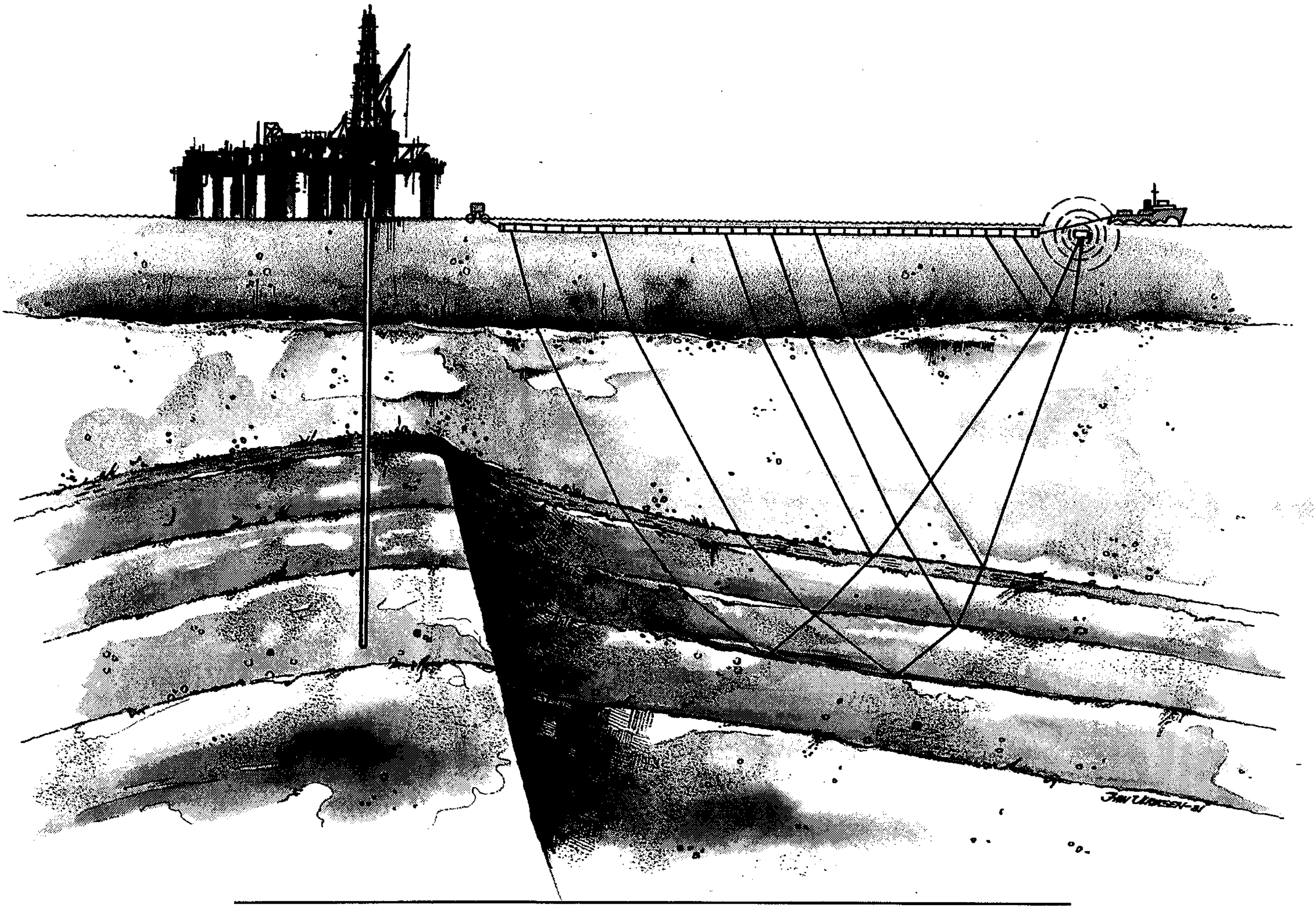
statoil



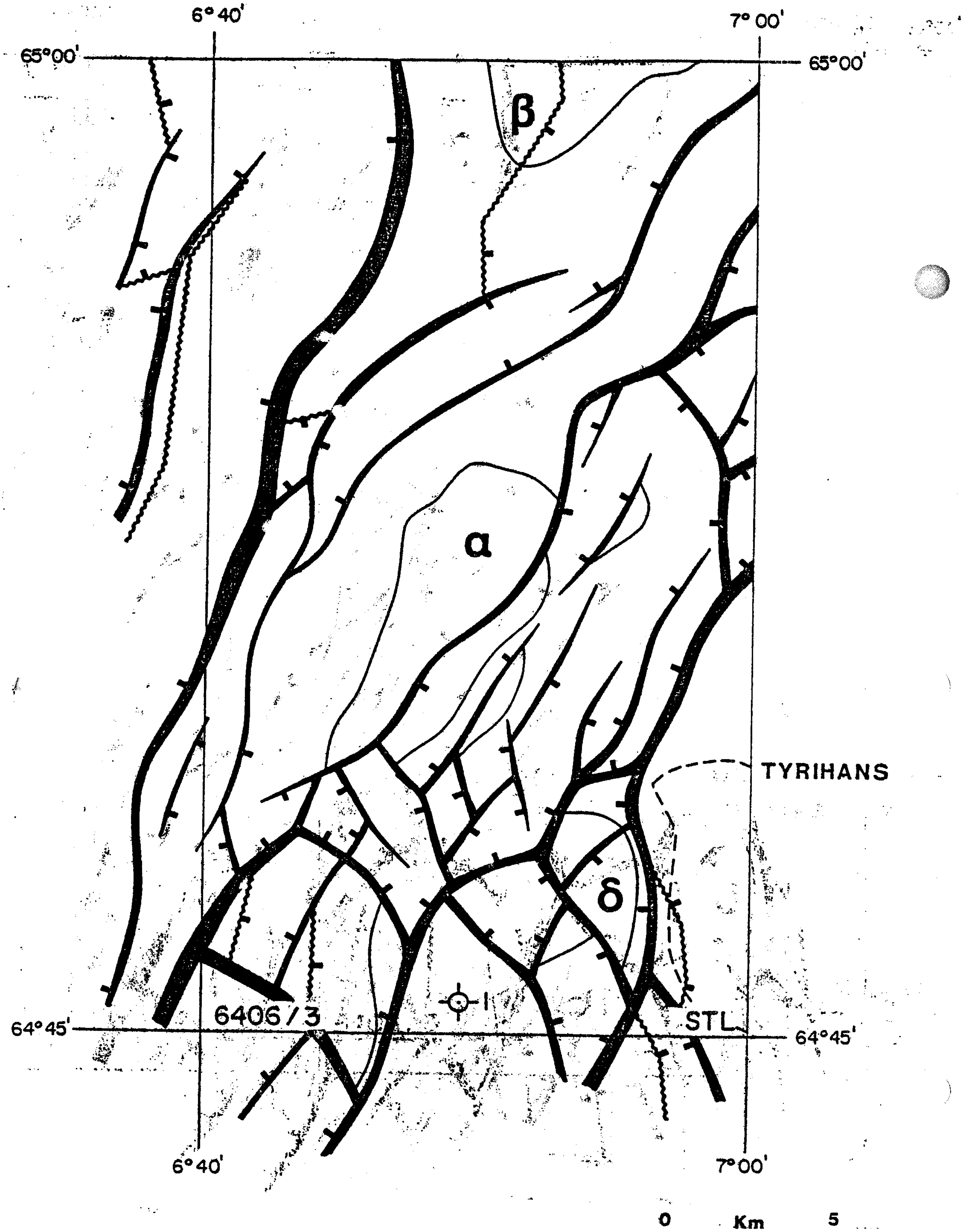
EXPLORATION & PRODUCTION DIVISION

Completion Report

Well 6406/3 - 1

PL 091 Statoil/Mobil/Saga Petroleum

LET/BER


6°40'
7°00'
65°00'
65°00'
β
α
TYRIHANS
δ
6406/3
1
STL
64°45'
64°45'
6°40'
7°00'
0 Km 5

CONTENTS

GENERAL INFORMATION

Well data record

a) Well designation: 6406/3-1

b) Well classification: Wildcat

c) Well location:

   i) Country: Norway, Haltenbanken

   ii) Licence: PL 091

   iii) Latitude: 64^{o} 45' 29.77"N

   iv) Longitude: 06^{o} 49' 21.77"E

   v) Seismic location: Shotpoint no. 950, line no. 911 279

   vI) Waterdepth: 256 m MSL

d) Rig data:

   i) Rig name: Ross Isle

   ii) Drilling draft: 23.5 m

   iii) RKB-MSL: 22 m

Purpose of the well

The purpose of the well was to test for possible hydrocarbon accumulations in sandstones of Middle and Lower Jurassic age.

Results of the well

The well was drilled to a total depth of 4902 m RKB into sediments of Triassic age. A hydrocarbon bearing Middle Jurassic sandstone was encountered at 3782 m RKB. A drillstem test however proved a low concentration of gas in a water phase. Further details will be available in a full test report.

WELL HISTORY

a) General:

i) Spud date: April 27, 1984

ii) Rig released: August 15, 1984

iii) Status: Plugged and abandoned

b) Contractors:

i)	Drilling platform:	Ross Isle
ii)	Drilling contractor:	Ross Drilling
iii)	Mudlogging contractor:	Exploration Logging Nòrge
iv)	MWD contractor:	Exploration Logging Norge
v)	Wireline logging contractor:	Schlumberger
vi)	Mud contractor:	Anchor Drilling Fluid
vii)	Cement contractor:	Dowell Schlumberger
viii)	Testing:	Flopetrol
ix)	Rig positioning:	Decca
x)	Bottom survey:	Geoteam
xi)	Helicopters:	Helikopter Service A/S
xii)	Supply boats:	Statoil boat pool

c) Casing:

30" shoe at 352 m RKB

20" shoe at 945 m RKB

13 3/8" shoe at 2148 m RKB

9 5/8" shoe at 3765 m RKB

7" liner at 4470 m RKB

d) A total of four cores were taken on 6406/3-1:

Core no. 1	3783.0-3794.5	Rec 11.2 m =	98 percent
Core no. 2	3794.5-3822.0	Rec 27.5 m =	100 percent
Core no. 3	3822.0-3847.0	Rec 24.3 m =	97 percent
Core no. 4	4537.0-3549.0	Rec 11.0 m =	91 percent

Core 1-3 were in Middle Jurassic sandstone. Core 4 was in the Lower Jurassic "Coal Unit".

e) Mudlogging:

A full computorised logging service was run. All drilling parameters and gas values including chromatograph break down were recorded every metre real time and lagged to depth.

f) Logging Whilst Drilling:

A MWD service was used from 980 m to 4472 m. This recorded gamma ray, short normal resistivity, directional surveys, mud temperature and mud resistivity. No tools were run in the intervals 2177 - 83 m and 3375 to 3847 m.

g) Wireline log runs are listed below by tool type:

<u>ISF/LSS/MSFL/GR</u>

351.5-958: Run 1A
942-2133: Run 2B
2147.2-3371.8: Run 3C
3763.2-3843.5: Run 4D (MSFL not run)
3763-4497: Run 5E
4470-4902: Run 6F (MSFL not run, BHC ran instead of LSS)

<u>LDL/CNL/GR</u>

351.5-960: Run 1A (CNL not run)
942-2159: Run 2B
2147-3766.5: Run 3C (SGR from NGS)
3763-4489: Run 5D
4480-4903: Run 6E (SGR from NGS)

<u>DLL/GR</u>

3763-4494.5: Run 5A

<u>NGS</u>

3450-3761: Run 3A
3761-4463: Run 5B
4480-4893: Run 6C

SHDT/GR

2147-3771.5: Run 3A

3763-4498: Run 5B

HDT

4468-4899.5: Run 6A

CST/GR

2181-3772.5: Run 3A

3660-3774: Run 3B

3780.6-4486.5: Run 5C (STL)

4490.2-4900: Run 6D

RFT/GR

3784-3840: Run 4A

3784.5-4084.5: Run 5B

3784.5-3832: Run 5C (sample run)

WST Check Shot

619-3900: Run 5A

3939-4904: RUn 6B

CBL/VDL/GR

700-2147: Run 3A

3000-3760: Run 5B

2000-4466.5: Run 7C

Processed data

Cluster and dual dip: 2147-3771

Cluster and dual dip: 3763-4498

Cluster (HDT): 4468-4899

Synthetic seismic (geogram)

Seismic Calibration log

VSP

REPORTS ON 6406/3-1

Summary Reports

Drilling programme		
Site Survey Report		Geoteam
Test programme		Statoil
Final DLWD Report		Exlog
Final Well Report		Exlog
Test report	(in preparation)	Statoil
RFT Report		Statoil
Petrophysical Report	(in preparation)	Statoil

Testing

Well Testing Report	Flopetrol
Pressure Survey Report DST I	Sperry Sun
Wellsite gas and water analysis	Corelab
Water analysis/RFT	Statoil
Water analysis	Corelab

Seismic

Navigation positioning of "Ross Isle"	Racal
VSP-report 2820-3900 m + 12 plots	Schlumberger
Supplement of VSP-report (no. 5) plot 13-16	Schlumberger
WSC/GEO 359-4897 m	Schlumberger
GEO 359-4897 m	Schlumberger

Coring

Core Gamma Surface log spec. log	Geco
Core Photo, core 1-3	Geco
Routine Core Analysis	Geco
Core Photo, core 4	Geco

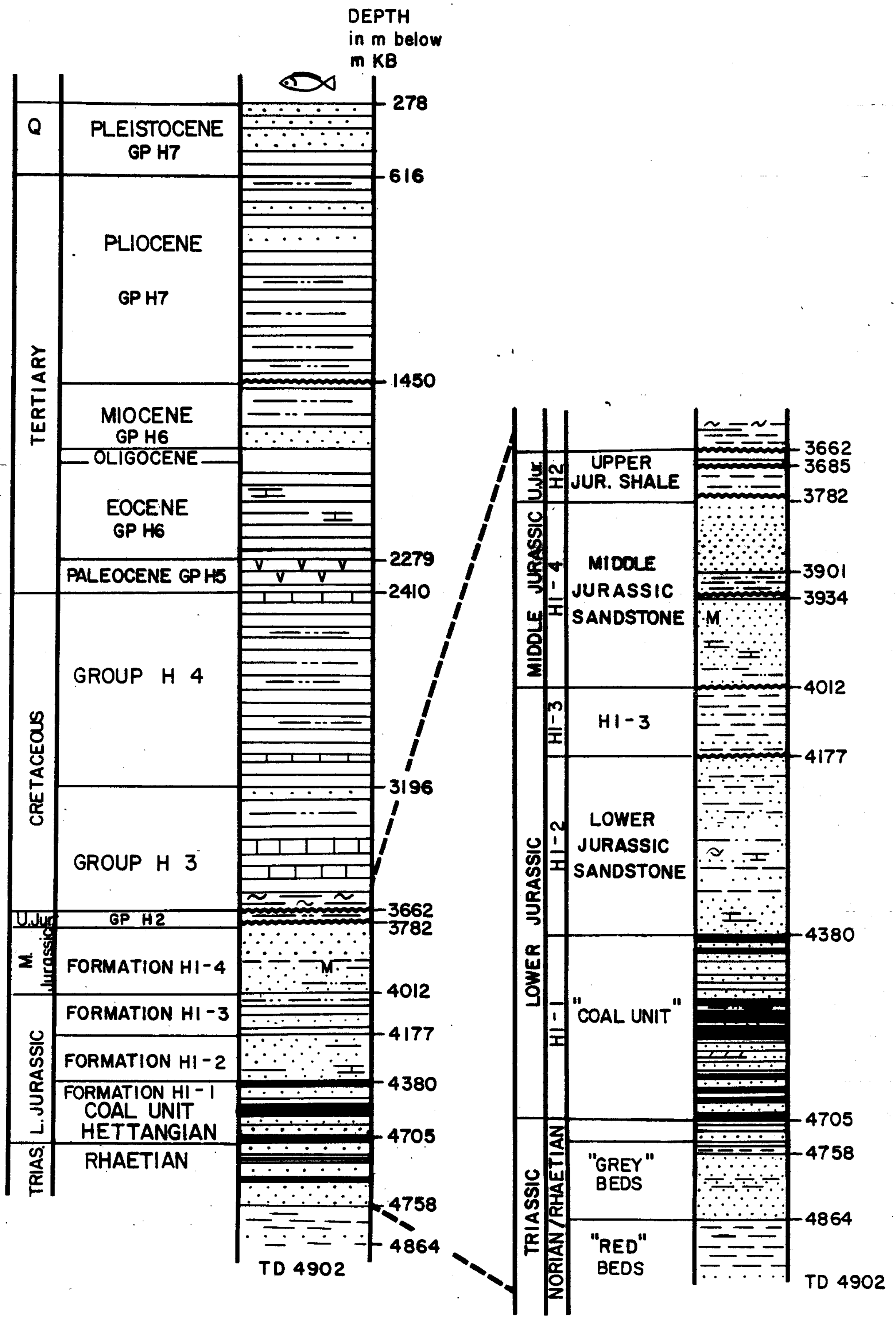
Biostratigraphy

Biostratigraphy.	Kerogen analysis prepared + st.	Stratlab

Geochemistry

Gas composition	Statoil
Report of stable isotops on test gas sample	Inst. for Energy Techn.
Geochemical evaluation of Statoils Haltenbaken well	Geochem

6406/3-1
GENERALIZED STRATIGRAPHY



6406/3-1 STRATIGRAPHY

		MKB
QUATERNARY	H7	278
PLIOCENE	H7	616
MIOCENE	H6	1450.3
BALDER	H5-2	2279
LISTA/SELE	H5-1	2347
CRETACEOUS	H4	2410
(L. CRETACEOUS)	H3	3196
APTIAN		3583
UPPER JURASSIC	H2-2	3662
HEATHER EQ	H2-1	3685
UPPER SST	H1-4	3782
SLTST	H1-4	3901
LOWER SST	H1-4	3934
DUNLIN EQ	H1-3	4012
LOWER JURASSIC SANDSTONE	H1-2	4177
"COAL UNIT"	H1-1	4380
TRIASSIC		4705
GREY BEDS		4758?
RED BEDS		4864?

GEOPHYSICAL SUMMARY, WELL 6406/3-1

Reflector	Formation	TWT (S)	Depth (m MSL)	Depth (m RKB)	Thickness (m)	Int.vel.[1] (m/s)
						1480
Seafloor	H7	0.376	278	300		
					1150.3	2258
Miocene	H6	1.395	1428.3	1450.3		
					828.7	2122
Paleocene	H5-2	2.176	2257	2279		
					68	
	H5-1	2.235	2325	2347		2079
					63	
Cretaceous	H4	2.302	2388	2410		
					786	
	H3	2.918	3174	3196		2633
					466	
Kimm.unc.	H2-2	3.253	3640	3662		
					23	
	H2-1	3.271	3663	3685		2727
					97	
M.Jurassic unc.	H1-4	3.341	3760	3782		
					230	3651
L.Jurassic shale	H1-3	3.467	3990	4012		
					165	
	H1-2	3.556	4155	4177		
					203	3777
	H1-1	3.663	4358	4380		
					325	
Intra Coal unit (Triassic)	Intra H1-1	3.834	4683	4705		
					99	
	Gray beds	3.863	4736	4758		
					106	
	Red beds	3.918	4842	4863		

1 Between reflectors

Stratigraphical breakdown Well 6406/3-1

Top of interval	
460m	Pleistocene
630m	Pliocene
1470m	Late Miocene - Early Pliocene
1590m	Late Miocene
1770m	Middle Miocene
1860m	Early Miocene
1920m	Late Oligocene
?1950m	Early Oligocene
- - - - - - - - - -	? Unconformity
1980m	Middle-Late Eocene
2190m	Early Eocene
2290m	Late Paleocene - Early Eocene
2320m	Late Paleocene
2380m	Early Paleocene
- - - - - - - - - -	? Unconformity
2410m	Early Paleocene (Danian)
- - - - - - - - - -	Unconformity
2425m	Late Campanian - Early Maastrichtian
- - - - - - - - - -	Unconformity
2440m	Early Campanian
2515m	Early Campanian
2620m	Late Cretaceous (?Turonian-Santonian)
- - - - - - - - - -	? Unconformity
3205m	Albian
- - - - - - - - - -	Unconformity

3655m Barremian

\- Unconformity

3666m ?Portlandian

\- ? Unconformity

3668m Oxfordian

3686m Early Oxfordian

3698m Callovian / Early Oxfordian

\- Unconformity

3774m Early Bathonian

\- ? Unconformity

3895m Late Toarcian - Aalenian

4030m Late Toarcian

4075m Late Pliensbachian - Early Toarcian

4195m ?Pliensbachian

\- ? Unconformity

4255m Hettangian - ?early Sinemurian

\- ? Unconformity

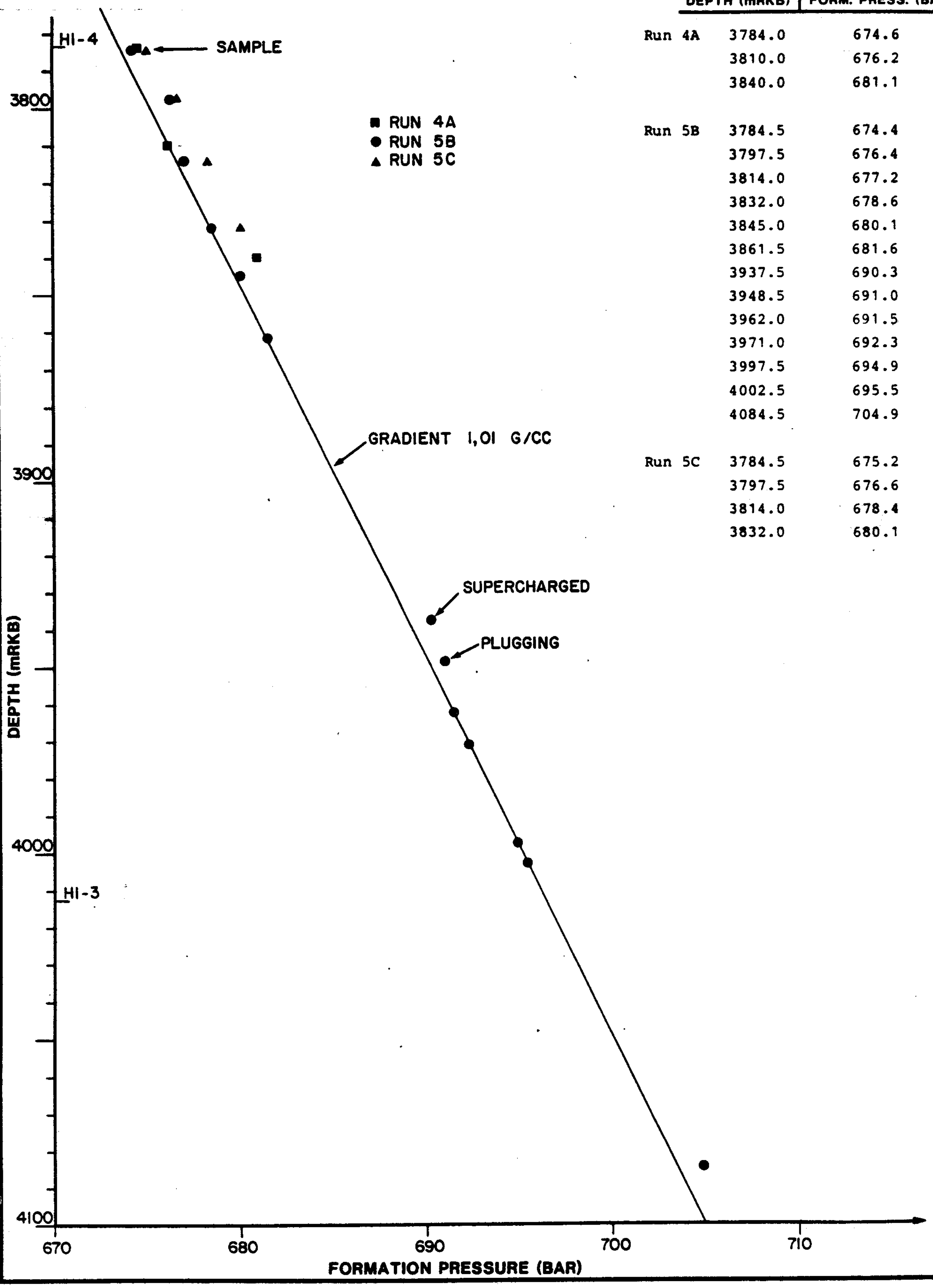
4705m Rhaetian

4885m Late Triassic (unspecified)

4901.8m TD

WELL : 6406/3-1	RFT PRESSURES	statoil Den norske stats oljeselskap a.s
FORM. : HI-4 / HI-3		MADE BY/DRAWN BY: TH AS
RUN no.: 4A, 5C, 5B		DATE: 18.01.85

	DEPTH (mRKB)	FORM. PRESS. (BAR)
Run 4A	3784.0	674.6
	3810.0	676.2
	3840.0	681.1
Run 5B	3784.5	674.4
	3797.5	676.4
	3814.0	677.2
	3832.0	678.6
	3845.0	680.1
	3861.5	681.6
	3937.5	690.3
	3948.5	691.0
	3962.0	691.5
	3971.0	692.3
	3997.5	694.9
	4002.5	695.5
	4084.5	704.9
Run 5C	3784.5	675.2
	3797.5	676.6
	3814.0	678.4
	3832.0	680.1



WELL 406/3-1

DATE 22/[illegible]-84

RUN NO. 4A

PRETEST RECORDED DATA

TAB

Max. recorded temp.: 114.8°C

Test No.	Depth	Tem	Log hydr. before t.	Corr. hydr. before t.	Draw down	Build up time	Log Pretest pressure	Cor. Pretest pressure	Log hydr. after t.	Cor. hydr. after t.	Remarks
	m	C	bar	bar	bar	sec	bar	bar	bar	bar	
1	3784	107.2	706.07	704.35	676.08	3	676.22	674.57	706.07	704.35	
2	3789	109.3	707.31	705.59	4.25	-	-	-	707.31	705.59	Tight formation
3	3810	111.6	710.97	709.25	677.32	42	677.87	676.22	710.97	709.25	
4	3840	114.8	716.76	715.04	680.56	42	682.77	681.10	716.69	714.97	
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

WELL 406/3-1

DATE 6/[illegible]4

RUN NO. 5B

PRETEST RECORDED DATA

TAB

Max. recorded temp.: 129.4 C

Test No.	Depth	Tem	Log hydr. before t.	Corr. hydr. before t.	Draw down	Build up time	Log Pretest pressure	Cor. Pretest pressure	Log hydr. after t.	Cor. hydr. after t.	Remarks
	m	C	bar	bar	bar	sec	bar	bar	bar	bar	
1	3784.5	116.5	709.86	712.00	671.65	5	672.21	674.42	709.86	712.00	
2	3797.5	116.9	712.96	715.10	674.01	9	674.21	676.42	713.10	715.24	
3	3814.0	117.2	715.17	717.31	674.15	5	674.97	677.18	715.38	717.52	
4	3832.0	117.5	718.27	720.44	671.18	4	676.35	678.59	718.27	720.44	
5	3845.0	118.0	720.89	723.06	675.94	4	677.87	680.11	720.96	723.13	
6	3861.5	118.1	723.93	726.10	673.18	18	679.39	681.63	723.93	726.10	
7	3937.5	124.6	738.61	740.85	441.65	84	687.93	690.31	737.85	740.09	Supercharged
8	3948.5	125.1	739.99	742.23	233.64	–	688.62	691.00	740.06	742.30	Plugging
9	3962.0	125.5	742.68	744.89	685.31	20	689.11	691.49	742.47	744.68	
10	3971.0	125.8	744.13	746.34	677.87	26	689.87	692.25	744.13	746.34	
11	3997.5	126.1	749.30	751.51	691.38	12	692.49	694.87	749.09	751.30	
12	4002.5	126.2	749.85	752.06	691.73	42	693.11	695.49	750.13	752.34	
13	4084.5	129.4	765.57	767.71	690.35	12	702.55	704.87	765.50	767.64	
14											
15											
16											
17											
18											
19											
20											

WELL 06/3-1

DATE 5/[illegible]

RUN NO. 5C

PRETEST RECORDED DATA

TAB

Max. recorded temp.: 118.4° C

Test No.	Depth	Tem	Log hydr. before t.	Corr. hydr. before t.	Draw down	Build up time	Log Pretest pressure	Cor. Pretest pressure	Log hydr. after t.	Cor. hydr. after t.	Remarks
	m	C	bar	bar	bar	sec	bar	bar	bar	bar	
1	3784.5	117.8	713.58	715.93	672.49	6	672.91	675.18	713.79	716.04	Sample
2	3797.5	118.2	716.21	718.34	673.87	6	674.29	676.56	716.51	718.34	
3	3814.0	118.3	719.45	721.65	674.84	2	676.15	678.42	719.45	721.65	
4	3832	118.4	722.89	725.03	673.94	40	677.80	680.07	722.83	724.96	
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

statoil

PRELIMINARY TEST RESULTS
WELL 6406/3-1

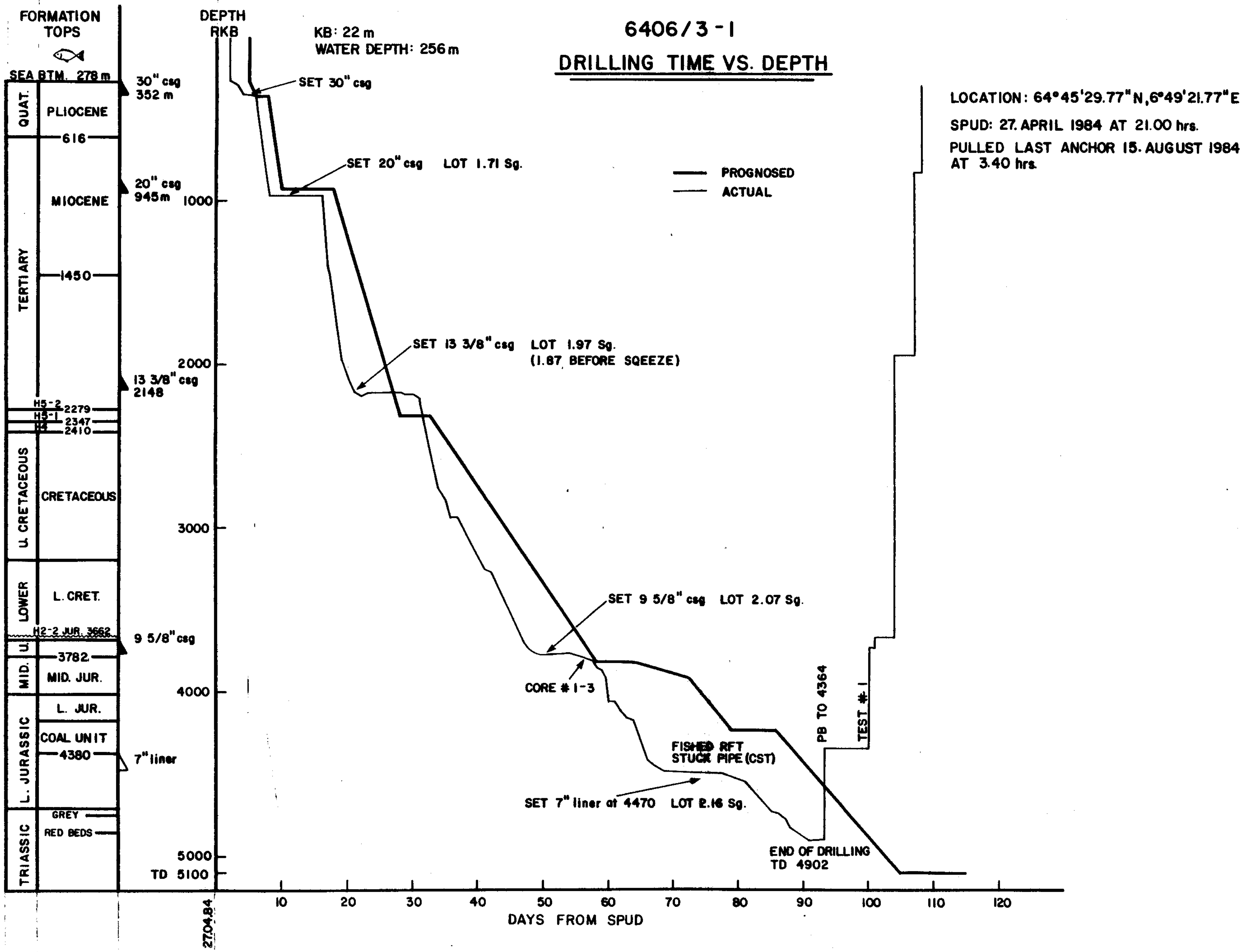
TEST NO. 1

PERF. INTV.	:	3782.5 - 3787.5 M RKB	
OPERATION	:	INITIAL FLOW	: 1 MIN
		INITIAL B.U.	: 60 MINS
		FINAL FLOW	: 618 MINS
		FINAL B.U.	: 583 MINS
RESULTS	:	WATER RATE	: 1469 M^3/D
		GAS RATE	: 8763 SM^3/D
		F WHP	: 107 BAR
		F BHP	: 586 BAR
		BHP	: 672 BAR
		BHT	140 DEG C

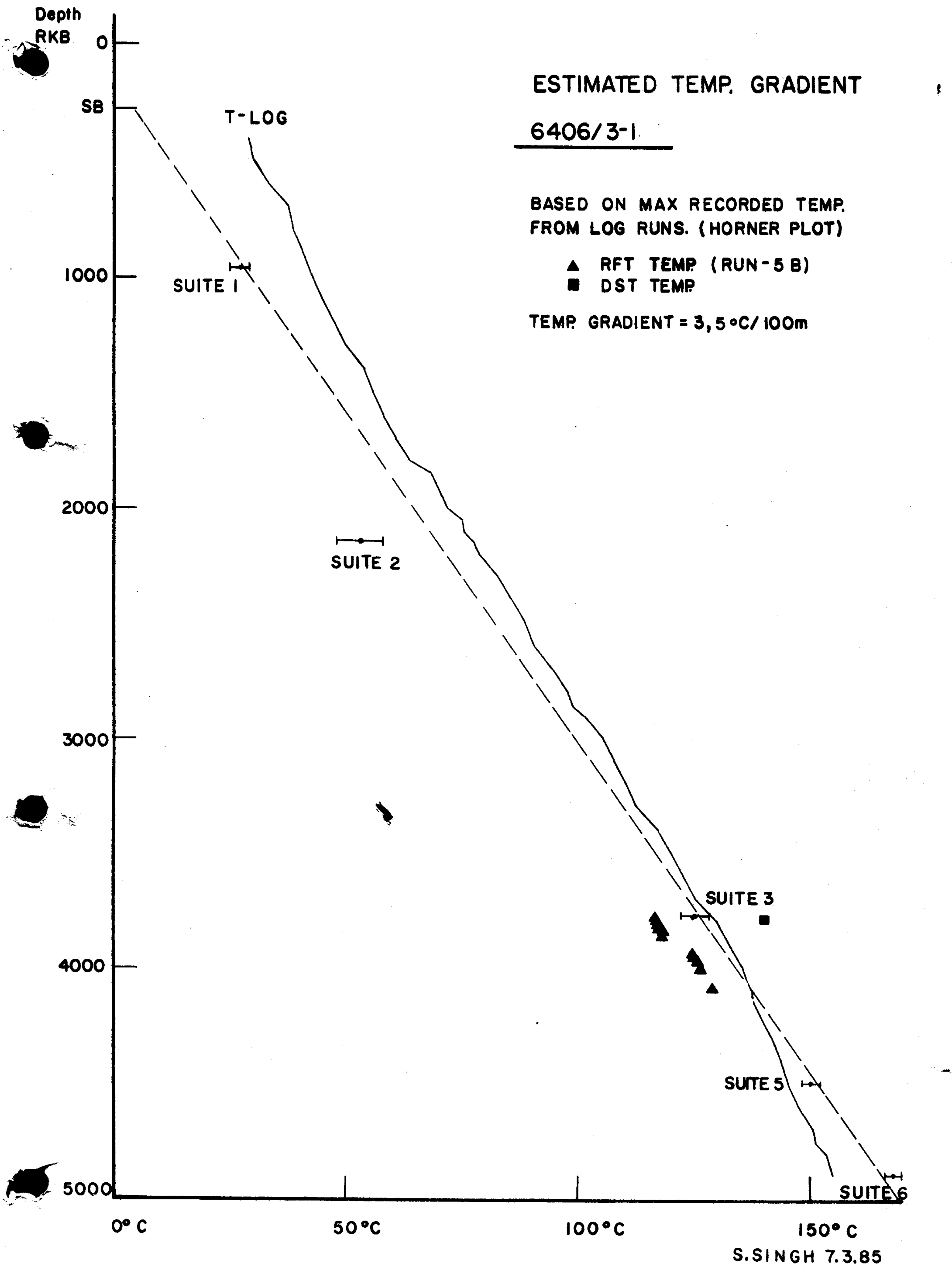
WELL 6406/3-1

PRELIMINARY LOG EVALUATION

INTERVAL	NET SAND
3783-3900 (117 M)	81.7 M
AVERAGE SHALE VOL.	9%
AVERAGE POROSITY	15%



6406/3-1
DRILLING TIME VS. DEPTH
FORMATION TOPS
DEPTH RKB
KB: 22 m
WATER DEPTH: 256 m
LOCATION: 64°45'29.77"N, 6°49'21.77"E
SPUD: 27. APRIL 1984 AT 21.00 hrs.
PULLED LAST ANCHOR 15. AUGUST 1984 AT 3.40 hrs.
PROGNOSED
ACTUAL
SEA BTM. 278 m
QUAT.
PLIOCENE
616
TERTIARY
MIOCENE
1450
H5-2 2279
H5-1
H4 2347
2410
U. CRETACEOUS
CRETACEOUS
LOWER
L. CRET.
H2-2 JUR. 3662
U.
3782
MID.
MID. JUR.
L. JURASSIC
L. JUR.
COAL UNIT
4380
GREY
RED BEDS
TRIASSIC
30" csg 352 m
20" csg 945m
13 3/8" csg 2148
9 5/8" csg
7" liner
1000
2000
3000
4000
5000
TD 5100
SET 30" csg
SET 20" csg LOT 1.71 Sg.
SET 13 3/8" csg LOT 1.97 Sg. (1.87 BEFORE SQEEZE)
SET 9 5/8" csg LOT 2.07 Sg.
CORE # 1-3
FISHED RFT
STUCK PIPE (CST)
SET 7" liner at 4470 LOT 2.16 Sg.
END OF DRILLING TD 4902
PB TO 4364
TEST # 1
27.04.84
10
20
30
40
50
60
70
80
90
100
110
120
DAYS FROM SPUD


ESTIMATED TEMP. GRADIENT
6406/3-1
BASED ON MAX RECORDED TEMP. FROM LOG RUNS. (HORNER PLOT)
RFT TEMP (RUN-5 B)
DST TEMP
TEMP GRADIENT = 3,5 °C/100m
Depth RKB
0
SB
1000
2000
3000
4000
5000
T-LOG
SUITE 1
SUITE 2
SUITE 3
SUITE 5
SUITE 6
0° C
50°C
100°C
150° C
S.SINGH 7.3.85

LITHOLOGICAL SUMMARY

GROUP H7 352 - 1450 m KB

Quaternary

Pleistocene 352 - 616 m KB

The Pleistocene section was interbedded sands and clays. Sands dominate down to 435 m after which the clay fraction increases and the number of clean sands decreaces.

The sands were clear-white, very fine to granules with abundant lithic fragments. Clay was medium grey soft, swelling and silty. Shell fragments forams, lignite and mica were abundant traces throughout the section, particularly in the cleaner sand beds.

The top of the section is determined by the commencement of sampling at 352 m, but it is probable that similar lithology continues to the seabed. The base of the section was defined by a log break at 616 m, and is supported the appearence of Pliocene fossiles in the first sample examined below 616 m.

Tertiary

Pliocene 616 - 1450 m KB

The remainder of Group H7 is predominently clay with sandy interbeds. The final 50 m from 1400 - 1450 was almost all sand with shell fragments.

The Claystone becomes firmer at the Pleistocene/pliocene boundary, otherwise it resembles that described in the section above. By 1050 m the claystone is noticably lighter in colour being described as light to medium grey, silty and sandy. Sands in the section are finer than in the overlying Pleistocene, they appear in fairly discrete beds and are moderately well sorted. Shell fragments continue to be associated with the sands. A shallow marine environment is likely.

The section is Pliocene in age. The upper boundary is marked by a distinctive log break. The lower boundary is very distinct on the sonic log and resistivity confirming less dense rock from 1450 down.

GROUP H 6 1450 - 2279 m KB

Miocene - Early Eocene

The "H6 group" consists of dominantly argillaceous series of lithologies varying from interbedded sands and clay at the top to high smectite claystone at the base.

The first 35 m of the group penetrated had a high sand content. This was described as quartz, very fine to fine, loose, subrounded to subangular and grading to siltstone. After 1485 claystone dominates. The claystone was both light grey and green grey, soft, sticky and non calcareous. From 1835 m to 2100 m the claystone is interbedded with, and grads to a siltstone. This was, light medium brown grey, moderately hard and lightly calcite cemented. A prominent limestone stringer was recorded on the logs at 1856 m. Limestone stringers become more common with depth. These stringers are a regular feature from 2100 m to 2279 m. The claystone interval was a cleaner claystone described as green grey, to light grey, soft sticky and non calcareous. The limestones were white to light grey and variable in hardness. This claystone interval is thought to correspond to a high smectite clay identified from other wells in the area. Traces of tuff were found towards the base of the unit emphasising the volcanogenic influence over the mineralogy of the clay.

The top of the H6 group was diagnosed from the log break at 1450 m which was conspicuous on the sonic log. The base of the unit was taken where a distinctive increase in resistivity and density show the characteristic response of the H5-2 formation.

The age of the group spans Late Miocene/Early Pliocene to Early Eocene. The Early Eocene section corresponding to the cleaner clays at the base.

GROUP H5 2279 - 2410 m KB

Early Eocene - Early Paleocene

Formation H5-2 2279 - 2347 m

The H5-2 formation consists of a mixed lithology of varying claystones, minor tuffs and limestone. The claystone was predominantly green grey with variation of light grey, blue grey and dark green. Variable tuff content, glauconite and pyrite account for these colour changes. Thin limestone stringers were described as white, and soft to firm.

The top of the formation shows a characteristic increase in sonic velocity and resistivity. The base is less distinct but can be taken where the resistivity drops to the fairly uniform value of the underlying H5-1 formation. The H5-2 is Late Paleocene to Early Eocene. Formation H5-1 2347 - 2410 m KB. The H5-1 is similar to the H5-2, however a reduction in tuff occurs with depth. Claystones were generally as above with more discrete ashy tuff layers.

The top and base of this formation can be identified by a lower and more uniform resistivity curve. The age of the formation covers Early Paleocene to Late Paleocene.

GROUP H4 2410 - 3202 m KB

Upper Cretaceous

The Cretaceous of 6406/3-1 is of considerable thickness and is lithological dissimilar to that of the North Sea. A purely informal nomenclature based on informal lithological units is used.

"The Marly unit" 2410 to 2430 m

This unit consists of marl and interbedded limestone stringers. Marls were brown grey green, soft and waxy. The limestones white-light brown, moderately hard and with calcite viens.

The top of the unit is marked by a distinctive gamma ray peak and the onset of higher resistivity and sonic velocities at 2410 m. The base was taken at 2430 m where the resistivity becomes more uniform again. The top has the symptoms of an unconformity and gave high gas concentrations whilst drilling. The most limey section from 2410 to 2425 m is Danian in age and the remainder Late Campanian to Early Maastrichtian.

"The Siltstone/Claystone unit" 2430 to 2597 m KB

The Siltstone/Claystone unit is dominated by a medium-brown grey siltstone described as hard, pyritic and slightly calcareous. This siltstone is however generally argillaceous and grades in places to claystone. The log character suggests a very finely bedded unit with stringers of fine sand, siltstone or limestone. Glauconite and pyrite are common accessories and complete a picture of a shallow marine environment just too low in energy to bring about sand deposition.

The top of the unit was defined by the lower smoother resistivity curve which starts at 2430 m and the drop in marl. The base of the unit was taken at a distinct knick in the resistivity and sonic logs at 2597 m. The age of the unit is mostly Early

Campanian with a little Late Campanian or Maastrictian material in the top 10 metres. Log curves suggest an unconformity at the base of the unit.

"Interbedded claystones and Sandstones" 2597 - 2900 m

This unit varies from the above in the increased differentiation of the sediments into claystone and sandstone. Claystone predominates however both sandstone and siltstones are common as thin interbeds.

The claystone were described medium brown to brown grey, firm, variable calcite content from moderate to very calcareous. The sandstones were generally in thin beds and described as clear-white, quartz very fine well sorted and loose. One such sand at 2850 m is notable for being five metres thick with a gas show. The lower half of the section from 2750 m displayed increased silt content in the claystone, discrete beds of siltstone were also logged. Colours were as for the claystone, calcite and clay were matrix material, localy the silt grads to very fine sand. The top and base of the unit are best defined from the resistivity and sonic logs. Both display a very ragged curve from the interbedded nature of these sediments. 2900 m is an arbitary level below which there is generally less interbedding. The age of the unit is believed to be Turonian to Santonian diagnosic fossils are sparse in this section and a more detailed stratigraphy is not possible at present.

"The Claystone/Shale and Silty unit" 2900 - 3196 m

This section is less regularly interbedded than the one above with cleaner claystones. Siltier parts and limestone stringers are common. The claystone was described as medium brown grey, firm to hard, silty - occasionaly sandy, calcareous, pyritic, glauconitic, micaceous and shaly. The silty parts were as described in the unit above. Limestone stringers occur more frequently below 3000 m, marly claystones are found at 3050 and 3100 metres. The upper boundary was defined by the cleaner claystone and shalyness from 2900 m down. The base is transitional with a new interbedded sand unit becoming dominant below 3196 m. The unit can be regarded as having smoother resitivity curves than the units above and below. Age of the unit is Turonian to Santonian. Biostratigraphic control is poor.

GROUP H3 3196 - 3662 m

"The Lower Cretaceous"

The devision between the H4 and H3 groups is well defined by an interbedded sandstone-claystone unit correlatable with other wells. The exact age relationship is problematic as paleodata is sparse at this depth. A biostratigraphic hiatus is suggested at 3205 m which may separate Upper and Lower Cretaceous sections.

"Interbedded Coarse to Medium Sandstones and Siltstones"
3196 - 3250 m

This unit was dominantly siltstone, but this grades to a sandstone. The sandstone is generally fine to medium with local course grains. Variations in cementation can be seen from the E-logs, but sand in the samples is mainly loose. The interbedded siltstones are described as light grey to light brown grey, argillaceous and sandy. Both sandstone and siltstone becomes fine with depth, the last ten metres of the section becomes just claystone.
The upper boundary of the unit was taken at the top of the first sandstone at 3196 m. The base of the unit was picked at the top of a gamma ray peak at 3150 m. This is a correlatable event in the area. The unit is albian in age.

"The Claystone and Shale unit with minor limestones"
3250 - 3577 m

The majority of the section from 3250 to 3577 m was claystone, however local siltstone and marly development occur. Several gamma ray peaks were observed and proved to be carbonaceous claystone with strong hydrocarbon odor. At 3260 m and 3300 m slight traces of cut and flourecence were recorded.
The claystone generaly were described as medium grey, brown grey and green grey, soft to firm, from blocky to subfissile, non calcareous, silty and occasionly sandy. The siltstones were light to medium grey, friable, slightly calcareous and sandy.

Limestones varied from hard crystaline and dolomitic to soft argillaceous and marly.

The upper boundary of the unit was taken on the gamma ray peak at 3250 m, the lower boundary between two peaks on the sonic log at 3577 m. A distinct lithological change occurs at this level but with no unique character on the logs.
The entire unit is dated as Albian. A shallow marine environment is likely. The marly developments may be an alternative to sand development in other wells.

<u>The "Basal Marl Unit" 3577 - 3662 m</u>

This interbedded unit of marls, limestones and claystones contains several beds of a strong red brown colour. The top most claystone was reported as brick red-brown, firm to soft, blocky and non calcareous. A light-medium grey marl follows. This marl was described as soft to firm, blocky and silty locally grading to claystone. Multi colour claystones also occur and traces of sand. At 3650 m another cycle of red claystone and marl occurs below which a well defined limestone forms the base of the unit. The limestone was white to light grey, firm to hard crystaline and locally marly.

The top of the unit was picked between two sonic peaks on the logs. However, the distinctive colour change in the samples is more diagnostic of the boundary. The lower boundary coincides with both a distinctive lithology change and dramatic shifts in the log curves. The rapid increase in gamma ray and transit time at 3662 m confirm a major break in sedimentation. Age of the unit was recorded as Albian.

JURASSIC

GROUP H-2 The "Upper Jurassic shale group"

Formation H2-2 3662 - 3685 m

This formation displays typical Upper Jurassic shale characteristics. The shaly claystone is described as medium dark brown grey, firm, subfissile, blocky- and platy, carbonaceous. The high gamma ray and sonic transit time are also typical of the Upper Jurassic (Draupne formation) of the North Sea. Samples were organically rich, cut and fluorescence is reported from the cuttings, background gas increased sharply and includes heavier gases.

The top of the formation was clearly defined by an abrupt break in the gamma ray and sonic. The base was taken at the lowest point on the resistivity log at 3685 m, this being consistant with other wells in the area. However marked changes in gamma ray and sonic occur at 3675 m and a boundary between Oxfordian and Portlandian ages occurs even higher. It is probable that one or more unconformities occur within the area of uncertainty.

