipner Fm.

Depositional environment

Subsidence in late Bajocian produced a set of grabens and half grabens in the Viking Trough area. Marine waters from the East Shetland basin flooded southwards and marine-marginal marine clays and silts were mixed with the fluvial sand and locally derived scree from the fault scarps. Thin coals and carbonaceous shales were deposited occasionally.

Distribution

In the middle and southern part of the Viking Trough.

Age

Bajocian to Bathonian.

Sleipner Formation, Type Description

Name

From the Sleipner Field in the Norwegian sector, Blocks 15/6 and 15/9 (Statoil/Esso).
The Sleipner Formation is homotoxical with the Broom-Rannoch Formations of the Brent Group.

Well type section

From Norwegian well 15/6-5 (Esso).

Well reference section

Norwegian well 15/9-2 from 3650 m (11975 ft) to 3692 m (12113 ft) below KB.

Thickness

42 m (138 ft) in the reference well.

Lithology

The formation consists of interbedded sandstones and silty shales. The sandstones are dark grey, very fine to coarse, occasionally conglomeratic, partly calcareous and micaceous, kaolinite is abundant. The shales are dark grey to brown and silty in parts.

Coals, massive and mature are frequently encountered.

Boundaries

In the Sleipner area, the Sleipner Fm overlies the Eiriksson Mb of the Statfjord Fm, and the boundary is the base of the non calcareous silty shales below the coal beds. The sonic log change to a very irregular response compared to the underlying Eiriksson Mb.

Outside the Sleipner area, the "Dunlin" equivalent Fm is encountered below, and the change from marine beds to continental beds marks the transition.

On the highs the Sleipner Fm may unconformably overlie Triassic deposits.

The upper boundary is with the Beryl Formation, and should be taken at the base of the first marine sandstone bed. The sonic log response change to a more quiet one, and the gamma ray log has a marked shift.

Depositional environment

Following the post Dunlin erosion, a fluvial system developed in the Viking-Vestland structural and topographic complex. Cut and fill by the streams reduced the region to a level not much above the Rannoch sea to the north, and an extensive continental coal swamp developed in the lowlands. Local deltas and lakes were present from time to time.

Distribution

The Sleipner Fm is restricted to the southern part of the Viking Trough.

Age

Aalenian to Bajocian.

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 " E

K.B.E.: 25 meters | COMPANY: Statoil/Esso/Norsk Hydro

HOLE SIZE: 17½" | GEOLOGIST: A. Hage | DATE: 14. april 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
180	95 5	sd, lse, med-v crs, lithic grains, subang-rnd clay, lt gy, sft, fos frags, shell frags	
190		a/a	BG = 2 - 5 units
200	70 30	clay, slty, sndy,-f -,sft sd, a/a fos frags	
210	40 60	clay a/a sd a/a, med-crs	
220	100	clay, lt gy, sft, slty, sl sdy, sl sticky	
230	100 tr	clay a/a sd a/a	
240	100 tr	clay a/a sd a/a	
250	50 50	sd, lse, f-crs clay, a/a fos - shell frags	
260	70 30	clay a/a sd a/a	
270	60 40	clay a/a sd a/a	
280	100 tr	clay a/a sd a/a	
290	95 5	clay a/a lignite, small frags, fibrous in parts, tr sd	
300	100	a/a	
310	100 tr	clay a/a lignite + sd	↑
320	100	clay a/a	BG = 20 - 25 u
330	100	clay a/a	↓
340	100	clay a/a	
360	100	clay a/a	
370	100	clay a/a	
380	100	clay a/a	
390	100	clay a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 17½" | GEOLOGIST: A. Hage | DATE: 14.apr.- 18. apr. 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
400	100	clay, lt gy, sft, sl slty, sl lignitic	
410	100	clay a/a	
420	100	clay, a/a, slty	
430	100	clay, a/a, slty	
440	100	clay	
450	100	clay, a/a	
460	100 tr	clay, a/a, more silty, calc, sl sticky v f sd	
470	100	clay, sdy, a/a	
480	100	clay, a/a, - more med - lt gy	
490	100	clay a/a	
510	100	clay a/a	
520	100	clay, a/a	
540	100	clay a/a	
550	100	clay, a/a	
560	100	clay a/a	
570	100 tr	clay a/a sd, v f grained	
580	100	clay, a/a	
590	100	clay, a/a	
600	100	clay a/a	
610	100	clay a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 17½" | GEOLOGIST: A. Hage | DATE: 18. april 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
620	100	clay, lt-med gy, sft, slty, calc, sl sticky	
630	100	clay a/a	
640	100	clay a/a	
650	60	clay a/a	
	40	sd, v f-med, occ crs, lt gy, lse, ang-subrnd,	
		m-p-srt, mainly qtz, ab dk min-lithic grns,	
	tr	pyr, lignite	
660	100	clay a/a	
	tr	sd	
670	70	clay a/a	
	30	sd a/a	
680	100	clay a/a	
690	100	clay a/a	
	tr	sd, vf - f	
700	90	clay a/a	
	10	sd, vf-f, lse, -qtz grain mainly	
710	100	clay, a/a, incr slty, sdy	
720	100	clay, silty a/a	
730	100	clay a/a	
740	100	clay a/a	
750	100	clay a/a	
760	100	clay a/a	
770	100	clay a/a less calc	
780	100	clay a/a	
790	100	clay a/a	
800	100	clay, a/a	
810	100	clay a/a	
820	100	clay a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06" N ; 01 ° 42 ' 28,20 " E

K.B.E.: 25 meters | COMPANY: SRATOIL/ESSO/NORSK HYDRO

HOLE SIZE: 17½" | GEOLOGIST: A. Hage | DATE: 18. april 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
830	100	clay, lt-med gy, sft, slty, occ sdy, sl sticky	
840	100	clay a/a	
850	100	clay a/a	
860	100	clay a/a	drl.break: 863 m
870	70	clay a/a	
	30	sd, vf-f, lse, shell frags	no shows
880	80	sd, vf-med, lse, w srt, ab fos frags, shell, forams gastropods, corrals	
	20	clay a/a	
	tr	pyr, lignite	
890	80	sd a/a	
	20	clay a/a	50 units gas
900	80	sd, a/a, ab fos frags	most of sd goes through shaker
	20	clay a/a	
910	90	sd a/a	
	10	clay	
920	90	sd a/a	
	10	clay a/a	
930	80	sd a/a	
	20	clay a/a	
940	80	sd a/a	
	20	clay a/a	
950	50	sd a/a	
	50	clay	
960	50	sd a/a	
	50	clay a/a	
970	80	sd a/a	
	20	clay a/a	
980	50	sd a/a	
	50	clay a/a	
990	80	sd a/a	
	20	clay a/a	
1000	80	sd a/a	
	20	clay a/a	
1010	70	sd a/a	
	30	clay a/a	
1020	50	sd a/a	
	50	clay a/a	
1030	50	sd, bcmg arg, hd, cmted, occ dk gy, mostly med gy, f-vf	
	50	clay, a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 17½" | GEOLOGIST: A. Hage | DATE: 18. april 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1040	80	sd, med-v f, occ cmt hd, a/a	
	20	clay a/a	
1050	60	clay, sft, lt-med gy, v slty-sdy (siltstone)	
	40	sand, vf-med, lse, ang-subrnd, w srt,	
	tr	fos	
1060	90	siltstone, v arg, sdy(vf), sft, med gy, sl calc	
	10	sd a/a	
1070	100	siltst-clay, a/a	
	tr	sd	
1080	90	siltstone, sft-firm, arg, a/a, sandy	
	10	sd, f-med, lse,	
	tr	fos frags	
1090	100	siltstone a/a firm	
1100	100	sltst a/a	
1110	100	sltst a/a	
1120	100	sltst, arg, firm, lr gy-med gy-brn, sl calc	
1130	100	sltst, a/a, more hd-firm	
1140	100	sltst a/a	
1150	100	sltst a/a	
1160	100	claystone, v silty, brn, firm-hd(mod hd), calc sdy in parts	
1170	100	claystone, silty a/a	
	tr	fos frags - forams, shell frags,	
	tr	pyr	
1180	100	claystone a/a	
1190	100	claystone a/a, silty-sl sandy (v f gr)	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Aasheim/Mæhle | DATE: 23. april 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1200	100	clst, grnish gy-brn gy, firm, slty-v slty calc, micromica	NO SHOWS
	tr	pyr	BG 30 units
	tr	glauc	
	tr	fossil frags	
1210	60	clst a/a, less slty, occ v calc	— " —
	40	sd, vf-f, qtz, clr, subrnd-rnd	
	tr	lignite	
	tr	shell frags	
1220	80	clst a/a	
	20	sd a/a	
	tr	dol, lt-med gy, mod hd-hd	
	tr	lignite	
1230	100	clst, a/a, mostly med gy	
	tr	shell frags	
	tr	glauc	
1240	100	clst a/a	
	tr	lignite	
	tr	glauc	
	tr	shell frags	— " —
1250	100	clst a/a	
	tr	lignite	
	tr	glauc	
	tr	shell frags	
	tr	sd	
1260	95	clst a/a, med gy, occ lt gy,	
	5	sd, vf-f, qtz, clr, subr, well srt, loose	
	tr	shell frags	
	tr	glauc	
	tr	lignite	
1270	55	sd a/a	
	40	clst a/a	NO SHOWS
	5	shell frags	
	tr	glauc	
	tr	lignite	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 "

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

HOLE SIZE: 12 1/4" | GEOLOGIST: MÆHLE/AASHEIM | DATE: 23 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1280	80	sd, qtz, clr, f - med, rnd-subrnd	
	15	clst, lt-med gy, firm, sl slty	NO SHOWS
	5	shell frags	
	tr	glauc	
	tr	calcite, xln, hd, wh-lt yel	
1290	85	clst a/a	
	10	sd a/a	
	5	shell frags	
	tr	glauc	
	tr	lignite	
1300	90	sd a/a	
	5	clst a/a	
	5	shell frags	
	tr	lignite	
	tr	glauc, pyr	
1310	100	clst a/a occ brn	
	tr	shell frags	
	tr	lignite	
	tr	glauc	
1320	100	clst a/a	
	tr	shell frags, lignite, glauc	
1330	100	clst, med gy - brn, firm, silty, sl calc	
	tr	glauc	
	tr	lignite	
1340	100	clst a/a, w/some rnd, f - med grnd sd grains	
	tr	glauc	
1350	100	clst a/a	
	tr	glauc	
	tr	lignite	
1360	100	clst a/a	
1370	100	clst, brn-lt gy, firm, v slty, sl calc	
	tr	shell frags	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Aasheim | DATE: 23 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1380	100	clst, brn - lt gy, firm, sl slty	NO SHOWS
	tr	shell frags	
	tr	f - med sd grns	
1390	100	slty clst, brn- mod gy, firm	
	tr	shell frags	
	tr	glauc	
1400	100	clst, brn - lt gy, firm, sl slty	
	tr	shell frags	
1410	95	clst, med gy, firm	
	5	sd, vf - f, clr qtz	
	tr	glauc	
	tr	shell frags	
1420	95	clst a/a micromica	
	5	sd a/a	
	tr	shell frags	
1430	90	clst, brn gy - med gy, firm, sl slty, calc	
	10	sd a/a	
	tr	fossil frags, mostly shell frags	
	tr	glauc	
	tr	lignite	
1440	95	clst a/a	
	tr	sd a/a	STG 110 units
	tr	fos frags	
	tr	glauc	
1450	95	sd, clr qtz, vf-med, subrnd-rnd	
	5	shell frags,	
	tr	clst a/a	
	tr	glauc	
1460	85	sd a/a	
	15	foss frags, mostly shell frags	
	tr	clst a/a	
	tr	glauc	
1470	90	sd a/a	
	10	foss frags a/a	
	tr	clst a/a	
	tr	glauc	NO SHOWS

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 12 1/4" | GEOLOGIST: Aasheim/Mæhle | DATE: 23. april 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1480	95	sd, clr, qtz, vf-f occ med, subrnd-rnd	
	5	shell frags	NO SHOWS
	tr	clst, brn-gy, firm, sl calc, slty, micromica	
	tr	glauc	
1490	95	sd a/a, mostly vf	
	5	fossil frags, mostly shell frags	
	tr	lignite	
	tr	glauc	
	tr	clst a/a	
1500	85	sd a/a	
	10	clst a/a occ sft	
	tr	glauc	
	tr	lignite	
1510	90	sd a/a mod hd-hd occ calc cmt	
	5	clst a/a	Mw. 1.20
	5	fossil frags	B.G. 10 units
	tr	glauc	
	tr	lignite	
1520	65	clst a/a occ med gy	NO SHOWS
	30	sd a/a	
	5	shell frags	
	tr	lignite	
	tr	glauc	
1530	55	sd a/a	
	40	clst a/a	
	5	shell frags	
	tr	glauc	
	tr	lignite	
1540	100	clst med gy-br, calc, firm, sl calc	BIT from 1533 m
	tr	glauc	
	tr	shell frags	T.G. 101 units
1550	95	clst a/a	
	5	sd, vf, qtz, clr-milky, subr.	
	tr	lignite	
	tr	shell frags	
	tr	glauc	NO SHOWS
	tr	dol	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: S. Aasheim/S. Mæhle | DATE: 24. April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1560	95	clst, med gy, firm, sl calc	
	5	sd vf, qtz, clr, subr	
	tr	glauc	
	tr	lignite	
	tr	dol	
	tr	shell frags	
1570	80	sd, f - med, qtz, clr-milky c, subr	
	20	clst a/a	
	tr	lignite	
	tr	dol	
	tr	glauc	
	tr	shell frags	
1580	75	clst a/a	
	25	sd a/a	
	tr	glauc	
	tr	lignite	
	tr	dol	
	tr	shell frags	
1590	100	clst a/a mostly brnish gy, slty, sl calc	
	tr	sd a/a	
	tr	glauc	
	tr	shell frags	
	tr	lignite	
1600	100	clst a/a	
	tr	sd a/a	
	tr	shell frags	
	tr	lignite	
1610	100	clst a/a	
	tr	dol, gy-lt brn gy, mod hd-hd, xln	
	tr	lignite	
1620	95	clst a/a	
	5	ls, wh-lt yel, firm-mod hd, v argil - marly	NO SHOWS
	tr	dol a/a	
	tr	lignite a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 ' 34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Aasheim/Mæhle | DATE: 24 Nov. 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1630	100	clst, med gy, brn gy, firm, sl slty, sl calc	weak min. fluor
	tr	ls, wh-lt yel, firm-mod hd, v argil-micritic	
	tr	dol, dk gy-brn gy, mod hd-hdå xln	NO SHOWS
	tr	lignite	
	tr	shell frags	
1640	100	clst a/a mostly med gy	
	tr	ls a/a	NO SHOWS
	tr	lignite	
	tr	sd, qtz, clr, vf-med, subrnd	
1650	100	clst a/a	
	tr	lignite	
	tr	glauc	
1660	100	clst a/a	
	tr	lignite	
	tr	ls a/a	
	tr	glauc	
	tr	shell frags	
1670	90	clst a/a	
	10	sd, clr, qtz, vf-f, subrnd-rnd	
	tr	lignite	
	tr	glauc	
	tr	ls a/a	
1680	100	clst a/a ls less slty	
	tr	sd a/a	
	tr	lignite	
	tr	shell frags	
1690	100	clst a/a mostly med gy	
	tr	sd a/a	
	tr	lignite	
1700	100	clst a/a	NO SHOWS
	tr	sd a/a	
	tr	lignite	
	tr	glauc	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Aasheim | DATE: 24 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1710	100	clst, med gy, occ brn-gy, firm, sl slty, sl calc	NO SHOWS
	tr	ls, wh-lt gy, firm, mod hd, argil, micritic	
	tr	sd, clr, qtz, vf-med,subrnd-rnd	
	tr	lignite	
	tr	fos frags	
	tr	pyr	
1720	100	clst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	lignite	
	tr	fos frags	
1730	95	clst a/a	
	5	ls a/a, mostly firm, argil - (marly), slty texture	
	tr	lignite	
	tr	sd a/a	
1740	95	clst a/a	
	5	ls a/a	
	tr	lignite	
	tr	glauc	
	tr	sd a/a	
1750	95	clst a/a occ dk gy	
	5	ls a/a	
	tr	lignite	
	tr	glauc	
	tr	dol, lt gy, hd	
1760	100	clst a/a	
	tr	ls a/a	
	tr	glauc	
	tr	dol a/a	
	tr	lignite	
1770	100	clst a/a	
	tr	glauc	
	tr	dol	
	tr	lignite	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Aasheim | DATE: 24 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1780	100	clst, med gy, soft, sl calc	
	tr	dol	
	tr	lignite	
	tr	glauc	
	tr	ls	
1790	100	clst a/a, more firm	
	tr	lignite	
	tr	dol	
	tr	fossils silicious	
	tr	ls, wh-lt yel, micr	
1800	100	clst, lt-med gy, firm, sl calc	
	tr	lignite	
	tr	glauc	
	tr	ls	
1810	100	clst a/a	
	tr	pyrite	
	tr	glauc	
	tr	lignite	
	tr	dol	
1820	100	clst a/a	
	tr	pyrite	
	tr	sd, v f - f	
	tr	lignite	
	tr	dol/calcite	
1830	100	clst a/a	
	tr	pyrite	
	tr	lignite	
	tr	glauc	
	tr	dol	
	tr	sd, f	
1840	100	clst a/a	
	tr	lignite	
	tr	pyrite	
	tr	glauc	
	tr	dol	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Aasheim | DATE: 24 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1850	100	clst, mod gy, firm	
	tr	pyrite	
	tr	lignite	
	tr	mica	
1860	100	clst a/a	
	tr	pyrite	
	tr	lignite	
1870	100	clst a/a	
	tr	pyrite	
	tr	lignite	
1880	100	clst a/a brownish	
	tr	pyrite	
	tr	lignite	
	tr	glauconite	
1890	100	clst, grn-med gy, firm	
	tr	lmst, wh-yel, firm	
	tr	pyrite	
	tr	lignite	requested for
1895	85	clst a/a	drilling break
	tr	lignite	
	tr	pyrite	
	tr	glauc	
1900	100	clst a/a brn-med grn	
	tr	glauc	
	tr	lignite	
	tr	pyrite	
1910	75	clst a/a	
	25	sd cl, qtz, sub-rnd, f-med, v sort	NO SHOWS
	tr	glauc	
	tr	pyrite	
	tr	lignite	
	tr	lms, yel-wh, hd	
1920	40	sd, f-med, clr, qtz, subrnd-rnd, v sort	NO SHOWS
	60	clst a/a	
	tr	glauc, lign, pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Aasheim | DATE: 25. april 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1930	85	clst, lt-med grn, firm	NO SHOWS
	15	sd, f-med, clr, qtz, v sort	
	tr	glauc, pyr, lignite, dol	
1940	95	clst a/a	
	5	sd a/a	
	tr	pyr, lign, dol, glauc	
1950	95	clst a/a	
	5	sd a/a	
	tr	dol, lign, glauc	
1960	90	clst a/a, shaly in parts - dk gy	
	10	dol, med gy, hd, xln	
	tr	glauc	
1970	75	clst a/a, dk gy-brn gy, shaly in parts	
	25	sd, clr qtz, vf-f, subang-subrnd	
	tr	tuff?, wh-lt yel, sft, dk spots, sl calc	
	tr	dol	
1980	75	clst a/a occ subfiss	
	15	sh, brn-gy, dk gy, firm, fiss	
	10	sd a/a	
	tr	pyr	
	tr	glauc	
	tr	fiss frags	
1990	50	clst a/a mostly bluish gy, firm, subfiss	First sample of the trip Bit 6
	40	sh, brn-brnish gy, firm-mod hd, fiss	
	10	sd a/a	NO SHOWS
	tr	ls, wh, mod hd, argil, micritic	
	tr	tuff? wh-lt yel, lt grn, firm, dk spots, slty textur calc - sl calc	
	tr	glauc	
	tr	pyr	
2000	50	sh, grn-gy, bluish gy, firm, subfiss-fiss	NO SHOWS
	50	sh, dk gy, brn-gy, firm, mod hd, fiss	
	tr	ls a/a	
	tr	tuff? a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01 ° 42 ' 28,20 " E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 12 1/4" | GEOLOGIST: Aasheim/Mæhle | DATE: 25. april 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2010	50	sh, grnish gy-bluish gy, firm, subfiss-fiss	NO SHOWS
	50	sh, dk gy - brn gy, firm, mod hd, fiss	
	tr	ls, wh-lt yel, firm-mod hd	
	tr	sd, clr, qtz, vf-f, subrnd, occ calc cmt	
2020	50	sh, grn/blue-gy a/a	
	50	sh gy/brn a/a	
	tr	ls a/a	
2025	40	sh, grn/blue gy a/a	
	40	sh dk gy-brn gy a/a	
	20	sd a/a	
2030	80	sh a/a (grn-blue gy - dk gy - brn gy)	
	20	sd a/a mostly vf, hd, occ calc cmt	
	tr	siderite, lt brn, hd	
	tr	ls a/a	
2035	75	sh a/a	
	25	sd a/a less cmted	
	tr	siderite	
	tr	dol dk gy, hd	
2040	75	sh a/a	
	25	sd a/a	
	tr	tuff?, wh-lt gy, dk-blck dotted, sl calc, sft firm	
	tr	siderite	NO SHOWS
	tr	glauc	
2050	90	sh a/a	
	10	sd a/a	
	tr	dol	
	tr	siderite	
2055	60	sh a/a mostly grn gy	
	40	sd a/a mostly vf, cmtd - mod hd	NO SHOWS
	tr	dol	
	tr	ls, wh, mod hd, xln	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Aasheim/Mæhle | DATE: 25. april 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2060	70	sh, med gy - lt grn, firm, subfiss-fiss	
	30	sd, f-med, clr, qtz, subr	
	tr	dol	
	tr	pyr	
2065	95	sh a/a	
	5	sd a/a	
	tr	dol	
	tr	lignite	
2070	95	sh a/a	
	5	sd a/a calc cemented	
	tr	dol	
2075	95	sh a/a	
	5	sd a/a	
	tr	pyr	
	tr	dol	
	tr	siderite	
	tr	lignite	
2080	95	sh a/a	
	5	sd a/a	
	tr	dol	
2085	90	sh a/a mostly lt grn, some rdish brn	
	10	sd a/a silica cmt?	
	tr	glauc	
	tr	dol	
2090	60	sh a/a	
	40	sd a/a	
	tr	dol, siderite	
2095	80	sd, clr, qtz, f-med-coarse, subrnd, silica cmtd	
	20	sh a/a	
	tr	lignite	
	tr	dol	
2100	90	sd a/a	
	10	sh a/a mostly lt grn gy, occ rd brn, occ med gy	NO SHOWS
	tr	glauc	
	tr	dol	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Aasheim | DATE: 25 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2105	95	sd, clr, qtz, f-crs, subr, sil cmt	
	5	sh, med gy, lt grn, occ rd brn, firm	
	tr	lignite	
	tr	glauc	
2110	95	sd a/a	
	5	sh a/a, mostly lt grn	
	tr	glauc	
	tr	dol, lt gr, xln, hd	
	tr	chert	
2115	95	sd a/a	
	5	sh a/a	
	tr	lignite, glauc, pyr, siderite	
2120	95	sd a/a	
	5	sh a/a	
	tr	lignite	
	tr	ls, lt gy, firm, arg	
2125	60	sd a/a	
	40	sh a/a	
	tr	lignite	
	tr	siderite	NO SHOWS
2130	65	sh a/a, lt dk grn, lt gy	
	35	sd a/a	
	tr	yel sh, sl calc, firm	
	tr	dol	
2135	95	sh, lt grn, med gy, firm, occ brn	
	5	sd a/a calc cmtd	
	tr	dol lt gy	
	tr	pyrite	
2140	95	sh a/a	
	5	sd a/a, f-med, calc cemented	
	tr	glauc	
	tr	dol	
2145	90	sh a/a	
	10	sd a/a	
	tr	glauc, pyrite, dol	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 ' 34,06" N ; 01 ° 42 ' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Aasheim | DATE: 25 - 26 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2150	95	sh, lt grn, med gy, occ redish brn, firm, fiss	NO SHOWS
	5	sd, f - med, clr, qtz, subr, sil cemented	
	tr	dol, glauc	
2155	95	sh a/a	
	5	sd a/a	
	tr	dol	
2165	95	sd a/a, f-crs	
	5	sh a/a	
	tr	dol	
2170	100	sd a/a	
	tr	lignite	
	tr	dol	
	tr	sh a/a	
2175	60	sd a/a	
	40	sh a/a	
2180	100	sd a/a	
	tr	sh a/a	
2185	100	sd a/a	
	tr	sh a/a	
2190	100	sd a/a	
	tr	sh a/a	
2195	100	sd a/a	
2199	100	sd a/a	2199 circ bottoms up. STG: 50 units
2200	90	sh, lt grn-grn-gy, med gy, firm, subfiss, occ micromic, occ sl calc	
	10	sd a/a	
	tr	sd a/a	
2203	95	sh a/a mostly grn-gy	
	5	sd a/a	NO SHOWS
	tr	tuff?, wh-lt gy, dk spots, sft-firm, non calc	
	tr	glauc	
	tr	dol	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO: 15/9-2

COORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: AASHEIM/MÆHLE | DATE: 26 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2206	100	Sh, lt grn-brnish gy, med gy, firm, subfiss micromica, occ sl calc	No shows.
	tr	Sd, clr, qtz, vf-med, subrnd	
	tr	Ls, wh-lt gy-lt yel, hd, occ micritic occ xln	
	tr	Tuff ? wh-lt gy, dk spots, firm non calc-sl calc	
	tr	Pyr	
2209	90	Sh, a/a grading to clst	
	10	Sd a/a	
	tr	Ls a/a	
	tr	Tuff? occ blk-glass ?	
	tr	Pyr	
2212	95	Sh a/a subfiss	
	5	Sd a/a	
	tr	Ls a/a	
	tr	Tuff a/a (?)	
	tr	Glauc	
2215	100	Sh a/a	
	tr	Sd a/a	
	tr	Tuff a/a	
	tr	Ls a/a	
2218	95	Sh a/a brn-gy-sl calc	
	5	Sd a/a	
	tr	Tuff ? a/a	
	tr	Ls a/a	
	tr	Pyr	
2221	95	Sh a/a	
	5	Ls a/a both xln & micritic	
	tr	Tuff a/a	
	tr	Sd a/a	
2224	100	Sh a/a	
	tr	Ls a/a	
	tr	Sd a/a	
	tr	Tuff a/a ? wh, few dk spots, sl calc, firm	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

CO ORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: AASHEIM/MÆHLE | DATE: 26 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2227	100	Sh, grnish gy, dk gy, brn gy, firm subfiss-fiss occ micromica	No shows.
	tr	Sd, clr, qtz, vf-med,subrnd	
	tr	Pyr	
2230	100	Sh a/a fiss	
	tr	Ls, wh-lt yel, firm-hd, xln occ micritic	
	tr	Tuff ?, wh-lt gy, dk spots occ dk bands, firm	
	tr	Pyr	
	tr	Sd a/a	
2233	95	Sh a/a	
	5	Ls a/a	
	tr	Pyr	
	tr	Sd a/a	
2236	95	Sh a/a	
	5	Ls a/a	
	tr	Sd a/a	
	tr	Pyr a/a	
	tr	Tuff ? a/a	
2239	95	Sh a/a	
	5	Ls a/a	
	tr	Sd a/a	
	tr	Tuff a/a	
	tr	Pyr up to 1%	
2242	100	Sh a/a	
	tr	Ls a/a	
	tr	Sd a/a	
	tr	Pyr a/a	
2245	95	Sh a/a	
	5	Ls a/a	
	tr	Sd a/a	
	tr	Pyr	
2248	100	Sh a/a mostly grnish gy	
	tr	Ls a/a	
	tr	Sd a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: AASHEIM/MÆHLE | DATE: 26 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2251	100	Sh, grnish gy, bluish gy, occ brn-gy-dk gy, firm, fiss occ micromica	No shows.
	tr	Sd, qtz, clr, vf-f, subrnd	
	tr	Ls, wh-lt yel, med hd, xln, occ micritic	
	tr	Pyr	
2254	100	Sh a/a	Soltex in the mud.
	tr	Ls a/a	
	tr	Tuff ? wh-lt gy-dk gy-blk dots-bands, firm sl calc	
	tr	Pyr	
	tr	Glauc	
2257	95	Sh a/a occ lt brn	
	5	Ls a/a mostly micritic occ slty textun	
	tr	Tuff ? a/a	
	tr	Pyr	
	tr	Glauc	
2260	100	Sh a/a	
	tr	Ls a/a	
	tr	Pyr	
	tr	Dol, dk gy, xln, hd	
2263	100	Sh a/a up to 20% lt brn-red brn sh, firm, fiss	
	tr	Ls a/a	
	tr	Pyr	
2266	100	Sh a/a up to 15% lt brn-red brnsh, mod hd	
	tr	Ls a/a	
	tr	Pyr	
	tr	Glauc	
2269	100	Sh a/a	
	tr	Glauc	
2272	100	Sh a/a	
	tr	Ls a/a	
2275	100	Sh a/a	
	tr	Ls a/a	
2278	100	Sh a/a	
	tr	Ls a/a	No shows.

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: AASHEIM/MÆHLE | DATE: 26 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2281	100	Sh, grnish-gy, med gy, brnish gy, red brn, firm-mod hd subfiss-fiss, occ micro, non sl calc	No shows.
	tr	Ls, wh, lt gy, hd, mostly xln but occ micritic	
	tr	Sd, clr, qtz, vf-f subrnd	
	tr	Dol, med gy, hd, micritic	
	tr	Glauc	
2284	95	Sh a/a	
	5	Ls a/a	
	tr	Dol a/a	
	tr	Glauc	
	tr	Pyr	
2287	100	Sh a/a	
	tr	Ls a/a	
	tr	Pyr	
2290	90	Sh a/a	
	5	Ls a/a occ pink	
	5	Marl, lt gy-lt bluish gy, sft-firm, occ glaucomitic	
	tr	Pyr	
2295	95	Sh a/a	
	5	Marl a/a	
	tr	Ls a/a	
	tr	Pyr	
2300	100	Sh varicolor a/a	
	tr	Ls a/a	
	tr	Marl a/a	
2305	100	Sh a/a	
	tr	Ls a/a	
	tr	Pyr	
2310	100	Sh a/a	
	tr	Ls a/a	
	tr	Pyr	
	tr	Glauc	
2315	100	Sh a/a	No shows.
	tr	Ls a/a	
	tr	Dol	P.O.O.H. to change bit.
	tr	Glauc	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: AASHEIM/MÆHLE | DATE: 27 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2320	100	Sh, lt gy med gy, lt-med grn, brick red, firm, occ pink, occ dk brn, fiss	
	tr	Lst, lt gy, wh, firm	
	tr	Glauc, lign	
2325	100	Sh a/a	No shows.
	tr	Lst a/a, pyr	
2330	100	Sh a/a	
	tr	Lign, glauc, lst, pyr	
2335	100	Sh a/a becomming more med gy	
	tr	Mica, glauc, lign, ls	
2340	100	Sh a/a	The sequense contain trace of sand (possible caving from above)
	tr	Glauc, lign, ls, wh-yel, firm	
2345	100	Sh a/a mostly med-dk gy, micro micac	
	tr	Lign, pyr, ls	
2350	100	Sh a/a	
	tr	Lign, glauc, ls pyr	
2355	100	Sh a/a	
	tr	Lign glauc, ls, ls rustred	
2360	100	Sh mostly med-dk gy, brk rd, lt-dk grn lt yel, firm, fiss, micromic, occ calc	
	tr	Siltst, glauc, lign, pyr, ls	
2365	100	Sh a/a	
	tr	Ls, pyr, lign	
2370	100	Sh a/a	
	tr	Ls, pyr, glauc ls rust red	
2375	100	Sh a/a	
	tr	Lign, pyr, glauc, ls wh-yel, ls rust rd	
2380	100	Sh lt-med gy, brk red sl calc, lt grn firm, micro mic, occ brn, fiss	
	tr	Glauc, lign	
2385	100	Sh a/a	
	tr	Lign, glauc	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: AASHEIM, MÆHLE | DATE: 27 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2390	100	Sh, lt-dk gy, brk red, lt brn, lt grn, firm, fiss, micromic	
	tr	Lign	
2395	100	Sh a/a	
2400	100	Sh a/a	
2405	100	Sh a/a	
2410	100	Sh mostly lt-med grn, lt-med gy, micromic	
	tr	Sh brk red, dol lt gy, glauc	
2415	100	Sh a/a	
	tr	Fossilfrags silica	
	tr	Sd, clr qtz, f, subr, carb cemented	
	tr	Lst, wh	
	tr	Glauc	
	tr	Dol	
2420	100	Sh a/a occ dk gy	
	tr	Sd, a/a	
	tr	Glauc	
	tr	Pyr	
	tr	Foss frags	
	tr	Ls and dol a/a	
2425	100	Sh, lt-med gy, occ brick rd and dk gy firm, fiss sl micromicac	
	tr	Sd, clr qtz, f-med, subang-subrnd, occ milky	
	tr	Ls, wh, microxln, hd	
	tr	Dol, lt brnish gy, firm-hd-v hd	
	tr	Glauc	
	tr	Pyr	
2430	60	Sh a/a	
	40	Sd, clr qtz vf-crs, ang-subrnd, occ as sdst v f grains calc cement	
	tr	Pyr	
	tr	Ls a/a	
	tr	Foss frags	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Kræmer | DATE: 27 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2435	70	sd, clr qtz, occ milky and tan, f-crs, ang-subrnd	NO SHOWS
	30	sh, lt-med gy, occ brick red, grnish and brnish gy	
		firm, fissile, occ micromicac	
	tr	pyr	
	tr	dol, brnish, hd	
2440	95	sd, a/a, w srt, mostly f-med gr	
	5	sh a/a	
	tr	pyr	
2445	80	sd, a/a occ sst: vf gr, calc cmt	
	20	sh, a/a	
	tr	pyr	
	tr	dol	
	tr	ls a/a	
2450	85	sd, clr qtz, occ milky, med-v crs, occ v f-f, w srt	
	15	sh a/a	
	tr	pyr	
	tr	ls, wh-brnish, firm-hd, occ microxln	
2455	90	sd a/a	
	10	sh a/a	
	tr	ls a/a	
	tr	pyr	
2460	95	sd a/a	
	5	sh a/a	
	tr	ls a/a	
	tr	pyr a/a	
2465	75	sd a/a	
	25	sh a/a	
	tr	dol a/a	
	tr	ls a/a	
	tr	pyr	
	tr	foss frags	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Kræmer | DATE: 27 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2470	80	sd, clr qtz, occ milky, f-crs, occ v crs, subang - rnd, occ sst, f gr, calc cmt	NO SHOWS
	20	sh, lt-med gy, occ dk gy, brick rd, grnish gy and lt grn, firm, subfiss, occ micromicac, non calc	
	tr	ls, wh, hd, occ microxln, (occ brnish), arg	
	tr	dol, brnish, hd-firm	
	tr	pyr	
	tr	foss frags	
2475	75	sd a/a	
	25	sh, lt-med gy, grnish else a/a	
	tr	dol a/a	
	tr	ls a/a	
	tr	pyr	
2480	75	sd a/a	
	25	sh a/a	
	tr	dol a/a	
	tr	ls a/a	
	tr	pyr	
2485	70	sd a/a	
	30	sh a/a	NO SHOWS
	tr	dol a/a	
	tr	ls a/a	
	tr	pyr	
2487	70	sd a/a (5% sdst, wh, occ brnish, slty)calc cmt)	
	25	sh a/a, occ hd	Bottoms up
	5	clayst, lt gy- brnish gy, sft, calc, slty	
	tr	dol a/a	
	tr	ls a/a	
	tr	pyr	
2490	65	sh a/a (incl. 5% sdst a/a)	
	30	sd a/a	
	5	clayst a/a	
	tr	ls, brnish, occ wh, occ arg, hd, occ microxln	
	tr	dol a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Mæhle/Kræmer | DATE: 27 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2495	70	sh, lt gy-med gy, brnish gy, grnish gy, occ brick rd dk gy, dk brnish, firm, slty, fiss, non calc, occ micromicac	NO SHOWS
	30	sd, clr-mlky qtz, f-med, occ crs, subang-rnd, w srt, occ as sdst, wh-lt brnish, calc cmt, firm-hd	
	tr	clst, lt gy- brnish gy, sft, slty, calc	
	tr	pyr	
	tr	foss frags	
	tr	ls, wh-brnish, hd, arg, occ microxln	
2496	95	sh a/a	Bottoms up.
	5	sd a/a	
	tr	clst a/a	
	tr	pyr	
	tr	ls a/a	
	tr	foss frags	
2500	95	sh a/a firm-hd	T.G. 73 units
	5	sd a/a	
	tr	pyr	
	tr	clst, firm	
	tr	glauc	
2505	85	sh a/a	
	15	sd a/a	
	tr	glauc	
	tr	ls a/a	
	tr	pyr	
2507	90	sh a/a	
	10	sd a/a	
	tr	pyr	
	tr	glauc	
	tr	ls	
2510	70	sd, clr, qtz, occ milky, f-crs, occ v crs, subang-rnd w srt, (mostly f grnd), loose	
	30	sh a/a	
	tr	glauc	
	tr	ls, occ xln	
	tr	siderite	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01 ° 42 ' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: Kræmer/Mæhle | DATE: 28 April 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2515	50	sd, slr-milky, qtz, f-crs, occ vers, subang-rnd, w srtd, loose, occ calc cmtd	
	50	sh, lt-dk gy, lt-med grn, lt-dk brn, occ pink occ brick red, firm, hd, occ calc cmtd, fiss, micromicac, occ clst	
	tr	pyr	
	tr	ls, wh, hd, occ xln	
2520	75	sd a/a	
	25	sh a/a	
	tr	pyr	
	tr	ls a/a, occ lt brn-yel	
	tr	dol	
2525	90	sd a/a	
	10	sh a/a	
	tr	pyr	
	tr	glauc	
2530	90	sd a/a	
	10	sh & clst a/a	
	tr	pyr	
	tr	glauc	
2535	90	sd a/a abundant v crs grns	
	10	sh a/a	
	tr	pyr	
	tr	ls	
	tr	clst	
2540	90	sd a/a	
	10	sh a/a	
	tr	pyr	
	tr	ls	
2545	90	sd a/a bimod sort f & v crs	
	10	sh a/a	
	tr	clst	
	tr	pyr , rnd frags	
2550	95	sd a/a	
	5	sh a/a	NO SHOWS
	tr	ls, pyr	
	tr	clst	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER/MÆHLE | DATE: 28 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2555	100	Sd, f-v crs, mostly f-med, clr-milky qtz, subang-rnd fair sort, occ pink, occ calc. cmtd	
	tr	Sh, lt-med gy, lt grn, bluish, gy, firm-hd, no calc, fiss, micromic, occ brk red	
	tr	Clst, med gy, firm-soft	
	tr	Ls, wh w/blk bands	
	tr	Pyr	
2560	100	Sd, a/a	
	tr	Sh, a/a	
	tr	Clst, a/a	
	tr	Ls, a/a	
	tr	Pyr	
	tr	Dol, gy	
2565	100	Sd, a/a	
	tr	Sh, a/a	
	tr	Ls	
	tr	Pyr	
	tr	Siltst, lt brn, hd, pyrithic	
	tr	Clst	
2570	95	Sd, a/a	
	5	Sh, a/a	
	tr	Clst, lt gy	
	tr	Pyr	
	tr	Ls, a/a	
2575	95	Sd, a/a occ brnish yel	
	5	Sh, a/a	
	tr	Dol, lt brn, hd	
	tr	Ls, a/a	
	tr	Pyr	
2580	95	Sd, a/a also as sst, vf-f grains, calc cmt	
	5	Sh, a/a	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	
2585	95	Sd, a/a	
	5	Sh, a/a	
	tr	Dol, a/a, ls a/a, pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

CO ORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 28 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2590	95	Sd, clr-milky qtz, subang-rnd, f-crs, occ v crs, fair srt, also as sst: vf-f grians, calc, cement, mod hd	No shows.
	5	Sh, lt-med gy, occ, grnish gy, dk brn, dk gy and brick red, firm-hd, occ micromicac, slty in prts, fiss	
	tr	Ls, wh-lt brnish, hd, prtly arg, occ microxln	
	tr	Pyr	
	tr	Dol, lt brnish, hd	
	tr	Lign, matured	
2595	95	Sd, a/a	
	5	Sh, a/a	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	
2600	90	Sd, a/a	
	10	Sh, a/a	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	
2605	95	Sd, a/a	
	5	Sd, a/a	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	
	tr	Lignite	
2610	95	Sd, a/a	
	5	Sh, a/a	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Lignite	
	tr	Pyr	
2615	95	Sd, a/a	
	5	Sh, a/a	
	tr	Dol, a/a, ls a/a	
	tr	Lignite	
	tr	Pyr	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 28 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2620	100	Sd, clr-milky qtz, subang-rnd, f-crs, occ v crs, fair srt, occ calc, also as sdst: vf-f grains, calc cement, mod hd	No shows.
	tr	Sh, lt-med gy, occ grnish gy, dk brn, dk gy and brick rd, firm-hd, occ micromica, occ slty, fiss	
	tr	Dol, lt brnish, hd	
	tr	Ls, wh- lt brnish, hd, occ arg, occ microxln	
	tr	Lignite	
	tr	Pyr	
2625	100	Sd, a/a	
	tr	Sh, a/a	
	tr	Dol, a/a	
	tr	Pyr	
	tr	Lignite	
	tr	Ls, a/a	
2630	100	Sd, a/a	
	tr	Sh, a/a	
	tr	Ls, a/a	
	tr	Dol, a/a	
	tr	Pyr	
2635	100	Sd	
	tr	Sh, a/a	
	tr	Ls, a/a	
	tr	Dol, a/a	
	tr	Pyr	
	tr	Lignite	
2637	100	Sd, a/a	
	tr	Sh, a/a	
	tr	Ls, a/a	
	tr	Dol, a/a	
	tr	Pyr	
	tr	Lignite	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 28 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2640	100	Sd, a/a	
	tr	Sh, a/a	No shows.
	tr	Lignite (up to 5%)	
	tr	Ls, a/a	
	tr	Dol, a/a	
	tr	Pyr	
2645	95	Sd, a/a	
	5	Sh, a/a	
	tr	Lignite	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	
2650	95	Sd, a/a	
	5	Sh, a/a	
	tr	Lignite	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	
2655	70	Sd, a/a	
	30	Sh, a/a	
	tr	Lignite	
	tr	Dol, a/a	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	
2656	60	Sd, a/a	Bottom up.
	40	Sh, a/a	
	tr	Lignite	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 28 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2660	85	Sh, lt - med gy, grnish gy, bluish gy, occ brn, dk gy, brick red and lt grn, firm, occ hd, occ slty, occ sl, calc, mostly non calc, subfiss-fiss occ micromica	
	10	Sd, clr qtz, occ milky, med -crs, subang-rnd, occ as sdst, vf-f, calc cemt	
	5	Sltst, brnish, sl calc, v micromicac, firm	
	tr	Dol, lt brn, mod hd	
	tr	Ls, wh-brnish, firm-hd, occ arg	
	tr	Pyr, mostly in conn. w sh	
	tr	Lignite	
2665	90	Sh, a/a	
	10	Sd, f-crs, occ v crs, else a/a	
	tr	Sltst, a/a	
	tr	Dol, a/a	
	tr	Pyr	
	tr	Ls, a/a	
	tr	Lignite	
2670	60	Sh, a/a	
	40	Sd, a/a (occ vf)	
	tr	Clayst, lt gy-med gy, sl calc, slty	
	tr	Sltst, a/a	
	tr	Pyr	
	tr	Dol, a/a	
	tr	Ls, a/a	
	tr	Lignite	
2675	50	Sd, a/a	No shows.
	50	Sh, a/a	
	tr	Clayst	
	tr	Sltst	
	tr	Dol, a/a and Ls, a/a	
	tr	Pyr	
	tr	Lignite	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 29 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2680	90	Sd, clr qtz, occ milky, med-crs, subang-rnd, occ as sdst, vf-f, calc cemt	No shows.
	10	Sh, lt-med gy, grnish gy & bluish gy, occ brn, dk gy, brick rd and lt grn, firm, occ slty, occ sl calc sub-fiss-fiss, occ micromicac	
	tr	Dol, lt brn, mod hd	
	tr	Ls, wh-brnish, firm-hd, occ arg	
	tr	Pyr	
	tr	Sltst, brnish, sl calc, v micromicac firm	
2685	90	Sd, a/a	
	10	Sh, a/a	
	tr	Dol, a/a, ls a/a	
	tr	Sltst, a/a	
	tr	Lignite & pyr	
2690	90	Sd, a/a	
	10	Sh, a/a	
	tr	Dol, a/a & Ls, a/a	
	tr	Pyr & lignite	
2695	95	Sd, a/a	
	5	Sh, a/a	
	tr	Dol, a/a & Ls, a/a	
	tr	Calcite	
	tr	Lignite & pyr	
2700	90	Sd, a/a	
	10	Sh, a/a	
	tr	Dol, a/a & Ls, a/a	
	tr	Pyrite, lignite & calcite	
2705	80	Sd, a/a	
	20	Sh, a/a	
	tr	Sltst, a/a	
	tr	Dol, a/a & Ls, a/a	
	tr	Calcite	No shows.
	tr	Pyr & lignite	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 29 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2710	75	Sd a/a	No shows
	25	Sh a/a	
	tr	Dol a/a	
	tr	Ls a/a	
	tr	Pyr & lignite & calcite	
2715	60	Sh a/a	
	35	Sd a/a	
	5	Ls, wh-lt gy-lt brnish gy, firm-hd, prtly sl arg, mostly microxln	
	tr	Sltst a/a	
	tr	Pyr	
	tr	Lignite	
	tr	Marl, lt gy, firm-sft	
2720	80	Sh a/a	
	20	Sd a/a	
	tr	Ls a/a	
	tr	Dol a/a	
	tr	Sltst, sdy, else a/a	
	tr	Pyr	
	tr	Marl a/a	
2725	85	Sh a/a	
	10	Sd a/a	
	5	Ls a/a	
	tr	Lignite	
	tr	Dol	
	tr	Marl a/a	
	tr	Sltst a/a	
2730	100	Sh a/a	
	tr	Marl a/a	
	tr	Ls a/a	
	tr	Sdst a/a	
	tr	Lignite	
2734	100	Sh a/a	Bottum up
	tr	Marl a/a	
	tr	Ls a/a & dol a/a	
	tr	Lignite	
	tr	Sdst a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 29 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2735	75	Sh, lt-med gy, occ brn, grnish gy, brick rd and dk gy, firm, occ slty, subfiss, non calc, occ sl calc, occ micromicac	No shows
	20	Sd, clr qtz, occ milky, f-crs, subang-rnd, occ as sdst, calc cmt	
	5	Ls, wh-lt gy-lt brnish, firm-hd, occ arg, mostly microxln	
	tr	Marl, lt gy, occ lt brnish, sft-firm	
	tr	Pyr	
	tr	Lignite	
	tr	Sltst, lt brn, sdy, sl calc, firm	
2740	70	Sh, med gy, brnish gy, occ dk gy, lt gy, brick rd, grnish & bluish gy, firm, occ micromicac, occ slty, non calc, occ sl calc	3 m interv. from
	30	Sd and sdst a/a, occ yel grains	
	tr	Ls a/a and calcite	
	tr	Dol a/a	
	tr	Lignite	
	tr	Pyr	
2743	80	Sh a/a	
	20	Sd and sdst a/a	
	tr	Dol a/s	
	tr	Ls a/a and calcite	
	tr	Glauc	
	tr	Pyr	
	tr	Lignite	
2746	80	Sh a/a	
	20	Sdst a/a	
	tr	Dol a/a	
	tr	Ls a/a & calcite	
	tr	Marl, lt gy, sft	
	tr	Foss frags	
	tr	Pyr	
2749	75	Sh a/a	
	20	Sdst a/a	
	5	Ls a/a	
	tr	Dol a/a, marl a/a, pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 30 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2752	50	Sh, lt-med gy, brnish gy and dk brn, occ dk gy, brick red and grnish, firm, occ slty, occ micromicac, occ sl calc	
	25	Sdst, wh-tan, vf-f grains, calc cmt, hd	
	20	Ls, tan, occ wh, occ microxln, occ sl arg, hd	
	5	Marl, lt gy, sft	
	tr	Pyr	
	tr	Lignite	
2755	60	Sh a/a	
	25	Sdst a/a, and sd, clr occ milky qtz, subang-rnd	
	15	Ls a/a	
	tr	Marl, a/a	
	tr	Pyr, lignite	
2758	40	Sh a/a	
	45	Sdst and sd a/a	
	15	Ls a/a	
	tr	Pyr, lignite	
	tr	Dol, tan-brnish, hd	
2761	40	Sh, a/a	
	25	Sdst and sd a/a	
	30	Ls, wh, chky, sft-firm (occ tan, hd, microxln)	
	5	Marl a/a	
	tr	Pyr, glauc	
	tr	Dol a/a	
2764	50	Sdst and sd a/a	
	40	Sh a/a	
	10	Ls a/a	
	tr	Pyr both in conn w/sh & sdst	
	tr	Glauc	
	tr	Dol a/a	
2767	40	Sdst and sd a/a	
	40	Sh a/a	
	20	Ls a/a	
	tr	Pyr	
	tr	Glauc	
	tr	Dol a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01° 42 ' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 30 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2770	60	Sdst, wh-tan, vf-med grains, calc cmt, hd and sd, clr qtz, occ milky, subang-rnd	No shows.
	30	Sh, ltpmed gy, brnish gy and dk brn, firm, occ hd, occ micromicac, occ slty, sl calc, occ calc	
	10	Ls, tan, hd, microxln, occ as chalk, wh, firm	
	tr	Pyr	
	tr	Dol, lt brnish, hd	
2773	60	Ls, wh, occ tan, mostly chky, sft-hd, microxln	
	20	Sh a/a occ blk	
	20	Sdst and sd a/a	
	tr	Pyr	
	tr	Lignite	
2776	70	Ls a/a	
	30	Sh a/a	
	tr	Sdst and sd a/a	
	tr	Pyr	
	tr	Lignite	
2779	70	Ls a/a	
	30	Sh a/a	
	tr	Sd, clr qtz, occ mlky, subrnd-rnd, f-crs	
	tr	Pyr	
	tr	Lignite	
2782	70	Ls a/a (occ lt-med gy)	
	30	Sh, mostly calc, occ v calc, occ non calc	
	tr	Sdst/sd a/a	
	tr	Pyr	
	tr	Dol a/a	
2785	80	Ls a/a	
	20	Sh a/a	
	tr	Dol a/a	
	tr	Pyr	
	tr	Sdst/sd	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 30 April 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2788	50	Sdst/sd, wh-tan, f-med, calc cmt, hd	
	30	Ls, wh-lt brnish gy, chalky, firm, microxln	Dead oil
	20	Sh, lt-dk gy, brnish gy, occ brick red, grnish gy and blk, firm, occ slty, occ micromicac, sl calc	pale yel fluor in sltst
	tr	Dol, lt brnish, hd	
	tr	Pyr	
	tr	Sltst, lt-med brn, calc, firm-sft	
	tr	Lignite	
2791	40	Sdst/Sd, a/a	
	50	Ls a/a	
	10	Sh a/a	
	tr	Pyr	
	tr	Lignite	
	tr	Dol a/a	
2794	60	Ls a/a	
	20	Sdst/sd	
	20	Sh a/a	
	tr	Dol	
	tr	Pyr, lignite	
2797	75	Ls a/a	
	15	Sh a/a	
	10	Sdst/Sd a/a	
	tr	Dol a/a	
	tr	Pyr, lignite	
2800	80	Ls a/a	
	15	Sh a/a	
	5	Sd/Sdst a/a	
	tr	Pyr, lign	
2803	80	Ls a/a	
	20	Sh a/a	
	tr	Sdst/Sd	
	tr	Pyr	
2806	80	Ls a/a	
	20	Sh a/a	
	tr	Sdst/Sd	
	tr	Pyr, lign	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 12 1/4" | GEOLOGIST: KRÆMER | DATE: 1 May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2809	90	Ls, mostly chk, wh-cream, occ tan and gy, hd-firm, occ sl arg, mostly microxln	No shows.
	10	Sh, lt-med gy, brnish gy, occ dk gy, dk gy, blk and grnish, brick rd, firm-hd, occ slty, occ micromicac sl calc - non calc, occ calc	
	tr	Sd, clr-mlky qtz, subang-rnd, f-crs, comm as sdst, wh - lt brnish, f grains, calc cmt, hd brit	
	tr	Dol, lt brnish, hd	
	tr	Pyr	
	tr	Lignite	
2812	90	Ls a/a	pale yel fluor
	10	Sh, also grn, else a/a	dead oil sltst
	tr	Sltst, brnish, calc cmt, sft-firm	
	tr	Sdst, a/a	
	tr	Pyr	
2815	90	Ls a/a	
	10	Sh a/a	
	tr	Sdst a/a	
	tr	Pyr	
2819	95	Ls a/a	
	5	Sh a/a	Bottom u-
	tr	Sdst a/a	T.D. of rathole
	tr	Pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8 1/2" | GEOLOGIST: MÆHLE/SYRSTAD/AGA | DATE: 10/11 May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2821	90	Ls, wh-lt buff, chky, firm-hd, occ sl arg, microxln	Sement in sample.
	5	Marl, lt-med gy occ, grnish, sft-firm	
	5	Sh, gy-dk gy, occ blk, frm, occ hd, sl calc	
	tr	Pyr, glauc	
2824	80	Ls, a/a, occ yelish	
	20	Chlk, wh-lt byff, sft-firm	
	tr	Marl, a/a	
	tr	Sh, a/a	
	tr	Pyr	
2827	60	Ls, a/a	
	40	Chlk, a/a	
	tr	Marl, a/a occ brick rd	
	tr	Sh, a/a	
2830	80	Ls, a/a	
	15	Chlk, a/a	
	5	Sh, a/a occ micromicac	
	tr	Marl, a/a	
	tr	Glauc	
2833		a/a	
2836	80	Lst a/a, prtly v hd chlky, pure	First sample turbo
	20	Shale, md gy-grnish gy, firm-hd, silty, sl calc	drilling much metal
	tr	Pyrite and glauc	in sample
2839	85	Lst, a/a, mostly pure, wh, chky	- " -
	15	Shale a/a	
	tr	Pyr and glauc	
	tr	Marl, lt gy, sft	
2842	80	Lst, wh-lt buff, pure, chky microxln, firm-hd, prtly argil	
	15	Shale a/a	
	5	Marl, lt gy-md gy, sft-mod hd	
2845	90	Lst a/a, prtly sft	
	10	Shale, a/a	
	tr	Pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01 " 42 ' 28,20 " E

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

HOLE SIZE: 8 1/2" | GEOLOGIST: MÆHLE/AGA | DATE: 11 May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2848	95	Ls, wh-lt buff, pure, chlky, sft-hd	
	5	Marl, lt-med gy, firm, occ hd, sub fiss, occ fiss	
2851	95	Ls, a/a	
	5	Marl, a/a	
	tr	Sh, calc	
2854	95	Ls, a/a mostly chlky	No shows.
	5	Marl, a/a occ dk gy	
2857	90	Lst a/a	
	5	Marl a/a	
	5	Shale, md gy, mod hd, silty, sl calc	
2860		a/a	
2863	95	Lst a/a, mostly firm	
	5	Marl a/a	
	tr	Shale	
	tr	Pyr	
2866	100	Lst a/a	
	tr	Marl a/a	
	tr	Shale a/a occ dk gy	
2869	100	Lst, a/a	
	tr	Marl a/a	
	tr	Sh a/a	
2872	95	Ls, a/a	
	5	Marl, a/a	
	tr	Sh a/a	
2875	100	Ls, a/a	
	tr	Marl, a/a	
	tr	Sh, a/a sl calc	
	tr	Mica, biotite ?	
2878	70	Ls, lt gy, firm, subfiss, flky	
	30	Ls, a/a	
	tr	Sh, a/a	
	tr	Marl, a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Aga/Mæhle | DATE: 11 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2881	80	ls, lt gy, firm, finly laminated, occ fiss, firm	tr of metal
	20	chky ls, firm, wh-lt buff, occ microxln	
	tr	sh, dk gy-blk, firm-hd, sl calc, fiss	
	tr	marl, lt-med gy, firm-soft, occ micromic	
	tr	clr qtz?	
2884	90	chky lst a/a, bcmng more lt buff-lt brn, occ med brn	
	10	marl, a/a	
	tr	sh a/a	
2887	95	lst a/a	
	5	marl a/a	
	tr	sh a/a	
2890	100	chalk, pure wh-lt buff, firm, a/a	
	tr	pyr	
	tr	sh a/a	
	tr	marl a/a	
2893	100	chlk, wh-lt buff, lt brn, occ med brn, firm	
	tr	sh a/a	
	tr	marl a/a	
2896	100	chlk a/a	tr of metal
	tr	marl a/a	
	tr	sh a/a	
2899	100	chlk, a/a occ reddish brn	
	tr	sh a/a	
	tr	marl a/a	
2902	100	chlk a/a occ microxln	
	tr	sh a/a	
	tr	marl a/a	
	tr	lignite ?	
2905	60	chlk, a/a mostly wh	no shows
	30	ls, lt-med gy, laminated, hd	
	10	marl, a/a	
	tr	sh a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole Aga/Steinar Mæhle | DATE: May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2911	70	chlk, wh-lt buff, firm, pure, occ micrxln	
	20	marl, lt-med gy, firm, subfiss-fiss	
	10	sh, med gy, calc, finn, fiss occ hd.	
	tr	Is, med brn-red, hd.	
2914	90	Chlk, wh a/a, occ hd	
	5	marl a/a	
	5	sh; a/a	
	tr	ls; red a/a	
2917	90	chlk; a/a	
	5	marl; a/a	
	5	sh; a/a	
	tr	Is; a/a	
2920	100	chlk; a/a mostly wh	
	tr	Is rd	
	tr	marl a/a	
2923	100	chlk; a/a occ lt brn	
	tr	marl a/a	
	tr	ls; a/a	
2926	95	chlk; a/a	
	5	marl: a/a	
	tr	Is; a/a	
2929	100	chlk, a/a mostly pure wh	ligmite in mud
	tr	marl	
2932	100	chlk a/a	
	tr	marl a/a	
	tr	pyr	
2935	100	chlk a/a	
	tr	marl a/a	
	tr	Is; red, firm-hd	
2938	100	chlk a/a	
	tr	marl a/a	
2941	100	chalk a/a	
	tr	marl	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole Aga/Steinar Mæhle | DATE: 12. May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2941	100	chlk; wh-lt buff, firm, micritc, pure marl, lt gy,	
	tr	firm, subfiss	
2944	100	chlk, a/a	
	tr	marl, a/a	
2947	90	chlk, a/a	
	10	marl	
2950	95	chlk, a/a	
	5	marl, a/a	
2953	95	Chalk a/a	
	5	marl, lt gy, prtly wh, firm-hd, subfiss	
	tr	mica (mostly museovite)	
2956	95	chalk a/a	
	5	marl a/a, prtly as thin argil lamino in lst.	
	tr	mica	
2959	95	chalk a/a	
	5	marl a/a	
2962	100	chalk a/a	
	tr	marl a/a and mica	
2965	90	chally firm-md hd,	
	10	marl, lt md gy, firm-hd	
	tr	chert and mica	
2968	80	chalk, wh-lt buff, firm-mod hd, pure micrtic.	
	10	Lst, lt buff,mod hd lam	
	10	man, lt gy-lt med gy, firm-hd	
2971	90	chalk a/a	
	10	lst a/a, also brick red	
	45	marl a/a	
2974	70	chalk a/a	
	20	marl (grding to shale)	
	10	lst a/a	
	tr	mica	
2977	40	chalk a/a	
	40	lst, lt buff, lt gy, firm-hd, microxln	
	20	marl a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 18½" | GEOLOGIST: Ole Aga/Steinar Mæhle | DATE: 12 May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2980	50	Lst, wh, lt buff - lt gy, firm - med hd, microxln, pelty arg,	
	40	Marl, lt md gy, firm - md hd, occ hd,	
	10	Chalk, wh, firm, micritic, pure	
	tr	mica	
2983	55	Lst a/a	
	30	Marl a/a	
	15	Chalk a/a	
	tr	mica	
2986	70	Marl, lt gy, lt med gy - lt brn, md hd - hd, partly fine lam.	
	20	Lst a/a	
	10	Chalk a/a	
2989	80	Marl a/a	(Lign from mud 1 sx/hr added at moment.)
	10	Lst a/a	
	10	Chk a/a	
	tr	mica	
2992	50	Marl, lt gy, lt md gy - lt brn, md hd-hd	
	50	Lst, lt gy, lt brn, md hd - hd, petty arg.	
	tr	mica	
2995	70	Lst a/a	
	30	Marl a/a	
2998	70	Lst, wh, lt gy, lt brn, mod hd - hd	
	30	microxln, perlty arg.	
	tr	chalk a/a	
3001	60	Lst, wh lt gy, lt brn - radish brn, mod hd - hd, micraxln, argil, grading to marl,	
	40	Marl, lt gy, brn - rdish brn mod hd - tid, also marl pink, soft.	
3004	50	Lst a/a	
	50	Marl a/a	
	tr	Shale, lt grnish gy, mod hd, sl calc	
3007	70	Lst, lt rd - lt brn, md hd, sl-v arg.	
	30	Marl, lt gy - grnish gy, mod hd-hd	
3010	80	Lst a/a	
	20	Marl a/a	
3013	80	Lst a/a lt brn - brn, brnish rd,	
	20	marl a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole Aga/Steinar Mæhle | DATE: 12 May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3016	70	Lst, md brn-rdish brn, firm-md hd microxln, partly laminated	
	30	Marl, lt gy-wh, firm-hd	
	tr	chalk, wh, mod hd, pure micritic	
3019	50	Marl a/a	
	25	Lst a/a	
	25	Chalk a/a	
3022	60	Lst a/a (grding to marl, v argl)	
	20	Marl a/a	
	20	Chalk a/a	
	tr	mica	
3025	80	Lst a/a	
	20	Marl a/a	
	tr	Chalk a/a	
3028	90	Lst lt brn, md brn-rdish brn, md hd-hd, occ firm, lamin, arg	
	10	Marl a/a	
	tr	Chalk a/a	
3031	90	Lst a/a (grding to marl)	
	10	Marl a/a	
3034	80	Lst a/a	
	20	Marl a/a, also rdish brn, soft	
	tr	Chalk, wh, soft-md hd, micritic	
3037	60	Lst a/a	Mud cleaner
	40	Marl, rdish brn-lt brn, soft mod hd prtly silty	cheked! Same content as over
	tr	Chalk, wh, micritic, md hd	the shaker.
3040	60	Lst a/a occ wh	
	30	mail a/a	
	10	Chalk a/a	
3043	50	Lst a/a	
	40	Marl a/a	
	10	Chalk a/a	
3046	50	Lst a/a	
	45	Marl a/a	
	5	Chalk	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole Aga | DATE: 12. May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3049	50	Marl, rdish brn-lt brn, mod hd-hd, occ soft, prtly silty	
	40	Lst, wh, lt gy, rdish brn firm-hd, laminated, micritic prtly clsky.	
	10	Marl, lt gy, mod hd, laminated pyritic	
3052	40	Marl, rdish brn a/a	
	30	Chalk, wh, firm-hd, micritic,	
	30	Lst, wh, lt gy, rdish brn, lamin-firm-hd	
3055	40	Chalk a/a prtly soft	
	40	Marl a/a	
	20	Lst a/a	
3058	65	Marl, lt md gy, wh, lt brn, md hd-hd,	
	20	Lst a/a	
	15	Chk a/a	
3061	80	Marl a/a mostly lt md gy-wh	
	15	Lst a/a	
	5	Chalk a/a	
3064	80	Marl a/a, dk argil zones, occ soft	
	10	Lst a/a	
	10	Chalk a/a	
3067	80	Marl, wh-lt md gy, firm-hd, laminated, w/dker argil bands.	
	10	Lst, lt brn-buff, hd, argil, lam,	
	10	Chalk, wh, firm-hd, micr. pure	
3070		a/a	
3073		a/a	
3076		Marl a/a	
	tr	Lst a/a	
	tr	Chalk a/a	
3079	90	Marl a/a	
	10	Lst, buff-wh, md hd-hd, lamin - micritic	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

CO ORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 8½" | GEOLOGIST: O.J. Aga | DATE: 12 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3082	80	Marl, wh-lt gy, md hd-hd, thin argil lam, occ silty	Lignite additive to mud
	20	Lst, wh, lt gy, lt brn, firm - hd, micritic, laminated	
3085	80	Marl, a/a	
	20	Lst, some pink cuttings repr. else a/a	
3088	90	Marl	
	10	Lst, a/a	
3091	40	Marl a/a	
	20	Marl, lt brn - pink rd, else a/a	
	20	Lst, wh-lt gy, firm-hd, micritic	
3094	80	Marl, wh-lt gy, occ lt brn-pink rd, md hd-hd, thin arg. laminas	
	20	Lst, wh-lt gy, firm-hd, micritic	
3097	90	Marl a/a	
	10	Lst a/a	
	tr	Chlk, wh, md hd, pure, micritic	
3100		a/a	
3103	90	Marl a/a	
	10	Lst a/a	
3106	100	Marl a/a	
	tr	Lst a/a	
3109	90	Marl	
	10	Lst a/a	
3112	90	Marl, occ med gy, silty, else a/a	
	10	Lst, a/a	
3115	90	Marl, wh-lt gy, occ med gy, med hd-hd, thin argil lamina common	
	10	Lst, wh, buff-lt gy, md hd-hd, micritic	
3118	70	Marl, wh-lt gy, lt md brn, md hd-hd	
	30	Lst, buff-lt med brn, md hd-hd micritic, laminated	
3121	60	Lst, buff-lt md brn, md hd-hd, micritic, laminated, sl argil	
	40	Marl, a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: O.J. Aga | DATE: 13 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3124	70	Marl, wh-lt gy, md hd-hd	
	30	Lst, buff-lt brn, md hd-hd, sl arg, micritic	
3127	85	Marl, a/a	
	15	Lst, a/a	
3130	90	Marl, lt gy, occ wh and md gy, md hd-hd	
	10	Lst, a/a	
3133	100	Marl, a/a	
	tr	Lst, a/a	
3136	100	Marl, a/a	
	tr	Lst, a/a	
3139		a/a	
3142		a/a	
3145		a/a	
3148	95	Marl, a/a firm - md hd, occ hd	
	5	Lst, a/a	
3151		a/a	
3154	95	Marl, lt gy, occ wh and md gy, firm-hd, thin lamina, argil	
	5	Lst, wh, hd, micritic	
3157	95	Marl, lt gy-lt med gy, firm-hd	
	5	Lst, a/a	
	tr	Pyr	
3160	90	Marl, a/a	
	10	Lst, a/a	
3163	80	Marl, a/a	
	20	Lst, a/a	
3166	50	Marl, a/a	
	50	Lst, wh-lt brn, prtly md brn, micritic, firm-hd	
	tr	Pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 " E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole J. Aga | DATE: 13. May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3169	60	Lst, lt brn - lt gy, wh, firm -md hd micritic	
	40	Marl, lt gy - lt md gy, md hd-hd	
3172	50	Lst occvhd, else a/a	
	50	Marl occ brick red, else a/a	
3175	70	Marl, lt gy - mcd gy, else a/a	
	30	Lst, a/a	
	tr	sst, clear med crs, rnd, lse calc matrix	No shows
3178		Marl a/a occ silty.	
		Lst a/a	
3181	60	Marl a/a	
	40	Lst a/a	
3184		a/a	
3187	50	Marl a/a firm-hd	
	45	Lst a/a	
	5	Shale, med gy, mod hd non-sl calc	
3190	45	Marl a/a	
	45	Lst a/a	
3190	10	shale a/a	
3193	50	Marl a/a	
	40	Lst a/a	
	10	Shale a/a	
	tr	pyrite, and glauc.	
3196	50	Lst, wh, lt gy, lt brn, mod hd-hd,occ firm, micritic,	
	50	Marl, med gy, prtly silty, md hd, mica	
	tr	gland,	
3199	50	Lst a/a	
	40	Marl a/a	
	10	Shale a/a	
	tr	glauc	
	tr	mica	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole J. Aga | DATE: 13. May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3202	60	Lst, wh - lt brn, firm - mod hd, prtly argil, micritic	
	40	Marl, med gy, firm - mod hd,	
	tr	mica	
	tr	glauc.	
	tr	Shale, med gy, mod hd, non-sleak	
3205	60	Lst, a/a	
	40	Marl a/a	
	tr	mica	
	tr	Shale a/a	
3208	65	Lst a/a, mostly wh. brn glauc spots in wh lst.	
	35	Marl a/a	
	tr	Shale a/a	
	tr	Sand, clear, wh, glauc. carb matrix,	
3211	50	Lst a/a	
	50	Marl a/a	
	tr	Shale a/a	
3214	50	Lst a/a	
	50	Marl a/a	
	tr	Shale	
	tr	pyr	
3217	65	Marl, lt med gy - md gy, firm - hd	
	35	Lst, wh tab lt gy, occ glauc. micritic occ argil	
	tr	Shale, md gy, non - sl calc, firm-md hd	
	tr	pyr.	
3220	80	Marl a/a	
	20	Lst a/a	B.G= 4-5 units
3223	75	Marl a/a	
	25	Lst a/a	
3226	75	Marl, med gy, firm - mod hd,	
	25	Lst, tan, lt gy, firm - hd, micritic	
	tr	mica	
3229	80	Marl a/a	
	80	Lst a/a	
	tr	pyr & mica	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole J. Aga | DATE: 14. May 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3232	75	Marl, med gy, lt md gy, firm-hd,	
	25	Lst, wh, tan, lt med gy, micritic,	
	tr	pyr & mica	
3234		a/a	Btms up.
3235	50	Lst a/a	Much metal in smpl.
	50	Marl a/a	
	tr	Sand, clr qtz, md crs, sitbrnd - rnd,	First smpl. after bit change
	tr	pyr, glauc. mica, lignite *	
3238	85	Marl a/a	* Fm mud/-
	15	Lst a/a	
3241	90	Marl a/a	Lignite Fm mud/-
	10	Lst a/a	
	tr	Shale, md gy-grnish gy mod hd sl calc.	
3244	85	Marl a/a	
	15	Lst a/a	
3247	85	Marl a/a occ dk md gy	
	15	Lst a/a	
	tr	pyr	
3250	85	Marl a/a bec. dker.	
	15	Lst, mostly wh, else a/a	
3253	85	Marl, a/a	
	15	Lst, occ pink, else a/a	
	tr	glauc	
3256	90	Marl a/a	
	10	Lst a/a	
3259	95	Marl, mostly dk med gy, else a/a	
	5	Lst a/a	
3262	90	Marl a/a	
	10	Lst a/a	
3265	85	Marl a/a	
	15	Lst a/a	
	tr	pyr	
3268	50	Lst, wh a/a	
	25	Lst vrick rd, redish brn, firm-hd, argil	
	25	Marl a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: O. Aga | DATE: 14 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3271	55	Lst, wh, lt gy, firm-hd, sl argil	
	45	Marl, lt md gy - dk md gy, md hd-firm, occ hd	
	tr	Pyr	
3274	65	Marl, a/a occ v silty	
	35	Lst, a/a	
3277	60	Marl, a/a	
	40	Lst, a/a	
3280	70	Marl, a/a	
	30	Lst, a/a	
3283	65	Marl, a/a	
	35	Lst, a/a	
	tr	Glauc	
3286	75	Marl, a/a	
	25	Lst, a/a, thin argil lamina interbd	
	tr	Glauc	
3289	80	Marl, a/a	
	20	Lst, a/a	
3292	80	Marl, a/a	
	20	Lst, a/a	
	tr	Sst, dr-grn, fine-md crs,loose,v silty	
3295	75	Marl, a/a	
	25	Lst, a/a	
	tr	Sandst, a/a	
	tr	Mica	
3298	55	Lst, wh-lt gy, also lt brn-bluish gy, firm-hd, sl argil Thin argil lamina abund	
	45	Marl, a/a	
3301	60	Marl, a/a	
	40	Lst, wh-tan, firm-hd, occ v hd	
	tr	Siltstone/claystone, md gy, mod hd	
	tr	Mica	
3304	60	Marl, a/a	
	40	Lst, a/a	
3307	60	Marl, a/a	
	40	Lst, a/a	
	tr	Silst, md gy, mod hd, sl calc	
3310	70	Marl, a/a	
	30	Lst, a/a	
	tr	Siltst, a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 8½" | GEOLOGIST: O. Aga | DATE: 15 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3313	60	Marl, lt med gy, occ dk med gy, firm-hd	
	40	Lst, wh-lt gy, occ tan, md hd-hd, sl argil, occ laminated	
3316		a/a	
3319		a/a	
3322	60	Marl, occ silty, else a/a	
	40	Lst, a/a	
3325		a/a	
3328	70	Marl, a/a grding to v calc clayst	
	30	Lst, a/a	
3331		a/a	
3334	40	Clayst, brick red, firm-hd, prtly silty, non calc	
	30	Marl, a/a	
	20	Lst, a/a	
	10	Shale, md gy, brnish-grnish gy, sl silty, non calc, micromic	
3337	40	Clayst, a/a	
	20	Marl, a/a	
	20	Lst, a/a	
	10	Shale a/a	
3340	40	Clayst, a/a	
	30	Shale, a/a	
	15	Lst, a/a	
	15	Marl, a/a	
3343	30	Clayst, a/a	
	30	Shale, a/a	
	30	Marl, a/a	
	10	Lst, a/a	
3346	40	Shale, a/a	
	30	Clayst, a/a	
	20	Lst, a/a	
	10	Marl, a/a	
3349	40	Shale, a/a	
	30	Marl, a/a	
	20	Lst, a/a	
	10	Clayst, a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: O. Aga | DATE: 15 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3352	60	Clyst, brick rd, firm-hd, v-sl calc	Lignite fm mud.
	20	Shale, md gy-grnish gy, sl silty, non calc, micromic	
	20	Lst, wh-tan, lt gy, md hd, micritic sl-v argil	
3355	75	Clyst a/a	
	15	Shale, a/a	
	10	Lst, a/a	
3358		a/a	
3361	40	Shale, a/a, sl calc	
	30	Clyst, a/a	
	30	Marl, md gy, md hd	
	tr	Lst, a/a	
3364	50	Marl, lt gy-md gy, md hd-hd	
	40	Clyst, a/a	
	5	Lst, a/a	
	5	Shale, a/a	
3367	50	Marl, a/a	
	30	Lst, md hd-hd, else a/a	
	10	Shale, a/a	
	10	Clyst, a/a	
3370	40	Marl, a/a	
	35	Lst, a/a	
	25	Clyst, a/a	
3373	35	Clyst, dk gy, firm-md hd, sl calc	
	30	Marl, a/a	
	15	Lst, a/a	
	15	Clayst, a/a, brick rd	
	5	Shale, a/a	
	tr	Pyr	
3376	70	Clayst, dk gy, firm-md hd, sl calc	20 units
	10	Clayst, brick red a/a	
	10	Shale, a/a	
	10	Lst, a/a	
	tr	Pyr	
3379	65	Clayst, a/a	
	25	Shale, a/a	
	10	Lst, a/a	
	tr	Clayst, brick rd	
	tr	Pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: O. Aga | DATE: 15 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3382	80	Clayst, dk med gy, mod hd, sl calc	10 units
	15	Marl, lt gy-med gy, mod hd-hd	
	5	Lst, wh, med gy, hd, sl argil	
	tr	Clayst redish brn, mod hd, silty, non calc	
	tr	Pyr	
3385	45	Clayst, a/a	
	45	Marl, a/a	
	5	Lst, a/a	
	5	Clayst, redish brn a/a	
3388	40	Marl, a/a, also lt brn	
	40	Lst, a/a	
	20	Clayst, a/a	
3391	50	Marl, a/a	
	40	Lst, a/a	
	10	Clayst, a/a	
3394	50	Lst, a/a	
	40	Marl	
	10	Clayst	
3397	65	Marl, a/a	
	35	Lst, wh-lt gy, sl argil, mod hd-hd	
	tr	Clayst, brick rd a/a	
3400	40	Marl, a/a	
	30	Lst, a/a	33 units
	30	Shale, dk gy, brick rd, md hd, sl calc	
	tr	Sand clear, rnd crs, subang-subrnd	no shows
3403	80	Clayst, dk gy-blk, firm-md hd, sl calc, high org. cont.	48 units
	20	Marl, a/a	
3406	90	Clayst, dk gy turning to gy brn, occ fiss, micromic, soft-mod hd	38 units
	5	Shale, brick rd a/a	
	5	Lst, a/a	
	tr	Pyr	
3409	80	Clayst, a/a	
	10	Lst, a/a	
	10	Shale, grnish gy, mod hd micromic, silty	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT BETA STRUCTURE	
WELL NO: 15/9-2			
CO ORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 "			
K.B.E.: 25 meters	COMPANY: STATOIL/ESSO/NORSK HYDRO		
HOLE SIZE: 8½"	GEOLOGIST: O. Aga	DATE: 15 May 78	

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3412	85	Clayst, dk gy, gy brn, firm-soft, sl calc micromic, occ silty, high org cont, bec more shaly	
	10	Shale, brick rd, md hd, sl calc	
	5	Lst, wh, lt gy, md hd-hd, sl argil	
3415	80	Clayst, a/a occ fiss	58 units
	15	Shale, brick rd a/a	
	5	Lst, a/a	
3418	95	Clayst-shale a/a, non-sl calc, bec hder	
	5	Lst, a/a	
	tr	Pyr	
3421	80	Clayst-shale a/a	
	20	Lst, a/a, sl - v argil	
	tr	Pyr	
3424	75	Shale a/a, occ non fiss	
	25	Lst, sl - v argil, else a/a	
	tr	Sst, clear, wh, lse, med crs, subrnd	No shows. Little sand through mud-cleaner.
	tr	Pyr	
3427	60	Shale, a/a	
	40	Lst, v argil, else a/a	
	tr	Sst, a/a	
	tr	Pyr	
3430	70	Shale, a/a	
	30	Lst, a/a	
	tr	Sst, a/a, med-crs, subrnd-rnd	
3433	70	Shale, mostly non-calc, else a/a	
	30	Lst, a/a	
	tr	Sst, a/a	
	tr	Pyr	
3436	80	Shale, a/a sl calc	
	20	Lst, a/a	
	tr	Sst, a/a	
	tr	Pyr	
3439	70	Shale, a/a, firm-md hd, sl calc, occ silty	
	30	Lst, a/a	
	tr	Sst, a/a	
	tr	Pyr	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: O. Aga | DATE: 15 - 16 May 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3442	70	Shale, a/a, sl calc	
	20	Lst, a/a, also rdish brn	
	10	Marl, lt gy, grnish gy, sl silty	
	tr	Sand, a/a	
	tr	Pyr	
3445	85	Shale, bec more grnish gy, micromic v. silty sl calc, else a/a	
	10	Lst, a/a mostly wh, tan, firm-md hd	
	5	Marl, a/a	
3448	90	Shale, a/a	
	5	Marl, a/a	
	5	Lst, a/a	
3451	65	Shale, a/a	
	20	Marl, a/a	
	15	Lst, a/a	
3454	70	Shale, a/a	
	15	Lst, a/a	
	15	Marl, a/a	
	tr	Sand, a/a	
	tr	Pyr	
3457	70	Shale, a/a	
	20	Lst, a/a	
	10	Marl, a/a	
	tr	Sand, a/a	
	tr	Pyr, a/a	
3460	80	Shale, a/a	
	10	Lst, a/a	
	10	Marl, a/a	
	tr	Sand, a/a	
	tr	Pyr	
3463		a/a	
3466		a/a	
3469		a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42 ' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Ole J. Aga/Kræmer | DATE: May 16. 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3472	70	Shale, dk gy, gy brn, firm - soft occ.md hd & sl silty, micromic, non-sl calc (also grnish)	
	15	Marl, med gy, mod hd,	
	15	Lst, wh-lt gy, firm-hd.	
	tr	sand, clr, wh, med, crs, subrnd-rnd	
	tr	pyr	
3475	85	Shale a/a	
	15	Lst a/a	
	tr	marl a/a, pyr, and sand a/a	
3478	80	Shale a/a	
	10	Lst a/a	Bottoms up
	10	Marl a/a	
	tr	pyr,	
3481	85	Shale a/a	
	10	Lst a/a	
	5	Marl, also sft else a/a,	
	tr	pyr	
	tr	sd a/a	
	tr	calcite	
3484	50	sh a/a (mostly strongly pyritic)	
	40	Pyr	
	5	hs a/a	
	5	Marl a/a	
	tr	calcite	
	tr	sd a/a	
3487	45	sdst, wh-lt brnish, vf-f grains, calc cmt, fri, rare as grains, wh-ch gtz, subrnd	
	45	sh a/a	
	5	Marl, lt gy, lt brn-med brn, firm-sft	
	5	Ls, wh-lt br ish, firm-hd,	
	tr	pyr,	
3490	80	sd, clr milky qtz, subang-subrnd, more occ as sdst a/a,	
	10	sh a/a	No shows
	10	Pyr tr: ls a/a, Marl a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25' 34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: Aga/Kræmer | DATE: 17. mai 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3493	100	sd, clr qtz, occ mlky, ang-subrnd, f-crs, occ v crs lse, occ as sdst, calc cmt	
	tr	med-dk gy, hd, firm, micac	
	tr	hs, wh-lt brnish, firm - hd	NO SHOWS
	tr	pyr	
3496	90	sd a/a	
	10	sh a/a	
	tr	pyr a/a	
3497	90	sd a/a	
	10	sh a/a	
	tr	pyr	Bottoms up.
		INTERVAL FROM 3497 - 3670 CORED	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58 ° 25 ' 34,06 " N ; 01 ° 42 ' 28,20 " E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 8½" | GEOLOGIST: Hage/Mæhle | DATE: 27. -28.-29. mai 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3670	100	sh, lt-med gy, lt-med brn, slty, sh, hd, subfiss, micromic	cavings:?, sh:rd,br lignite in mud
	tr	sd, vf, slty, sl calc, cmtd	
	tr	pyr	
3671	100	sh, a/a	
	tr	pyr, sd	NO SHOWS
	tr	ls, wh lt gy, hd, occ brn	
	tr	sd a/a	
3672	100	sh a/a, occ slty	
	tr	siltst, non calc, lt gy	NO SHOWS
3673	85	sh, a/a	
	15	sandst-sltst, non calc, vf grnd, clr qtz	
	tr	sd, v crs	
	tr	ls, a/a	
3674	95	sd, f-med, clr, qtz	NO SHOWS
	5	sh, a/a	
	tr	ls a/a	Coring core no. 11 from 3674
	tr	glauc?	
3675	60	lign, blk, massive	lignite in mud
	30	sh, med gy, non calc	
	10	sd, vf-f, slty, clr qtz	
	tr	pyr	
	tr	mica	
	tr	ls, wh, firm- hd	
3678	80	lignite a/a	lignite in mud
	20	sh, a/a	
	tr	sd a/a	
	tr	ls a/a	
3680	95	sh, lt-med gy, fimr, micromic, non calc, occ lt grnsh	
	5	sd, a/a, occ milky qtz	
	tr	ls a/a	
3682	100	coal, blk, massive, mature	large frags, are not from mud,
	tr	sd, a/a	
	tr	shale a/a	possible caving
3684	60	coal, blk, massive mature	
	35	sh, lt-med-dk gy, firm, silty, micromic, abund, med brn-rd sh (from further up?)	
	5	sd, clr qtz, occ milky, vf, silty, non calc, w srt	
	tr	ls, wh-lt gy, firm-hd	
3686	80	coal, lignite	
	tr,	sd,vf-slty, lt gy, fri-hd	
3688	100	shale is sl brnish, else a/a	

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WELLSITE SAMPLE DESCRIPTION

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

WELL NO.: 15/9-2

COORDINATES: 58° 25 '34,06" N ; 01° 42' 28,20" E

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

HOLE SIZE: 8½" | GEOLOGIST: A. Hage | DATE: 30. mai 1978

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3694	80	Coal, blk, hd	T.G. 530 u
	10	shale, dk gy-blk, sl brnsh, hd, sl fiss, non calc	B.G.2 u
	5	siltst, arg, brn, nod hd, non calc	NO SHOWS
	5	sandst, vf, slty, lt gy, nod hd-hd	
3697	80	sd, lt gy, f-med, fri, slr-mlky qtz gr, subang-rnd apparently good por, (hd sst in parts) w srt	NO SHOWS
	20	coal + shale a/a	
3700	60	shale, dk brn-med brn, hd, subfiss, non calc silty in parts, lam of coal, pyritic	B.G. 1 u
	20	sst, silty, vf-f-med, hd, cmt, coal, tr of green min, glauc?, pyr cmt in clusters, fos frags, spheres, brn, hd.	NO SHOWS
3703	60	shale + coal a/a	
	40	sandst, a/a, pyrite	
3706	100	sandst, slty, vf-f-med, mod-w srt, hd, cmt, coal	NO SHOWS Bg = 2 - 3 u
3709	50	sandst, a/a, pyr clusters	
	40	shale, lt-med-dk brn, slty in parts, hd	
3712	70	sandst a/a	
	30	shale, med dk gy, brn, hd, fis, non calc	
3715	80	sandst a/a, v hd, cmt, caolin?, non calc	NO SHOWS
3718	90	sandst a/a	
	10	shale a/a	
3721	80	sandst a/a	
	20	shale, med-dk gy, lt-med brn, hd, fis, slty, non calc	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT BETA STRUCTURE
WELL NO.: 15/9-2
COORDINATES: 58° 25 '34,06" N ; 01 ° 42 ' 28,20 " E
K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/NORSK HYDRO
HOLE SIZE: 8½" | GEOLOGIST: A. Hage | DATE: 30. mai 78

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
3724	80	sst, vf, slty, lt gy, v hd, no-poor por, ang, w srt	
	20	shale, med dk gy, occ brn, hd, fis, non calc, pyr	
3727	70	sand a/a	
	30	shale, med gy- brn, hd, fis, non calc	
3730	80	sst, lt gy, vf-f, ang-subang, w srt, v hd-hd, cmt	tr of grn min frags
	20	shale a/a	clorite?
3733	80	sand a/a	
	20	shale, gy-brn, a/a	
3736	70	sst, f, occ vf, else a/a, pyr, mica, grn min frags	
	30	shale, gy, brnsh, a/a	
3739	50	siltst, v arg, brick red, firm-hd, non calc	Brick red
	50	sandst + shale a/a	
3742	80	sandst, lt gy, sl brnsh, silty, vf, siltst, in parts calc in slty part, hd-mod hd, mic, pyr, clusters	
		mod sort - v sort	NO B.G.
	10	siltst, brick red, a/a	
	10	shale, dk gy-brn, a/a, tr ls, (caving)	
3745	95	sst, a/a, f-vf	
	5	shale, dk gy-brn, tr of coal	
3748	95	sst a/a pyritic, calc cmt in parts	
	5	shale a/a	
3751	95	sand a/a	
	5	shale	
3754	85	sandst , vf, a/a	
	10	siltst, lt gy-occ grn, and brick red, firm-hd, sl calc, pyr	
	5	shale, dk gy- med gy a/a	NO GAS
	tr	coal	
3757	80	sandst a/a	
	20	shale, siltst-shaly, a/a	
3760	60	sandst a/a v pyritic	
	20	shale, silty, lt gy-brick red, mod hd-firm, subfis, non calc	
	20	shale, med dk gy-dk brn, slty, carb in place, hd	
3763	60	sandst a/a	
	40	shale, silt, mixed a/a	
			TD = 3164 m