Formation H2-1 3685 - 3782 m KB

This formation is similar in characteristics to the H2-2 above but is generaly lower gamma ray sonic transit time and resistivity. The claystone/shale was described as dusky, yellowish brown and light medium brown grey in colour, blocky to subfissile, micromicaceous, non calcareous and silty locally. Limestone stringers were common and a silty layer occurs approximately 25 m from the base of the formation. Strong shows are recorded from cuttings in the upper part although sidewall cores did not confirm this. Pyrite, glauconite and calcite were common assessories.

The top of the formation was picked at 3685 m - see discussion under H2-2. The base of the formation was clear on drill rate, gamma ray and sonic log. The gamma ray drops abruptly from 120 API to 20 API.
The age of the unit ranges from Early Bathonian to Early Oxfordian.

GROUP H1

Formation H1-4 3782 - 4012 "The Middle Jurassic Sandstones

The Middle Jurassic can be divided into three units. The "upper sandstone member" the "siltstone-claystone member" and the "lower sandstone member".

The "Upper Sandstone Member" 3782 - 4012 m

The upper sandstone member was cored from 3783 to 3847 m. A complete description of the sandstone is available in the core description. In general it is a fairly uniform clean sand with minor shaly, limy and micaceous developments.
The sandstone was described as clear quartz, medium, occasionaly fine and coarse, moderately well sorted, subangular to subrounded, friable to hard, generaly lightly silica cemented, locally calcite cemented and generaly fair to good porosity. Locally kaolin and tourmaline occur in abundance.
The basal 30 metres of sandstone show higher gamma ray and tighter beds. This was caused by silty layers or micaceous lamination.

The top of the unit is clearly defined at 3782 m by a sharp drilling break and a marked drop in gamma ray. The base of the unit was picked at 3901 m where a thin limey peak devides the silty sand from the dominantly siltstone unit below.
The age of the sandstone unit is believed to be Early Bathonian. The basal 5 metres are dated as Late Toarcian-Aalenian.

The "Siltstone Claystone Member" 3901 - 3934 m

The siltstone claystone member show a mixture of siltstone-sandstone and claystone in finly dominated or intimate mixtures. In general it became more shaly with depth.
The claystone and siltstone was described as medium grey, locally dark grey or light grey, soft to firm, non calcareous, locally very carbonaceous.

The top of the unit was defined by the limey peak mentioned above where siltstone predominates over sandstone. The base was defined by the apperence of a new clean sandstone at 3934 m best defined by a drop in gamma ray and a slight step in the sonic. The whole of the unit lies within the Late Toarcian-Aalenian period.

The "Lower Sandstone unit" 3934 - 4012 m

This predominantly sandstone unit consists of a series of fining up cycles. The sandstone was described as clear to transparent, medium to coarse occasionally very coarse, subangular to subrounded, poor to moderately sorted, loose or occasionally moderatly silica cemented. Kaolin was a common accessory. The local claystone developments were light-medium brown grey in colour, soft to firm, slightly swelling, calcareous, silty and carbonaceous.

The top of the unit has been defined above. The base was taken on a tight limey peak at 4012 m. This peak in well defined on the resitivity sand sonic logs and is probably responsible for the "Lower Jurassic reflector".
The whole of the unit lies within a Late Toarcian-Aalenian age section.

Formation H1-3 4012 - 4177 m

The H1-3 formation is a mixed lithology formation in which sandstone dominates. Sandstone and claystone are present as clean interbeds and also as mixed lithologies grading to siltstone.
The top most sandstone grads to a claystone at 4040 m. The sandstone was very fine to fine, well sorted with hard calcite and silica cement. The claystone was medium grey-brown, soft and calcareous, silty and sandy. A different sandstone was encountered at 4060 m. It was described as fine-medium - well sorted and calcite cemented. A five metre bed at 4081-4086 m is a well defined coarse grained bed with good porosity, beneath which the sediments gradually fine into a claystone. Several fine and medium sandstones occured within the remainder of the formation down to 4177 m. Meanwhile the interbedded claystone becomes darker in colour and harder.

The top of the formation was picked at the tight peak at 4012 m below which finer tighter sand occurs. The base of the formation was picked at 4177 m, where a new sandstone appears which was cleaner with lower gamma ray. The boundary is more clearly defined on other wells with which this one has been correlated. The formation is Toarcian to Late Pliensbachian in age.

Formation H1-2 4177 - 4380 m

The H1-2 formation is a major sandy section of Lower Jurassic age. The sandstones are generally tight or dirty but locally cleaner higher porosity beds occur.

The sandstone was described as medium well sorted angular to subrounded silica cemented with poor porosity. At 4350 m a coarser bed occurs with poor sorting from very fine to very coarse grains locally recemented with silica and with kaolin cement.

The top of the unit is defined above the base is taken at the first record of coal beds.
The age of the formation is from Late Pliensbachian to Sinemurian.

Formation H1-1 the "Coal Unit"

The formation H1-1 differs from the succeeding H1-2 by the presence of major coal seams. Within the unit interbedded granular sandstone, siltstones and claystones at the top give way to light shale and sandstone towards the base.

The top most sandstones were very similar to in the base of the H1-2 above, generally poorly sorted with very fine and very coarse material with variable silica cement and both poor and good porosity. The shale was described as medium to dark grey, hard, brittle, very micaceous, non calcareous, pyritic and carbonaceous. Coals are generally black brittle and shiney. Soft light brown siltstones are also found under some coals. Coal often grads to very carbonaceous shale. Leaf remains were found within the carbonaceous shales of the core taken at 4537 to 4549 m. This core was taken primarily for geochemical investigation of the coal beds. The electric logs suggest it was taken between two thick coal seams. However very little coal was found within the core. The thin coals within the core seems to be of several origins. Some being fragmented and mixed with sandstone, some being associated with carbonaceous shales. The latter may have been reletively "in place". The core gamma ray does not correlate with the wireline logs. This would suggest a depth error between the two. However as the wireline log has thick coal above and below the cored interval the recovered rock would preclude this. From 4710 down the shales were described as light to medium grey. A different facies is also suggested by a lower gamma ray and lower sonic velocities in the shales.

The top of the unit was defined by the first good coal occurence. The base was picked amongst a group of light shales and sands at 4758 m. Here the log curves correlate with other wells to have penetrated the "grey beds" on Haltenbanken. It is possible that the earlier end of thick coal beds at 4710 m where grey shales start to occur would be an alternative pick.

Age of the coal beds spans Sinemurian to Rhaetian. In this well top Triassic was found at 4705 m. Triassic top generaly does not mark a change in lithology on Haltenbanken well however in this case there could be a change to the lower gamma ray shales and evidence of an unconformity comes from the biostratigraphy.

Greybeds? 4758 - 4864 m

Sandstones continue to predominate from 4758 to 4864 m, they are however whiter than above and associated with light to medium grey shales.
The sandstones were white to clear, fine to coarse, subangular to angular, friable to hard and silica cemented. Light calcite cement also occurs. The shales were medium-light grey, also dark to medium brown grey, hard, subfissile, slightly carbonaceous and non calcareous. In the lower part of the unit occasional occurences of red brown claystone are recorded.

The top of the unit was picked on the basis of a "pattern correlation" with other wells. The top of the Triassic at 4705 m is another possibility. The base of the unit was taken after the persistant occurence of red shales and above a marked low velocity shale. As with the top of the unit some uncertainty is inevitable until more wells penetrate this part of the section. The unit is all Rhaetian in age. **The Triassic top at 4705 m is** an alternative for the top grey beds.

The red beds? 4864 m - TD (4902 m)

This unit is dominantly red brown shaly claystone, light grey shale also occurs, both are firm to hard, blocky to subfissile, non calcareous and slightly micromicaceous and silty.

The top of the unit is taken near a prominent low velocity shale. The base lies below the end of the well. As with the grey beds above some uncertainty is inevitable. The occurence of grey and red beds may have no stratigraphical significance on Haltenbanken. Until further wells penetrate this far no conclusion can be made.
The age of the red beds covers Rhaetian and some undifferentiated Late Triassic.

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"pilot	Geologist:	GRACE	Date:	1/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
360	70	SD:clr-wh-med-v crs,granules,predom	Some cmt and
		ang-sub ang,occ sub rd,mod srtd,qtz	c.shoe comtam.
		occ rk frags from met.rx,mica	
	30	CLY; med gry,sft,stcky,swlg,sl slty,sol	
	tr	shell frags	
370	60	SD:predom clr,vf-granules,p.srtd,else a/a	
	40	CLY:a/a	
	tr	shell frags,abun forams/microfoss.	
	50	SD:a/a	
	50	CLY:a/a	
	tr	a/a	
380	50	SD:A/A	
	50	CLY:A/A	
390	80	SD:A/A	
	20	CLY:A/A forams/microfoss	
400	80	CLY:A/A	
	20	SD:A/A	
410		a/a	
420	80	CLY:a/a	
	20	SD:fewer granules,else a/a	
		shl frags,forams/microfoss	
	tr	lignite and coal	
430	90	CLY:A/A	
	10	SD:A/A	
440	100	CLY:A/A	
450	100	CLY:A/A	
	tr	sd,forams/microfoss,shl frags	
460		a/a,but sd bec finer,vf-med,mod srtd	
470		a/a	
480		A/A	
490		a/a	
500		a/a	
510		a/a	
520		a/a	
530		a/a	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA
Hole size: 12 1/4"pilot | Geologist: GRACE | Date: 1/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
540	100	CLY:med gry,sft,stcky,swlg,sol,slty bec	
		plastic I/P,forams/microfoss	
	tr	mica,lign/calc,vf-f sd,shl frags	
550	100	CLY;A/A	
560		a/a,w/tr of pyr	
570		a/a	
580		a/a but incr lign,bec more spcwld	
590		a/a,w/sl incr vf-m sd	
600	100	CLY:a/a,but becoming more cohesive+	
		globular	
610		a/a,w/ sponges macrofoss	
620		A/A	
630		a/a	
640		a/a	
650		a/a	
660		a/a	
670	95	CLY;A/A	
	5	SD:clr-wh,vf-v crs,ang-subang,occ subrnd,	
		poor srtd,qtz,lse,occ rk frags,lign/coal	
680		a/a	
690	100	CLY;A/A	
700		a/a	
710	60	SD;A/A	
	40	CLY;A/A	
720	95	CLY;A/A	
	5	SD:A/A	
730		a/a	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"pilot	Geologist:	GRACE	Date:	2/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
740	95	CLY:med gry,sft,sl stcky,swlg,slty,	
		w/shl frags,forams,micro+macrofoss,	
		blk spckld appearance due to lign+coal+	
		rk frags	
	5	SD:clr-wh,vf-f crs,ang-subang,occ subrnd,	
		poor srtd,loc mod,qtz,rk frags,lign/coal	
		lse	
	tr	mica	
750	90	CLY:A/A	
	10	SD:A/A	
760		a/a	
770	95	CLY;A/A	
	5	SD:A/A	
780		a/a	
790		a/a	
800		a/a	
810		a/a	
820		a/a	
830		a/a	
840		a/a	
850		a/a	
860		a/a	
870	90	CLY:A/A	
	10	SD:A/A	
880	100	CLY;A/A	
	tr	SD:A/A	
890		a/a	
900		a/a	
910		a/a	
920		a/a w/no pyr	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/ MOBIL/SAGA
Hole size: 12 1/4" pilot | Geologist: GRACE | Date: 2/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
930	100	CLY: med gry,sft,stcky,swlg,slty,	
		w/shell frags,forams,microfoss,blk,	
		spckld w/lign,coal	
	tr	SD:clr-wh,vf-v.crs,finer predom,	
		ang-subang,occ subrnd,mod srtd,qtz,rk	
		frags,shl frags,coal/lign,lse,pyr	
940		a/a	
950		a/a	
960		a/a	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 17½"	Geologist: HELLE/OPSTAD		Date: 11/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
980	100	CLY: gry,sft,stcky,non sl calc,v slty, partly sdy,mica	No shows
990	100	CLY:A/A	Sand appears in the sft and stcky cly
1000	100	CLYST:A/A	
1010	100	CLYST:A/A	
	TR	shell frags	
1020	100	CLYST;A/A	
1030	100	CLYST:A/A	
1040	80	CLYST:A/A	
	20	SD:clr qtz,vf-f,occ med,subrnd-ang,occ rnd,lse,poorly srtd,grding to slst	
1050		a/a	
1060		a/a	
1070	70	CLYST:A/A	
	15	SD:A/A	
	15	SLST:gry,sft,amorp,non calc	
1080		a/a	
1090		a/a	
1100	60	CLYST;A/A	
	25	SLST:A/A	
	15	SD:A/A	
1110	80	CLYST;A/A	
	10	SLST:A/A	
	10	SD;A/A	
	tr	shell frags	
1120	60	CLYST;A/A	
	20	SLST:A/A	
	20	SD:A/A	
	tr	shl frags	
1130		a/a	
1140		a/a	
1150		a/a	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	17½"	Geologist:	HELLE/OPSTAD	Date:	11/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
1160	60	CLYST:lt-med gry,sft,amorph,non-sl	No shows
		calc.slty and sdy	
	20	SD:clr qtz,vf-med,subrnd,mod srtd,lse	
	20	SLST:lt gry,sft,amorp,non calc	
	tr	shell frags	
1170		a/a	
1180		a/a	
1190		a/a	
1200	80	CLYST:v.slty I/P,else a/A	
	10	SD:A/A	
	10	SLST:A/A	
	TR	shl frags	
1210	90	CLYST;A/A	
	10	SD:A/A	
	TR	SLST;A/A	
1220		a/a	
1230		a/a	
1240	70	CLYST;A/A	
	30	SD:A/A	
	TR	SLST:A/A	
	TR	PYR	
1250	70	CLY:A/A	
	30	SD:A/A	
	TR	shl frags	
1270	90	CLYST:A/A	
	10	SD:A/A	
	TR	shell frags	
1280	90	CLYST:A/A	
	10	SD:A/A	
	TR	shell frags	
1290	90	CLYST:A/A	
	10	SD:A/A	
	TR	shell frags	
1300	90	CLYST;A/A	
	10	SD:A/A	
1310	90	CLYST:A/A	
	10	SD:A/A	
1320	80	CLYST:A/A	
	20	SD:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 17½"	Geologist: OPSTAD/HELLE		Date: 11/5 -12/5 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
1330	80	CLYST:lt-med gry,sft,non sl calc,slty and sdy	No shows
	20	SD:fn-crs,clr,subang-subrnd,poor srtd	
1340	80	CLYST;A/A	
	20	SD:A/A	
1350	90	CLYST:A/A	
	10	SD:A/A	
1360	90	CLYST;A/A	
	10	SD:A/A	
	TR	shell frags	
1370	90	CLYST;A/A	
	10	SD;A/A	
	TR	shell frags	
1380	80	CLYST:A/A	
	20	SD;A/A	
	TR	shell frags	
1390	90	CLYST:A/A	
	10	SD;A/A	
	TR	shell frags	
1400	90	CLYST;A/A	
	10	SD:A/A	
	TR	shell frags	
1410	90	CLYST;A/A	
	10	SD:A/A	
	TR	shell frags	
1430	80	CLYST;A/A	
	20	SD;A/A	
1440	60	CLYST;A/A	
	40	SST;A/A	
1450	60	CLYST;A/A	
	40	SST:A/A	
1470	70	CLYST;A/A	
	30	SST;A/A	
1480		a/a	
1490		a/a	
1500	80	CLYST;lt-med gry,sft,non-sl calc,amorp, slty and sdy I/P	
	20	SD:A/A	
	tr	shell frags	
1510	90	CLYST;A/A	
	10	SD:A/A	
	TR	shell frags	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	17½"	Geologist:	OPSTAD/HELLE	Date:	12/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
1520	95	CLYST:lt-med grn gry,sft,stcky,amorp,	
		non calc,hydr,sl slty,sl micromic	No shows
	5	SD:clr qtz,vf-med,subang-subrnd,lse,	
		grding to slst	
1530		a/a	
1540	100	CLYST:A/A	
	TR	SD;A/A	
1550		a/a	
1560		a/a	
1570		a/a	
1580		a/a	
1590		a/a	
1600		a/a	
1610		a/a	
1620		a/a	Bottoms up at
1630		a/a	1670 m.
1640		a/a	
1650		a/a	
1660	100	CLYST;lt-med gry,occ grnsh and brnish	
		gry,sft,amorp,occ stcky,slty,occ spkld	
	tr	SD;clr qtz,vf,grding to slst,lse	
1670		a/a	
1680		a/a	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN-	Field:	EPSILON
Well no.:	6404/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	17½"	Geologist:	HELLE/OPSTAD	Date:	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
1690	100	CLYST: lt-med gry,grn.gry brn,sft,amor,	No shows
		occ stcky,slty,occ spkld,v.slty	
	tr	SD:clr qtz,vf,occ med crs,grding to	
		slst,lse	
1700	90	CLYST:mostly med brnish gry,else a/a	
	5	SD:A/A	
	5	SLST:lt-med gry-brnish gry,sft-frm,	
		non calc,spkld,sl mic	
1710		a/a	
1720		a/a	
1730		a/a	
1740		a/a	
1750	85	CLYST:A/A	
	10	SD:A/A	
	5	SLST:A/A	
	tr	shell frags	
1760		a/a	
1770	95	CLYST:med brnish gry,sft, occ frm,v.slty	
		amorp,non calc,sl mic	
	5	SLST:A/A	
	tr	SD;A/A	
	tr	shell frags	
1780		a/a	
1790	100	CLYST;A/A	
	tr	SLST:A/A	
	TR	SD;A/A	
	TR	shell frags	
1800		a/a	
1810	100	CLYST:mostly dk brnish gry,ekse a/a	
	TR	SD:A/A	
	TR	SLST;A/A tr of glauc	
1820		a/a	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOILI/MOBIL/SAGA		
Hole size: 17½"	Geologist: HELLE/OPSTAD	Date: 13/5-84	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
1830	100	CLYST:med-dk brnish gry,sft,amorp,v slty I/P,sl glauconitic,mic,non calc	No shows
	tr	SD:clr qtz,vf-grs,subang-rnd,lse	1835m:cg:2,0%
	tr	glauc and pyr	
1840	50	SLST:lt-dk brnsh gry,sft-frm,non calc, sl glauconitic,mic	
	50	CLYST:A/A	
	TR	SD;A/A	
	tr	glauc and pyr	
1850	75	SLST:A/A	
	25	CLYST;A/A	
	TR	SD;A/A	
	TR	GLAUC AND PYR	
1860	75	SLST;A/A	
	25	CLYST;A/A	
	tr	A/A	
1870	75	SLST;A/A	
	25	CLYST;A/A	
	TR	A/A	
1880	75	SLST;A/A	
	25	CLYST;A/A	
	TR	A/A	
1890	75	SLST;A/A	
	25	CLYST;A/A	
	TR	A/A	
1900	75	SLST;A/A	
	25	CLYST;A/A	
	TR	A/A	
1910	90	SLST;A/A	
	10	CLYST;A/A	
	TR	A/A	
1920	90	SLST;A/A,occ also med gry w/glauc	
	10	CLYST;A/A	
1940	100	SLST;A/A also grn gry	
	tr	pyr	
1950	90	SLST:A/A,also grn gry	
	10	CLYST;A/A	
1960	90	SLST;lt-med brn gry,grn gry,gry,sft-frm, non calc,sl glau,micromica	
	10	CLYST;A/A	
	tr	SD:A/A and LST:wh-buff,micrite xln, sft-hd	
1970	90	SLST:A/A	
	10	CLYST;A/A	
	TR	A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 17½"	Geologist: HELLE/OPSTAD	Date: 14/5-84	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
1980	100	CLYST:lt-med gry,sft,non calc,micromica,	No shows
		sl slty,stcky	
	tr	LST: wh-buff,xln,med hd,sft	
1990	70	CLYST;A/A	
	30	SLST;lt-dk brn gry,sft-frm,non calc,	
		sl glau,mica	
	tr	LST:A/A	
2000	90	CLYST;A/A	
	10	SLST;A/A	
	tr	LST;A/A	
2010	80	CLYST;A/A	
	20	SLST;A/A	
	TR	LST;A/A	
2020	90	CLYST:A/A	
	10	SLST;A/A	
	TR	LST:A/A,glauc	
2030	70	CLYST:mostly med brnsh gry-gry,occ grnsh	
		gry,sft-frm,occ mod hd,blky,sl mic,	
		non calc,amorph,occ subfis,grding to	
		slst	
	30	SLST:med brnsh gry-gry,frm,non calc,	
		sl mic,arg	
	tr	SD:clr qtz,vf-med,subang-rnd,lse	Incre.mw=1,53
	TR	LST;A/A	
	TR	PYR AND GLAUc	
2040	70	CLYST:partly lt gry,else a/a	
	30	SLST;A/A	
	TR	SD;A/A	
	TR	GLAUC AND PYR	
2050	70	CLYST:fiss,occ grding to sh ,else a/a	
	30	SLST:A/A	
	TR	SD;A/A	
	TR	LST;A/A	
	TR	PYR	
2060		a/a	Cavings
2070	100	CLYST;gry brn gry,grn gry,sft-frm,	
		non calc,grading to a shale,sl slty	
		micromica	
	tr	LST;SD AND PYR	
2080	100	CLYST;A/A	
	TR	LST;A/A	
	TR	shell frags,forams	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area: HALTENBANKEN-		Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	17½"	Geologist:	HELLE/OPSTAD	Date:	15/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2090	100	CLYST;mostly brn gry,gry,grn gry,sft-frm,	
		partly grding to a shale,sl slty	
	tr	LST:brn,buff ,xln,med hd	
2100	100	CLYST:A/A	Drill break at
	tr	SLST:dk brn,sl calc,blky,micromica	2097, no sd!
	tr	LST;A/A	
2110	100	CLYST:lt-med grn gry,brn gry,lt gry,	
		sft-frm,blky,non calc,sl slty,occ v.slty	
		occ subfiss,partly stcky	
	tr	LST:wh-lt gry,arg,med hd	
	tr	forams,pyr	
2120		A/A	CG:10,3% at
			2131m
2140		a/a	CG:5,16% at
			2151m
2150		A/A	
2160		A/A	
2170			SAMPLE LOST
2180		A/A	CG: 19% at
			2179 m
? 2186		a/a NB! NO SD	Drill bake at
			2185 m
		!!!! PIPE TELLY ERROW FROM 978m	
		ALL DEPTHS FROM SHOULD BE	
		SUBTRACKTED BY 9m	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 17½/12 1/4"	Geologist: OPSTAD/BEYR/GRACE		Date: 23/5 / 26/5 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2180	60	CLYST:grn gry ,sft,non calc	Dull yel fluor wedk wh cloudy cut
	40	SLST:brnsh gry,mic,sl calc,sft-hd	
	tr	SD:qtz,wh,f-vf	
2190	90	CLYST:grn gry ,sft to med,stcky,non calc	
	10	SLST:tan to brownish gry,sft-hd,micro-mica	
2200	100	CLYST:grn gry.lt gry,sft-med,stky, non calc,	First indication of C4 gas
	tr	SLST:A/A	
2210	100	CLYST:A/A, tr of calcite xols,tr slst	
2215	100	CLYST:A/A	
2220	100	CLYST;	
2225	100	CLYST;A/A,sl calc in parts	
	tr	SLST: lt brn,hd	
2230	100	CLYST;A/A,	
	tr	LST: wh,lt gry ,sft	
2235	100	CLYST:A/A, tr pyrite nodules	
	tr	LST:A/A	
2240	100	CLYST:becoming sl brnsh,non calc	
	TR	LST:A/A	
2250	90	CLYST:brn,grnsh gry-gry green,sft,stky in parts,	
	10	LST:wh,sft-mod hd,no show	
2255	90	CLYST:lt grnsh gry,sft-frm,pyritic	
	30	LST:wh-lt brn,mod hd,calcite veins	
2260	80	CLYST:incr lt brnsh grn a/a	
	20	LST:a/a,less pyrite	
2265	95	CLYST:predom grnsh gry,bec tuffaceous, else a/a	
	5	LST:A/A	
	TR	abundant pyr	
2270		A/A	
2275	100	TUFFACEOUS CLYST:dk gry-gry grn,predom else a/a (incr glauc. less pyr)	
			MAX GAS: 3,7%

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	GRACE/BEYER	Date:	26/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2280	100	TUFFACEOUS CLYST: med gry brn,lt gry gn.	
		dk grn I/P,lt blu gry,slty,frm,sl calc	
		glau,pyr nods (cubic+pyritohedron),	
		lt gry-blu gry,v.ashy,spckld	
2285		A/A,w/tr lst	
2290		A/A	
2295		A/A	
2300		A/A	
2305		A/A	
2310		A/A	
2315	100	TUFFACEOUS CLYST:incr blu gry tuff,	
		else A/A	
2320	50	TUFFACEOUS CLYST:A/A	
	50	SLST:lt-med brn gry.lt-dk brn,mod hd,	11,8% GAS
		sl calc cmtd,pyr,glau,pyr,	
	tr	LST:wh-pnk,xln,mod hd,blky ,	
2325	90	SLST:A/A	
	10	CLYST:A/A	
2330		A/A; but slst bec sfter	
2335	80	SLST:A/A	
	20	CLYST:A/A	
2340	20	SLST:A/A	SHOWS:
	30	CLYST:A/A	dull yel fluor
	20	SLST/TUFF: gry-wh,sft,v.ashy in appeara-	no cut
		nce,microxln,glassy shards,spcky	
2345	70	SLST/TUFF:A/A	
	25	CLYST:A/A,glau	
	5	SLST:A/A incr pyr	
2350	20	SLST/TUFF:A/A	
	20	CLYST;A/A	
	55	SLST:A/A	
	5	LST:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	GRACE/BEYER	Date:	26/5-27/5 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2355	60	SLST/TUFF:A/A	NO FLUOR
	20	CLYST;A/A	EXEPT MINERAL
	15	SLST A/A W/pyrite	FLUORECENCE
	5	LST:A/A	
2360	80	TUFF/SLST:A/A	NO FLUOR
	10	CLYST:A/A W/tuff	
	10	SLST:A/A W/pyrite	
	tr	calcite xtls and lst A/A	
2365	70	TUFF/SLST:A/A	NO FLUOR
	10	CLYST:A/A W/tuff	
	10	pyrite euhedrals and nodules	
2370	60	SLST/TUFF:A/A	
	30	CLYST/TUFF:A/A	
	10	LST:A/A, and calcite xtls	
	tr	pyrite and glac	
2375	30	SLST/TUFF:A/A	
	60	CLYST/TUFF:A/A	
	5	SLST:med brn,hd,sl clc cmtd	
	5	LST:A/A, tr pyrite euhedrals	
2380	30	SLST/TUFF:A/A	
	60	CLYST/TUFF:A/A	
	5	SLST:A/A	
	5	LST:A/A ,less pyrite	
2385	20	SLST/TUFF:A/A	
	70	CLYST/TUFF:A/A	
	5	SLST:A/A	
	5	LST:A/A	
2390	20	SLST/TUFF:A/A	
	70	CLYST/TUFF:A/A	
	5	SLST:A/A	
	5	LST:A/A	
2395	20	SLST/TUFF;A/A	
	70	CLYST/TUFF;A/A	
	5	SLST:A/A	
	5	LST:A/A	
2400	10	SLST/TUFF:A/A	
	80	CLYST/TUFF:A/A	
	5	SLST:med brn,dh-v.hd,v sl calc cmt	
	5	LST/CALCITE XTLS	
2405	15	SLST/TUFF:A/A	
	80	CLYST W/TUFF	
	5	TUFFACEOUS CLYST,glauconitic,A/A	
	tr	clr qtz xtls	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	GRACE/BEYER	Date:	27/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2410	50	SLST/TUFF:A/A	NO FLUOR
	50	CLYST/TUFF:A/A	
	TR	LST/CALCITE:A/A	
	TR	CLR QTZ XTLS;incr glauc	
2415	50	MARL;brnsh gry,sft-med hd,waxy	Mineral fluor
	30	CLYST/TUFF:A/A	
	20	SLST/TUFF:A/A	
	TR	CALCITE/LST:A/A	
2420	90	MARLY CLYST:brn gry,predom gry/gn,sft,	
		occ fiss/subfiss w/less marly,slty,	
		stcky	
	5	SLST:A/A,predom med-dk brn gry	
	5	LST:A/A	
	TR	pyr,glauc	
2425		A/A	
2430	100	MARLY CLYST:A/A	
	TR	pyr,glau,slst,lst	Interbedded
			clyst/slst
2435	100	CLYST:A/A	w/occ lst
	TR	A/A	stringers
2440	60	CLYST:A/A	
	40	SLST;A/A	
2445		A/A, W/tr lst,pyr	
2450		A/A, w/lst:gnsh colour,yellow min fluor	No cut
2455		A/A	
2460		A/A	
2465		A/A	
2470		A/A	
2475		A/A	
2480		A/A	
2485		A/A	
2490	100	CLYST:brn gry,med hd,v.slty,occ sft and	
		stcky,non calc	
	tr	LST:wh,sft-med	
	tr	pyr nods and glauc	
2495	100	A/A, sl incr marly lst	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 12 1/4"	Geologist: GRACE/BEYER		Date: 27/5-28/5 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2500	100	A/A	NO FLUOR
2505	80	CLYST:A/A,v.slty,sl calc cmt,tr lst	
	20	MARL :A/A	
2510	80	CLYST:A/A	
	20	MARL:A/A	
2515	100	CLYST/SLST;A/A less calc cmt,tr lst	
2520	100	CLYST/SLST:A/A incr glau,tr lst w/pyr	
2525	100	CLYST/SLST;A/A tr lst w/pyr	
2530	100	CLYST/SLST:A/A,	Dull mineral
	tr	lst w/pyr,dol abun glau	fluorecence
2535	100	CLYST/SLST;A/A,	
	tr	lst/dol w/pyr and glau	
2540	100	CLYST/SLST:A/A occ sl calc cmt	
	tr	A/A	
2545	100	SLST:clr qtz grns,argill,lse-fri,I/P	
		calc cmt	
	tr	A/A+ tr qtz sd	
2550	100	CLYST/SLST:A/A	
	tr	A/A ,non calc,tr qtz sd grns,vf	
2560	80	SLST:brn gry,mod hd,calc cmt,glau	
	20	CLYST:dk oliv gry,mod hd,blky	
	tr	LST:pl gn wh,sft-mod hd,glauc,pyr	
2565	100	SLST:brn gry,argill,sl calc cmt,incr	
		glau,and pyr,	
	tr	clr qtz sd grns,vf	NO FLUOR
2570	100	SLST:A/A	
2575	100	SLST:bec less argill,else A/A	
2580	100	SLST;A/A	
2585	100	SLST:bec more argill again	
	tr	clr qtz.A/A	
2590	100	SLST:A/A	
2595	100	CLYST:brn gry,slt,stcky,sl calc cmt,	Dull-mod
	tr	dol	minaral fluor

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	GRACE/BEYER	Date:	28/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2595	100	CLYST:A/A	Dull-mod
			mineral fluor
2600	100	CLYST:A/A incr tr of pyr	NO FLUOR
2605	100	CLYST:A/A	
2610	100	CLYST:A/A	MAX GAS 76%
			C1-C5
2615	100	CLYST:A/A	MAX GAS: 8,8%
			C1-nC4
2620	100	CLYST:A/A(bec harder? hydr samples)	NO FLUOR
2625	100	CLYST:A/A w/some vf sd	
2630	100	CLYST:less slst,else A/A	
2635	100	CLYST: incr slst again I/P,no pyr	
2640	100	CLYST/SLST:A/A	
2645	100	CLYST/SLST: v.stcky when hydrated	
2650	100	CLYST/SLST:A/A mod calc,glauc	
2655	100	CLYST/SLST:A/A	MOd mineral
	tr	DOL:wh,hd,occ sft	fluor
		incr vf sd contact	
2660	95	CLYST/SLST:A/A	
	5	SD:clr-wh,qtz ,vf,rarely f,ang-subrnd,	
		good srtg,lse	
2665		A/A	
2670		A/A	
2675		A/A	
2680		A/A w/tr lst	
2685		A/A	
2690		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 12 1/4"	Geologist: GRACE/BEYER		Date: 28/5-29/5 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2695	95	CLYST/SLST:med brn,med brn gry,dk gry,	
		frm,mod-v.calc,pyr glau	
	5	SD:clr-wh,qtz,vf,occ f,ang-subrnd,	
		good srtg,lse,rarely weackly cmt	
	tr	LST:occ dol,wh-buff,hd-frm,xln	Min fluor
2700		A/A	
2710	100	CLYST/SLST:A/A bec marly,sft I/P	
	tr	qtz,clr-wh,vf,occ float in other sed	
2715		A/A NO SD	
2720	100	A/A bcming calc	
2725	100	A/A bec v.calc and amrly	
	tr	calcite xtls	
2730	100	A/A, less stcky/grain supp slst	
2735	100	A/A stcky again	
2740	100	A/A,v.calc	
	tr	dol,wh-buff,hd,xln	
2745	100	A/A	
2750	100	A/A	
2755	100	A/A,incr lst/dol A/A,hd-v.hd,xln	
	tr	muscov mic	
2760	100	A/A	
2765	100	A/A v.calc i/p grad to calcarenite	
	tr	dol/lst,occ sft	
2775	100	A/A	
	tr	SD:clr,vf,mod rnd,good srtg,lse glau cmt	
2780	100	A/A	
2785	100	A/A	
2790	100	A/A	
2795	100	A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON
Well no.: 6406/3-1		
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA	
Hole size: 12 1/4"	Geologist: BRACE/BEYER	Date: 29/5-30/5 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2795	60	Interbedded slst/clyst,approx	
		CLYST: v.slty,dk gry,frm,calc,mic	
		w/occ tr vf sd,pyr,glau	
	40	SLST:med brn,sft-frm,lse+weak	
		sl calc+clay cmtd,occ grd to sst	
		(both marly and grain supported),vf qtz,	
		mica	
	tr	vf sd	
	tr	LST; wh-clr,pnk,hd,amorp-xln,also	
		fibrou,often dol	
	tr	pyr nods,micropyr	
2797,5	60	CLYST;A/A	
	40	SLST:A/A	
	TR	A/A	
2800		A/A	
2802,5	50	CKYST;A/A	
	45	SLST:A/A	
	5	LST:A/A	
	TR	A/A	
2807,5	80	CLYST:A/A	
	20	SLST:A/A	
	TR	A/A	
2810		A/A	
2812,5		A/A	
2815		A/A	
2817,5		A/A	
2820		A/A, tr earthy lst/dol and xln calcite	
2822,5		A/A	
2825		A/A	
2827,5		A/A tr clr qtz sd grns,f-med,ang-rnd,	Lignosulfonate
		sign. less calc	contamination

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	GRACE/BEYER	Date:	30/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2832,5	80	CLYST:dk gry-brn gry,frm-hd,slty,occ	
		sl calc,pred non calc,mic	
	20	SLST:brn gry-med brn,sft-hd,pred frm,	
		occ lse,sl calc,glau,pyr,mic	
	tr	free float qtz,clr,f-med,ang-rnd	
2835	60	CLYST:A/A	
	40	SLST:A/A	
	TR	QTZ GRNS A/A	
2837,5	80	CLYST:A/A v. slty	
	20	SLST:A/A	
	TR	QTZ GRNS A/A	
2840	90	CLYST:A/A	NO SHOWS
	10	SLST:A/A	
	TR	vf sst a/a	
2842,5	80	CLYST:A/A	
	10	SLST:A/A	
	5	SST;A/A	
	5	LST:A/A	MINERAL FLUOR
	TR	pyr,glau	
2845		A/A	LIGNOSULPH.
			CONTAM.
2847,5	90	CLYST:A/A	0,2 % BG
	10	SLST:A/A grd to vf sst A/A mic	
2850		A/A	1,8 PEAK no show
2852,5		A/A w/	
	tr	DOL:dk brn,hd,xln,(sucrosic) blky	0,2% BG
2855		A/A but less sd	
2857,5		A/A	
2860		A/A	
2862,5		A/A	
2865		A/A	
2867,5		A/A	
2870		A/A	
2872,5		A/A	
	tr	SST: clr-wh,qtz,vf,subang-subrnd,g strg,	
		calc cmtd	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	GRACE/BEYER	Date:	30/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2875	90	CLYST:med dk brnsh gry,frm,v slty,and	Lignosulphonate
		common sdy (vf),mic,micromic,glau,occ	contamination
		pyr,micropyr,calc	SHOWS:SLST/SST:
	10	SLST:wh-lt brn gry,hd,calc/cly cmtd,	dull brn yel,
		grd to vf sst I/P,mic,some glau grains,	spotty fluor,
		occ pyr	v slow wh,
	tr	LST:wh,pnk,lt brn,crypto-micro xln,	crush cut I/P
		also fibrous,,hd	some min.fluor
	tr	DOL:dk brn,blky ,xln (sucrosic),hd-v hd	in lst/dol
	tr	vf sd/sst: througout	
	tr	microfossils/worm tubes or burrows?	
		both calc+pyr	
	tr	pyr nods,mica	
2877,5		A/A	
2880		A/A	
2882,5		A/A	
2885		A/A	
2887,5		A/A	
2890	100	CLYST:A/A	
	TR	A/A	
2895		A/A less sst	Continuing poor
			shows in sst
2897,5		A/A	
2900		A/A	
2902,5		A/A less slst	
2905		A/A	
2910		A/A becoming more slty again v calc	
		tr lst,wh+pnk ,lt brn,amorph, sucrsic xln	
		glau,pyr,occ mica	
2912,5	90	CLYST:A/A less slty	
	10	LST:A/A tr dol	

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WELLSITE SAMPLE DESCRIPTION

Country:	ORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER/GRACE	Date:	31/5-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2915	80	CLYST:med brn gry,frm-hd,slty,occ sdy vf,	Clyst still
		calc,pyr,glau,occ mica	stcky whem hy-
	10	LST:eh,pnk,xln,amorp,hd as xln,sft as	dratet by dril-
		amorph,	ling fluids
	10	DOL:wh-lt brn,dk brn,bkky med xln,sucro-	
		sic,hd,mica,occ pyr,occ glau	NO FLUOR
2917,5	90	CLYST:A/A tr shly clyst,lt-med gry,frm,	
		brit,	
	10	LST/DOL:A/A sl calc,glau,micromica	
2920	90	CLYST:A/A w/sl tr sd,clr qtz,subrnd,vf-med	
	10	LST/DOL:A/A tr musc xtls	
2922,5	90	CLYST;A/A W/tr of sd A/A	
	10	LST/DOL:A/A	
2925	90	CLYST:A/A	
	10	LST/DOL:A/A	
2927,5	90	CLYST:A/A	
	10	LST/DOL:A/A	
2930	90	CLYST:A/A	
	10	LST/DOL:A/A	
2932,5	100	A/A	
2935		A/A	
2937,5		A/A but hardening further up	
2940	60	CLYST:med gry-med brn,GRY md gn gry, frm-hd,	
		I/P fiss,slty,calc,	
	40	SLST:lt gry-lt brn,gry,sft-frm,sdy,vf,	
		occ med,cln,calc,pyr,mica,sl tr calcite	
		xtls,transl,hd	
		clyst/ slst intc. in thin lamina	
		(flazer beds?)	
2942,5	60	CLYST:A/A still stcky when hydrated	
	40	SLST:A/A	
2945	60	CLYST;A/A	
	40	SLST:A/A+tr lst/dol A/A,tr v crse glau	
		xtls	
2947,5	60	CLYST;A/A	
	40	SLST:A/A	
2950	60	CLYST:A/A	
	40	SLST:A/A	
2952,5	40	CLYST:A/A both w/calc	
	60	SLST:A/A	
2955	40	CLYST:A/A	
	60	SLST:A/A	
2960	20	CLYST:A/A	
	80	SLST:A/A w/tr of sd,vf-f,lse-frm	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	2/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
2962,5	60	CLYST:md gry,med gn gry,occ brn gry,A/A	NO FLUOR
		v slty	
2965	60	CLYST;A/A	
	40	SLST:A/A sl incr tr dol/lst A/A	
2967,5	70	CLYST:A/A	
	30	SLST:A/A	
2970	60	CLYST:A/A	
	40	SLST:A/A occ grd to sd,vf,clr-transl qtz,	
2972,5	80	CLYST:A/A,I/P non calc sl more indur clyst	
	20	SLST: A/A sl incr tr dol/lst and free qtz	
2975	80	CLYST:A/A still incr quant of shly clyst	
		A/A	
	20	SLST:A/A pyr nods common	
2980	80	CLYST;A/A	
	20	SLST:A/A	
2982,5	80	CLYST;A/A	
	20	SLST:A/A	
2985	80	CLYST;A/A	
	20	SLST:A/A	
2987,5	80	CLYST:A/A	
	20	SLST:A/A	
2990	80	CLYST:A/A v slty,grding to slst,calc cmt	
	20	SLST:A/A	
2992,5	80	CLYST:A/A v slty A/A	
	20	SLST:A/A tr of free qtz grns,clr-transl	
2995	80	CLYST:A/A	
	20	SLST:A/A ,tr a/a	
2997,5	80	CLYST:A/A sl less slty again	
	20	SLST;A/A	
3000	80	CLYST:A/A	
	20	SLST:A/A	
3002,5	80	CLYST;A/A	
	20	SLST:A/A	
3005	80	CLYST:A/A	
	20	SLST:A/A	
3007,5	80	CLYST:A/A	
	20	SKST:A/A	
3010	80	CLYST:A/A ls more slty	
	20	SLST:A/A	
3012,5	80	CLYST:A/A	
	20	SLST:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	2/6-3/6 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3017,5	80	CLYST:med gry,slty-v slty,occ non slty	
		& shly,hydr	NO FLUOR
	20	SLST:lt gry-lt brn gry,frm,sdy,(vf),calc,	
		pyr,mica	
3020	80	CLYST:A/A	
	20	SLST:A/A	
3022,5	60	CLYST:A/A	
	40	SLST:A/A sl tr sd,clr-transl,vf-f,lse	
3025	60	CLYST:A/A	
	40	SLST:A/A tr:sd,A/A w/good vis por	
3027,5	60	CLYST:A/A	
	40	SLST:A/A w/specks and laminae of clyst	
3030	60	CLYST:A/A	
	40	SLST:A/A TR:sd,gen a/a,v well srtd,well	
		rnded	
3032,5	80	CLYST;A/A still slty-v slty and calc	
	20	SLST:A/A tr fibr lst,tan-lt brn,hd	
3035	60	CLYST:A/A less stcky and swelling	Pipe dope cont-
		shectites	amination
	40	SLST:A/A	
3037,5	60	CLYST:A/A	NO FLUOR
	40	SKST:A/A I/P glau,mica,free qtz,vf-f xln	
3040	60	CLYST;A/A	
	40	SLST:A/A	
3042,5	80	CLYST:A/A	
	20	SLST:A/A TR;free qtz,clr,vf-f xln	
3045	80	CLYST;A/A	
	20	SLST:A/A	
3047,5	80	CLYST:A/A	
	20	SLST:A/A	
3050	80	CLYST:A/A	
	20	SLST:A/A TR;mrl;wh,lt brn,sl slty,frm	
3052,5	60	CLYST;A/A PRED CALC SLTY,occ sdy,(vf)	
	40	SLST:A/A	
3055	80	CLYST:A/A pyr,mica	
	20	SLST:A/A TR:mrl;lt brn;non slty,frm	
3057,5	80	CLYST;A/A,still slty and occ sdy(vf-med)	
	20	SLST:A/A,TR:marl,wh,frm,tr sd,free qtz,	
		clr,vf-med	
3060	90	CLYST:gen A/A,but w/incr shly clyst;med	
		gry,sl fiss,mica	
	10	SLST:A/A TR:lst,buff-lt brn,microxln-	
		f-xln,hd,pyr	
3062,5	90	CLYST;A/A	
	10	SLST:A/A TR;A/A	
3065	90	CLYST:A/A	
	10	SLST:A/A TR:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	Area:	Field:
Well no.:		
K.B.E. meters	Company:	
Hole size:	Geologist:	Date:

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3067,5	80	CLYST:A/A TR:sl shly clyst:dk gry,hd, bnded,w/slst	
	20	SLST:A/A, glau,pyr,calcite	
3070	90	CLYST;A/A less slty	
	10	SLST:A/A TR:lst/marl:tan-spckld lt brn, frm-hd	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	5/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3072,5	90	CLYST:slty,calc,med gry,hd,sl slty,sl calc blk gry,pyr,mica,tr free qtz,clr-transl, vf-med	NO FLUOR
	10	SLST:lt gry-lt brn,argill,sdy,calc,pyr, mica,glau	
	tr	LST/MARL:buff-lt brn,hd,slty ,fn xln, pyr nods,mica,occ dolmtzd	
3075	90	CLYST;A/A	
	10	SLST:A/A	
	TR	A/A	
3077,5	90	CLYST: bec sltier,else a/a,flakes of musc	
	10	SLST:A/A	
3080	80	CLYST:A/A	
	20	SLST:in vugs and flazers w/clyst	
2082,5	80	CLYST:A/A	
	20	SLST:A/A	
3085	90	CLYST:A/A	
	10	SLST;A/A TR:A/A	
3087,5	90	CLYST;A/A	
	10	SLST:A/A TR:nod pyr	
3090	90	CLYST;A/A still predom calc	
	10	SLST:A/A still predom calc	
3092,5	80	CLYST:A/A occ v slty,grding to slst	
	10	SLST:A/A	
	10	MRL/LST:A/A	
3095	80	CLYST;A/A	PIPE DOPE CONTAM
	10	SLST:A/A	
	10	MRL/LST:A/A	
3097,5	80	CLYST:A/A	NO FLUOR
	10	SLST:A/A	
	10	MRL/LST:A/A	
	TR	free qtz,med xln,clr	NO FLUOR
3100	70	CLYST:A/A	
	20	SLST:A/A	
	10	MRL/LST:A/A TR:A/A	
3102,5	80	CLYST:A/A	
	10	SLST:A/A	
	10	MRL/LST;A/A TR:shell frag	
3105	90	CLYST:A/A	
	5	SLST:A/A	
	5	MARL:A/A TR:calcite,clr med xln	
3107,5	80	CLYST;A/A	
	20	SLST:A/A TR:MARL/LST:also wh clr calcite,clr med xln	
3110	80	CLYST:A/A	
	20	SLST:A/A TR:A/A	
3112,5	80	CLYST:A/A	
	20	SLST:A/A TR:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	5/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3115	80	CLYST:A/A	
	20	SLST:A/A, + TR sd ,clr-transl,qtz,vf-f,	
		subang,lse grns	
3117,5	80	CLYST:A/A	
	20	SLST:A/A TR:A/A + good tr sd,A/A	
3120	40	CLYST: gen a/a,v slty and sdy (vf-f)	
	60	SLST:A/A	
	TR	sd:A/A	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	3/6-4/6 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3122,5	80	CLYST:slty,calc,med gry-med brn gry,hd,	NO FLUOR
		pyr,mica	
	20	SLST:argill,lt gry-lt brn gry,sdy ,(vf,	
		clr-transl,subang qtz) ,pyr,mica,calc cmn	
		w/patches of med brn clyst:A/A	
3125	80	CLYST:A/A	
	20	SLST:A/A	
3127,5	80	CLYST:A/A	
	20	SLST:A/A	
3130	90	CLYST:A/A sl incr shly clyst,md gry,fiss,	
		hd,mica	
	10	SLST:A/A	
3132,5	90	CLYST:A/A	
	10	SLST:A/A	
	TR	LST/DOL:buff-lt brn,occ wh,fn xln,fibr,	
		pyr nods	
3135	90	CLYST:A/A	
	10	SLST:A/A TR:A/A	
3137,5	90	CLYST:A/A	
	10	SLST:A/A	
	tr	A/A,also marly I/P,lt brn,sft	
3140	90	CLYST:A/A	
	10	SLST:A/A TR:A/A flazer beds?	
3142,5	90	CLYST:A/A	
	10	SLST:A/A TR:A/A	
	tr	free qtz,vf-med,clr,ang	
3145	90	CLYST:A/A	
	10	SLST:A/A TR:A/A	
3147,5	100	CLYST;A/A TR;SLST:A/A	
3150	90	CLYST:A/A	
	10	SLST:A/A	
3152,5	100	CLYST:slty and sdy A/A v/mica I/P	
3155	90	CLYST:A/A	
	10	SLST:A/A	
3157,5	100	CLYST:A/A	
	TR	SLST:sdy,(vf,clr-transl qtz,ang)	
3160	90	CLYST:A/A	
	10	SLST/SD:lt brn,lse-frm-mod-wll srtd,glau,	
		mica,pyr	NO FLUOR
3162,5	80	CLYST:A/A	
	20	SLST/SD:A/A	
3165	80	CLYST:A/A	
	20	SLST:A/A less sd	
3167,5	80	CLYST;A/A	
	20	SLST:A/A	
3170	80	CLYST:A/A	
	20	SLST:A/A no sd	
3172,5	80	CLYST:A/A 20 SLST:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	4/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3175	90	CLYST:slty,pred calc,I/P sl calc,med gry-med brn gry,hd,gen stcky,pyr,mica, tr sd clr qtz,tr calcite xtls	clyst is still pred hydrated by mud system
	10	SLST:argill,lt gry-lt brn gry,sdy(vf, clr-transl,subang),pred calc w/spcks of med brn clyst,mica,pyr	NO FLUOR
3477,5	80	CLYST:A/A	
	20	SLST:A/A	
3180	80	CLYST:A/A	PIPE DOPE CONTAM
	20	SLST:A/A	NO FLUOR
3182,5	90	CLYST:A/A	
	10	SLST:A/A	
3185	90	CLYST:A/A	
	10	SLST:A/A	
3187,5	90	CLYST:A/A	
	10	SLST:A/A	
3190	90	CLYST:A/A sl incr in shly,fiss,lt gn gry clyst	
	10	SLST:A/A	
2192,5	90	CLYST:A/A-30% non sl calc	
	10	SLST;A/A sl tr of free qtz grns,clr, subrnd,glauc	
3195	80	CLYST:A/A	
	20	SLST:A/A incr cont sd;A/A,	
	tr	LST/DOL:wh-tan,hd	
3197,5	60	CLYST:A/A	
	40	SLST: sdy-v sdy,occ grdng to sst,frm-hd, mod-well srtd,subang-rnded,glau,xtls,pyr	NO SHOWS
	TR	LST/DOL:A/A, tr clr calcite crse xtls	PIPE DOPE CONTAM
3200	80	CLYST:A/A	
	20	SLST/SST:A/A cont of free qtz in sample in sample trans incr	to 10%
3202,5	60	CLYST:A/A	
	20	SLST:A/A,w/ clr qtz ,fn-med	NO SHOW
	20	QTZ:clr-transl,fn-med,ang-subrnd	PIPE DOPE!
	TR+	LST/DOL:pred wh,fibr,hd,also calaite xtls	
3205	60	CLYST:	NO SHOW
	20	SLST:A/A,w/spcks of dk brn gry clyst,glau	
	20	QTZ:A/A,also tr of crse grns	DULL YEL FLUOR
	TR	LST/DOL:A/A	NO CUT
3207,5	60	CLYST:A/A	
	20	SLST/SST:A/A (percentage are from sample trays,not the actual rock from shakers)	NO SHOWS
	20	QTZ:A/A large amount of stcky clay not accounted for	
3210	80	CLYST:A/A	NO FLUOR
	20	SLST/SST:A/A much less qtz xtls,v mica	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 12 1/4"	Geologist: BEYER		Date: 4/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3212,5	20	CLYST:A/A	NO FLUOR
	40	SLST/SST:A/A	
	40	QTZ:A/A,pred med,also crse grns	
	TR+	LST/DOL:A/A	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	4/6-5/6 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3215	60	CLYST:slty,sdy(A/B qtz),pred calc,shly	Clyst still pred
		clyst,v sl calc,frm-hd,pred hydr,also not	stcky from shak-
		hydr clyst.All pred med gry-med brn gry,	ers.
		occ spcks w.dk brn gry clyst,pred blky,	
		occ fiss,pyr,mica ,glau	NO SHOWS
	20	SLST:argill,sdy,grdng to sst I/P,sl calc	
		cmtd,lt gry-lt brnlgry,pred frm,occ sft,	
		pyr comm,micromica,glau ,also w/ spcks	
		of dk brn ckyst a/a, SST:poor srtd,lse,	
		calc cmtd	
	20	QTZ:clr-transl,vf-med,ang-rnd,tr overgrwth	
		glau,pyr	
3217,5	80	CLYST:v slty and sdy A/A	
	10	SLST: v sdy grdg to sst A/A	NO SHOWS
	10	QTZ:A/A	
3220	60	CLYST:A/A	
	20	SLST:A/A	
	20	QTZ:A/A	
3222,5	80	CLYST:A/A	
	20	SLST: much less qtz,else A/A,	
	TR	DOL:lt brnlt brn,-rsty brn,hd	
3225	80	CLYST:A/A	
	20	SLST:A/A TR QTZ AND DOL:A/A	
3230	80	CLYST:A/A	
	20	SLST:A/A	
	TR	LST:pred wh,fibr,hd,occ sft,mrly	
3232,5	70	CLYST:A/A	
	20	SLST: A/A	
	10	QTZ:A/A qtz pred in slst	
3235	80	CLYST:A/A	
	20	SLST:A/A only sl tr sd/qtz	
3237,5	80	CLYST:A/A	
	20	SLST:A/A sl tr sd/qtz:A/A	
3240	90	CLYST:A/A	
	10	SLST:A/A sl tr sd/qtz,A/A	
3242,5	90	CLYST;A/A	
	10	SLST:A/A sl tr sd.a/a	
3245	90	CLYST:A/A	
	10	SLST:A/A sl tr sd A/A	
3247,5	90	CLYST:A/A	
	10	SLST:A/A sl tr sd A/A,	
	tr	DOL:gr wh,hd,glau,pyr	
3250	80	CLYST:A/A	
	20	SLST;A/A sl tr sd A/A tr brck rd lst/dol	
3252,5	80	CLYST:A/A TR:carb clyst,blksh gry,sft-frm	
		HC odor	
	20	SLST:A/A ,sl tr sd/qtz,A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	4/6-5/6 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3255	80	CLYST:A/A	
	20	SLST:A/A	
	TR+	SD/QTZ:pred vf-f,pyr,mica	
3257,5	80	CLYST:A/A	
	20	SLST:A/A	
	TR+	SD/QTZ:A/A	
3260	80	CLYST:A/A	
	20	SLST:A/A becoming less stcky	
	TR	carb clyst ,blksh gry,w/ HC-odor	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 12 1/4"	Geologist: BEYER		Date: 6/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3262,5	90	CLYST:med gry,lt gry,lt grnsh gry,sl brit,	Much less stcky
		hd,micromica	clyst-firming
	10	LST/DOL/MRL:lt brn.brck rd,micro-vf xln,	
		pred hd,britt	
	tr	SLST:lt brn,lse,calc cmt,tr glau,pyr,	
		calcite,qtz	PIPE DOPE!
3265	90	CLYST;A/A tr blksh gry,sft,carb clyst,	
		w.HC odor	V DULL ORNG FLUOR
	10	SLST:A/A TR+LST/DOL/MRL:A/A	W SLOW GEL WH
			CMT
3267,5	90	CLYST:A/A	VERY DULL ORNG
	10	SLST:A/A	FLUOR;NO CUT
3270	80	CLYST:A/A	very dull orng
	20	SLST/SST:lt-med brn gry,calc cmt,hd,	fluor,v slow yel
		spckld,pyr	wh cut
3272,5	60	CLYST:A/A	
	40	SLST:A/A less SD:A/A	dull orng fluor
3275	70	CLYST:A/A	dull orng fluor
	30	SLST:A/A TR SD;A/A	
3277,5	80	CLYST: becmg pred dker gry,else A/A	dull orng fluor
	20	SLST:A/A TR SD:A/A TR DOL/LST:A/A	
3280	80	CLYST:A/A	very dull orng
	20	SLST:A/A TR: PYR NODS	fluor,no cut
3282,5	60	CLYST;A/A	NO FLUOR
	40	SLST:A/A	
3285	60	CLYST:A/A	
	40	SLST;A/A	
3287,5	70	CLYST:A/A	
	30	SLST:A/A	
	tr	DOL/LST:pred A/A also calcite,mlky wh,xtls	
3290	50	CLYST:A/A	DULL ORNG FLUOR
	40	SLST:A/A sl calc-calc	W SLOW WH YEL CUT
	tr	SD:transl,qtz,vf	IN MRL/DOL
	10	MRL: crm-lt gry spkcld,sft,blky,	NO SHOWS IN SLST
	TR+	dol,calcite ,pyr nods	
3292,5	60	CLYST;A/A	
	40	SLST:A/A TR:MRL and other A/A	
3295	70	CLYST;A/A	
	30	SLST:A/A	
3297,5	70	CLYST:A/A	
	30	SLST:A/A TR:A/A	
3300	70	CLYST;A/A	
	30	SLST:A/A TR: no mrl,else a/a	
3302,5	80	CLYST:A/A	
	20	SLST:gen A/A,also lt brn-lt brn gry,blky,	Dull yel orng
		hd,fiss,non calc	fluor, slow-m.
			fast yel wh

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/HYDRO/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	6/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3305	80	CLYST:A/A	crush cut,occ
	20	SLST:A/A	no cut
3307,5	80	CLYST:A/A	SHOWS A/A
	20	SLST:A/A	
3310	80	CLYST:occ slty,else A/A,pyr nods,glau	SHOWS:A/A
	20	DOL/MRL:lt-med brn ,oliv grn,occ wxy,	
		blky,amorph,microxln-f xln,occ fibr,	
		hd-vhd	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	BEYER	Date:	6/6-7/6 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3312,5	100	CLYST:slty,occ sdy,(vf),pred med gry,occ	CMC or gypsum
		slst flazers/spcks,lt brn-lt gry,(A/A),	contam.
		calc,occ sl calc,	Dull orng fluor
	tr	non calc,SD:vf-f,clr-transl,subang-subrnd,	slow yel wh cut
		qtz,calc cmt,glauc,TR:lst/dol:rsty brn,	in some lst/dol
		hd,fibr xln	
3315	80	CLYST:A/A,mod hd,blky,occ fiss	
	20	SLST:lt brn gry,calc-sl calc	
	TR	SD:A/A	
3317,5	90	CLYST:A/A becmg more mica,slty,occ grdg ,	
		to slst	
	10	LST/DOL:crm,lt brn,pred hd-v hd,blky,xlne	
3320	90	CLYST:A/A	
	10	SLST:A/A	
3322,5	80	CLYST:A/A	Dull orng fluor
	20	SLST:A/A TR:LST/DOL/MRL	mod slow crush
			cut in slst
3325	80	CLYST:A/A	
	20	SLST:A/A TR:LST/DOL/MRL	
3327,5	80	CLYST:A/A	
	20	SLST:A/A TR:A/A	
3330	80	CLYST:A/A	NO SHOWS
	20	SLST:A/A TR:A/A	
3332,5	80	CLYST:A/A	
	20	SLST;A/A	
3335	90	CLYST:A/A	
	10	SLST:A/A TR:A/A	
3337,5	90	CLYST:A/A	
	10	SLST:A/A TR;A/A	
3340	90	CLYST:A/A	
	10	SLST:A/A	CMC gypsum cont
3342,5	80	CLYST:A/A	DULL YEL ORNG
	20	SLST:A/A TR:A/A	FLUOR AND SL YEL
3345	80	CLYST:A/A	WH CUT IN SOME
	20	SLST:A/A	DOL.NO SHOWS IN
			SLST.
3347,5	80	CLYST:A/A	
	20	SLST:A/A TR:A/A	
3350	90	CLYST:A/A still pred calc	
	10	SLST:A/A TR:A/A	
3352,5	90	CLYST:A/A	v dull orng
	10	SLST:A/A	fluor,no cut
3355	90	CLYST: gen A/A, bec also dker clyst	mod br orng fluor
	10	SLST:A/A TR;LST/DOL/MRL	yel mlky wh,mod
			fast crush cut

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	7/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3357,5	90	CLYST:pred med gry,occ lt gry-brn gry,	WEAK DULL YEL
		sft-frm,blky,occ subfiss,non calc,sl slty	FLUOR NO CUT
		-v slty,occ sdy	GAS: 0,3-0,35%
	10	SLST:mostly med gry-lt gry,occ sk calc,	
		frm	
	TR	LST/MRL: wh-lt brn,gry,freq w/bands of	
		med gry,sft,arg matr	
3360		A/A	SHOWS A/A
3362,5		A/A	
3365		A/A	
3367,5		A/A	
3370		A/A	
3372,5	90	CLYST:also grnsh gry and dk gry,else A/A	SHOWS:A/A
	10	SLST:lt-med gry,occ grnsh gry and brnsh	
		gry,frm,non calc	
	TR	LST/MARL:A/A	
3375		A/A	
3377,5	80	CLYST:A/A	
	10	SLST:A/A	
	10	LST:/MARL: wh-lt gry,bred,sft.amor	
3380	80	CLYST:A/A	
	20	LST/MARL:A/A	
	TR	SLST:A/A	
3382,5	100	CLYST;pred med gry,occ brn gry,grn gry,	
		occ dk gry,sft-frm,sl slty,non calc	
	TR	LST/MRL:A/A	
	TR	SLST:A/A	
	TR	GLAUC	
3385	95	CLYST: occ grdng to slst,else A/A	
	5	LST/MRL:A/A	
	TR	SLST:A/A AND GLAUC	
3387,5		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	7/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3390	100	CLYST:med gry,brn/grn gry,sft-frm,blky,	TR of dull orng
		amor,sl slty,non calc,sl stcky,	fluor,no cut
		sk micromic	
	TR	SLST:lt-med gry,brn gry,fri,occ sdy	
	TR	LST/MRL:wh-lt gry,sft,arg,occ xln,hd	GAS:0,3-0,5%
	TR	GLAUC	
3392,5		A/A	
3395		A/A	
3397,5		A/A	
3400		A/A	PARTLY CAVINGS
3402,5	100	CLYST:pred med gry,occ brn gry,dk gry,	
		sft-mod hd,mostly blky-amor,sl stcky,	
		occ fiss,grdg to sh,non calc,partly slty	
	TR	SLST:A/A	
	TR	LST/DOL:A/A	
	TR	GLAUC	
3405	90	CLYST:A/A	DULL ORNG FLUOR
	10	SLST:A/A	NO CUT
	TR	LST/DOL	
3407,5		A/A	
3410	90	CLYST:A/A	TR GYP
	10	SLST:lt-med gry,occ grn gry and dk gry,	PROB FROM MUD
		frm,blky,sl calc	
	TR	LST/MARL:A/A	
3412,5		A/A	
3415		A/A	
3417,5		A/A	
3420		A/A	
3422,5		A/A	
3425		A/A	pale gry-wh fluor
			in shaly matr
			no cut

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	8/6-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
3427,5	90	CLYST: med dk gry,occ lt gry,brn and grn	Minor wh yel
		gry,sft-frm,occ mod hd when shaly,blky-	fluor,no cut
		subfiss,sl mic,non sl calc-calc	from slst
	10	SLST:lt-med gry,fri-mod hd,sl calc-calc,	gas:0,3-0,4%
		arg	partly cavings
	TR	GLAUC	5-10%
3430		A/A	
3432,5		A/A	
3435		A/A	
3437,5		A/A	
3440		A/A	
3442,5	95	CLYST: becoming dk gry and more shaly,	
		else A/A	
	5	SLST:A/A	
	TR	GLAUC	
3445	90	CLYST;A/A	
	10	SLST:A/A	
	TR	SD:clr-wh qtz,vf-f,subang,lse	wh yel fluor
			mod fast strmg
			yel
3447,5		A/A	wh milk cut from
			10% of sample
			mostly slst/sd
3450	80	CLYST:A/A	
	15	SLST:A/A	
	5	SD:A/A, pyr and glauc	
3542,5	90	CLYST:A/A	
	10	SLST:A/A	
	TR	SD;A/A,pyr and glauc	
3455		A/A	
3457,5	100	CLYST:A/A	
	TR	SLST:A/A	
	TR	LST/MARL:wh-lt brn,sft,occ arg	
	TR	SD;A/A	
	TR	pyr and glauc	
3460		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	8/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3462,5	85	CLYST:med gry,lt-med brnsh gry,occ grn	weak yel brn
		gry,sft-frm,occ mod hd when shaly,blky-	fluor,mod-fast
		subfiss,nonsl calc,sl mic,slty	strmg mlky yell
	15	SLST:lt-med gry,brn gry,fri,sl mic,sl	wh cut from
		calc,arg	mostly slty matr
	TR	LST/MARL:wh-lt brn,sft-frm,occ arg	gas:0,5-1,62%
	TR	SD:wh-clr qtz,vf-f,subang,lse	10% of sample is
	TR	glauc and pyr	sh.(prob cavings)
3465	95	CLYST:A/A	
	5	SLST:A/A	
	TR	LST/MRL:A/A	
	TR	SD:A/A	
	TR	GLAUC	
3467,5	90	CLYST;A/A	
	10	SLST:A/A	
	TR	LST/MRL;A/A	
	TR	GLAUC	
	TR	SD:A/A	
3470		A/A	
3472,5	100	CLYST :A/A	gas:1,62%
	TR	SLST:A/A	
	TR	GLAUC	
3475		A/A	
3477,5		A/A	
3480		A/A	
3482,5		A/A	
3485		A/A	
3487,5		A/A	
3490		A/A	
3492,5	100	CLYST:mostly med-dk gry,else A/A	
	TR	SLST:A/A	
	TR	GLAUC	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	9/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3495	100	CLYST:med gry,brn gry,occ grnsh gry,and	Weak yel wh
		dk gry,sfr-frm,subfiss,sl mic,non sl mic	fluor,mod fast
		grdng into sh (10-20%) then mostly	strmg cut
		med-dk gry	
	TR	LST/MARL:wh-lt brn,gry,sft,grd to marl	gas: 0,5-0,9%
	TR	GLAUC	
3497,5		A/A	
3500		A/A	
3502,5		A/A	
3505		A/A	
3507,5		A/A	
3510		A/A	
3512,5		A/A	
3515		A/A	
3517,5	100	CLYST:less stcky,more shaly,else A/A	SHOWS:A/A
	TR	LST/MARL :A/A	
	TR	SD:clr-wh qtz,vf-f,lse	
	TR	glauc	
3520		A/A	
3522,5		A/A	
3525	100	CLYST:mostly med-lt gry,else A/A	
	TR	A/A	
3527,5		A/A	
3530		A/A	
3532,5		A/A	
3535		A/A	
3537,5		A/A	
3540		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	9/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3542,5	100	CLYST;lt-med gry,gry brn,grn gry,sft-frm,	Yel wh fluor
		occ mod hd,blky,subfiss,sl stcky,non sl	strmg yel cut
		calc,slty I/P,whwn shaly (10%),med fk gry	Abundan shale,
		frm,micromic,non calc	prob.cavings
	TR	LST:wh-lt brn,sft-frm,occ grdg to marl	(10-20%)
	TR	SD:clr-wh qtz,vf-m,subang,lse	
3545		A/A	
3547,5		A/A	
3550		A/A	
3552,5		A/A	
3555		A/A	
3557,5	100	CLYST:mostly med-dk gry,else A/A	SHOWS:A/A
	TR	A/A	
3560		A/A	
3562,5	100	CLYST:mostly med gry and brn gry,occ grn	
		gry and dk gry,sft-frm,blky-subfiss,	
		sl stcky,non sl calc,slty in parts, when	
		shaly;(10%) med-dk gry, frm,noncalc,micmic	
	TR	LST:A/A	
	TR	pyr and glauc	
3565		A/A	
3567,5		A/A	
3570		A/A	
3572,5		A/A	
3575		A/A	
3577,5		A/A	
3580	50	CLYST:A/A	
	50	CLYST: brick red-red brn,frm-sft,blky.,	SHOWS:A/A
		amorph,non calc	
	TR	LST:A/A	LCM in sample
			(NUT) question-
			able where it
			came from

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	9/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3582,5	60	MARL:lt-med pale gry,sft-frm,blky-amor,	Dull yel wh
		slty,grdg to clyst	fluor,slow-mod
	40	CLYST:med gry,occ grn gry,brn gry,brick	fast strm,mlky
		red,sft-frm,non-sl calc,sl slty,blky-	wh cut from 10%
		subfiss	of sample.
	TR	LST:wh-lt gry,lt brn,sft,arg I/P	Gas:0,3-0,4%
	TR	glauc	
3585	70	MARL:A/A	
	30	CLYST:A/A	SHOWS:A/A
	TR	LST:A/A	
	TR	GLAUC	
3587,5		A/A	
3590		A/A	
3592,5		A/A	
3595	50	MARL:A/A	
	50	CLYST:becoming dk gry,frm-mod hd,else A/A	SHOWS:A/A
	TR	LST:A/A	
	TR	GLAUC	
3597,5		A/A	
3600		A/A	
3602,5		A/A	
3605	60	MARL:lt-med gry,pale gry-brn gry,sft-v sft	A/A
	40	CLYST:A/A	
	TR	LST:A/A	
	TR	glauc and pyr	
3607,5		A/A	
3610		A/A	
3612,5		A/A	
3615		A/A	
3617,5		A/A	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	HELLE	Date:	10/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3620	50	MARL:lt-med gry,pale gry-brn gry,sft-vsft	Weak dull yel
		occ slty,amor,occ grd to clyst	fluor,mlky wh
	50	CLYST: lt-med gry,brn gry,grn gry,occ dk	yel mod-fast
		gry,sft-frm,non-sl calc,sl slty,occ shaly	strm cut from
		sl mic	over 50% of samp
	TR	LST:wh-lt gry,sft,arg in parts	
	TR	SD:clr qtz,vf-med,lse,subang	
3622,5		A/A	
3625		A/A	
3627,5	70	CLYST:A/A	
	30	MARL:A/A	A/A
	TR	LST:A/A	
	TR	SD:A/A	
3630		A/A	
3632,5		A/A	
3635		A/A	
3637,5		A/A	
3640	80	CLYST: v slty in parts,else A/A	A/A
	20	MARL;A/A	
	TR	LST:A/A	
	TR	SD:A/A and glauc	
3642,5	65	CLYST:A/A	
	30	MARL:A/A	
	5	kaolin: crm,pnk,sft,blky,non calc	
	TR	SD;A/A	
	TR	LST:A/A and glauc	
3645	90	CLYST: mostly lt-med brn gry,occ brick	
		red,dk gry,sft-frm,non sl calc,slty,	
		sl micmic,occ shaly	
	10	MARL:A/A	
	TR	KAOLIN	
	TR	SD;A/A	
	TR	LST:A/A and glauc	
3647,5		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOILI/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	M HELLE	Date:	11/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3650	90	CLYST:pred brick red-red brn,brn gry,med	Weak dull yel
		gry,sft,occ frm,non-sl calc,occ slty,	fluor,instant
		sk micmic	mlky wh yel mod
	10	MARL:lt-med gry,brn gry,sft,amor,occ grd	fast strm cut
		to clyst	from 50% of
	TR	SD:clr,qtz,vf-med,subang,lse	sample.
3652,5	95	CLYST:A/A	
	5	MARL;A/A	
	TR	SD:A/A	
3655	90	CLYST;pred brick red-red brn,occ gry,	
		becoming v calc,else A/A	
	10	SH/CLYST:med gry,occ grn gry and brn gry	
		frm,micmic,sl slty,non calc	
	TR	SD:A/A	
3675,5		A/A	
366050	50	CLYST; more med gry,else A/A	
	40	LST: wh-lt gry,frm-hd,occ xln,arg I/P	
		grd to marl	
	10	SH:A/A	
3662,5	100	SH/CLYST:med-dk brn gry,sft-frm,subfiss,	TOP KIM. at 3662
		blky -platy,carb,non calc	fluor A/A
	TR	CLYST;A/A	wh yel mlky mod-
	TR	SH;A/A	fast strm cut
	TR	LST:A/A	
3665		A/A	
3667,5		A/A	
3670		A/A	
3672,5		A/A	
3675		A/A	
3677,5		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	12 1/4"	Geologist:	M. HELLE	Date:	11/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3680	100	SH/CLYST:dk brn gry,dk gry,frm,subfiss, blky,platy,carb,mostly non calc,occ v calc,slty,grd to marl and lst streaks	Dull yel wh fluor instant mlky wh yel fast strm cut from most of sample
3682,5		A/A	
3685		A/A	
3687,5		A/A	
3690		A/A	A/A
3692,5	100	SH/CLYST:dusky yel brn,occ dk gry,sft, carb,occ frm,non calc,micmic,sl slty, blky,amor	Sudden increase in $CaCO_3$-content
	TR	PYR	
	TR	LST: clr wh-lt brn,frm-hd,occ xln	
3695		A/A	
3697,5		A/A	
3700	100	SH/CLYST:dusky yel brn,lt brn gry,sft-frm blky-amor,occ subfiss,micmic,non calc, slty in parts,carb	A/A
	TR	pyr and glauc	
	TR	LST:A/A	
3702,5		A/A	
3705		A/A	
3707,5		A/A	
3710		A/A	
3712,5		A/A	
3715		A/A	
3717,5		A/A	
3720	100	SH/CLYST:mostly lt-med brn gry,else A/A	
	TR	LST:A/A	
	TR	pyr and glauc	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 12 1/4"	Geologist: HELLE		Date: 12/6-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
3722,5	100	SH/CLYST:lt-med brn gry,dusky yel brn,	Very weak dull
		frm-sft,blky-subfiss,micmic,non calc,	yel fluor,in-
		occ slty,sl carb	stant mlky wh
	TR	glauc and pyr	yel fast strm
			cut from most
			of sample.
3725		A/A	
3727,5		A/A	
3730		A/A	
3732,5		A/A	
3735	100	SH/CLYST:A/A	SHOWS:A/A
	TR	LST: wh-lt gry,occ clr,frm-hd,occ xln	
	TR	pyr and glauc	
3737,5		A/A	
3740		A/A	Cir. bottoms up
3742,5	100	SH/CLYST:partly med dk gry,else A/A	
	TR	LST:A/A	
	TR	pyr and glauc	TG: bottoms up:
3745	90	SH/CLYST;A/A	1,6%
	TR	LST:A/A	SHOWS:A/A
	TR	pyr and glauc	alot of cavings
			from the hole
			above
3747,5	85	SH/CLYST:med gry,occ lt and dk gry,med	Weak yel-wh-orng
		brn gry,micromic,sl pyritic,when dk gry,	fluor,mlky wh
		carb,else non-sl carb,non calc,occ sl	yel,mod fast
		slty	strmg cut from
	15	LST/MARL: wh-lt brn,lt gry,sft-hd,occ	most of sample
		xln,partly arg,grd to marl	
	TR	pyr and glauc	
3750	90	SH/CLYST:mostly med brn gry,partly slty,	Shows A/A
		else.A/A	
	10	LST/MARL:occ calcite,transp,hd,else A/A	
	tr	pyr	
3752,5	95	SH/CLYST:A/A	Increasing con-
	5	LST/MARL:A/A	tent of pyr
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/HYDRO/SAGA
Hole size: 12 1/4" | Geologist: M HELLE | Date: 13/6-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
3755	95	SH/CLYST: med brn gry,med-dk gry,occ lt gry,sft-frm,occ mod hd,non calc,sl mic, subfiss,partly carb,occ pyritic,slty in parts	Weak yel wh-orng fluor,mlky wh yel mod fast strmg cut from most of sample
	5	LST/MARL:lt brn,wh-buff,occ lt gry,sft-hd, occ xln,partly arg,grd to marl,occ calcite,transp,hd	
	TR	pyr and glauc	2-3% pyr
3757,5	95	SH/CLYST;occ pale grn gry,else A/A	shows A/A
	5	SLST:lt-med brn gry,fri,non calc,arg, sl mic,occ pyritic,occ grdg to vf sst	
	tr	LST/MARL:A/A	
	TR	pyr and glauc	3 % pyr
3760	90	SH/CLYST:A/A	
	10	SLST:A/A	
	TR	SD:clr qtz,vf-f,fri,subang,aggregates	
	TR	pyr and glauc	
3762,5	95	SH/CLYST: more fis,frm-mod hd,else A/A	
	5	SLST:A/A	
	TR	LST/MARL:A/A	
	TR	SD:A/A	
	TR	pyr and glauc	1% pyr from 66 GR-kos res-2-1,5
3765		A/A	
3767,5		A/A	
3770		A/A	
3772,5		A/A	
3775		A/A	Cir bottoms up

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: TAJET/HELLE	Date: 19/6-84	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3777,5	95	SH/CLYST:med brn gry,med-dk gry,occ	Cmt cont
		lt gry,sft-frm,occ mod hd,non calc,	Weak yel wh-orng
		subfiss,I/P carb,occ pyr,slty I/P	fluor,mlky wh
	5	SLST:lt-med brn gry,fri,non calc,arg,sl	yel mod fast
		mic,occ pyr,occ grd to vf sst	strmg cut from
	tr	SD:clr qtz,vf-f,occ med,lse,subang	some samples
	tr	pyr	
3780	95	SH/CLYST:A/A	
	5	SLST:A/A	
	TR	SD;A/A	
	TR	PYR AND GLAUC	
	TR	LST:lt brn,wh-buff,occ lt gry,sft-hd,occ	
		xln,aprtly arg,grd to marl	
3782,5	60	SH/CLYST:A/A	Max gas:8,6%
	40	SST:clr qtz,crs-med,occ f,subang,lse,	None-weak yel wh
		occ w/kaolin matrix	fluor,mlky wh
	TR	SLST:A/A	yel mod fast
	TR	LST:A/A	strmg cut from a
	TR	DOL:wh-buff,hd,arg	few particles
3785	90	SST:mostly med-f,crs,else A/A	10% lignite in
	10	SH/CLYST:A/A	sample
	TR	LST:A/A	tr of metall
	TR	DOL:A/A	
3787,5		A/A	shows a/a
3790	90	SST:increasing content of wh-buff kaolin	
		matrix in sst	
	10	SH/CLYST:A/A	
	TR	LST/DOL:A/A	
3792,5		A/A	
3795		A/A	
3797,5		A/A	
		CORED BETWEEN 3783-3847m	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: SVINDLAND/PRUDDEN	Date: 23/6-24/6 1984	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3847,5	100	SST:clr-transl,med,occ f and crs,subang-subrnd,lse,mod srtd	Weak bluish wh fluor,no cut
3850	100	SST:fn-med,else A/A	-"-
3852,5	100	SST:A/A	-"-
3855	100	SST:clr-transloc,med,occ f and crs	-"-
3857,5	100	SST:A/A	
3860	100	SST: slightly calc,else A/A	-"-
3862,5	100	SST:A/A	
3865	90	SST:clr-transl qtz,med,occ f,subang-rnd,	Abun lignite
	10	SLST:arg,orng brn,frm,ang brk,sl calc-calc	contam v occ spots dull orng
	gd tr	KAOL:wh,sft,sl swelling	yel fluor
3867,5	90	SST:A/A, f-med	
	10	KAOL:A/A	No shows
	gd tr	SLST:A/A	
3870	100	SST:clr-transl qtz,f,silica and calc cmt	
	TR	KAOL;A/A	
3872,5	100	SST:A/A,calc cmt	
	TR	KAOL:A/A	
	TR	PYR NODS	
3875	100	SST:A/A,mod calc	
	TR	KAOL:A/A	
	TR	PYR NODS	
3877,5		A/A	Patchy pal yel
3880	90	SST:A/A,v calc	fluor,vv slow
	10	MARL: wh-v lt gry-v sft,swelling	dull yel wh cut

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	M. PRUDDEN	Date:	24/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3882,5	90	SST:clr-transl qtz,med,occ crs,lse,f-med,	Patchy pa yel-
		w/calc cmt,subang-rnd,well srtd,mod hd	yel fluor,v slow
	10	MARL:wh-lt gry,v sft,swelling,?,kaol	dull yel wh cut
	tr	pyr nods	
3885		A/A	Overall v dull
			orng fluor,
			spots A/A
3887,5	90	SST:A/Aocc wh kaol cmt	Patches v dull
	10	KAOL:wh,sft-frm,non calc-marly	orng fluor
	tr	pyr nods	
3890	85	SST:A/A mod abun kaol cmt	
	15	KAOL:A/A	
	TR	PYR NODS	
3892,5	85	SST:A/A	Patches v dull
3895	90	SST:A/A	yel,brn fluor,
	10	CLYST/SILTS; med gry,occ dk-med gry,occ	no cut
		lt gry,sft-frm,non calc	
	tr	kaolin	
3897,5	70	CLYST/SILTS:A/A	Patches,brn fluor
	30	SST:A/A	no cut
3900	70	CLYST/SILTS:A/A	
	30	SST:f-occ m,else A/A	-"-
3902,5	70	CLYST/SILTS:A/A	Patches v dull
	30	SST:clr-transl qtz,fin occ m,w/calc cmt,	yel brn fluor,
		subang-rnd,well srtd,mod hd	no cut
	tr	pyritt	
3905	70	CLYST/SILTS;A/A	
	20	SST:clr-transl,qtz,vf-occ f w/calc cmt,	-"-
		else A/A	
	10	pyrit	
3907,5	80	CLYST/SILTS:A/A	Patches,dull
	10	SST: vf-occ f,else A/A	orng brn fluor
			no cut
3910	90	CLYST/SILTS:A/A,but more dk-brnsh gry than	
		above,and probably carb	Patches brn
	10	SST:A/A	fluor,no cut
3912,5	60	CLYST/SLST:dk-dk brnsh gry,carb,else A/A	
	30	SST:A/A	-"-
	10	pyr	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN	Date:	26/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3915	85	COAL:dk gry blk-blk,mod hd,brit,blky,occ fobrous,occ subfiss,sl slty I/P,occ micropyr	Patches dull orng yel fluor
	10	CLYST:lt gry-gry,gry brn,sft-frm,amorph, sl swelling,sl calc-calc,sl-v slty, occ sl sof	
	5	SST: clr-transl qtz,vf-f,calc cmt,mod hd	
	tr	pyr nods	
3917,5		A/A	
3920	90	COAL:A/A	V occ spots dull orng yel fluor
	10	CLYST:A/A	
	TR	SST:A/A	
	TR	PYR NODS	
3922,5		A/A	-"-
3925	85	COAL:A/A	
	15	CLYST:A/A	-"-
	TR	SST:A/A	
	TR	PYR NODS	
3927,5	75	COAL:A/A	
	25	CLYST: med gry,occ lt gry,frm,occ sft,A/A	-"-
	TR	SST:A/A	
	TR	PYR NODS	
3930	70	COAL:A/A	
	30	CLYST:med-dk gry,gry brn,sft-frm,amorp, sl swelling,non-sl calc,slty,vf sd grns	
	tr	SST:A/A	-"-
	TR	PYR NODS	
3932,5	65	CLYST:lt-med brn gry ,non calc A/A	
	30	COAL:A/A	
	5	SST:clr-transl qtz,f-med,occ crs,subang-subrnd,mod srtd,occ calc cmt,gen lse	
	tr	pyr nods	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA
Hole size: 8½" | Geologist: PRUDDEN/SVINDLAND | Date: 25/6-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
3935	85	SST:clr-transl qtz,med crs,occ v crs,	Patches dull
		subang-subrnd,poor-mod srtd,lse,also	yel fluor
		f-med silica cmtd	
	10	KAOL:wh-lt gry wh,sft-frm	
	5	CLYST:lt-med brn gry,A/A	
3937,5	80	SST:A/A gen f,occ f-med silica cmtd	Patches dull
	10	KAOL:A/A	orng yel fluor
	10	CLYST:A/A	
	TR	PYR NODS	
3940	100	SST:f occ med else A/A	-"-
	tr	kaol	
	tr	mica	
3942,5	100	SST:A/A	Patches lt yel
	TR	KAOL	fluor -"-
3945	95	SST: f occ vf else A/A	-"-
	5	KAOL	
	tr	mica	
3947,5		A/A	-"-
3950	95	SST: f occ m else A/A	-"-
	5	KAOL	
	tr	mica	
3952,5	100	SST:A/A	
	TR	MICA	-" -
3955	100	SST:A/A	Patches dull
	tr	kaol	orng yel fluor
	tr	mica	
	tr	pyr	
3957,5	100	SST: m occ c,less cmt than above,else A/A	Patches lt yel
	tr	kaol	fluor
	tr	mica	
3690	100	SST:m,occ f-crs,else A/A	
	tr	kaol	
	tr	mica	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN/SVINDLAND/TAJET	Date:	25/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3692,5	85	SST:clr-transl qtz,med,occ f-crs,subang-	Patches dull
		subrnd,poor-mod srtd,lse,occ kaolin and	yel fluor
		silica cmtd	
	15	KAOL:wh-lt gry wh,sft-frm	
	tr	mica,pyr	
	tr	CLYST:dk gry-blk,mod hd	
3965	80	SST:A/A	
	20	KAOL:A/A	
	TR	CLYST:A/A	
	TR	MICA	
3967,5	90	SST;A/A	
	10	KAOL:A/A	-"-
	TR	CLYST:A/A	
	TR	MICA	
	TR	PYR	
3970		A/A	
3972,5	85	SST:A/A	
	15	KAOL:A/A	
	TR	MICA	-"-
	TR	CLYST	
3977,5	95	SST:ckr-transl qtz,f occ m,subang-	
		subrnd,mod strd,lse,occ calc cmt else A/A	-"-
	5	KAOL:A/A	
	TR	PYR	
3980	90	SST:A/A	
	5	KAOL:A/A	
	5	CLYST:lt gry-dk gry,sft	
3982,5		A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON
Well no.: 6406/3-1		
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA	
Hole size: 8½"	Geologist: TAJET/SVINDLAND/PRUDDEN	Date: 25/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
3985	70	CLYST- Carbon,dk gry-dk brnsh gry,occ slty,hd,fibr,	Patches dull yel fluor
	20	CLYST: lt gry-dk gry,sft	
	10	SST:clr-transl qtz,f occ m crs,subang-subrnd,mod srtd,occ calc cmtd	
3987,5	70	CLYST:A/A	-"-
	20	CLYST:A/A	
	10	SST:A/A occ grd to slst	
3990	40	CLYST;A/A	-"-
	60	SST:A/A	
	tr	kaolin	
3992,5	70	CLYST;A/A	-"-
	20	KAOLIN: wh-gry wh,sft-frm	
	10	SST:A/A	
3995	60	CLSYST:A/A	No shows
	30	SST:A/A	
	10	KAOLIN:A/A	
3997,5	50	CLYST;A/A	NO SHOWS
	40	SST: more calc else A/A	
	10	KAOLIN	
4000	40	SST: f occ m,else A/A	-"-
	50	CLYST;A/A	
	10	CLYST:A/A (lt gry-dk gry,sft)	
4002,5	80	SST:A/A	-"-
	10	CLYSTS;A/A carbon,dk gry-dk brnsh gry, occ slty,hd,fibr	
	10	KAOLIN	
	tr	mica,pyr,limest	
4005	80	SST: m-f,else A/A	-"-
	20	CLYST:A/A	
	tr	KAOLIN	
	tr	mica,limest	
4007,5	60	SST:A/A	-"-
	40	CLYST:A/A	
	tr	limest	
	tr	mica	
	tr	kaolin	
	tr	pyrite	
4010	85	SST:A/A	
	15	CLYST;A/A	
	tr	mica,kaolin.pyr	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: ALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA
Hole size: 8½" | Geologist: SVINDLAND/PRUDDEN/TAJET | Date: 25/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4012,5	65	SST:clr-transl,qtz,f occ m,subang-subrnd, mod srtd,partly grd to slst,calc in most slty parts	NO SHOWS
	20	LST:lt brn-buff,occ wh,sft-frm,amorph, argill in parts,	
	10	KAOL:wh-lt gry,sft-frm	
	5	CLYST;-carbon,dk gry-brnsh gry,occ slty, hd,fib	
4015	80	SST:A/A	
	10	LST:A/A	-"-
	10	CLYST:A/A	
	TR	KAOL	
4017,5	95	SST:A/A	
	TR	LST:A/A	-"-
	5	CLSYT;A/A	
4020	90	SST:clr-transl qtz,vf-f,occ med,subang-subrnd,poor-med srtd,partly grding to slst,occ sl calc in mostly slty parts	-"-
	5	KAOLIN:A/A	
	5	CLYST:dk gry-dk brnsh gry,occ orng brn, mod hd,occ fib,sl slty	-"-
	tr	LST:buff,off wh,sft-frm,occ arg	
	tr	mica	
4022,5		A/A	-"-
4025		A/A	
4027,5	90	SST:A/A,hd,silica cmt,also W/clyst:v sft swelling	
	5	KAOL:A/A	
	5	CLYST ;A/A	
	TR	LST:A/A	
	TR	mica,pyr nods	
4030	100	SST:A/A	
	gd tr	CLYST:A/A	
	TR	KAOL;A/A	
	TR	mica,pyr nods	
4032,5		A/A	
4035	90	SST:A/A	
	10	CLYST;med gry,brn gry,v sft,swelling, amorp,v slty, v sdy,sl calc-calc	
	TR	LST:A/A	
	TR	CLYST: dk gry-dk brnsh gry,carb A/A	
	tr	kaol,mica,pyr nods	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: PRUDDEN/SVINDLAND		Date: 25/6-26/6 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4037,5	90	SST:clr-transl qtz,vf-f,mod hd-hd,w/calc and silica cmt,med,lse,subang-subrnd, well srtd	NO SHOWS
	10	CLYST:med gry-brn gry,A/A	
	tr	LST:crm-buff,frm	
	TR	KAOL:wh,v sft-sft	
	tr	mica,pyr nods	
4040	80	SST:A/A occ crs lse grns	
	20	CLYST;A/A	
	gd tr	CLYST:dk gry-dk brnsh gry,carb,A/A	
	tr	KAOL:A/A	
	TR	MICA	
4042,5	40	SST:A/A	
	40	SLST:rd brn,frm,cmbly brk,non calc,arg,occ grdng to vf sd	Abun metal
	10	CLYST: med-dk gry,occ gry brn,sft-mod hd., swelling-brit,brk.,non-sl calc	
	10	CLYST; dk gry blk-dk brn gry A/A	
	TR	KAOL: mica,pyr nods	
4045	50	CLYST:med gry-gry brn,v sft-sft,swelling, amorp,slty,sdy,non-sl calc	
	30	SST:A/A	
	20	SLST:A/A	
	TR	CLYST:dk gry blk-dk brn gry,A/A	
	TR	kaol,mica.pyr,nods	
4047,5		A/A	
4050		A/A	
4052,5	50	SST: clr-transl qtz,f occ m,mod hd-hd, w/calc and silica cmt,med lse,subang-subrnd,well srtd	
	40	CLYST;A/A	
	10	SLST:A/A	
4055	70	CLYST;A/A	
	15	SST: vf-f,occ med,else A/A	
	15	CLYST: dk gry-dk brnsh gry,occ slty,hd, prob carb	
	TR	SLST:A/A	
	TR	LST:crm-buff,frm-mod hd	
4057,5	90	CLYST:med gry-gry brn,v sft,swelling, occ slty	
	5	CLYST;A/A	
	5	SST:A/A	
	TR	LST:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA
Hole size: 8½" | Geologist: TAJET/SVINDLAND | Date: 27/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4060	90	CLYST:med gry-gry brn,v sft,swelling,	NO SHOWS
		occ slty,	
	10	CLYST:dk gry-dk brnsh gry,occ slty,hd,	
		prob carb	
	tr	lst	
4062,5	100	CLYST;A/A	
	TR	CLYST :A/A	
	TR	LST	
4065	90	CLYST:A/A	
	10	CLYST:A/A	
	TR	LST	
4067,5		A/A	
4070	70	SST:clr-transl qtz,f-med,occ mod-good srt	
		subang-subrnd	
	25	CLYST:A/A	
	tr	lst	
4072,5	95	SST:A/A	
	5	CLYST:A/A (dk gry-dk brnsh)	
	tr	lst	
	tr	mica	
4075	85	SST:A/A	
	5	CLYST:A/A	
	10	CLYST:med gry-gry brn,v sft,selling,	
		occ slty	
	tr	kaolin,lst,mica,pyr	
4077,5	85	SST;A/A	
	10	CLYST:(med gry-gry brn)A/A	
	5	CLYST;(dk gry-dk brnsh)a/a	
	tr	kaolin,lst,mica,pyr	
7080	55	CLYST:A/A	Patches dull
	40	SST;A/A	yel fluor
	5	CLYST:A/A	
	TR	A/A	
7082,5	90	SST:A/A	-"-
	5	CLYST:(med gry-gry brn) A/A	
	5	CLYST:(dk gry-dk brnsh) A/A	
	TR	A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: TAJET/SVINDLAND/PRUDDEN		Date: 27/6-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
4085	70	SST:clr-transl qtz,f-m,occ mod-well srtd, subang-subrnd	NO SHOWS
	30	CLYST:med gry-gry brn,v sft,swelling, occ slty	
	tr	pyr,kaolin,mica.lst	
4087,5	80	SST:f,occ vf-crs ,mod hd,occ sl calc,occ silica cmtd	
	20	CLYST:med gyr-brn gry,v sft-sft,slty and sdy,pyritic	Some pipedope in the samples
	tr	LST:crmy wh-buff,sft-frm	
	tr	pyr,mica	
4090	60	SST:sl calc in most slty parts,else A/A	-"-
	40	CLYST:A/A	
	tr	lst,pyr,mica	
4092,5		A/A	
4095	70	CLYST;A/A	
	30	SST;A/A	
	tr	pyr.lst,mica	
4097,5	85	CLYST:A/A	
	15	SST:A/A	
	TR	LST:PYR,MICA	
4100	70	CLYST;A/A	
	30	SST:A/A vf,well srtd,silica and calc cmt gen lse,med,occ f-crs,well srtd,subang-subrnd	
	tr	lst.pyr nods,mica	
4102,5	90	CLYST:A/A	
	10	SST;A/A	
	TR	A/A	
4105	95	CLYST;A/A, occ grdng to frm slst	
	5	SST:A/A	
	TR	A/A	
4107,5	95	CLYST;A/A	
	5	SST:A/A	
	tr	pyr nods	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN/SVINDLAND	Date:	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4110	90	CLYST:lt-med gry,brn gry,v sft-sft,amorp,	NO SHOWS
		swelling,slty,sdy,non calc	Tr of pipe dope
	10	SST:clr-transl qtz,vf-f,well srtd w/silica	
		and sl calc cmt,also lse med,occ f-crs	
		grns,subang-subrnd,well srtd	
	gd tr	pyr nods	-"-
6112,5	50	CLYST:A/A, occ bec dk gry,v slty,micromic	
		frm-mod hd,	
	50	SST:A/A, mod calc	
	tr	pyr nods,mica	
4115	60	SST:A/A ,sl calc	-"-
	40	CLYST;A/A	
	tr	pyr nods,mica	
4117,5	70	SST:A/A	-"-
	30	CLYST:A/A	
	TR	pyr nods,mica	
4120	85	CLYST; grdg to slst,gry brn,sft-frm,	-"-
		sl swelling,occ sdy,non calc	
	15	SST:A/A	
	tr	pyr nods	
4122,5	90	CLYST:grdg to slst,dk gry-gry brn,sft,	NO SHOWS
		sft-hd,calc	
	10	SST:clr-transl qtz,f-m,well srtd w/silica	
	tr	lst	
4125	95	CLYST: A/A	-"-
	5	CLYST;dk gry-dk brnsh gry,hd	
	tr	sst	
	tr	lst	
4127,5		A/A	-"-
4130	90	CLYST:A/A	-"-
	10	SST:A/A but more calc	
	tr	lst	
4132,5	100	CLYST:A/A	-"-
	TR	sst,lst	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA
Hole size: 8½" | Geologist: PRUDDEN/BEYER/SVINDLAND | Date: 28/6-29/6 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4135	50	SST:clr-transl,occ lt yel brn,qtz,f-med, well srtg,ang-subrnd,frm,occ sl lse, predom silica cmt,sl calc cmt,mica-v mica no vis por	~~NO SHOWS~~
	50	CLYST:dk gry-blksh gry,tr brck rd,sl slty/sdy,frm-hd,blky-pred non calc,tr carb	
	tr	LST/DOL:lt-med brn,hd,xln	
4137,5	70	SST:A/A	Dull dk orng fluor,no cut
	30	CLYST:A/A TR:fibr amphibole?	
4140	60	SST:A/A	
	40	CLYST;A/A bcoming more aren,brn gry	-"-
4142,5	60	SST:A/A	
	40	CLYST;A/A bcmng gen more calc	-"-
4145	50	SST;A/A	
	50	CLYST:A/A	-"-
4147,5	60	SST:A/A	
	40	CLYST:A/A TR: LST:A/A,tr pyr nods,coal	
4150	40	SST:A/A	-"-
	60	CLYST;A/A,very aren/silica cmt	
4152,5	40	SST;A/A	
	60	CLYST: grdn to sst:med brn-brn gry,frm	-"-
4155	40	SST:A/A	
	60	CLYST;A/A tr coal;blk,sft,tr lst/dol	-"-
4157,5	30	SST:A/A	Dull orng fluor no cut
4160	90	CLYST;dk gry-blksh gry.sl slty/sdy, frm-hd,blky,occ calc	
	10	SST:A/A	
	tr	lst.,mica	
4162,5	90	CLYST:A/A	-"-
	10	SST:A/A	
	tr	lst,mica,coal	
4165	60	CLYST;A/A	
	40	SST:A/A	
	TR	mica.lst,coal	-"-
4167,5	60	CLYST:A/A	
	40	SST:A/A	
	tr	mica.lst,pyr nods	-"-