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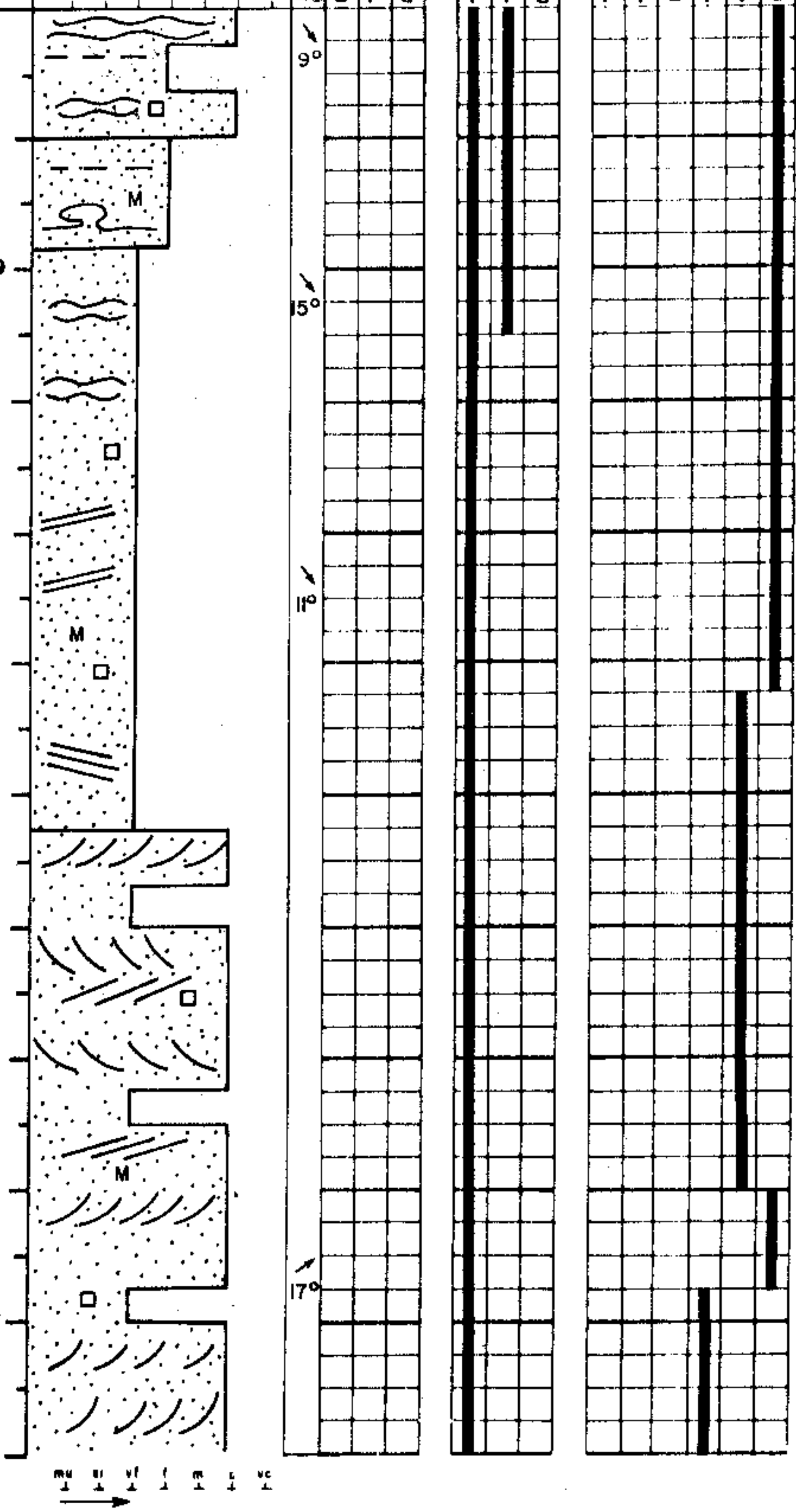
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 1 | INTERVAL from 3498 m to 3515m | CORED 17m | REC 16.5 m | 97 %

FORM. | GEOLOGIST AGA/KRÆMER | DATE 18 May,1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP apparent	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3498		9°					Sandstone; clear quartz, finer coarse hard, poor sorting calcareous cemented, micromicaceous, pyritic.	good odour
3499		15°					Sandstone; clear quartz, occasional light brown, very fine fair sorting, hard, slightly micro-micaceous.	
3500		11°						
3501							Sandstone; clear quartz, very fine - course, poor fair, sorting, hard, slightly calcareous cemented, micromicaceous.	
3502								
3503		17°						



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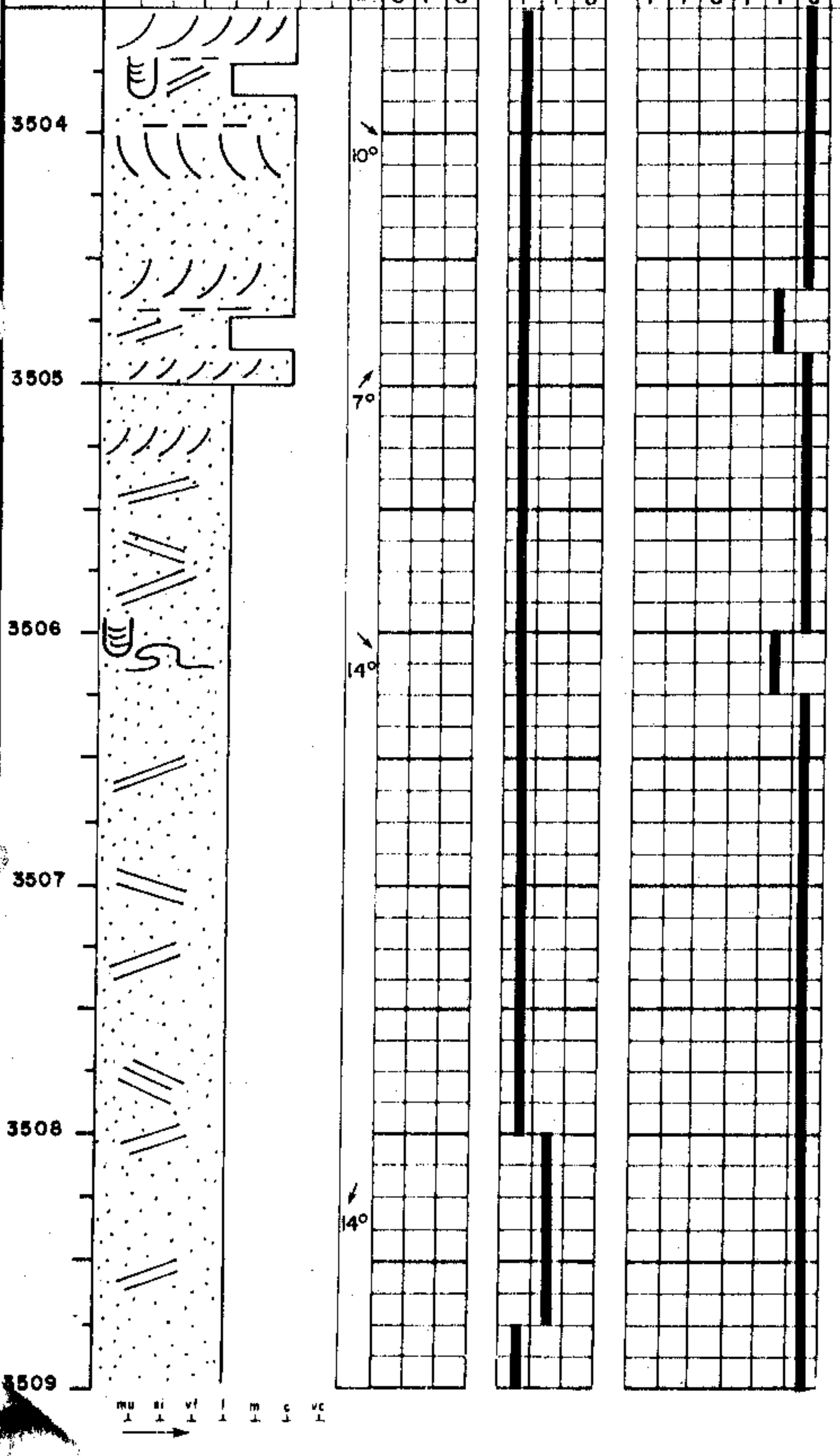
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 1 | INTERVAL from 3498 m to 3515 m | CORED 17 m | REC 16.5 m | 97 %

FORM. | GEOLOGIST AGA/KRÆMER | DATE 18 May, 1978

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



Sandstone; clear quartz, very fine-coarse, moderately sorted with shaly bands.

good odour

Sandstone; clear-milky quartz, mostly very fine - fine grained, shale laminations near top. occasional graded bedding.

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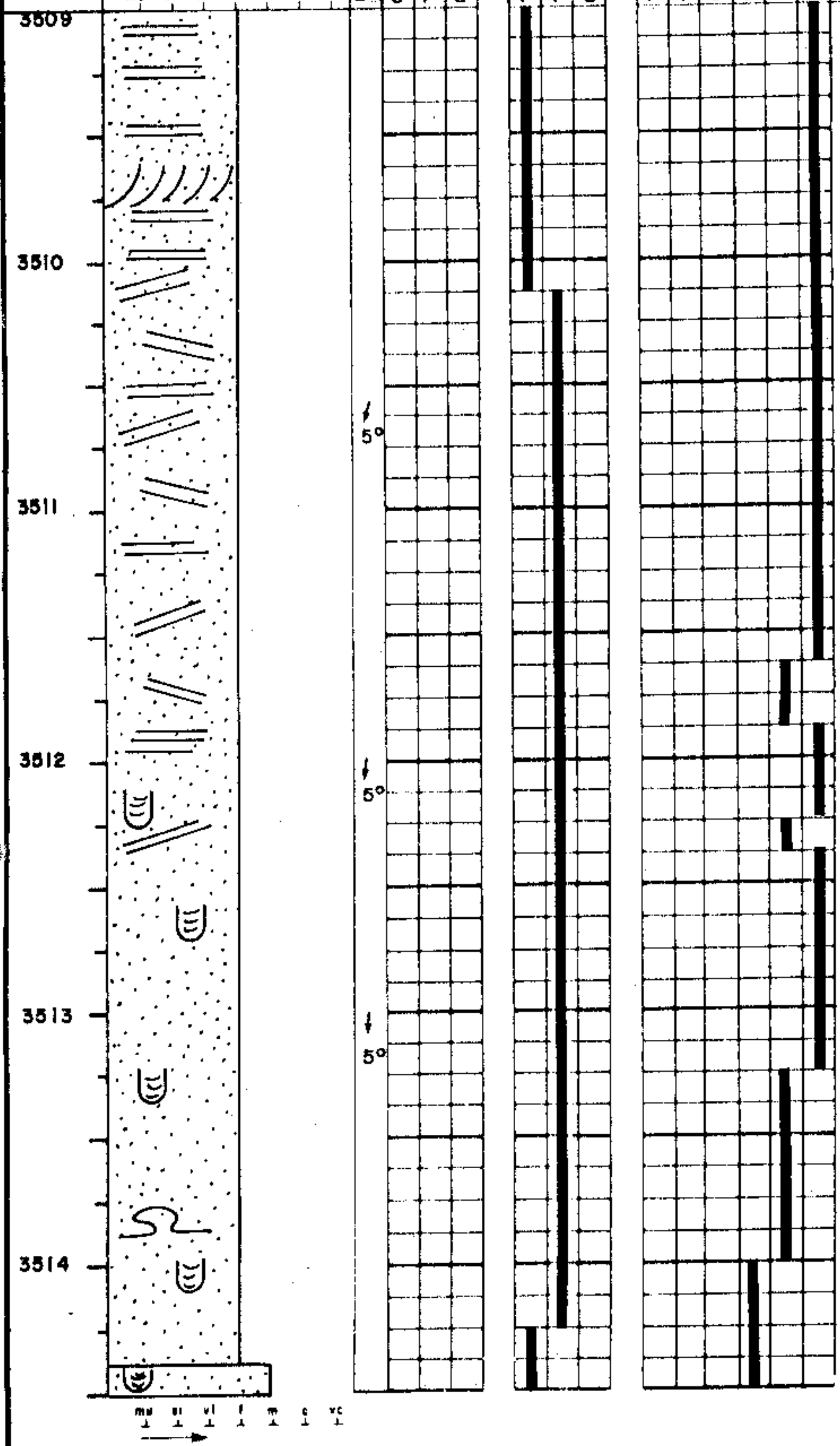
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 1 | INTERVAL from 3498 m to 3515 m | CORED 17 m | REC 16.5 m | 97 %

FORM. | GEOLOGIST AGA / KRÆMER | DATE 18 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP apparent	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3509							Sandstone; clear milky, quartz, mostly fine grained, shaly laminations.	good odour



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CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea	
CORE NO. 1	INTERVAL from 3498m to 3515m	CORED 17m	REC. 16.5 m 97 %
FORM.	GEOLOGIST AGA/KRÆMER	DATE 18 May, 1978	

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3515							core missing	

mu si vf f m c vc

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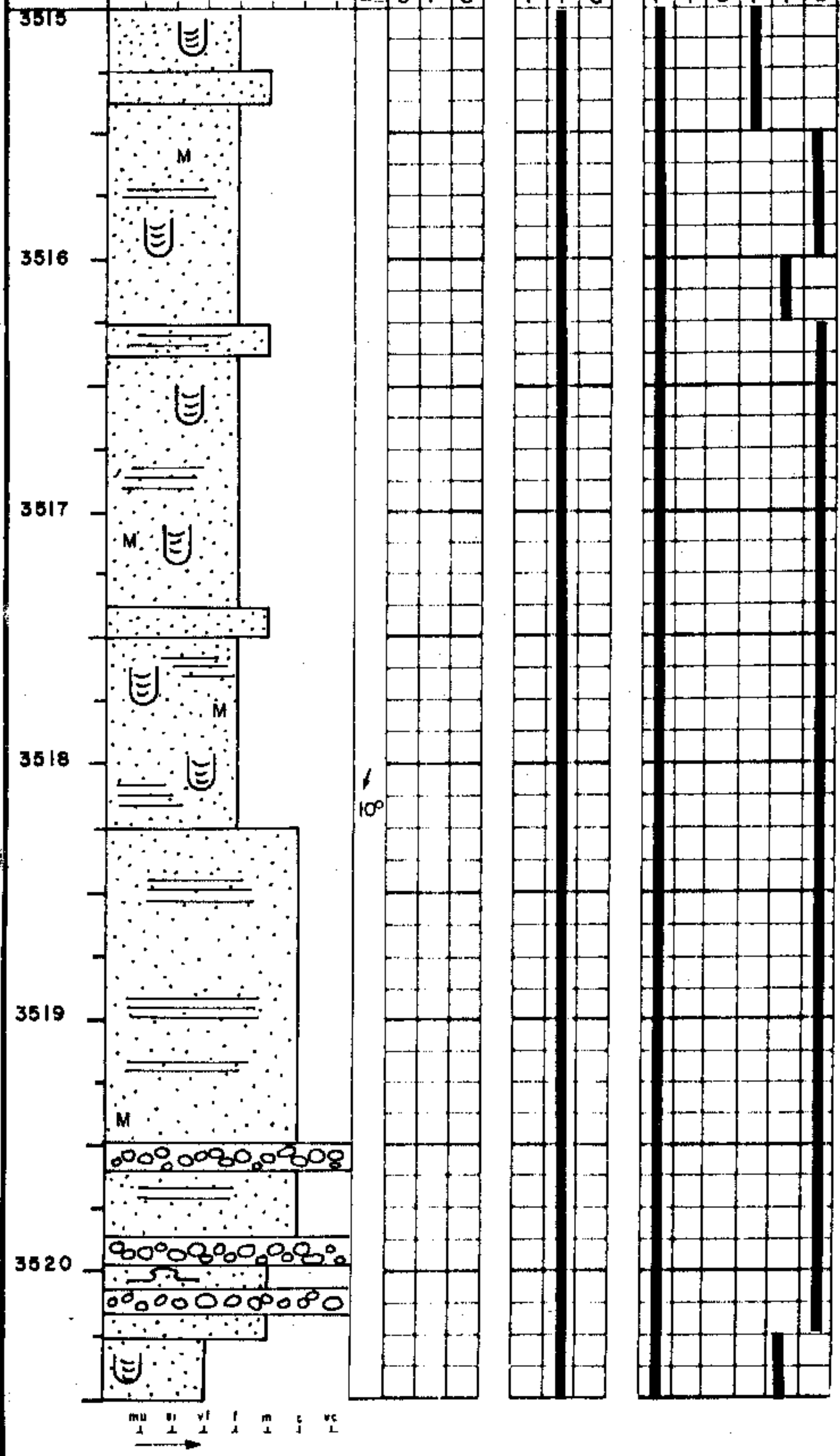
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea		
CORE NO. 2	INTERVAL from 3515m to 3533,3 m	CORED 18,3 m	REC 18,3 m	100 %
FORM.	GEOLOGIST HAUGE / KRÆMER		DATE 19 May, 1978	

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



Sandstone; clear white quartz, very fine - medium, very hard, fair sorting, subangular - subrounded, slightly micromicaceous

Sandstone; clear - milky, light brown, very fine - very coarse, occasional pebbles, conglomeratic in lower part, fair sorting, slightly micromiceceous.

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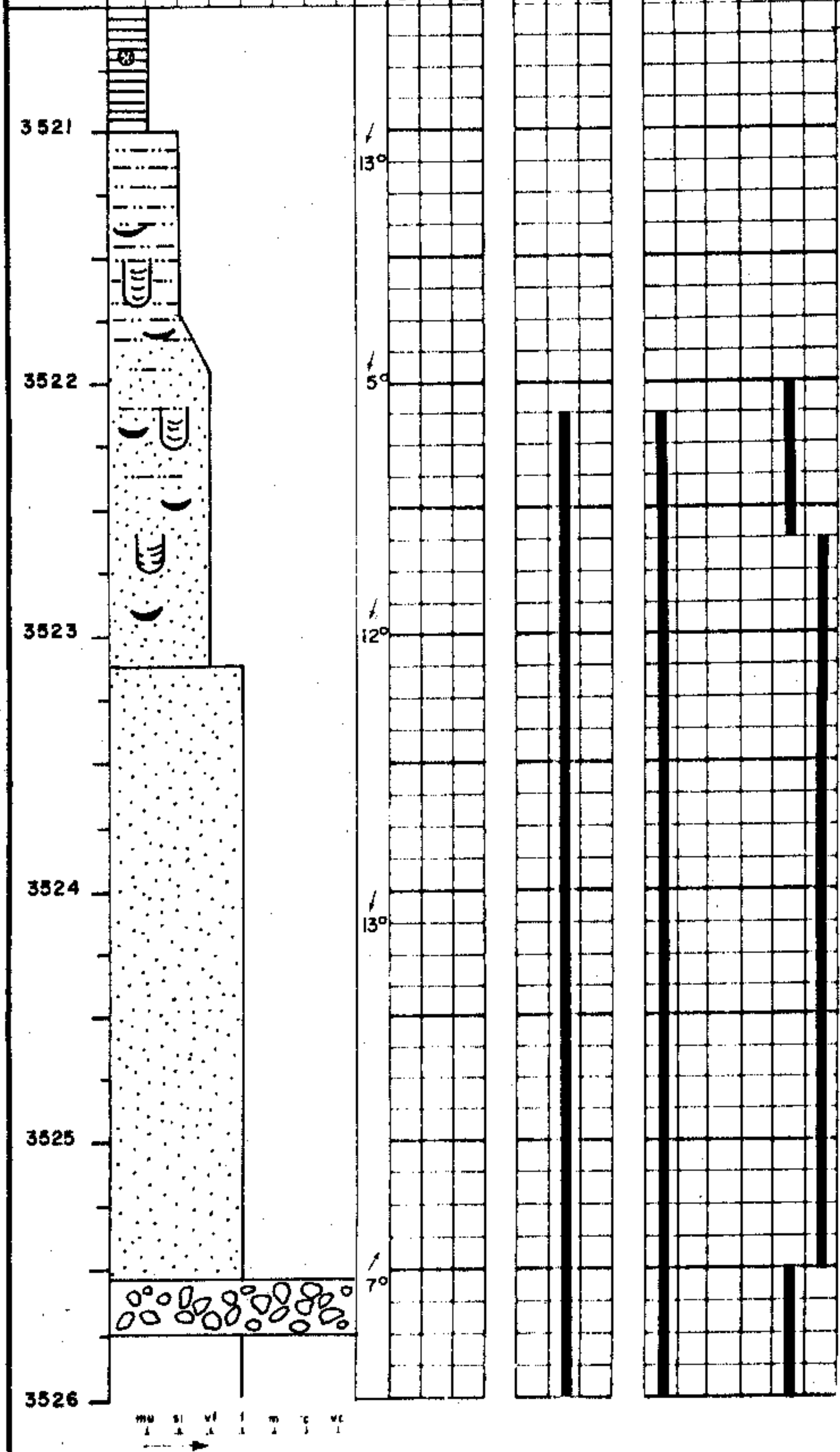
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 2 | INTERVAL from 3515 m to 3533.3 | CORED 18.3 | REC 18.3 | 100 %

FORM. | GEOLOGIST HAUGE / KRÆMER | DATE 19 May, 1978

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



Mudstone; grey-brown, sandy, very hard sideritic, micro-micaceous, laminated with coal, black, mature.

flaserbedding.

Silty sandstone; clear - lightbrown, very fine - fine, fair sorted, generally a fining upward sequence.

Sandstone; clear light brownish, fine - medium, wellsorted, subangular-subrounded, hard-friable.

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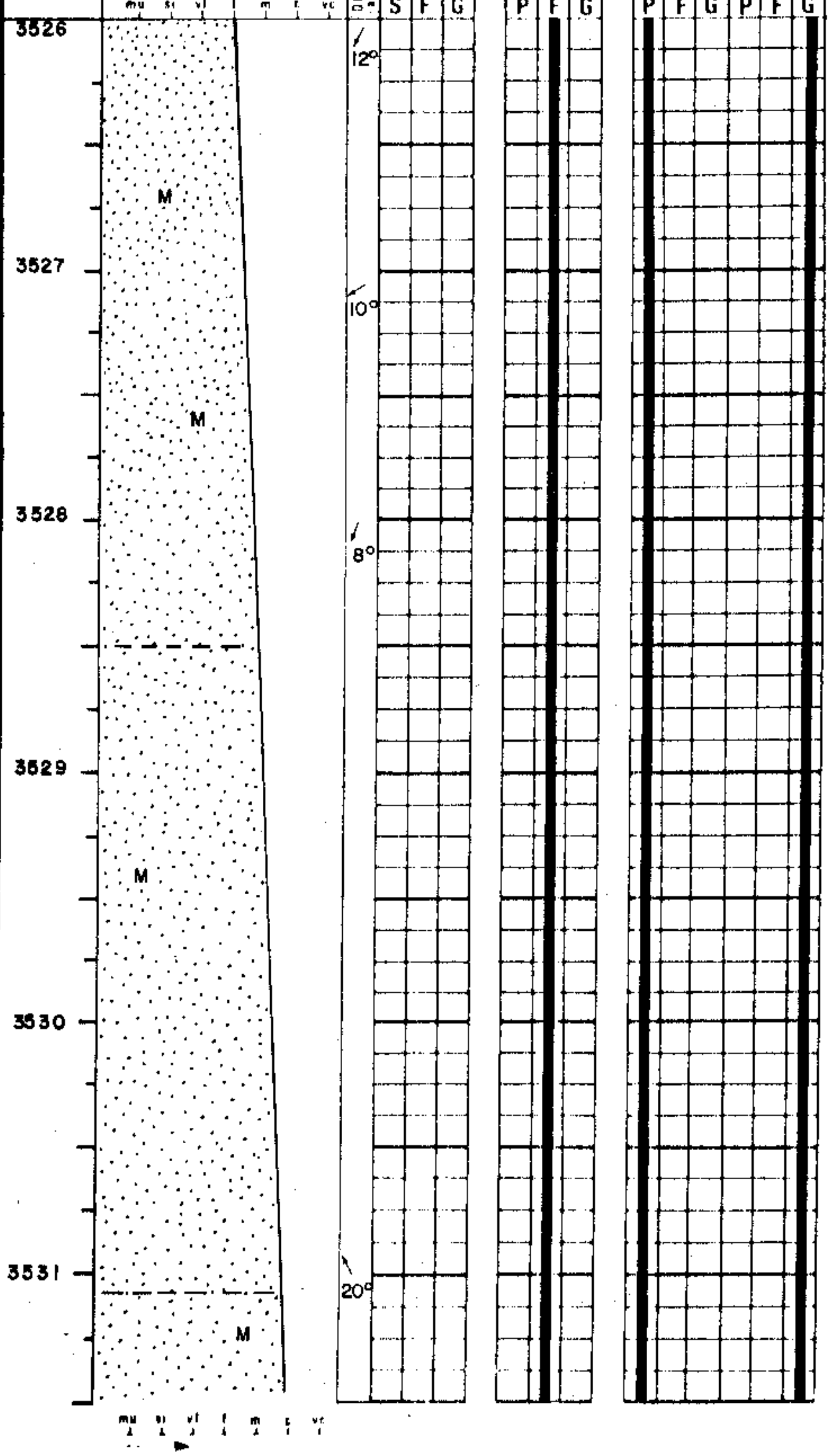
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea		
CORE NO. 2	INTERVAL from 3515 m to 3533.3 m	CORED 18.3m	REC 18.3 m	100 %
FORM.	GEOLOGIST HAUGE/KRÆMER		DATE 19 May, 1978	

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



Sandstone; clear - lightbrownish, fine - medium - coarse, well sorted, hard - friable, subangular subrounded, with shale laminae; very hard, micromicaceous, non calcareous, silty

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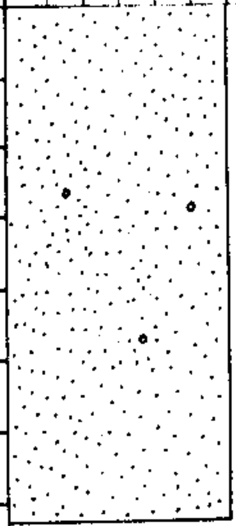
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 2 | INTERVAL from 3515 to 3533.3 m | CORED 18.3 m | REC 18.3 m | 100 %

FORM. | GEOLOGIST HAUGE/KRÆMER | DATE 19 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (ms si vf f m c vc)	Dip apparent	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3532							Sandstone; clear brownish, grey quartz, hard-friable, medium-coarse, occasional small pebbles well sorted.	
3533		12°						

ms si vf f m c vc

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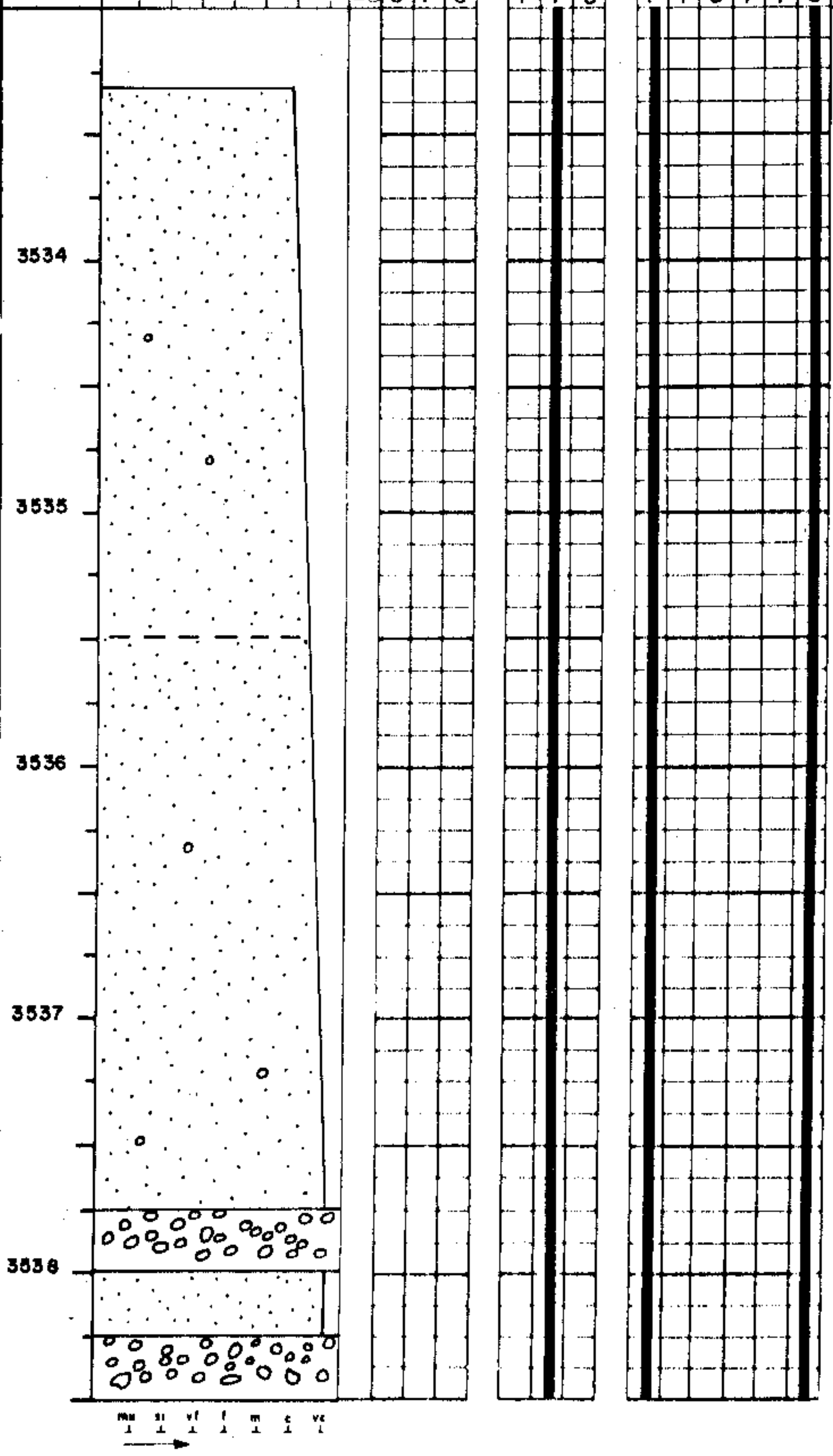
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 3 | INTERVAL from 3533.3 to 3551.6 m | CORED 18.3 m | REC 18.3 m | 100 %

FORM. | GEOLOGIST HAUGE / KRÆMER | DATE 20 May, 1978

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



Sandstone; light brown - milky quarts medium - very course, occasionally fine subangular - sub-rounded, well sorted, calcareous cemented hard - very hard,

occasional pebbles.

pebbly conglomerate.

MISC.: weak fluor, weak slow stream, white - pale - milkey yellow cut

good odour

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CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea
CORE NO. 3 | INTERVAL from 3533.3 to 3551.6 | CORED 18.3m | REC 18.3m | 100 %
FORM. | GEOLOGIST HAUGE / KRÆMER | DATE 20 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
							pebbly conglomerate	
3539							Sandstone; light brown - milky quartz, occasionally clear, medium - very course, occasionally fine and shaly laminae, subangular-subrounded, calcareous cemented well sorted, hard-very hard.	
3540								very weak flour. weak slow streaming cut white-pule-yellow-milkey cut
3541		5°						
3542		7°						good odour
3543								
3544								

mu si vf f m c vc

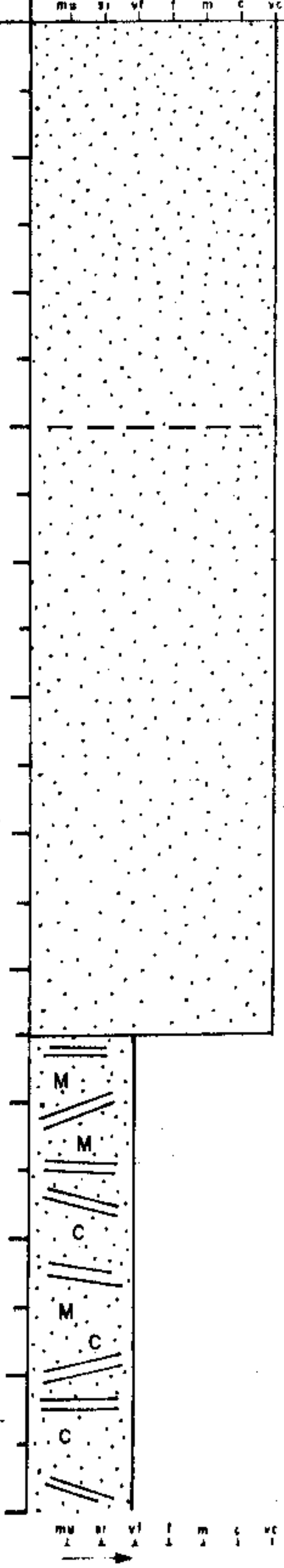
statoil

CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 3 | INTERVAL from 3533.3 to 3551.6 | CORED 18.3 | REC 18.3 | 100 %

FORM. | GEOLOGIST HAUGE / KRÆMER | DATE 20 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP apparent	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3544 – 3547.5		5°, 32°		F	P	G	Sandstone; light brown - milky occasionally clear quartz, med-very course, occasionally fine rapid altermatiom in grain size, subangular-subrounded culcareous cemented, well sorted, hard - very hard.	very weak, flour weak streaming white - pule yellow milky cut.
3547.5 – 3549.7		8°		F	P	G (F 3548.5–3548.9)	Sandstone;clear - milky, occasional light - brownish quartz, very fine - medium, hard-friable, non calcareous, fair sorting, subangular - subrounded micromicaceous carbonaceous.	

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CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea
CORE NO. 3 | INTERVAL from 3533.3 to 3551.6 m | CORED 18.3 m | REC 18.3 m | 100 %
FORM. | GEOLOGIST HAUGE / KRÆMER | DATE 20 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3550 3551		5°		P	P	G	Sandstone; clear - milky, occasional light brownish, subangular - subrounded, hard-friable, non calc - areous, fair sorting, slightly micromicaceous thin layers of irregular shale laminae	very weak flour, weak streaming white - pale yellow milky cut.

mu si vf f m c vc

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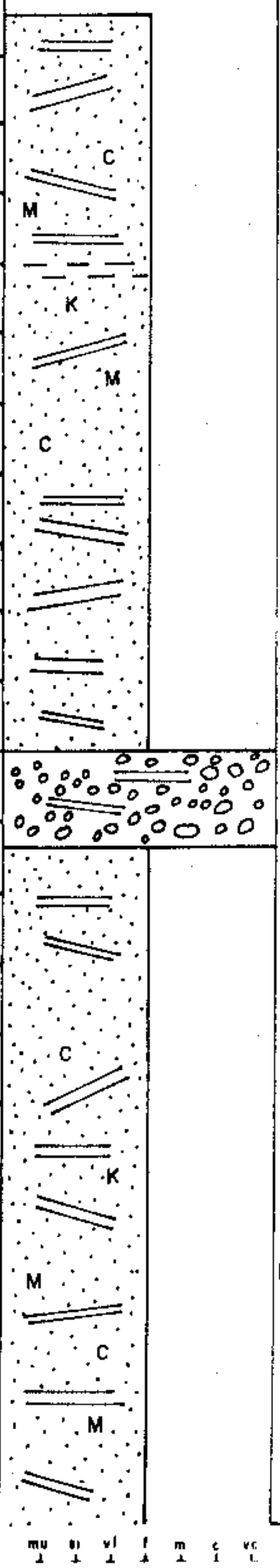
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 4 | INTERVAL from 3551.6 to 3569.9 m | CORED 18.3 m | REC 18.3 m | 100 %

FORM. | GEOLOGIST HAUGE / KRÆMER | DATE 20 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3552							Sandstone; light grey-brownish quartz, fine-medium, angular-subangular, hard, non calcareous, silica cemented, kaolinitic, poor sorting, with laminae of shale; grey, hard, micromicaceous	
		5°						very weak flour, slow streaming white-pale yellow milkey cut good odour
3553		8°						
3554		17°						
							Conglomerate;	
3555		6°						
3556		10°						
3557								



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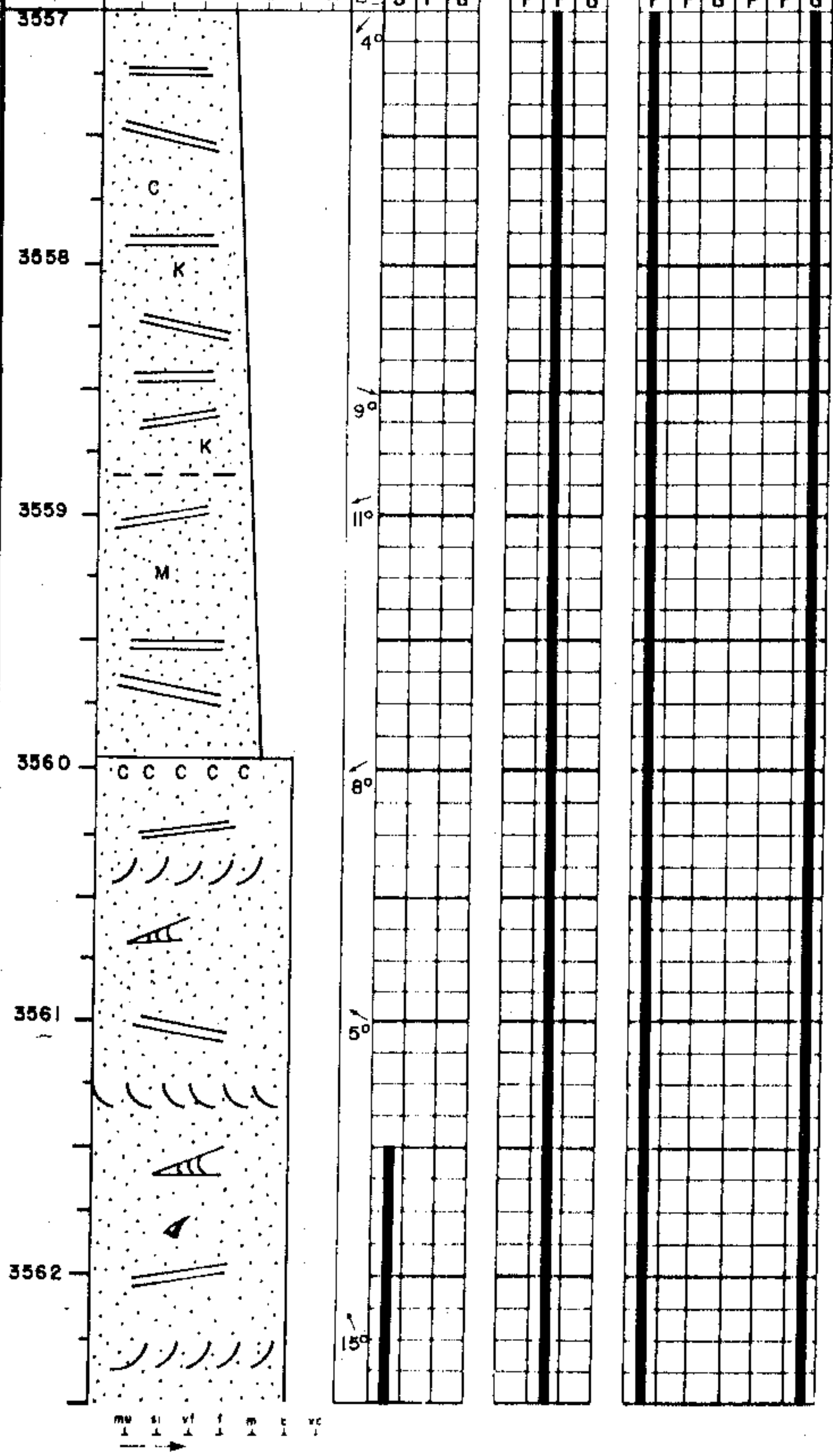
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO 15/9-2	AREA North Sea

CORE NO. 4	INTERVAL from 3551.6 to 3569.9m	CORED 18.3m	REC 18.3m	100 %

FORM.	GEOLOGIST HAUGE/KRÆMER	DATE 20 May,1978

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



Sandstone; light grey-brownish, fine - medium, subangular - subrounded, fair sorting, silica cemented kaolinitic, slightly carbonaceous and micaceous.

very weak flour, slow streaming white pale yellow milky cut

Sandstone;a/a medium - course grain size.

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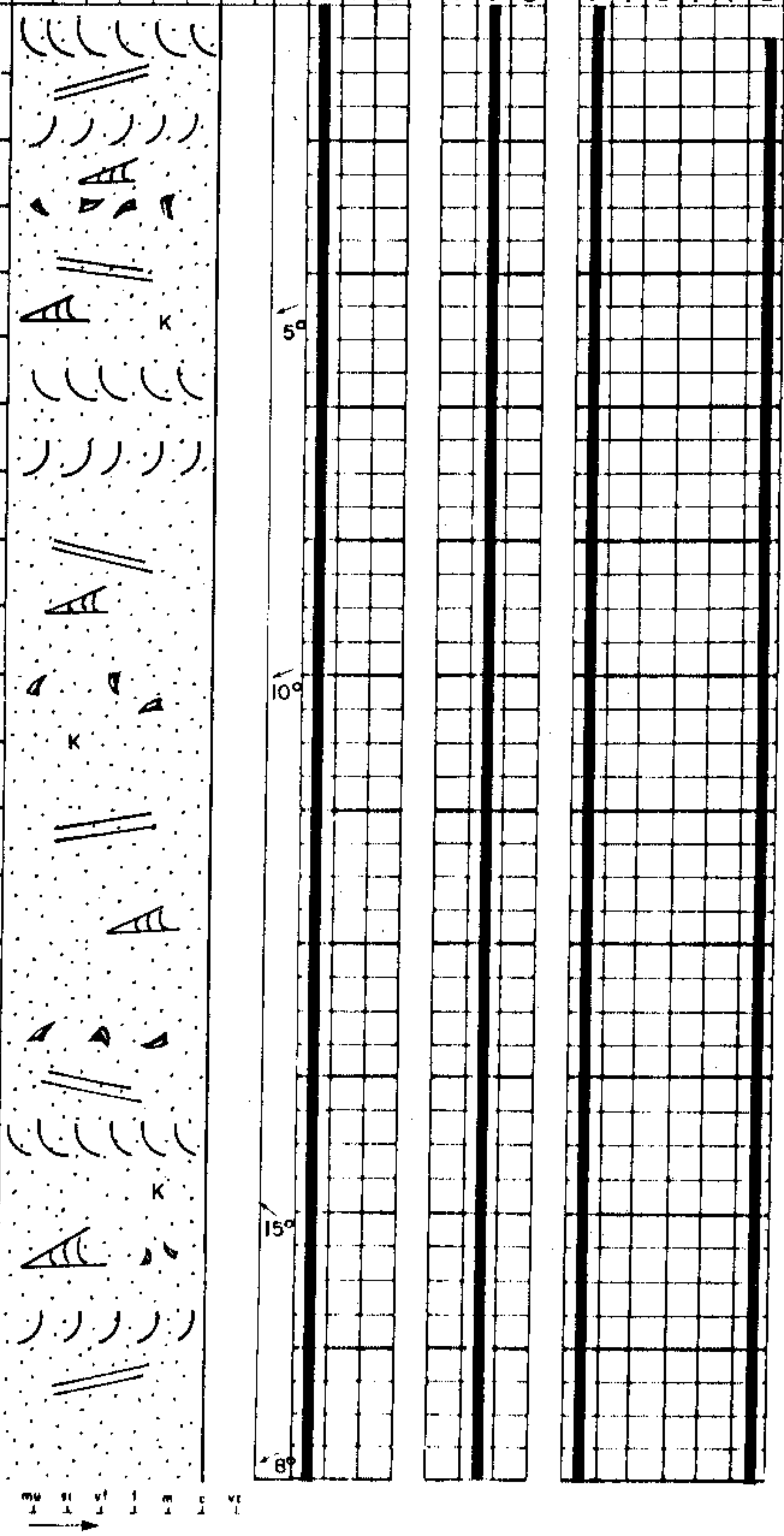
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 4 | INTERVAL from 3551.6 to 3569.9 m | CORED 18.3 m | REC 18.3 m | 100 %

FORM. | GEOLOGIST HAUGE/ KRÆMER | DATE 20 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP apparent	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3563 3564 3565 3566 3567 3568		5° 10° 15° 8°					Sandstone; light grey-brownish, medium course, subangular - subrounded, fair sorting, slightly kaolinitic, silica cemented, shale fragments	very weak, flour slow streaming white-pale yellow cut good odour



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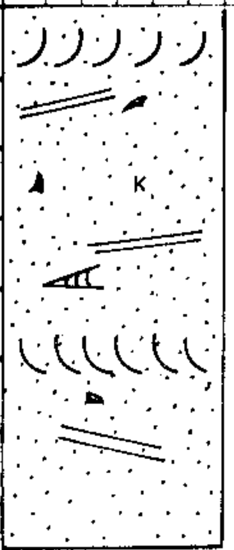
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 4 | INTERVAL from 3551.6 to 3569.9 | CORED 18.3m | REC 18.3m | 100 %

FORM. | GEOLOGIST HAUGE / KRÆMER | DATE 20 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP apparent	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3568		11°					Sandstone; a/a	show, a/a
3569								

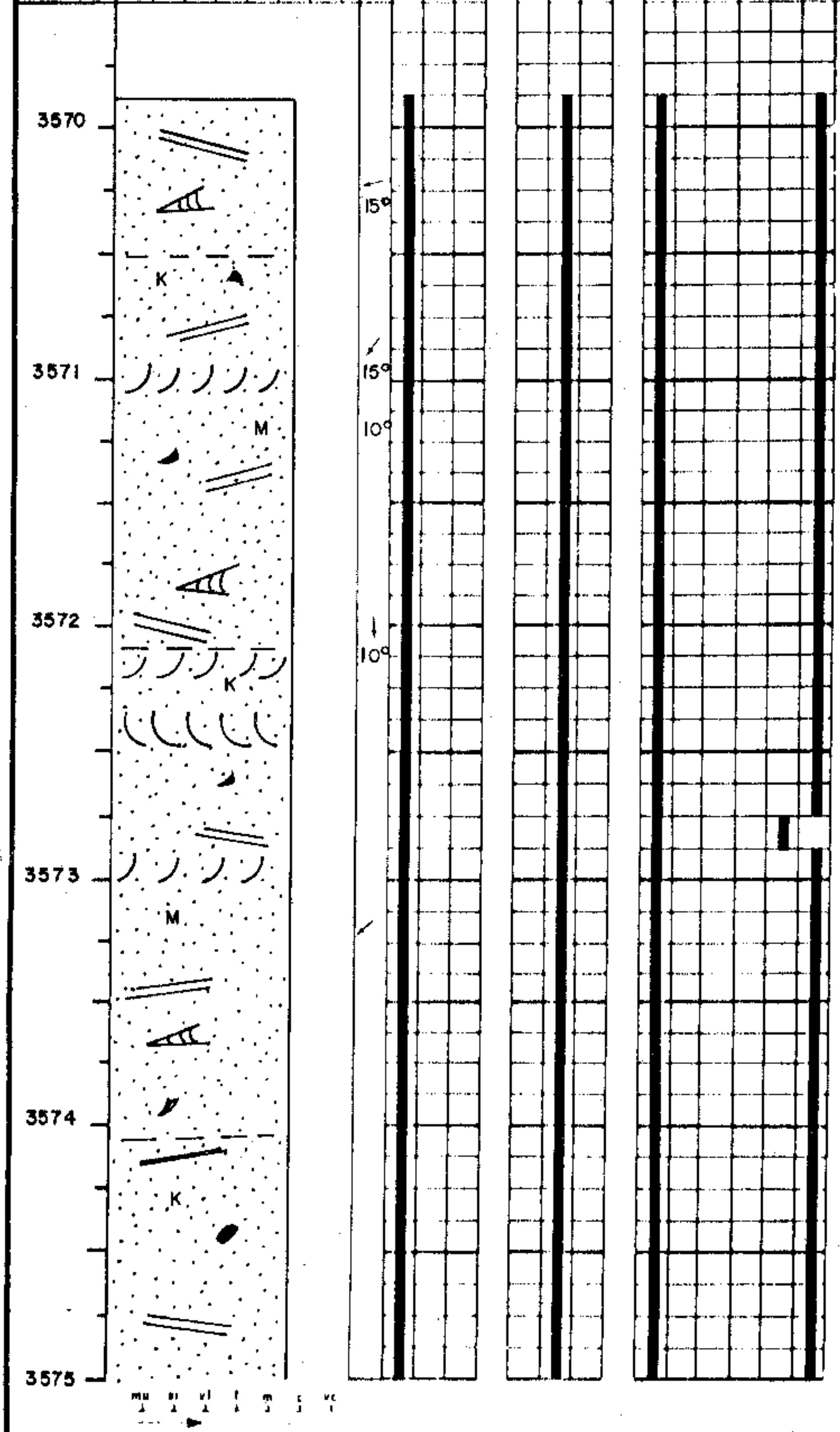
mu si vf f m c vc

statoil

CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea		
CORE NO. 5	INTERVAL from 3569.9 to 3588.2	CORED 18.3 m	REC 18.3 m	100 %
FORM.	GEOLOGIST HAUGE/ KRÆMER	DATE 21 May, 1978		

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



sandstone, clear light grey - light brown quartz, subangular - subrounded, hard - friable, medium - very coarse, non calcareous, slightly micromicaceous and kaolinitic

MISC.:

abundant dead oil

very weak fluor

slow - moderate fast white bluish milky cut

good odour

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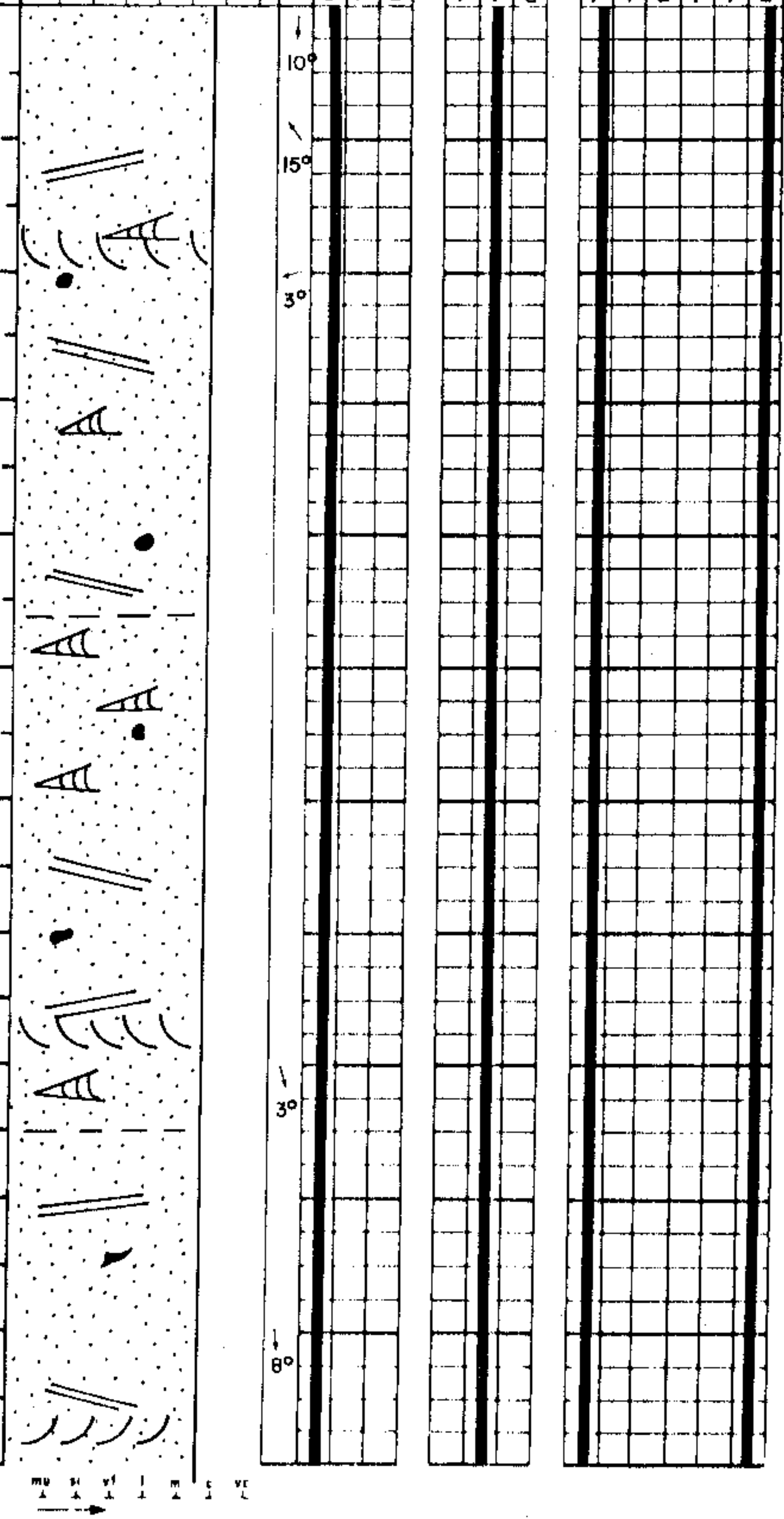
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea

CORE NO. 5	INTERVAL from 3569.9 to 3588.2	CORED 18.3m	REC 18.3m	100 %

FORM.	GEOLOGIST HAUGE / KRÆMER	DATE 21 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3575		10°						
		15°					sandstone, light brownish - clear - milky quartz, friable - hard, subangular - subrounded, medium - very coarse, non calcareous, well sorted, kaolinitic, silica cemented	
3576		3°						
								abundant dead oil
3577								very weak fluor, slight - moderately fast white - bluish milky cut
3578								good odour
3579		3°						
3580		8°						



4.00.17

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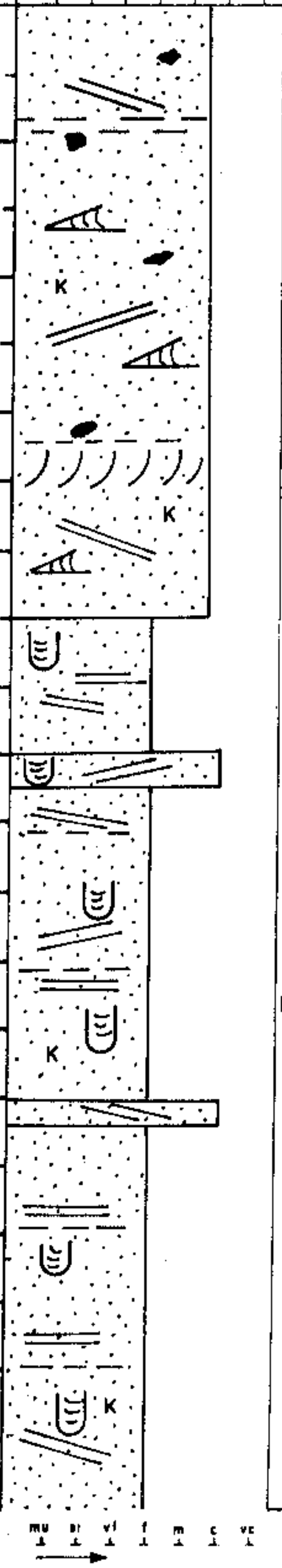
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea

CORE NO. 5	INTERVAL from 3569.9 to 3588.2 m	CORED 18.3 m	REC 18.3 m	100 %

FORM. GEOLOGIST HAUGE/KRÆMER DATE 21 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3581							sandstone, clear - light brown grey, medium - coarse, sub-angular - subrounded, friable - hard, slightly micromicaceous fair - well sorted, kaolinitic, silica cemented trace of coal fragments	
3582		8°						abundant dead oil very weak fluor, slow - moderately fast white milky cut good odour
3583								
3584		15°					sandstone, a/a but more fine grained	
3585								
3586								



4.00.17

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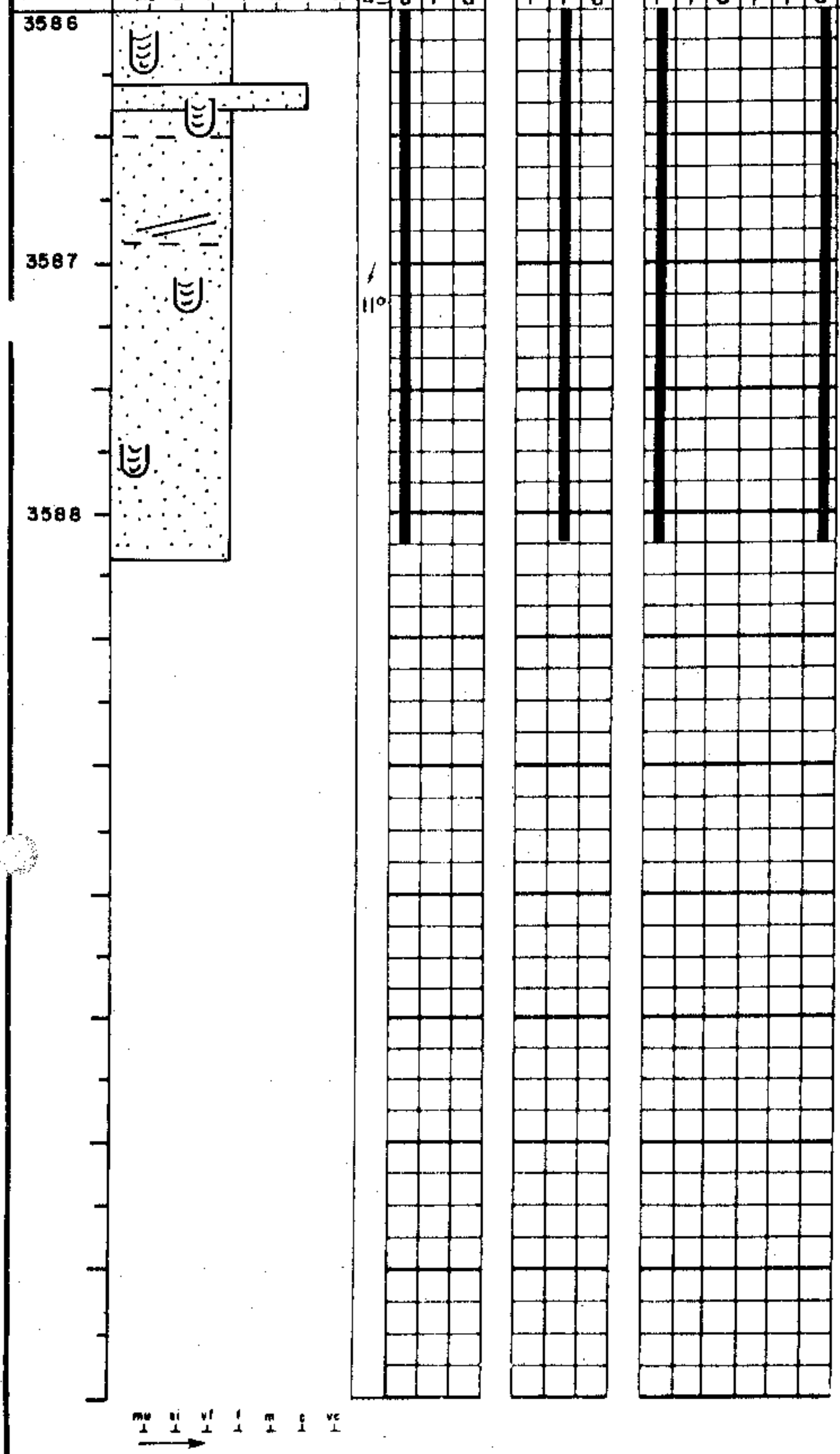
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9 - 2	AREA North Sea
CORE NO. 5	INTERVAL from 3569.9 to 3588.2 m	CORED 18.3 m / REC 18.3 m / 100 %
FORM.	GEOLOGIST HAUGE / KRÆMER	DATE 21 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN S F G / CUT P F G / FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3586					sandstone, a/a	shows a/a
3587		11°				
3588						



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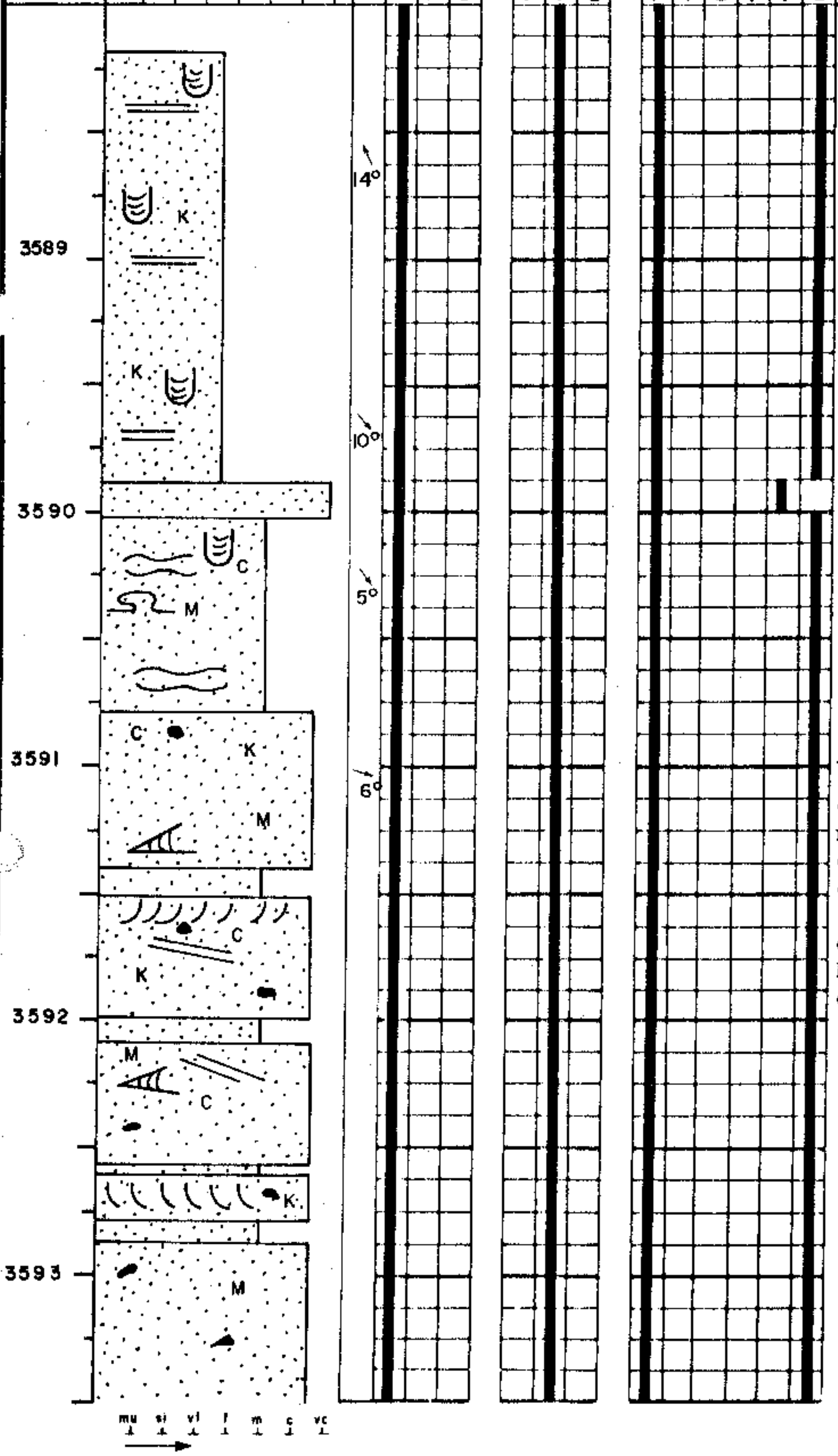
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea
CORE NO. 6	INTERVAL from 3588.2 to 3606.5 m	CORED 18.3m · REC 18m · 98.5 %
FORM.	GEOLOGIST HAUGE / MÆHLE	DATE 24 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN (S F G), CUT (P F G), FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.



sandstone, clear light brown - grey, fine grained, occasional medium, well sorted, subangular, friable, non calcareous, kaolinitic, slightly micaceous, shale laminations

MISC.: core bleeding gas, good odour, weak fluor slow - fast milky bluish cut

sandstone, clear light brown - grey, occasionally milky, medium - coarse, occasionally very coarse, moderately sorted, loose - friable occasionally hard, kaolinitic, calcareous cemented in parts

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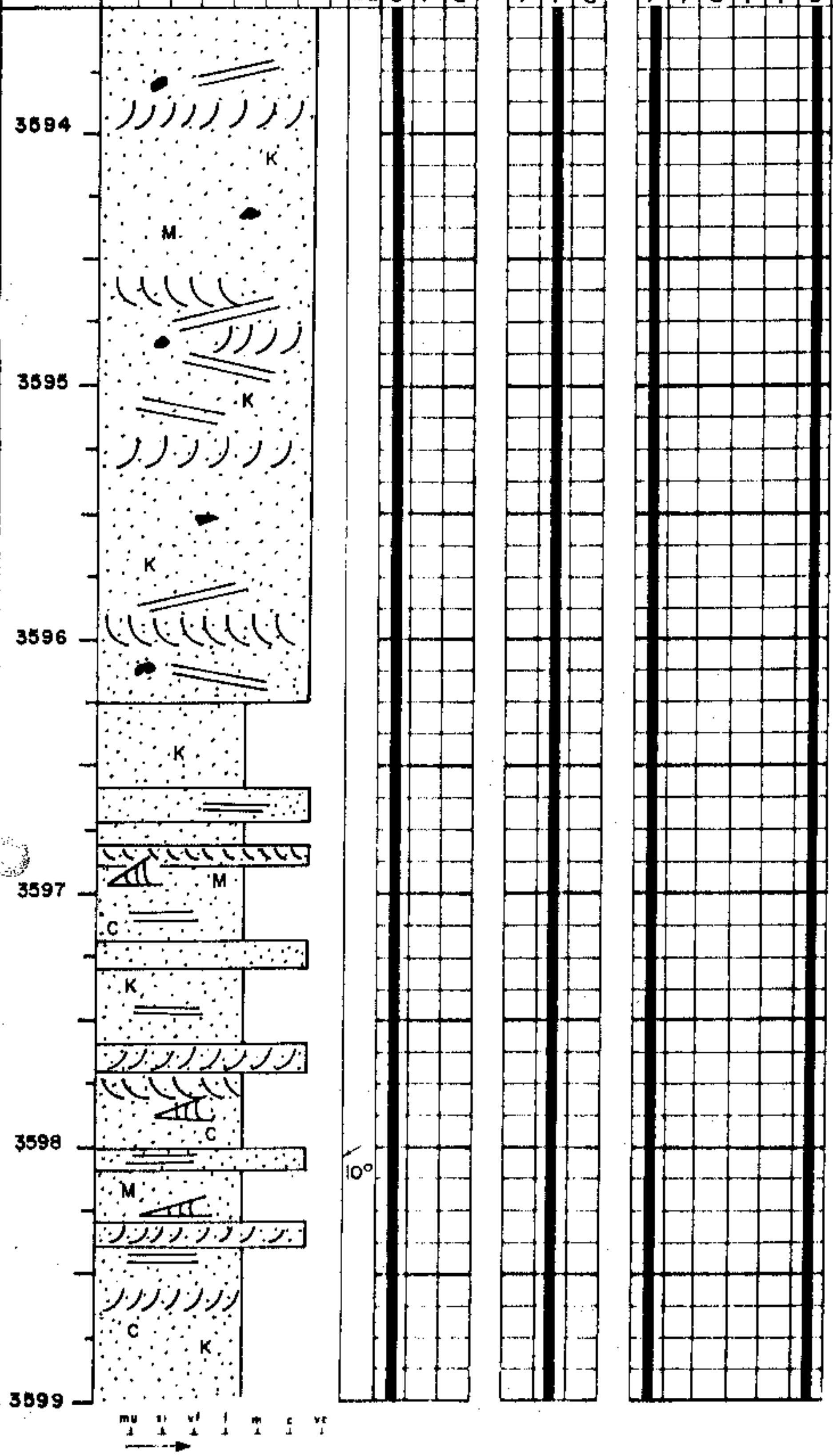
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea
CORE NO. 6 | INTERVAL from 3588.2 to 3606.5m | CORED 18.3 m | REC 18m | 98.5 %
FORM. | GEOLOGIST HAUGE/MÆHLE | DATE 24 May,1978

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



sandstone, clear - light brown - grey, coarse - very coarse, well sorted, sub-angular, friable, non calcareous, kaolinitic, slightly micaceous

shows a/a

sandstone, clear light brown - grey, fine - medium imbedded with coarse - very coarse, fair sorting, friable - hard, occasional very hard, non calcareous, kaolinitic, slightly micaceous, very thin coal laminae between 3597 and 3599

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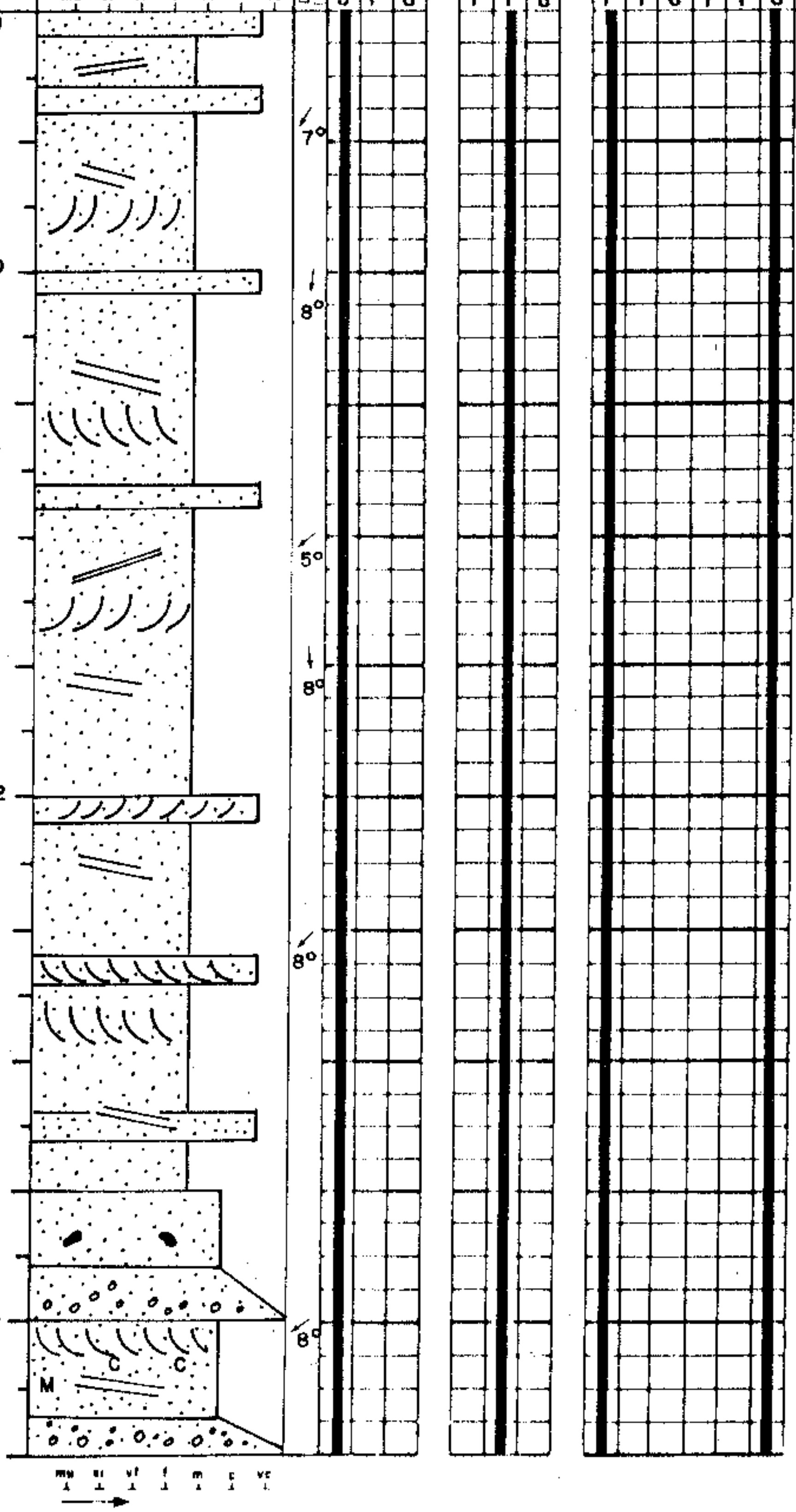
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea		
CORE NO. 6	INTERVAL from 3588.2 to 3606.5m	CORED 18.3m	REC 18m	98.5 %
FORM.	GEOLOGIST HAUGE / MÆHLE		DATE 24 May, 1978	

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3599								
		7°					sandstone, a/a	
3600		8°						shows a/a
3601		5°						
		8°						
3602		8°						
3603								
3604		8°					pebbly conglomerates	



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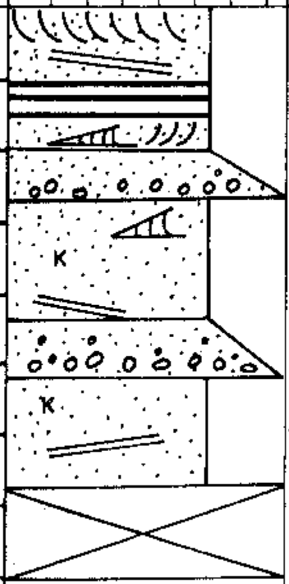
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 6 | INTERVAL from 3588.2 to 3606.5m | CORED 18.3 m | REC 18m | 98.5 %

FORM. | GEOLOGIST HAUGE/MÆHLE | DATE 24 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
							thin coal beds	
3605								shows a/a
							sandstone, a/a interbedded with pebbly conglomerates	
3606		8°						

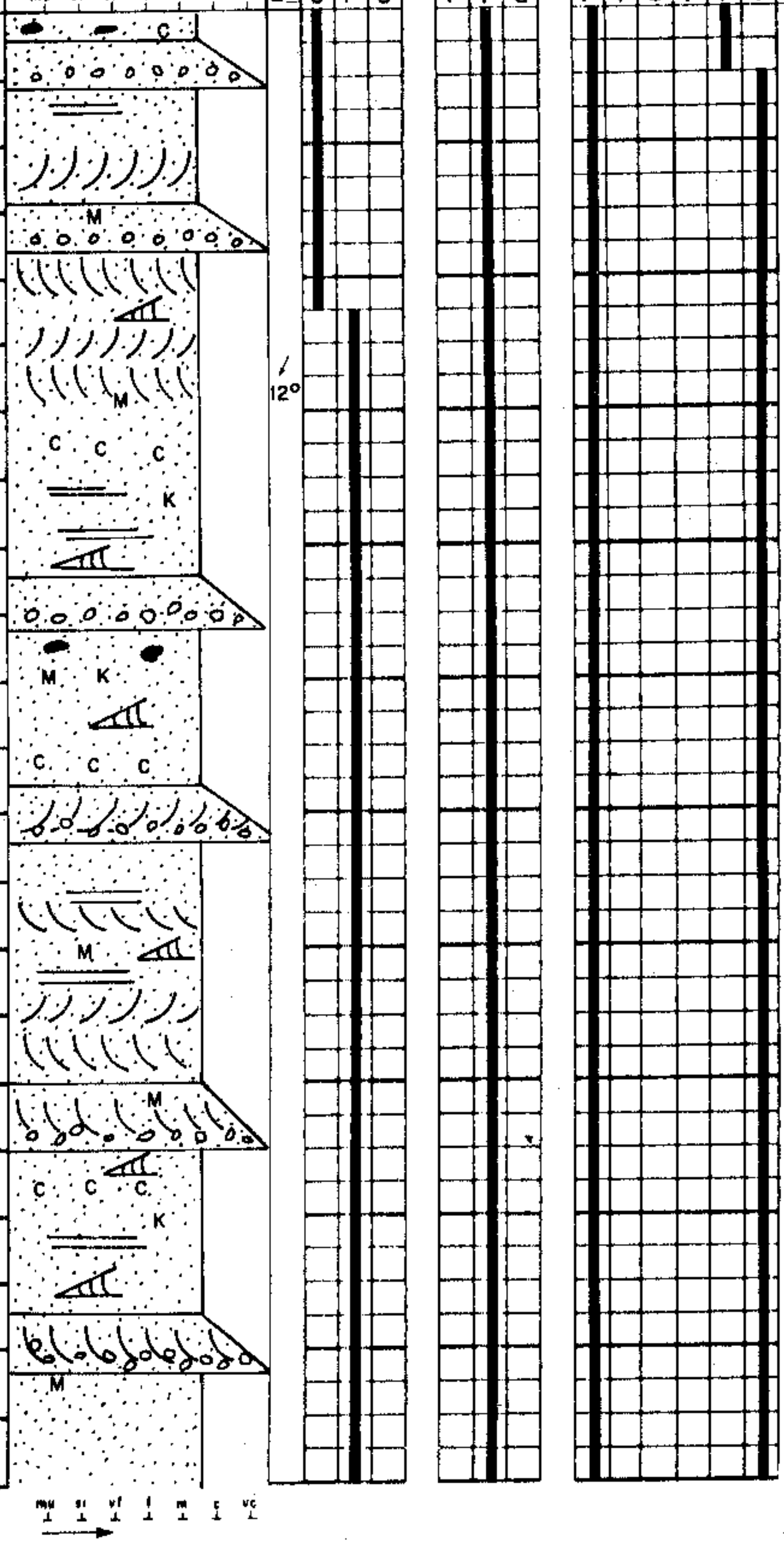


mu si vf f m c vc

statoil

CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea	
CORE NO. 7	INTERVAL from 3606.5 to 3624.5 m	CORED 18.0 m	REC 17.7 m — 98.3 %
FORM.	GEOLOGIST HAUGE / MÆHLE	DATE 25 May, 1978	

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN (S F G) / CUT (P F G) / FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3607 3608 3609 3610 3611 3612		12°			Sandstone, light brown, medium -coarse fair sorting, calca-reous, cemented, kaolinitic, subangu-lar - subrounded, loose, friable imbedded with pebbly conglomerates, graded	bleeding gas, good odour weak fluor, moderate - fast milky bluish cut

statoil

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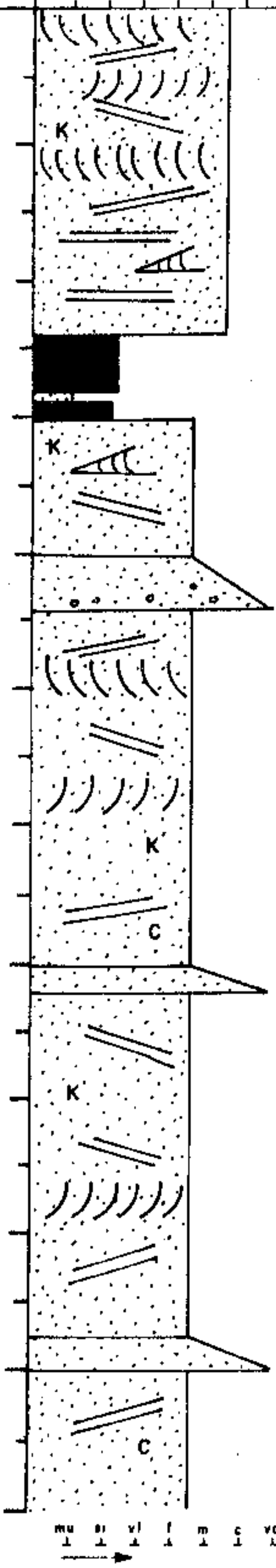
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO 15/9-2	AREA North Sea

CORE NO. 7	INTERVAL from 3606.5 to 3624.5m	CORED 18.0 m	REC 17.7	98.3 %

FORM.	GEOLOGIST HAUGE / MÆHLE	DATE 25 May, 1978

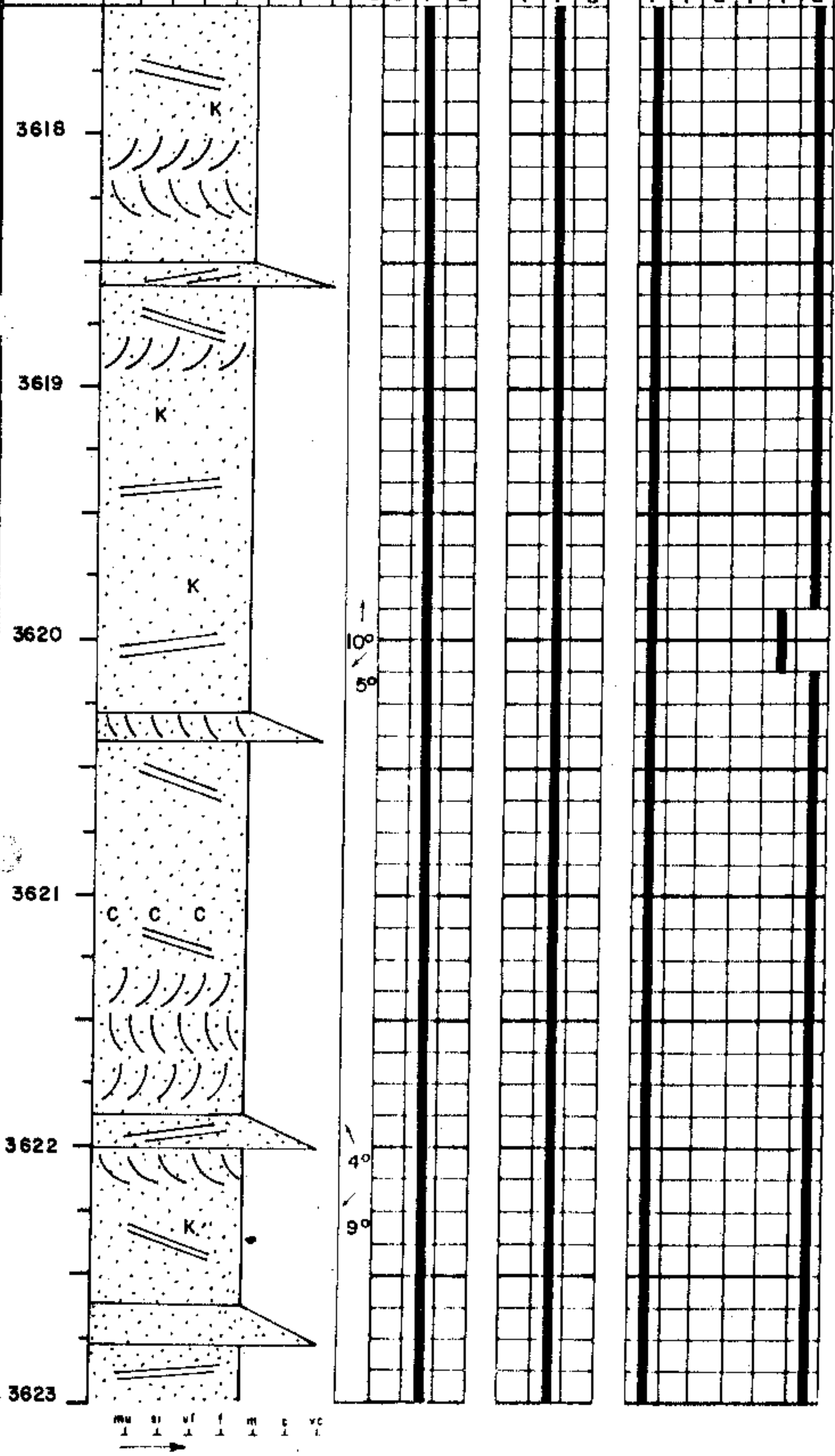
DEPTH	LITHOLOGY/ GRAIN SIZE	DIP apparent	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3612		20°					Sandstone, light brown medium - coarse, occasional very coarse loose - friable, sub-angular - subrounded, slightly calcareous kaolinitic	
							coal, black, massive, trace of sand	
								shows a/a
							sandstone, a/a mostly fine - medium, imbedded with thin graded beds, of very coarse sandstone	

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO 15/9 - 2 | AREA North Sea
CORE NO. 7 | INTERVAL from 3606.5 to 3624.5m | CORED 18.0m | REC 17.7m | 98.3 %
FORM. | GEOLOGIST HAUGE / MÆHLE | DATE 25 May, 1978

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



sandstone, light brown milky quartz, fine - medium, occasional coarse to very coarse beds, fair sorting, slightly calcareous, subangular, loose - friable, kaolinitic

shows a/a

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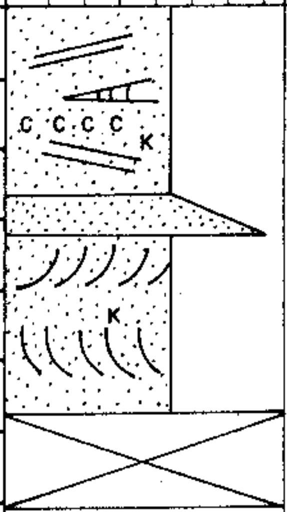
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea
CORE NO. 7 | INTERVAL from 3606.5 to 3624.5m | CORED 18.0m | REC 17.7m | 98.3 %
FORM. | GEOLOGIST HAUGE / MÆHLE | DATE 25 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
3623 – 3624		9°	F	F	P	G	sandstone, light brown occasionally milky, fine - medium, moderately sorted, hard, non calcareous, angular - subangular, kaolinitic	



mu si vf f m c vc

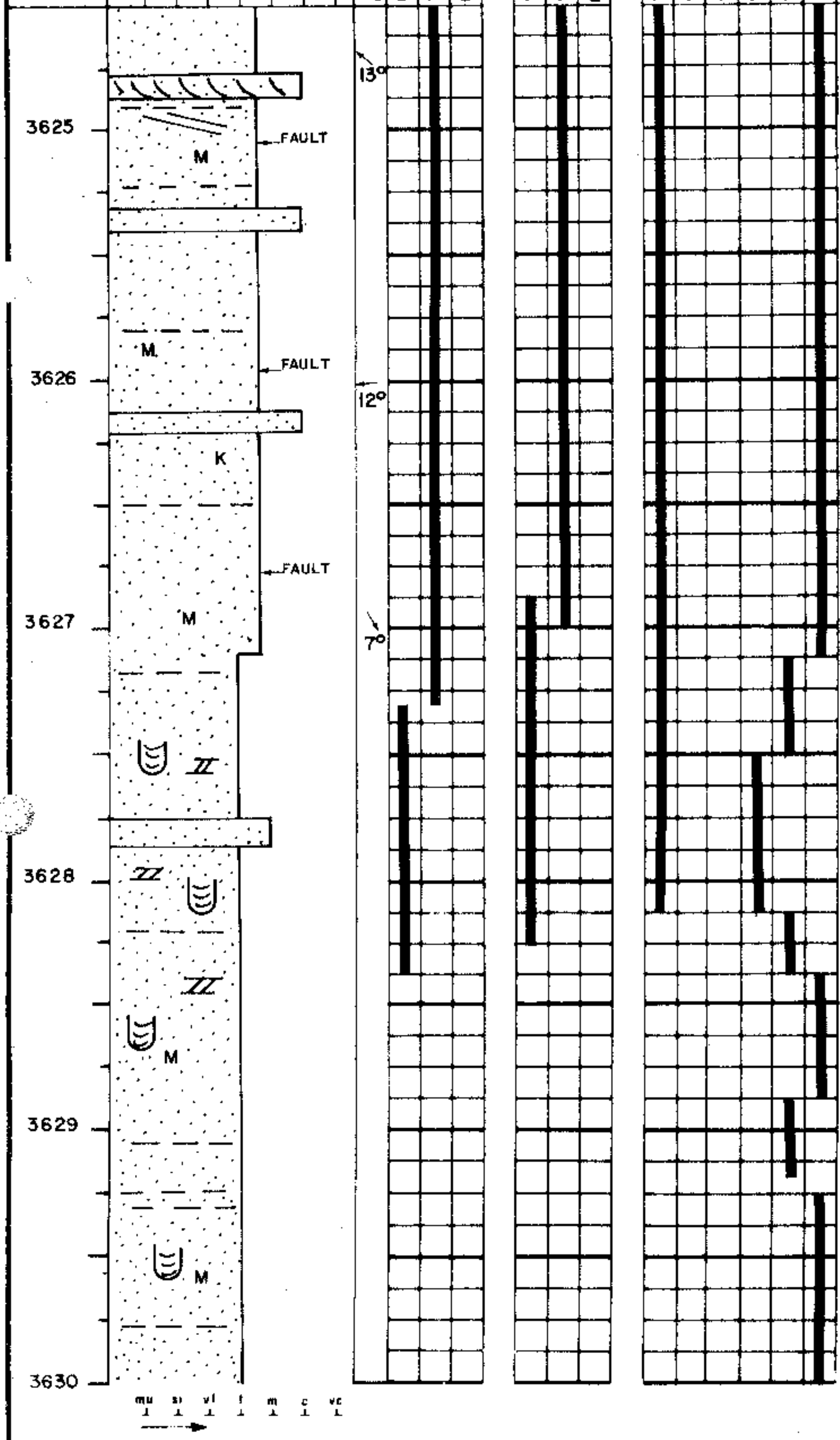
4.00.11

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea	
CORE NO. 8	INTERVAL from 3624.5 to 3642.8 m	CORED 18.3 m	REC 17.8 m 97.4 %
FORM.	GEOLOGIST HAGE / MÆHLE		DATE 26 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN (S F G), CUT (P F G), FLUOR (P F G), Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.