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: PRUDDEN/BEYER	Date: 29/6-30/6 1984	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4170	40	SST:clr-transl qtz,f,well srtd,silica and	Dull orng fluor
		calc cmt,mod hd,also med-crs lse grns,	no cut
		subang-subrnd,well srtd	
	40	CLYST:gry-dk brn gry,sdft,amorph,non calc	
		slty,sdy	
	20	SLST:sdy,dk brn gry,frm-mod hd,ang brk,	
		non calc,micropyr	
	tr	LST:buff,frm,micritic	
	tr	mica,pyr nods	
4172,5	70	SST:A/A gen lse	-"-
	15	CLYST:A/A	
	15	SLST:A/A	
	tr	mica,pyr nods	
4175	40	SLST:A/A sft-frm,arg-sdy	"
	30	CLYST:A/A	
	30	SST:A/A	
	TR	lst,pyr nods	
4177,5	55	SLST:A/A	-"-
	25	CLYST;A/A	
	25	SST;A/A	
	tr	lst,pyr nods	
4180	40	SST:A/A no vis por	v dull orng-brn
	30	SLST:lt brn,cln,sft,and med-dk brn gry,	fluor,no cut
		hd,	
	20	CLYST;pred dk gry-dk brn gry,occ grdng to	
		slst,sdy	
	10	LST:buff,occ clr-transl calcite,tr pyr,	
		mica	
4182,5	40	SST:A/A	-"-
	40	SLST:v sdy,grdg to sst:med brn gry,	
		frm-mod hd	
	10	CLYST:A/A	
	10	LST:A/A	
4185	80	SST:A/A I/P poor vis por	-"-
	20	SLST:A/A TR:clyst,lst A/A	
4187,5	80	SST:pred clr free qtz grns,med,ang-subrnd	-"-
		well srtd	
	20	SST:dk brn gry,argill,slty,silica cmtd	
4190	90	SST:clr qtz A/A	
	10	SST:dk brn gry A/A	
4192,5	90	SST:A/A	
	10	SST:A/A	
4195	90	SST:A/A	
	10	SST: gen more argill,tr dk gry blksh	-"-
		gry clyst	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN	Date:	30/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4197,5	85	SST:clr-transl qtz,med crs,occ v crs,	v dull orng
	subang-subrnd,occ ang,mod-well srtd,silica cmt		fluor,occ specks
		qtz overgrowths,lse grns,poor vis por	orng fluor no
	10	SST:arg,gry-dk brn gry,vf-med qtz,slty,	cut
		silica cmt	
	tr	CLYST:dk brn-dk brn gry,sft-frm-amorph-	
		blky,non calc,occ slty-v slty	
	tr	LST:wh-buff,sft-frm	
	tr	kaol,pyr nods	
4200	100	SST:clr-transl, lse qtz A/A	-"-
	tr	SST: arg,A/A	
	tr	kaol,pyr nods,occ mica	
4202,5	100	SST;A/A occ sl calc	fluor a/a,occ
	tr	SST:arg,A/A	specks orng yel
	tr	kaol,occ pyr nods,mica	fluor,no cut
4205		A/A	Occ brn oil
			stain,fluor a/a
4207,5	100	SST:clr-transl qtz A/A,occ f,well cmtd	Brn stain in F,
	tr	CLYST;A/A	well cmtd sst
	TR	kaol	Common specks
			dull yel F,occ
			v slow
4210	100	SST:A/A,common F,occ f-med,well cmtd	Bl wh cut
	tr	CLYST:A/A	common brn stain
	tr	kaol	F A/A
4212,5	100	SST;A/A,common F,well cmtd,micromic	Common brn stain
	tr	CLYST:A/A	
	tr	kaol,pyr nods,mica	Fluor A/A
4215	95	SST:A/A	
	5	CLYST; slty,grdg to slst,dk gry brn,	-"-
		sft-frm,non calc	
	tr	lst,kaol	
4217,5		A/A	
4220	100	SST:A/A,gen med-crs,lse grns	No stain v occ
	tr	CLYST:A/A	spots dull yel
	tr	kaol,mica	fluor,no cut

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN	Date:	30/6-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
4222,5	90	SST: clr-transl qtz,f,subang-subrnd,well srtd,mod hd-hd,silica cmt,sl calc cmt, also med-crs,occ v crs lse sst,ang-subrnd well srtd	Some brn stain on Fcmtd sst occ tr of dull yel fluor
	10	CLYST: slty,sdy,dk gry-dk gry brn,sft-frm amorp-blky,non calc,occ sl carb,occ v v mic bands	
	tr	kaol,mica	
4225	100	SST:clr-transl qtz,f-med,subang-subrnd, v well srtd,lse	Minor spots fluor
	tr	kaol,mica,pyr nods	
	tr	blk carb frags	
4227,5	100	SST:A/4222,5 m	Brn stain
	tr	CLYST:A/A	spots dull yel
	t0	kaol,mica	fluor
4230		A/A	-"-
4232,5		A/A	-"-
4235	100	SST: clr-transl qtz,med,subang-rnd, v well srtd,lse	Minor spots dull orng yel fluor
	tr	CLYST:A/A	v dull orng F
	tr	kaol	
4237,5	100	SST:A/4232m , mod calc	-"-
	t0	CLYST;A/A	
	TR	kaol	
4240		A/A	-"-
4242,5		A/A	-"-
4245	100	SST;A/A, gen med-crs,occ v crs,lse,v sl calc	
	tr	CLYST :A/A	
	tr	kaol	-"-
4247,5		A/A	
4250	100	SST:A/A,f,cmtd,w/med-crs,lse	-"-
	tr	CLYST;A/A	
	tr	kaol,pyr nods	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: PRUDDEN/BEYER		Date: 30/6-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4252,5	100	SST:ckr-transl qtz,f-med,occ crs,occ v	Occ brn staining
		crs,ang-subrnd,mod srtd,mod hd,silica	in F,cmtd sst
		cmtd,or lse,occ sl calc	gen v dull orng
	tr	CLYST:slty,sl sdy,dk brn-dk gry brn,	fluor,occ spots
		sft-frm,amorp-blky,occ mod hd,brit,	dull yel fluor
		non swelling,non calc,occ rd brn	
	tr	kaol,pyr nods	
4255		A/A	-"-
4257,5	100	SST:A/A,gen med-crs lse qtz grns	A/A v occ spots
	TR	CLYST:A/A	dull yel fluor
	TR	KAOL	
4260	100	SST:A/A gen med-v crs.lse ,subrnd	V slightly stain
	tr	CLYST:A/A	v occ dull yel
	tr	kaol,pyr nods	fluor
4262,5	100	SST:A/A	
	TR	CLYST;A/A,kaol,pyr nods seen as lam in	
		clyst	
4265	100	SST:A/A	
	tr	CLYST:A/A	
4267,5	100	SST:A/A incr kaolin cmt,also I/P sl calc	V sl stain of
			res HC v occ
			dull yel fluor
4270	100	SST:A/A tr pyr	
	TR	CLYST:A/A	
4272,5	100	SST;A/A w/veins of kaolin	
	TR	CLYST;A/A	
4275	100	SST:A/A	Still sl HC
	tr	CLYST;A/A	stain no por/
			perm
4277,5	100	SST;A/A	
	tr	CLYST;A/A	
4280	90	SST:A/A	
	10	CLYST;A/A incr pyr	
4282,5	80	SST:A/A	
	20	CLYST/KAOLIN;A/A	
4285	90	SST;A/A	Still HC stain
	CLYST	/KAOLIN;A/A	v/occ dull mod
			yel fluor
4287,5	90	SST:A/A	
	10	CLYST/KAOLIN:A/A	
4292,5	95	SST;A/A	
	5	CLYST/KAOLIN;A/A	

WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN/BEYER	Date:	1/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4295	95	SST:clr-transl qtz,f-med,occ crs-v crs, nag-subrnd,mod-wll srtd,silica/kaolin cmtd,tr calc	Occ staining in f sst,giving v dull yel-orng fluor
	5	CLYST;dk gry-brnsh dk gry,sft-frm,amorp-blky,slty,sdy,pred non calc,micromica, tr pyr	
	tr	SLST:med brn,sft,sl calc	
	tr	KAOLIN:wh,v sft blky, w/pyr nods	
4297,5	90	SST;A/A	
	10	CLYST;A/A	
4300	90	SST:A/A	
	10	CLYST:A/A	
4302,5	70	SST:A/A	
	30	CLYST/KAOLIN;A/A	
4305	90	SST;A/A	No fluor
	10	CLYST/KAOLIN;A/A	
4307,5	95	SST;A/A	-"-
	5	CLYST/KAOL:A/A incr pyr	
4310	95	SST;A/A	Lignite additive
	5	CLYST/KAOL:A/A	contamination
4312,5	90	SST;clr-transl qtz,med-v crs,subang-sub-rnd,mod srtd,gen lse,occ f-med w/silica cmt,sl calc,kaol	
	10	KAOL:wh,sft-frm	
	tr	pyr nods,lst	
4315	90	SST:A/A	V occ spots dull orng yel fluor
	5	KAOL;A/A	
	5	CLYST:slty,brn-dk gry brn,sft,occ frm, amorp-blky,non calc,occ dk gry,arg slst	
4317,5	85	SST;A/A	
	10	KAOL;A/A	
	5	CLYST;A/A	
	tr	SLST:orng brn,frm,non calc	
	tr	mica	
4320	90	SST:A/A	
	5	KAOL:A/A	
	5	CLYST;A/A	
	tr	mica,pyr nods	
4222,5		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN	Date:	1/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4325	95	SST;clr-transl qtz,f,occ vf-med,subang-	Tr lignite
		subrnd,mod srtd,mod hd,silica/kaol cmt,	contam occ spots
		sl calc,occ med-v crs lse grns	dull orng-dull
	5	CLYST:slty,occ grdg to slst,sdy,brn-dk	yel fluor
		brn gry,occ dk gry,gen frm,occ sft,	
		amorp-blky,non calc	
	gd tr	KAOL:wh,sft-frm	
	tr	pyr nods,mica	
4327,5	85	SST;A/A	-"-
	15	CLYST:A/A	
	t0	kaol	
	tr	pyr nods	
4330	90	SST:A/A	-"-
	10	CLYST:A/A	
	tr	kaol	
4332,5	95	SST:A/A	
	5	CLYST:A/A grdg to slst/f sst,occ bec	
		subfiss	
	tr	kaol.a/a	
4335		A/A, tr pyr nods	
4337,5	90	SST:A/A gen vf-f,silica/kaol cmt,bec sl	-"-
		arg,mod calc,well srtd,	
	10	CLYST;A/A, bec sft-frm,dk gry,mod hd,	
		subfiss	
	tr	pyr nods,mica	
4340		A/A	-"-
4342,5	95	SST:A/A,non-sl calc	-"-
	5	CLYST;grdg to slst,sdy,dk brn gry,occ	
		dk gry,sft,frm-mod hd,blky-subfiss,	
		non calc	
	gd tr	pyr nods	
4345		A/A	Spots dull yel
4347,5		A/A	fluor
4350	90	SST:A/A ,non calc	-"-
	10	CLYST;A/A,gen dk brn gry	
	tr	kaol,pyr nods	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN	Date:	1/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4352,5	95	SST:clr-transl qtz,gen f,occ med-crs lse	Tr lignite
		grns,subang-subrnd,well srtd,frm-mod hd	contam occ
		silica/kaol cmt,occ sft arg	spots v dull
	5	CLYST;grdg to slst,sdy,dk brn gry,sft-	yel fluor
		frm,occ mod hd,blky,non calc	
	tr	kaol,pyr nods	
4355		A/A	Samples cleaner
4357,5		A/A	-"-
4360	95	SST:A/A,vf-f,cmtd	No shows
	5	CLYST;A/A occ brit	
	tr	kaol,pyr nods	
4362,5	100	SST:A/A, common med-crs	v v occ tr dull
	gd tr	CLYST:A/A	yel fluor
	gd tr	kaol A/A	
	tr	pyr nods,mica	
4365	90	SST:A/A	-"-
	5	CLYST:A/A	
	5	KAOL:A/A	
4367,5	100	SST:gen med-crs,occ v crs lse grns,	-"-
		f cmtd sst in arg	
	gd tr	KAOL:wh ,sft	
	tr	CLYST:A/A	
	tr	LST:wh,sft-frm,micritic	
4370	100	SST:A/A,dom med-crs,subang-rnd,v well	
		srtd,lse	v v occ spots
	tr	CLYST;A/A	dull orng fluor
	TR	kaol,pyr nods	
4372,5		A/A	
4375		A/A	
4377,5		A/A	
4380		A/A	
4382,5		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8 1/2"	Geologist: BEYER/PRUDDEN		Date: 1/7-2/7 1984

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4385	100	SST:clr-transl qtz,pred med-crs,occ v crs,subang-subrnd,occ wll rnd as v crs, wll srtd,frm-hd,silica/kaol cmnt,tr pyr	Occ spots of v dull-mod yel fluor
	tr	KAOL:wh-crm,sft,blky	
4387,5	60	SST:A/A incr kaol cmnt,occ slty,non calc	-"-
	20	SLST/SST:transl,grdg to sst,vf,sft kaol cmt,also med red brn non sdy,sft,argill	Lignite contam
	20	CLYST/SHL; aren,med-dkbrn gry,blky-shly, pred sft-frm,micac-v mica	but coal also pres
	tr	KAOL;A/A,abun pyr,tr thin coal lam	
4390	90	SST:pred vf-f,occ crs-v crs,:A/A	
	10	SLST:CLYST/KAOL:A/A tr coal;blky,shny,frm	
4392,5	95	SST: pred med-crs again-v kaolic cmt	Incr resid
	5	SLST/CLYST/KAOL , TR COAL:A/A	HC stain
4395	100	SST: pred f-med,gen A/A	Giving dull yel-orng fluor v slow
4397,5	100	SST:A/A	
	TR	SST: vf-f,v kaol w HC stain	cut
4400	80	SST:	-"-
	20	SST: vf-f, A/A	
	tr	COAL:blk,hd,brit , TR:slst TR;kaol TR: shl	
4402,5	90	SST: pred med-crs,A/A	Dull orng fluor
	10	SST:vf-f,A/A TR:A/A	no cut
4405	80	SST:pre med-crs,A/A	Part of coal prob
	20	SST:vf-f,A/A	ligno contam
4407,5	80	A/A	
	20	A/A	
4410	60	SST:vf-f,v kaol cmt,w/sl res HC stain giving	Dull orng fluor
	20	SST:med-v crs,gen A/A	
	20	SHL:aren,hd,brit,v micromicac,pyr	
	tr	CLYST:aren,grdg to slst,med-dk gry,frm-hd	
4412,5	40	SST:vf-f,gen A/A	Still v dull orng
	40	SST:med-crs,A/A	fluor
	20	SHL/COAL: gen A/A	
	tr	CLYST/SLST:A/A	
4415	70	SST: med-crs,A/A	
	15	SST:vf-f,A/A	
	10	SLST: arg,orng brn-frm,ang brk,occ sdy,sl calc	
	5	CLYST:A/A	
	TR	KAOL/COAL/OCC MICA/PYR NODS	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	8½"	Geologist:	PRUDDEN/BEYER	Date:	2/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4417,5	40	SST: clr-transl qtz,med-crs,occ v crs,ang-subrnd, mod srtd,lse	v v dull orng fluor
	30	SST:clr-transl qtz,f,mod hd,occ frm,ang-brit brk, silica/kaol cmt,sl calc,occ calc	
	25	CLYST:gry-dk gry,brn gry,sft-frm,amorp-blky, sl slty,occ bec dk gry mod hd slst,non calc	
	5	SLST:arg,orng brn,sft-frm,plas-ang brk,occ sl sdy,non-sl calc	
	tr	kaol,coal frags,pyr nods	-"-
4420	80	SST: f A/A,occ vf-slst,arg,non-sl calc	
	10	SST: med-crs A/A	
	10	SLST:A/A bec v arg-clyst	
	gd tr	CLYST:A/A	
	tr	kaol,coal frags,occ pyr nods,mica	
4422,5	85	SST;vf-f A/A	-"-
	5	SST: med-crs A/A	
	5	CLYST;A/A	
	5	COAL; blk,hd,brit,occ sany,occ sl arg	
	tr	SLST:A/A	
	tr	kaol,occ pyr nods	
4425	100	SST:vf-f,A/A,occ slty arg,occ med-crs lse grns	
	gd tr	CLYST/COAL/SLST:A/A	-"-
	tr	kaol	
4427,5	100	SST:A/A	
	vg tr	COAL/SLST:A/A	
	tr	CLYST:A/A bec lt gry wh,sft,amorph,non calc	No shows
	tr	kaol	
4430	100	SST:vf-f,gen A/A w/coal fragm	
	tr	CLYST/SHL: coaliferous,gen A/A as thin lamina	
4432,5	50	SST;vf-f,A/A,I/P sl calc cmt	No shows
	40	COAL:blk,frm-hd,occ sft,blky,occ slty	
	5	SLST:gen A/A, but also incr crs qtz,ang-subang	
	15	CLYST/SLST:med-dk gry,carb,non calc,micromica	
4435	80	SST: gen A/A but also incr crs qtz,ang-subang	
	10	SLST:A/A	
	10	CLYST: slty,gen A/A	
	tr	COAL:A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: BEYER/PRUDDEN		Date: 3/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4437,5	90	SST:clr-transl qtz,vf-med,ang,occ plain qartzite,	Sl resid HC stain
		hd-v hd,occ frm-hd,and kaol cmtd,micromica	on sst, v dull brn-
	5	SLST:med gry,med brn,argil,sft,occ sl calc/kaol	orng fluor
	5	CLYST/SHL:dk gry,carb,hd,brit,v micac	
	tr	COAL:blk,sft-frm,occ hd,and brit	
	tr	KAOL:crm,sft,sl calc	
4440	95	SST:A/A	
	5	SLST:A/A	
4442,5	50	SST:A/A	
	40	COAL:A/A	
	5	fibr asbest like minaral	
	5	SLST:A/A	
4445	90	SST: gen A/A also crs-v crs	
	5	COAL:A/A	
	5	SLST:A/A	
	TR	KAOL:A/A	
4447,5	95	SST:A/A	
	5	SLST:A/A	
	tr	KAOL:A/A TR; COAL:A/A	
4450	85	SST:A/A	No shows
	10	SLST:A/A	
	5	COAL:A/A	
	TR	KAOL; PYR NODS	
4452,5	90	SST:A/A	"
	5	SLST;A/A	
	5	COAL:A/A	
	tr	kaol	
4455	85	SST:A/A	Sl tr v dull
	10	COAL:A/A	brn-orng fluor
	5	SLST/CLYST:A/A	
	TR	kaol,pyr nods	
4457,5	90	SST: bec gen med lse grns,occ f-crs,	Tr dull orng
		ang-subrnd,well srtd,occ grns overgrown	fluor
		together	
	5	SLST:A/A	
	5	COAL:A/A	
	TR	MICA	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: PRUDDEN/BEYER	Date: 3/7-84	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4460	85	SST: clr-transl,crs,occ med-v crs, ang-subrnd,well srtd,owergrowths to from qtz,v mic,occ f,slty,arg w/silica/kaol cmt	Tr dull brn-orng fluor,tr dull yel grn fluor
	15	COAL: blk,frm-hd,dubfiss,shiny I/P,sl arg I/P,	
	tr	SLST:orng brn,sft-frm,ang brk,sl calc	
	tr	kaol,mica	
4462,5	85	SST:A/A	Dull orng-brn fluor,occ tr dull yel grn fluor
	10	COAL:A/A	
	5	CLYST; gry brn,sft,amorph,non calc, sl swelling,occ slty,occ dk gry,frm, slty-v slty	
	tr	kaol,mica ,slst:A/A	
4465	60	COAL;A/A	"
	30	SST:gen vf-f,mod hd,silica cmtd	
	10	CLYST:A/A, gry brn grdg to v arg vf sst I/P	
	tr	mica,kaol	
4467,5	70	COAL:A/A	"
	15	SST:A/A	
	15	CLYST;A/A	
	tr	occ kaol,mica	
4470	70	SST:A/A	
	20	COAL:A/A	
	10	CLYST:A/A	
	TR	A/A	
4472,5	60	SST: clr-transl qtz,med-crs,ang-subang, hd,silica/kaol cmtd,also vf-f,argil, slty,sl calc,mica,coal frags,mica	Near indisting grain bound on sst,med-crs dull orng fluor v slow strm cut
	20	COAL:blk,frm-hd,subfiss-brit;occ shny, I/P aren	
	20	SLST:lt brn,lt brn gry,occ sdy,(vf-f) sl calc,sl porous I/P	
4475	60	SST: gen A/A large fraction diagenetic, tight,no por/perm	
	20	COAL:A/A	
	10	SLST:A/A	
	10	MARL: lt brn,sft,porous	
4477,5	90	SST:clr-transl,pred med-crs,occ v crs (not diagen),lse,	Shows A/A
	10	COAL:A/A	
	tr	SLST:A/A	
	TR	kaolin,mica,calcite	
4480	80	SST:gen A/A also as CNGL w/coal and slst/vf sst	"

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 8½"	Geologist: BEYR/PRUDDEN		Date: 4/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4482,5	80	COAL: blk,occ argill,frm,subfiss,occ shny occ fibr,	V dull orng fluor
	10	CLYST;med gry,slty,carb,sft,blky,non calc	
	10	SST:clr-transl,pred crs xtls,also vf-f, argill	
	tr	CNGL: consist of above sst/coal/slst: lt brn,sft	
4485	70	COAL;A/A	No shows
	25	CNGL:A/A	
	5	SST:clr-transl,f-med,kaol/silica cmt, mica	
	tr	SLST:lt.med brn red,sft-frm	
4490	90	COAL:A/A	
	5	SST:A/A also crs-v crs	
	5	CNGL/CLYST:A/A	
	TR	SLST:A/A	
4492,5	90	SST: clr-transl,med,pre lse silica cmnt, ang-subrnd,wll srtd,mica	V dull orng fluor,no stain
	10	COAL:A/A	
	tr	SLST/CLYST/CNGL:A/A	
4495	70	COAL:A/A	
	20	SST:A/A	
	10	SLST/CLYST/CNGL:A/A	
	TR	MICA/KAOL/CALCITE	
4497,5	60	COAL:A/A	
	30	CNGL:A/A	
	10	SST: pred med, A/A	
	tr	SLST/KAOL/SL CALC; TR CHLORITE	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE/BARTNES		Date: 13/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4500	50	COAL:blk,sl brittle,frm-hd,subfiss,	3% of disel and
		sl argill,occ grdg to blk sh	pipelax have
	40	SST:clr qtz,wh-transp,vf-med,subang,	been added to
		fri.mod hd,sl silica cmt, occ w/kaolin	mud
		matrix	
	10	CNGL	
4502,5		A/A	
4505	60	COAL:A/A	
	40	SST:A/A	
	TR	CONGL:A/A	
4507,5	70	COAL:A/A	
	30	SST;A/A	
	TR	CNGL	
4510	75	SST: f-med,ang-subang,else A/A	
	25	COAL:A/A	
4512,5	95	SST: f-med,occ crs,sl more silica cmt,	
		else A/A	
	5	COAL;A/A	
4515		A/A	
4517,5		A/A	
4520	50	COAL;A/A	BG; 0,4%
	40	SST:A/A	
	10	SH:dk gry,blk,splntry,hd,non calc,	
		grdg to slst in parts	
4522,5		A/A	
4525		A/A	
4527,5	90	COAL:A/A	
	10	SST:A/A	BG: 1,3% at
	tr	SH:A/A	4527,8 m.
4530	100	COAL:A/A	BG: 0,5%
	TR	SST:A/A	
	TR	SH:A/A	
4532,5	100	COAL:blk,brittle,frm-hd,subfiss,occ shny,	
		sl fiss,occ grdg into blk sh	
	tr	SST;A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE/BARTNES		Date: 15/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4535	90	COAL:blk,hd,arg I/P,subfiss,occ shny,	Bottoms up
		occ grdg to v carb sh	before core
	10	SST: clr-wh qtz,f-med,ang-subrnd,fri-mod	Core no.4 from
		hd,sl silica cmt,partly w/kaolin matrix,	4537-4549 m
		occ grdg v/sst and slst	
	tr	SH:dk gry-dk brn gry,blk,frm-mod hd,	
		occ slty,v carb,sl mic	
4550	60	COAL;A/A	NO SHOWS
	30	SH:A/A	
	10	SST:A/A	
4552,5	75	COAL;A/A	
	15	SH:A/A	
	10	SST:A/A	
4555	60	SST:A/A	Drlg break 8m/hr
	20	COAL:A/A	caused by sand
	20	SH:A/A	
	TR	pyr	
4557,5	60	COAL:A/A	
	20	SH:A/A	
	15	SST;A/A	
	5	SLST: wh-lt gry,occ brn gry,mod hd-hd,	
		mostly silica cmt	
4560	50	COAL:A/A	
	20	SH:A/A	
	20	SST:A/A	
	10	SLST:A/A	
4562,5		A/A	
4565	50	COAL:A/A	
	30	SST:A/A	
	10	SLST:A/A	
	10	SH:A/A	
4567,5		A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE/BARTNES		Date: 17/7-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
4570	90	SST:clr qtz,f-crs,subang,fri-hd, sl silica cmt,partly w/frosted grns	No shows
	5	SLST:wh-lt gry,occ brn gry,mod hd-hd, partly silica cmt	
	5	COAL: blk,hd,arg in parts,subfiss, occ shny,occ grdg to v carb sh	
4572,5	100	SST:A/A	
	TR	COAL:A/A	
	TR	SLST:A/A	
4575		A/A	
4577,5	60	SST; becoming more silica cmt	
	20	COAL:A/A	
	15	SLST:A/A	
	5	SH: dk gry-blk,hd,v carb,sl mic,slty I/P	
4580	50	COAL:A/A	Weak dull yel fluors,and slow strm mlky wh cut from a few particles
	30	SST:A/A	
	10	SH:A/A	
	10	SLST:A/A	
4582,5	40	COAL:A/A	-"-
	40	SST: clr-wh qtz,vf-med,occ crs,mod hd-hd, mostly silica cmt,occ sl calc cmt	
	10	SLST: lt gry-buff,lt brn,frm-hd,occ silica cmt,non calc	
	10	SH: dk gry-blk,med brn gry then frm-else hd,carb-v carb,sl mic,slty in parts	
4585	70	COAL:A/A	
	20	SST:A/A	
	10	SH:A/A	
	TR	SLST:A/A	
4587,5	75	SST:A/A	
	10	COAL:A/A	
	10	SLST:A/A	
	5	SH:A/A	
4590	90	SST:A/A	
	5	COAL:A/A	
	5	SH:A/A	
	TR	SLST:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE/BARTNES		Date: 18/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4592,5	90	COAL: blk,hd,partly arg,subfiss,occ shny, occ grdg to v carb sh	Weak dull yel fluor and slow strm mlky cut from a few aggregates of sst.
	10	SST:clr qtz,occ wh,f-med,subang,hd,sl silica cmt,	
	tr	SH: dk gry-blk,hd,carb,sl mic,slty I/P	
4595	90	COAL;A/A	"
	10	SST:A/A	
	TR	SH:A/A	
4597,5	100	COAL;A/A	"
	TR	SST:A/A	
	TR	SH:A/A	
	TR	SLST:A/A	
4600	70	COAL:A/A	-"-
	30	SST:A/A	
	TR	SLST:A/A	
	TR	SH:A/A	
4602,5		A/A	
4605	60	COAL:A/A	
	35	SST; more silica cmt,occ sl calc cmt	
	5	SLST:A/A	
	TR	SH:A/A	
4607,5	50	COAL:A/A	
	30	SST:A/A	
	15	SH;A/A	
	15	SLST:A/A	
4610	90	SST:A/A	A/A
	5	SH:A/A	
	5	COAL;A/A	
	TR	SLST:A/A	
4612,5		A/A	
4615	50	SST:A/A	
	30	COAL;A/A	
	20	SH A/A	
	TR	SLST:A/A	
4617,5		A/A	A/A
4620	90	COAL:A/A	
	10	SST:A/A	
	TR	SH:A/A	
	TR	SLST:A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE/BARTNES		Date: 18/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4622,5	90	SST: more calc cmt,occ silica cmt	Occ yel orng fluors,no cut
	10	COAL:A/A	
	TR	SLST:A/A	
4625	80	SST;A/A	
	20	COAL:A/A	
	TR	SLST:A/A	
4627,5	95	SST:A/A	
	5	COAL;A/A	
	TR	SLST:A/A	
	TR	SH;A/A	
4630	60	COAL;A/A	
	35	SST: clr-yel qtz,f,occ med,more silica cmt,occ calc cmt	
	5	SLST:A/A	
	TR	SH:A/A	
4632,5	85	SST:A/A	
	10	COAL:A/A	
	5	SLST:A/A	
	TR	SH;A/A	
4635	60	COAL:A/A	Occ yel orange fluors
	40	SST:A/A	
	TR	SH:A/A	
	TR	SLST:A/A	
4537,5	100	SST: clr qtz,,f-med,subang-subrnd, partly silica cmt	-"-
	TR	COAL:A/A	
	TR	SH:A/A	
	TR	SLST:A/A	
4640	100	SST:A/A	-"-
	TR	COAL:A/A	
	TR	SH:A/A	
	TR	SLST:A/A	
4642,5	80	SST;clr qtz,f,occ med,subang-subrnd, calc cmt	
	15	COAL: partly grdg to shale,else A/A	
	5	SLST:A/A	
	TR	SH:A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON

Well no.: 6406/3-1

K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA

Hole size: 6" | Geologist: HELLE/BARTNES | Date: 19/7-84

Depth (m KB)	Lith (%)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, cavings, mud additives, etc.
4645	60	SST: clr yel qtz,f,occ med,ang-subrnd, hd,silica and calc cmt	Occ orng fluors no cut
	30	COAL:blk,hd,partly arg,subfiss,occ shny, occ grdg to carb sh	
	5	SH; dk gry-blk,hd,carb,sl mic	
	5	SLST: lt gry-lt brn,mod hd-hd,partly silica cmt	
4675,5	50	SST:A/A	-"-
	40	COAL:A/A	
	5	SH:A/A	
	5	SLST:A/A	
4650	70	SST:A/A	-"-
	20	COAL:A/A	
	5	SH:A/A	
	5	SLST:A/A	
4652,5	75	COAL;A/A	-"-
	15	SST:A/A	
	5	SLST;A/A	
	5	SH:A/A	
4655		A/A	
4657,5	50	SST:A/A	-"-
	40	COAL:A/A	
	10	SH:A/A	
	TR	SLST:A/A	
4660	90	SST: mostly silica cmt and fri,else A/A	-"-
	5	COAL:A/A	
	5	SH:A/A	
	TR	SLST:A/A	
4662,5		A/A	
4665	90	SST: becoming more silica cmt,else A/A	
	5	COAL:A/A	
	5	SH:A/A	
	TR	SLST:A/A	
4667,5	100	SST: clr-wh qtz,med-crs,occ f,subang, fri-hd,none-sl silica cmt,partly calc cmt,sl mic	
	TR	COAL;A/A	
	TR	SLST:A/A	
	TR	SH:A/A	
4670	90	SST;A/A	
	5	SLST:A/A	
	5	SH: dk gry-dk brn gry,frm-hd,carb, slty,non calc	
	TR	COAL:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country:	NORWAY	Area:	HALTENBANKEN	Field:	EPSILON
Well no.:	6406/3-1				
K.B.E.	22 meters	Company:	STATOIL/MOBIL/SAGA		
Hole size:	6"	Geologist:	HELLE/BARTNES	Date:	19/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4672,5	60	SST: clr-wh qtz,med,occ f and crs, subang,fri-hd,partly silica cmt,occ calc cmt,sl mic,occ w/kaolin matrix	Orng yel fluors
	25	SH: dk brn-dk gry,frm-hd,carb,sl slty, subfiss-blky,non calc	
	15	COAL: blk,hd,sl brittle,shny,sl arg I/P	
4675	75	SST:A/A	A/A
	20	SH:A/A	
	5	COAL:A/A	
4677,5		A/A	A/A
4680	90	SST:A/A	A/A
	10	SH:A/A	
	TR	COAL:A/A	
4682,5	100	SST:sl silica cmt,occ w/kaolin matrix, else A/A	A/A
	TR	SH:A/A	
	TR	COAL;A/A	
4685	90	SST:A/A	
	10	SH:A/A	
	TR	COAL:A/A	
4687,5		A/A	
4690		A/A	
4692,5	50	SST:A/A	A/A
	40	SH:A/A	
	10	SLST: lt gry brn,frm,non-sl calc,mostly blky	
	TR	COAL:A/A	
4695	40	COAL:A/A	A/A
	30	SH:A/A	
	20	SST;A/A	
	10	SLST:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE/BARTNES	Date: 19/7-84	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4697,5	75	SST: clr-wh qtz,f-crs,subang,fri-hd,	No shows
		abun aggregates,silica cmt,partly w/kaolin	
		matrix,sl calc/dol cmt,mod srtd	
	20	SH: med-dk brn gry,blk,frm,non-sl	
	tr	COAL: blk,brittle,shny	
4700	80	SH:A/A	
	10	COAL:A/A	
	10	SST;A/A	
	TR	SLST:A/A	
4702,5	40	SH:A/A	
	40	COAL:A/A	
	20	SST:A/A	
	TR	A/A	
4705		A/A	
4707,5	60	COAL:A/A	
	30	SH:A/A	
	10	SST:A/A	
	TR	SLST:A/A	
4710	90	COAL:A/A	
	5	SH:A/A	
	5	SST;A/A	
	TR	SLST:A/A	
4712,5	80	SH: med-dk brn gry,frm-hd,subfiss-blky,	
		non calc,carb	
	15	COAL:A/A	
	5	SST;A/A	
4715	70	COAL:A/A	
	25	SH:A/A	
	5	SST;A/A	
4717,5	50	COAL:A/A	
	25	SH:A/A	
	25	SST;A/A	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE	Date: 21/7-84	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4720	100	SST: clr qtz,f-crs,fir-mod hd,subang, sl silica cmt,occ calc/dol cmt,mod srtd	No shows
	TR	SH: dk gyr,dk brn gry,frm-mod hd,blky, subfiss,carb	
	TR	COAL: blk,brittle,hd,sl shny	
4722,5	80	SST:A/A	
	20	SH: med brn gry-dk brn gry,slty,frm-hd, blky-subfiss,partly carb,non calc	
	TR	COAL:A/A	
4725	100	SST;A/A	
	TR	SH:A/A	
	TR	COAL:A/A	
4727,5	75	SST;A/A	
	25	SH;A/A	
	TR	COAL;A/A	
4730		A/A	
4732,5	60	SH:A/A	
	30	SST:A/A	
	10	COAL:A/A	
4735		A/A	
4737,5		A/A	
4740	90	SH:A/A	
	5	SST:A/A	
	5	COAL:A/A	
4742,5	90	SH:A/A	
	10	COAL;A/A	
	TR	SST:A/A	
4745		A/A	
4747,5	70	SH:A/A	
	20	SST:A/A	
	10	COAL:A/A	
4750		A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE		Date: 23/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4752,5	90	SH: med-dk brn gry,lt-med gry,frm-hd,	No shows
		blky-subfiss	
	5	COAL: blk,brittle,hd,occ shny	
	5	SST:clr-wh qtz,f-crs,subang,frm-hd,	
		silica cmt and partly calc cmt,mod srtd	
4755		A/A	
4757,5	70	SST:A/A	
	30	SH:A/A	
	TR	COAL;A/A	
4760	90	SH;A/A	
	10	SST:A/A	
	TR	COAL;A/A	
4762,5		A/A	
4765	100	SST: mostly sl silica cmt and fri,else	
		A/A	
	TR	SH:A/A	
	TR	COAL:A/A	
4767,5	75	SST:A/A	
	25	SH:A/A	
	TR	COAL;A/A	
4770		A/A	
4772,5	75	SH:A/A	
	20	SST:A/A	
	5	COAL:A/A	
4775	50	SST: more silca cmt,else A/A	
	50	SH:A/A	
	TR	COAL:A/A	
4777,5	90	SST:A/A	
	10	SH:A/A	
	TR	COAL;A/A	
4780	60	SH;A/A	
	40	SST:A/A	
	TR	COAL:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN		Field: EPSILON
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: HELLE/TAJET		Date: 23/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4782,5	50	SH: med-dk brn gry,lt-med gry,frm-hd, subfiss,occ blky,sl carb-carb,non calc	No shows
	50	SST: wh-clr qtz,f-crs,subang-ang,fri-hd, mostly silica cmt,sl calc cmt	
	TR	COAL; blk,brittle,fri-hd,shny	
4785	80	SH:A/A	-"- less BG than above
	20	SST:A/A	
	TR	COAL;A/A	
4787,5	90	SH:A/A	-"-
	10	SST:A/A	
	TR	COAL:A/A	
4790	90	SH: micromic-mica,else A/A	-"-
	10	SST:A/A	
	TR	COAL:A/A	
4792,5	90	SH: occ lt gn,else A/A	
	10	SST:A/A	
	TR	COAL:A/A	
4795	80	SH:lt-med gry,med-dk brn gry,occ lt gn else A/A	A more greyish colour than A/A
	20	SST:A/A	
	TR	COAL	
	TR	PYR	
4797,5	90	SH:A/A	
	10	SST;A/A	
	TR	COAL	
4800	95	SH:A/A ,but less med-dk brn gry sh	
	5	SST:A/A	
	TR	COAL:A/A	
4802,5	90	SH:A/A	
	10	SST:A/A	
	TR	COAL:A/A	
	TR	MICA,PYR	
4805	60	HS;A/A	
	40	SST:A/A	
4807,5	70	SH;A/A	
	30	SST:A/A	
4810	95	SH:A/A	
	5	SST:A/A	
	TR	COAL	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY	Area: HALTENBANKEN	Field: EPSILON	
Well no.: 6406/3-1			
K.B.E. 22 meters	Company: STATOIL/MOBIL/SAGA		
Hole size: 6"	Geologist: TAJET	Date: 23/7-84	

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4812,5	90	SH: lt-med gry,med-dk brn gry,frm-hd, subfiss,occ blky,sl carb,non calc, sl micromic	No shows
	10	SST: wh-clr qtz,f-crs,subang-ang,fri-hd, mostly silica cmt,sl calc cmt,occ grdg to slst	The treaces of coal is probably cavings
	TR	COAL: blk,brittle,frm-hd,shny,(minor traces)	
4815	60	SH: occ brick red,else A/A	"
	40	SST:A/A	
	TR	COAL;A/A	
4817,5	60	SH/CLYST: lt-med gry,med-dk brn gry, occ lt gn,occ brick red,frm-hd,blky-subfiss,non calc,sl micromic,occ pyr,	"
	40	SST: wh-clr qtz,vf-f,occ crs,subang-ang, fri-hd,mostly silica cmt,sl calc cmt, occ grdg to slst,occ mica	
	TR	COAL:A/A	
4820		A/A	"
4822,5		A/A	"
4825	50	SH/CLYST:A/A	"
	50	SST:A/A	
	TR	COAL:A/A	
	TR	MICA	
4827,5	60	SST:A/A	"
	40	SH/CLYST:A/A	
	TR	PYR	
4830	60	SH/CLYST;A/A	"
	40	SST: but more of the crs fraction than above,else A/A	
	TR	COAL	
4832,5	70	SST:A/A	
	30	SH/CLYST: occ rd brn,else A/A	
4835		A/A	
4837,5	70	SH/CLYST:A/A	
	30	SST;A/A	
	TR	COAL	
4840	80	SH/CLYST;A/A	
	20	SST:A/A	
	TR	COAL	

WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA
Hole size: 6" | Geologist: TAJET | Date: 24/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4842,5	80	SH/CLYST: lt-med gry,med-dk brn gry,occ lt gn,frm-hd,blky-subfiss,occ sl carb, non calc,occ sl micromic,sl slty	No shows
	20	SST; wh-clr qtz,partly clr-lt gn,f-crs, subang-ang,fri-hd,silica and calc cmt, partly grdg to slst	
	TR	COAL: blk,brittle ,shny	
4845	95	SH/CLYST: occ rd brn,else A/A	"
	5	SST	
	TR	COAL	
4847,5		A/A	
4850	100	SH/CLYST:A/A ,but more rd-brn sft-frm clyst than above	More rd brn sh/clyst
	TR	SST	
	TR	pyr,mica,coal	
4852,5	100	SH/CLYST:A/A	Approx 5% rd-brn clystone in the samples
	TR	SST:A/A	
	tr	pyr	
4855	85	SH/CLYST:A/A	(5% rd-brn sh/clyst)
	15	SST:A/A	
	TR	PYR	
4857,5	95	SH/CLYST; lt-med gry,med-dk brn gry, rd-brn,occ lt gn,frm-hd,blky-subfiss, non calc,occ sl micromic,sl slty	(2% rd-brn)
	5	SST:A/A	
4860	90	SH/CLYST: lt-med gry,rd brn-copper coloured,occ med-dk gry,else A/A	(50% rd-brn)
	10	SST:A/A	
	TR	PYR	
4862,5	70	SH/CLYST:A/A	(50% rd-brn)
	30	SST:A/A	
4865	95	SH/CLYST;A/A	(30% rd-brn)
	5	SST;A/A	
4867,5	50	SH/CLYST;A/A	(less rd-brn sh/clyst than above)
	50	SST:A/A	
4870	80	SH/CLYST:A/A	
	20	SST:A/A	

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WELLSITE SAMPLE DESCRIPTION

Country: NORWAY | Area: HALTENBANKEN | Field: EPSILON
Well no.: 6406/3-1
K.B.E. 22 meters | Company: STATOIL/MOBIL/SAGA
Hole size: 6" | Geologist: TAJET | Date: 25/7-84

Depth (m KB)	Lith (%)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, cavings, mud additives, etc.
4872,5	100	SH/CLYST: lt-med gry,rd brn,occ med-dk gry, frm-hd,blky-subfiss,non calc,occ sl micromic,sl slty	No shows (50% rd-brn)
	TR	SST: wh-clr qtz,vf-f,occ med-crs,subang-subrnd,fri-hd,silica and calc cmt, occ grdg to slst	
4875	95	SH/CLYST:A/A	(50% rd brn)
	5	SST:A/A	
4877,5	90	SH/CLYST:A/A	(>50% rd brn)
	10	SST:A/A	
4880	95	SH/CLYST: rd brn,lt-med gry,occ med-dk gry,frm-hd,blky-subfiss,non-sl calc, occ sl micromic,occ micropyr,sl slty	(60% rd brn)
	5	SST:A/A	
4882,5		A/A	
4885	80	SH/CLYST;A/A	(80-90% rd brn)
	20	SST:A/A	
4887,5	90	SH/CLYST;A/A	
	10	SST:A/A	
4890	95	SH/CLYST;A/A	90%
	5	SST:A/A	
4892,5	95	SH/CLYST;A/A	90%
	5	SST:A/A	
4895	95	SH/CLYST; non calc-sl calc,else A/A	
	5	SST:A/A	
4897,5	95	SH/CLYST:A/A	
	5	SST:A/A	
4900	100	SH/CLYST; red brn,occ lt gry-dk gry, mod hd-hd,blocky-subfiss,slty I/P, sl micromic,non calc-sl calc	
	TR	SST:A/A	
4902	100	SH/CLYST:A/A	
	TR	SST:A/A	
		TD: 4902 m.	

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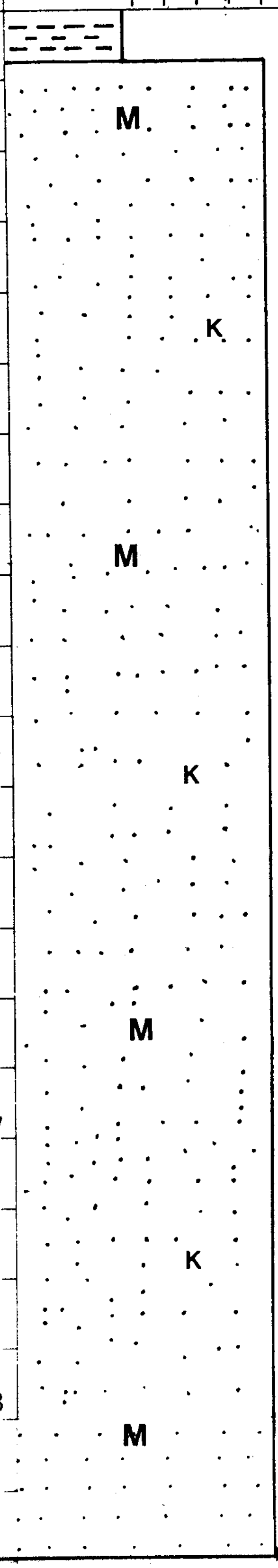
CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field: Epsilon
Well no.: 6406/3-1	Formation: H1-4		
Core no.: 1	Interval: 3783-3794.5	Cored: 11.5 m	Rec: 11.23 m 98 %
Core size:	Geologist: P.Tajet/M. Helle		Date: 20.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3783									Clyst/Sh; med brn gry, med-dk gry, mod hd, subfiss, micromic, carb	Weak patchy wh, bluish wh fluor, v weak mlky wh, bluish-wh, slow strmy cut from most of the sample
									Seal peal: 3783.91-3784.21 m	
3784										
3785									Sst; clr qtz, med, occ f, occ crs, subang-subrnd, mod-w srtd, fri-mod hd, kaolin and silica cmt, occ micromic	
3786										
3787									Sst; calc cmtd, mod hd-hd, esle a/a	
3788										

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CONVENTIONAL CORE DESCRIPTION

Country: Norway		Area: Haltenbanken		Field: Epsilon	
Well no.: 6406/3-1		Formation: H1-4			
Core no.: 1	Interval: 3783-3794.5		Cored: 11.5 m	Rec: 11.28 m	98 %
Core size:	Geologist: P. Tajet/M. Helle			Date: 20.06.84	

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS (STAIN, FLUOR, CUT)	Φ (POOR, FAIR, GOOD)	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3788.5	K					Weak patchy wh, bluish wh fluor, v weak mlky wh, bluish wh, slow strmy cut from most of the sample
3789	M K					
3790	K M				Sst; clr qtz, med, occ f, occ crs, subang-subrnd, mod-w srtd, fri-mod hd, kaolin and silica cmtd, occ micro-mic	
3791	K					
3792	K M K					
3793					Seal peal: 3793.70-3794.08 m	
3793.5	K M					

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CONVENTIONAL CORE DESCRIPTION

Country:	Norway	Area:	Haltenbanken	Field:	Epsilon
Well no.:	6406/3-1	Formation:	H1-4		
Core no.:	1	Interval:	3783-3794.5 m	Cored: 11.5 m	Rec: 11.23m 98 %
Core size:		Geologist:	P. Tajet/M. Helle	Date:	20.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3794 – 3794.5				I	I		I		Sst; clr qtz, med, occ f, occ crs, subang-subrnd, mod-w srtd, fri-mod hd, kaolin and silica cmtd, occ micro-mic	

cly slt vf f m c vc

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CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken	Field: Epsilon
Well no.: 6406/3-1	Formation: H1-4	
Core no.: 2	Interval: 3794.5-3822 m	Cored: 27.5 m — Rec: 27.5 m 100 %
Core size:	Geologist: P. Tajet/M. Helle	Date: 21.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN / FLUOR / CUT	Φ: POOR / FAIR / GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3794.5	M				Sst; clr qtz, med, occ f and crs, subang-subrnd, mod-w srtd fri-mod hd, kaolin and silica cmtd, occ micromic	Weak patchy wh, bluish-wh fluor, v weak mlky, wh-bluish, slow strmy or cloudy cut, good odour
3795	K					
3796	M					
3797	K					
3798	M				Seal peal: 3798.12-3798.55 m	
3799	K					
3799.5						

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CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken	Field: Epsilon
Well no.: 6406/3-1	Formation: H1-4	
Core no.: 2	Interval: 3794.5-3822 m	Cored: 27.5 m / Rec: 27.5 m 100 %
Core size:	Geologist: P. Tajet/M. Helle	Date: 21.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3800 – 3805	M, K								Sst; clr qtz, med, occ fn occ crs, subang-subrnd, mod w srt, fri-mod hd, kaolin and silica cmt, occ micro-mic-mic	Weak patchy, bluish-wh fluor, v weak mlky, wh-bluish, slow strmy or cloudy cut, good odour

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CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field: Epsilon
Well no.: 6406/3-1	Formation: H1-4		
Core no.: 2	Interval: 3794.5-3822 m	Cored: 27.5 m	Rec: 27.5 m 100 %
Core size:	Geologist: P. Tajet/M. Helle		Date: 21.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3805.5	M									
3806									Seal peal: 3806.15-3806.55 m	Weak patchy, bluish wh fluor, v weak mlky wh bluish, slow strmy or cloudy cut, good odour
	K									
3807	M								Sst; clr-transluc qtz med-crs, occ f, subrnd, mod-w srt fri-mod hd, kaolin and silica cmt, micromic-mic and laminaes	
3808	K									
3809	M									
3810										
3810.5	K									

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CONVENTIONAL CORE DESCRIPTION

Country: Norway		Area: Haltenbanken		Field: Epsilon	
Well no.: 6406/3-1		Formation: H1-4			
Core no.: 2	Interval: 3794.5-3822 m		Cored: 27.5 m	Rec: 27.5 m 100%	
Core size:	Geologist: P. Tajet/M. Helle			Date: 21.06.84	

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS (STAIN, FLUOR, CUT)	Φ (POOR, FAIR, GOOD)	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3811	M					
3812	K				Sst; clr-transluc qtz med, occ f and crs, subang-subrnd, mod-w srtd, fri-mod hd, kaolin and silica cmt, micromic-mic	Weak patchy, bluish wh fluor, v weak mlky wh bluish, slow strmy or cloudy cut, good odour
3813	M				Seal peal: 3813.55-3813.93 m	
3814	K					
3815	M					
3816	M					

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CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field: Epsilon
Well no.: 6406/3-1	Formation: H1-4		
Core no.: 2	Interval: 3994.5-3822 m	Cored: 27.5 m	Rec: 27.5m 100 %
Core size:	Geologist: P. Tajet/M. Helle		Date: 21.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS (STAIN, FLUOR, CUT)	Φ (POOR, FAIR, GOOD)	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3816.5 – 3822	M, K				Sst; clr-transluc qtz med, occ f and crs, subang-subrnd, mod-w srtd, fri-mod hd, kaolin and silica cmt, micromic-mica in laminaes	Weak patchy, bluish wh flour, v weak mlky wh bluish, slow strmy or cloudy cut, good odour
3819					Seal peal: 3819.06-3819.42 m	

Depth marks: 3817, 3818, 3819, 3820, 3821, 3822

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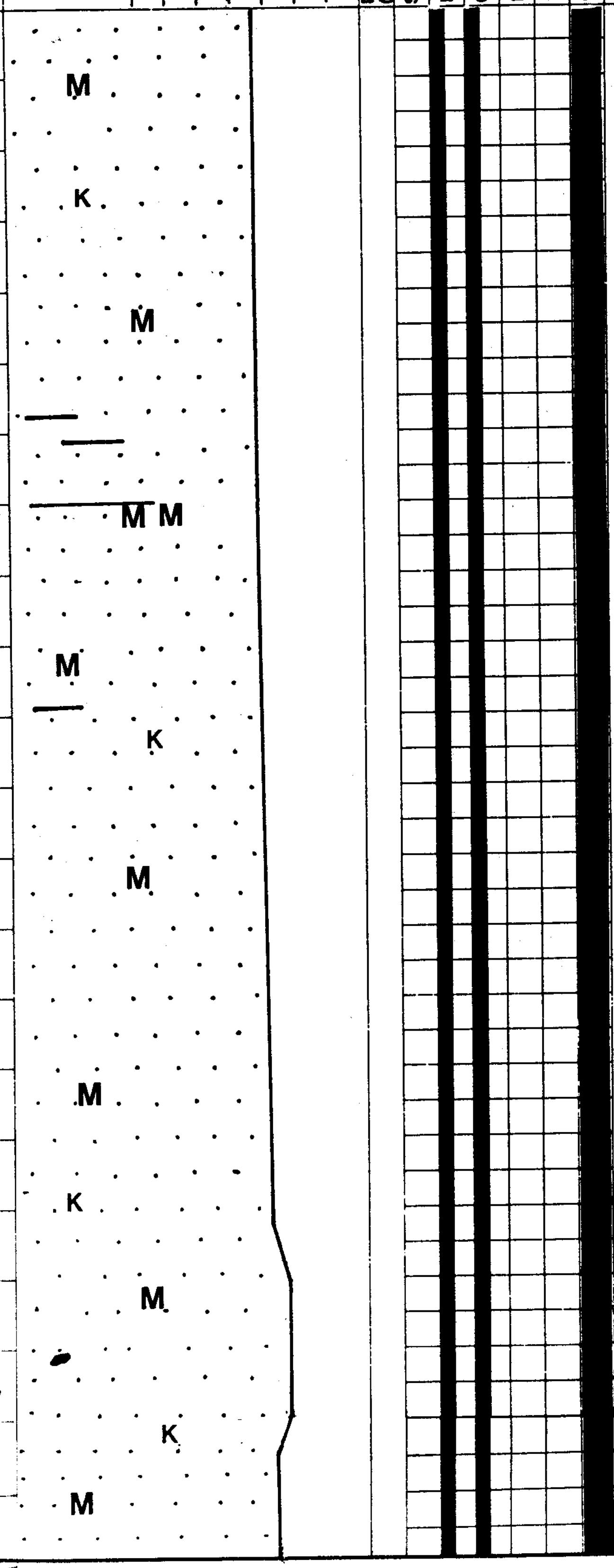
CONVENTIONAL CORE DESCRIPTION

Country: Norway		Area: Haltenbanken		Field: Epsilon	
Well no.: 6406/3-1		Formation: M. Jurassic			
Core no.: 3	Interval: 3822-3847 m		Cored: 25 m	Rec: 24.33m	97 %
Core size:	Geologist: M. Prudden/P. Tajet			Date: 22.06.84	

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS (STAIN, FLUOR, CUT)	Φ (POOR, FAIR, GOOD)	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3822					Sandstone; lt gry wh, clr-transl qtz, f-med, well srtd, subang-subrnd, mod hd, sl fri, silica cmt, v sl calc, some kaol, micromic, occ tr blk carb frags poor-fair gas shows	Waxed 3822.68-3822.88 m Slight gas odour dull yel fluor, occ patchy bl wh, no cut, pa yel crush cut
3823						
3824						
3825						Patchy bluish wh fluor, no cut, v dull mlky wh crush cut
3826						
3827						



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CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken	Field: Epsilon	
Well no.: 6406/3-1	Formation: M. Jurassic		
Core no.: 3	Interval: 3822-3847 m	Cored: 25 m	Rec: 24.33m 97 %
Core size:	Geologist: M. Prudden/P. Tajet	Date: 22.06.84	

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN / FLUOR / CUT	Φ: POOR / FAIR / GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3827.5 – 3832	M, K				Sandstone; lt gry wh, clr-transl qtz, f-med, well srtd, subang-subrnd, mod hd, sl fri, silica cmt, v sl calc i/p, kaol, micromic, mic i/p, occ tr blk carb frags. poor-fair gas shows	Patchy bluish wh fluor, no cut, v dull bl wh crush cut
3832 – 3832.5	M, K				Sandstone; a/a, bec med, occ med-crs	Waxed 3832.12-3832.38 m

Depth marks: 3827.5, 3828, 3829, 3830, 3831, 3832, 3832.5

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CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field: Epsilon
Well no.: 6406/3-1	Formation: M. Jurassic		
Core no.: 3	Interval: 3822-3847 m	Cored: 25 m	Rec: 24.33m 97 %
Core size:	Geologist: M. Prudden/P. Tajet		Date: 22.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3833	M, M K								Sandstone; lt gry wh, clr-transl qtz, med-crs, wellsrtd, subang-rnd, mod hd, sl fri, silica cmt, sl calc i/p, kaol, micromic, mic i/p, occ tr blk carb. frags poor-fair gas shows	Spotty bri bl wh fluor, nd cut, v dull yel crush cut
3834	M									
3835	M, K, M									
3836	M, K								Sandstone; a/a, med, occ, f-med	Spotty bl wh fluor, vv slow pa yel cut
3837	M, M									Waxed 3237.78-3238.17 m
3838	K, M									

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CONVENTIONAL CORE DESCRIPTION

Country: Norway		Area: Haltenbanken		Field: Epsilon	
Well no.: 6406/3-1		Formation: M. Jurassic			
Core no.: 3	Interval: 3822-3847 m		Cored: 25 m	Rec: 24.33m	97 %
Core size:	Geologist: M. Prudden/P. Tajet			Date: 22.06.84	

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3838.5	M K									
3839	M								Sandstone; lt gry wh, clr-transl qtz, f-med, v occ crs, mod-well srtd, subang-subrnd, mod hd, sl fri, silica cmt, sl calc i/p, kaol, micromic, occ mic, occ tr blk carb frags poor-fair gas shows	Spotty bl wh fluor, vv slow pa yel cut
3840	M									
3841	K M									
3842	M									Spotty bl wh fluor, vv slow dull yel cut
3843	M K								Sandstone; a/a, med	Waxed 3843.46-3843.85 m
3843.5	M									

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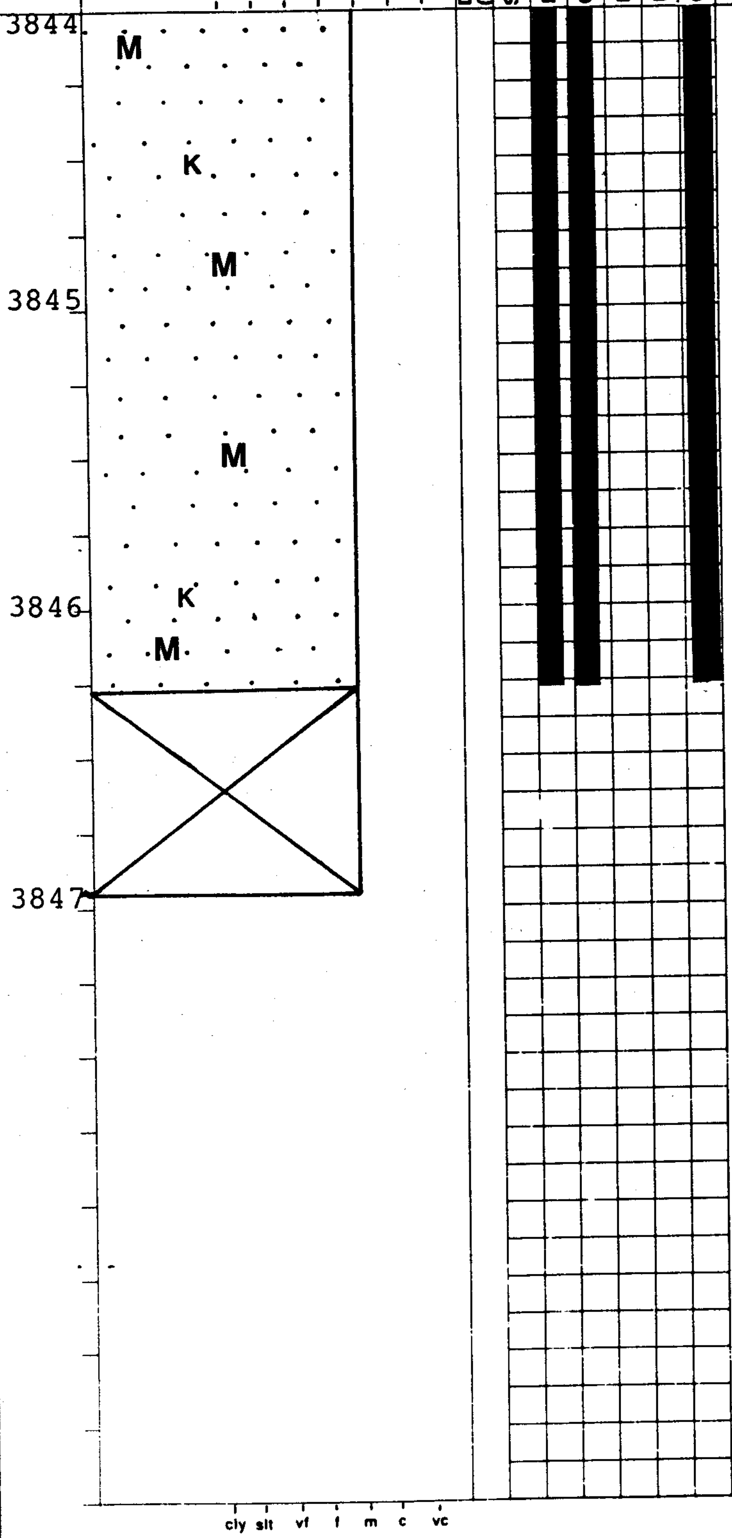
CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field: Epsilon
Well no.: 6406/3-1	Formation: M. Jurassic		
Core no.: 3	Interval: 3822-3847 m	Cored: 25 m	Rec: 24.33 m 97%
Core size:	Geologist: M. Prudden/P. Tajet		Date: 22.06.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS (STAIN, FLUOR, CUT)	Φ (POOR, FAIR, GOOD)	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
3844–3847					Sandstone; a/a	Spotty bl wh fluor, vv slow dull yel cut



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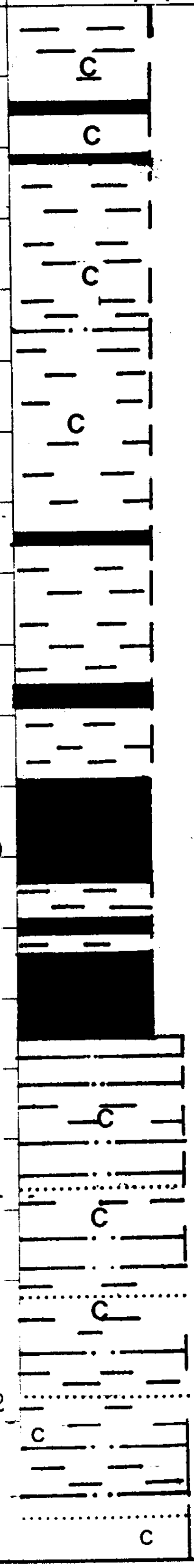
CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field:
Well no.: 6406/3-1	Formation:		
Core no.: 4	Interval: 4537-4549 m	Cored: 12.0 m	Rec: 11.0 m 91 %
Core size:	Geologist: Helle/Bartnes		Date: 16.07.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
4537									Sh; dk gry-blk, hd, v carb, mic, slty-v slty in parts, non calc, partly grding to coal	
4538										
4539										No shows
4540									Coal; blk, hd, arg in parts, subfiss, occ shny, grding into dk carb sh; a/a	
4541									Sltst; dk gry, argil, hd, silica cmt, mic, occ carb, occ grd to vf-f sst w/streaks of sh and coal a/a	
4542										



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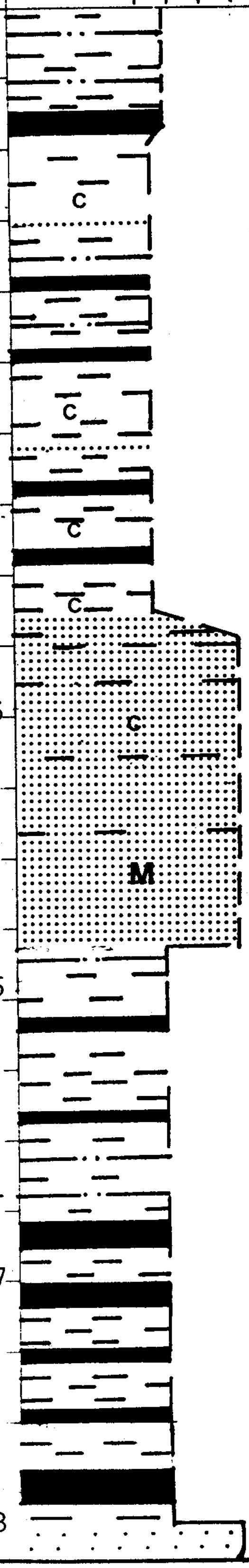
CONVENTIONAL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field:
Well no.: 6406/3-1	Formation:		
Core no.: 4	Interval: 4537-4549 m	Cored: 12.0 m	Rec: 11.0 m 91 %
Core size:	Geologist: Helle/Bartnes		Date: 16.07.84

DEPTH (mKB)	LITHOLOGY/ GRAIN SIZE (cly slt vf f m c vc)	DIP (apparent)	SHOWS: STAIN	FLUOR	CUT	Φ: POOR	FAIR	GOOD	Lithological Description (Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination)	Remarks (Shows, etc.)
									Sltst; a/a w/sh a/a and coal a/a	
4543									Sh; blk-dk gry, hd v carb, w/interclast of coal, occ slty and sndy	
									Coal; a/a	
4544										No shows
4545									Sst; wh-lt gry, vf-med, hd, silica cmt, occ slty, mic, poor por	
4546										
4547									Arg coal, grding to sh else a/a	
									Sst; moslt vf-f, else a/a	
4548										

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SIDEWALL CORE DESCRIPTION

Country: Norway | Area: Haltenbanken | Field: Epsilon-st
Well no.: 6406/3-1 | Run no: 3A, C-gun
K.B.E. 22 meters | Company: Statoil/Mobil/Saga
Hole size: 12 1/4" | Geologist: M. Helle/P. Tajet | Date: 15.06.84

Ref. Log for shot levels:

Shot no	Depth (mKB)	Rec (mm)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, factors affecting recovery, etc.
	3772.5	<10	SH, med dk gry, frm-mod hd, micromic,	No shows
			non calc, slty	
	3766	<10	SH, med-dk gry, sl slty, else a/a	No shows
	3742	30	SH, a/a	No shows
	3725	15	SH, med-dk brn gry, frm-mod hd, micromic,	No shows
			carb, non calc	
	3717	10	CLYST, lt-med gry-grnish gry, sft-frm,	No shows
			non calc, slty in parts	
	3698	20	SH, med brn gry, sft-frm, micromic,	No fluor
			non calc sl carb	Occ yel wh strm
				cut from one pices
				of sample
	3686	<10	CLYST, med brn gry, sft, micromic,	
			slty grd to sltst	
	3673	<10	SH/CLYST, a/a	No shows
	3671	20	SH/CLYST, med-dk gry, frm, mic, carb,	No shows
			fis, non calc	
	3670	15	Only mudcake	
	3669	20	SH/CLYST, med-dk gry, sft-frm, subfis,	No shows
			carb, non calc	
	3668	25	SH/CLYST, a/a	No shows
	3667	30	SH/CLYST, a/a	No shows
	3666	30	SH/CLYST, a/a	No shows
	3663	<10	SH, dk gry, mod hd, mic, non calc	No shows
		small pieces		
	3659	<10	SH, a/a (only small pieces)	No shows
	3657	25	CLYST, brn red, sft-frm, calc, sl mic	No shows
	3608	20	MARL, lt gry, pale gry, sft, amor,	No shows
			sl slty	
	3604	40	MARL, a/a	No shows
	3588	30	CLYST, brick red-red brn, sft, amor	No shows
			sl-none calc	
	3468	20	SLTST, lt gry, fri, non calc, arg	
	3368	10	CLYST, lt gry, sft, sl micromic, sl mic,	
			slty in parts	

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SIDEWALL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field: Epsilon-st
Well no.: 6406/3-1	Run no: 3A		
K.B.E. 22 meters	Company: Statoil/Mobil/Saga		
Hole size: 12 1/4"	Geologist: M. Helle/P. Tajet		Date: 15.06.84
Ref. Log for shot levels:			

Shot no	Depth (mKB)	Rec (mm)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, factors affecting recovery, etc.
	3313	<10	Manily mud	
	3287	15	CLYST, med gry, lt grnsh gry, frm-mod hd, micromic, occ sl slty	No shows
	3250	25	CLYST, a/a	No shows
	3197	20	CLYST, slty, occ shly, med gry-med brn gry, mod hd, occ hd, micromica-mica, occ sndy	No shows
	3142	15	CLYST, a/a	No shows
	2812	<10	CLYST, sft-frm, else a/a, mud-cont	No shows
	2717	25	CLYST, med gry-med brn gry, frm, pyr, glauc, micromic, occ slty-sndy, calc	No shows
	2597	40	CLYST, med gry-brn gry, frm-mod hd, glauc, micromic, occ v sndy, sl calc	No shows
	2530	35	CLYST/SLTST, lt gry-med gry, frm-mod hd, glauc, pyr, micromic, occ sndy, non-sl calc	No shows
	2440	40	CLYST/SLTST, a/a	No shows
	2410	35	CLYST, slty, probl tuffaceous, else a/a	No shows
	2346	30	CLYST, lt grn-lt gry, frm-mod hd, micromic	No shows
	2320	40	CLYST, med gry-dk gry, frm, micromic, occ tuff.	No shows
	2306	10	CLYST, med gry brn, lt gry grn, dk gry, slty, frm, sl calc, micromic, glauc, tr of lst, wh-offwh	No shows
	2207	40	CLYST, grn gry, sft-frm, micromic	No shows
	2181	40	CLYST, a/a	

SIDEWALL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field: Epsilon
Well no.: 6406/3-1		Run no: 3B	
K.B.E. 22 meters	Company: Statoil/Mobil/Saga		
Hole size: 12 1/4"	Geologist: M. Helle/P. Tajet		Date: 15.06.84

Ref. Log for shot levels:

Shot no	Depth (mKB)	Rec (mm)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, factors affecting recovery, etc.
	3774	15	SH/CLYST, med-dk brn gry, sft-frm, subfiss, blky-platy, carb, non calc	No shows
	3673	20	SH/CLYST, med-dk brn gry, sft-frm, subfiss blky-platy, carb, non calc	No shows
	3670	15	SH/CLYST, a/a	No shows
	3670	20	SH/CLYST, a/a	No shows
	3669	20	SH/CLYST, a/a	No shows
	3667	<10	SH/CLYST, a/a	No shows
	3664	just pieces	SH/CLYST, med hd-hd, else a/a	No shows
	3660	<10		
	3672.5	<10	Mud cont.	
	3671.5	15	SH/CLYST, frm, else a/a	No shows

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SIDEWALL CORE DESCRIPTION

Country: Norway | Area: Haltenbanken | Field: Epsilon
Well no.: 6406/3-1 | Run no: 5C
K.B.E. 22 meters | Company: Statoil/Mobil/Saga
Hole size: 8"1/2" | Geologist: O. Beyer | Date: 09.07.84
Ref. Log for shot levels:

Shot no	Depth (mKB)	Rec (mm)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, factors affecting recovery, etc.
	4486.5	18	SST, clr-transl, vf-f, argil, slty, lse-fri, mica, sl calc cmnt, tr coal: blk, frm; tr: sltst: brn rd	No shows
	4473.8	18	SST, clr-transl, vf-f qtz, argil, slty, lse-fri, ang-subang, pr srtd, kaol/sl calc cmnt, mica, coal frags	Dull drng fluor, v sl yel wh cut
	4471.8	41	MUDCAKE, 100%	
	4466	15	SST, clr-transl, vf-med, occ crs, sl slty, lse, ang, mod srtd, kaol/sl calc, sl mica, sl tr coal	v dull orng fluor
	4463.5	13	SST, clr-transl, f-med, occ crs, sl slty, lse-fri, ang-subang, mod-pr srtd, mica, occ v mica, tr carb kaol cmnt, non calc	v dull orng fluor
	4418	13	SST, clr-transl, med-crs, v. argil, ang-subrnd, occ rnd/wll rnd, lse-mod hd, kaol/silica/calc cmnt, tr kaol	v dull orng fluor
	4411.8	18	SST, vf-f, argil, frm-mod hd, ang-subrnd, will srtd, kaol cmnt, non calc, mica, carb	No shows
	4385.2	30	SST, clr-transl qtz, vf-crs, occ v crs, ang-subrnd, mod srtd, kaol cmnt, kaol frags, calc cmnt, frm, mica	No shows
	4296.1	15	SST, clr-transl qtz, pred f-med, occ crs, ang-subrnd, mod srtd, frm, kaol cmnt, i/p sl calc, carb, mica	No shows
	4225.2	18	SST, clr-transl qtz, vf-med, slty, sft-frm, subnag-rnd, pr srtd, kaol cmnt, carb, sl mica, non calc	v dull orng fluor
			SLTST/CLYST, dk gry, sft, non calc, carb	No show
	4181	11	SST, clr-transl qtz, vf-med, occ crs, subang-subrnd, mod-pr srtd, frm, kaol cmnt, sl argill/slty, karb	No show
	4164.9	8	CLYST/SLTST, med brn gry, sdy, frm-mod hd, mica, carb, non calc, (frazer beds)	No show
	4106.4	16	SST, clr-transl qtz, vf-med, ang-subang, frm-mod hd, v. argill/micac/slty, kaol cmnt, non calc, sl carb	No show
	4058.6	25	SST/SLTST, clr-transl qtz, vf-med, subang-subrnd, pr srtd, frm-mod hd, v argil/slty, kaol cmnt, carb, mica	No show
	4022.7	15	SST, clr-transl qtz, f-med, occ crs, subang-subnrd, mod srtd, kaol cmnt, non calc, tr carb, tr mica	No show
	3930.6	4	CLYST, med-dk gry, sft-frm, v slty, tr sd, micromica (kaol) tr sd, tr coal, non calc	No show
	3928.8	35	CLYST, dk gry, frm, slty, v carb, mica, sl calc	No show

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SIDEWALL CORE DESCRIPTION

Country: Norway | Area: Haltenbanken | Field: Epsilon

Well no.: 6406/3-1 | Run no: 5C

K.B.E. 22 meters | Company: Statoil/Mobil/Saga

Hole size: 8 1/2" | Geologist: O. Beyer | Date: 09.07.84

Ref. Log for shot levels:

Shot no	Depth (mKB)	Rec (mm)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, factors affecting recovery, etc.
	3924.7	39	MUDCAKE, 100%	
	3917.7	40	COAL/SHL, dk blksh gry, frm-mod hd, brit,	
			mica	
	3898.5	12	SST, transl qtz, med-crs, frm-mod hd,	Dull-mod brnt yel
			subang-rnd, kaol/silica/calc cmnt, mrly,	fluor
			tr mica, tr kaol	
	3895.2	19	SLTST, lt gry, sdy, argil, frm-mod hd,	v dull yel fluor
			micromica	slow str yel wh
			SST, clr-transl qtz, vf-med, frm-hd,	cut
			slty, argil, mica, sl stain of resid hc?,	
	4441.1	NIL	Co. number 6	
	4196.9	NIL	Co. number 13	
	4048.8	NIL	Co. number 18	
	3922.4	NIL	Co. number 23	
	3908.5	NIL	Co. number 25	
	3901.9	NIL	Co. number 26	
	3878.1	NIL	Co. number 29	
	3780.6	NIL	Co. number 30	

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SIDEWALL CORE DESCRIPTION

Country: Norway | Area: Haltenbanken | Field:

Well no.: 6406/3-1 | Run no: 6

K.B.E. 22 meters | Company: Statoil/Mobil/Saga

Hole size: 6" | Geologist: Kristensen/Petterson | Date: 28.07.84

Ref. Log for shot levels:

Shot no	Depth (mKB)	Rec (mm)	Lithological Description: Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks: Shows, factors affecting recovery, etc.
	4490.2	Emty		
	4519	Emty		
	4585.5	Emty		
	4598	15	CLYST, dk brn gry, mod hd, blocky,	No shows
			micromic, carb, sl slty, non calc	
	4631	15	SST, brn gry, clr-transluc qtz, v fn,	No fluor
			subang.subrnd, hd, non calc cmtd,	weak cloudy
			v mic, arg, slty, carb	blue wh
				crush cut fluor
	4645	15	SST, lt brn, clr-transluc brn qtz, fn-	Dull yel fluor,
			med, occ crs, mod srtd, subang, fri-mod	no cut fluor
			hd, non calc cmt, carb patches, sl mic,	
			sl arg	
	4654	Emty		
	4659	Emty		
	4672	Emty		
	4676	Emty		
	4695	18	CLYST, dk gry, mod hd, blocky, sl slty,	No shows
			carb, sl calc	
	4728.8	Emty		
	4753	24	CLYST, dk gry, firm-mod hd, blocky, sl	No shows
			slty, sl carb, non calc	
	4755.6	25	CLYST, dk gry, firm-mod hd, blocky, sl	No shows
			slty, sl sdy, sl micromic, sl carb,	
			non calc	
	4759	10	SST w/dk carb laminaes	None
			SST, lt gry, clr-transluc qtz, v fn-fn,	
			mod srtd, subang-subrnd, fri-mod hd,	
			non calc cmt, sl mic, sl arg, coal frags	
	4770.5	14	SST, lt brn, clr-gry qtz, vfn-crs, poor	None
			srtd, ang-subrnd, fri-mod hd, non calc	
			cmt, mic, arg	
	4794.5	12	CLYST, med gry, mod hd, blocky, non calc	None
	4832.2	Emty		

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SIDEWALL CORE DESCRIPTION

Country: Norway	Area: Haltenbanken		Field:
Well no.: 6406/3-1		Run no: 6	
K.B.E. 22 meters	Company: Statoil/Mobil/Saga		
Hole size: 6"	Geologist: Kristensen/Petterson		Date: 28.07.84

Ref. Log for shot levels:

Shot no	Depth (mKB)	Rec (mm)	Lithological Description Rock name, mod. lith, colour, grain size, sorting, roundness, matrix, cementation, hardness, sed. structures, accessories, fossils, porosity, contamination	Remarks Shows, factors affecting recovery, etc.
	4836	17	SST, lt gry-pale brn, clr-mlky qtz, fn-crs, poor srtd, ang-subang, mod hd, non calc cmt, sl arg	Dull yel fluor, no cut
	4841	16	CLYST, lt gry, mod hd, blocky, non calc	
	4843	20	CLYST, a/a	
	4847.5	28	CLYST, red brn, firm, v slty, sdy, non calc	
	4875	Emty		
	4900	Emty		
			Quality of cores recovered is very poor. Most of them are crushed due to bullet impact, and are mixed w/filtercake. Length of recovered cores are unsure!	

III DRILLING REPORT

II. DRILLING OPERATIONS IN INTERVAL

After the anchorhandling, the rig "Ross Isle" spudded in the well in 256 m of water 27th April 1984 at 2100 hours.
The final position was 64° 45' 29.77"N, 06° 49' 21.77"E.

36" hole, 278-353 m

The 36" hole was drilled with one Varel L3A 36" bit to 351,5m in 20,5 hours. The average rate of penetration was 3,6 m/hr.
A high viscous pill was pumped at every connection to facilitate cuttings removal and to maintain hole condition.
At total depth, the hole was displaced with 50 m^3 viscous mud prior to taking a wiper trip. After the wiper trip, the hole again was displaced with viscous mud and the bit pulled out of the hole. 6 joints of Vetco ATD-RB 30" casing were run, but would not pass a tight spot at 333 m.
The casing was then pulled and a 26" bit and a 36" hole opener used to ream the hole to total depth. 1,5 m new formation was drilled prior to displacing the hole to high viscous mud and pulling out of the hole. The 30" casing was then successfully run and cemented with the shoe set at 352 m.

26" hole, 353-962 m

The 30" casing shoe was drilled out with a 26" bit prior to running the marine riser.
A 12 1/4" pilot hole was then drilled from 354 m to 962 m in one run in 16,6 hours.
At 962 m, a bottoms up circulation gave 1,69% gas and after a wiper trip, 11.6% gas was recorded.
Background gas exhibited a gradual increase over this section from 0.3-0.4% increasing to 0.6% at 800 m, and 1% at 880 m.
Peaks up to 1.9% were recorded in the lower part of the section.

III 1. SUMMARY

The rig "Ross Isle" arrived the location 6406/3-1 April 26th 1984 at 1800 hours.
The well was a rank wildcat and was the first well drilled on this block.
The primary objective was to test the reservoir potential of the Middle Jurassic sandstones and the secondary objective was the Lower Jurassic sandstones.
The well was drilled to 4902 m, about 50 meters into the Triassic red beds. This was 200 meters shallower than the prognosis.
The porepressure in the well was higher than expected and the Middle Jurassic sandstone which was believed to have a porepressure equivalent to 1.14 s.g., had a porepressure equivalent to 1.82 s.g.
A drill stem test was performed but the formation did not contain any significant amounts of hydracarbons.
The well was drilled, tested and plugged back in 111 days and this was ahead of the prognosis.
The total wellcost pr. 01.02.85 was 172 million NOK.
The rig left the location 6406/3-1 August 15th 1984 at 0400 hours.

When pulling out of the hole prior to logging, 20 tons overpull were recorded between 848 m and 870 m.
After the wireline logging, a 26" underreaming assembly (AZ-DUX) were run and the 12 1/4" hole underreamed to 26" from 354 m to 753 m in 28 hours. When pulling out to change the underreamer about 2 hours were lost due to problems getting the underreamer through the marine riser tie back tool. The reason for the problem was that boulders wedged under the underreamer arms.
The next underreamer run underreamed the hole to 26" from 753-960 m in 21,3 hours.
Both underreamers were completely worn when pulled out of the hole, and for the future, it is recommended using sealed roller bearings instead of standard roller bearings on the underreamer cones.
The hole was displaced to 1,17 s.g. mud and the riser to seawater prior to pulling out of the hole with the underreamer.
After the marine riser was pulled, a 26" bit was run in to clean up and gauge the hole. The 20" casing was run and cemented without any problems.

<u>17½" hole, 962-2177 m</u>

The Cameron 18 3/4", 1035 bars BOP stack was run and connected to the McEvoy 18 3/4", 690 bars wellhead. The BOP and the casing were then pressure tested to 502 bars/241 bars and 116 bars respectively.
The cement and the 20" casing shoe were drilled out and a formation integrity test performed below the casing shoe. A leak of equivalent to 1.46 s.g. mudweight was considered not to be a representative value for the formation strength, and therefore a cement plug was set and squeezed around the casing shoe.
After the cement was drilled out, a new formation integrity test equivalent to 1.71 s.g. mudweight was performed.
The 17½" hole was drilled through the Pliocene, the Miocene and deep into the Eocene. The plan was to set the 13 3/8" casing into the Paleocene at 2300 m and get the active red claystone in the Early Eocene behind the casing, but as the pore pressure came

up faster than prognosed, the 13 3/8" casing shoe had to be set higher.

The section from 978-2177 m was drilled using 2 mill tooth bits in a total of 52,3 drilling hours.

The first bit drilled down to 1609 m in 28,6 hours at an average of 22,1 m/hr and was pulled due to low penetration. 5 m^3 high viscous pills were pumped while drilling at regular intervals to keep as clean hole as possible. The next bit drilled down to 2177 m in 23.7 hours at an average of 24 m/hr.

The section was drilled with a pendulum assembly using a stabilizer 23 m above the bit. High rotary speeds of up to 215 RPM were used to ensure low drift angles and a high penetration rate, although these rotary speeds were reduced to a range 160-185 RPM in the lower part of the section.

An Exlog Downhole Logging While Drilling tool was used in the drill string just above the bit.

Despite failures of some sensors, the formation data for the 1208 m of the 17½" hole was generally complete, the only big gap being 178 m of formation resistivity data.

A total of 29 directional surveys were recorded at intervals approximately 50 m.

The mud system used on this section was a gyp/lignosulphonate system with weights ranging from 1.10 s.g. to 1.71 s.g.

The pore pressure was normal down to late Miocene and the mudweight increased to 1.18 s.g. while drilling. The first indication of a pressure increase was after the bit trip at 1609 m.

The trip gas recorded at 1609 m was 8.9% and connection gases were also recorded in the interval from 1533-1665 m.

The pore pressure increased faster than prognosed through the Miocene clay and to keep the gas reading down, it was necessary to raise the mudweight in steps from 1.18 s.g. to 1.53 s.g., which was the mudweight at 2056 m. At this depth 2 stands were pulled and 60 tons overpull were recorded. Also swabbed 1 m^3 mud before running in to total depth again.

After circulating and conditioning the mud, a wiper trip to 1420 m was done. Tight spots from 1971-1831 m and from 1799-1718 m required 60 tons and 30 tons overpull respectively.

The 17½" hole was then drilled to 2177 m, where it was necessary to stop the drilling due to high gas readings.
Drag and up to 60 tons overpull were recorded at a short trip at 2160 m and swabbing was also a problem.
The mudweight was increased in steps to get the gas readings down, but even with a 1.70 s.g. mudweight, 5-7% background gas and up to 34.5% wiper trip gas were recorded.
Since the formation strength at the 20" casing shoe did not allow for higher mudweight, it was decided to plug back the lower part of the hole to seal off the high pressure.
A cement plug was set from 2177 m to 2093 m and dressed down to 2160 m. High gas readings were recorded while drilling the cement and it was not possible to reduce the mudweight prior to logging the hole. Prior to pulling out of hole for logging, 58 m^3 of 1.90 s.g. mud was pumped and displaced leaving the heavy mud at the bottom.
Schlumberger ran electric logs and a clean up trip with a 17½" bit was down prior to running the 13 3/8" casing.
The heavy mud was circulated out at 1935 m, 2010 m, 2085 m and at 2160 m to ensure that the 1.9 s.g. mud passed the shoe in short columns not exceeding the fracture at the 20" casing shoe.
60 m^3 1.9 s.g. mud was spotted on bottom and the bit pulled out of the hole.
The 13 1/8" casing was run and landed at 2148 m. Partial mudlosses were observed when circulating the casing volume, and after 1500 strokes the returns were lost completely.
No returns were seen during the cement job.

<u>12 1/4" hole, 2177-3776 m</u>

The BOP and the seal assembly were pressure tested to 313 bar/241 bar and 345 bar respectively prior to running in to 1350 m with a Johnstone Positrieve packer. The casing was then tested to 313 bar above the packer.
After the plugs, the cement and the 13 3/8" casing shoe was drilled out, a formation integrity test equivalent to 1.87 s.g. mudweight was performed. Since it was believed that this value

was not a true formation strength, the 13 3/8" casing shoe was squeezed. After the cement was drilled out, a new formation integrity test equivalent to 1.97 s.g. mudweight was performed. The mudweight used was 1.77 s.g.

The 1592 meters from 2183 m to 3775 m were drilled in 284 effective rotating hours using two rock bits, two diamond bits on turbine, and one rock bit at the end of the section.

The hole was drilled through the Paleocene, the Cretaceous and into the upper Jurassic shales close to the prognosed depth of the hole. The two first rock bits drilled 534 m and 215 m each and the average rate of penetration decreased from 16.6 m/hr for the first bit to 7.6 m/hr for the second bit.

At 2932 m the second bit was pulled to change over to diamond bit and turbine.

Two diamond bits, M269L and LX13 were run and made 330 m and 478 m each. The turbine used was a Cristensen two stage type. The M269L was pulled after a suspected bearing failure in the turbine, but the 50 bars pressure increase that was observed was due to a plugged fluid port.

A rock bit was run the last 35 m of the section to easier locate the casing seat as the DLWD-tool in this assembly was installed just above the bit.

The effective drilling time on this section was 68.9 hours using 3 rock bits and 215 hours using 2 diamond bits.

The gas levels in this section were generally high at the upper part of the section and decreased after the pressure top was passed at 2500 m.

A maximum gas reading of 76% was recorded when circulating a drilling break at 2413 m. Down to this depth the background gas levels ranged from 2% to 4%.

To reduce the gas levels, the mudweights were increased in steps to 1.85 sg, and this mudweight was maintained from 2495 m and for the remainder of the section.

The gas levels decreased steadily with the depth due to a lower pore pressure resulting in a background gas ranging between 0.2 - 0.6%.

Trip- and connection gases were recovered throughout the section and this was related to tight hole conditions.

Overpull of between 30 tons and 60 tons were recorded when pulling the pipe through the intervals 2300 m to 2350 m and 2620 m to 2660 m on all trips in this section except for the last bit run.

The mud used in this section was a gyp/lignosulphonate system with densities ranging from 1.77 sg to 1.85 sg.

DLWD tools were run continously from 2183 m to 3775 m, involving five runs using four assemblies.

Of the 1592 m of formation logged, 236 m of resistivity data and 223 m of gamma ray data were lost due to tool malfunctions.

After the wireline logging, a clean up trip was made prior to running the 9 5/8" casing.

The plan was to run the 9 5/8" casing using a McEvoy fullbore running tool and a left hand threaded 9 5/8" casing as a landing string. Due to problems getting the threads on the casing and the running tool fitting, the casing was landed using 5" S-135 drill pipes.

Started loosing the mud while running the casing and lost a total of 55 m^2.

On attempting to break the circulation after the casing was run, there were a total loss of the returns.

Mud losses were also observed when pumping and displacing the cement.

The cement started setting up too early and left a 380 m cement column inside the casing.

8 1/2" hole, 3776 - 4498 m

The cement plug inside the 9 5/8" casing was tagged at 3385 m and the mudweight reduced from 1.85 sg. to 1.40 sg. while drilling the cement. Before drilling out the casing shoe at 3765 m, the BOP was tested to 502 bars/241 bars and the casing to 502 bars. A formation integrity test was performed below the 9 5/8" casing shoe and showed a leak-off equivalent to 2.07 sg mudweight. The 8 1/2" hole was drilled in 2-3 m intervals and the bottoms circulated up for samples to prevent penetrating the sand in a too great extent. At 3782 m, a drilling break occured and a subsequent flowcheck was positive.

The well was shut in on the upper annular preventer and the total pitgain was 2.5 m^3. The shut in drill pipe- and casing pressures were 137 bars and 138 bars repectively, increasing to 155 bars on the drill pipe and to 164 bars on the casing side after 2 hours and 25 minutes. These shut in pressures indicated a porepressure of 1.82 sg on bottom. The mud in the pits were weighted up to 1.85 sg and the influx circulated out according to normal Statoil procedures. Maximum gas recorded was 8.6%.

Prior to pulling out of hole for coring, the mudweight was increased to 1.87 sg. The remainder of the section was drilled using 9 conventional rock bits and 2 core bits in a total of 172.9 effective rotating hours.

Three cores were cut in the interval from 3783 - 3847 m and the rate of penetration varied from 4 m/hr to 21 m/hr with background gas averaging 0.7%, however, a 40% gas peak was recorded while circulating bottoms up from 3822 m. At 3847 m an intermediate wireline logging suite was run comprising ISF/SONIC/GR and RFT. The RFT showed a porepressure equivalent to 1.82 sg and a fluid density of 1.20 sg at the top of the sand section.

The drilling below the cored interval involved excessive torque and low rate of penetration, especially for the two first bit runs. The mudweight was increased to 1.89 sg to maybe cure the torque problem, but both bits were pulled after they had drilled 10 m and 5 m each.

Wearmarks were seen on the nearbit stabilizer and was changed out with a roller reamer.

The remainder of the section was drilled without any torque problems and no drag or tight hole were seen when tripping except for in the section below 4400 m.

When using the roller reamer, there was a tendency to build angle, and the angle increased steadily from 0.22 degrees at 3897 m to 9.46 degrees at 4369 m.

The average rate of penetration ranged between 3 m/hr and 5 m/hr. The background gas averaged 0.1-0.2% and gaspeaks in the 0.5-0.6% range were recorded through the section.

At the total depth at 4498 m, Schlumberger ran wireline logs, but got stuck with the RFT tool at 4084 m. To free the tool, the cable was cut and an overshot stripped over the cable and run in to catch the RFT tool.

A 6 1/4" DLWD tool was run in the drill string above the bit, and except for some tool failures, the tool worked fairly good. A total of 34 directional surveys were recorded during the drilling of the section.
Prior to running the 7" casing, a 8 1/2" bit and a junk basket were run in the hole to clean up the hole and recover some lost CST bullets.
When working the junk basket, the pipe got stuck. Attempted freeing the pipe with 100 tons overpull, but did not manage to neither rotate the pipe nor trip jars in either direction.
After 15 hours, the pipe came free with 100 tons overpull. The mud used in this section was a gel/lignosulphonate with densities ranging from 1.40 sg. to 1.89 sg.
The 7" casing were run and cemented with the shoe set at 4470 m without any problems.

<u>6" hole, 4498 - 4902 m</u>

The cement plugs and cement shoe were drilled out and the mudweight simultaneously reduced to 1.74 sg. A formation integrity test was performed below the 7" casing shoe and showed a leak off equivalent to 2.16 sg. The 6" hole was drilled about 50 m into the Triassic red beds to a total depth of 4902 m.
The 6" hole was drilled in a total of 170.8 effective rotating hours using 10 rock bits and one core bit. No special drilling problems were encountered and the average rate of penetration ranged between 2 m/hr and 6 m/hr, but drilling breaks up to 15-20 m/hr occured.
The mudweight was kept at 1.74 sg. throughout the section and the gas levels were very low. Small gas peaks were seen occasionally after penetrating different horizons, such as coal seams, carbonaceous shales and sandstones. Due to the difference in the lithology, the bit performance varied a lot.
One core was taken from 4537 - 4549 m with the intention of getting a coal sample.
A Reed HPSM bit was pulled due to excessive torque at 4740 m after 41 m was drilled and all three cones were left in the hole. 25 hours were lost before drilling was resumed.

While drilling at 4859 m the pump pressure gradually decreased from 280 bars to 240 bars.
Several washouts were found in drill pipe tool joints and in the monel and a total of 18 hours were lost.
At the total depth a wiper trip was made before the final logging program was commenced.
The hole was cemented back to 4374 m and a drill stem test was performed in the interval from 3782.5 - 3787.5 m.
When the DST perforations could not be squeeze cemented with 138 bars, a cementplug was set above the EZSV retainer. The 7" casing was cut at 2045 m, but it was not possible to pull same free using 100 tons overpull.
Since the NPD regulations required cement across the test perforations, the cement plug and the retainer were drilled out and a cement plug set from 3887 - 3677 m.
Servco made 4 more attempts cutting and retrieving the 7" casing before it came free. The Servco service and equipment was so bad that they were replaced by A-1 Bit and Tool Company after the 7" casing was cut and retrieved.
The well was plugged and abandoned according to attached drawing (Wellbore Schematic), and the rest of the casings were cut and retrieved on the first attempts. The anchors were pulled and the rig left the location 6406/3-1 the 15th August 1984 at 0400 hours. A total of 112 days were used on this well and the total costs were 172 million NOK.

DAILY ACTIVITY

25.04	Rig in transit to 6406/3-1.
26.04	Rig in transit to 6406/3-1. Anchor handling. Had to reset anchor no. 3. Ballasted rig to drilling draft.
27.04	Continued anchor handling. Ran the 30" casing and hung off same in the moon pool area. Picked up drill collars and drill pipes and RIH with a 36" bit. Lowered the Mantis mini submarine to inspect when tagging the seabed. Spudded in and drilled a 36" hole from 278-292 m.
28.04	Drilled a 36" hole from 292-318 m. POOH to 285 m due to problem with pump efficiency. Repaired mud pump no. 2 and changed out impeller on super charge pump no. 2. RIH and drilled a 36" hole from 318-347 m.
29.04	Drilled a 36" hole from 347-351.5 m. Displaced the hole to mud and made a wiper trip. Displaced the hole again and POOH. Ran the 30" casing, but could not pass 333 m. POOH with the casing and RIH with a 26" bit and a 36" hole opener. Reamed the hole and drilled 1.5 m to 353 m. Made a wiper trip, displaced the hole to high viscosity mud and POOH. Started RIH with the 30" casing.
30.04	Continued running the 30" casing. Cemented same with the shoe set at 352 m. Made up 12 1/4" BHA and set same in the derrick. Drilled out the 30" casing shoe and 1 m formation and POOH. Started running the marine riser.
01.05	Continued running the marine riser. Repaired a failure on the sub sea camera. Landed the riser and pulltested with 25 tons overpull. Installed the diverter housing.

RIH with the 12 1/4" BHA and drilled a 12 1/4" pilot hole from 354-680 m.

02.05 Drilled a 12 1/4" pilot hole from 680-962 m. CBU and made a wiper trip to the 30" shoe. CBU after the wiper trip and recorded 11.6% gas. Dropped survey and POOH. Schlumberger ran electric logs.

03.05 Laid down excess drillpipe and made up a 26" underreamer assembly. RIH and underreamed the 12 1/4" pilot hole to 26" from 354-590 m.

04.05 Underreamed to 26" from 590-753 m. POOH with the underreamer assembly. Experienced problems getting through the riser tie back tool due to boulders wedging under the underreamer arms. Changed the 17½" hole opener and the 26" underreamer and RIH. Slipped and cut the drilling line. Underreamed to 26" from 753-782 m.

05.05 Underreamed to 26" from 782-960 m. Raised the mudweight to 1.13 s.g at 940 m. Displaced the hole to 1.17 s.g mud. POOH to the wellhead.

06.05 Displaced the riser to seawater and POOH. Found one cone on the underreamer left in the hole. Pulled the marine riser. Prepared to run the 20" casing. RIH with a 26" bit. Reamed from 837-852 m and from 852-866 m. Circulated and conditioned the mud. POOH leaving 1.17 s.g. mud in the hole. Prepared to and started RIH with the 20" casing.

07.05 Continued RIH with the 20" casing. Cemented same. Attempted to tension up anchor no. 1. The anchor slipped in the first place, but after letting the anchor soak for a while it was holding tension. Changed out a bent kelly and bearings in the kelly bushing.

08.05	Ran the 18 3/4" x 1035 bar Cameron BOP and landed same on the wellhead.
09.05	Pressure tested the BOP and the casing. Had no success when trying to circulate out a TAM tester load ring. Set the seat protector. RIH with a 17½" bit and a slick BHA, displaced the hole and riser to 1.10 s.g. mud, and drilled out the float, the cement and the casing shoe. Drilled 3 m new formation to 965 m. Circulated and performed a formation integrity test that was not conclusive. Circulated and performed a second formation integrity test that was equivalent to 1.46 s.g. mudweight. POOH with the bit. RIH with an open ended drill pipe. Squeezed cement around the casing shoe.
10.05	Waited on the cement. POOH with the open ended pipe. RIH and drilled out the cement and performed a new formation integrity test equivalent to 1.71 s.g. mudweight. Drilled a 17½" hole from 968-978 m and CBU. Max. gas 0.5%. POOH and laid out 21 joints of drill pipe. Made up and started RIH with a new 17½" BHA.
11.05	Continued RIH. Drilled a 17½" hole from 978-1419 m.
12.05	Drilled a 17½" hole from 1419-1609 m and CBU. POOH. Tight hole at 1461-1451 m and at 976 m caused 30 tons overpull. RIH with a new 17½" bit and a new DLWD-tool to 1609 m. Drilled a 17½" hole from 1609-1626 m. Recorded 8.9% tripgas from 1609 m.
13.05	Drilled a 17½" hole from 1626-1646 m. Raised the mudweight from 1.18 s.g. to 1.30 s.g. and drilled a 17½" hole from 1646-1741 m. Raised the mudweight from 1.30 s.g. to 1.38 s.g. and drilled a 17½" hole from 1741-1951 m. Raised the mudweight from 1.38 s.g. to 1.45 s.g. Drilled a 17½" hole from 1951-1964 m.

14.05 Drilled a 17½" hole from 1964-2029 m and raised the mudweight from 1.45 s.g. to 1.53 s.g. Drilled a 17½" hole from 2029-2056 m and CBU. Pulled 2 stands and experienced tight hole. Swabbed 1 m^3. RIH to total depth and circulated and conditioned the hole. Max. gas 1.1%. POOH to 1971 m and washed and reamed from 1971-1831 m. Maximum overpull was 60 tons. Continued POOH to 1421 m. Tight hole from 1789-1718 m caused 30 tons overpull. RIH and drilled a 17½" hole from 2056-2086 m. Recorded 2.8% short trip gas.

15.05 Drilled a 17½" hole from 2086-2103 m and raised the mudweight from 1.53 s.g. to 1.59 s.g. Drilled a 17½" hole from 2103-2160 m. Recorded 10.3% gas from connection at 2122 m. CBU. Max. gas 5.1%. Pulled out to 2031 m and swabbed 2 m^3. Max. overpull was 40 tons. RIH to 2160 m and CBU. Max. gas 4%. POOH to 1992 m. Pumped out through tight hole from 1992-1850 m. Max. overpull was 60 tons. POOH to 1792 m. RIH to 1850 m and reamed from 1850-2046 m. Flowchecked, ok. Continued RIH to 2146 m. Reamed and washed tight hole from 2146-2160 m. Circulated and conditioned the mud. Max. gas 3.7%. POOH to 1716 m. Tight hole caused 30 tons overpull. RIH to total depth at 2160 m.

16.05 Drilled a 17½" hole from 2160-2177 m. Had a drilling break at 2176 m. Raised the mudweight from 1.59 s.g. to 1.68 s.g. Circulated and conditioned the mud and recorded max. 24% with 1.68 s.g. mud around. Raised the mudweight to 1.70 s.g. and recorded 9.7% gas after circulating bottoms up. Circulated to get gas down.

17.05 Circulated gas down to 5%. Made a wiper trip to 1831 m and recorded 34.5% gas when CBU. Made a new wiper trip to the 20" shoe, ran back to bottom and CBU. Recorded 28% gas. Spotted 63 m^3 1.90 s.g. mud on bottom and displaced same with 7.2 m^3 1.70 s.g. mud. POOH. RIH with an open ended drill pipe 1970 m and CBU. Recorded 16.7% gas.