sandstone, light - medium brown, occasional milky quartz, fine - medium, occasional coarse beds, subangular - subrounded, friable, fair sorting

irregular shale laminations, dolomite cement occasional kaolinite

mica, chlorite and muscovite

questionalble burrows

MISC.: white - light blue milky cut

non - weak shows

4 00 17

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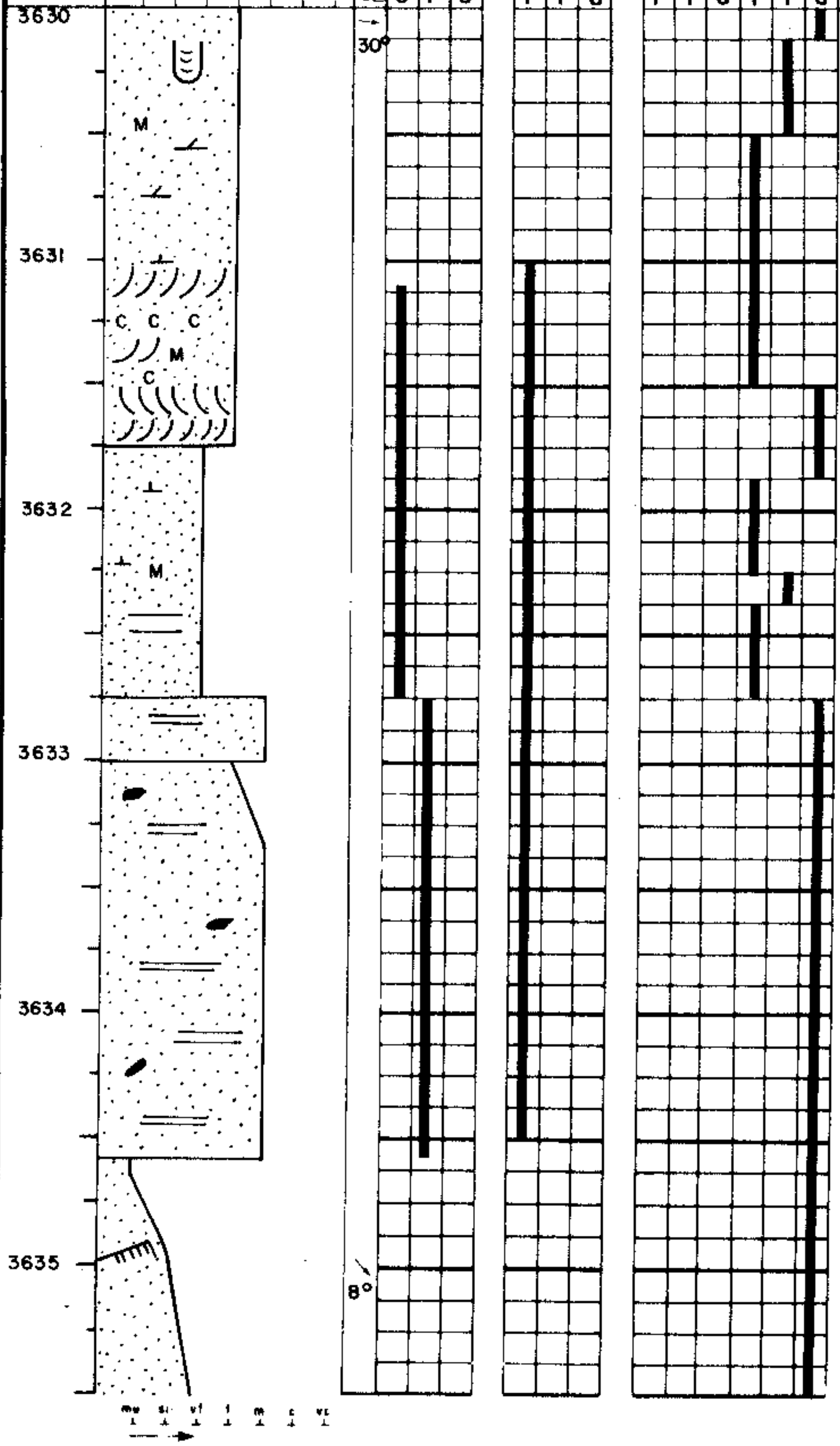
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 8 | INTERVAL from 3624.5 to 3642.8m | CORED 18.3m | REC 17.8m | 97.4 %

FORM. | GEOLOGIST HAGE/MÆHLE | DATE 26 May, 1978

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



sandstone, light - medium grey, fine - very fine, moderate - well sorted, hard, dolomite & calcite cement, micaceous, slightly argillaceous, clay matrix, and coaly — no - very weak shows

sandstone, light - medium brown, fine - medium, moderate - well sorted, friable — weak stain in parts; slow milky cut

sandstone, dark grey - medium greyå very fine laminated with clay in upper part — no shows

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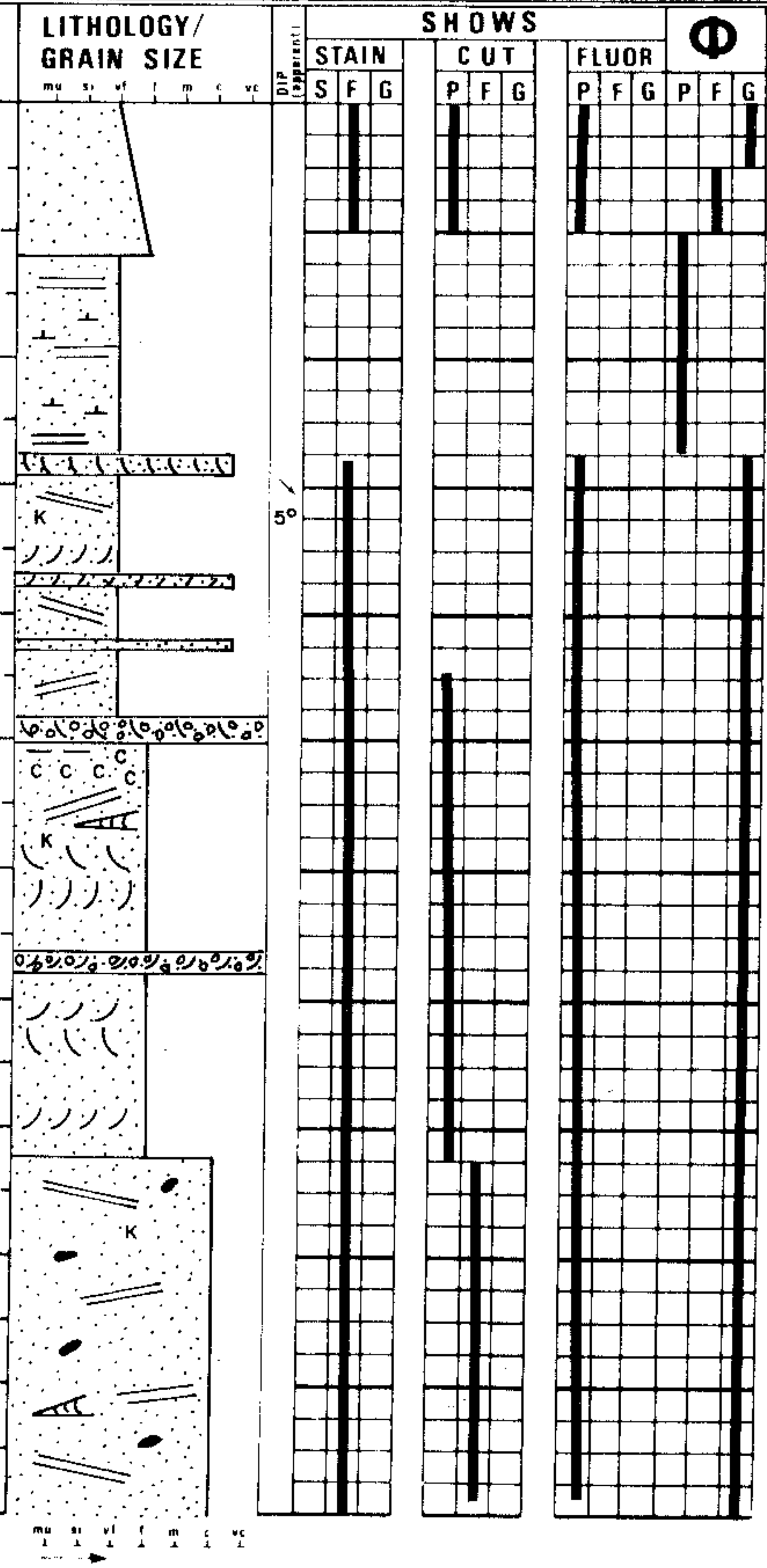
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 8 | INTERVAL from 3624.5 to 3642.8 m | CORED 18.3 m | REC 17.8 m | 97.4 %

FORM. | GEOLOGIST HAGE/MÆHLE | DATE 26 May, 1978

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



DEPTH	LITHOLOGIC DESCRIPTION	MISC.
3636	sandstone, a/a	
	sandstone, light - medium brown, very fine, well sorted, tight, argillaceous matrix and dolomite cement	fractured no shows
3637	sandstone, light - medium brown, very fine, with thin beds of coarse - very coarse sandstone, friable, kaolinitic	
3638	pebbly conglomerate	very weak cut
	sandstone, a/a finegrained with thin coal laminae	
3639	granule conglomerate	
3640	sandstone, brown, coarse, friable, fair - well sorted, subangular, argillaceous matrix, kaolinitic	moderate streaming white - yellow bluish cut
3641		

statoil
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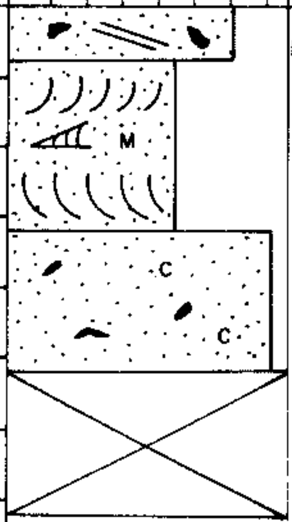
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea
CORE NO. 8	INTERVAL from 3624.5 to 3642.8m	CORED 18.3m / REC 17.8m / 97.4 %
FORM.	GEOLOGIST HAGE / MÆHLE	DATE 26 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3641 – 3642		12°	F	F	P	G	sandstone, light - medium brown, fine - very coarse, poor sorting, friable, argillaceous matrix	slow streaming light yellow - bluish cut

mu si vf f m c vc

statoil

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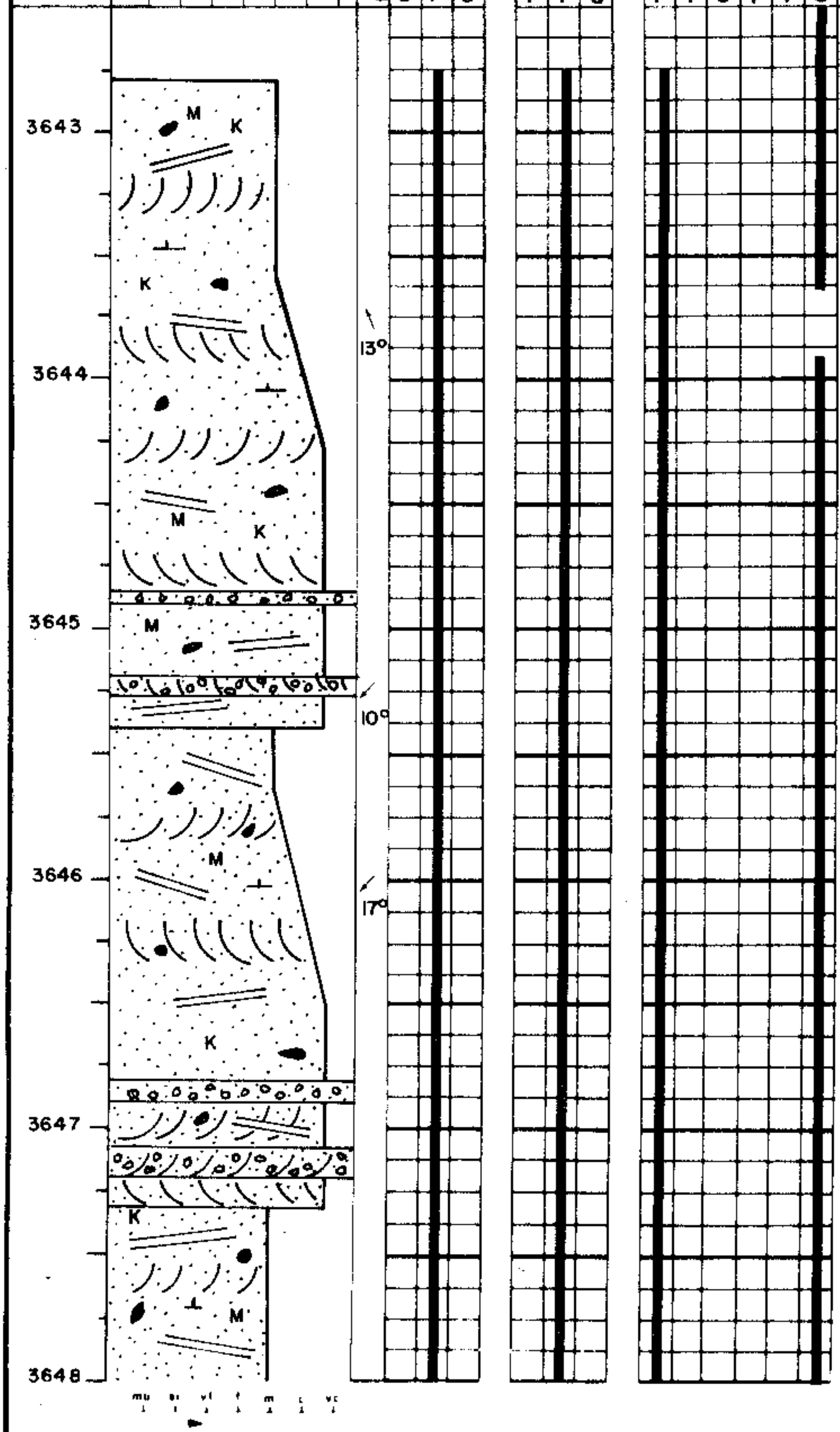
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea		
CORE NO. 9	INTERVAL from 3642.8 to 3661.1m	CORED 18.3m	REC 18.3m	100 %
FORM.	GEOLOGIST HAGE/MÆHLE		DATE 26 May, 1978	

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



sandstone: light brown occasional milky quartz coarse - very coarse, moderate - well sorted subangular, micaceous kaolinitic, friable, slightly calcareous cemented and clay matrix with thin beds of pebbly conglomerates

abundant rock fragments

MISC.:

weak fluor

slow streaming light yellow bluish cut

odour

statoil

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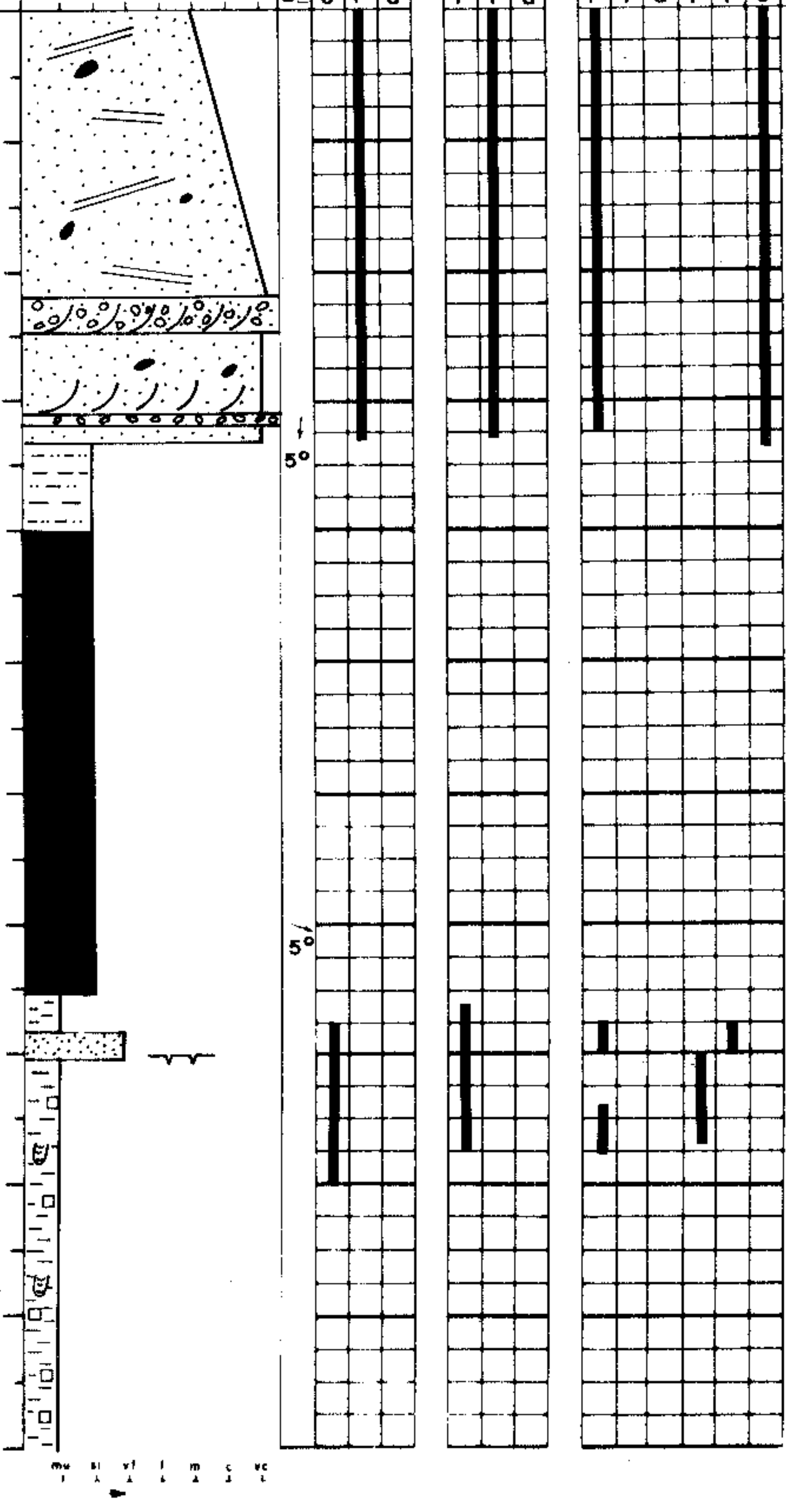
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 9 | INTERVAL from 3642.8 to 3661.1m | CORED 18.3 m | REC 18.3 m | 100 %

FORM. | GEOLOGIST HAGE / MÆHLE | DATE 26 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3648							sandstone: a/a	shows a/a
3649		5°					shaly siltstone: medium grey, hard, non calcareous, micromicaceous, possible bioturbation	
3650							coal; black, mature, with thin laminations of silty shale	
3651		5°						no shows
3652							shale: medium grey, hard, subfissile, micromicaceous, non calcareous, sand pockets, pyritic, questionnable bioturbation mudcracks in top	
3653								



statoil
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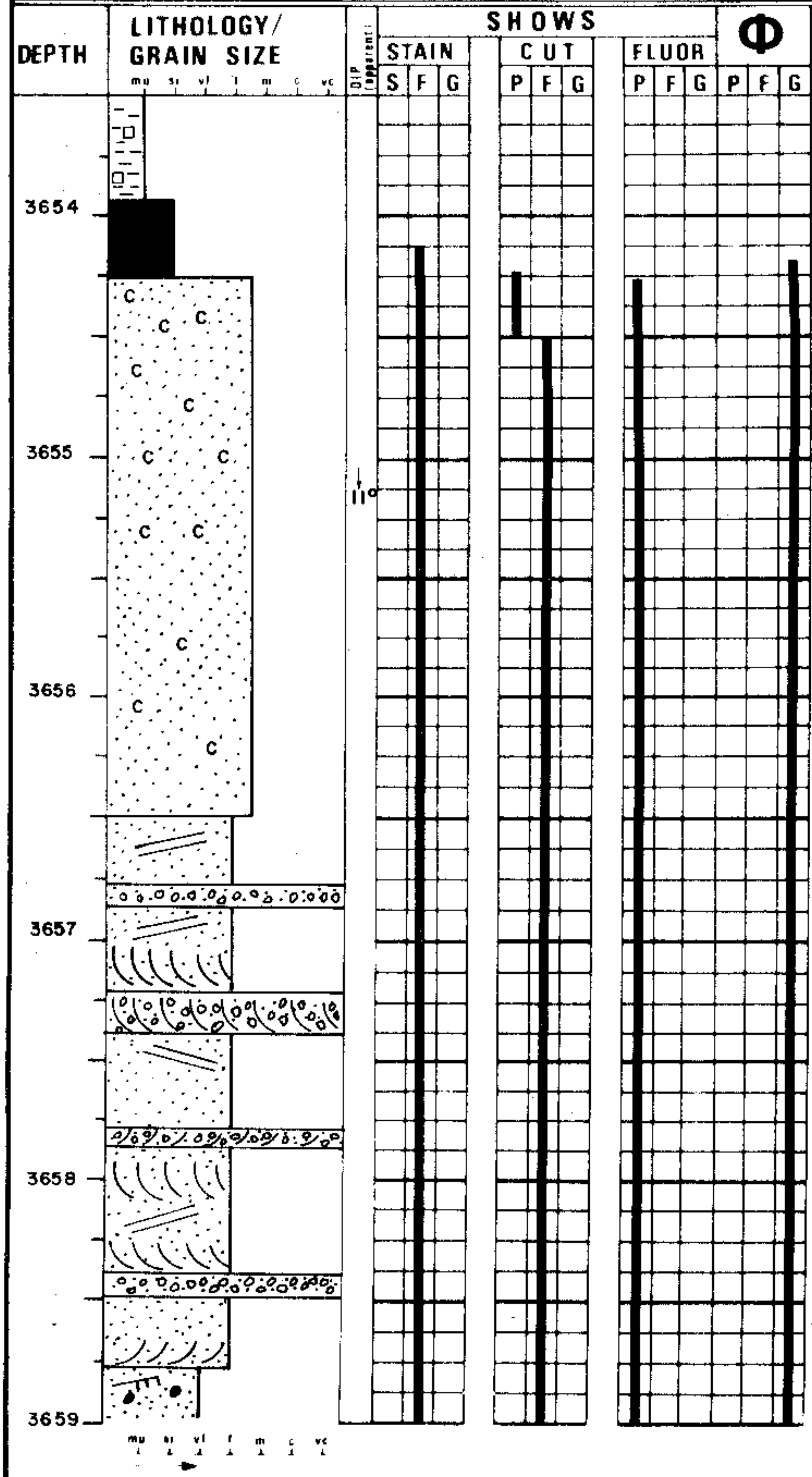
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea
CORE NO. 9	INTERVAL from 3642.8 to 3661.1m	CORED 18.3m — REC 18.3 — 100 %
FORM.	GEOLOGIST HAGE / MÆHLE	DATE 26 May, 1978



LITHOLOGIC DESCRIPTION	MISC.
shale: a/a	no shows
coal: a/a	
sandstone: light - medium brown, fine - medium, occasional coarse, subangular, moderate sorted, occasional poor sorting non calcareous, kaolinitic	weak fluor slow stream-ing light - yellow bluish cut
beds of granule size conglomerates	

statoil

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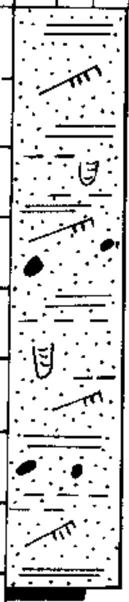
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 9 | INTERVAL from 3642.8 to 3661.1 | CORED 18.3 m | REC 18.3m | 100 %

FORM. | GEOLOGIST HAGE / MÆHLE | DATE 26 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS	LITHOLOGIC DESCRIPTION	MISC.
3659		21°		sandstone: light grey to brownish, silty, very fine, tight, with shale laminae	no shows
3660					very weak odour
3661				coal: a/a	

mu si vf f m c vc

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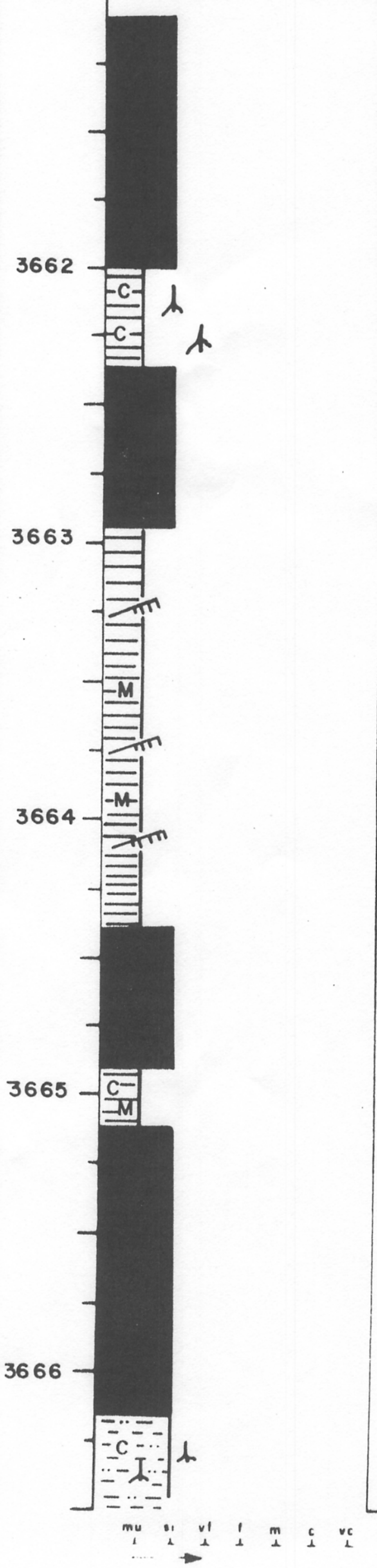
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat	WELL NO. 15/9-2	AREA North Sea		
CORE NO. 10	INTERVAL from 3661.1 to 3669 m	CORED 7.9 m	REC 7.9m	100 %
FORM.	GEOLOGIST HAGE / MÆHLE	DATE 27 May, 1978		

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN (S F G)	SHOWS: CUT (P F G)	SHOWS: FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
							Coal: Black, massive brittle, shiny, mature with shale fragments	bleedi gas
3662							claystone: medium grey, hard, subfissile micromicaceous, non calcareous, silty in parts, abundant coal fragments and fossil leaves	
3663								
3664							coal and claystone a/a	
3665								
3666								



statoil
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CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea
CORE NO. 10 | INTERVAL from 3661.1 to 3669 m | CORED 7.9 m | REC 7.9 m | 100 %
FORM. | GEOLOGIST HAGE / MÆHLE | DATE 27 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
3667, 3668, 3669						P	shaly siltstone: medium grey - light brownish, subfissile, micromicaceous, non calcareous, abundant root hairs and coal fragments trace of pyrite	no shows

mu si vf f m c vc

4.00.17

statoil

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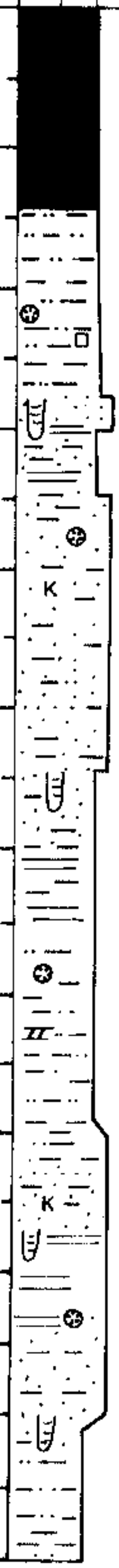
CONVENTIONAL CORE DESCRIPTION

FIELD: Wildcat | WELL NO: 15/9-2 | AREA: North Sea

CORE NO: 11 | INTERVAL from 3674 to 3692 | CORED: 18 m | REC: 16.9 m | 97 %

FORM. | GEOLOGIST: HAGE/ MÆHLE | DATE: 29 May, 1978

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



3674

coal, black, hard, laminated, shale, medium grey

Shale, silty, medium grey, hard - very hard subfissile, trace of pyrite, micromicaceous sideritic concretions and cemented trace of sand, very fine - silty — no shows

3675

sandstone, light grey, very fine - silty, hard, cemented, kaolinitic, no - poor porosity in laminae shale laminated — no shows

3676

shale, a/a

shale, very silty, light grey, very hard, dolomitic, cemented, subfissile

3677

3678

sandstone, laminated with shale a/a very hard, kaolinitic, no - very poor porosity — no shows

3679

shale, silty, medium grey, very hard, non calcareous

mu si vf f m c vc

statoil

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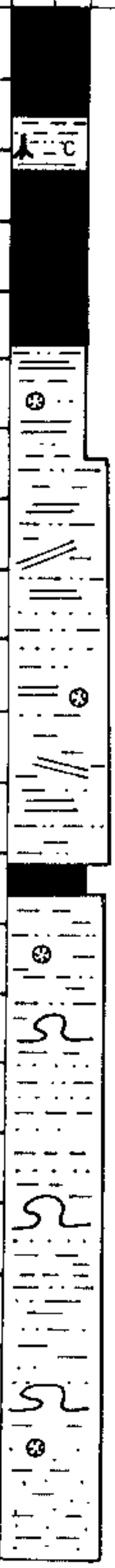
CONVENTIONAL CORE DESCRIPTION

FIELD Wildcat | WELL NO. 15/9-2 | AREA North Sea

CORE NO. 11 | INTERVAL from 3674 to 3692m | CORED 18 m | REC 16.9m | 97 %

FORM. | GEOLOGIST HAGE / MÆHLE | DATE 29 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN (S F G)	SHOWS: CUT (P F G)	SHOWS: FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
							coal, black - brown, hard	
3680							shale, silty, a/a	
3681								no shows
							sandstone, shale laminated; silty, argillaceous, light grey, hard very fine, inverse grading in laminae no - very poor porosity in laminae	
3682								no shows
							coal, black - dark brown, hard	
3683							sandstone, shale laminated a/a sandstone: silty, a/a	no shows
3684							kaolinitic cement	
3685								



mu si vf f m c vc

statoil

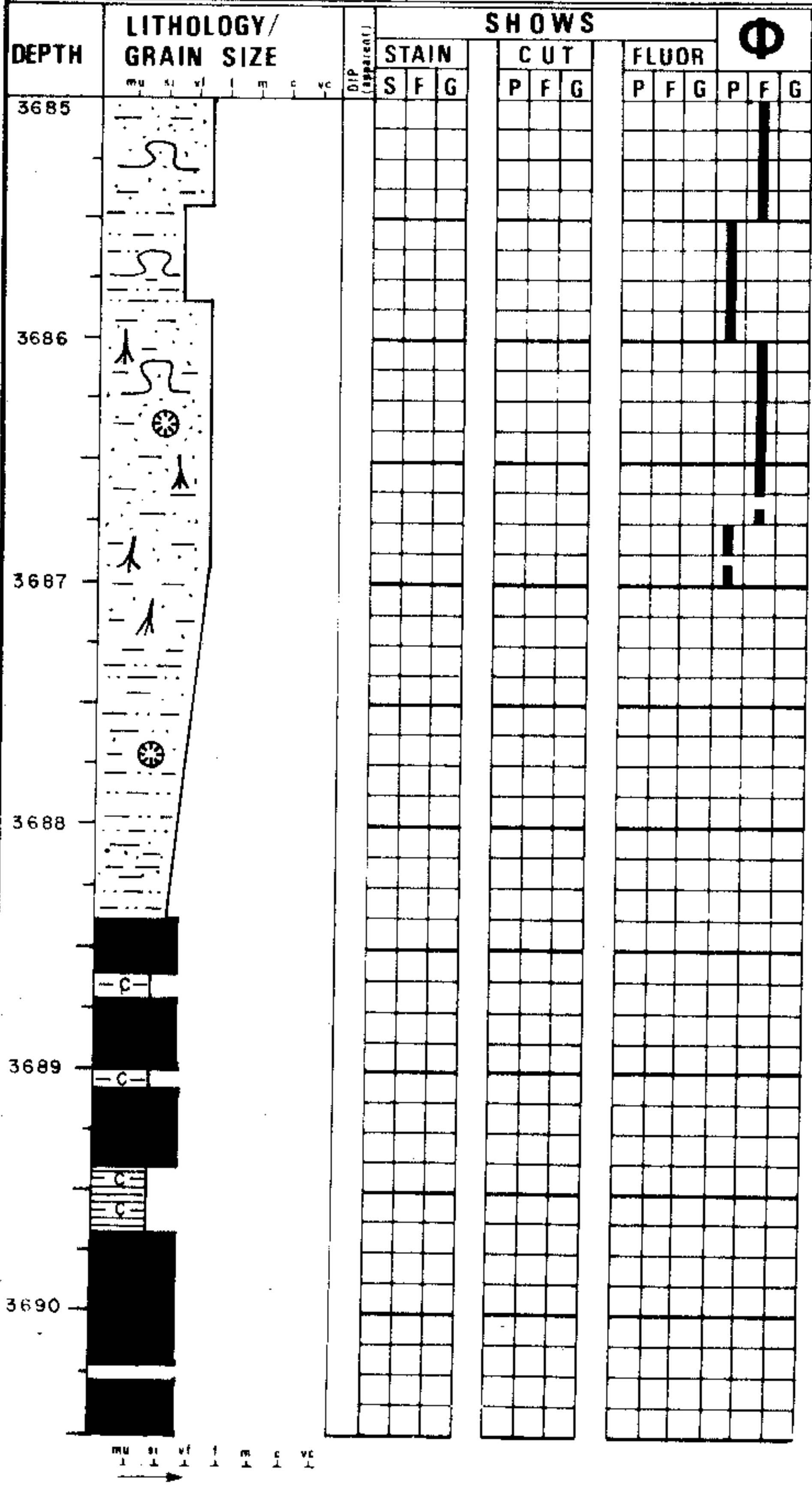
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD ______ WELL NO. 15/9-2 AREA ______

CORE NO. 11 INTERVAL from 3674 to 3692 m CORED 18 m REC. 16,9m 97 %

FORM. ______ GEOLOGIST A. HAGE / S.MÆHLE DATE 29 May 1978



LITHOLOGIC DESCRIPTION	MISC.
sandstone + shale laminations a/a	
shale, silty a/a	
sandstone + shale laminations a/a	no shows
sandstone, silty, argillaceous, light grey, very fine, hard inverse grading in laminations no - poor porosity in laminae	no shows
grading into silty shale downwards, medium grey, hard	
claystone - coal interbedded (laminated) Claystone, dark brown hard, fissile, non calcareous, slickensided, turning into dark grey - black shale downwards, carbonated, rich in organic material, pyritic, very hard Coal, black, hard, mature	

4.00.17

statoil
Den norske stats oljeselskap a.s

CONVENTIONAL CORE DESCRIPTION

FIELD ______ WELL NO. 15/9-2 AREA ______

CORE NO. 11 INTERVAL from 3674 to 3692 CORED 18 m REC 16.9 m 97 %

FORM. ______ GEOLOGIST A. Hage — S. Mæhle DATE 29 May, 1978

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN (S F G)	CUT (P F G)	FLUOR (P F G)	Φ (P F G)	LITHOLOGIC DESCRIPTION	MISC.
							shale - coal a/a	no shows
3691							no recovery	
3692								

mu si vf f m c vc

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SIDEWALL CORE DESCRIPTION

COUNTRY: NORWAY		AREA: NORTH SEA		FIELD: WILDCAT	
WELL NO.: 15/9-2	RUN NO.: 2	INTERVAL: 3365 - 3755 m			
CO ORDINATES: 58 ° 25 ' 33 " N ; 01 ° 42 ' 29 " E					
K.B.E.: 25 meters	COMPANY: STATOIL/ESSO				
HOLE SIZE: 8 1/2"	GEOLOGIST: R. KRÆMER		DATE: 25 June 1978		

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
3755	1	Sh, brn, firm, v slty, sdy, sl micromicac, now calc	-	No
3750	3,5	Clayst, med gy, firm-sft, v slty, sl sdy, sl micromicac, sl calc	-	"
3737	3	Clayst, gy-lt brnish, else a/a	-	"
3733	0			
3725	2	Sdst, lt gy, vf-f, fri, slty, subang-subrnd, non calc	poor	"
3723	0,5	Sh, dk brn, firm, slty, sl micromicac, sl calc	-	"
3708	1,5	Sltst, lt gy, firm, sl sdy, arg, non calc	-	"
3700	1	Sltst, a/a		
3492	1,5	Sdst, brn-clr qtz, hd, vf-crs, occ slty, poor srt, subang-subrnd, sl calc	fair	v weak fluor wh-pale yel
3 488	0			milky cut.
3484	2,5	Sdst, vf-med, else a/a	fair	"
3473	0			
3468	2,5	Sh, dk gy, firm, slty, sl sdy, micromicac, non calc,	-	No
3465	2,5	Sh, a/a		"
3658	4	Sh, dk brnish gy, hd, slty, sl micromicac, non-sl calc	-	"
3455	4	Sh, a/a	-	"
3452	3,5	Sh, a/a	-	"
3448	5	Sh, a/a	-	"
3445	3	Sh, a/a	-	"
3442	2	Sh, a/a	-	"
3438	4	Clayst, med-dk gy, firm, sl calc, micromicac, slty	-	"
3435	4	Sh, a/a	-	"

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SIDEWALL CORE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT	
WELL NO.: 15/9-2	RUN NO.: 2	INTERVAL: 3365 - 3755 m	
COORDINATES: 58 ° 25 ' 33 " N ; 01 ° 42 ' 29 " E			
K.B.E.: 25 meters	COMPANY: STATOIL/ESSO		
HOLE SIZE: 8 1/2"	GEOLOGIST: R. KRÆMER	DATE: 25 June 1978	

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
3430	2	Sh, dk brnish gy, firm-hd, slty, sl micromicac, calc	–	No
3425	4	Sh, a/a	–	"
3420	2,5	Sh, a/a	–	"
3415	2	Sh, a/a	–	"
3395	5	Clayst, lt brnish gy, hd, slty, micromicac, calc	–	"
3378	2	Sh, gy, firm-hd, slty, micromicac, sl calc	–	"
3370	5	Sh, a/a	–	"
3365	1,5	Sh, brn, hd, sl slty, sl micromicac, calc	–	"

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SIDEWALL CORE DESCRIPTION

COUNTRY:	NORWAY	AREA:	NORTH SEA	FIELD:	WILDCAT
WELL NO.:	15/9-2	RUN NO.:	1	INTERVAL:	2792 - 3760 m
CO ORDINATES:	58 ° 25 ' 33 " N ; 01 ° 42 ' 29 "				
K.B.E.:	25 meters	COMPANY:	STATOIL/ESSO/HYDRO		
HOLE SIZE:	8½"	GEOLOGIST:	S. M. AASHEIM	DATE:	5 June 1978

DEPTH	REC.		LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
3218	26	2	Marl, lt gy-grn gy, occ med gy, sft-firm, micromic v glauconitic, v slty	-	No
3262	25	2,5	Marl, lt gy lt grn gy, sft-firm, v glauc sl slty	-	-
3286	24	0	No rec.	-	-
3327	23	3	Clay-clayst, brick red, sft-firm, sl-v calc sl slty Tr sh, dk brn-dk gy, firm, non calc	-	-
3331	22	5,5	Shale, lt-med gy, firm, subfiss-fiss micromica, sl calc	-	-
3359	21	2,5	Clayst, brick red, firm, sl slty, sl-v calc Tr sh, dk gy, firm-hd, fiss, micromica	-	Tr min.
3390	20	3,2	Marl, lt-med gy, firm, subfiss, sl slty glauc	-	-
3397	19	2,2	Clayst, dk gy-blk, firm-mod hd, org. cont.	-	-
3400	18	4,0	Clayst, dk gy, firm-mod hd, subfiss Tr org cont.	-	-
3404	17	4,0	Shale, dk gy-blk, firm-mod hd, subfiss sl org cont.	0	Tr yel slow cut. Gas odor.
3410	16	5,5	Clayst, dk gy, shaly-subfiss, firm, micromic, sl calc.	-	-
3428	15	1,5	Clayst, med-dk gy, firm, micromica sl-v calc, sl shaly	-	Gas odor.
3460	14	3,5	Shale, dk gy occ dk grn gy, firm-mod hd subfiss, micromica sl calc	-	No
3471	13	3,5	Clayst-shale, dk gy, mod hd, subfiss, micromica, sl calc Tr slt, red, lt gy, firm, micromica	-	-
3475	12	2	Shale, dk gy, firm-mod hd, subfiss micromica, sl calc	-	-

statoil
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SIDEWALL CORE DESCRIPTION

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

WELL NO.: 15/9-2 | RUN NO.: 1 | INTERVAL: 2792 - 3760 m

CO ORDINATES: 58 ° 25 ' 33 " N ; 01 ° 42 ' 29 "

K.B.E.: 25 meters | COMPANY: STATOIL/ESSO/HYDRO

HOLE SIZE: 8½" | GEOLOGIST: S. M. AASHEIM | DATE: 5 June 1978

DEPTH	REC.		LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
3482	11	2	Shale, dk gy, occ gy brn, firm, subfiss non calc, sl micromica, tr ls, wh-lt brn, argil, mod hd	-	No
3485	10	2,5	Shale, lt-med dk gy, brn-gy, slty, firm, sl calc, pyritic micromica	-	-
3488	9	3	Sdst, lt brn, occ brn gy, v loose, vf-crs, qtz	Good	Gas odor w weak funn
3490	8	0	Mud filtrate (mud cake) no form rec.		yelish-milky-blu cut
3492	7	0	No rec.		
3698	6	0	No rec.		
3708	5	2	Shale lt gy, grn gy, sft-firm, slty, non calc Tr sdst, lt brn, loose-firm, vf-f, qtz	Fair-good	No shows.
			Tr slt lt gy, micromica		
3723,5	4	1,5	Sltst, brick red, red-brn, firm, sl micromica	Poor	-
3735	3	1,5	Sdst, vf-slty, lt gy, firm-mod hd, qtz	Poor	-
3754	2	3	Shale, lt-med gy, firm, sl slty, subfiss, sl-v calc		
3760	1	4	Sh, dk-lt gy, occ brn, slty, firm-mod hd v. micromica		

III DRILLING REPORT

III 1. SUMMARY

This was the second well to be drilled in block 15/9 and drilling was found to be quite similar to 15/9-1.

There was no downtime due to weather, as the well was drilled in April/June.

The durbodrilling in 8½" hole was very successful and should be adopted as standard procedure in the area.

The major problem encountered in this well was a washout in the 18 3/4" wellhead ax-seal area. This was discovered after 9 5/8" casing had been run. An ax ring with a resilient seal was run and the stack tested satisfactorily. However, due to the possibility that a leak again could develop in the system a decision not to test the well was taken.

III 2. DRILLING OPERATION IN INTERVALS

36" HOLE, 133 - 171m

The well was spudded at 2130 hrs on April 12.
The final position was 58^{O} 25' 34.06" N, 01^{O}42'28.20"E.
The water depth was 108m.
The 36" hole was drilled by a 26" bit and 36" holeopener in one run.
The 30" casing was run with a permanent guide base and cemented.

26" HOLE, 171 - 415m

This interval was first drilled by a 17½ bit.
It was then logged and opened up to 26" by a hole opener.
The 20" casing was then run and cemented without problems.

17½" HOLE, 415 - 1195m

A leak-off test was performed at 418m after drilling out the shoe. It gave a formation integrety equivalent to 1.43 sp.gr.
The 17½ hole was then drilled to 1195m. The formation down to 863m was clay and drilled at approx. 35 m/hr. At 863 m Miocene sands were encountered. These were drilled at 50-60m/hr. Claystone was encountered again at 1150m. The pore pressure gradient seemed constant through the interval and the back-ground gas was fairly stable at approx. 10-60 units with a peak at 1130m.

The hole was then logged and 13 3/8" casing was run and cemented.

The seal assembly had to be tested three times before holding test pressure.

Subsequent CBL showed fair to good bond all the way up to the 20" shoe.

12 1/4" HOLE, 1195 - 2819m

The cement was tagged at 1153m and after the shoe and 2m of new hole had been drilled, a formation integrety test was performed. The test was run to 1.68 sp.gr. equivalent without leak-off having been reached.

The hole was then drilled to 2819m without any problems.

The drilling rate was in the region of 20-30 m/hr down to approx. 2200m with some increase in the sands. From 2200m to 2819m the drilling rate varied around 10-20 m/hr with a decrease to 2-5 m/hr towards the end.

There was no indication of any abnormal pressure and the background gas level showed a decreasing trend below 1400m.

The hole was logged and the casing was run and cemented at 2790m in Danian chalk, which was penetrated at 2773m.

The seal assembly was run, but would not test. In the end, after pulling the BOP stack, the ax-ring groove was found to be washed out on the wellhead.

This was repaired by running a resilient seal ring which was tested to 207 bars.

8½" HOLE, 2819 - 3764m

The cement was tagged at 2763m. After drilling 4m of new hole, the formation integrety was found to be at least 1.80 sp.gr. equivalent, no leak-off being reached.

The hole was drilled to 2836m with a ROP of 1-2m/hr.

Two turbine runs were made from 2836 to 3478m.

TURBODRILL RUN NO. 1

(2836m to 3234m, APR 7.70 m/hr.)

The weight was progressively increased to 16 tons, drilling in a Limestone formation at 10 to 12 m/hr.

The rate of penetration reduced to 7 m/hr as the percentage of Marl increased in the formation. The drilling weight was increased to a 21 ton maximum to maintain the rate of progress.

At a depth of 3234m a sudden pressure increase was observed. After making several surface pressure checks it was evident that the diamond bit had 'O' ring grooved. On P.O.O.H. the bit was found to be worn. Turbodrill checks indicated that the bearing and blade sections were in good condition.

TURBODRILL RUN NO. 2

(3234m to 3478m, APR 6.52 m/hr)

An unchanged BHA was run. The drilling weight was increased to 20 tons after drilling bit pattern.

At 3334m the formation changed from Limestone/Marl to claystone and the mud weight was increased from 1.27 sp.gr. to 1.32 sp.gr. Drilling continued with normal drilling torque fluctuating between 5000/6800 Nm at 6m/hr to 3468m.

The Turbodrill was pulled at a depth of 3478m so that a rock bit could be used to drill into the expected sand section.

Surface examinations revealed the Turbodrill to be in a good condition, the bearing section being worn 0.5 mm or 16%. The diamonds on the bit were generally flattened or shattered with two fluid courses blocked.

Both turbine runs must be regarded successful.

The Jurassic sands were encountered at 3487m. Eleven cores were cut from 3489m to 3692m. The coring went quite smoothly with near 100% recovery on all cores.

The 8½ hole was drilled to 3764m which was T.D. for the well.

Because of the wash-out in the wellhead it was decided not to test the well.

An extensive logging program was carried out and a 7" liner was run to 3762.5m and cemented.

Thereafter the well was plugged back and permanently abandoned blowing off the wellhead using explosives.

Three charges had to be used.

III 3. EXTRACT OF DAILY ACTIVITIES

APRIL	
10	Pulling anchors. Start towing to new location.
11	Run anchors. Picked up new BHA. Rig rep.
12	Rig rep.Drlg 36" hole to 171m. Pooh. Rih w/30" csg.
13	Cemented 30" csg. Drlg out cmt and shoe.Nippled up pin conn.and riser Drlg 17½" hole to 200m.
14	Drlg 17½" hole to 415m. Run ISF-Sonic-GR.Nippled down and pulled riser.
15	RIH w/new BHA. Reamed 26" hole to 398m. Run 20" csg to 399m and cemented.
16	Cemented 20" csg. Run BOP stack and tested.
17	Tested BOP drlg cmt. and shoe. Leak off 1.43 sp.gr.Drlg. 17½" hole to 644m.
18	Changed slipjoint packing. Drlg 17½" hole to 1076m.
19	Drlg to 1190m. Raised mud wt to 1.17 sp.gr. Pooh logging.
20	Logging. Drlg to 1195m. Pooh. Run 13 3/8" csg.
21	Cemented 13 3/8" csg. Washed in BOP and housing. RIH w/seal assy. Attempted to test. No success. Pooh Rih and recovered seal assy.
22	RIH w/seal assy. and tried to test it. No success. Tested seal assy and csg through chokeline to 140 kg/cm^2 ok.Pooh. RIH w/12 1/4" BHA. Drilled to 1322m, leakoff test 1.68 sp.gr. No leak-off reached.
23	Drlg. to 1533m. POOH. RIH w bit nr. 5 Drlg to 1579m.
24	Drlg to 1781m. Raised mud wt to 1.22 sp.gr. Drlg to 1983m. Est.pore pressure at 1983m eq. to 1.19 sp.gr.
25	POOH RIH w/bit nr. 6 Drlg to 2205m. Est.pore press. at 2205m eq. 1.2 sp.gr.
26	Drlg to 2314m. POOH RIH w/bit nr. 7 Drlg to 2404m.
27	Drlg to 2496m. POOH RIH w/bit nr. 8 Drlg to 2592m.
28	Drlg to 2656m. POOH RIH w/bit nr. 9 Drlg to 2718m.
29	Drlg to 2734m. POOH RIH w/same bit. Drlg 2762m.
30	Drlg to 2813m.
MAY	
1	Drlg to 2819m POOH. Started logging
2	Logging. RIH reamed and circ.
3	Reamed and circ. POOH. Retrieved wearbushing. Run 9 5/8" csg.
4	Run csg. to 2790m. Cemented. Run seal ass. Attempted to test seal assembly.
5	Attempted to test seal assy, neg. POOH w/seal assy. Washed 18 3/4" housing. RIH w/new seal ass. Attempted to test. Neg.
6	Pooh w/seal ass. nr. 2. Washed seal area. Rigged to squeeze cmt in 9 5/8"x 13 3/8" annulus. Tested cmt.Leaking. Pumped more cmt.
7	Attempted to test cmt, leaking. Run and set 9 5/8" seal ass. Nippled down and pulled BOP. Observed wash-out on wellhead side of AX-seal ring. Press. tested BOP. Divers rep. washout in wellhead.
8	Installed resilient seal ring.Ran BOP. Attempted to test seal ass. neg.
9	RIH w/new cuptester. Retrieved seal ass. Tested cmt to 211 kg/cm^2 ok.. Washed seal area. RIH w/seal ass. Tested seal ass. ok. RIH w/wear bushing POOH. RIH w/8½" BHA. Tested csg OK.

10 RIH Drlg cmt and shoe .Leak off 1.8 sp.gr..at 2823m Drlg to 2832m POOH made u turbine. RIH w/ 8½" bit and junk sub. Drlg to 2834m. Working junk subs.

11 Drlg to 2836m POOH RIH w/turbine. Drlg to 2975m.

12 Drlg to 3131m

13 Drlg to 3234 POOH

14 POOH. Serviced turbo and changed bit. RIH. Drlg to 3357m.

15 Drlg to 3478m.

16 POOH. Retrieved wear bushing. Tested BOP OK. Run wearbushing. Drlg to 3497m. Raised mud weight to 1.35 sp.gr. POOH.

17 POOH. RIH w/core barrel. Cored from 3489 to 3515m. POOH

18 RIH w/core barrel (C.B.) no 2. Cored to 3533m. POOH.Serviced C.B. RIH w C.B. no. 3

19 Cored to 3551m. POOH serviced C.B. and RIH w/new core bit.

20 Cored to 3570m. RIH and cut core no 5 to 3578m.

21 Cut core no 5 to 3588m. POOH.RIH w/bit no. 18. Reamed from 3420m. Circ.POOH

22 Logging. Could not get below 3572m. RIH w/bit no. 18 and reamed. POOH

23 RIH w/C.B. Cut core no. 6 to 3606,3m. POOH RIH w/C.B.

24 Cut core no. 7 to 3624m. POOH. RIH w/C.B. and new bit.

25 Cut core no. 8 to 3642.8m. POOH. RIH w/C.B.

26 Cut core no. 9 to 3661m. POOH RIH w/C.B.

27 Cut core no. 10 to 3669m. POOH. RIH w/new BHA Drlg. to 3674m. circ. POOH to 3284m, swabbing. RIH and washed/reamed to T.D.

28 Circ. POOH RIH w/C.B. Cut core no. 11 to 3692m.

29 POOH. Tested BOP. RIH w/bit no. 21. Drlg. 8½" hole to 3700m.

30 Drlg. to 3708m. Circ. for samples. Drlg to 3735m.

31 Drlg to 3761m.

JUNE

1 Drlg to 3764m. Wiper trip POOH.Logging

2 Logging RIH w/bit. Circ. wiper trip. POOH. Logging.

3 Ran HDT.RIH w/bit. circ. POOH. Ran RFT.

4 Ran RFT. Took 25 sidewall cores

5 Ran CBL on 9 5/8" csg. Made up csg equipment

6 RIH to csg shoe. circ. RIH Circ. and cond. mud.

7 POOH. Logging

8 Logging. RIH, circ POOH Running RFT.

9 Logging RIH w/bit and worked tight spot. circ. POOH.

10 POOH. Logging

11 Logging.Rep.elec.failure on draw work panel.Drifting pipe. Circ. and cond.mud POOH. Rig and run 7" liner.

12 Run 7" liner. Cementing. POOH. TIH w/8½" bit at 2695m.

13 Circ. POOH. RIH cleaned top of 7" liner. POOH

14 POOH Ran CBL. Tested csg. RIH. Set plug no. 1 at 2716m. top of plug at 2640m.

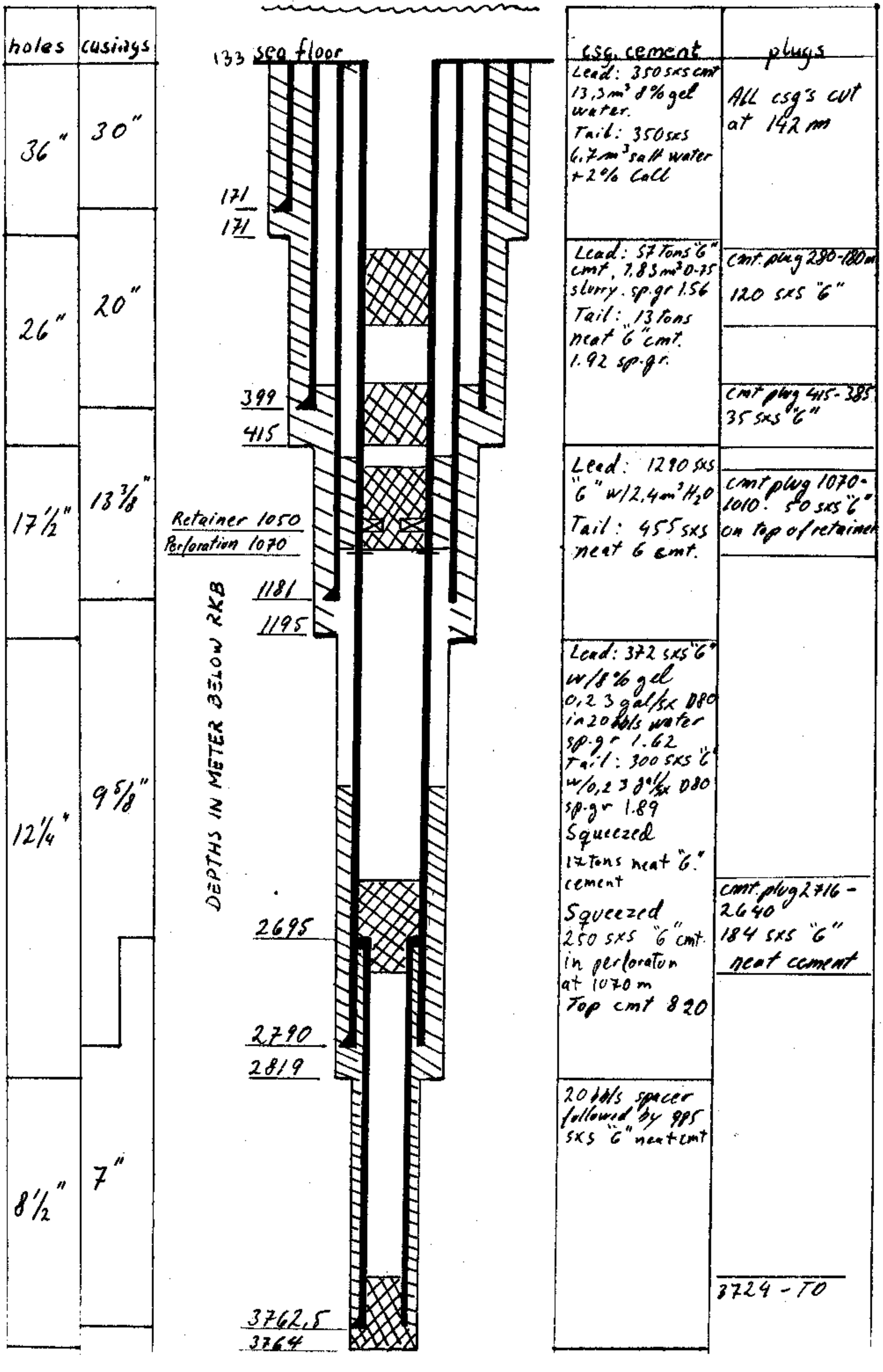
JUNE	
15	POOH. Perforate 9 5/8" csg at 1070m. Squeezed. POOH set cement plug at 415m and 280m.
16	Blowed off wellhead at 142m. Recovered 20", 13 3/8" and 9 5/8" csg. Run charge no. 2. Attempted to work 30" csg free. No success.
17	Run charge no. 3 Recovered 30" housing and permanent quide base. Pulled anchors.

WELL: 15/9-2

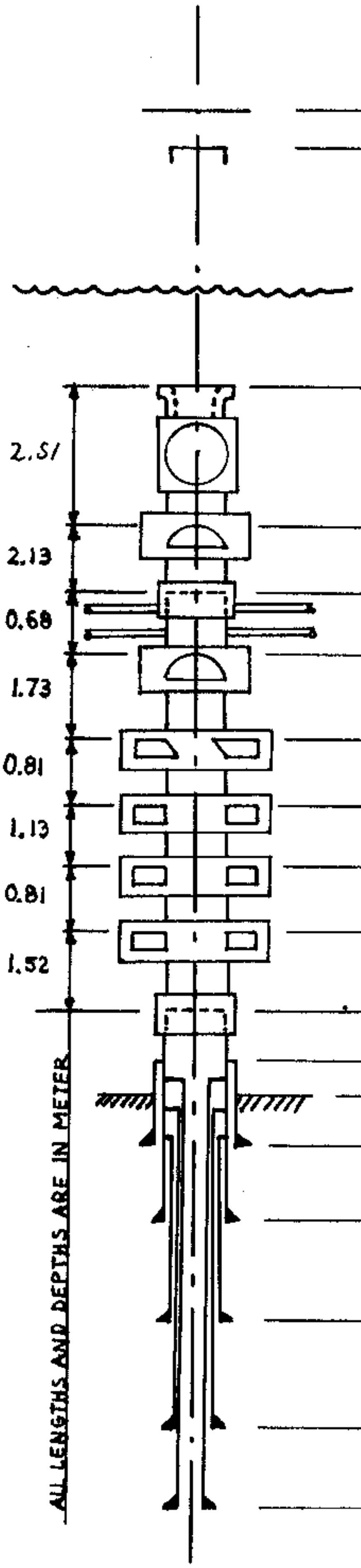
III 4. WELLBORE SCHEMATIC

RKB-MSL: 25 m

WATER DEPTH: 108 m



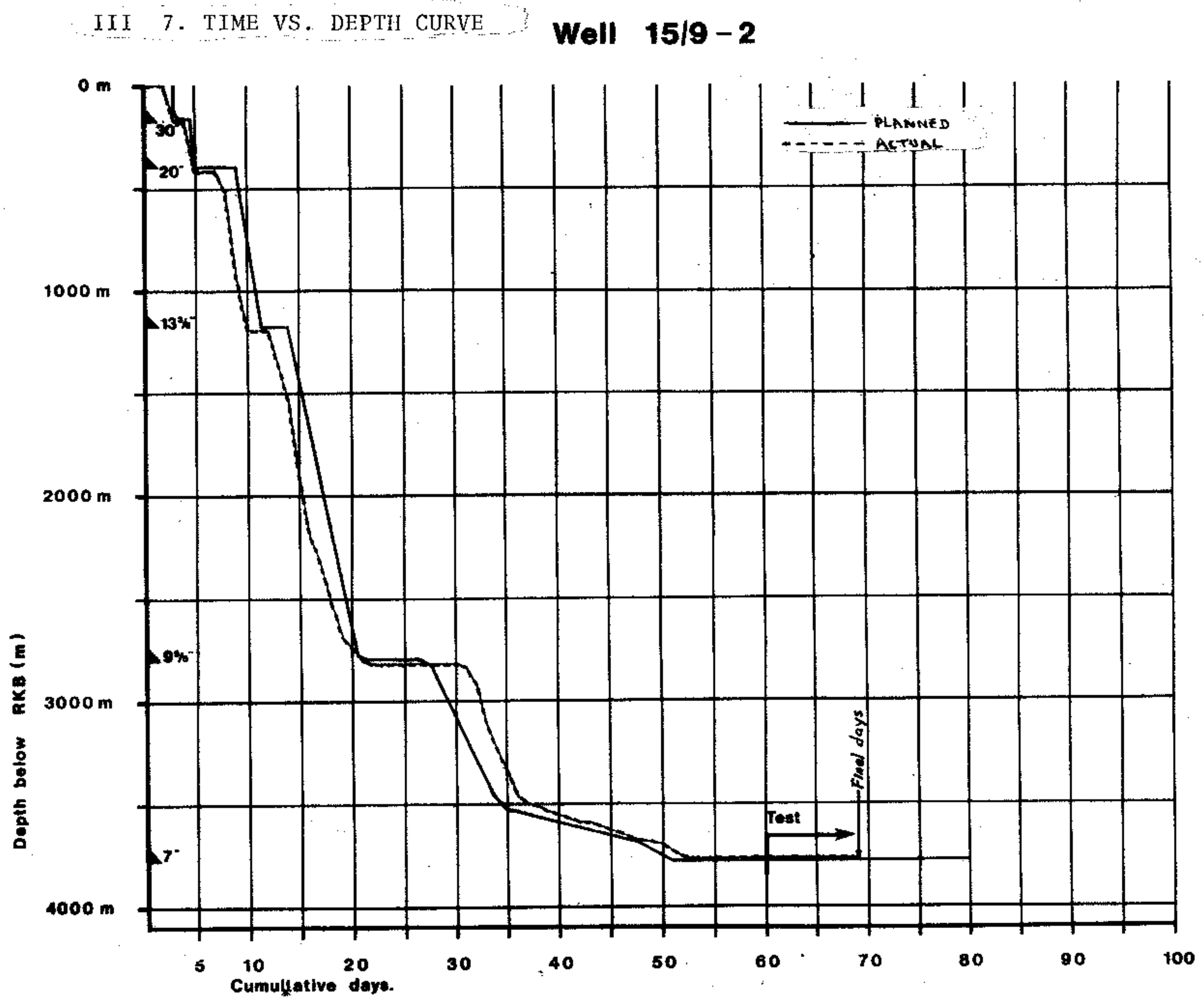
ROSS RIG SUBSEA ASSEMBLY 15/9-2



0	RKB
3,81	DIVERTER RISER CONNECTOR
25	MEAN SEA LEVEL
119,68	FLEX JOINT RISER CONNECTOR FLANGE
122,19	UPPER ANNULAR RUBBER TOP (CLOSED)
124,32	LOWER STACK ASSEMBLY TOP
125,00	LOWER ANNULAR RUBBER TOP (CLOSED)
126,73	SHEAR RAMS TOP
127,54	U.P. RAMS TOP
128,67	M.P. RAMS TOP
129,48	L.P. RAMS TOP
131,1	18 3/4" WELLHEAD TOP
131,6	30" HOUSING TOP
133	MUD LINE
171	30" SHOE
399	20" SHOE
1181	13 3/8" SHOE
2790	9 5/8" SHOE
3762,5	7" SHOE

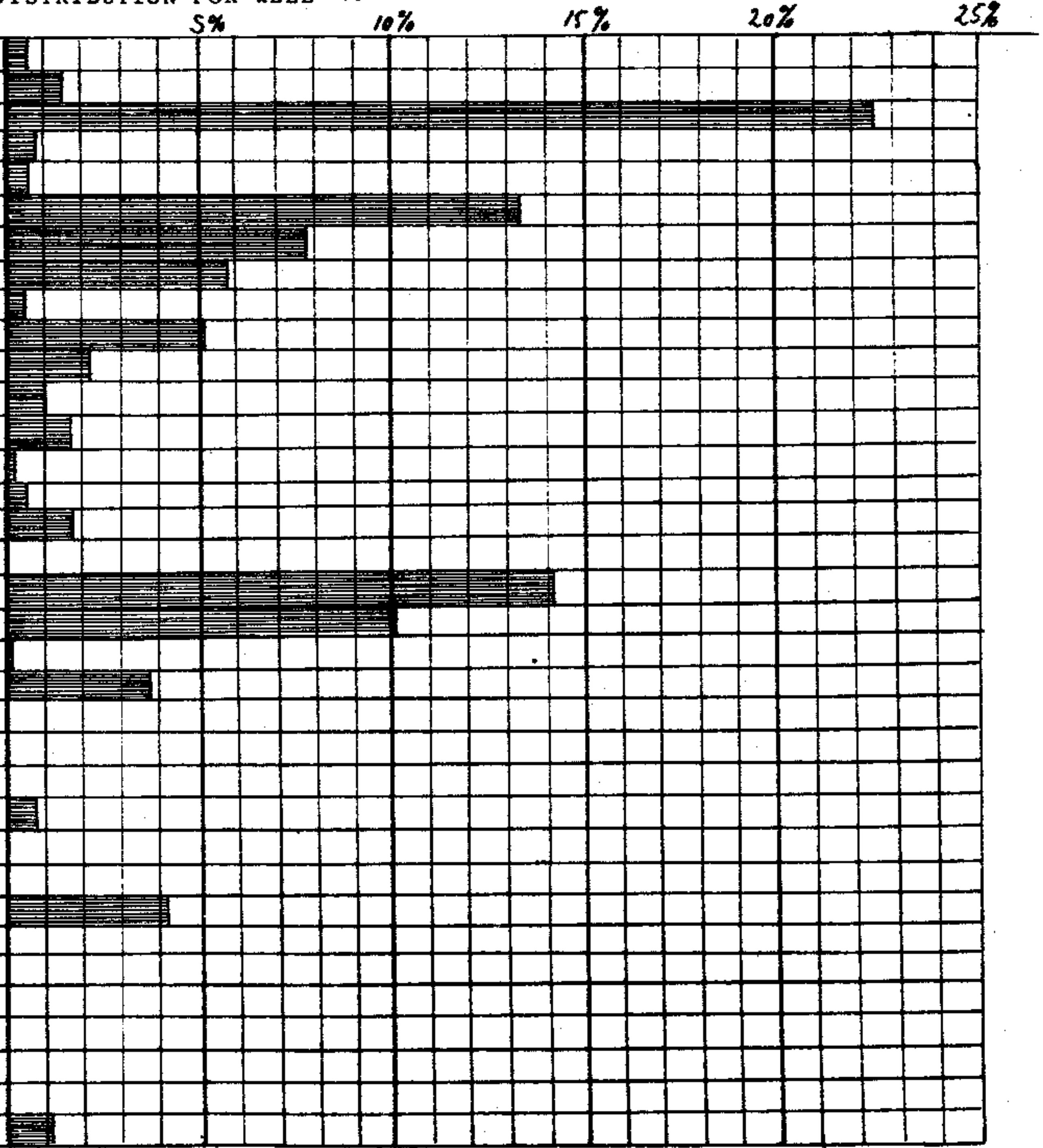
III 6. FORMATION INTEGRITY TESTS

III 7. TIME VS. DEPTH CURVE

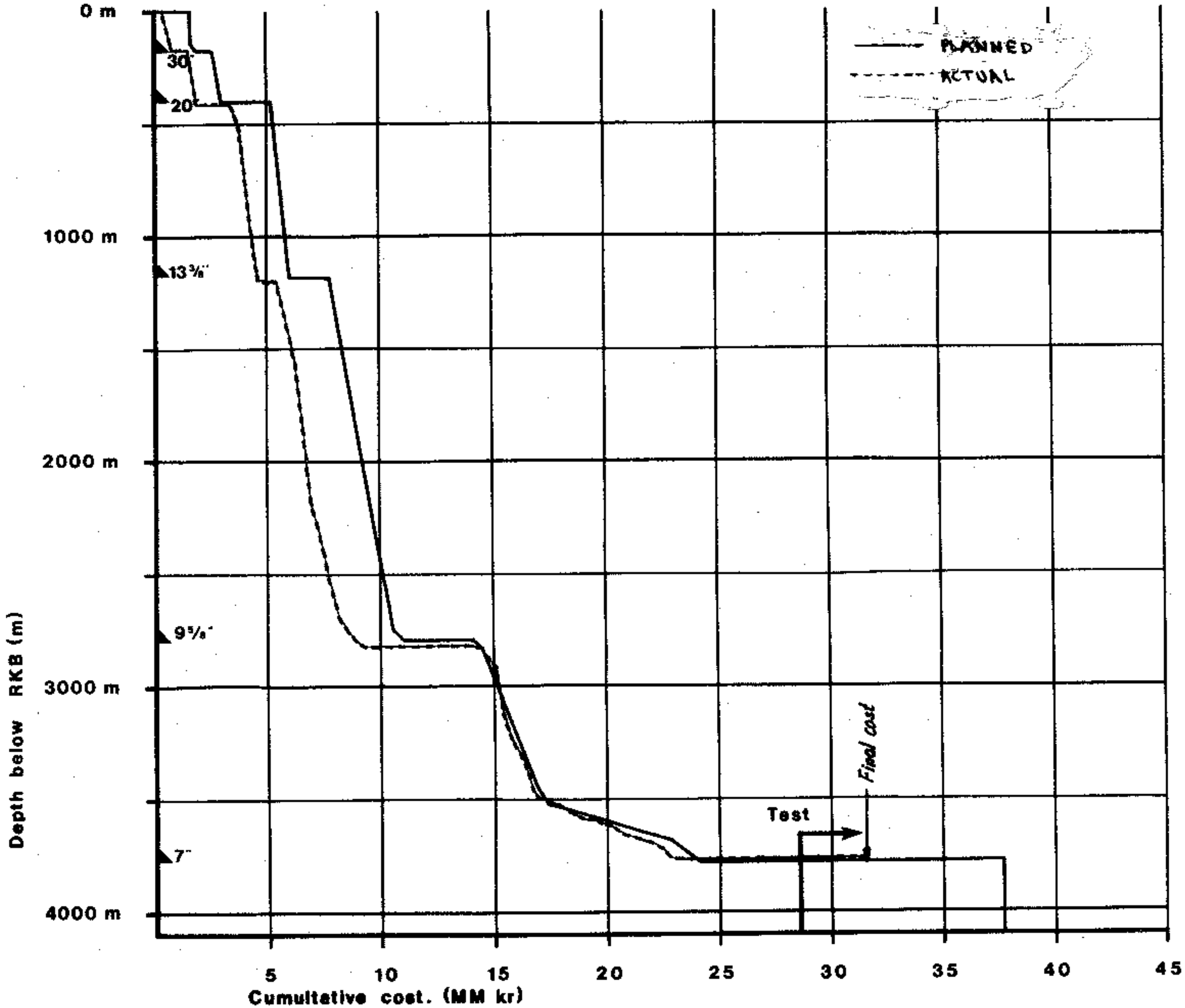


III 8. RIG TIME DISTRIBUTION FOR WELL 15/9-2

		Hrs.	%
	Moving	8.5	0.5
	Mooring	26	1.5
DRILLING OPERATION	**Effective** drilling	367	22.5
	Other drilling	13.5	0.8
	Bole opening	7.5	0.6
	Regular tripping	217	13.3
	Casing and cementing	127	7.8
	Subsea eq. and BOP	95.5	5.8
	Abnormal press. detection	6.5	0.4
	Cond. and circ.	83	5.1
	Reaming	36	2.2
	Directional survey	16.5	1.0
	Plugging	28.5	1.7
	Formation leak-off test	4.0	0.2
	Maintenance	7.5	0.5
	Other	28	1.8
FORMATION EVALUATION	Coring	230.5	14.2
	El. logging	170	10.1
	Circ. for samples	1	0.1
	F.I.T.	63.8	3.8
	Production testing		
	Other		
DOWNTIME	Rig repairs	13.5	0.8
	Rig moving		
	Waiting on weather		
	Subsea eq. and BOP	70	4.2
	Fishing		
	Lost circulation		
	Well control		
	Hole problems		
	Formation evaluation		
	Diving		
	Other	18	1.1
	TOTAL:	1638.5	100



III 9. COST VS. DEPTH CURVE **Well 15/9 - 2**



III 10. BIT RECORD

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BORKRONEDATA

Brønn nr.: 15/9-2

Nr.	B. k. Nr.	Diam.	Type	Fabr.	Dyser 1/32"	V.p.b.	O.p.m.	Pumpe Trykk	Pumpe V.grad	Pumpe V/t.	Dybde ut	Frem-drift	Rot. tid	Total rot.tid	Bore-hast.	Tilstand T	Tilstand B	Tilstand G	Anmerkninger
	1	26"	OSC	36"HO	24						171	38	12	12					
	1 RR	26"	OSC		24						172	1	1½	13½					Drlg out cmt
	2	17½	S35j4		4/18						415	243	13½	13½	18				
	2RR	17½	S35j?	26"H.O	4x18						415		Reamed						
	3	17½	S35j4		4x18	2-13	144	140		3350	1190	773	38.5	38,5	23				(4,5t Drlg out cmt)
	3RR	17½	S34j4		4x18	13	145	140		3300	1195	5	0.25	38,75	20	2	4	i	
	4	12 1/4	x3A		3/14	0-10	102	198		2250	1533	338	11,5	11,5	28,7	7	8	0	
	5	12 1/4	x3		3/15	0-15	125	210/ 217		2220	1983	450	20,8	20,8	21,6	6	6	i	
	6	12 1/4	x3		3/15	5-15	126	215		2200	2315	332	15,7	15,7	21,2	5	7	i	
	7	12 1/4	x16		3/15	14	130	214		2180	2496	181	12,8	12,8	14	7	7	i	
	8	12 1/4	XV		3/15	17-23	90	204/ 217		2180	2656	160	13,7	13,7	12,1	5	5	i	
	9	12 1/4	svh		3/15	17-22	90	204/ 217		2180	2734	72	13	13	5,5	5	7	i	
	10	12 1/4	fp52		3/15	20-25	55	210/ 220		2150	2819	85	34	34	2,5	3	3	i	
	10RR	12 1/4	pf52		3/15		40	215		2050	2819	0	1	35		3	3	i	reaming
	11	8 ½	XV		3/15	2-9	50	210		2300	2819	13	5,5	9	2,4	4	3	i	3,5t Drlg out cmt
	12	8 ½	XV		3/15	7-11	50	210		2300	2832	4	4,5	4,5	0,9	2	2	i	junk sub
	13	8 7/32	warc 75 tp		-	16-18	871	295		1700	3234	399	50	50	8	50%			Turbin
	14	8 ½	warc 75tp		-	18-24	872	300		1900	3478	244	37,4	37,4	6,5				"
	15	8 ½	xlg		3/12	10-14	78	214 220		1560	3497	19	4,15		4,6				

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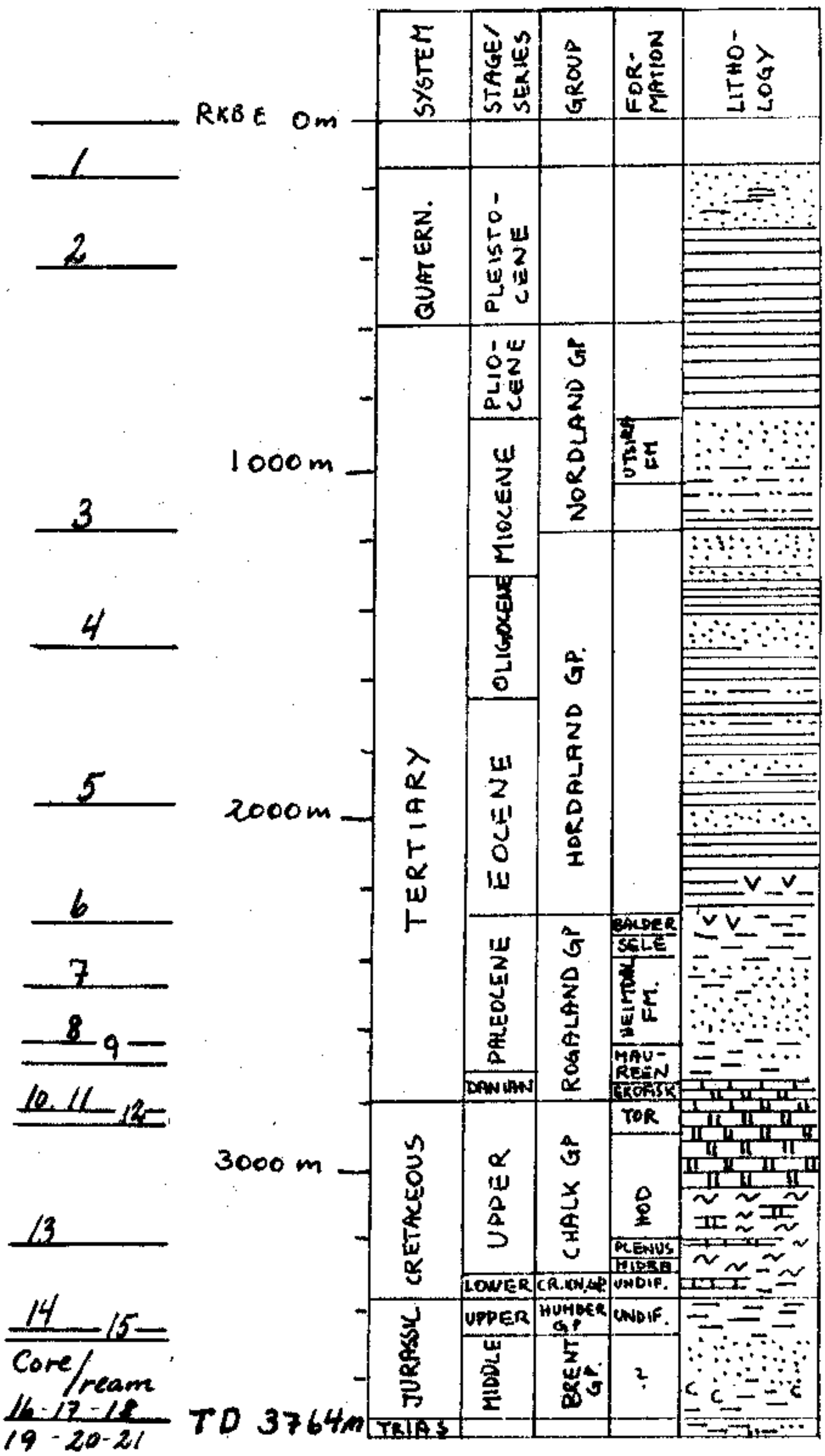
BORKRONEDATA

Brønn nr.: 15/9-2

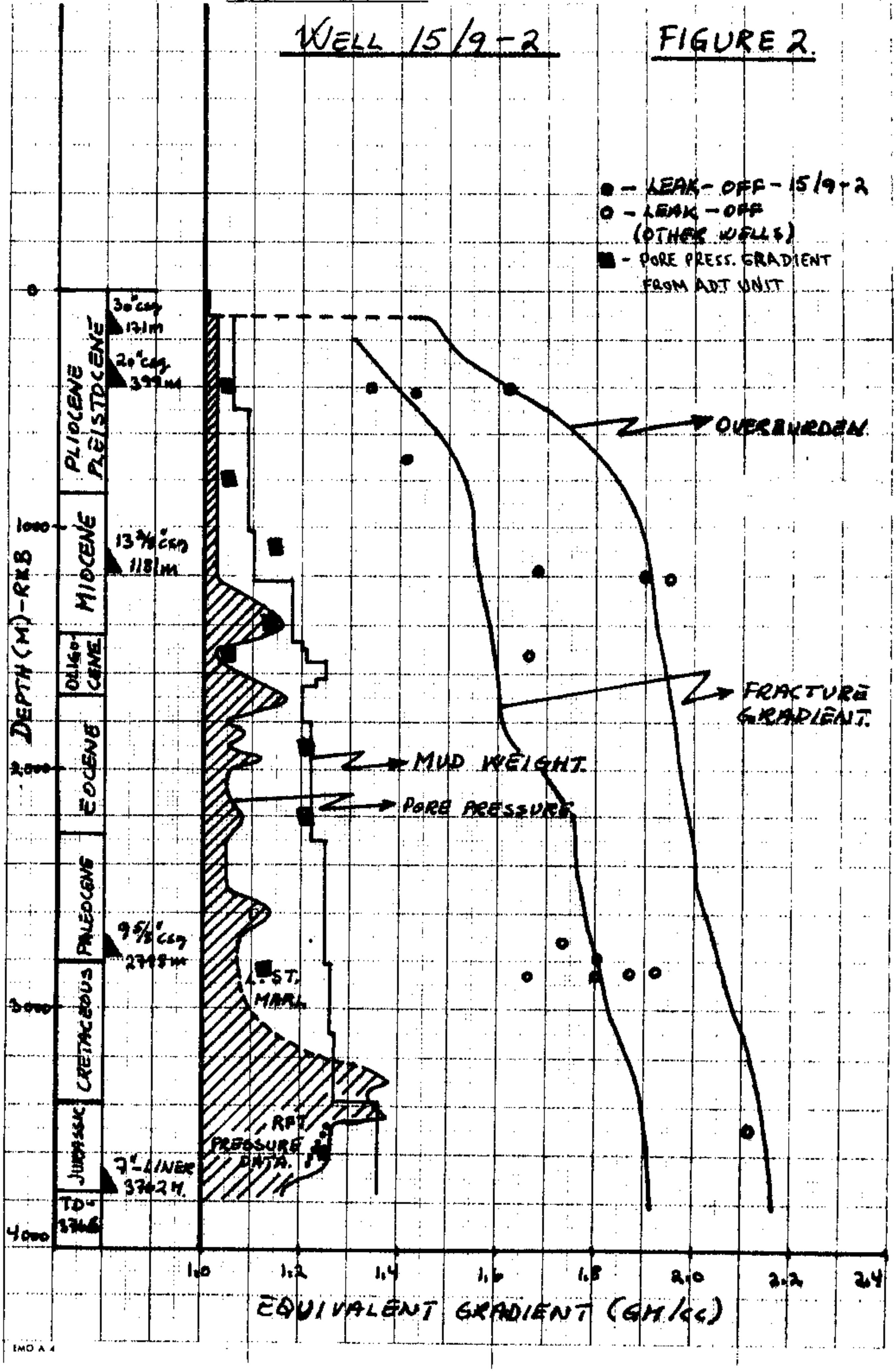
Nr.	B. k. Nr.	Diam.	Type	Fabr.	Dyser 1/32"	V.p.b.	O.p.m.	Pumpe Trykk	V.grad	V/t.	Dybde ut	Frem-drift	Rot. tid	Total rot.tid	Bore-hast.	Tilstand T	B	G	Anmerkninger
	16	8 15/32	C20		_	5-7	100			1000	3515	17	6,9		2.6				Coring
	16RR1					11.4	124	122/ 130		1000	3533	18	10,1	17	1.8				Coring
	16RR2					11	125	125		1000	3551	18	11,5	28,5	1.9	10%			Coring
	17	8 15/32	C18			11	130	125		1000	3570	19	8,5		2.23				Coring
	17RR					9-11	130	100/ 125		1000	3588	18	10	18,5	1.8				Coring
	18	8½	htcxv		3/15	5	110	210		2400	3588		2,5						reamed
	18RR					5-15	110	210		2400	3588		9			2	6	1/8"	reamed
	16RR3	8 15/32	C20			11	130	110		1000	3606	18	9	27,5	2.1				coring
	16RR4					10.5	130	109		1000	3624	18	14,5	42	1.3				coring
	19	8 15/32	C-18			7.8	130	100		1100	3642	18	10		1.7				coring
	19RR1					5-8	120	118		1110	3661	19	10	20	1.9				coring
	19RR2										3669	8	8	28	1.0				coring
	20	8½	3/12		3/12	14-16	90	200		1620	3674	5	3		5.8	3	5	0	2 t reaming
	16RR5	8 15/32	C-20			9-12	122	115		1070	3692	18	15.6	57,6	1.15				coring
	21	8½	FP52		2/12	14-17	42-58	105/ 215		1750	3764	71	51		1.4				2 t reaming
	21RR							132		1350			2						reaming
	22	6"	OWV																circ.