18.05 Continued RIH to 2076 m and CBU. Recorded max. 1.1% gas. Continued RIH to 2177 m and CBU. Recorded max. 3.3% gas. Set a balanced cement plug from 2177-2102 m and reverse circulated out at 2085 m. Recorded max. 10.4% gas. POOH to the 20" casing shoe. Slipped and cut the drilling line and POOH. RIH with a 17½" bit to 1970 m and CBU. Recorded max. 1.44% gas. RIH to 2093 m and drilled cement from 2093-2133 m. Recorded 17.4% gas and 1.5 m^3 pit gain 1500 strokes short of bottoms up. Shut in the well and recorded SIDPP = 8 bar and SICP = 0 bar. Closed the middle pipe ram and checked for trapped pressure, negative. Opened up the upper annular preventer and circulated the riser volume. Recorded max. 13.2% gas. Opened the middle pipe ram and checked for flow, negative. Continued drilling firm cement from 2133-2150 m.

19.05 Drilled firm cement from 2150-2160 m. Shut off the pumps and rotated the pipe for 15 minutes and CBU. Max. gas 2.56%. Reduced the mudweight from 1.70 s.g. to 1.68 s.g. Circulated and conditioned the mud. Max. gas 19.0%. Raised the mudweight back to 1.71 s.g. and recorded 16.2% on bottoms up. Pumped 58.2 m^3 1.90 s.g. mud and displaced same leaving the heavy mud on bottom. POOH to 1860 m and CBU. Max. gas 2.2%. POOH. Schlumberger ran ISF/SONIC-MSFL-GR, but could not pass 2135 m.

20.05 Ran electric logs. Prepared to run the 13 3/8" casing. RIH with a 17½" bit to 1935 m and CBU. Max. gas 2.6%. RIH to 2010 m and CBU. Max. gas 1.22%. RIH to 2085 m and CBU. Max. gas 0.88%. RIH to 2166 m and CBU. Max. gas 1.86%. Pumped and displaced 1.90 s.g. mud leaving the heavy mud from 2166-1840 m.

21.05 POOH with the 17½" bit. Attempted retrieving the wearbushing, but was not able to pass the upper annular preventer. Spent 9 hours trying to come through the preventer. After the 18 3/4" wearbushing was retrieved, ran the 13 3/8" casing.

22.05 Continued running the 13 3/8" casing and landed same with the shoe set at 2148 m. Commenced CBU. Started loosing mud at 0.7 m^3/min. Lost the returns completely after 1500 strokes. Flushed the riser and circulated out the 1.75 s.g. mud. Attempted to establish circulation, but no returns were achieved. Started cementing the 13 3/8" casing, but was interrupted by a plugged cement feeding line. Unplugged same and cemented the 13 3/8" casing with no returns neither during mixing and pumping nor displacing. Energized the seal assy and tested same to 345 bars. Tested the BOP on the blue pod and function tested same on the yellow pod, OK. POOH with the torque multiplier. RIH and set the wearbushing. Laid down the 17½" drilling assembly. RIH with a Johnstone positrieve packer to 1350 m and pressure tested the casing above the packer to 313 bars, OK. POOH with the packer. Pressure tested the casing against the shear rams to 175 bars.

23.05 Broke and laid down 9½" and 8" drill collars. Made up and RIH with a slick 12 1/4" BHA to 2120 m. Drilled out plugs float collar and firm cement to 2137 m. Recorded slow circulation rates and trained the rig crews in operating the remote chokes. Drilled out firm cement and the 9 5/8" casing shoe 2148 m. Drilled old cement plug in rathole from 2160-2177 m. Drilled 3 m new formation and performed a formation integrity test equivalent to 1.85 s.g. mudweight. POOH. RIH with open ended drill pipe to 2180 m, CBU.

24.05 Continued CBU, max. gas 2.5%. Set a balanced cement plug from 2180-1998 m. Pulled out to 1900 m and squeezed a total of 3 m^3 cement around the casing shoe. Held the squeeze pressure and bled back 0.59 m^3 mud. POOH. RIH with a 12 1/4" drilling assembly and drilled firm cement from 1948-1951 m and from 1994-2005 m.

25.05 Drilled firm cement from 2033-2180 m and new formation from 2180-2183 m. CBU and performed a formation integrity test equivalent to 1.97 s.g. mudweight. Dropped survey and POOH. RIH a with new bit to 2148 m and reamed to total depth at 2183 m. Drilled a 12 1/4" hole from 2183-2209 m.

26.05 Drilled a 12 1/4" hole from 2209-2332 m. Flushed the riser to clean out gumbo. Drilled a 12 1/4" hole from 2332-2351 m. Max. gas 12%. CBU, max gas 36%. Made a wiper trip to the 13 3/8" shoe, ok. CBU and recorded max. 24% gas. Raised the mudweight to 1.82 s.g. Max. gas 7%. Drilled a 12 1/4" hole from 2351-2399 m. Max. gas 3%. Started increasing the mudweight.

27.05 Continued increasing the mudweight to 1.85 s.g. Drilled a 12 1/4" hole from 2399-2426 m and observed the gas reading increasing from 3-76%. Circulated the gas down to 0.6% and made a wiper trip to the 13 3/8" casing shoe. Some tight spots. CBU and recorded max. 6.3% gas. Drilled a 12 1/4" hole from 2426-2639 m.

28.05 Drilled a 12 1/4" hole from 2639-2717 m and CBU. Max. gas 0.85%. Dropped a single shot survey and POOH. Tight spots from 2652-2611 m and from 2374-2345 m. Max. 40 tons overpull. Changed out the bit and RIH. Cut and slipped the drilling line. Continued RIH and drilled a 12 1/4" hole from 2717-2746 m.

29.05 Drilled a 12 1/4" hole 2746-2816 m. Had breakdown on the coupling between the rotary motor and the rotary gear. Lost 14.5 hours. Drilled a 12 1/4" hole from 2816-2820 m.

30.05 Drilled a 12 1/4" hole from 2820-2932 m. POOH.

31.05 RIH with TAM tester to test the BOP, but could not pass 220 m. Flushed the riser and observed excessive amount of cuttings in the riser. Could still not pass 220 m with the TAM tester. POOH with the TAM tester and RIH with a bit to 220 m. Washed and rotated the pipe and observed big chunks of old cuttings over the shakers. RIH and washed the wellhead area and POOH. RIH with the TAM tester and came through the upper annular preventer on the second attempt. Pressure tested the BOP on the yellow pod and function tested same on the blue pod. RIH with a 12 1/4" diamond bit on a turbine and RIH to 2310 m. Reamed from 2310-2316 m. RIH to 2932 m.

01.06 Drilled a 12 1/4" hole from 2932-2983 m. Changed piston on mud pump no. 1. Drilled a 12 1/4" hole from 2983-2994 m. Changed discharge valve on mud pump no. 2. Drilled a 12 1/4" hole from 2994-3009 m.

02.06 Drilled a 12 1/4" hole from 3009-3037 m. Made a wiper trip to 2885 m and had no drag. Drilled a 12 1/4" hole from 3037-3097 m.

03.06 Drilled a 12 1/4" hole from 3097-3110 m. Changed out piston and repaired a broken cooling hose on mud pump no. 1. Drilled a 12 1/4" hole from 3110-3165 m.

04.06 Drilled a 12 1/4" hole from 3165-3256 m.

05.06 Drilled a 12 1/4" hole from 3256-3262 m. POOH due to indication of bearing failure in the turbine. Had some tight spots from 2620-2530 m and from 2450-2170 m. Found one fluid port in the bit plugged. RIH with new bit and turbine bearing section. Cut and slipped the drilling line. Drilled a 12 1/4" hole from 3262-3272 m.

06.06 Drilled a 12 1/4" hole from 3272-3349 m.

07.06 Drilled a 12 1/4" hole from 3349-3377 m. Changed piston on mud pump no. 1. Drilled a 12 1/4" hole from 3377-3433 m.

08.06 Changed piston and liner on mud pump no. 1. Drilled a 12 1/4" hole from 3433-3522 m.

09.06 Drilled a 12 1/4" hole from 3522-3559 m. Changed piston and liner on mud pump no. 1, and suction valve and seat on mud pump no. 2. Drilled a 12 1/4" hole from 3559-3601 m. Max. gas 0.53%.

10.06 Drilled a 12 1/4" hole from 3601-3681 m.

11.06 Drilled a 12 1/4" hole from 3681-3740 m. Max. gas 1.06%. CBU, max. gas 1.28%. Pulled out to 2581 m. Tight hole from 3692-3597 m and from 2630-2581 m. Max. overpull 25 tons. Installed the kelly and worked the pipe at 2581 m while circulating. Continued POOH to 2411 m. Installed the kelly and circulated. Lost the circulation after 300 strokes due to packed BHA. After 3 m^3 mud was lost to the formation, full returns were reestablished. POOH to 2180 m and swabbed 700 liters.

12.06 RIH to 3522 m. Picked up kelly and reamed from 3522 to 3540 m. CBU, max. gas 11.75%. The well was static at flowchecks. POOH to 3436 m, installed the kelly and worked the pipe at a tight spot. Maximum overpull was 50 tons. POOH to 3312 m, swabbed 2.1 m^3 and RIH to the bottom. CBU and worked the pipe. Max. gas 1.75%. POOH and had max. 25 tons overpull. Pressure tested the BOP on the blue pod and function tested same on the yellow pod. RIH with a new rock bit.

13.06 Continued RIH to 3640 m. Worked the pipe and circulated trying to get the DLWD working, no success. Reamed parts of the hole down to bottom and drilled a 12 1/4" hole from 3740-3775 m. POOH to 3640 m and reamed to log with the DLWD tool from 3640-3734 m while circulating for samples. Made a wiper trip to the 13 3/8" casing. RIH to bottom.

14.06 CBU and recorded maximum 2.5% gas. POOH to log. Schlumberger ran electric logs.

15.06 Schlumberger ran electric logs. Attempted to make up 9 5/8" casing hanger, but the McEvoy full bore running tool and the 9 5/8" casing pup joint left hand treads did not fit together. RIH with a bit and a junkbasket to 2148 m. Cut and slipped the drilling line.

16.06 Continued RIH to 3775 m. Worked on junk and CBU, max. gas 21%. POOH. Retrieved the wearbushing and ran the 9 5/8" casing.

17.06 Continued running the 9 5/8" casing. Circulated prior to cementing but had no returns. Built new 1.85 s.g. mud. Cemented the 9 5/8" casing. The cement set up too early, leaving nearly 300 m cement inside the casing. Set the seal assembly and pressure tested same to 502 bars, ok. POOH with the landing string and RIH and set the wearbushing. Pressure tested the casing against the shear rams to 400 bars. Made up and RIH to 3385 m with a 8½" drilling assembly. Drilled plugs and firm cement from 3385-3445 m.

18.06 Drilled firm cement from 3445-3714 m and CBU. Reduced the mudweight to 1.40 s.g. while drilling. Pressure tested the BOP on the yellow pod and function tested same on the blue pod. Pressure tested the casing to 502 bars, ok. Drilled out the float collar, the cement and the 9 5/8" casing shoe at 3765 m.

19.06 Drilled a 8½" hole from 3775-3778 m and circulated for samples. Max. gas 0.42%. Performed a formation integrity test equivalent to 2.07 s.g. mudweight. Drilled a 8½" hole from 3778-3780 m and circulated for samples, max. gas 1.06%. Drilled a 8½" hole from 3780-3783 m. Flowchecked after a drilling break, positive. Gained a total of 2.5 m^3 mud. Shut in the well on the upper annular preventer and recorded SIDPP = 137 bars and SICP = 138 bars. Increased the mudweight to 1.85 s.g. and circulated out the influx through the choke. Displaced the riser with 1.85 s.g. mud, checked for pressure between the upper piper ram and the upper annular preventer, negative, and opened the upper pipe rams. Increased the mudweight to 1.87 s.g. and POOH.

20.06 Continued POOH. RIH with a 6 3/4" corebarrel and cut a core from 3783-3794.5 m. POOH with core no. 1 and recovered same. Serviced the core barrel, made up a new core bit and RIH with a 27.5 m core barrel.

21.06 Cut core no. 2 from 3794-3822 m and POOH. Recovered core no. 2, serviced the core barrel and RIH to the 9 5/8" casing shoe. Slipped and cut the drilling line. RIH to bottom and circulated the gas down from 40% prior to cutting core no. 3. Cut core no. 3 from 3822-3847 m and POOH due to core jamming. Recovered core no. 3 and started running electric logs.

22.06 Schlumberger ran electric logs. RIH with a 8½" drilling assembly and drilled a 8½" hole from 3847-3857 m. Increased the mudweight from 1.87 s.g. to 1.89 s.g. Circulated and conditioned the mud and POOH. Made up a new bit and RIH.

23.06 Continued RIH to 3842 m and reamed the hole to bottom. Drilled a 8½" hole from 3857-3862 m. Recorded low rate of penetration and high torque. Pulled out 3 joints and reamed the hole from 3820-3862 m with normal torque. Attempted drilling, but did not make any progress due to high torque. POOH, made up a new 8½" BHA including roller reamers and RIH. Drilled a 8½" hole from 3862-3872 m.

24.06 Drilled a 8½" hole from 3872-3930 m.

25.06	Drilled a 8½" hole from 3930-4043 m. Dropped a single shot survey and POOH.
26.06	Continued POOH and found one cone left in the hole. RIH with a 7 7/8" reverse circulating basket and attempted getting the lost cone, no success. RIH with 90 stands of drill pipe. Pressure tested the BOP on the blue pod and function tested same on the yellow pod. Continued RIH to 4037 m, and reamed from 4037-4043 m. Drilled a 8½" hole from 4043-4051 m.
27.06	POOH to change the bit. RIH with a new bit to the 9 5/8" casing shoe. Slipped and cut the drilling line. RIH to bottom and drilled a 8½" hole from 4051-4110 m.
28.06	Drilled a 8½" hole from 4110-4121 m. Flowchecked after drilling breaks at 4063 m and 4070 m, ok. Made a trip out to change the bit. RIH with a new bit and drilled a 8½" hole from 4121-4154 m.
29.06	Drilled a 8½" hole from 4154-4181 m. Dropped a single shot survey and POOH to change the bit. RIH with a new bit to 4161 m and reamed the hole down to 4181 m.
30.06	Drilled a 8½" hole from 4181-4296 m. Flowchecked after two drilling breaks, ok.
01.07	Drilled a 8½" hole from 4296-4410 m.
02.07	Drilled a 8½" hole from 4410-4414 m. CBU and dropped a single shot survey prior to POOH. Recorded 60 tons overpull at the beginning of the trip and tight spots between 4381 m and 4245 m caused max. 30 tons overpull. Changed out the bit and the DLWD tool and RIH to 4379 m. Reamed the hole from 4379 to 4414 m. Drilled a 8½" hole from 4414-4445 m.

03.07 Drilled a 8½" hole from 4445-4772 m. Dropped a single shot survey and POOH. RIH with a new bit, but without the DLWD tool due to a tool failure. Slipped and cut the drilling line with the bit at the 9 5/8" casing shoe. RIH to bottom and drilled a 8½" hole from 4472-4473 m.

04.07 Drilled a 8½" hole from 4473-4498 m and CBU. Dropped a single shot survey and made a wiper trip to the casing shoe, where the single shot was retrieved. RIH to the bottom and CBU. Started POOH, but had to work the string through tight spots from 4478-4453 m. Max. 75 tons overpull was recorded. Circulated and conditioned the hole and POOH. Schlumberger started running electric logs.

05.07 Schlumberger continued logging.

06.07 Rigged down the logging equipment. RIH with a 8½" BHA and 5" drill pipe to the total depth, CBU, and POOH. Schlumberger ran RFT, but got stuck at 4084 m. Pulled on the cable with 4.3 tons, no success. Cut the cable and RIH with overshot and 5" drill pipe.

07.07 RIH to 4057 m. Picked up the kelly and flushed through the fishing string. Pulled the tool free and engaged the tool with the overshot. The grapple broke the cable at the weak-point with 3 tons overpull. POOH with the broken cable and the fishing string and recovered the RFT tool. RIH with a 8½" bit, circulated and conditioned the mud and POOH. Tight spots from 4483-4348 m caused up to 40 tons overpull. Started picking up 3½" drill pipe while waiting on Schlumberger cable drum to arrive.

08.07 Continued waiting for the cable drum. POOH with the 8½" bit. Schlumberger ran electric logs.

09.07 Schlumberger ran electric logs. Prepared to run the 7" casing. RIH with a 8½" bit and a junk basket to recover 6 lost core bullets. Slipped and cut the drilling line. RIH to bottom and got stuck when trying to work the junk basket. Did not manage to neither rotate the pipe nor trip the jar in either direction.

10.07 Circulated and conditioned the mud. Reduced the mudweight from 1.89 s.g. to 1.86 s.g. Worked the pipe to free same, no success. Pumped and displaced 20 m^3 Imco spot leaving 5.5 m^3 inside the drill pipe. Worked the pipe using 100 tons overpull and pumped 150 liters every hour. The pipe came free after beeing stuck for 15 hours. CBU and worked the junk basket. POOH. RIH and retrieved the wearbushing. Started running the 7" casing.

11.07 Continued running the 7" casing. Circulated the casing volume and cemented the casing without any problems. Energized the seal assembly and tested same to 641 bar. Pulled out the torque multiplier and set the wearbushing. RIH with the 7" cup tester.

12.07 Pressure tested the BOP on the yellow pod and function tested same on the blue pod. Laid down the 8½" BHA. Made up and RIH with the 6" drilling assembly.

13.07 RIH with 6" drilling assembly. Drilled the cement plugs, firm cement down to 4451 m and started displacing the hole to 1.74 s.g. mud. Drilled cement from 4451-4469 m and the casing shoe at 4470 m. RIH to bottom and drilled a 6" hole from 4498-4500 m. CBU and pulled into the 7" casing and performed a formation integrity test equivalent to 2.16 s.g. mudweight. Drilled a 6" hole from 4500-4505 m and POOH. RIH with a new bit to the casing shoe.

14.07 Slipped and cut the drilling line. Reamed the hole from 4498-4505 m and drilled a 6" hole from 4505-4517 m. POOH to change the bit. RIH and drilled a 6" hole from 4517-4521 m. Dropped a single shot survey and POOH.

15.07 Continued POOH. RIH with a new bit and drilled a 6" hole from 4521-4537 m. CBU for samples, max. gas 1.3%. Dropped the single shot survey and POOH. Made up the corebarrel and RIH.

16.07 Continued RIH with the core barrel, dropped the ball and cut a core from 4537-4549 m. POOH and recovered the core. RIH with a new rock bit.

17.07 Drilled a 6" hole from 4549-4601 m. Flowchecked after drilling breaks, negative.

18.07 Drilled a 6" hole from 4601-4607 m. Max. gas 3.2%. Dropped a single shot survey and POOH. RIH with a new bit to 3877 m. Slipped and cut the drilling line and repaired the block extension. RIH to bottom and drilled a 6" hole from 4607-4649 m. Flowchecked after some drilling breaks, negative.

19.07 Drilled a 6" hole from 4649-4699 m. Dropped a single shot survey and POOH. RIH with a cup tester to test the BOP.

20.07 POOH with the cup tester and changed out same due to bad sealing in the housing. RIH with the cup tester and pressure tested the BOP. POOH with the cup tester. Changed out the bit and the roller reamers and RIH. Drilled a 6" hole from 4699-4734 m, max. gas 0.61%.

21.07 Drilled a 6" hole from 4734-4740 m. Dropped a single shot survey and POOH due to excessive and variable torque. Found 3 cones to be left in the hole. RIH with a reverse circulating junk basket, but did not recover any cones. RIH a second time and worked the junk basket. Got stuck, but came free using 50 tons overpull. Started POOH.

22.07 POOH. Found one cone in the junk basket. RIH with the junk basket again, worked same and POOH. Found 2 cones and a 0.4 m core. RIH with a new bit to the 7" casing shoe. Slipped and cut the drilling line and RIH to bottom. Drilled a 6" hole from 4740-4763 m.

23.07 Drilled a 6" hole from 4763-4828 m. Dropped the survey and POOH.

24.07 Continued POOH. RIH with a new bit and drilled a 6" hole from 4828-4859 m. Started POOH due to a dropping pressure. Checked every connections on the way out. Found a washout in a tool joint on stand no. 32. Laid out 2 joints and RIH to bottom.

25.07 Circulated, but the pump pressure was still 30 bars too low. Started POOH and found a washout in a tool joint on stand no. 34. Laid out 2 joints. Continued POOH and found washouts in 2 more tool joints and in the monel. Changed the bit, the roller reamers and the monel and RIH to 4842 m. Reamed the hole down to 4859 m. Drilled a 6" hole from 4859-4881 m.

26.07 Drilled a 6" hole from 4881-4902 m. Circulated and POOH with 8 stands when a drawwork failure occured. Circulated while working on the drawwork. Pulled into the 7" casing, ran back to bottom and CBU. Max. gas 0.21%. POOH and started running electric logs.

27.07 Continued logging.

28.07 Continued logging. RIH with an open ended drill pipe. Set one open hole cement plug from 4902-4770 m and one from 4770-4630 m. Reverse circulated after plug no. 1 and circulated the long way after plug no. 2.

29.07 Set open hole cement plug from 4630-4490 m and from 4490-4340 m. Reversed out after each plug was set. Increased the mudweight from 1.74 s.g. to 1.89 s.g. POOH and laid down excess 3½" drill pipe. Pressure tested the BOP to 566 bars using the cup tester. Checked every connections on the drill pipes. Broke and laid down the core barrel and 27 joints 5" drill pipes from the derrick. Made up one 3½" tubing joint to the Flopetrol control head. Pressure tested the cementplug/casing to 566 bars, ok.

30.07 Made a dummy run with the fluted hanger and the EZ-tree. Pulled out and set the landing string in the derrick. RIH with a 6" bit and a 7" casing scraper and tagged the cement plug at 4374 m. Slipped and cut the drilling line. CBU and POOH. Ran a gauge ring and a junk basket on wire line. Started running a 7" bridge plug on wire line.

31.07 Set the bridge plug at 4364 m. Picked up and RIH with 3½" tubing while waiting on Flopetrol DST equipment to be ready. POOH with the tubing and racked same back in the derrick. Perforated the test interval using 5" high shot density gun run on wire line. Started RIH with test string BHA.

01.08 Continued RIH with the teststring. Pressure tested against the drill pipe tester valve to 345 bar after the BHA was below rotary and to 566 bar prior to picking up the EZ-tree. RIH with the EZ-tree, the landing string, and the lubricator valve. Installed the Flopetrol surface equipment and pressure tested the string, the string valves and the surface equipment according to a separate test program. Found several leaks when pressure testing, but repaired same.

02.08 Opened the well on a 36/64" choke. Had initial flow, initial shut in, main flow and main build up. Flushed the lines from the cementing unit to the burners having the lubricator valve closed. Pressured up the string and opened the lubricator valve. Opened the LPR-N tester valve, but no pressure responses were observed at surface. Bled off the string pressure from 200 bar. Only 40 liters backflow indicated the EZ-tree to be closed. A leak in the EZ-tree control line prevented the EZ-tree valve to stay open. Bullheaded down the test string.

03.08 Made 3 attempts trying to open the APR-M circulating valve with 210 bar, but did not get any indication of shearing the shear pins. Attempted to circulate the long way, negative. Made 3 more attempts trying to shear the pins using 240 bar annulus pressure, but no pressure responses were observed neither on the tubing side nor the annulus side. Was not able to reverse circulate, but when setting pressure on the tubing, circulation was obtained. CBU the long way. Unset the packer and CBU the long way. Broke and laid down the surface equipment. POOH with the test string. Started RIH with a 6" bit and a 7" casing scraper.

04.08 Continued RIH to 3800 m. CBU and recorded max. 26.2% gas. POOH with the bit and the scraper. Ran a gauge ring and a junk basket prior to running and setting a EZSV retainer at 3777 m. RIH with a stinger to 3777 m, stung into the retainer and attempted to establish an injection rate using 138 bar surface pressure, negative. Pulled out of the retainer and set a balanced cement plug from 3777-3727 m. POOH to 3688 m and CBU. POOH with the stinger.

05.08 Perforated the 7" casing at 291 m under pressure control. The pressure dropped to zero. RIH with a 7" casing cutter and cut the 7" casing at 2045 m. POOH with the casing cutter. Backed out the seal assembly using the torque multiplier. RIH with a 7" casing spear and pack off and attempted to pull the casing free using 100 tons overpull, no success. POOH with the casing spear. RIH with a 6" bit and reamed cement stringers at 3708 m.

06.08 Drilled out the cement from 3727-3775 m and the EZSV retainer at 3777 m. Pushed the retainer from 3777-3905 m and POOH with the 6" bit. RIH with an open ended drill pipe to 3887 m and set a balanced cement plug from 3887-3677 m. Reverse circulated from 3597m and POOH with the open ended drill pipe. RIH with the 6" bit and the 7" casing scraper to 3590 m. Slipped and cut the drilling line. Continued RIH to 3652 m and dressed the cement down to 3655 m. Weight tested the cement with 10 tons, ok. Started POOH with the bit.

07.08 Continued POOH with the bit and the scraper. RIH with the 7" casing cutter and cut the 7" casing at 2035 m. POOH, but could not find any cutting marks on the knives. Machined down the non-cutting area of the knives. (Servco cutter). RIH and made a new cut at 2035 m. RIH with the 7" casing spear and attempted to pull the casing free using 100 tons overpull 85 bar pressure below the pack off, no success. Installed short knives in the casing cutter and RIH with the casing cutter.

08.08 Cut the 7" casing a third time at 2035 m and POOH with the cutter. RIH with the 7" casing spear, but could still not pull the casing free with 100 tons overpull and 95 bar below the pack off. POOH with the spear. Laid down drill pipes and drill collars while waiting for new 7" casing cutter (A-1). RIH with a new casing cutter and cut the casing at 2047 m. POOH with the casing cutter. RIH with the 7" casing spear and pulled the 7" casing free with no overpull.

09.08	POOH with 147 joints 7" casing. RIH with a 8½" bit and a 9 5/8" casing scraper to 2047 m. CBU, no gas. Pressure tested the 7" x 9 5/8" annulus to 120 bars, ok. POOH with the bit and the scraper. Schlumberger ran a junk basket and a gauge ring prior to running and setting an EZSV bridge plug at 2030 m. Perforated the 9 5/8" casing at 2020 m under pressure control, and performed an injectivity test. RIH and set an EZSV cement retainer at 2015 m.
10.08	RIH with a stinger and performed an injection test. Squeezed cement into the perforations, pulled out to 1890 m and reverse circulated. POOH with the stinger and laid down 120 joints 3½" drill pipe on the way out. RIH with a casing puncher to perforate the 9 5/8" casing under pressure control. A misunderstanding between the Schlumberger operator and the driller resulted in a cable break due to closing of the upper pipe ram. The casing puncher was lost in the hole. RIH with a new casing puncher and perforated the 9 5/8" casing under pressure control at 294 m. RIH with the torque multiplier and came through the upper annular preventer on the second attempt. Backed out the seal assembly with 6260 Nm surface torque. RIH with the 9 5/8" casing cutter, but could not pass an obstruction at 310 m.
11.08	RIH with a 8½" bit to 310 m and worked the pipe through a tight spot at 310 m. POOH with the bit. RIH with the 9 5/8" casing cutter and cut the 9 5/8" casing at 853 m. POOH with the casing cutter and RIH with a 9 5/8" casing spear. Pulled the 9 5/8" casing free with 50 tons overpull. POOH and laid down 49 joints 9 5/8" casing. Made a clean up trip to 853 m with a 12 1/4" bit and a 13 3/8" casing scraper. Pressure tested the 9 5/8" x 13 3/8" annulus to 55 bars and reduced the mudweight from 1.89 s.g. to 1.71 s.g. Ran a gauge ring and a junk basket prior to setting an EZSV bridge plug at 840 m.

12.08 Perforated the 13 3/8" casing under pressure control at 837 m. Performed an injectivity test and set an EZSV cement retainer on wireline at 830 m. RIH with a stinger, performed an injectivity test and squeezed cement into the 20" x 13 3/8" annulus. Pulled out of the stinger and reverse circulated at 596 m. Perforated the 13 3/8" casing under pressure control at 290 m and POOH with the open ended pipe. As a precaution against problems coming through the annular preventer, the boll weevil was run and worked through the preventer prior to running in with the torque multiplier. Backed out the seal assembly with 6000 Nm and POOH with the torque multiplier. RIH with a 13 3/8" casing cutter and cut the 13 3/8" casing at 400 m. RIH with a 13 3/8" casing spear and pulled the 13 3/8" casing free with no overpull.

13.08 POOH and laid out 11 joints 13 3/8" casing. Made a clean up trip to 400 m using a 17½" bit. Pressure tested the 20" x 13 3/8" annulus to 10 bars, ok. Displaced the hole to seawater. Set a balanced cement plug from 500-290 m. Pulled out to 290 m and reversed out. Pulled the marine riser and BOP.

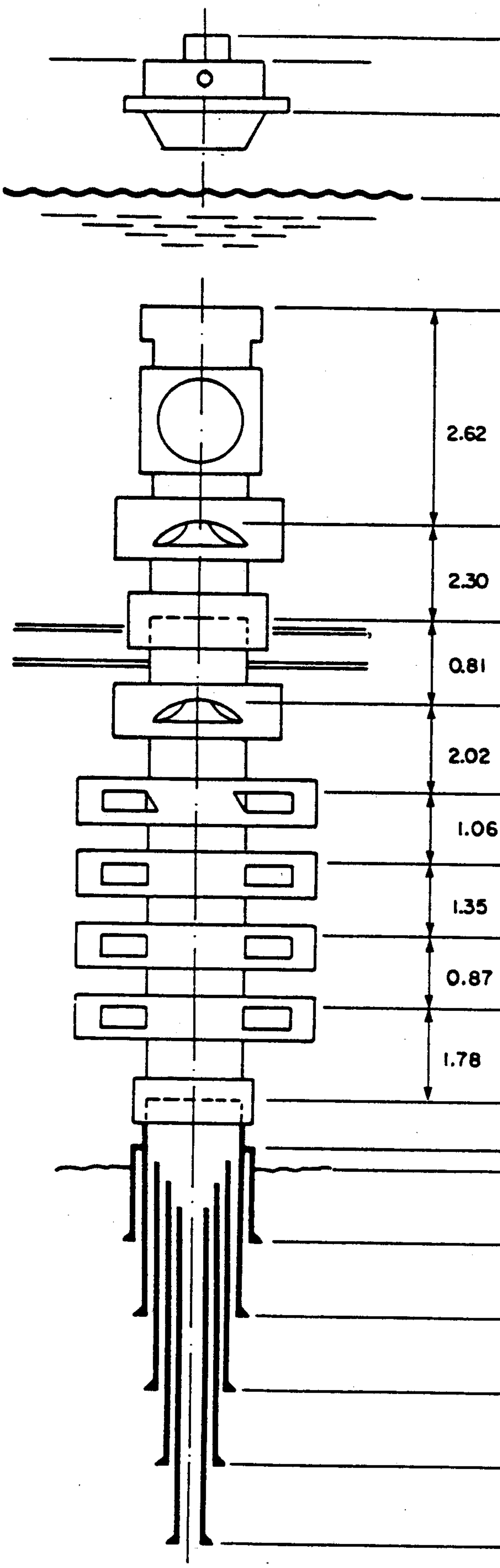
14.08 Prepared for cutting the 20" and the 30" casings. RIH and cut the 20" and the 30" casings at 285 m. POOH with the casing cutter. RIH with a 20" spear and pulled the cut 20" and 30" casings free. Lowered the Mantis mini submarine to inspect the seabed, ok. Commenced the anchor handling.

15.08 Commenced the anchor handling.
The rig "Ross Isle" left the location 6406/3-1 at 0400 hours.

III 4 . WELL AND SUBSEA SCEMATIC

ROSS ISLE 18 3/4" x 15 M SUBSEA ASSEMBLY. WELL 6406/3-1

(NOT TO SCALE)



M	
0	RKB
	DIVERTER RISER CONN. FLANGE
22	MEAN SEA LEVEL
263.19	JOINT RISER CONNECTOR FLANGE
265.81	UPPER ANNULAR RUBBER TOP (CLOSED)
268.11	LOWER STACK ASSEMBLY TOP
268.92	LOWER ANNULAR RUBBER TOP (CLOSED)
270.94	SHEAR RAMS TOP
272.0	U.P. RAMS TOP
273.35	M.P. RAMS TOP
274.22	L.P. RAMS TOP
276	18 3/4" WELLHEAD TOP
276.5	30" HOUSING TOP
278	MUD LINE
352	30" SHOE
945	20" SHOE
2148	13 3/8" SHOE
3765	9 5/8" SHOE
4470	7" SHOE

statoil
Den norske stats oljeselskap a.s

ORIGINAL: S R
TEGNET: AM
DATO: 27-10-83

III 4 WELLBORE SCHEMATIC 6406/3-1

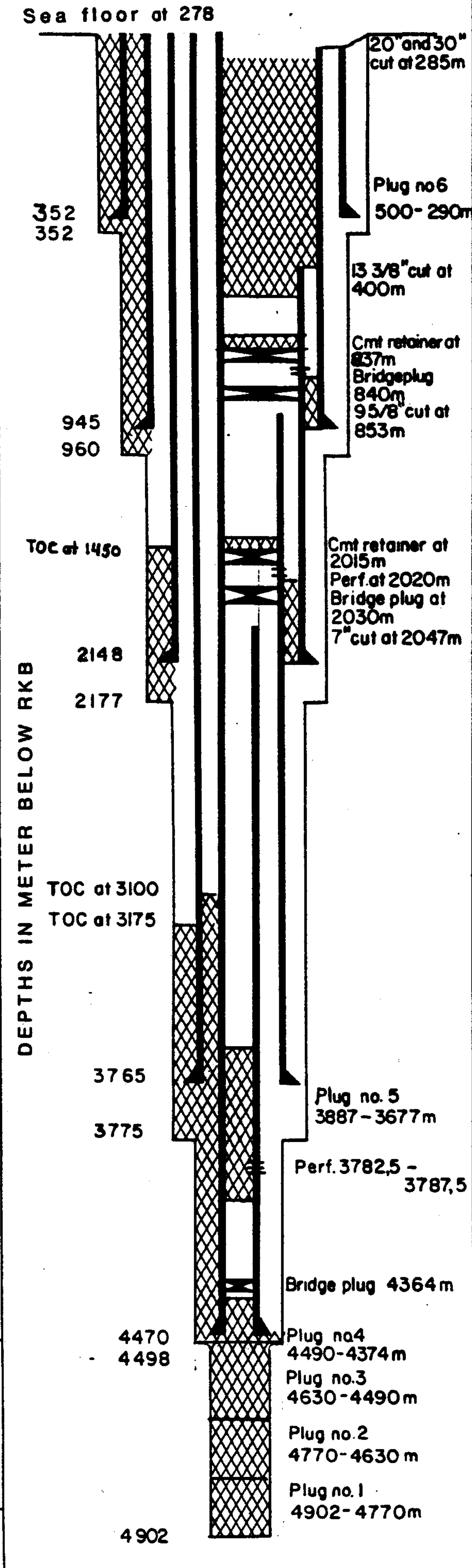
statoil
Den norske stats oljeselskap a.s

Original av : ÅR
Tegnet av : Tei
Dato : 14/1-85

(NOT TO SCALE)

RKB - MSL: 22 m. WATER DEPTH: 256 m.

HOLE	CASING
36"	30" Grade B Vetco ATD/RB 6 jonts
26"	20" 133 lbs/ft x-56 Vetco LS
17 1/2"	13 3/8" 72 lbs/ft P-110 and N-80 Buttress X-O at 1401 m
12 1/4"	9 5/8" 47 lbs/ft P-110 Buttres
8 1/2"	7" 32 lbs/ft P-110 and MW 125 Mixed types of threads and grades
	Not run



CASING CEMENT

Lead slurry:
Class "G" cmt + 3.20 1/100 kg D-75 and 93.43 1/100kg seawater to 1.56 s.g.
Tail slurry:
Class "G" cmt + 1.8 1/100 kg D-77 and 44.48 1/100kg seawater to 1.90 s.g.

Lead slurry:
Class "G" cmt + 3.2 1/100 kg D-75 + 0.71 1/100kg D-81 and 92.97 1/100kg seawater to 1.56 s.g
Tail slurry:
Class "G" cmt and 45.57 1/100kg seawater to 1.90sg
- Bumped plug with 70 bars
- Had to squeeze shoe

Lead slurry:
Class "G" cmt + 1% pre-hydrated bentonite + 0.53 1/100kg D-81, 0.89 1/100kg D-80 and 56.69 1/100kg freshwater to 1.75 s.g.
Tail slurry:
Class "G" cmt + 0.89 1/100 kg D-80 + 0.44 1/100kg D-81 + 0.33 1/100kg D-73 and 42.09 1/100kg freshwater to 1.90 s.g
-Did not bump plug
-Had to squeeze shoe

Tail slurry:
Class "G" + 2.22 1/100kg D-73, 1.33 1/100kg D-80, 0.49 1/100kg D-81 and 40.81 1/100kg freshwater to 1.9 s.g.
- The cement set up while displacing.
- Top cmt. inside csg. at 3385 m

Tail slurry:
Class "G" cmt + 2.22 1/100 kg D-73, + 1.33 1/100kg D-80 + 6.22 1/100kg D-28 and 35.38 1/100kg freshwater.
Slurry weight: 1.90 s.g
- Bumped plug
- 100% returns

PLUGS/SQUEEZE

Plug no. 6
Neat, slurry weight 1.90 s.g

Squeeze 13 3/8" x 20" annulus
Class "G" cmt + 1.33 1/100kg D-80 + 43.23 1/100kg seawater.
Slurry weight: 1.90 s.g.

Squeeze 13 3/8"x9 5/8" ann.
Class "G" cmt + 1.33 1/100kg D-73, + 1.33 1/100kg D-80 + 0.27 1/100kg D-81 + 41.81 1/100kg freshwater

Plug no. 5
Class "G" cmt + 2.22 1/100kg D-73 + 0.89 1/100kg D-80 + 0.48 1/100kg D-801 + 41.15 1/100kg freshwater
Slurry weight: 1.90 s.g
- Did not get any squeeze into perforations after DST.

Plug no. 1, no. 2, no. 3 and no. 4
Class "G" cmt + 2.22 1/100kg D-73 + 1.33 1/100kg D-80 + 6.66 1/100kg D-28 + 34.96 1/100kg freshwater
Slurry weight: 1.90 s.g.

III 5. FORMATION INTEGRITY TESTS

FORMATION INTEGRITY TESTS

Formation integrity tests were performed below each casing shoe except for the 30" casing.
Normal procedures were used.
Cement had to be squeezed around the 20" and the 13 3/8" casing shoe to obtain a true and satisfactory formation test.

statoil

FORMASJONSSTYRKETEST

Dato: 09.05.84

Brønn nr.: 6406/3-1 **Dybde:** Brønn: 965 m Foring: 945 m Test: 945 m

Fartøy: ROSS ISLE **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 278 m

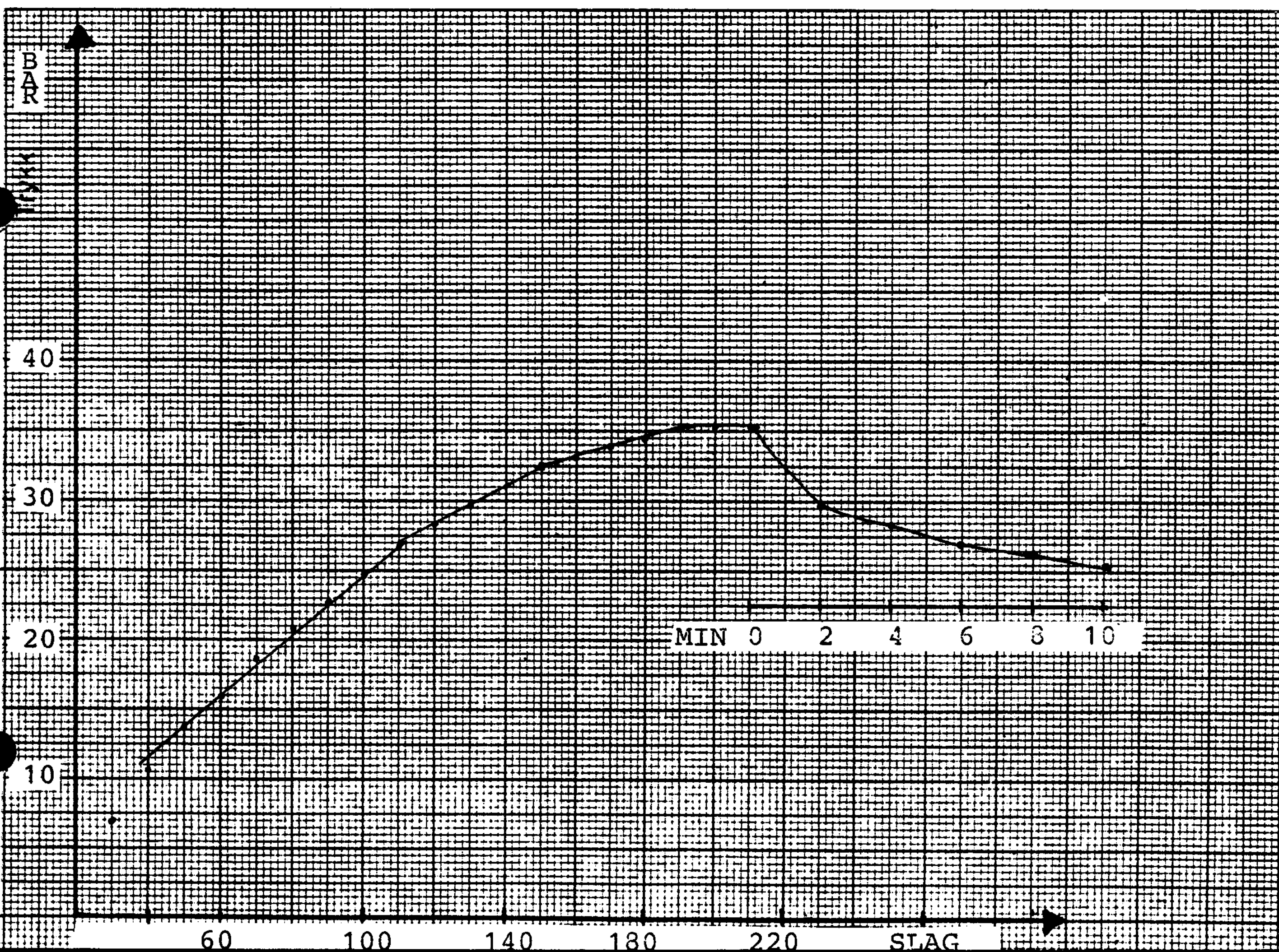
Foring: Diam.: 20" Tyngde: 133 lbs/ft Grad: X-56 Maks. trykk: 211 bar

Boreslam: Tetthet: 1.11 S.G Vis: 42 sec P.V.: 4 cp Y.P.: 5 lbs/100ft² Filt: 24 ml Gel.: 2/3 lbs/100ft²

Pumpe: Type: DOWELL Kapasitet: 2.08 l/stk Vol./tidsenh.: 120 l/min Tilb.str.: 320 l

Antatt styrke: 1.68 S.G Obs. spr. trykk: 32.8 bars Ekv. formasj. styrke: 1.46 S.G

SLAG	BAR	SLAG	BAR	SLAG	BAR	Anmerkninger
20	6.9	180	26.9	340	35.2	Before squeeze
40	10.3	200	28.3	360	35.2	
60	13.8	220	29.7	380	35.2	
80	15.9	240	31.0	MIN	BAR	
100	18.6	260	32.4	2	29.7	
120	20.7	280	33.1	4	28.3	
140	22.8	300	33.8	6	26.9	Sign.: P. Sandbu
160	24.8	320	34.5	8	26.2	
				10	25.5	



statoil

FORMASJONSSTYRKETEST

Dato: 10.05.84

Brønn nr.: 6406/3-1 **Dybde:** Brønn: 968 m Foring: 945 m Test: 945 m

Fartøy: ROSS ISLE **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 278 m

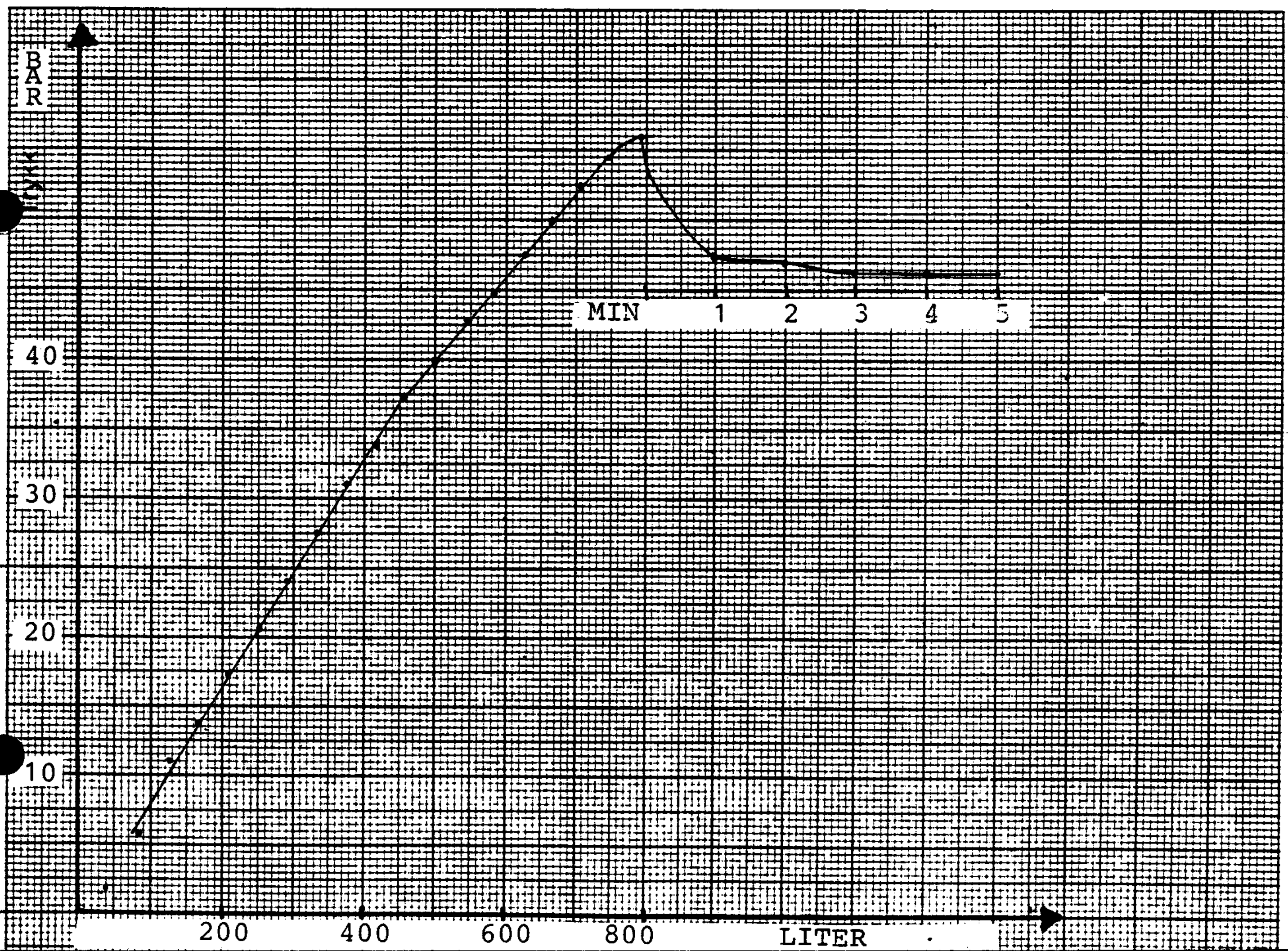
Foring: Diam.: 20" Tyngde: 133 lbs/ft Grad: X-56 Maks. trykk: 211 bar

Boreslam: Tetthet: 1.12 S.G Vis: 47 sec P.V.: 6 cp Y.P.: 23 lbs/100ft² Filt: 27 ml Gel.: 7/10 lbs/100ft²

Pumpe: Type: DOWELL Kapasitet: 2.08 l/stks Vol./tidsenh.: 120 l/min Tilb.str.: 477 l

Antatt styrke: 1.68 S.G Obs. spr. trykk: 54.4 bar Ekv. formasj. styrke: 1.71 S.G

LITER	BAR	LITER	BAR	LITER	BAR	Anmerkninger
41.6	1.8	374.4	31	707.2	52.4	-After squeeze -Volume pumped from
83.2	5.7	416.0	33.8	748.8	54.5	displ. tank 636 l (4bbl)
124.8	11.0	457.6	37.2	790.4	55.9	-Volume according to
166.4	13.8	499.2	40.0	MIN	BAR	total strokes 790.4 l
208.0	17.2	540.8	42.8	1	47.6	Pump eff. 80%
249.6	20.7	582.4	44.8	2	46.9	
291.2	24.1	624.0	47.6	3	46.2	Sign.: P. Sandbu
332.8	27.6	665.6	49.7	4	46.2	
				5	46.2	



statoil

FORMASJONSSTYRKETEST

Dato: 23.05.84

Brønn nr.: 6406/3-1 **Dybde:** Brønn: 2180 m Foring: 2148 m Test: 2148 m

Fartøy: ROSS ISLE **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 278 m

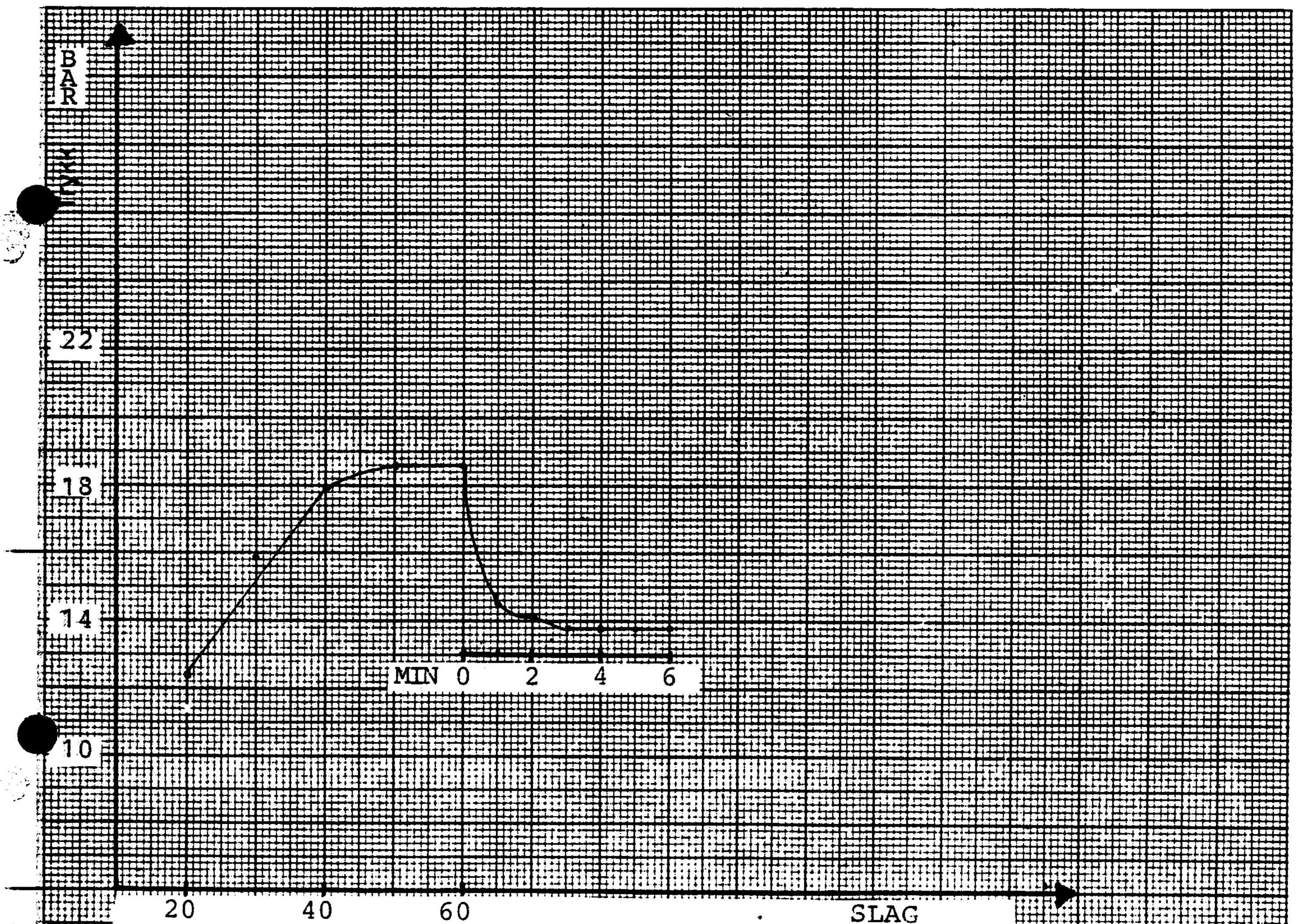
Foring: Diam.: 13 3/8" Tyngde: 72 lbs/ft Grad: N-80/ P-110 Maks. trykk:

Boreslam: Tetthet: 1.77 S.G Vis: 56 sec P.V.: 17 cp Y.P.: 17 lbs/ $100ft^2$ Filt: 25 ml Gel.: 27/64 lbs/ $100ft^2$

Pumpe: Type: DOWELL Kapasitet: 2.08 l/str Vol./tidsenh.: 80 l/min Tilb.str.: 80 l

Antatt styrke: 1.90 S.G Obs. spr. trykk: 17.9 bars Ekv. formasj. styrke: 1.85 S.G

SLAG	BAR	SLAG	BAR	MIN	BAR	Anmerkninger
10	12.4			1	14.5	Pumped: 111 ltr
20	15.9			2	14.1	Bleed back: 80 ltr
30	17.9			3	13.8	
40	18.6			4	13.8	
50	18.6			5	13.8	
				6	13.8	
						Sign.: S.E.



statoil **FORMASJONSSTYRKETEST** Dato: 23.05.84

Brønn nr.: 6406/3-1 **Dybde:** Brønn: 2180 m Foring: 13 3/8" Test: 2148 m

Fartøy: ROSS ISLE **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 278 m

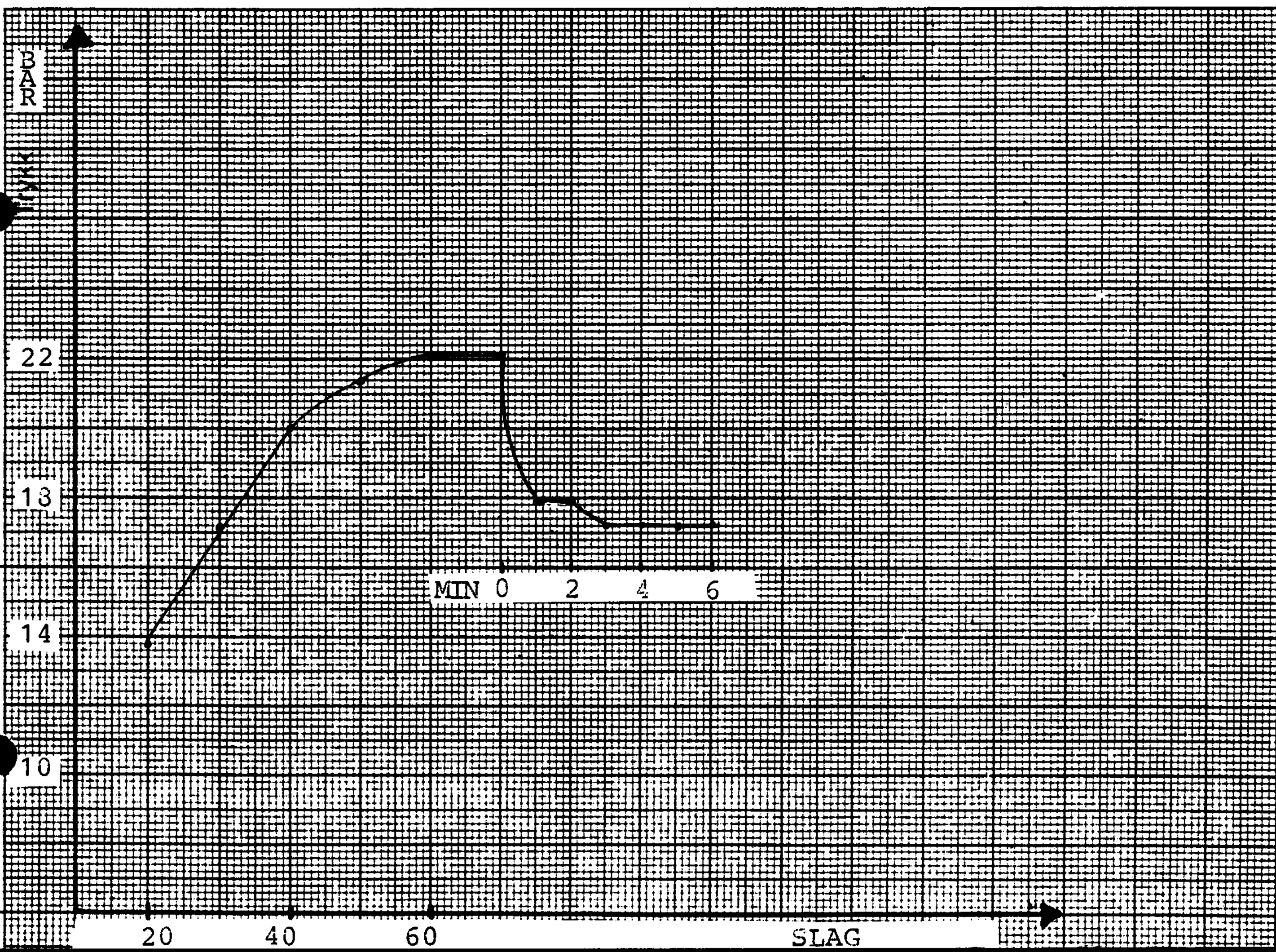
Foring: Diam.: 13 3/8" Tyngde: 72 lbs/ft Grad: N-80/ P-110 Maks. trykk:

Boreslam: Tetthet: 1.77 S.G Vis: 56 sec P.V.: 17 cp Y.P.: 17 lbs/ 100ft2 Filt: 25 ml Gel.: 27/64 lbs/ 100ft2

Pumpe: Type: DOWELL Kapasitet: 2.08 l/str Vol./tidsenh.: 80 l/min Tilb.str.: 80 l

Antatt styrke: 1.90 S.G Obs. spr. trykk: 22.1 bars Ekv. formasj. styrke: 1.87 S.G

STROKE	BAR			MIN	BAR	Anmerkninger
10	13.8			1	17.9	Pumped: 180 ltr
20	17.2			2	17.9	Bleed back: 80 ltr
30	20.0			3	17.2	
40	21.4			4	17.2	
50	22.1			5	17.2	
60	22.1			6	17.2	
						Sign.: S.E.



statoil

FORMASJONSSTYRKETEST

Dato: 25.05.84

Brønn nr.: 6406/3-1 **Dybde:** Brønn: 2183 m Foring: 2148 m Test: 2148 m

Fartøy: ROSS ISLE **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 278 m

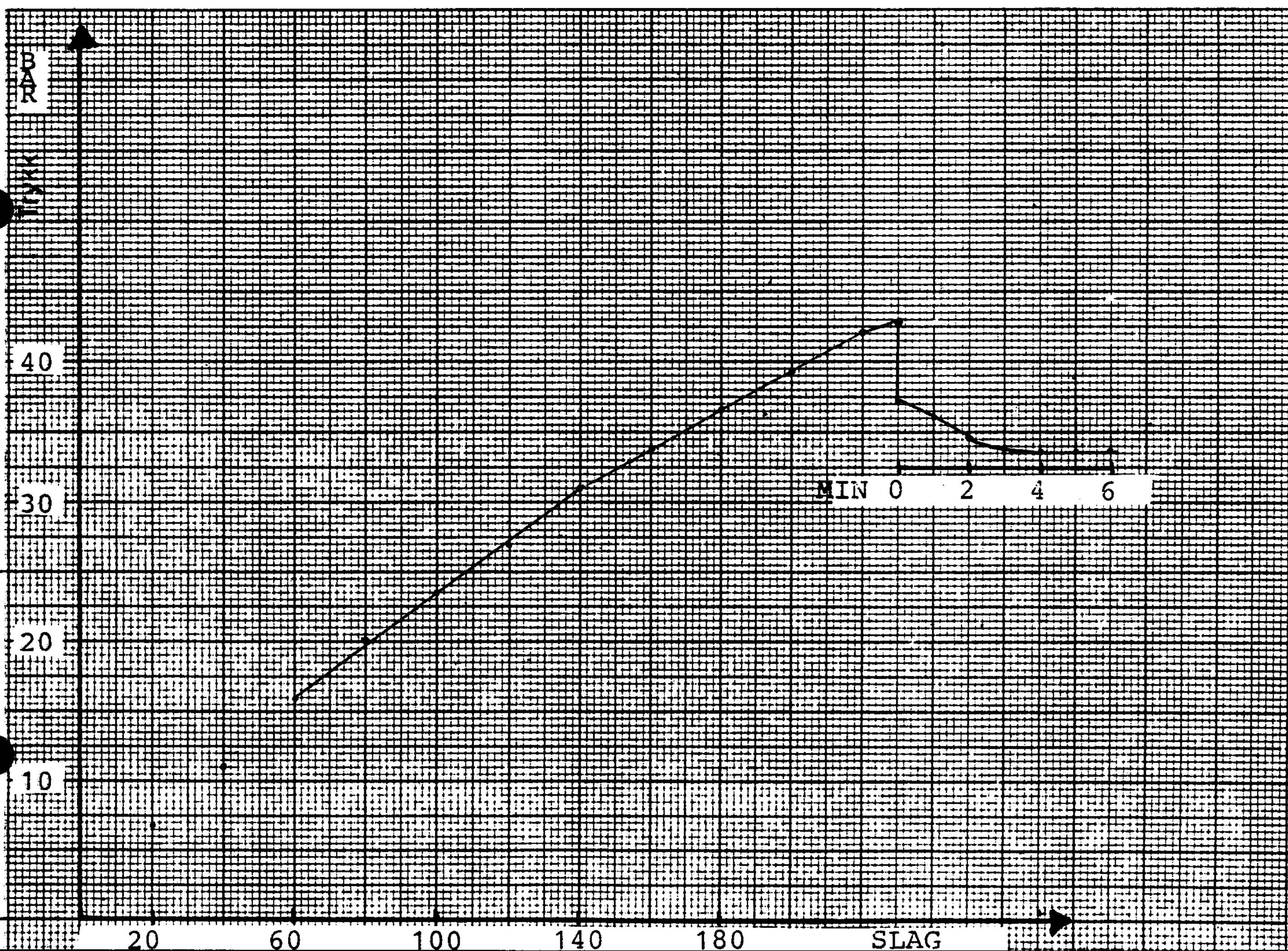
Foring: Diam.: 13 3/8" Tyngde: 72 lbs/ft Grad: N-80/ P-110 Maks. trykk:

Boreslam: Tetthet: 1.77 S.G Vis: 57 sec P.V.: 17 cp Y.P.: 16 lbs/100ft^2 Filt: 27 ml Gel.: 24/50 lbs/100ft^2

Pumpe: Type: DOWELL Kapasitet: 2.08 l/str Vol./tidsenh.: 80 l/min Tilb.str.:

Antatt styrke: 1.90 S.G Obs. spr. trykk: 42.0 bars Ekv. formasj. styrke: 1.97 S.G

SLAG	BAR	SLAG	BAR	MIN	BAR	Anmerkninger
20	6.9	180	36.6	0	37.2	Pumped: 461 ltr
40	11.0	200	39.3	1	35.9	Bleed back: 207 ltr
60	15.9	220	42.1	2	34.5	After squeeze
80	20.0	230	42.8	3	33.8	
100	23.5			4	33.1	
120	26.9			5	33.1	
140	31.0			6	33.1	Sign.: S.E.
160	33.8					



statoil

FORMASJONSSTYRKETEST

Dato: 19.06.84

Brønn nr.: 6406/3-1 **Dybde:** Brønn: 3778 m Foring: 3765 m Test: 3765 m

Fartøy: ROSS ISLE **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 256 m

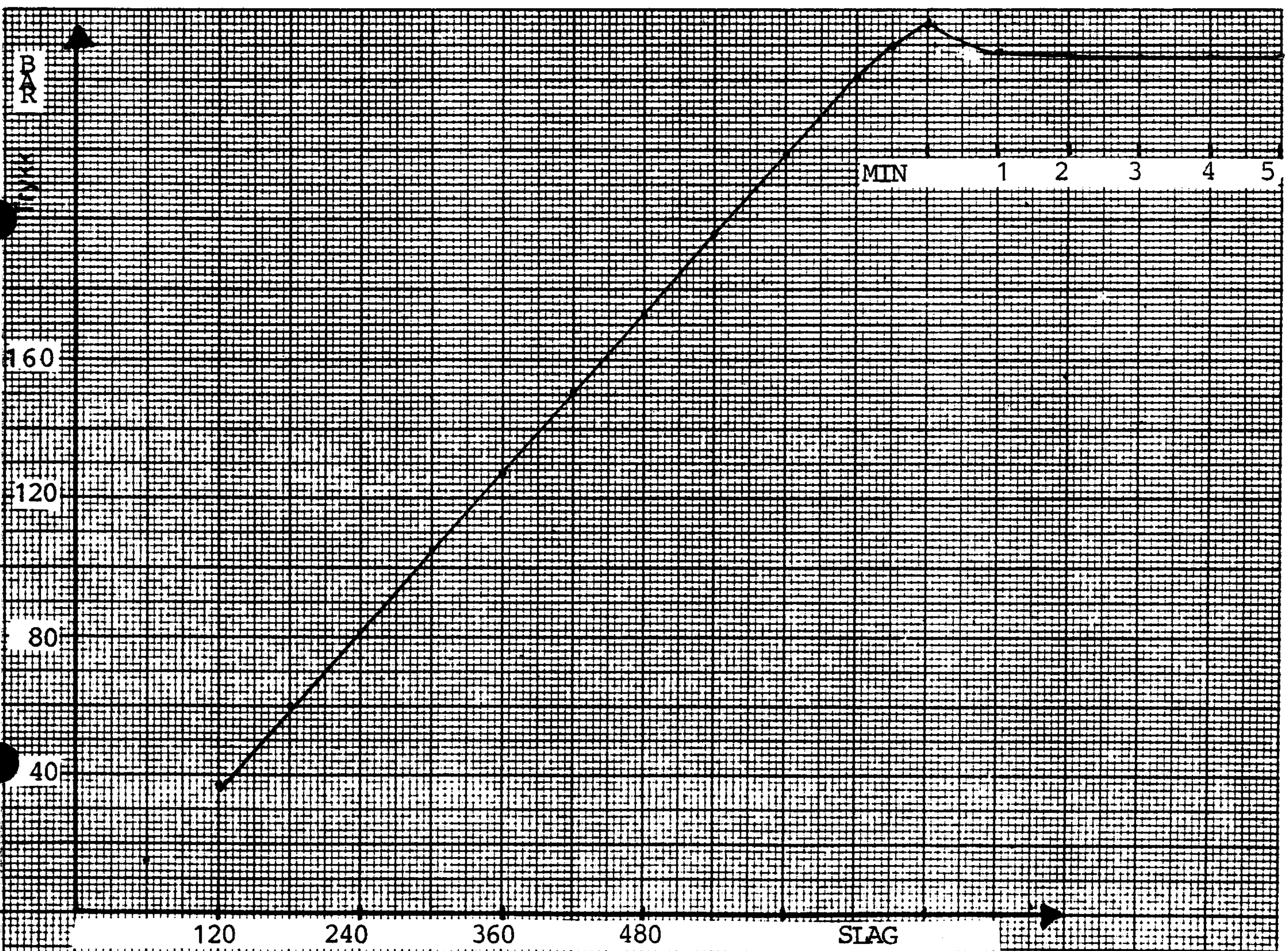
Foring: Diam.: 9 5/8" Tyngde: 47 lbs/ft Grad: P-110 Maks. trykk: 502 bar (csg. test)

Boreslam: Tetthet: 1.40 S.G Vis: 48 sec P.V.: 12 cp Y.P.: 10 lbs/100ft^2 Filt: 22 ml Gel.: 3/24 lbs/100ft^2

Pumpe: Type: DOWELL MD1000 Kapasitet: 2.08 l/str Vol./tidsenh.: 80 l/min Tilb.str.: 1340 l

Antatt styrke: 1.97 S.G Obs. spr. trykk: 2.48 bars Ekv. formasj. styrke: 2.07 S.G

STROKE	BAR	STROKE	BAR	MIN	BAR	Anmerkninger
60	15.8	540	196.5	1	248.3	Pumped: 1497 l
120	37.2	600	219.3	2	246.9	Lost: 157 l
180	60	660	240.7	3	246.9	
240	82	690	249.6	4	246.9	
300	104.8	720	255.8	5	246.9	
360	127.6					
420	151.					Sign.: H. Telle
480	173					



statoil

FORMASJONSSTYRKETEST

Dato: 13.07.84

Brønn nr.: 6406/3-1 **Dybde:** Brønn: 4500 m Foring: 4470 m Test: 4470 m

Fartøy: ROSS ISLE **Høyde R.K.B.:** Over vannfl.: 22 m Over sjøb.: 278 m

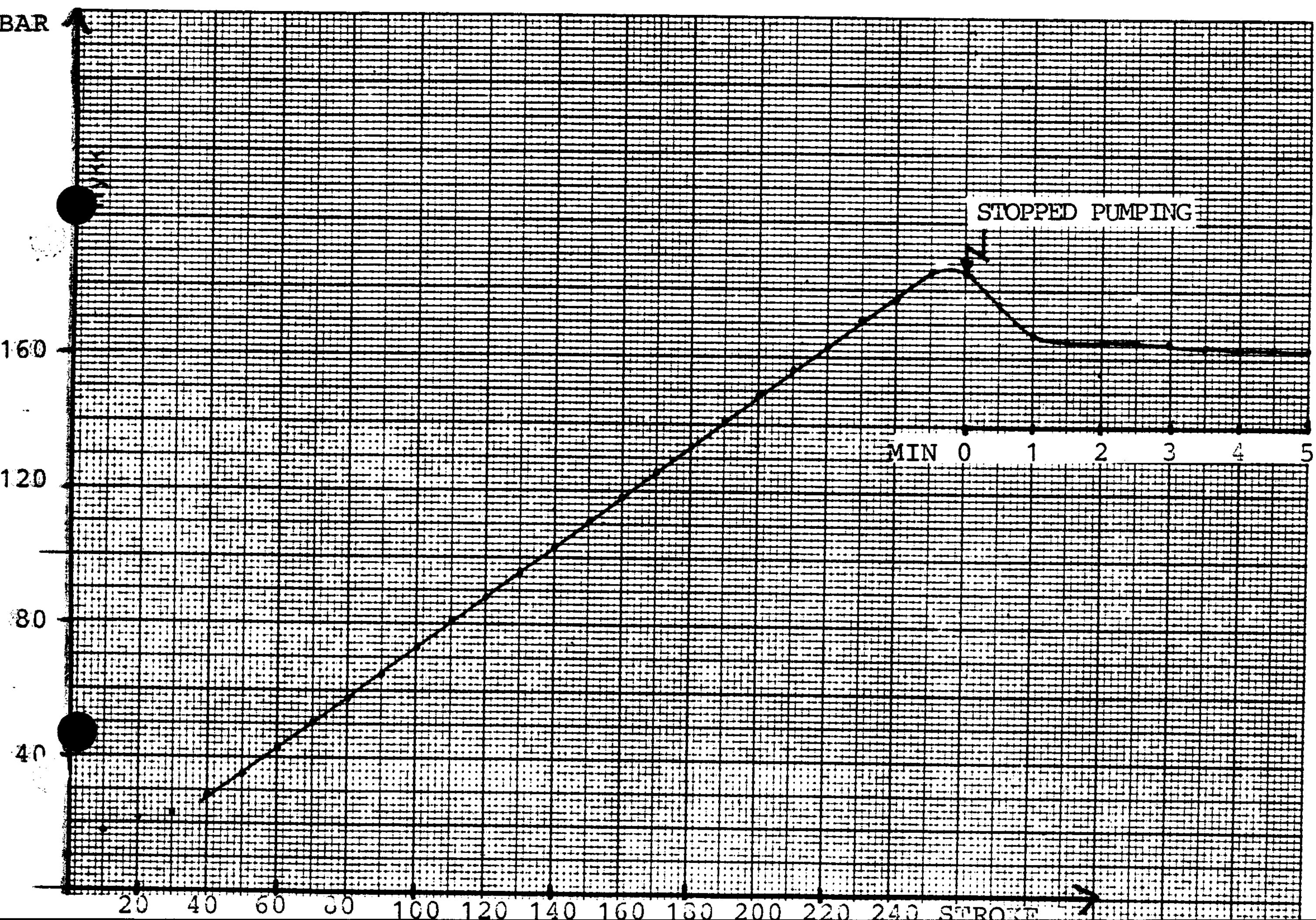
Foring: Diam.: 7" Tyngde: 32 lbs/ft Grad: P-110/ MW125 Maks. trykk: 859 bar

Boreslam: Tetthet: 1.74 S.G Vis: 58 sec P.V.: 23 cp Y.P.: 10 lbs/ $100ft^2$ Filt: 7.2 ml Gel.: 2.28 lbs/ $100ft^2$

Pumpe: Type: DOWELL MD1000 Kapasitet: 2.0 l/str Vol./tidsenh.: 35 l/min Tilb.str.: 470 l

Antatt styrke: 2.10 S.G Obs. spr. trykk: 184.8 bars Ekv. formasj. styrke: 2.16 S.G

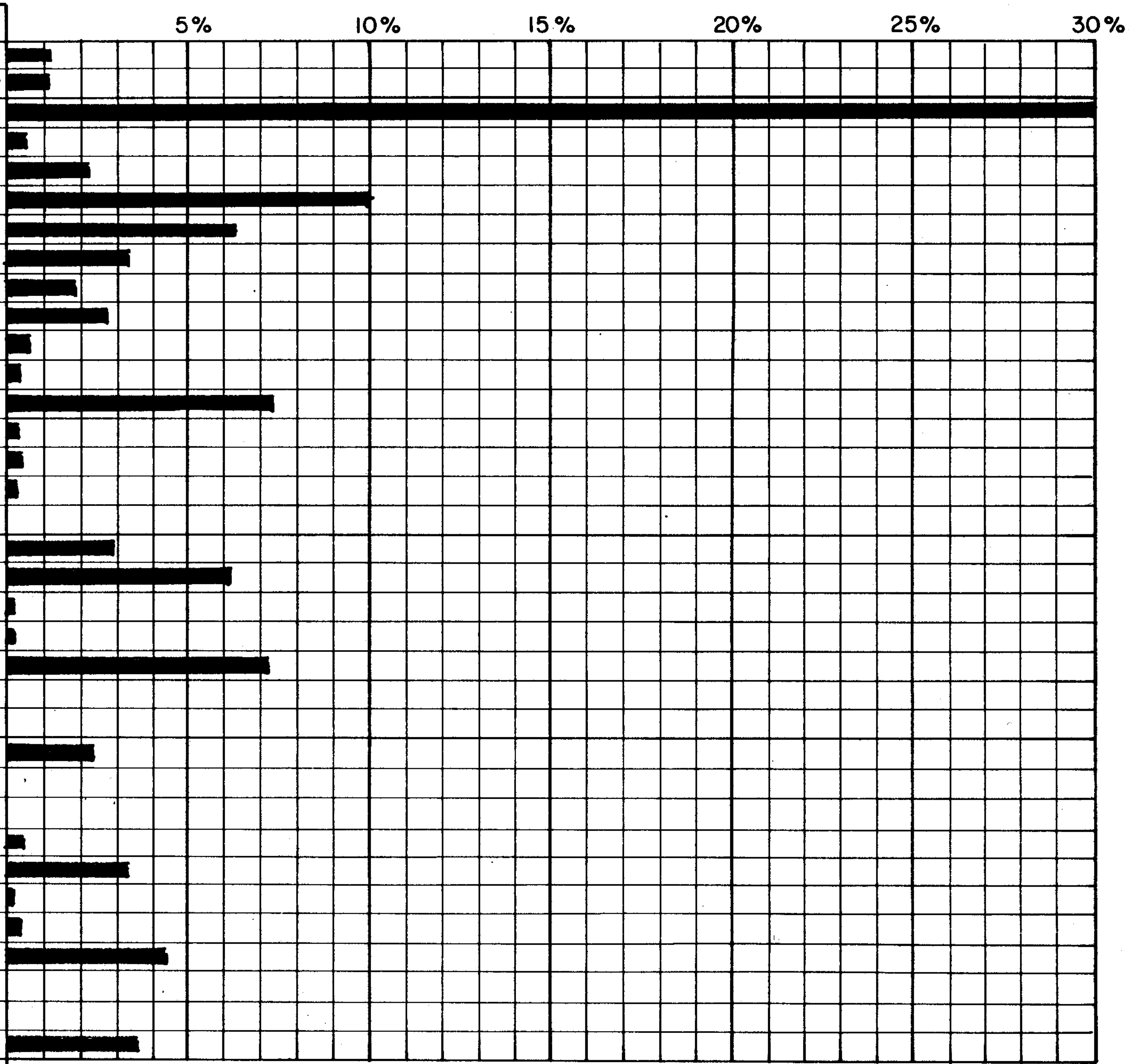
STROKE	BAR	STROKE	BAR	MIN	BAR	Anmerkninger
20	17.9	180	125.9	1	166.9	
40	23.4	200	141.4	2	164.8	
60	35.5	220	156.2	3	163.8	
80	50.3	240	170.7	4	162.4	
100	65.5	260	185.2	5	162.1	
120	80.7					
140	95.9					
160	111.0					Sign.: S. Longva



III 6. RIG TIME DISTRIBUTION
DRILLING TIME VS. DEPTH
DRILLING COST VS. DEPTH

TOTAL RIG TIME DISTRIBUTION FOR WELL 6406/3-1

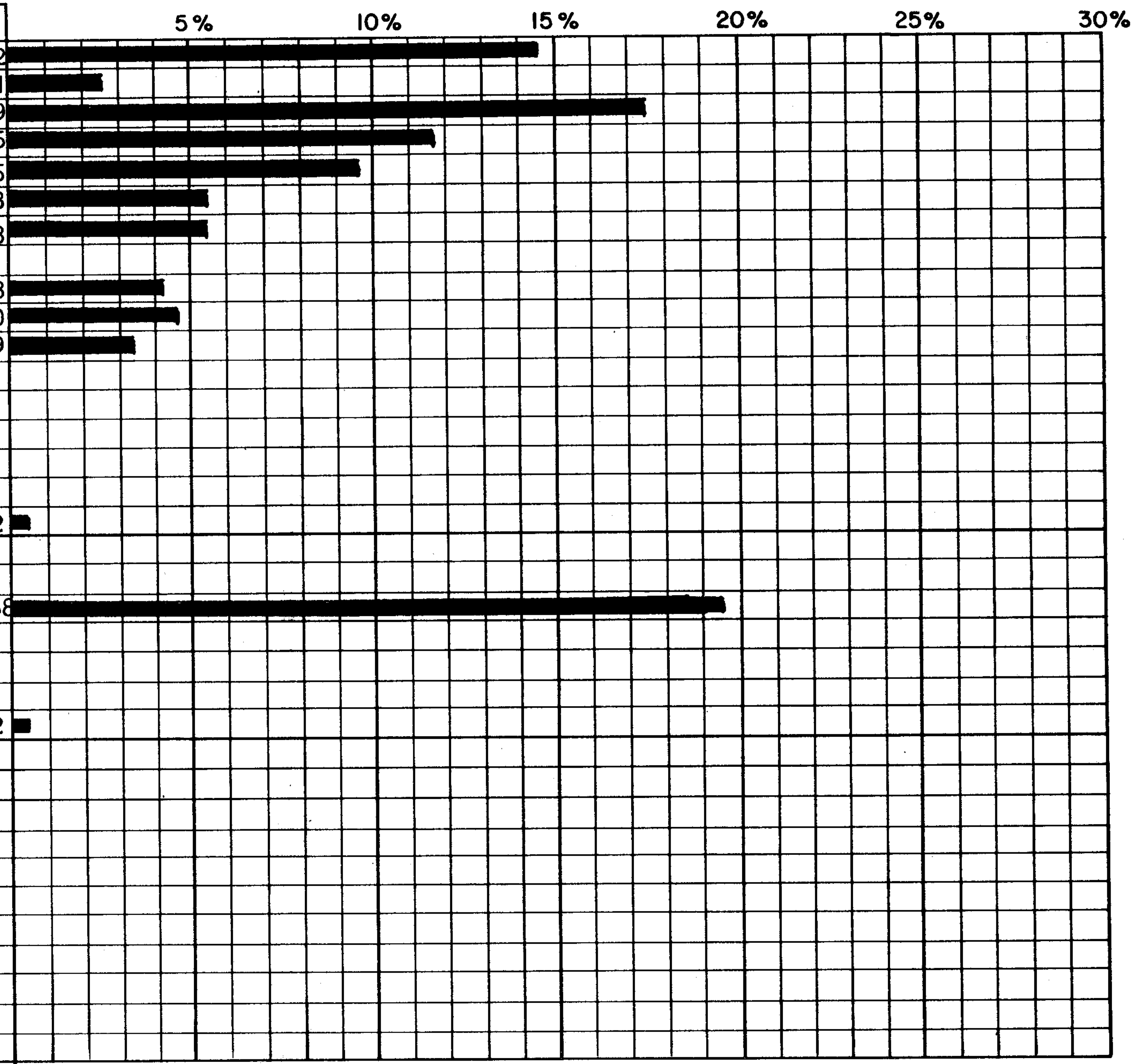
		HRS	%
	Moving	30.5	1.14
	Mooring	28.5	1.07
Drilling operation	Efficient drilling	797	30.0
	Other drilling	17	0.64
	Hole opening	57	2.15
	Regular tripping	265	9.98
	Casing and cementing	167.5	6.31
	Sub sea eq. and BOP	88.5	3.33
	Abnormal press. detection	50.5	1.90
	Cond. and circ.	72	2.71
	Reaming	18	0.68
	Directional survey	10	0.38
	Plugging	193	7.27
	Formation leak-off test	9.5	0.36
	Maintenance	11.5	0.43
	Other	8	0.30
Formation Evaluation	Coring	77	2.90
	El. logging	162.5	6.12
	Circ. for samples	6	0.23
	RFT	6	0.23
	Production testing	191.5	7.21
	Other		
Downtime	Rig repairs	61.5	2.32
	Rig moving		
	Waiting on weather		
	Sub sea eq. and BOP	13.5	0.51
	Fishing	87	3.28
	Lost circulation	3.5	0.13
	Well control	11	0.41
	Hole problems	118.5	4.46
	Formation evaluation		
	Diving		
	Other	95	3.58
TOTAL		2656.5	100



statoil
Den norske stats oljeselskap a.s

RIG TIME DISTRIBUTION FOR FORMATION EVALUATION, INCL. IN TOTAL RIG TIME DISTRIBUTION.

		HRS	%
Production testing	Preparations	28	14.62
	Pressure testing	5	2.61
	Teststring	33.5	17.49
	Cond. and circ.	22.5	11.75
	Wire line ops.	18.5	9.66
	Flow the well	10.5	5.48
	Build up	10.5	5.48
	Stimulation		
	Killing well	8	4.18
	Cement / Squeeze	9	4.70
	Sub sea eq. and BOP	6.5	3.39
	Other	1	0.52
Downtime	Rig repairs		
	Waiting on weather		
	Production testing	37.5	19.58
	Other	1	0.52
TOTAL		191.5	100



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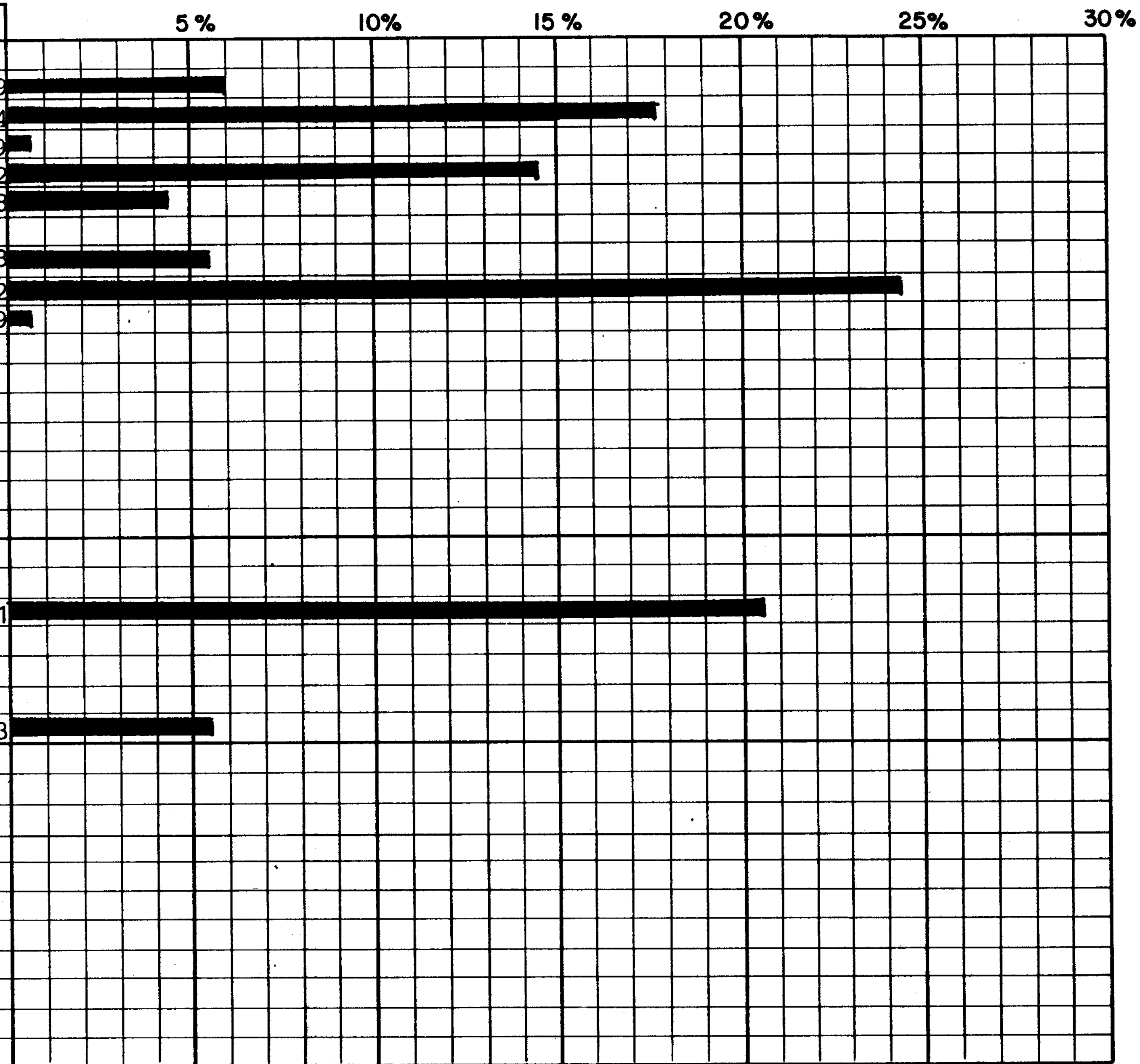
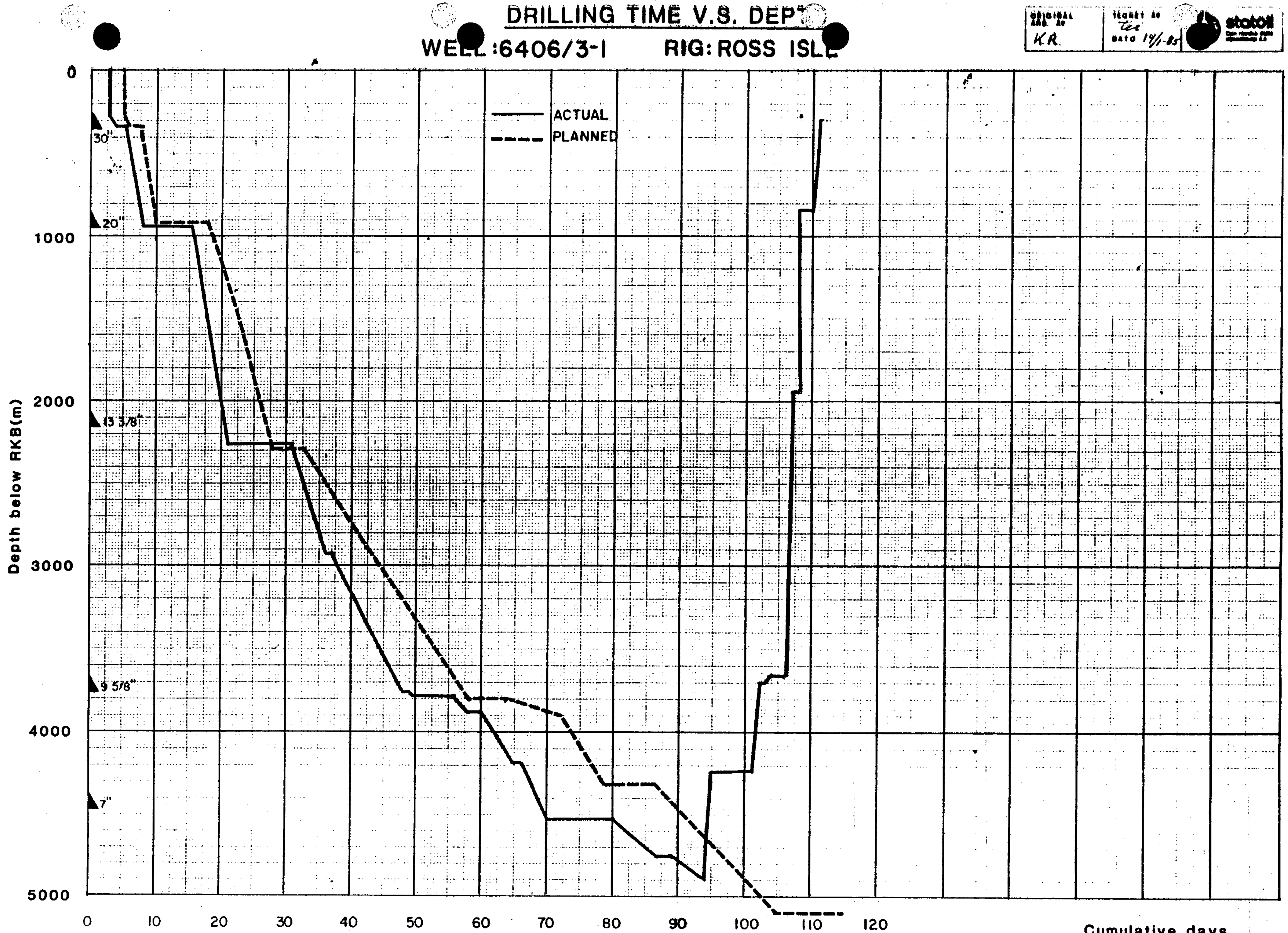
Den norske stats oljeselskap a.s

RIG TIME DISTRIBUTION FOR PLUGGING, INCL. IN TOTAL RIG TIME DISTRIBUTION.