BIT SEQUENCE AND LITH. COLUMN

WELL no. 15/9-2



III 12. PRESSURE PROFILE



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FORMASJONSSTYRKETEST

Dato: 17/4 - 1978

Brønn nr.: 15/9-2 **Dybde:** Brønn: 418 Foring: 399 Test: 418

Fartøy: Ross Rig **Høyde R.K.B.:** Over vannfl.: 25 Over sjøb.: 133

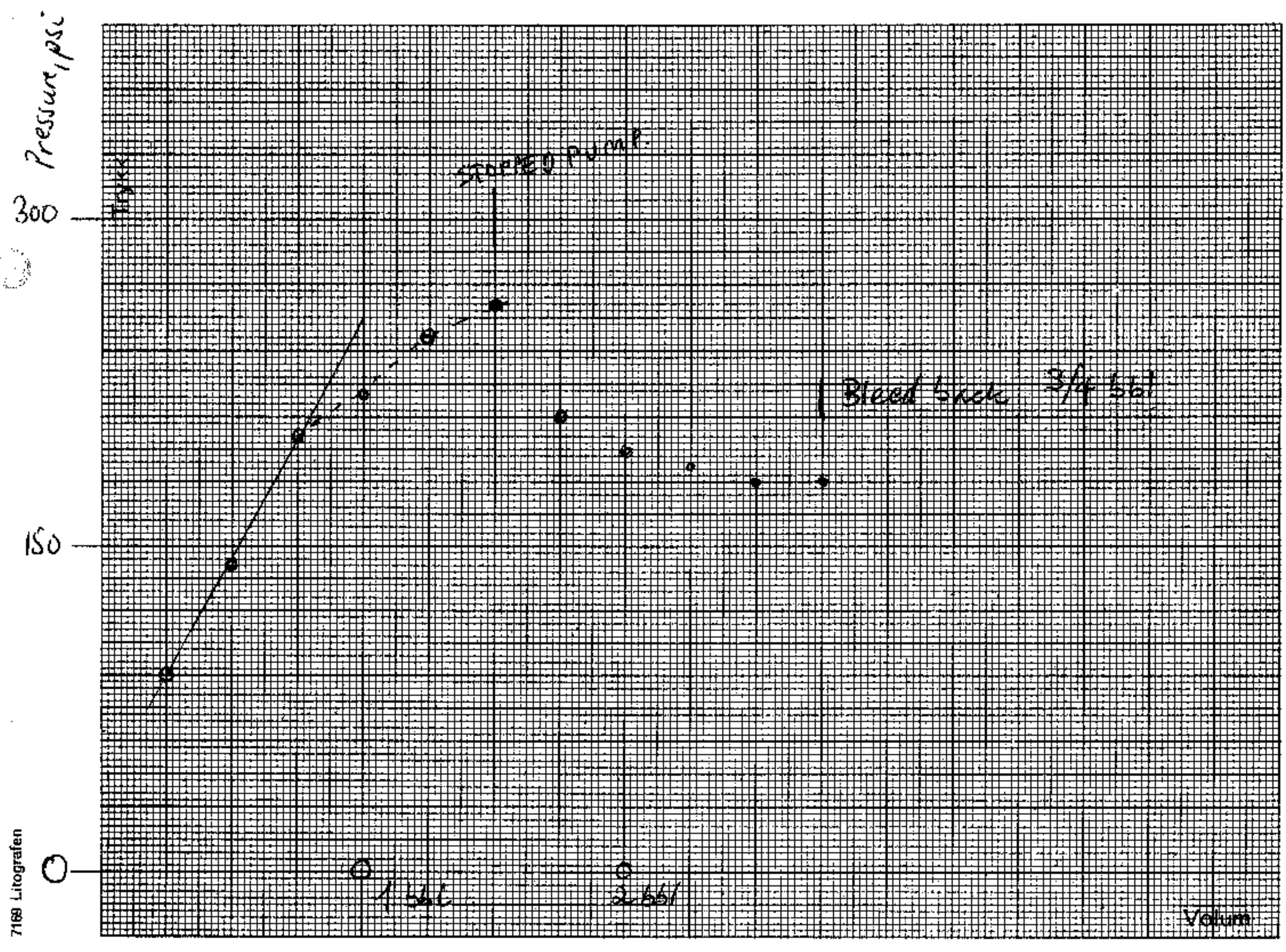
Foring: Diam.: 20" Tyngde: 94 #/ft Grad: J 55 Maks. trykk: 2100 psi

Boreslam: Tetthet: 9.1 Vis: 49 P.V.: 19 Y.P.: 13 Filt: 8 Gel.: 17/38

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

Antatt styrke: 12 ppg Obs. spr. trykk: 200 psi Ekv. formasj. styrke: 11.2 ppg

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
1/4	90 psi	1 min	210			Tested through D.P.
1/4	140 "	2 min	195			
1/4	200 "	3 min	188			
1/4	220 "	4 min	180			
1/4	250 "	5 min	180			
1/4	260 "					
Stopped pumping, took readings every min.						Sign.: Bjørn Hansson



7169 Litografen

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FORMASJONSSTYRKETEST

Dato: 22/4. 78

Brønn nr.: 15/9-2 **Dybde:** Brønn: 1186 Foring: 1181 Test: 1181

Fartøy: R.R. **Høyde R.K.B.:** Over vannfl.: 25 m Over sjøb.: 133 m

Foring: Diam.: 13 3/8 Tyngde: 68 #/ft Grad: K-55 Maks. trykk: 3450 psi

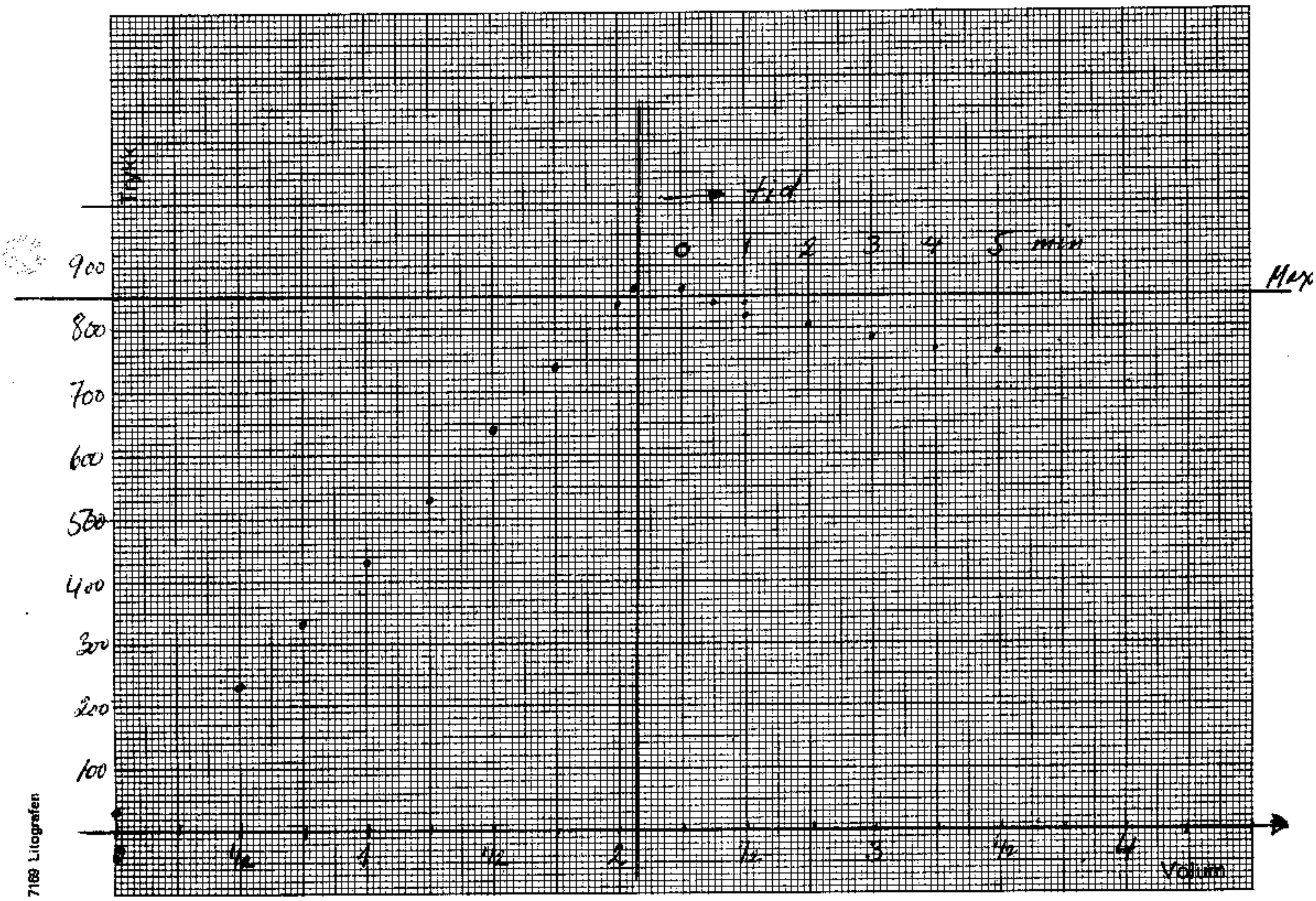
Boreslam: Tetthet: 1.17 Vis: 50 P.V.: 14 Y.P.: 19 Filt: 16 Gel.: 13/28

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

Antatt styrke: ? Obs. spr. trykk: Nil Ekv. formasj. styrke: > 1.68

Max test: 1.65

Volum/~~tid~~	Trykk	~~Volum~~/tid	Trykk	Volum/tid	Trykk	Anmerkninger
0	30	0 min	860			
1/2	230	1/2	840			
3/4	330	1	820			
1	430	2	805			
1 1/4	530	3	785			
1 1/2	640	4	765			
1 3/4	740	5	760			Sign.: K.K. / T.G.
2	840					



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statoil

FORMASJONSSTYRKETEST

Dato: 10/5-75

Brønn nr.: 15/9-2 **Dybde:** Brønn: 2823 m Foring: 2790 m Test: 2823 m

Fartøy: ROSS RIG **Høyde R.K.B.:** Over vannfl.: 25 m Over sjøb.: 133 m

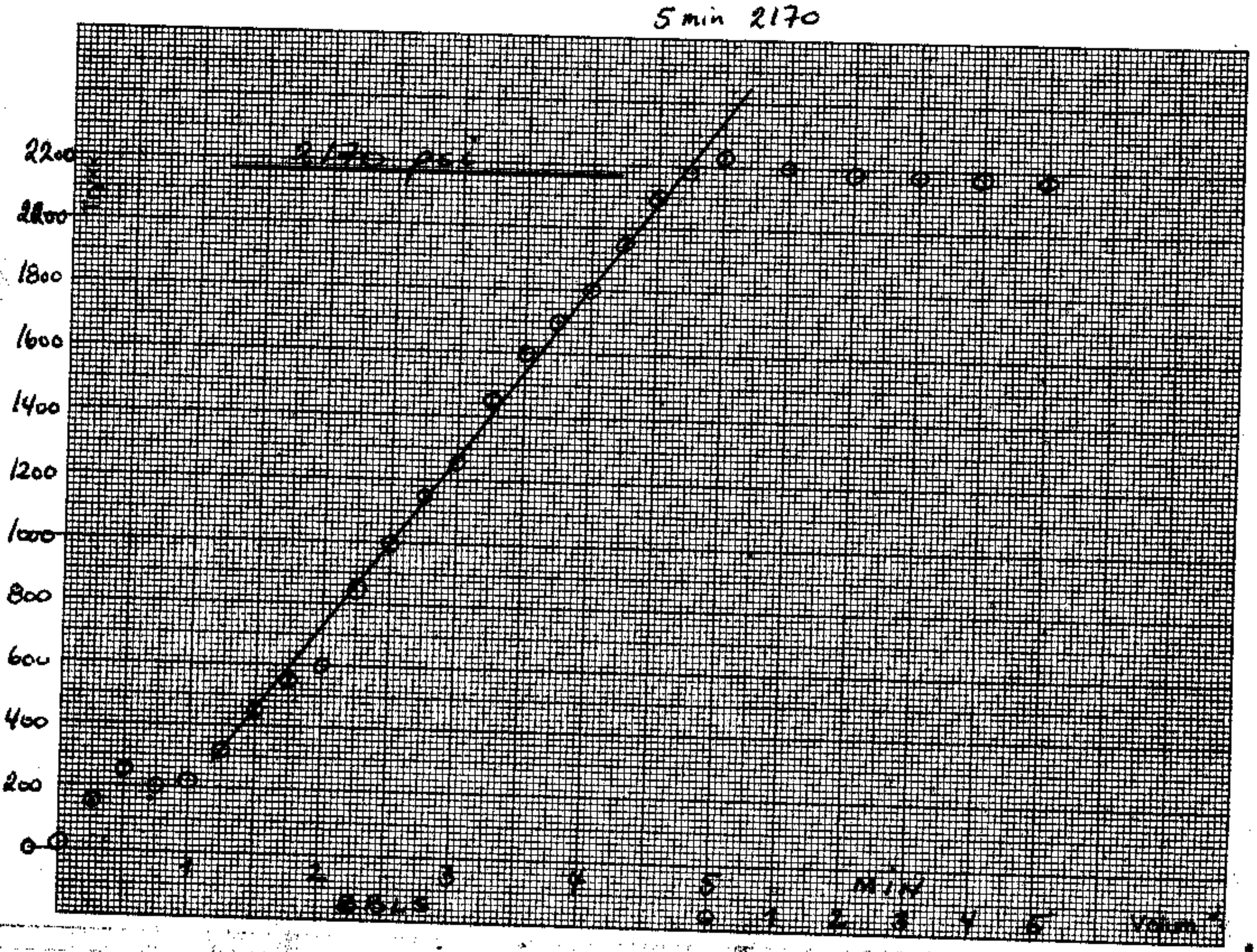
Foring: Diam.: 9 5/8" Tyngde: 47 lb/ft Grad: N-80 Maks. trykk: 6870 PSI

Boreslam: Tetthet: 10,5 PPG Vis: 47 P.V.: 14 Y.P.: 11 Filt: 9 Gel.: 6/24

Pumpe: Type: DOWELL Kapasitet: Vol./tidsenh.: 0,25 BBL/min Tilb.str.: 4.2 BBL

Antatt styrke: ? Obs. spr. trykk: NON Ekv. formasj. styrke: 1.80

Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
0	20	2.	600	4.0	1800	
0.25	150	2.25	850	4.25	1950	PUMPED 5,0 BBL
0.50	250	2.50	1000	4.50	2100	BLEAD BACK 4.2 BBL
0.75	200	2.75	1150	4.75	2180	TO FORM 0.8 BBL
1.00	220	3.	1250	5.0	2230	
1.25	320	3.25	1400	1 min	2200	
1.50	450	3.50	1600	2 min	2180	Sign.: Ø. Brinch
1.75	550	3.75	1700	3 min	2180	
				4 min	2175	
				5 min	2170	



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III 13. DRILLING FLUID SUMMARY ADDITIVES AND PROPERTIES

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 15/9-2

36" **HOLE/** 30" **CASING INTERVAL**

Statoil's 15/9-2 well was spudded on 12th April 1978 using a high viscosity spud mud of pre-hydrated Wyoming Bentonite, Caustic Soda, Soda Ash and Lime.

The 36" hole was drilled without returns to 171 meters without problems. Viscous slug of approximately 70 bbls. were spotted on each connection. This was done with only one pump, due to failure on the second pump. Displaced hole with 100 bbls. viscous mud at 9.5 ppg. before pulling out. Run and cemented 30" casing at 171 meters.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 15/9-2

26" HOLE/ 20" CASING INTERVAL

The 30" shoe was drilled out and the marine riser run. The riser and hole were displaced with mud and a 17½" pilot hole was drilled to 415 meters. After logging the 17½" hole, the marine riser was pulled and the hole was opened to 26". Approximately 30 bbls. high viscosity mud was spotted at each connection. At T.D. the hole was displaced with 600 bbls. high viscosity mud and a short trip made. A further 600 bbls. 9.7 ppg. weight high viscosity mud was pumped. The hole was tight on short trip. Raised weight to 9.8 ppg. pumped 600 bbls. A short trip was made and hole displaced with 9.8 ppg. with high viscosity. The 20" casing was than run and cemented.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 15/9-2

17½" **HOLE/** 13-3/8" **CASING INTERVAL**

After running the B.O.P.'s and drilling out the 20" shoe, 17½" hole was drilled without problems to 1190 meters with a Bentonite/Lignosulfonate mud. At T.D. two wiper trips were made before logging. After logging a wiper trip was made and the 13-3/8" casing was run and cemented at 1181 meters.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 15/9-2

8½" HOLE/ 7" CASING INTERVAL

After drilling out 9-5/8" casing shoe and the seal assembly fixed, the 8½" interval was drilled to 3764 meters. There were taken 11 cores each 60' from 3497 meters to 3692 meters. No problems were experienced while drilling and coring this interval. One short trip was done before P.O.O.H. to start logging. Had two short trips in between logging. Cleaned out hole to start R.F.T. log. Had 4 short trips in between R.F.T. logs. Circulate bottoms up before P.O.O.H. to set 7" liner at 3762 meters. A cement bound log was run and liner pressure tested. Then the hole was plugged off.

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL SEAWATER

WELL NAME: 15/9-2 AREA: NORTH SEA
OPERATOR: STATOIL RIG. ROSS RIG
ENGINEERS: S. ASBJØRNSEN/J. STRAND

Day No.	DATE	Estimated Daily Mud Volumes: Losses Sub Surface	Losses Surface	Volume Mud Built	Bulk Materials: Barite Bulk	Bentonite Bulk	Sack Materials: Bentonite		Materials Added to Control Properties: FCL Ligno.	Thinners	Polymers	Others: Caustic	Lime	Soda Ash	Sodium Bicarb.	L.C.M.	
1	10																
2	11			1000	6		180					6	4	4			
3	12		1300	300			42					2	4	1		12	
4	13			1200	17	14						8		8			
5	14			500		5	33					6					
6	15	2550		800	14	20						8	2	8		80	
7	16																
8	17	114	100	2000	31	14	175		26			32		8			
9	18		327	560	2		222		65			54		4			
10	19		161	200	20		20		15			13					
11	20								4								
12	21		795						28			4			7		
13	22			347			50		34			14		2	2		
14	23		240	260	37		130		40			16		2	1		
FORWARD																	
ESTIMATED TOTALS		2664	2923	7167	127	53	852		212			163	10	37	10	92	

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL LIGNOSULFONATE

WELL NAME: 15/9-2 AREA: NORTH SEA
OPERATOR: STATOIL RIG: ROSS RIG
ENGINEERS: S. ASBJØRNSEN/J. STRAND

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE	BENTONITE	SACK MATERIALS: BARITE	BENTONITE	FCL.	THINNERS: LIGNITE			POLYMERS: CMC	SOLTEX				OTHERS: CAUSTIC	LIME	SODA ASH	SODIUM BICARB.	L.C.M.	M.D.	LUBRA SEAL	AL. STEAR.	
15	24		180	468	24				81									34		2			2	1		
16	25		120	258	6			20	95									40						1		
17	26		240	345	11			40	46					10				22		1						
18	27		190	355	28			48	43									34								
19	28		280	200	28			85	27									43								
20	29		370	300	10			60	21									17								
21	30		185	200	13			60	23				5					31							13	
22	1		150	85	16				61				5					6							3	
23	2		312	100	3			50	2									4								
24	3		118	200	17			59	98				1					19	1							
25	4		214					7	2																	
26	5				8			28										1								
27	6	70	150					38	13									2								
28	7		70																							
FORWARD		2664	2923	7167	127	53		852	212									163	10	37	10	92				
ESTIMATED TOTALS		2734	5502	9678	291	53		1347	724				11	10				416	11	40	10	92	2	2	16	

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

rilling Fluid & Material Consumption Report

JD SYSTEM: GEL LIGNOSULFONATE

WELL NAME: 15/9-2 AREA: NORTH SEA
OPERATOR: STATOIL RIG: ROSS RIG
ENGINEERS: S. ASBJØRNSEN/J. STRAND

ay lo.	DATE	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE	BENTONITE	SACK MATERIALS: BARITE	BENTONITE	MATERIALS ADDED TO CONTROL PROPERTIES — THINNERS: FCL. LIGNO.	LIGNITE			POLYMERS: CMC	SOLTEX				CAUSTIC	LIME	SODA ASH	OTHERS: SODIUM BICARB.	L.C.M.	M.D.	LUBRA SEAL	AL. STEAR.
29	8		140																1			20			
30	9	50		57				25										1							
31	10		30	90	10			56	6											1					
32	11		112		8			64										3							
33	12		22		7			26	34	37			15					19							1
34	13							28	27	33			11					20							1
35	14			64					38	16			4					16							
36	15		178	200	25			25	45	18			8					20							
37	16		15	20	36				33	6								11							
38	17		157	200					9	10			9					6							
39	18			33	21			40	8	7			21					9							
40	19		30	26	3				11	12								4							
41	20		20	49	4			32	10	11			2												
42	21		36		3				18	23								2							
FORWARD		2734	5502	9678	291	53		1347	724				11	10				416	11	40	10	92	2	2	16
ESTIMATED TOTALS		2784	6242	10417	408	53		1643	963	173			81	10				527	12	41	10	112	2	2	18

REMARKS:

ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM GEL LIGNO LIGNITE

WELL NAME 15/9-2 AREA NORTH SEA

OPERATOR STATOIL RIG. ROSS RIG

ENGINEERS S. ASBJØRNSEN/J. STRAND

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE	BENTONITE	SACK MATERIALS: BARITE	BENTONITE	MATERIALS ADDED TO CONTROL PROPERTIES: FCL.	LIGNITE	THINNERS		POLYMERS: CMC	SOLTEX				CAUSTIC	OTHERS: LIME	SODA ASH	SODIUM BICARB.	L.C.M.	M.D.	LUBRA SEAL	AL. STEAR.	
43	22	–	10	122	11			28	20	15				15				8								
44	23	–	13	22				38	37	52								30								
45	24	–	40	10	16			15	26	54								11								
46	25	–						7	13	22																
47	26	–	15		8				13	12								11								
48	27	–	27	100	8				15	21				17				13								
49	28	–		52	3			17	15	16			6					10								
50	29	–	45					8	8	8								7								
51	30	–	20		1			12	23	23								5								
52	31	–	11		2					5																
53	1	–	9		3					11								3								
54	2	–			1				7	7								3								
55	3	–	50	18	4				12	12								2								
56	4	–	20	20				20																		
FORWARD		2784	6242	10417	408	53		1643	963	173			81	10				527	12	41	10	112	2	2	18	
ESTIMATED TOTALS		2784	6502	10761	465	53		1788	1152	431			87	42				630	12	41	10	112	2	2	18	

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

rilling Fluid & Material Consumption Report

UD SYSTEM: GEL LIGNOSULFONATE

WELL NAME: 15/9-2 AREA: NORTH SEA
OPERATOR: STATOIL RIG: ROSS RIG
ENGINEERS: S. ASBJØRNSEN/J. STRAND

ay No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS		SACK MATERIALS		MATERIALS ADDED TO CONTROL PROPERTIES																	
									THINNERS				POLYMERS					OTHERS								
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE	BARITE	BENTONITE	FCL	LIGNITE			CMC	SOLTEX				CAUSTIC SODA	LIME	SODA ASH	SOD. BICARB.	L.C.M.	M.D.	LUBRA SEAL	AL. STEAR.	
7	5																									
8	6		30	28	5			24	12	10								5								
9	7		18																							
0	8		10																							
1	9				8																					
2	10																									
3	11				6			4										9								
4	12	30			3													10								
5	13				11																					
6	14																									
FORWARD		2784	6502	10761	465	53		1788	1152	431			87	42				630	12	41	10	112	2	2	18	
ESTIMATED TOTALS		2814	6560	10789	498	53		1816	1164	441			87	42				654	12	41	10	112	2	2	18	

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

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Drilling Mud Properties Record

MUD SYSTEM: WYOMING BENTONITE/LIGNOSULFONATE

WELL NAME: 15/9-2 AREA: NORTH SEA
OPERATOR: STATOIL RIG: ROSS RIG
ENGINEERS: S. ASBJØRNSEN/J. STRAND

Day No.	DATE	DEPTH (FEET ☐ / METERS ☒)	DENSITY PPG ☐ SG ☐	VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Cl⁻ ppm	Ca ++ ppm	Pf	RETORT % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
1	10																							Moving rig to new l
2	11			SPUD	MUD	VISC.	130+																	Only one rig pump
3	12	171		SPUD	MUD	VISC.	200+																	Used 1300 bbls. sp
4	13	171		SPUD	MUD	VISC.	120+																	Drilled out 30" cmt shoe P.O.O.H.
5	14	415		SPUD	MUD	VISC.	120+																	Displaced w/mud. Dr 17½ to 415.
6	15	415		SPUD	MUD	VISC.	200+		WT.	9.8														O.H. to 26". Pumped 2550 bbls. m
7	16	415		NO MUD																				Ran 20" Csg. Running BOP + Riser
8	17	530	9.1	46	24	16	17	14/25	10	2		10.5	6500	80	.9	-	5	TR	25					RIH. Drill out cmt. Drill to 530
9	18	928	9.3	50	24	10	22	22/31	11	2		10.5	11000	80	.9	-	7	1/4	20					Drill ahead. Building mud.
10	19	1190	9.3	49	25	10	28	20/29	12	3		10.5	11500	80	.9	-	9	1/4	20					Drilled 17½" to T.D. 1190. Logging.
11	20	1195	9.8	50	24	13	22	19/36	14	3		10.5	12400	80	.55	-	10	1/2	25					Running 13-3/8" cas
12	21	1195	9.8	54	22	13	18	12/25	15	3		11	12400	60	2.3	-	10	1/4	20					Run 13-3/8 csg.Cmt.
13	22	1197	9.8	42	19	13	12	15/40	19	3		11	11000	148	2.4	-	11	3/4	20					Drilled float + sho
14	23	1573	10.4	43	24½	16	17	12/28	12	3		11.1	6800	80	1.7	-	11	1/4	25					Drilling clayst. 30M

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM: WYOMING BENTONITE/LIGNOSULFONATE

WELL NAME: 15/9-2 AREA: NORTH SEA
OPERATOR: STATOIL RIG: ROSS RIG
ENGINEERS: S. ASBJØRNSEN/J. STRAND

Day No.	DATE	DEPTH (FEET / METERS)	DENSITY PPG / SG	VISCOSITY sec/qt	VISCOSITY A.V. cps	VISCOSITY P.V. cps	VISCOSITY Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Cl⁻ ppm	Ca ++ ppm	Pf	RETORT % OIL	RETORT % SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMAR
15	24	1970	10.2	43	21½	15	13	5/25	12	3		11.2		80	1.1	-	9	1/2	25					Drilling claystone 20-30 M/HL
16	25	2199	10.2	43	20	14	12	3/19	9	3		11		40	1.4	-	9	1/4	32½					Drilling shale wit sand str. 25-50 M/H
17	26	2395	10.4	42	21	15	12	2/10	9	2		10		80	0.7	-	11	1/4	35					Drilling 100% shal
18	27	2517	10.4	42	16	13	6	3/17	9	2		10.5		80	0.7	-	12	1/4	32.5					Drilling shale with sandstone
19	28	2680	10.4	42	16	12	8	3/17	9.8	2		10.5		80	1.1	-	13	1/4	30					Drilling sandstone Trip.
20	29	2742	10.4	42	16	13	9	3/17	9.6	2		10.5		60	1.1	-	13	TR	30					Drilling sandstone Trip.
21	30	2799	10.4	41	16	12	8	4/20	9.9	2		10.5		60	0.9	-	12	TR	32.5					Drilling ahead. Mixed 200 bbls.
22	31	2819	10.5	41	17	13	9	3/18	8	2		11			1.1	-	13	TR	27.5					Drilling ahead. Circ. wipertrip.
23	32	2819	10.5	40	15	12	6	4/28	8.5	2		11			1.1	-	13	TR	27.5					Logging RIH Circulating.
24	33	2819	10.6	43	19	14	9	4/18	8.4	2		11			1.1	-	13	TR	27.5					Strat running 9-5/8" casing.
25	34	2819	10.6	44	19½	14	11	5/19	8.6	2		11.2			1.3	-	12	TR	27.5					Cemented 9-5/8". Leakin seal ass.
26	5	2819	10.9	46	20½	15	11	5/21	9	2		10.5			.75	-	14	TR	27.5					Working with seal
27	6	2819	10.7	46	19½	14	11	6/25	9	2		10.5			.7	-	13	TR	27.5					Cementing between 13-3/8 - 9-5/8.
28	7	2819	10.5	46	19½	14	11	7/24	9	2		11			.7	-	13	TR	27.5					Pull liser + BOP.

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM: WYOMING BENTONITE/LIGNOSULFONATE

WELL NAME: 15/9-2 AREA: NORTH SEA
OPERATOR: STATOIL RIG: ROSS RIG
ENGINEERS: S. ASBJØRNSEN/I. STRAND

Day No.	DATE	DEPTH (FEET ☐ METERS ☒)	DENSITY PPG ☐ SG ☐	VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Cl⁻ ppm	Ca ++ ppm	Pf	RETORT % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
29	8	2819	10.4	47	20	14	12	7/26	9	2		10.5	150	12000	.7		13	TR	30					Run bop. Testet se negativ.
30	9	2819	10.5	46	20	14	12	6/24	8.7	2		11	150	12500	.9		13	TR	30					Testet seal ok.
31	10	2819	10.5	43	17	13	9	2/10	8	2		11.2	80	11000	1.3		13	TR	30					Drilled 12m new hol leek of 15kg.
32	11	2917	10.5	45	17	14	9	3/11	9.8	2	34	11.2	80	12000	1.3		13	TR	27½					R.i.h. w/junk baske Pooh rih w/turbo.
33	12	3119	10.6	45	17	13	8	3/17	8.5	2	24	11.1	60	12000	1.1		13	-	27½					Drilling ahead 2/tu
34	13	3226	10.6	46	20	15	8	3/17	8.0	2	23	11.0	80	12000	1.1		13	-	27½					Drilling ahead. Wiper trip.
35	14	3318	10.6	47	22	16	11	3/25	8.5	2	23	11	80	13000	1.1		14	-	27½					Drilling ahead. Poo change bit.
36	15	3462	11	49	24	17	13	3/25	7.9	2	19	11	80	13400	1.2		15	-	27½					Drilling ahead. Wipertrip.
37	16	3495	11.2	47	23	18	12	3/24	8.5	2	16.5	11	80	14400	1.2		17	TR	27½					Drilling to 3478.Ch B.H.A., rock bit.
38	17	3506	11.3	48	20	17	11	3/21	7.2	2	14	11	80	13500	1.1		16	TR	27½					RIH with 60' core barrel.
39	18	3533	11.3	48	23	18	11	3/24	6	2	14	11	80	16400	1.3		16	TR	27½					Cut core no. I and 100% recover.
40	19	3551	11.3	50	24½	18	13	2/21	6	2	14	11	70	16600	1.8		14	TR	27½					Cut core no. III 100% recover.
41	20	3578	11.3	50	25	18	14	3/24	6	2	13.8	10.8	90	16200	1.1		14	TR	30					Cut core no. IV 100% rec.
42	21	3588	11.3	50	26	16	12	2/21	6.9	2	13.4	11	80	15900	1.6		14	TR	27½					Cut core no. V.

REMARKS

ANCHOR DRILLING FLUIDS A/S
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 15/9-2 AREA NORTH SEA

OPERATOR STATOIL RIG. ROSS RIG

MUD SYSTEM WYOMING BENTONITE/LIGNOSULFONATE

ENGINEERS S. ASBJØRNSEN/J. STRAND

Day No.	DATE	DEPTH FEET ☐ METERS ☒	DENSITY PPG ☐ SG ☐	VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis Cl⁻ ppm	Ca ++ ppm	Pf	RETORT % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
3	22	3588	11.3	56	22½	17	11	2/21	5.9	2	13.9	10	15900	80	1.2	10	16	TR	25					Fin logging, RIH for reaming.
4	23	3604	11.3	59	26	19	14	2/9	3.5	2	13.6	11.5	11000	80	2.8	9	14	TR	23					Cut core no. VI.
5	24	3624	11.3	61	23½	20	9	2/9	3.5	2	14.8	11	12500	80	2.8	7	13	TR	23					Cut core no. VII.
6	25	3642	11.3	61	24	19	13	2/13	3.9	2	14	11	13000	80	2.7	6	13	TR	22.5					Cut core no. 8.
7	26	3661	11.3	50	22	18	9	3/13	4	2	14	11	13000	80	2.5	6	13	TR	22.5					Cut core no. 9.
8	27	3674	11.3	60	30	23	13	3/15	2.4	2	9	11	13000	80	2.6	10	13	TR	25					Cut core no. 10. Change BHA RIH.
9	28	3684	11.3	59	28	22	12	3/14	3	2	9.5	11	13000	80	2.8	10	14	TR	25					Cut core no. 11.
0	30	3693	11.3	55	29	23	12	3/13	3.4	2	10.4	11.5	13000	60	2.6	10	14	TR	25					Tested BOP.
1	31	3728	11.3	54	26	20	11	2/12	2.4	2	10	11.5	13200	60	2.6	10	14	TR	25					Drilling ahead.
2	1	3755	11.3	57	27	21	12	2/14	2.6	2	10.2	11.5	12800	80	2.2	10	14	TR	25					Drilling ahead in sandstone.
3	2	3764	11.3	56	27	21	12	2/16	2.0	1	10.4	11.5	13200	80	2.0	9	14	TR	25					Drilled to TD 3764m
4	3	3764	11.3	60	26	20	12	2/15	2.7	1	10.6	11.5	13200	80	2.1	9	14	TR	25					Logging run 3 log
5	4	3764	11.3	56	24½	19	11	2/16	2.9	1	10.8	11.5	12900	90	2.2	9	14	TR	25					Run log no. 5. Wiper trip.
6	5	3764	11.3	54	24	19	10	2/15	2.8	1	10.8	11.4	12900	80	2.1	9	14	TR	25					Run log no. 6 - no. No problems.

REMARKS

ANCHOR DRILLING FLUIDS A/S
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 15/9-2 AREA NORTH SEA

OPERATOR STATOIL RIG. ROSS RIG

MUD SYSTEM WYOMING BENTONITE/LIGNOSULFONATE

ENGINEERS S. ASBJØRNSEN/J. STRAND

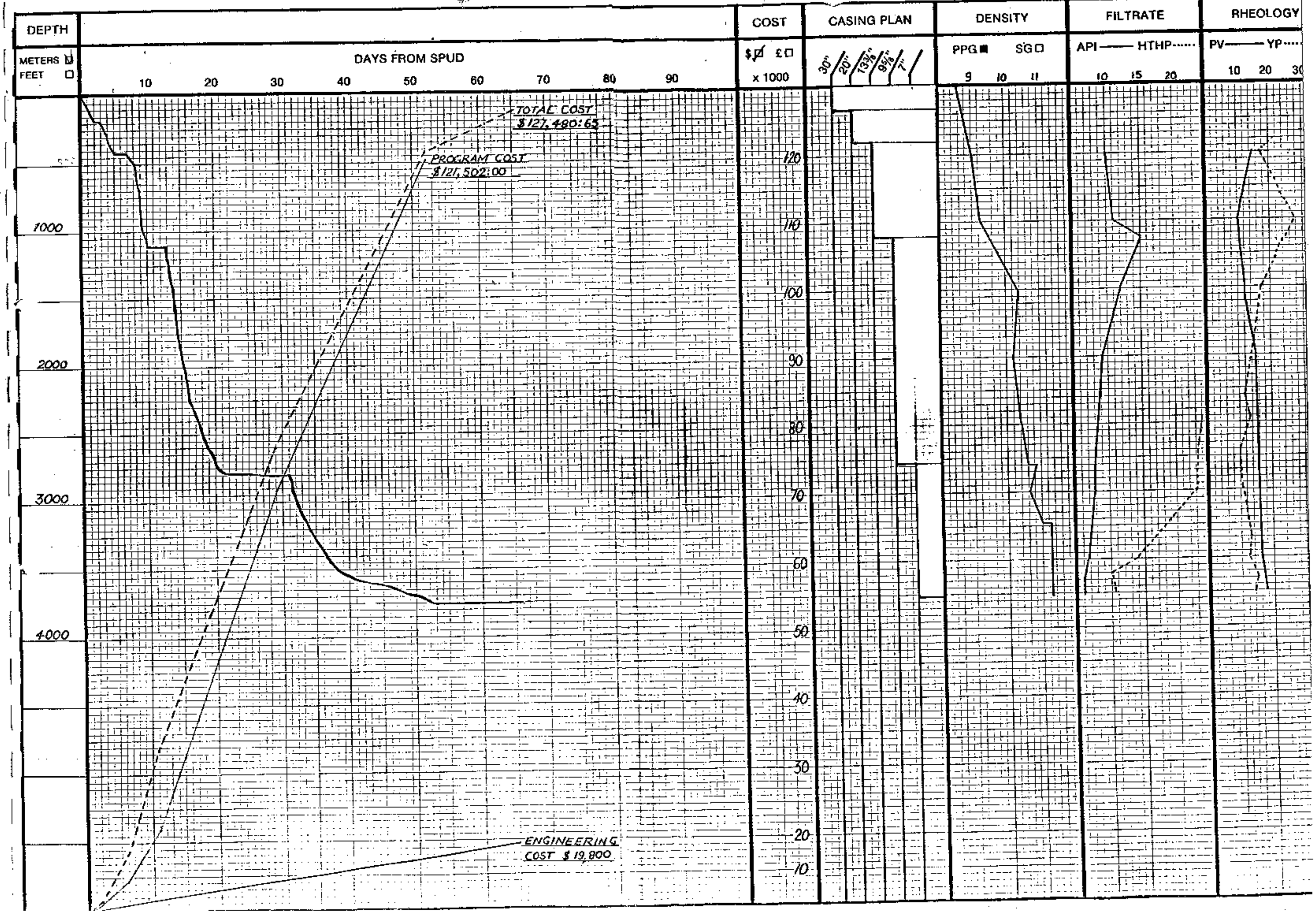
Day	DATE	DEPTH FEET ☐ METERS ☒	DENSITY PPG ☐ SG ☐	VISCOSITY sec/qt	VISCOSITY A.V. cps	VISCOSITY P.V. cps	VISCOSITY Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Cl⁻ ppm	Ca ++ ppm	Pf	RETORT % OIL	RETORT % SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
	6	3764	11.3	55	24	19	10	2/16	3	1	10.9	11.4	12900	90	2	9	14	TR	25					Fin logging.
	7	3764	11.3	59	24	18	12	2/16	2.8	1	10.8	11.5	12800	80	2.2	9	14	TR	25					Made wiper trip.
	8	3764	11.3	58	24	18	12	2/16	2.9	1	11	11.4	12200	80	2.1	8	14	TR	25					Start logging. Hole in good cond.
	9	3764	11.3	59	25	18	13	2/16	3.0	1	11.1	11.0	12400	80	2.1	8	14	TR	25					Logging. Wiper trip. Logging.
	10	3764	11.3	59	26	17	13	3/15	3.2	1	11.6	11	12400	80	2.0	8	14	TR	25					Logging wiper trip.
	11	3764	11.3	59	25	19	14	3/16	2.8	1	10.9	11	12400	80	1.9	8	14	TR	25					Logging (RFT)
	12	3764	11.3	50	24	18	12	2/14	2.7	1	11.2	11.5		80	1.9	8	14	TR	25					Logging. Conditioning mud.
	13	3764	11.3	54	24	20	13	3/14	2.9	1	10.9	11.5		80	1.9	7	14	TR	25					Set 7" liner and cmt.
	14	3764																						
	15	3764																						

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

GRAPHI-CAP

WELL NAME: 15/9-2 SPUD DATE:
CONTRACTOR: ROSS DRILLING RIG: ROSS RIG



III 14. DIRECTIONAL SURVEYS AND WELL PROFILES

SPERRY-SUN INTERNATIONAL
MAGNETIC SINGLE SHOTS

STATOIL
15-9-2

SSA/SSB-000-NOR
3 NOVEMBER 1978

TOTAL DEPTH	DIRECTION DEG	ANGLE DEG MIN	VERTICAL DEPTH	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	LOG LEG.
	N .0 E	0 0	.00	.00N	.00 E	.00	.00
412	N 75.0 W	0 35	411.98	.54N	2.04 W	1.57	.04
1186	S 5.0 E	0 15	1185.96	.13S	5.69 W	5.13	.03
1398	S 28.0 W	0 13	1397.96	.94S	5.84 W	5.63	.02
1979	S 23.0 W	1 35	1978.87	9.30S	9.49 W	12.65	.07
2196	S 11.0 E	1 47	2195.78	15.38S	10.02 W	15.84	.14
2310	S 5.0 W	0 40	2309.75	17.78S	9.74 W	16.67	.31
2492	S 45.0 E	0 45	2491.73	19.68S	8.99 W	16.85	.10
2731	N 59.0 W	0 40	2730.72	20.07S	9.08 W	17.10	.18
2816	N 37.0 W	0 50	2815.72	19.32S	9.87 W	17.48	.12
3116	N 16.0 W	1 47	3115.63	13.09S	12.47 W	17.01	.11
3212	N 3.0 W	1 0	3211.61	10.82S	12.93 W	16.39	.27
2447	N 35.0 E	1 20	3446.56	6.53S	11.47 W	13.16	.11
3494	N 1.0 E	1 10	3493.54	5.60S	11.14 W	12.46	.49

THE DOGLEG SEVERITY IS IN DEGREES PER ONE HUNDRED FEET.
THE VERTICAL SECTION WAS COMPUTED ALONG S 63 20 W.
A DECLINATION OF 7 0 WEST HAS BEEN APPLIED.

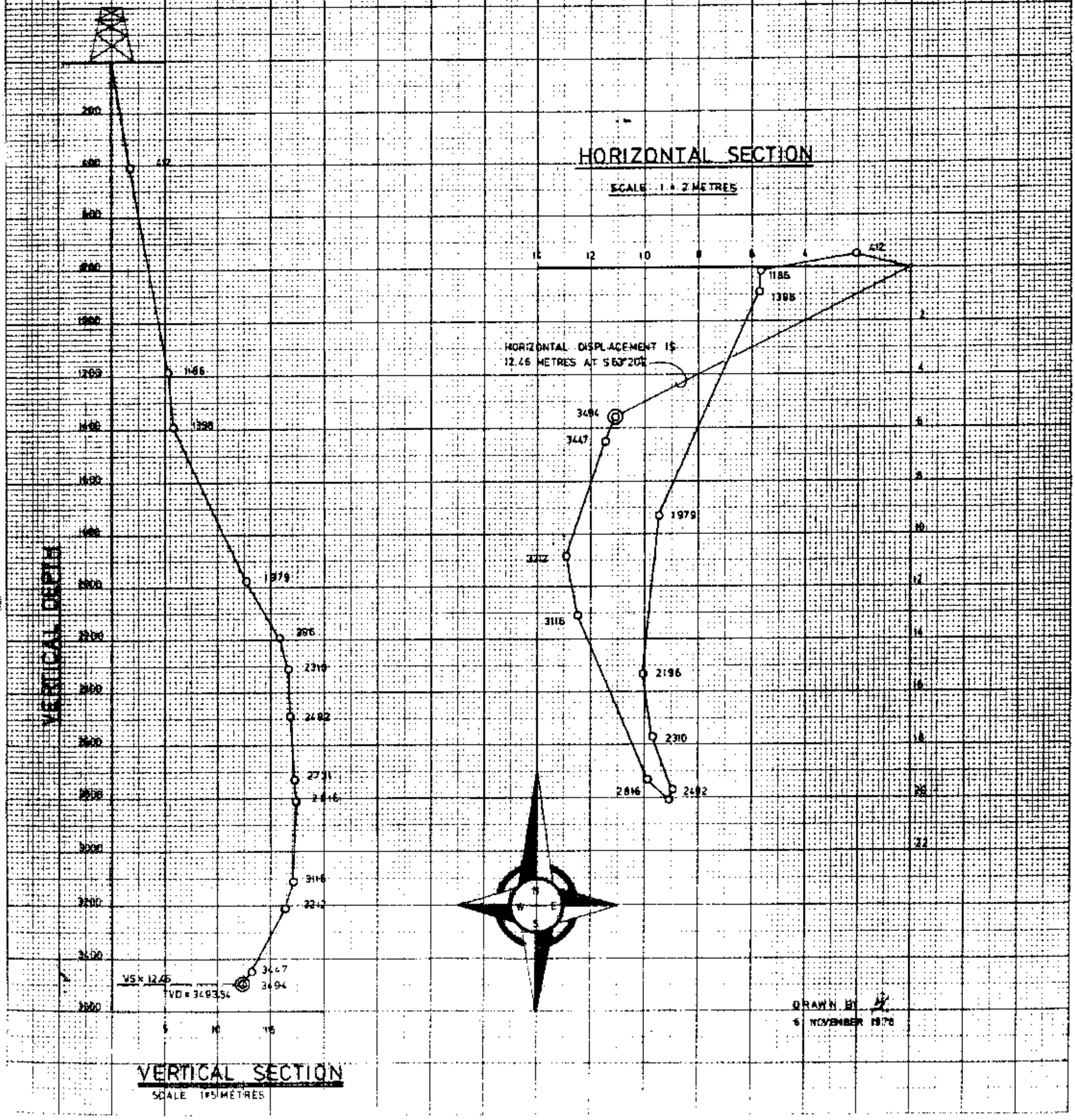
BASED UPON MINIMUM CURVATURE TYPE CALCULATIONS. THE BOTTOM HOLE DISPLACEMENT IS 12.46 METERS, IN THE DIRECTION OF S 63 20 W.

SPERRY - SUN INTERNATIONAL, INC.

FOR -

STATOIL

WELL NO. 15-9-2



IV MARINE REPORT

IV 1. WEATHER AND ANCHOR TENSION SUMMARY

There was no downtime due to weather as the summer season was approaching.

The highest wind speed encountered was in the range of 25-30 m/sec., and this occurred only once, from the East.

Windspeed in the 20-25 m/sec. range, occurred three times.

Apart from this, winds were variable and mostly below 10 m/sec.

Wave heights never exceeded 5m.

Anchor tensions never exceeded 127 tons.
This occurred on April 11th.

IV 2.

LOCATION WEATHER DATA SUMMARY

statoil

WELL: 15/9-2 RIG: Ross rig

TIME PERIOD: FROM 10/4 TO 16/6 - 1978

READINGS PR. MONTH:

WIND

dir. \ m/sec.	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	> 30	total
N		4	3	3	1			
NNE								
NE	1	4	1	2	1			
ENE	1	2		1				
E	3		1		1	1		
ESE		1						
SE	1	6	2					
SSE		2						
S	1	1	2	1				
SSW	1	1						
SW	7	1	1	1				
WSW								
W			2	1				
WNW								
NW	1		1	3				
NNW				1				
total								

WAVE

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

IV 3. NAVIGATION REPORT

RIG MOVE OF "ROSS RIG" FROM 24/12-1 TO 15/9-2

1. Final position

Lat.: 58° 25' 34,06" N   Lon.: 01° 42' 28,20" E

Rig heading: 312°

Deviation from intended location: 28 m - 343°

Accuracy: ±10 meters

2. Navigation/positioning method

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

Navigation contractor: A/S Geoteam, Oslo
Navigation engineers : Leiv O. Horten, Sveinung Høydal.

3. Duration of move

Navigation equipment and personnel dept. Forus	:	9 April, 1978 at 08.00 hours
Start from 24/12-1	:	11 " , 1978 at 01.25 "
Start run-in	:	11 " , 1978 at 10.20 "
First anchor (no. 5) set	:	11 " , 1978 at 10.40 "
Last piggy-back anchor set	:	11 " , 1978 at 18.35 "
All anchor tensioned	:	11 " , 1978 at 21.00 "

Total time from start of move till all anchors tensioned : 19 hours, 35 min.
Effective time from setting first anchor till last anchor set : 7 hours, 55 min.

4. Techniques/problems

To ensure good and continous navigation control during run-in a Pulse/8 receiver interfaced with computer and plotter was used.

At times the Pulse/8 system was unstable due to rain and snow showers. However, during the run-in the system performed well. The satellite navigation system was to be used for final positioning.

As the wind was north-westerly it was decided to drop anchor No. 5 at the run-in, then anchors No. 1 and 8 to keep the rig up against the wind. As one supply-boat was used as tug (pulling pennant-wire anchor No. 1), from loc. 24/12-1 to 15/9-2, anchor No. 1 was ready to be dropped as soon as the rig reached location. The anchor-handling was performed very well and was completed within 8 hours.

During the anchor-handling and tensioning the sat.nav. system showed a big discreapancy between fixes due to some unknown reason. Since we could not use the sat.nav. fixes as an confirmation of the Pulse/8 position, we had to rely only on the Pulse/8 position.

Using the Pulse/8 system we decided to position the rig approx. 40-50 meters south-east of the intended position (as the allowable deviation was ±100 m preferably not north-east). Experience from neighbour blocks indicated also that final sat.nav. position was in the north-west of the Pulse/8 position.
After tensioning the rig position at 22.00 hours 11 April was 50 m south-east off intended position. This position was computed from two different Pulse/8 pattern combination. As the sat.nav. fixes still was unreliable, I called Egil Tveit and the position was recommended for drilling.

During the next day (12 April 1978) different Pulse/8 patterns combination were tested (3-ways fixes) and positions referred to intended position were:

a) Pattern: 1-2/1-3/1-4 : 55 m - 140°
b) Pattern: 1-3/1-4/1-5 : 15 m - 132°
c) Pattern: 1-4/1-5/1-6 : 22 m - 008°

Final sat.nav. position: 28 m - 343°

The difference between a) and b) seems to be drift or unstability in pattern 1-5.

Discrepancy between a) and c) is 72 meters, which is out of Pulse/8 claimed accuracy. Further investigation will be made on this discrepancy.

Disregarding the navigation discrepancy between sat.nav. and Pulse/8 the rig move was carried out without problems.

Erik Håvarstein

IV 4. KOSS RIG

POSITION AND ANCHOR REPORT

DATE: April 15th, 1978

LOCATION:

LAT: 58° 25' 33,2" N LONG: 01° 42' 28,7" E

SURVEY COMPANY: A/S GEOTEAM VESSEL: —

SATELLITE: MAGNAVOX DECCA: PULSE - 8 WEATHER:

FINAL SURVEYED POSITION: LAT: 58° 25' 34,02" N LON: 01° 42' 28,21" E

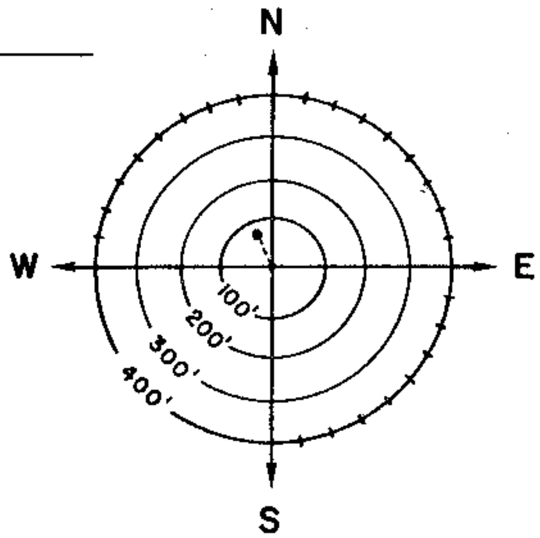
FIXING METHOD: DOPPLER NO. OF 2D PASSES: 74 NO. OF 3D PASSES: 56

DISTANCE FROM CENTER: 26,6 m (87') HEADING: 342 °T

WATER DEPTH: RT. TO WATER: RT. TO SF.: DRAFT:

POSITION PLOT

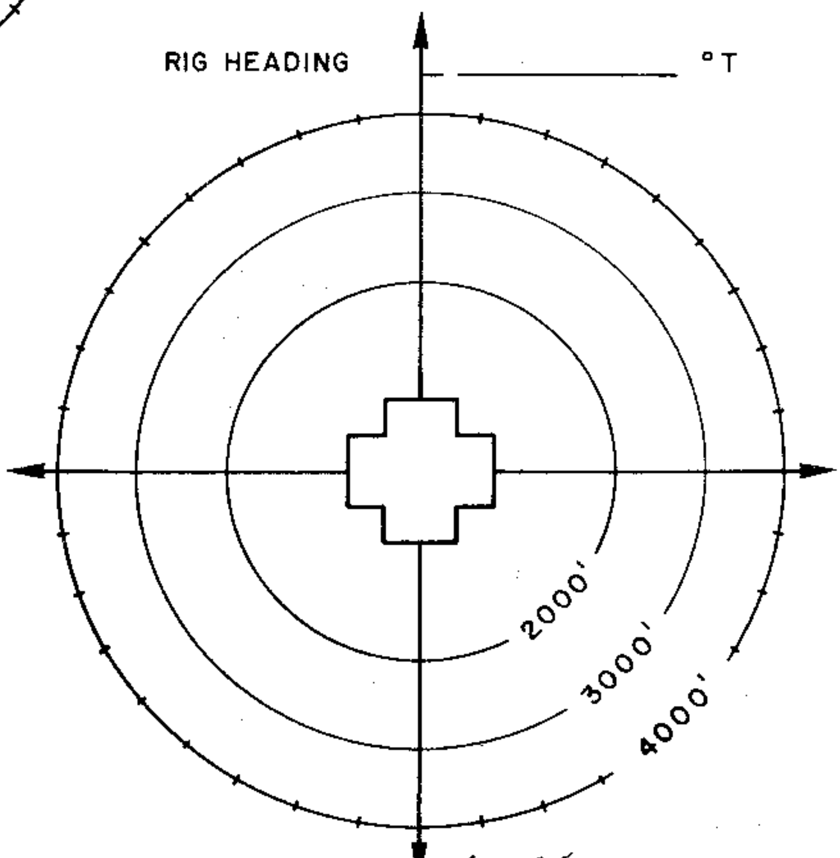
TRUE:



PENNANT LINE OUT

	SIZE	LENGTH FROM BOTTOM UP	TOTAL FOOTAGE
1		525'	
2		525'	
3		525'	
4		525'	
5		525'	
6		525'	
7		525'	
8		525'	
9		525'	

RIG HEADING: °T



ANCHOR POSITIONS

	HEADING	CHAIN OUT	PRETENSIONED
1	356°	2540'	
2	034°	2465'	
3	077°	2490'	
4	109°	2720'	
5	160°	2495'	
6	202°	2480'	
7	227°	2610'	
8	277°	2450'	
9			

PIGGY BACK

1	SAME AS ANCHOR	450'	
2		450'	
3		500'	
4		560'	
5		500'	
6		500'	
7		500'	
8		500'	
9			

SIGNATURE: for A/S GEOTEAM Leif Olav Norten

IV 5. SEABED CLEAR CERTIFICATE

threeX
diving company ltd.
Platform Diving
Construction Diving
Inspection Diving
Underwater Television
and Photography

Your ref.

Our ref.

Date 17/6/78

Observation dive was made on block 15/9.2 on Sat 17 June 1978
after the base plate was removed.
Visibility 8 to 10 M no object where sighted sea bed clear.

R.W.Bennett

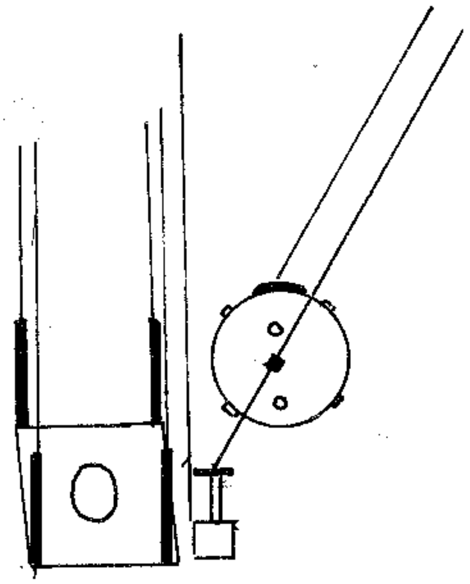
R.W.Bennett

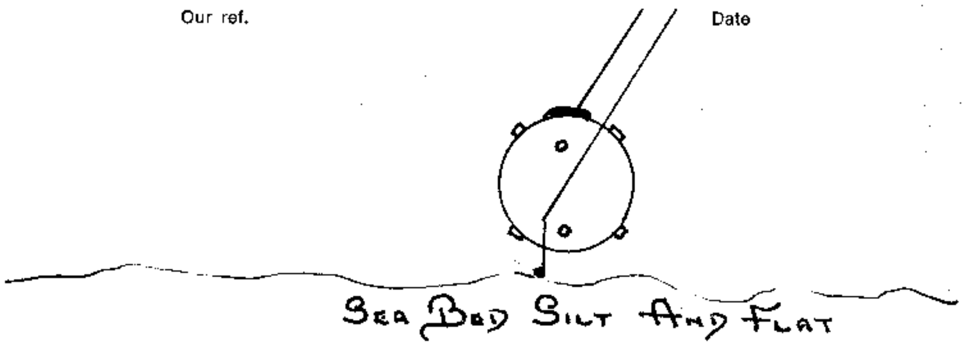
Diving Supervisor

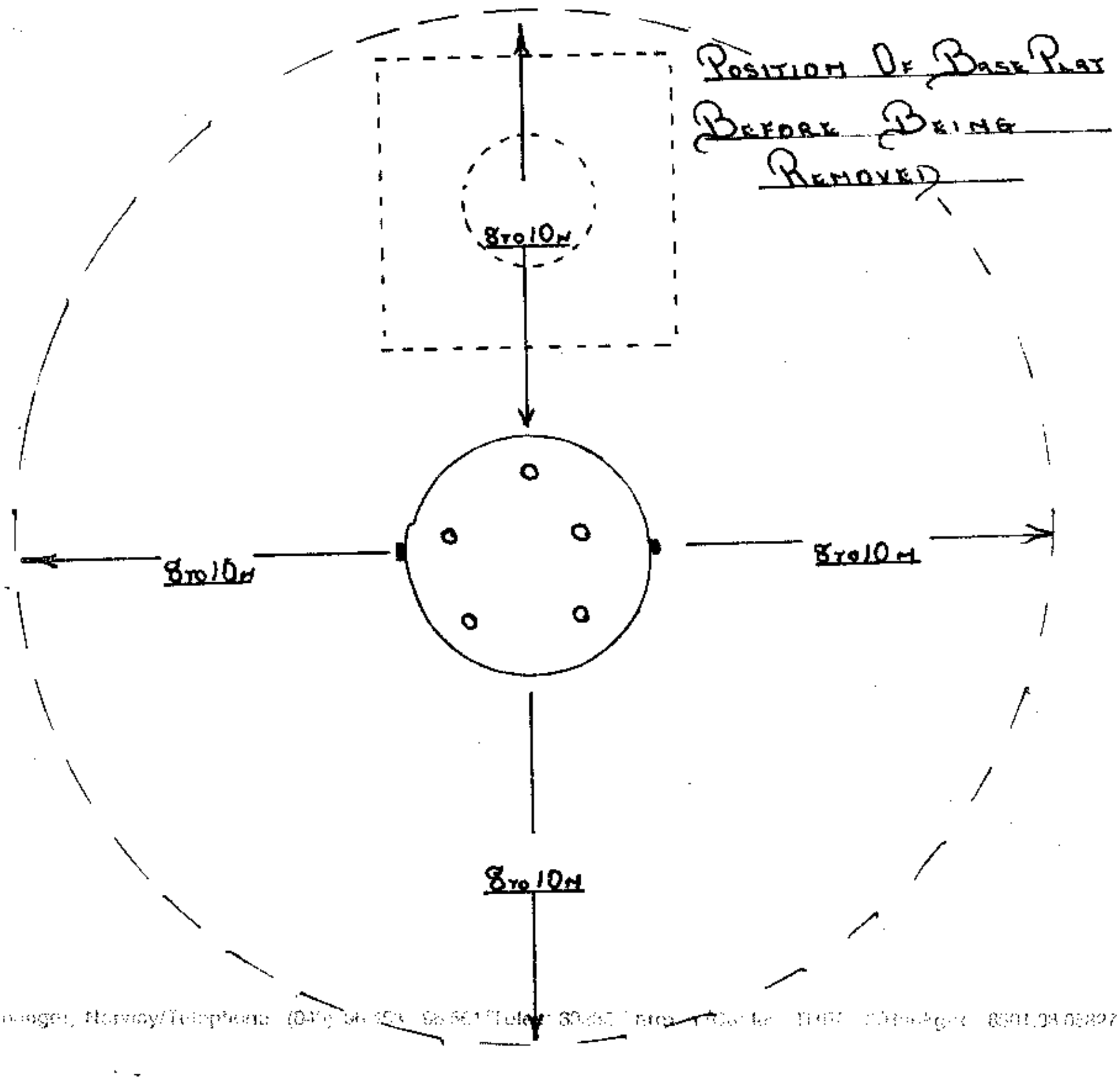
[illegible] Tananger, [illegible] Telex [illegible] Bankgiro [illegible]

three X diving company ltd.
Platform Diving
Construction Diving
Inspection Diving
Underwater Television
and Photography

Your ref. Our ref. Date







V LOGGING SUMMARY

15/9-2

SUMMARY OF LOGGING PERFORMANCE

The logging performance of well 15/9-2 was described by most observers as fair. Most problems occured with the ISF-BHC-GR combination, where a lost curve or lost time was incurred in 3 out of 5 runs.

Other notable problems included a Coregun misrun and failure of the depth transmission system on more than one occasion.

Log quality was in all runs considered good, but a recurring critisism was that the use of inexperienced engineers was resulting in high time consumption.

RUN 1:	171 - 391 m	ISF-BHC-GR
RUN 2:	399 - 1190 m	ISF-BHC-GR, FDC-GR
RUN 3:	1178.3 - 2807 m	ISF-BHC-GR, FDC-GR, CBL-GR
RUN 4:	2786 - 3570.8 m	ISF-BHC-MSFL-GR
RUN 5:	3475 - 3760.5 m	MLL, TDT-G, RFT-G, CST-G, LONG SPACING SONIC (2784.5 - 3750 m)
RUN 6:	3450 - 3760.7 m	ISF-BHC-GR, DLL-MSFL-GR, HDT, CST-G, RFT-G, CBL-G, NGT, VELOCITY SURVEY

RESULTS OF LOG INTERPRETATION, WELL 15/9-2

Depth interval:	3483 - 3653.75 m
Gross thickness:	170.75 m
Net pay:	156 m
Average porosity:	18.5%
Average water saturation:	11.2%

Cut off values:	$\Phi \leq$	0,10 (fractions)
	VSH $\leq$	0,40 (fractions)
	SW $\leq$	0,60 (fractions)

VI TESTING OPERATIONS AND RESULTS

REPORT

REPEAT FORMATION
TESTER (RFT)
WELL 15/9-2

25. oktober, 1978.

REPEAT FORMATION TESTER (RFT), WELL 15/9-2.

Conclusions.

Two separate pressure surveys, with different RFT-tools, were performed, each giving well defined pressure gradients over the pay zone, 0.0312 bar/m (0.138 psi/ft) and 0.0318 bar/m (0.141 psi/ft) respectively, comparing well with the pressure gradient of 15/9-1.

There was no indication of horizontal pressure barriers within the reservoir.

With respect to the actual values of formation pressures, however, conflicting information from the different gauges leaves us with an interval of inaccuracy of at least 5 bars for each depth level.

Although the observed pressures in this well seems to be a little low compared to the pressures in 15/6-3 and 15/9-1 at same levels, pressure communication should not be rejected.

Hydrocarbon fluid analysis shows a CO_2 concentration of 8 - 9 mol percents. Preliminary calculations based on fluid conpositions indicate a GOR of 25 - 31000 SCF/STB, however, the final fluid analysis is not yet available.

The logs and the RFT sampling in this well confirmed a gas water contact between 3652 and 3654.5 m. This gas water contact is at least 25 m deeper than in the Sleipner structure.

Runs and tools.

A Schlumberger Repeat Formation Tester program was performed during the 8½" open hole logging of the well to establish the formation pressure profile and reservoir pressure gradient. The pressure survey and the sampling program were also designed to check fluid contacts.

Two RFT tools were used for a total of 11 runs in the hole, twice for pressures and 9 times for fluid samples, of which one was a misrun.

RFT No. 32494 was used for run no. 1, 2, 3, 4, 5, 6, 9A and 10.
RFT No. 35761 was used on run no. 7, 8 and 9.

Run no. 2 and 7 were pressure surveys. On both runs, 2 amarada gauges were run with the RFT to check the RFT pressures.

Depth reference and RFT-calibration.

All depths given in this report are RKB, referring to the FDC-CNL log run no. 3, June 2, 1978.

RFT pressures have been corrected by the operator according to the calibration certificate, for temperature and pressure effects on tool readings.

Amarada pressure readings are provided by the field operator.

Quality of pressure data.

It is observed (see figure 1 and 2) that both RFT gauges read consistently lower pressures than the amarada gauges. This tends to be a more or less common feature of RFT pressure surveys that is observed in other wells before. However, we have no general conclusion about which type of gauge gives the more accurate estimate of actual formation pressures.

The difference between corresponding pressure readings of the two RFT gauges is approximately 5 bars, far exceeding the nominal accuracy, claimed by Schlumberger, of properly working tools.

Comparison between nominal mud weight gradient and observed hydrostatic pressures does not add significantly to the arguments for choice of best estimate of formation pressures.

We therefore consider that a reasonable interval of confidens for the actual values of formation pressures is represented by the readings of the two gauges, RFT 35761 and RPG-3 no. 41676, the width of this interval is approximately 5 bars. True values of formation pressures lower than those of RFT 35761 are considered improbable.

RFT PRESSURE SURVEY.

RFT run no. 2 and no. 7.

During run no. 2 the tool was set on 45 positions, and 39 pressure readings were recorded. Four pressure points were lost due to seal failure, and two due to very weak pressure build up in tight formation.

Complete record of final build up pressures and hydrostatic pressures for each tool position is presented in Table no. 1.

One of the two amaradas accompanying the RFT was plugged during the entire run and did not supply any useful pressure information.

Pressures obtained from the other Kuster gauge display a well defined mud gradient (see figure 2 and table). However, the formation pressures recorded by this gauge do not agree with a reasonable pressure profile, and these pressures are discarded for the further discussion.

The RFT gives a spurious, very high, formation pressure at 3626 m, the reason being probably a leaking seal. The build up observations at this setting show an extremely long build up time (11 minutes as compared with approximately 1 min. for the rest of the build ups). The pressure observation at 3656 m, the deepest setting in the main section, is probably indicative of a shift from a gas gradient to a water gradient.

At 3739 m the formation is relatively tight and the observed high pressure could be due to seal leakage also. The pressure did not stabilize, but the tool was retracted after 63 min. due to risk of differential sticking.

The validity of the pressure reading at 3711 m is considered doubtful when compared with the reading at 3695.5 m (run no. 7)

The RFT formation pressures obtained within the main reservoir section are plotted versus depth in figure 1, and the mud hydrostatic pressures of the RFT and Kuster gauge are plotted vs. depth in fig. 2.

A formation pressure gradient based on RFT pressures has been calculated using the least square method. In the calculations the points 3626 and 3656 m are excluded. The resulting pressure gradient is 0.0312 bar/m (0.138 psi/ft).

For data quality control the mud hydrostatic gradient is calculated both for the RFT and amarada gauge, giving 0.134 bar/m (11.4 lbs/gal) and 0.0130 bar/m (11.1 lbs/gal) respectively. Actual mudweight in hole was 11.3 lbs/gal.

<u>For run no. 7</u> a brand new RFT tool was used to check the pressures from run no. 2. The tool was set on 16 positions, and 15 valid pressure reading were obtained.

All the gauges, including the two amaradas, produced well defined formation pressure gradients, and also mud hydrostatic gradients. The mud had been circulated between run no. 2 and no. 7, and the hydrostatic pressures should not be directly compared.

Build up pressures and hydrostatic pressures for run no. 7 are given in Table 2.

Formation pressures have been plotted vs. depth in fig. 1, and hydrostatic pressures vs. depth in fig. 2.

Each of the three gauges originates separate, well defined, straight line formation pressure gradients. The RFT pressures, however, domonstrate the better straight line fit. The RFT gradient is 0.0318 bar/m (0.141 psi/ft), and amarada gradients are 0.0322 bar/m (0.142 psi/ft) and 0.0307 bar/m (0.136 psi/ft).

Mud hydrostatic gradients were:

RFT : 0.136 bar/m (11.6 lbs/gal)
Amaradas: 0.136 bar/m (11.6 lbs/gal) and
0.134 bar/m (11.4 lbs/gal).

The nominal mudweight applied was the same as in run no. 2, 11.3 lbs/gal.

Fluid sampling and analysis.

A total of 15 samples were obtained during eight sampling runs. The samples from the first seven runs were transferred under atmospheric pressure on the rig. Fluid recoveries and analysis of these samples are presented in Table no. 3. The lighter oil from run no. 4 (sampling depth 3490 m) may indicate some degree of gravity segregation in the reservoir.

The analysis of the gas from these samples is presented in Table no. 5.

A special report on analysis of the sampled water will be issued shortly.

The samples from RFT run no. 10 were transported ashore in the RFT samplers to be transferred under high pressure and temperature. The 1 gallon chamber developed a leak in a seal during transfer attempt, and the transfer was not successful.

14 samplebottles (600 cc) were collected during transfer of the 5 gallon chamber. Six of these were sent to Corelab (Aberdeen) for classification and component analysis. The results of the analysis are presented in Table no. 4.

The high experimental dew point pressure should be observed. There exist several sources of error that can account for this: light ends may have been lost during sampling, heavy ends may have been lost during the process of transfer from the samplers, the experimental procedure of observing dew points may be systematically biased, the formation temperature applied may also be too low and the effect of rising the temperature will be further investigated.

The high dew point leaves us so far with doubt to which extent the sample analysis should be trusted, however, we consider the higher CO_2 percentages to be significant for this well. We have also applied computer calculations for total GOR on the various compositions and obtained a range of 25 - 31000 SCF/BBL, which shows reasonable agreement with the wells 15/6-3 and 15/9-1.

In concordance with the logs, the fluid sampling of run no. 8 and run no. 9A confirmed a gas water contact between the sampling depths 3652 and 3654 m.

TABLE 3

RECOVERIES FROM RFT SAMPLE RUNS

RUN No	DEPTH RKBM	MAX BHT ($^{\circ}C$)	CHAMBER (gals)	PRESSURE (BARS)	GAS (m^3)	CONDENSATE (ccs)	WATER (ccs)	GRAVITY (API)
1	3644.0	109.4 110.6 107.2	1	220	0.75	150	450	44.0
3	3641.5	109.4 112.2 112.2	1 5	207 193	0.69 3.48	1200	2400	47.9, 45.6
4	3490.0		1 5	207 220	0.64 3.65	220 1500	120 2230	49.6 50.2, 50.3
5	3601.6		1 5	206 165	0.60 1.32	160 400	830 12000	45.9 47.5, 47.6, 48.2
6	3641.0 3640.4	110.0	1 5	172 172	0.52 2.52	100 1300	800 1300	48.5
8	3654.3	105.6 106.1	1 5	0 0	- -	- -	3600 18000	
9A	3652.0		1 5	193 179	0.63 2.44	200 1000	700 9000	45.5 47.9
10	3535.7		1 5					

TABLE 4

ANALYSIS OF GAS TRANSFERRED FROM 5 gal CHAMBER

RUN No. 10

Bottle No.	20438-32	22478-94	20112-26	20438-43	20438-20	22478-1
H_2S	NIL	NIL	NIL	NIL	NIL	NIL
CO_2	9.08	9.33	8.50	8.40	9.24	9.14
N_2	0.84	0.72	0.69	0.68	0.76	0.67
C1	71.65	73.26	72.50	72.97	72.78	72.18
C2	7.93	8.24	8.34	8.36	8.13	8.05
C3	4.88	3.73	4.30	4.39	4.27	4.37
iC4	0.84	0.51	0.64	0.64	0.66	0.66
NC4	1.47	0.96	1.16	1.13	1.14	1.13
1C5	0.27	0.30	0.38	0.29	0.29	0.49
NC5	0.42	0.42	0.48	0.37	0.36	0.53
C6	0.26	0.23	0.54	0.50	0.43	0.41
C7+	2.36	2.30	2.47	2.27	1.94	2.37
Molecular weight of heptanes plus	131	134	129	132	135	135
Specific gravity heptanes plus	0.792	0.790	0.793	0.792	0.793	0.793
Dew point at 241°F Psig	6579	6645	6638	6667	6655	6653

Samples was taken by the RFT tool in run no. 1, 3, 4, 5, 6, 8, 9 and 10. All but the last sample was flashed on the rig and samples of gas, water and oil was collected. Below follows the results of the gas analysis (in mol %) by Statoil Petroleum Laboratory.

Run no.	1	3	3	4	4	5	5	6	6	9	9
Depth (m)	3644	3641,5	3641,5	3490,0	3490,0	3601,6	3601,6	3641,0	3640,4	3652	3652
Chamber (gal)	1	1	5	1	5	1	5	1	5	1	5
N_2	0,5	0,5	0,3	0,4	0,5	0,4	0,5	0,2	0,5	0,5	0,4
CO_2	7,0	8,7	8,3	7,3	6,8	8,1	5,9	9,9	8,6	8,5	7,3
C_1	78,8	77,1	75,6	79,0	78,6	78,7	79,0	68,6	77,7	77,9	78,8
C_2	8,4	7,9	8,3	8,0	8,8	8,0	9,3	12.9	7,9	8,4	8,2
C_3	3,8	3,8	4,5	3,7	3,8	3,5	3,9	6,3	3,7	3,5	3,7
iC_4	0,46	0,52	0,71	0,47	0,46	0,42	0,44	0,71	0,48	0,40	0,49
nC_4	0,64	0,79	1,3	0,70	0,68	0,62	0,65	1,03	0,73	0,60	0,81
iC_5	0,17	0,24	0,36	0,16	0,16	0,13	0,19	0,18	0,18	0,10	0,16
nC_5	0,14	0,23	0,31	0,14	0,14	0,11	0,10	0,13	0,15	0,09	0,13
C_6	0,07	0,22	0,32	0,11	0,05	0,02	0,02	0,05	0,06	0,01	0,01
Approx. mol% air in sample	3	3	8	5	2	5	6	2	3	1	5

Note: All samples was contaminated with air. This has been corrected for by subtracting the oxygen and an amount of nitrogen equal to $[O_2]$ x 3,73 where 3,73 is the ratio $[N_2]/[O_2]$ in normal air.

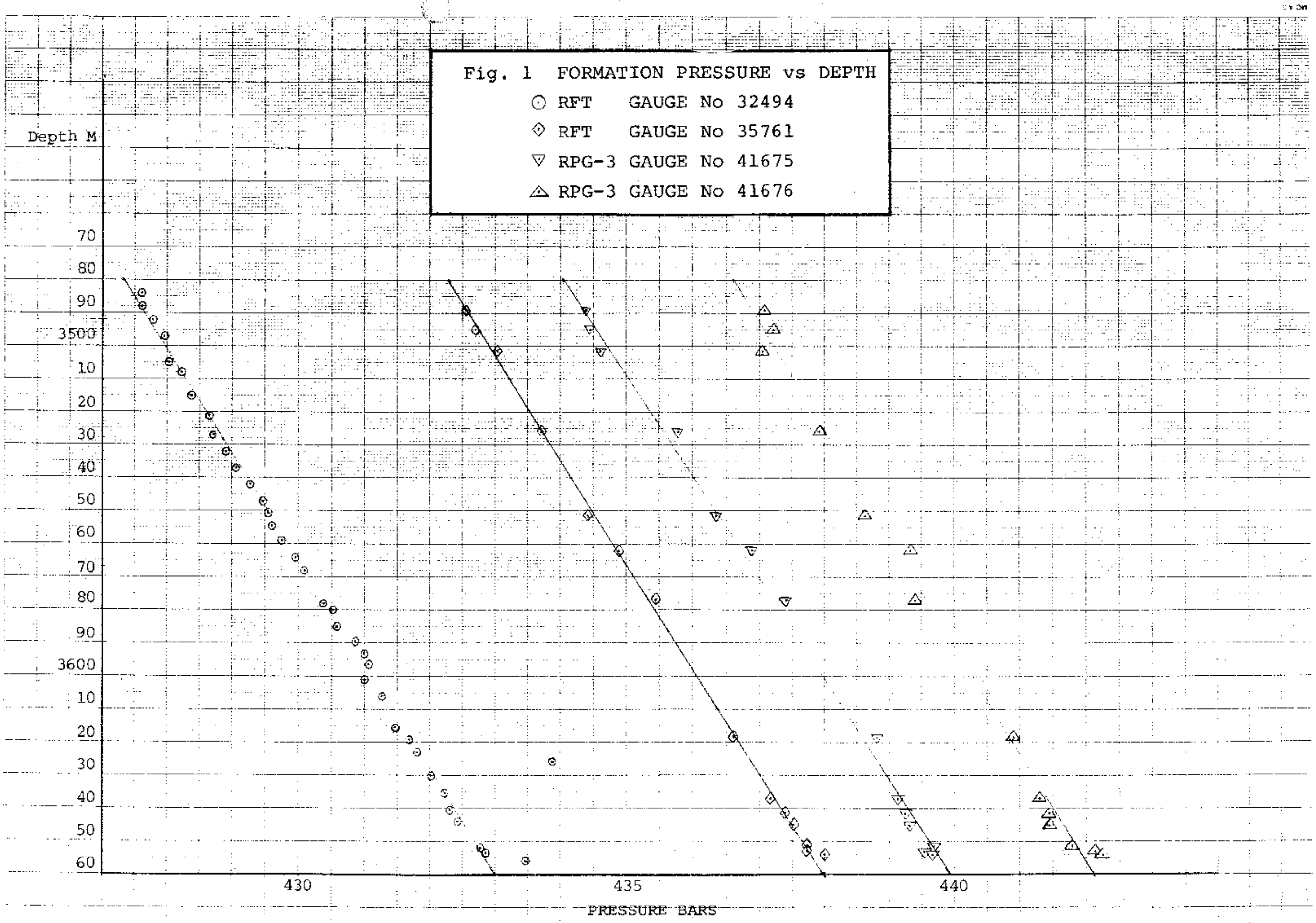


Fig. 1 FORMATION PRESSURE vs DEPTH
RFT GAUGE No 32494
RFT GAUGE No 35761
RPG-3 GAUGE No 41675
RPG-3 GAUGE No 41676
Depth M
70
80
90
3500
10
20
30
40
50
60
70
80
90
3600
10
20
30
40
50
60
430
435
440
PRESSURE BARS

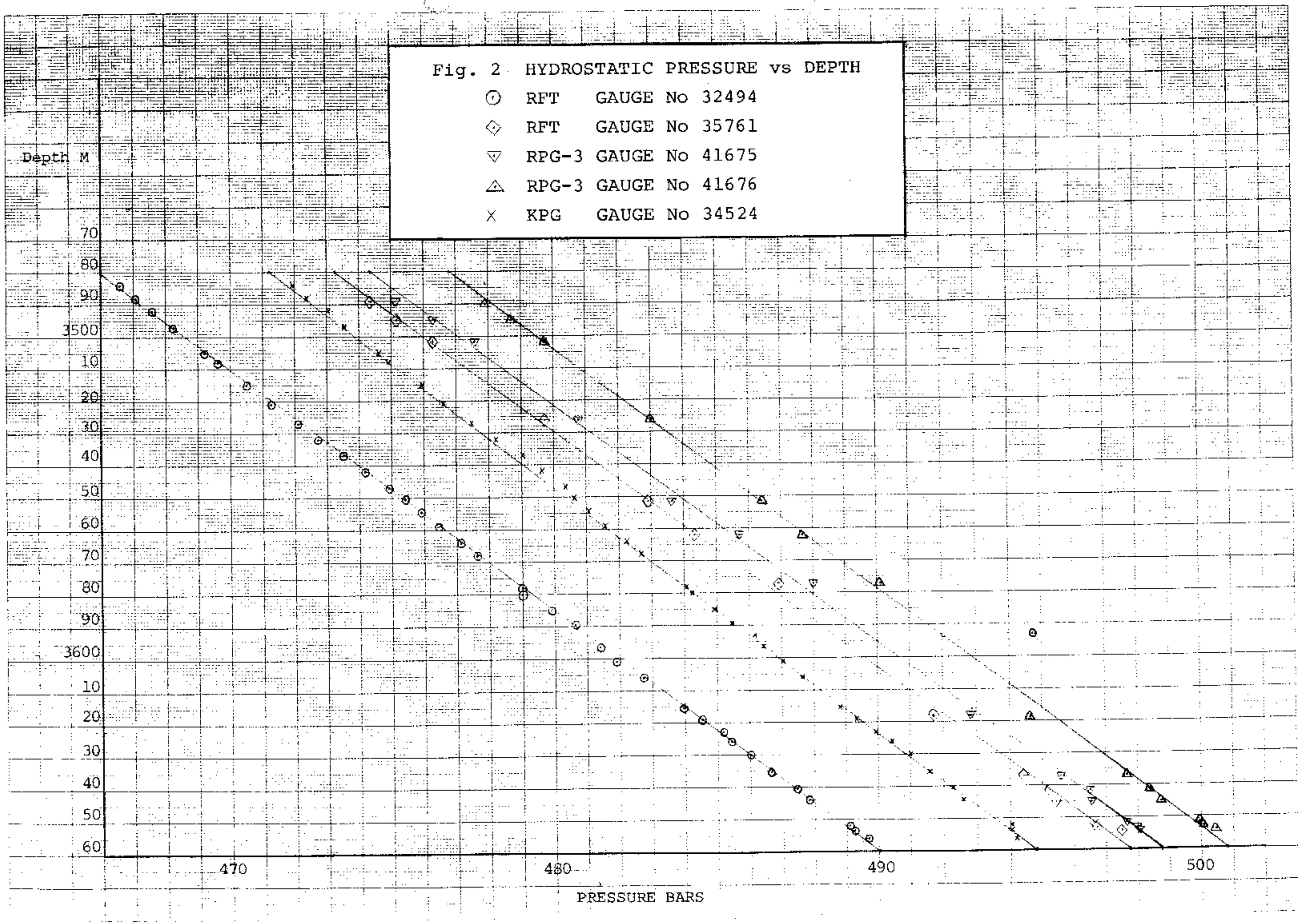


Fig. 2 HYDROSTATIC PRESSURE vs DEPTH
RFT GAUGE No 32494
RFT GAUGE No 35761
RPG-3 GAUGE No 41675
RPG-3 GAUGE No 41676
KPG GAUGE No 34524
Depth M
70
80
90
3500
10
20
30
40
50
60
70
80
90
3600
10
20
30
40
50
60
470
480
490
500
PRESSURE BARS

TABLE 1

RESULTS OF RFT PRESSURE

RUN No 2

		RFT GAUGE No 32494		KPG GAUGE No 34524	
No	DEPTH RKB. M	FORMATION PRESSURE BAR.	HYDROSTATIC PRESSURE BAR.	FORMATION PRESSURE BAR.	HYDROSTATIC PRESSURE BAR.
1A	3745.5	Seal Failure			
1B	3747.3	Seal Failure	501.7		
1C	3747.1	Seal Failure	501.5		
2	3739.0	467.8	500.1		
3	3729.0	Very Slow B.U.	499.0		
4	3717.0	No Seal	497.6		
5	3711.0	445.6	496.8	439.3	501.9
6	3706.0	Very Slow B.U.	496.0		
7	3656.0	433.5	489.7	432.4	494.2
8	3653.5	432.9	489.3	438.6	494.0
9	3652.0	432.8	489.1	438.5	494.0
10	3644.0	432.4	487.8	438.0	492.6
11	3640.5	432.3	487.5	438.0	492.3
12	3635.5	432.2	486.7	438.0	491.6
13	3630.0	432.0	486.0	437.6	491.0
14	3626.0	433.9	485.4	439.3	490.5
15	3623.0	431.8	485.2	437.4	490.0
16	3619.0	431.7	484.5	432.2	489.3
17	3615.5	431.5	484.0	432.2	488.9
18	3606.0	431.3	482.7	436.9	487.7

Table 1 cont....

TABLE 1 Page 2
RESULTS OF RFT PRESSURE RUN No 2

		RFT GAUGE No 32494		KPG GAUGE No 34524	
No	DEPTH RKB. M	FORMATION PRESSURE BAR.	HYDROSTATIC PRESSURE BAR.	FORMATION PRESSURE BAR.	HYDROSTATIC PRESSURE BAR.
19	3601.0	431.0	481.9	437.0	487.0
20	3596.5	431.1	481.4	436.6	486.5
21	3593.0	431.0	494.8	436.6	486.2
22	3589.5	430.9	480.7	436.6	485.5
23	3585.0	430.6	479.9	431.6	484.9
24	3580.0	430.3	479.0	431.9	484.3
25	3578.0	430.4	479.0	431.7	484.1
26	3568.0	430.1	477.6	435.9	482.7
27	3564.0	430.0	477.1	435.9	482.3
28	3559.0	429.8	476.5	435.5	481.6
29	3554.5	429.6	475.9	435.4	481.1
30	3550.5	429.6	475.4	435.4	480.7
31	3547.0	429.5	474.9	431.1	480.4
32	3542.0	429.3	474.2	431.2	479.7
33	3537.0	429.1	473.5	430.8	479.0
34	3532.0	428.9	472.7	430.8	478.2
35	3527.0	428.7	472.1	430.6	477.5
36	3521.0	428.7	471.3	430.6	476.6
37	3515.0	428.4	470.5	430.2	476.0
38	3508.0	428.2	469.6	434.1	475.0
39	3505.0	428.0	469.2	430.2	474.6
40	3497.0	428.0	468.3	429.9	473.6
41	3492.0	427.8	467.6	430.2	473.1
42	3488.0	427.6	467.1	429.9	472.4
43	3484.0	427.6	466.6	430.0	472.0

TABLE 2

RESULTS OF RFT PRESSURE

RUN No 7

		RFT GAUGE No 35761		RPG3 No 41675		RPG3 No 41676	
No	DEPTH RBK. M	FORMATION PRESS.BAR.	HYDROSTATIC PRESS.BAR.	FORMATION PRESS.BAR.	HYDROSTATIC PRESS.BAR.	FORMATION PRESS.BAR.	HYDROSTATIC PRESS.BAR.
1	3730.0	Very slow buildup	507.4				
2	3695.5	456.2	502.8	457.5	503.4	460.0	505.9
3	3654.0	438.0	497.5	439.7	498.1	442.3	500.5
4	3653.0	437.7	496.8	439.5	498.0	442.2	500.1
5	3651.5	437.7	496.6	439.7	497.7	441.8	499.6
6	3645.0	437.5	495.5	439.3	496.6	441.5	498.7
7	3641.5	437.4	495.2	439.3	496.5	441.5	498.4
8	3637.0	437.2	494.4	439.1	495.6	441.3	497.7
9	3618.5	436.6	491.7	438.8	492.8	440.9	494.7
10	3577.0	435.5	486.9	437.4	488.0	439.4	490.1
11	3562.0	434.9	484.4	436.9	485.8	439.3	487.7
12	3551.5	434.4	482.9	436.4	483.7	438.6	486.4
13	3526.0	433.7	479.8	435.8	480.8	437.9	483.0
14	3501.5	433.0	476.3	434.6	477.6	437.1	479.8
15	3495.0	432.7	475.2	434.5	476.3	437.2	478.7
16	3489.0	432.6	474.4	434.4	475.2	437.1	477.9

VII ENCLOSURES

No.31

WELLFILE

statoil / ESSO / N.HYDRO
15/9-2
COMPLETION LOG
Scale 1:500

COORDINATES: 58° 25' 34.06" N
01° 42' 28.20" E
K.B.: 25m
WATER DEPTH: 108 m
TOTAL DEPTH: 3764m
DEEPEST FORM. PEN.: Skagerrak Fm. Triassic
SPUD DATE: 12 April, 1978
RIG RELEASE DATE: 18 June, 1978
WELL STATUS: P & A
RIG: Ross Rig
CONTRACTOR: Ross Drilling Co. A/S
GEOLOGISTS: O. Aga, A.Hage, R.Kramer, S.Mæhle, S.O. Syrstad, S.Aasheim, T. Hauge
PREPARED BY: S. Mæhle

LOCATION PLAT

DATE: 15 Dec. 1978

CASING DATA:
30" at 171 m
20" at 399m
13 3/8" at 1181 m
9 5/8" at 2788m
7" liner at 3762.5m

VELOCITY SURVEY: 28 checkshots, levels from 630m to 3760m by SSL.

LOGS RUN (Schlumberger, depths in m KBE)

ISF / SONIC	FDC-GR	HDT	CBL-GR	CPI	NGS	MLL
Run 1. 171 - 388.8 2. 399 - 1186.2 3. 1178.3 - 2804.3 4. 2784.5 - 3570.8 5. 3450 - 3760.5	Run 1. 399 - 1190.5 2. 1178.3 - 2800	Run 1. 2784.5 - 3760	Run 1. 399 - 1176 2. 1908 - 2785	Run 1. 3460 - 3750	Run 1. 3450 - 3760.5	Run 1. 3475 - 3760.5
	FDC/CNL-GR	GEODIP	CBL-VDL-CCL-GR	DLL-MSFL-GR	TDT	LSC-SONIC
	Run 3. 2784.5 - 3760.5	Run 1. 3476 - 3660	Run 3. 2686 - 2721.5	Run 1. 3450 - 3675	(open hole) Run 1. 3475 - 3758.9	Run 1. 2784.5 - 3750

LITHOLOGIC SYMBOLS

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

SHOW OR STAIN, HYDROCARBON CUT, FLUORESCENCE, GAS SHOW

SIDEWALL CORES: REC., REC. W/SHOW, NO REC; CORES: CORE NO.; DST; F.I.T.; CASING SHOE/LINER; BIT

THE WELL WAS NOT PRODUCTION TESTED DUE TO TECHNICAL REASONS.

RECOVERIES FROM RFT SAMPLE RUNS

RUN No.	DEPTH RKBM	MAX BHT (°C)	CHAMBER (gals)	PRESSURE (BARS)	GAS (m^3)	CONDENSATE (ccs)	WATER (ccs)	GRAVITY (API)
1	3644.0	103.4 110.6 107.2	1	220	0.75	150	450	44.0
3	3641.5	109.4 112.2 112.2	1 5	207 193	0.69 3.48	3200	2400	47.9, 45.6
4	3490.0		1 5	207 220	0.64 3.65	220 1500	120 2230	49.6 50.2, 50.3
5	3601.6		1 5	206 165	0.60 1.32	160 400	830 12000	45.9 47.5,47.6,48.2
6	3641.0 3640.4	110.0	1 5	172 172	0,52 2.52	100 1300	800 1300	48.5
8	3654.3	105.6 106.1	1 5	0 0	- -	- -	3600 18000*	
9A	3652.0		1 5	193 179	0,63 2.44	200 1000	700 9000	45.5 47.9
10	3535.7		1 5					

For additional RFT results, see "Report on Repeat Formation Tester" included in the 15/9-2 completion report.

WELL 15/9-2
COMPANY Statoil - Esso
0-7D
LEGEND
LITHOLOGY
CUTTINGS ANALYSIS
TOTAL GAS
METHANE
LIQUID HYDROCARBONS
DRILLING RATE
LITHOLOGY
ppm HYDROCARBONS IN MUD M=1000
all depths are from RKB
STATOIL ESSO
15/9 Nº 2
drilled with Ross Rig TF 103
spud: 0930 12 April 1978
water depth 108m.
RKB to water line 25m
drilling rate in METERS/HR.
30" CSG TO 171 M
denotes PPM
denotes UNITS
ALL DRILLING RATES FOR 26" HOLE WERE CONTROLLED TO HOLD DOWN MUD WEIGHT
SAND QTZ CLR CRSE GR SUB ROUND WELL SORT ABUND SHELL FRAG.
CLAY LT GRY SFT STKY NON CALC
SAND QTZ CLR SUB RD M GRN WELL SORT TR LIG UNCONSOL.
CLAY LT GRY SFT STKY V AREN
SPUD MUD
WT 1.06-1.13
WOB 2.76-5 TONNES
RPM 90-115
PP 1450-1600
SAND AS ABOVE
CLAY LT GRY V SFT STKY V AREN MICRO SILT MICA

WELLFILE

BAROID LOGGING SYSTEMS

No 31

BAROID PETROLEUM SERVICES

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

WELL 15/9-2 (ROSS RIG).
COMPANY STATOIL / ESSO.
NORTH SEA.
NORWAY.

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 MSL, ELEV: 25m. ABOVE PERM DATUM

WATER DEPTH 108m.

SAND CLAY SHALE LS

ADT LOG

REMARKS

SPUD DATE : 12 APRIL 78
30" CASING SHOE AT 171m
NB 2 S3SJ4

CLY - LT GY, SFT, STKY, NON - CALC, SDY.

20" CASING SHOE AT 399m
NB 3 S3SJ4

18/4/78

CLY - LTGY, MGY, OCC GRN GY, SFT, STKY, NON CALC, SDY, OCC SHELL FRAGS.

SD - CLR, VF-M GN, UNCON, SUB-RND, PR SRTD, ABNT SHELL FRAGS.

19/4/78

CLY - GY GRN, BRN, SFT-FIRM, SL SLTY.

13 3/8" CASING SHOE 1181m
20-23/4/78
NB 4 X3A

SD - CLR, F GN, W SRTD, RND - SUB RND, SHELL FRAGS.
CLYST - LT GY, SFT-FIRM, NON - CALC

SD - CLR, WH, F-M GN, SUB-ANG - SUB RND, PR SRTD.
CLYST - BRN, DK BRN, SFT-FIRM, SL SLTY, MICROMIC, NON CALC.

NB 5 X3 24/4/78.

CLYST - LT GY, BRN, SFT-FIRM, SL CALC, OCC SLTY.

LS - BUFF, WH, M HD

25/4/78
SD - CLR, F GN, RND, W SRTD.

NB6 X3

SH - LT GY, GN, FIRM, SL SLTY, FISS IN PT, SL CALC

SD - CLR, F GN.

SH - A/A BRN IN PT.
26/4/78

NB 7 X1G
27/4/78

SH - LT GY GRN BLU BRN, SFT FRM, SLI CALC.

NB 8 XV.

28/4/78.
SD - CLR QTZ, VF GN, SUB RD SUB ANG, WELL SORT.

NB 9 SVH.
LIG - BLK, SFT FRM.
29/4/78.

NB 10 FP 52.

30/4/78.
LS - WH LT GY BRN, FM, M HD, MCX.
1/5/78.
2-10/5/78 NB 11 XV
11/5/78 NB 12 XV
NB 13 WARC 75/TURBO

12/5/78

13/5/78

LS - OFF WH, LT GY, FHD, MICRITIC, OCC SL MARLY, W/ THIN SHALE STRINGERS.

MARL - WH, LT GY, F HD

14/5/78
NB 14 WARC 75/TURBO
MARL - LT GY, DK GY, SFT-FM.

15/5/78

SH - RED, RED BRN, FH D, SL CALC, MICRO-MICA.

SH - BLK, FHD, ORGANIC.

16/5/78.
NB 15 X1G.

NCB 1 C20.	17/5/78.
18/5/78.	RR CB1
19/5/78	RR CB1
20/5/78	CB2 C18
21/5/78	RR CB2
22-23/5/78	RR CB1
24/5/78	RR CB1
25/5/78	CB3 C18
26/5/78	RR CB3
27/5/78	RR CB3
28/5/78	NB19 SDVH
29/5/78	RR CB1
30/5/78	NB 20 FP52

31/5/78

1/6/78

00621