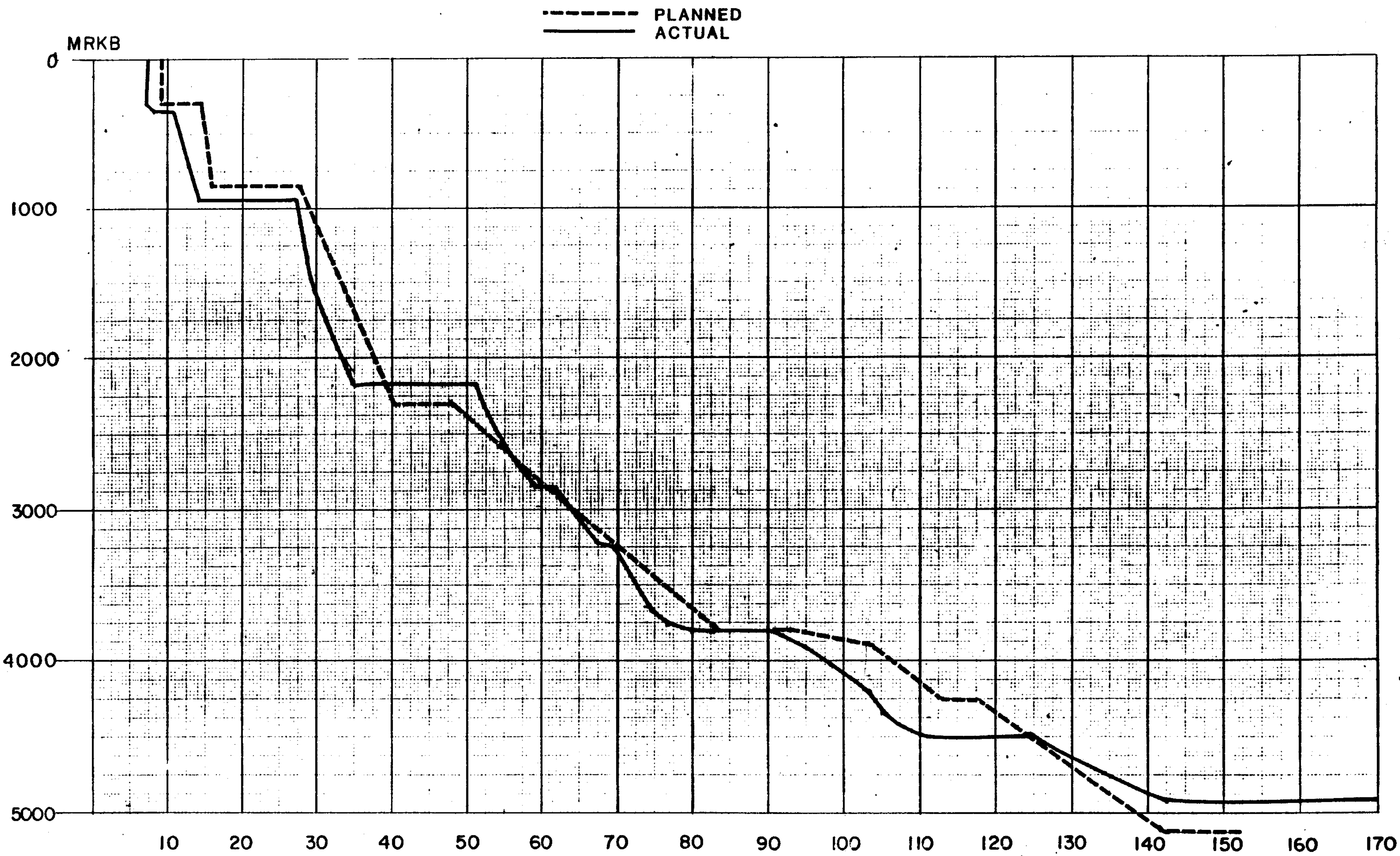
		HRS	%
Plugging	Preparations		
	Con. and circ.	13	5.99
	Cement / Squeeze	38.5	17.74
	Pressure testing	1.5	0.69
	Wire line ops.	31.5	14.52
	Tripping	9.5	4.38
	Other drilling		
	Sub sea eq. and BOP	12	5.53
	Cutting casing	53	24.42
	Diving	1.5	0.69
	Other		
Downtime	Waiting on weather		
	Waiting on cement		
	Cutting casing	44.5	20.51
	Other	12	5.53
TOTAL		217	100




DRILLING TIME V.S. DEPT
WELL :6406/3-1
RIG: ROSS ISLE
ORIGINAL ARB. AV K.R.
TEGNET AV
DATO 14/1-85
statoil
ACTUAL
PLANNED
Depth below RKB(m)
0
1000
2000
3000
4000
5000
30"
20"
13 3/8"
9 5/8"
7"
0
10
20
30
40
50
60
70
80
90
100
110
120
Cumulative days

WELL 6[illegible]3/3-1 RIG ROS[illegible]ISLE

COST V.S. DEPTH



III 7. BIT RECORD AND LITHOLOGY COLUMN

statoil

BORKRONEDATA

Brønn nr.: 6406/3-1

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe Trykk	Pumpe V.grad	Pumpe v/t	Tilstand T	Tilstand B	Tilstand G	Anmerkninger
1	1	36"	VAREL	LA3	53277	OPEN	351.5	73.5	20.5	20.5	3.6	2-5	60-70	80	0.97	4500	8	8	I	Allcones locked up. Bit flat on bottom.
2	2	26"	HTC	OSC-3AJ	PL995 1-2-1	3x20	353	1.5	0.3	20.8	5.0	5	70	85	"	4500	1	1	I	Used with a 36" h.o.
3	2RR	"	"	"	"	3x20	354	1	0.1	20.9	10	5	70	90	"	4500	1	1	I	Drill cmt.shoe and 1m format.
4	3	12 1/4"	STC	SDS	XC2721 1-1-4	3x16	962	608	16.6	37.5	36.6	2-10	200	50	"	2850	7	5	I	Pilot hole
5	4	12 1/4"	"	"	cd 3436 1-1-4	Bit: 3x12	753	-	28	-	14.3	0-5	90	110-120	"	3800	2	2	I	Bit AZ-DUX
																	2	4	I	HO
		+17 1/2"				h.o. 6x14											8	8		UR
																	5	2	I	
		x 26"				u.r 3x16											2	3	I	
6	4RR	"	"	"	PL995 1-1-2	"	962	-	21.3	-	9.8	3-5	80-90	130	"	3800	8	8		1 cone on UR left in hole
7	2RR	26"	HTC	OSC-3AJ	1-2-1	3x20	Clean up trip after logging. Reamed 110 m							-	-	-	1	1	I	
8	5	17 1/2"	SEC	S3SJ	927566 1-1-1	3x20	965	3	0.3	37.8	10	5-10	70	138	"	3420	1	1	I	Drilled cmt + shoe + 3m new form
9	5RR	"	"	"	"	"	978	13	0.6	38.4	21.7	10-15	100	162	"	3800	1	1	I	Drilled 85m cmt + 13m formt. after squeeze
10	6	"	STC	SDSC	XC7897 1-1-4	3x18 1x14	1609	631	28.6	67	22.1	22-27	190-210	215	"	3325	8	6	1 8	
11	7	"	"	SDTc	XC7982 1-1-4	3x20 1x15	2177	568	23.7	90.7	24	10-15	180	215	"	2775	2	4	I	
12	5RR	"	SEC	S3SJ	927566 1-1-1	Open	2160	67	4	-	16.8	5-10	160	184	"	2850	2	2	I	Drilled 67 m cmt.
13	8	12 1/4"	STC	SDS	XO2784 1-1-4	3x15	2180	3	0.1	90.8	30	8-10	85	208	"	2014	1	1	I	Drilled cmt + new formt.
14	9	"	REED	S11J	NRP197 1-1-4	3x16	2183	3	0.2	91	15	8-20	60-85	202	"	2235	2	2	I	Drld. 160m cmt + 3m new formt
15	10	"	HTC	X3	971BK 1-2-4	3x16	2717	534	32.2	123.2	16.6	10-25	125-140	242	"	2235	6	6	I	Pulled due to low ROP.
16	11	"	"	"	358UF 1-2-4	"	2932	215	28.4	151.6	7.6	25	140	250	"	2235	7	7	I	
17	12	"	CRISTAL	M269-L	Cp1194	-	3262	330	85.4	237	3.86	15.25	750	320	"	2200	15%			Corejector, Pulled due to possible bearing failure

statoil

BORKRONEDATA

Brønn nr.: 6406/3-1

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot. tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe			Tilstand			Anmerkninger
														Trykk	V.grad	v/t	T	B	G	
18	13	12 1/4"	D.B.	LX13	7083630	-	3740	478	129.6	366.6	3.69	25	745	313	0.97	2148	100% 30%		 "	worn in nose area overall. In gauge
19	14	"	STC	SDGH	XC1077 1-3-5	3x16	3775	35	8.4	375	4.2	26	140	262	"	2190	2	2	I	Pulled at t.d.
20	14RR	"	"	"	"	"	Clean out trip/working on junk after CST								-	-	8	4	I	
21	15	8 1/2"	STC	"	XC0513 1-3-7	Open	3783	8	3.2	378.2	2.5	15-20	110	120	"	1800	3	4	I	Pulled to start coring.
22	16	"	D.B	SB502	708351	-	3794.5	11.5	3.6	381.8	3.2	3-6	90	75	"	1020	50%			core bbl jamed
23	17	"	"	"	708350	-	3822	27.5	2.1	383.9	13.1	3-5	105	95	"	1020	25%			
24	17RR	"	"	"	"	-	3847	25	3.6	387.5	6.9	3-6	105	95	"	1020	50%			
25	18	"	STC	FUH	XC0222 2-1-7	3x13	3857	10	4.6	392.1	2.2	15	80	210	"	1428	2	3	1/32	Pulled bit due to high torque low ROP.
26	19	"	HTC	J33	554 wf 5-3-7	3x12	3862	5	10.9	403	0.46	3-12	70-115	190/ 220	"	1224/ 1360	1	2	I	High torque
																				Low ROP. Poss. stab. hang up.
27	20	"	"	J11	539SS 4-3-7	"	4043	181	43.7	446.7	4.1	12-18	120-70	218	"	1360	8	8	I	Lost one cone in hole.
28	21	"	"	JD8	ZJ614 3-4-7	"	4051	8	2.9	449.6	2.7	15-20	70-80	220	"	1360	6	1	I	Drld. on junk.
29	22	"	"	JD4	894 df 2-1-7	"	4121	70	14.3	463.9	4.9	10-15	90-100	223	"	1360	6	6	I	
30	23	"	STC	SVH	XC5927 2-1-5	"	4181	60	19.5	483.4	3.1	12-18	80-110	220	"	1360	5	8	I	
31	24	"	"	F2	XD0888 5-1-7	"	4414	233	42.7	526.1	5.5	12	80-110	245	"	1360	5	5	1/8	
32	25	"	"	SVH	XC6241 2-1-5	"	4472	58	18-6	544.7	3.1	12	110	225	"	1360	7	8	I	
33	26	"	"	FDGH	XC0524 1-3-7	"	4498	26	6.7	551.4	3.9	12	110	225	"	1360	2	2	I	Pulled to log.
34	27	6"	HTC	J2	Q06MF 1-2-6	3x11	4505	7	5.1	556.4	1.37	9	60-80	199	"	585	8	8	1/2	Drlg. on junk from cst.
35	28	"	"	J33	502LF	"	4517	12	7.7	564.1	1.56	8-14	50-80	240	"	680	5	3	1/8	20 BT
36	29	"	"	JA	263WF	3x10	4521	4	3.5	267.6	1.14	5-7	80-105	215	"	570	2	2	I	2 BT

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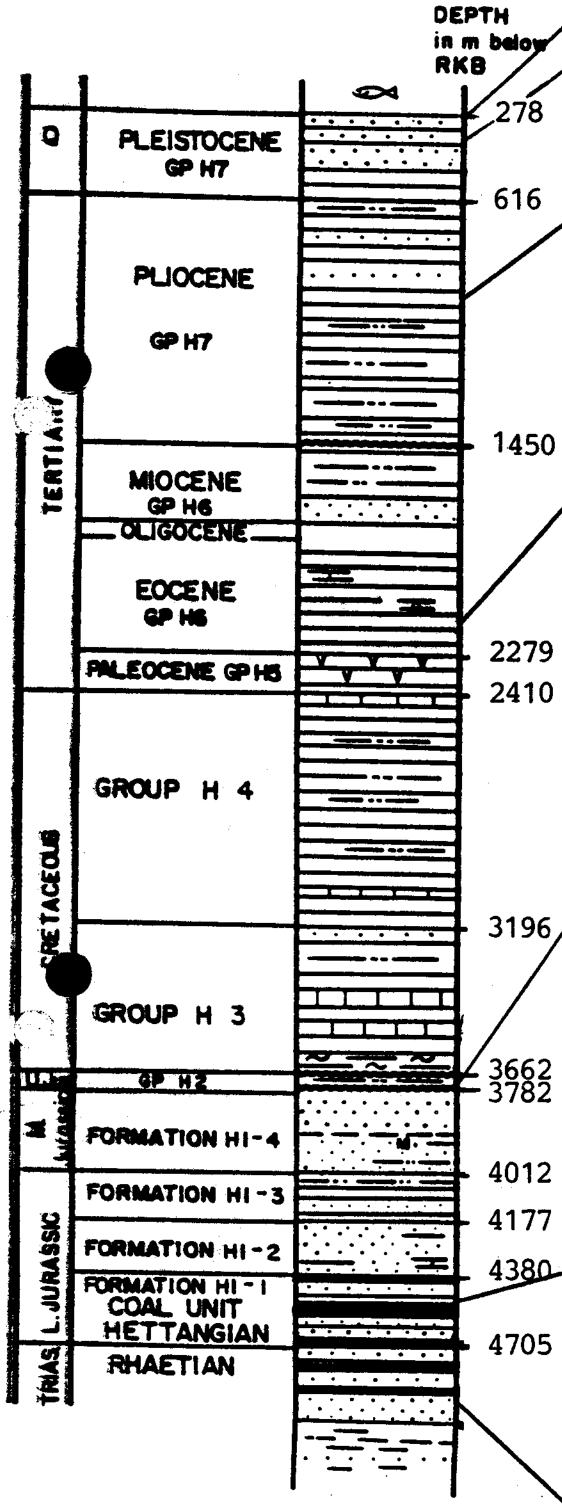
BORKRONEDATA

Brønn nr.: 6406/3-1

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe Trykk	Pumpe V.grad	Pumpe v/t	Tilstand T	Tilstand B	Tilstand G	Anmerkninger
37	30	6"	HTC	J33	283LF	3x10	4537	16	7.9	575.5	2.03	13	40-65	270	0.97	700	2	3	I 6	Pulled to start coring.
38	31	"	DB	CB403	7082779	-	4559	12	11.2	286.7	1.09	5	110	170	"	450	20%			Core no. 4
39	32	"	HTC	J33	904AS	3x10	4607	58	25.2	311.9	2.3	14	70	280	"	720	2	5	I	
40	33	"	"	"	903AS	"	4699	92	30	341.9	3.07	14	64	290	"	734	2	6	I	
41	34	"	REED	HPSM	T-58181	"	4740	41	18.9	360.8	2.17	14	95/105	282	"	720		-		3 cones lost in hole.
42	35	"	HTC	J33	906AS	"	4828	88	28.5	389.3	3.09	14	68	285	"	720	3	8	I	11 broken teeth
43	36	"	"	"	159GK	"	4859	31	14	403.3	2.2	14	68	280/240	"	720	2	8	I	Burned due to washout in monel
44	37	"	"	"	160GK	"	4902	43	18.8	422.1	2.3	14	68	275	"	710	2	7	I	2 BT POOH to log.
45	29RR	"	"	J-4	263WF	Open	Used to tag cmt plug at 4374 m								"			-		
46	38	"	"	"		"	-	50	3.9	-	12.8	5-10	70-100	250	"	830	8	1	I	Drld. frm cmt from 3727-3777
47	29RR	"	"	"	263 WF	"	-	3	0.3	-	10.0	5	60	250	"	830	2	2	I	Drld. frm cmt 3652-3655 m.

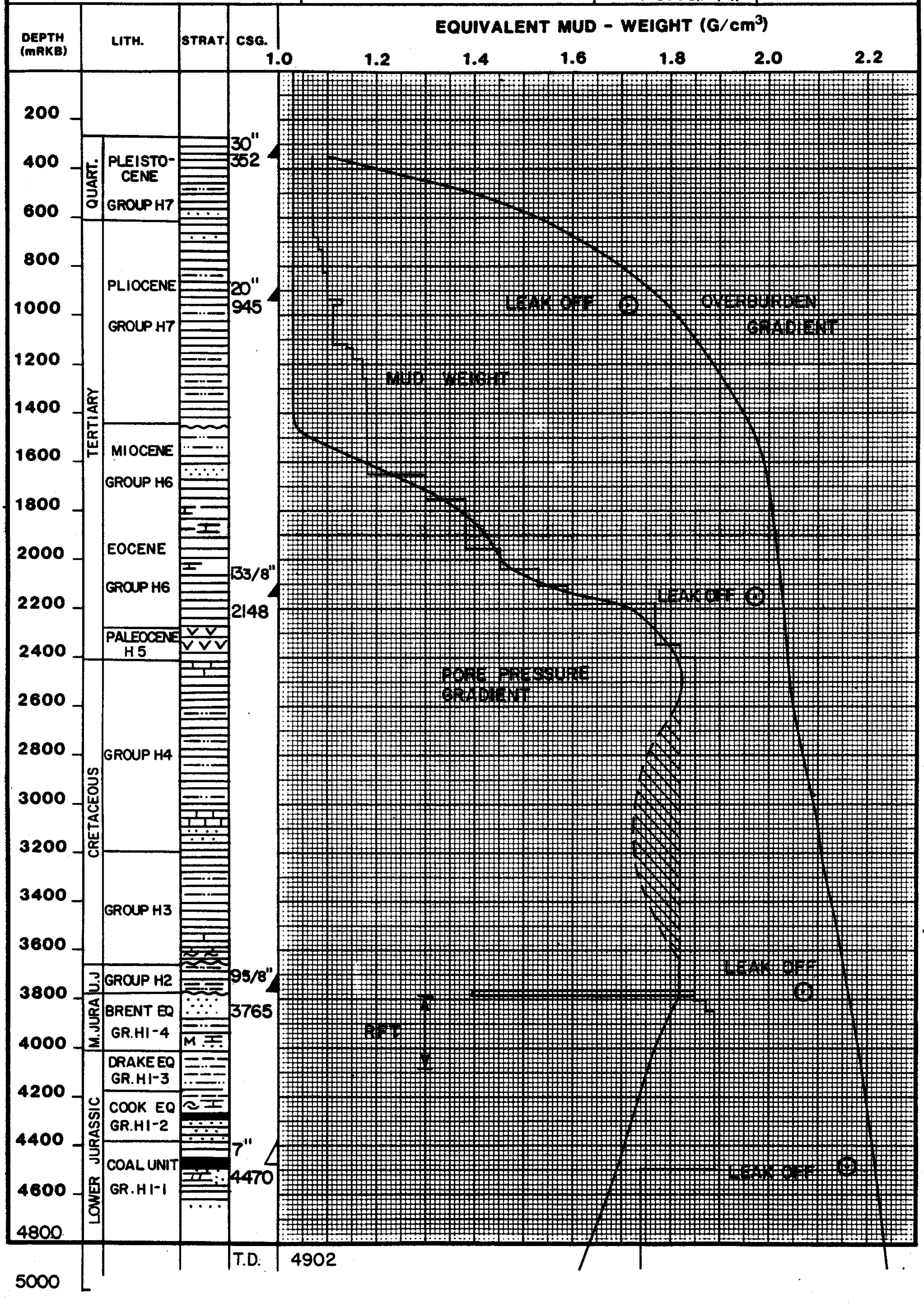
BIT RECORD VS.
LITHOLOGY COLUMN
6406/3-1



HOLE SIZE	BIT NO.	TYPE	DEPTH OUT (m)	TIME (HOURS)	ROP m/hr
36"	1	L3A	351.5	20.5	3.6
	2 (26")	OSC-3AJ	353	0.3	5.0
PILOT + 26" UR	3	SDS	962	16.6	36.6
	4	SDS	753	28	14.3
	4RR	SDS	962	21.3	9.8
17½"	5	S3SJ	965	0.3	10
	5RR	"	978	0.6	21.7
	6	SDSC	1609	28.6	22.1
	7	SDTC	2177	23.7	24
12 1/4"	8	SDS	2180	0.1	30
	9	S11J	2183	0.2	15
	10	X3	2717	32.2	16.6
	11	"	2932	28.4	7.6
	12	M269-L	3262	85.4	3.9
	13	LX13	3740	129.6	3.7
	14	SDGH	3775	8.4	4.2
8½"	15	FDGH	3783	3.2	2.5
	16	CB502	3794.5	3.6	3.2
	17	"	3822	2.1	13.1
	17RR	"	3847	3.6	6.9
	18	FVH	3857	4.6	2.2
	19	J33	3862	10.9	0.46
	20	J11	4043	43.7	4.1
	21	JD8	4051	2.9	2.7
	22	JD4	4121	14.3	4.9
	23	SVH	4181	19.5	3.1
	24	F2	4414	42.7	5.5
	25	SVH	4472	18.6	3.1
	26	FDGH	4498	6.7	3.9
6"	27	J2	4505	5.1	1.37
	28	J33	4517	7.7	1.56
	29	J4	4521	3.5	1.14
	30	J33	4537	7.9	2.03
	31	CB403	4549	11.2	1.09
	32	J33	4607	25.2	2.3
	33	"	4699	30	3.07
	34	HPSM	4740	18.9	2.17
	35	J33	4828	28.5	3.09
	36	"	4859	14	2.2
	37	"	4902	18.8	2.3

III 8 PRESSURE PROFILES

WELL: 6406/3-1	**PRESSURE COMPOSITE GRAD.**	statoil Den norske stats oljeselskap a.s
RIG NAME: ROSS ISLE		**MADE BY/DRAWN BY:** PS. JS/TV.
DEPTH mRKB: 22		**DATE:** 26.10.84.



III 9. SURVEY

DIRECTIONAL SURVEY LISTING FOR WELL INDEX # 1: STATOIL 6406/3-1

DLWD AND CONVENTIONAL SURVEY DATA

SURVEYS STARTED ON 1 MAY 84, AT DEPTH = 347 m FROM KB. LAST SURVEY # 112 AT MD = 4018.00 m

---DEPTHS ARE MEASURED RELATIVE TO KB AT 22 m ABOVE MEAN SEA LEVEL---

	READINGS					ANALYSIS (CONFIDENCE LEVEL = 99.0%)							
	SVY #	DEPTH	COURSE LENGTH	INCL. ANGLE	AZIMUTH ANGLE	DOGLEG deg/100m	VERTICAL DEPTH	--POSITION-- NORTH	EAST	---UNCERTAINTY RANGE--- VERT	MAJOR	MINOR	AXIS
S	1	347.0	0.0	.50	348.00	0.00	347.0	0	0	0.0	.2	.2	0
S	2	958.0	611.0	.50	51.00	.08	958.0	4	2	.1	2.4	1.8	39
D	3	991.0	33.0	1.30	175.00	4.94	991.0	4	2	.1	2.5	1.8	39
D	4	1018.0	27.0	.90	166.00	1.59	1018.0	3	2	.1	2.5	1.8	39
D	5	1047.0	29.0	.60	143.00	1.42	1047.0	3	2	.1	2.5	1.8	39
D	6	1077.0	30.0	.70	202.00	2.14	1077.0	3	2	.1	2.5	1.8	39
D	7	1105.0	28.0	.60	209.00	.37	1105.0	3	2	.1	2.5	1.8	39
D	8	1135.0	30.0	.40	220.00	.69	1135.0	2	2	.1	2.5	1.9	39
D	9	1182.0	47.0	.30	141.00	.94	1182.0	2	2	.1	2.5	1.9	39
D	10	1230.0	48.0	.10	323.00	.82	1230.0	2	2	.1	2.5	1.9	39
D	11	1278.0	48.0	.30	180.00	.38	1278.0	2	2	.1	2.5	1.9	39
D	12	1325.0	47.0	.20	31.00	1.01	1325.0	2	2	.1	2.5	1.9	39
D	13	1374.0	49.0	.40	329.00	.37	1374.0	2	2	.1	2.5	1.9	40
D	14	1421.0	47.0	.60	270.00	1.10	1421.0	2	1	.1	2.5	1.9	39
D	15	1468.0	47.0	.70	309.00	.93	1468.0	2	1	.1	2.5	1.9	39
D	16	1514.0	46.0	.70	287.00	.56	1513.9	3	0	.1	2.5	1.9	39
D	17	1561.0	47.0	.50	333.00	1.06	1560.9	3	-0	.1	2.5	1.9	40
D	18	1606.0	45.0	.90	53.00	2.10	1605.9	3	0	.1	2.5	1.9	40
D	19	1656.0	50.0	.70	46.00	.42	1655.9	4	1	.1	2.5	1.9	40
D	20	1704.0	48.0	1.30	346.00	2.34	1703.9	4	1	.1	2.5	1.9	40
D	21	1733.0	29.0	1.10	290.00	3.92	1732.9	5	0	.1	2.5	2.0	40
D	22	1760.0	27.0	1.10	222.00	4.55	1759.9	5	-0	.1	2.5	2.0	40
D	23	1808.0	48.0	.40	160.00	2.03	1807.9	4	-0	.1	2.5	2.0	40
D	24	1857.0	49.0	.50	274.00	1.54	1856.9	4	-0	.1	2.5	2.0	40
D	25	1904.0	47.0	.50	208.00	1.14	1903.9	4	-1	.1	2.5	2.0	40
D	26	1952.0	48.0	.40	61.00	1.79	1951.9	4	-1	.1	2.5	2.0	40
D	27	1999.0	47.0	.80	179,00	2.22	1998.9	4	-1	.1	2.5	2.0	40
D	28	2046.0	47.0	1.30	189.00	1.12	2045.9	3	-1	.1	2.6	2.0	40
D	29	2057.0	11.0	.50	12.00	16.35	2056.9	3	-1	.1	2.6	2.0	40
D	30	2114.0	57.0	1.20	205.00	2.96	2113.9	2	-1	.1	2.6	2.0	40
D	31	2161.0	47.0	.70	311.00	3.29	2160.9	2	-1	.1	2.6	2.0	40
S	32	2179.0	18.0	3.00	274.00	13.76	2178.9	2	-2	.1	2.6	2.0	40
D	33	2185.0	6.0	2.61	274.00	6.43	2184.9	2	-2	.1	2.6	2.0	40
D	34	2194.0	9.0	2.29	275.00	3.52	2193.9	2	-2	.1	2.6	2.0	40
D	35	2223.0	29.0	2.12	273.00	.59	2222.8	2	-4	.1	2.6	2.0	40
D	36	2280.0	57.0	2.02	275.00	.17	2279.8	3	-6	.1	2.6	2.0	40
D	37	2324.0	44.0	1.70	297.00	1.76	2323.8	3	-7	.1	2.6	2.0	40
D	38	2336.0	12.0	1.54	287.00	2.63	2335.8	3	-7	.1	2.6	2.0	39
D	39	2385.0	49.0	.75	236.00	2.48	2384.8	3	-8	.1	2.6	2.0	39
D	40	2432.0	47.0	1.10	276.00	1.51	2431.7	3	-9	.1	2.6	2.0	39
D	41	2479.0	47.0	.92	272.00	.38	2478.7	3	-10	.1	2.6	2.0	39
D	42	2528.0	49.0	.50	280.00	.86	2527.7	3	-10	.1	2.6	2.1	39
D	43	2575.0	47.0	.69	271.00	.41	2574.7	3	-11	.1	2.6	2.1	39
D	44	2622.0	47.0	.55	248.00	.58	2621.7	3	-11	.1	2.6	2.1	39
D	45	2670.0	48.0	.74	262.00	.49	2669.7	3	-12	.1	2.6	2.1	39

DIRECTIONAL SURVEY LISTING FOR WELL INDEX # 1: STATOIL 6406/3-1

	READINGS					ANALYSIS (CONFIDENCE LEVEL = 99.0%)							
	SVY #	DEPTH	COURSE LENGTH	INCL. ANGLE	AZIMUTH ANGLE	DOGLEG deg/100m	VERTICAL DEPTH	--POSITION-- NORTH	EAST	---UNCERTAINTY RANGE--- VERT	MAJOR	MINOR	AXIS
S	46	2704.0	34.0	.75	250.00	.40	2703.7	3	-12	.1	2.6	2.1	39
D	47	2713.0	9.0	.94	256.00	2.18	2712.7	3	-12	.1	2.6	2.1	39
D	48	2756.0	43.0	.89	254.00	0.00	2755.7	3	-13	.1	2.6	2.1	39
D	49	2804.0	48.0	.71	277.00	.74	2803.7	2	-14	.1	2.6	2.1	39
D	50	2851.0	47.0	.69	279.00	0.00	2850.7	3	-14	.1	2.6	2.1	39
D	51	2902.0	51.0	.26	268.00	.84	2901.7	3	-15	.1	2.6	2.1	39
D	52	2943.0	41.0	1.00	307.00	1.98	2942.7	3	-15	.1	2.7	2.1	39
D	53	2981.0	38.0	.35	347.00	2.01	2980.7	3	-15	.1	2.7	2.1	39
D	54	3000.0	19.0	.58	327.00	1.41	2999.7	3	-15	.1	2.7	2.1	39
D	55	3067.0	67.0	.36	17.00	.65	3066.7	4	-16	.1	2.7	2.1	40
D	56	3174.0	107.0	.70	86.00	.62	3173.7	4	-15	.1	2.7	2.2	40
S	57	3227.0	53.0	1.00	116.00	.99	3226.7	4	-14	.1	2.7	2.2	40
D	58	3248.0	21.0	.90	163.00	3.62	3247.7	4	-14	.1	2.7	2.2	40
D	59	3306.0	58.0	.60	325.00	2.55	3305.7	3	-14	.1	2.7	2.2	40
D	60	3334.0	28.0	1.22	86.00	5.76	3333.7	4	-14	.1	2.7	2.2	40
D	61	3372.0	38.0	1.01	175.00	4.13	3371.7	3	-13	.1	2.7	2.2	40
D	62	3420.0	48.0	1.31	102.00	2.91	3419.7	3	-13	.1	2.7	2.2	40
D	63	3467.0	47.0	1.27	98.00	.13	3466.6	3	-12	.1	2.7	2.2	39
D	64	3516.0	49.0	1.17	45.00	2.22	3515.6	3	-11	.1	2.7	2.2	40
D	65	3565.0	49.0	1.42	85.00	1.86	3564.6	3	-10	.1	2.7	2.2	39
D	66	3653.0	88.0	.49	91.00	1.06	3652.6	3	-8	.1	2.8	2.2	39
D	67	3690.0	37.0	.45	80.00	.15	3689.6	3	-8	.1	2.8	2.2	38
S	68	3705.0	15.0	.50	102.00	1.13	3704.6	3	-8	.1	2.8	2.2	38
D	69	3716.0	11.0	.45	60.00	3.04	3715.6	3	-8	.1	2.8	2.2	38
D	70	3769.0	53.0	.30	129.00	.82	3768.6	3	-8	.1	2.8	2.2	38
D	71	3852.0	83.0	.43	101.70	.24	3851.6	3	-7	.1	2.8	2.3	38
D	72	3858.0	6.0	.15	21.80	6.99	3857.6	3	-7	.1	2.8	2.3	38
D	73	3867.0	9.0	.24	205.00	0.00	3866.6	3	-7	.1	2.8	2.3	38
D	74	3897.0	30.0	.22	138.00	0.00	3896.6	3	-7	.1	2.8	2.3	38
D	75	3917.0	20.0	.39	174.00	.77	3916.6	3	-7	.1	2.8	2.3	38
D	76	3945.0	28.0	.94	278.00	3.93	3944.6	3	-7	.1	2.8	2.3	38
D	77	3973.0	28.0	1.52	293.00	2.33	3972.6	3	-8	.1	2.8	2.3	38
D	78	4002.0	29.0	2.27	308.00	3.07	4001.6	4	-9	.1	2.8	2.3	38
D	79	4011.0	9.0	2.37	318.00	4.56	4010.6	4	-9	.1	2.8	2.3	38
S	80	4024.0	13.0	2.50	314.00	1.57	4023.6	4	-9	.1	2.8	2.3	38
D	81	4030.0	6.0	2.63	318.00	3.55	4029.6	4	-9	.1	2.8	2.3	38
D	82	4038.0	8.0	2.44	315.00	2.80	4037.5	5	-10	.1	2.8	2.3	38
D	83	4068.0	30.0	3.75	319.00	4.42	4067.5	6	-11	.1	2.8	2.3	38
D	84	4097.0	29.0	4.40	323.00	2.44	4096.4	8	-12	.1	2.8	2.3	38
D	85	4116.0	19.0	5.15	321.00	4.03	4115.4	9	-13	.1	2.8	2.3	38
D	86	4125.0	9.0	4.76	316.00	6.43	4124.3	9	-14	.1	2.8	2.3	38
D	87	4143.0	18.0	4.93	318.00	1.28	4142.3	10	-15	.1	2.8	2.3	38
D	88	4153.0	10.0	4.90	322.00	3.38	4152.2	11	-15	.1	2.8	2.3	38
S	89	4167.0	14.0	4.90	325.00	1.79	4166.2	12	-16	.1	2.8	2.3	38
D	90	4180.0	13.0	6.02	336.00	11.75	4179.1	13	-16	.1	2.8	2.3	38
D	91	4189.0	9.0	6.01	336.00	0.00	4188.1	14	-17	.1	2.8	2.3	38
D	92	4199.0	10.0	7.70	349.00	22.83*	4198.0	15	-17	.1	2.8	2.3	38
D	93	4208.0	9.0	7.40	344.00	8.01	4206.9	16	-17	.1	2.8	2.3	38
D	94	4217.0	9.0	7.64	347.00	5.08	4215.8	17	-18	.1	2.8	2.3	38
D	95	4227.0	10.0	8.49	354.00	12.96	4225.7	19	-18	.1	2.8	2.3	38
D	96	4237.0	10.0	8.69	355.00	2.45	4235.6	20	-18	.1	2.8	2.3	38
D	97	4246.5	9.5	7.72	347.00	15.74	4245.0	22	-18	.1	2.8	2.3	38

DIRECTIONAL SURVEY LISTING FOR WELL INDEX # 1: STATOIL 6406/3-1

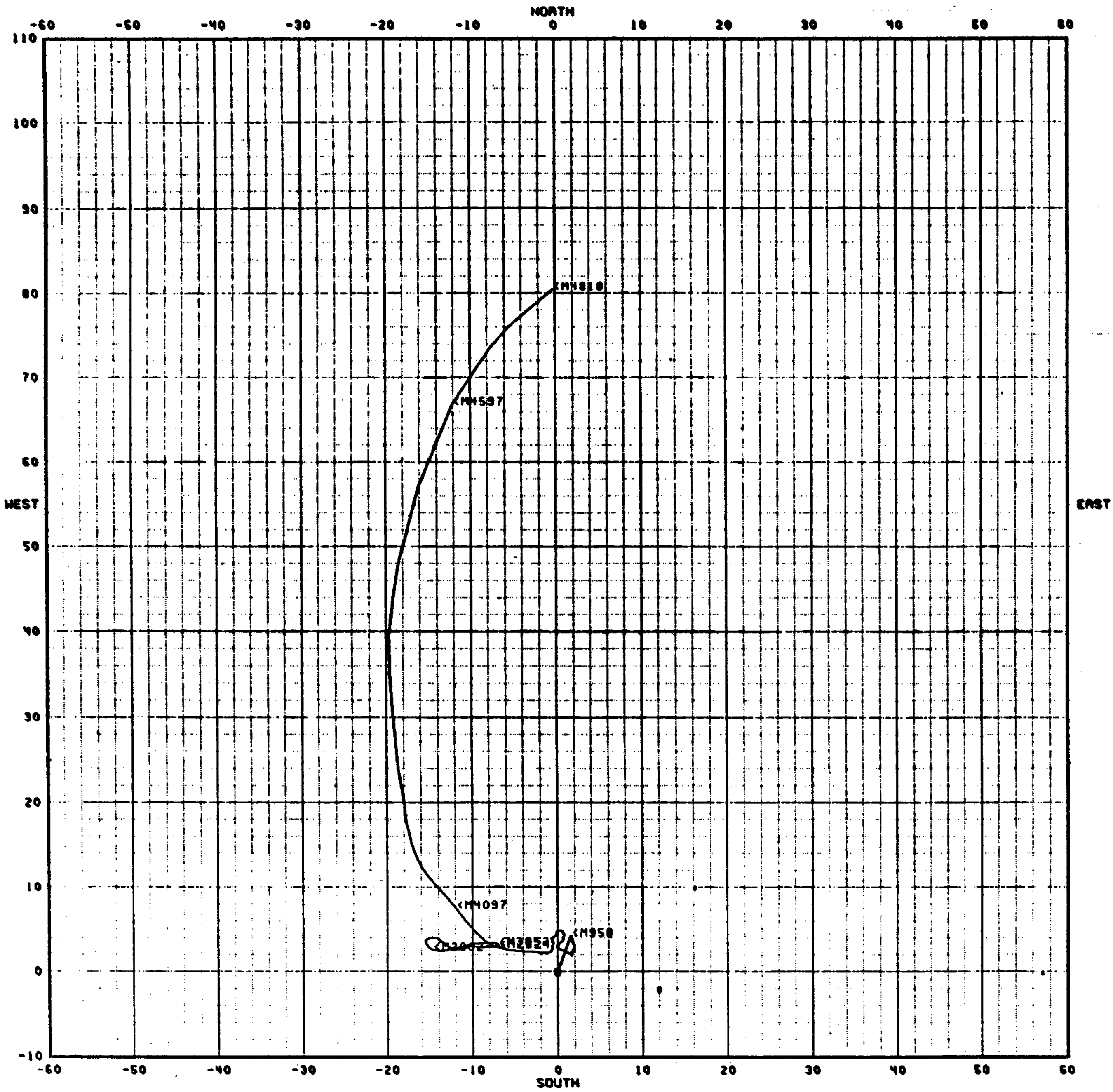
	READINGS					ANALYSIS (CONFIDENCE LEVEL = 99.0%)							
	SVY #	DEPTH	COURSE LENGTH	INCL. ANGLE	AZIMUTH ANGLE	DOGLEG deg/100m	VERTICAL DEPTH	--POSITION-- NORTH	EAST	---UNCERTAINTY RANGE--- VERT	MAJOR	MINOR	AXIS
D	98	4267.0	20.5	8.31	355.00	6.14	4265.3	24	-19	.1	2.8	2.3	37
D	99	4312.5	45.5	8.28	355.00	0.00	4310.4	31	-19	.1	2.8	2.3	37
D	100	4341.0	28.5	8.49	355.00	.72	4338.5	35	-20	.1	2.8	2.3	37
D	101	4369.0	28.0	9.46	4.20	6.17	4366.2	39	-20	.1	2.8	2.3	37
S	102	4396.0	27.0	9.25	8.00	2.41	4392.8	44	-19	.1	2.8	2.3	37
D	103	4418.0	22.0	9.20	9.00	.73	4414.6	47	-19	.1	2.8	2.3	37
D	104	4428.0	10.0	8.80	16.00	11.64	4424.4	49	-18	.1	2.8	2.3	37
D	105	4448.0	20.0	7.91	15.30	4.47	4444.2	52	-18	.1	2.8	2.3	37
S	106	4457.0	9.0	7.25	14.00	7.56	4453.1	53	-17	.1	2.8	2.3	37
D	107	4467.0	10.0	7.20	14.00	0.00	4463.1	54	-17	.1	2.8	2.3	37
S	108	4494.0	27.0	6.50	16.00	2.74	4489.9	57	-16	.1	2.8	2.3	37
S	109	4597.0	103.0	5.25	30.00	1.84	4592.3	67	-12	.1	2.8	2.3	38
S	110	4689.0	92.0	4.75	38.00	.93	4684.0	73	-8	.2	2.9	2.3	38
S	111	4730.0	41.0	4.50	43.00	1.15	4724.8	76	-6	.2	2.9	2.4	38
S	112	4818.0	88.0	4.50	56.00	1.15	4812.6	80	-0	.2	2.9	2.4	38

PLAN VIEW PLOT FOR WELL INDEX # 1: STATOIL 6406/3-1

SURVEYS STARTED ON 1 MAY 84 AT DEPTH = 347 M FROM KB. LAST SURVEY # 112 AT MD = 4818 M
DLWD AND CONVENTIONAL SURVEY DATA

--DEPTHS ARE MEASURED RELATIVE TO KB AT 22 M ABOVE MEAN SEA LEVEL--

PLOT SCALE - 5.0 M/CM



III 10. DRILLING FLUID SUMMARY

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 6406/3-1

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

This section was drilled with seawater and returns to the seafloor. On every connection a slug (5 - 6 m^3) was pumped of hivis gel. The hole was spudded with a 36" bit. When the hole was drilled to casing depth (352 m) it was displaced with hivis gel mud. After a wiper trip the hole was again displaced with gel mud ($\pm$50 m^3 each time).

When the 30" casing was run it was not possible to get below 330 m, despite circulation with seawater. Then POOH with 30" casing and RIH with a 36" hole opener to ream. Reamed and drilled to 353 m. Displaced the hole with hivis gel (50 m^3). Made wiper trip and again displaced the hole with 60 m^3 gel.

Then POOH and the 30" casing was run and cemented without incidents.

OPERATOR STATOIL

WELL NO. 6406/3-1

RECOMMENDATIONS

36" HOLE/ 30" CASING INTERVAL

This section was drilled according to program, with no major mud problems. Due to problems when running the 30" casing, the hole was reamed and displaced with more mud than programmed, which resulted in a higher cost.

To get really hivis pills at low weight one might consider using a polymer viscosifier along with the bentonite.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 6406/3-1

26" HOLE/ 20" CASING INTERVAL

30" casing was drilled out with 26" bit, using seawater. Riser and pin connector was installed and hole and riser were displaced with gel/seawater mud. 12 1/4" pilot hole was drilled to 962 m with an average ROP of 30 - 35 m/hr. Had to use large quantities of seawater and prehydrated gel to control mud weight below 1.10 SG. The mud cleaners (used as desilters) and the desanders were run all the time when drilling. Shaker screens were 2 x S30/60 and 1 x 20/40.

When Schlumberger had logged, a 26" underreamer was run with mud returns to the surface. Started underreaming with the same mesh screens on the shakers, and were using mud cleaners as desilters and desanders all the time while drilling. The mud needed heavy dilution with seawater and prehydrated gel to control weight and viscosity.

The shaking mechanism of mud cleaner no. 2 has not been working since the start of the well (waited on spare parts).

After underreaming the hole to casing depth, the hole was displaced with 1.17 SG mud. Then displaced riser with seawater and pulled same. RIH with 26" bit and reamed to bottom, returns to seabed. Ran and cemented 20" casing without any problems.

OPERATOR STATOIL

WELL NO. 6406/3-1

RECOMMENDATIONS

26" HOLE/ 20" CASING INTERVAL

This section was drilled without any major mud problems. Due to reaming with mud returns going to seabed, the costs also for this section turned out to be higher than programmed.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 6460/3-1

~~17 1/2"~~ **HOLE/ ____________ CASING INTERVAL**

This section was drilled with a Gyp/Lignosulpnate mud to 2177 m and 13 3/8" casing was set at 2151 m. Shaker screens were S30/60 at the beginning of the sectiona and were changed to B40 over S80 towards the end. Mud cleaner screens was S150 mesh. One mud cleaner was out of order for the whole section (waited on spare parts).

The 20" casing shoe was drilled out with a ±1.10 SG mud, but the first leak-off obtained was considered too low to drill to the programmed casing depth, and consequently cement was squeezed from 855 m to 965 m. Because of the amount of cement drilled after the squeeze job, some Ancomel was used instead of CMC to control fluid loss, since CMC works poorly in high Ca^{++}/high pH environments.

Formations drilled in this section was mostly sticky, gumbo type clays. In order to avoid bit balling and swabbing on trips both coarse nut plug and drilling detergent were tried. Desanders and mud cleaners were utilised (along with seawater dilution) to control MBT and solids content, but when the mud weight was raised above 1.50 SG, the desanders were switched off, and the centrifuge used instead to save barite.

Upon reaching casing depth the mud weight was 1.68 SG, but as gas readings were high the mud weight was increased to 1.70 SG and a 40 m^3 pill of 1.90 SG mud was pumped down before setting a cement plug. The cement was then dressed off from 2093 m to 2160 m and the mud weight cut back to 1.68 SG but % gas increased and the weight was again raised to 1.71 SG and 58 m^3 of 1.90 SG mud was laid on bottom prior to logging. Logging was done without incidents. A wiper trip was done to clean the hole, and the 1.90 SG mud was circulated out in 4 stages (not to damage the formation below the 20" casing shoe). Then a new 50 m^3 pill of 1.90 mud was spotted on bottom before POOH. The 13 /8" casing was run without problems, but when circulating before cementing circulation was lost completely and the cement was pumped and displaced without returns. (Reserve gyp mud at 1.71 SG was used to displace cement).

OPERATOR STATOIL

WELL NO. 6406/3-1

RECOMMENDATIONS

17 1/2" HOLE/ 13 3/8" CASING INTERVAL

This section started with squeezing cement due to a bad leak off test, and also a cement plug was set after reaching casing depth. All this cement drilling resulted in extreme high pH and viscosity. This again caused a loss of all the fluid loss additives and required a high usage of thinners and polymers to get the mud properties back in line. The cement usage in this section was also high due to a completely lost circulation when circulating before cementing the casing. Due to fact that large quantities of cement can be drilled it is recommended to keep a more Ca^{++} and pH-tolerant fluid loss agent onboard (Ancomel).

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 6406/3-1

12 1/4" **HOLE/** 9 5/8" **CASING INTERVAL**

The mud weight was increased several times during the early parts of this section. The initial mud weight after drilling the casing shoe at 2151 m was 1.77 SG. At 2351 m the mud weight was increased to 1.82 SG, while at 2399 m it was increased to 1.85 SG. Flow checks were done on a regular basis during this period.

A turbine bit was used from 2932 m. The drilling rate was low probably because of overbalance of the drilling fluid, the rate remaining fairly constant 3 - 4 m per hour. The high concentration of very fine drilled solids necessitated running the centrifuging on the active system plus addition of 3 - 4 m^3/hr of sea water. With the addition of seawater, barite consumption averaged 50 m/ton per day to maintain the high mud weight.

The hole was OK when pulling out. The mud properties were controlled by continuous addition of seawater and pre-hydrated bentonite. The presence of marble stone in the clay formation near 3600 m minimized gyp use at that time. Breakdowns of the mud claeners was a persistant problem 10 min. Gel strengths between 50 - 75 might seem high, but were easily broken.

The turbine bit was used for about 215 hrs. At 3740 m a rock bit was used to T.D. at 3775 m. The penetration rate with this bit was the same with the turbine.

OPERATOR STATOIL

WELL NO. 6406/3-11

RECOMMENDATIONS

12 1/4" SECTION

The barite cost in this section is high due to the necessity of diluting mud with seawater to control solids content, and of course because of high mud weight. The mud bill would be considerably less if the solids removal equipment was improved. Having two centrifigues at disposal would mean that you on the first one could save barite and then on the next high speed centrifuge could get rid of lots of drilled solids. This would mean less seawater dilution, less chemical consumption, and maybe the most important at high mud weights, less barite consumption.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 6406/3-1

8 1/2" **HOLE/** 7" **CASING INTERVAL**

The mud weight was cut to 1.40 SG before drilling out the shoe. A leak off test was performed, giving an equivalent mud weight of 2.07 SG. When drilling ahead a drilling break occurred at 3783 m. As the well was flowing it was shut in and the mud weight increased to 1.85 SG. The well was killed, but soon the mud weight was increased to 1.87 SG while circulating. 3 cores were cut to 3847 m before Schlumberger logs were run. The drilling then continued to casing depth at 4498 m.

During logging the RFT tool got stuck and was retrieved with drill pipe. No further problems with the logging.

During a clean out trip after logging the drill string got stuck at bottom. The mud weight was then reduced to 1.86 Sg and a spotting fluid was pumped. The pipe then came free after 6 hrs. The casing was then ran and cemented with no further problems or losses.

OPERATOR STATOIL

WELL NO. 6406/3-1

RECOMMENDATIONS

8 1/2" HOLE/ 7" CASING INTERVAL

This section was drilled according to program with no major mud problems. Mud weight was higher than expected. The program called for a cut in mud weight to 1.20 SG before drilling out the shoe and expected to stay at this level for the rest of the section. Finally maximum mud weight turned out to be 1.87 SG. Spercel C and Lignite were used to control the HTHP fluid loss.

OPERATOR STATOIL

WELL NO. 6406/3-1

RECOMMENDATIONS

6" HOLE SECTION

This section was drilled according to program with no major mud problems. Referring to recommendations for 12 1/4" section one observes that barite cost is about 60 % of mud cost in 6" hole section.

OPERATOR STATOIL

WELL NO. 6406/3-1

MATERIAL CONSUMPTION & COST ANALYSIS

36" HOLE DRILLED TO 353 Meters ~~Feet~~ 30" CASING SET AT 352 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 75.5 Meters ~~Feet~~ DAYS ON INTERVAL 3

DRILLING FLUID SYSTEM SPUD MUD

MATERIAL	UNIT SIZE	UNIT PRICE	CONSUMPTION	US$COST
WYOMING BENTONITE	M/T	380.-	53	20,140.-
SODA ASH	50 KG	21.-	13	273.-
CAUSTIC SODA	25 KG	20.-	23	460.-

COST/DAY US$ 6,957.67

COST FOR INTERVAL US$ 20,873.-

COST/ M US$ 276.46

OPERATOR STATOIL

WELL NO. 6406/3-1

MATERIAL CONSUMPTION & COST ANALYSIS

26" HOLE DRILLED TO 962 Meters ~~Feet~~

20" CASING SET AT 945 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 610 Meters Feet

DAYS ON INTERVAL 8

DRILLING FLUID SYSTEM SPUD MUD

MATERIAL	UNIT SIZE	UNIT PRICE	CONSUMPTION	US$COST
ANCOBAR	M/T	148 -	159	23,532.-
WYOMING BENTONITE	M/T	380.-	108	41,040
CAUSTIC SODA	25 KG	20.-	113	2,260.-
SODA ASH	50 KG	21.-	26	546.-
BENTONITE	50 KG	18.-	267	4,806.-

COST/DAY US$ 9,023.-

COST FOR INTERVAL US$ 72,184.-

COST/ MT US$ 118.33

OPERATOR STATOIL

WELL NO. 6406/3-1

MATERIAL CONSUMPTION & COST ANALYSIS

17 1/2"	HOLE DRILLED TO	2177	Meters ~~Feet~~	13 3/8"	CASING SET AT	2151 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 1215 Meters ~~Feet~~ DAYS ON INTERVAL 16

DRILLING FLUID SYSTEM GYP/LIGNO

MATERIAL	UNIT SIZE	UNIT PRICE	CONSUMPTION	COST
ANCOBAR	M/T	148.-	1046	154,808.-
WYOMING BENTONITE	M/T	380.-	36	13,680.-
BENTONITE	50 KG	18.-	300	5,400.-
SODA ASH	50 KG	21.-	9	189.-
CAUSTIC SODA	25 KG	20.-	231	4,620.-
SPERCELL C	25 KG	19.50	497	9,691.50
DESCO	25 LBS	38.-	166	6,308.-
CMC LOVIS	25 KG	65.-	182	11,830.-
CMC HIVIS	25 KG	67.-	97	6,499.-
GYPSUM	40 KG	13.20	704	9,292.80
ANCOMEL	25 KG	52.-	100	5,200.-
NUTPLUG COARSE	25 KG	22.-	44	968.-
MICA FINE	25 KG	22.-	76	1,672.-
ANCONOL DEFOAMER	LTR.	4.72	126	590.-
ANCO DETERGENT	200 LTR.	495.-	4	1,980.-

COST/DAY US$ 14,545.52

COST FOR INTERVAL US$ 232,728.30

COST/MT US$ 191.55

OPERATOR STATOIL

WELL NO. 6406/3-1

MATERIAL CONSUMPTION & COST ANALYSIS

12 1/4" HOLE DRILLED TO 3775 Meters ~~Feet~~ 9 5/8" CASING SET AT 3769 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 1595 Meters ~~Feet~~ DAYS ON INTERVAL 26

DRILLING FLUID SYSTEM GYP/ LIGNO

MATERIAL	UNIT SIZE	UNIT PRICE	CONSUMPTION	US$ COST
ANCOBAR	M/T	148.-	1152	170,496.-
WYOMING BENTONIT	M/T	380.-	34	12,920.-
SPERCELL C	25 KG	19.50	851	16,594.50
CAUSTIC SODA	25 KG	20.-	280	5,600.-
CMC LOVIS	25 KG	65.-	284	18,460.-
SODA ASH	30 KG	21.-	5	105.-
BICARBONATE	50 KG	24.-	9	216.-
CMC HIVIS	25 KG	67.-	3	201.-
GYPSUM	50 KG	13.20	673	8,883.60
ANCO DETERGENT	200 LTR.	495.-	4	1,980.-
LIGNITE	25 KG	32.-	84	2,688.-
ANCO RESIN	25 KG	81.25	50	4,062.50
DESCO	25 LBS	38.-	322	12,236.-

COST/DAY US$ 9,786.25

COST FOR INTERVAL US$ 254,442.60

COST/ MT US$ 159.53

OPERATOR STATOIL

WELL NO. 6406/3-1

MATERIAL CONSUMPTION & COST ANALYSIS

8 1/2" HOLE DRILLED TO 4498 Meters ~~Feet~~ 7" CASING SET AT 4470 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 723 Meters ~~Feet~~ DAYS ON INTERVAL 24

DRILLING FLUID SYSTEM GEL/LIGNO/LIGNITE

MATERIAL	UNIT SIZE	UNIT PRICE	CONSUMPTION	US$COST
ANCOBAR	M/T	148	637	94,276.-
WYOMING BENTONITE	M/T	380	22	8,360.-
SPERCELL C	25 KG	19.50	503	9,808.50
CAUSTIC SODA	25 KG	20	110	2,200.-
CMC LOVIS	25 KG	65	56	3,640.-
SODA ASH	30 KG	21	13	273.-
CMC HIVIS	25 KG	67	23	1,541.-
CHROME LIGNITE	25 KG	32	317	10,144.-
SODIUM BICARONBATE	50 KG	24	94	2,256.-
$ZnCO_3$	25 KG	90	3	270.-
ANCO DETERGENT	200 L	495	5	2,475.-
IMCO SPOT	25 KG	99	200	19,800.-
PIPE LAX	200 L	1,089.-	10	10,890.-
DESCO	25 LBS	38.-	93	3,534.-

COST/DAY US$ 7,061.15

COST FOR INTERVAL US$ 169,467.50

COST/ MT US$ 234.39

OPERATOR STATOIL

WELL NO. 6406/3-1

MATERIAL CONSUMPTION & COST ANALYSIS

6" HOLE DRILLED TO 4902 Meters ~~Feet~~ None CASING SET AT Meters Feet

ACTUAL AMOUNT OF HOLE DRILLED 432 Meters ~~Feet~~ DAYS ON INTERVAL 33*

DRILLING FLUID SYSTEM GEL/LIGNO/LIGNITE

MATERIAL	UNIT SIZE	UNIT PRICE	CONSUMPTION	US$ COST
ANCOBAR	M/T	148,-	287	42,476.-
WYOMING BENTONITE	M/T	380.-	7	2,660.-
SPERCELL C	25 KG	19.50	147	2,866.50
CAUSTIC SODA	25 KG	20.-	72	1,440.-
SODA ASH	50 KG	21.-	2	42.-
CHROME LIGNITE	25 KG	32.-	129	4,128.-
DESCO	25 LBS	38.-	59	2,242.-
SODIUM BICARBONATE	50 KG	24.-	13	312.-
ANCO RESIN	25 KG	81.25	122	9,912.50
DRISPAC REGULAR	25 KG	154.-	3	462.-
XC POLYMER	25 KG	395.-	4	1,580.-
BENTONITE	50 KG	18.-	3	54.-

COST/DAY US$ 2,065.90 COST FOR INTERVAL US$ 68,175.-

COST/ MT US$ 157.81

*INCLUDES DAYS FOR TESTING AND PLUG AND ABANDON.

OPERATOR STATOIL

WELL NO. 6406/3-1

TOTAL CONSUMPTION & COST ANALYSIS

TOTAL DEPTH 4902 Meters ~~Feet~~

TOTAL HOLE DRILLED 4624.5 Meters ~~Feet~~

TOTAL DAYS 110

MATERIAL	UNIT SIZE	UNIT PRICE	CONSUMPTION	US$ COST
ANCOBAR	M/T	148.-	3281	485,588.-
WYOMING BENTONITE	M/T	380.-	260	98,800.-
BENTONITE	50 KG	18.-	570	10,260.-
CAUSTIC SODA	25 KG	20.-	829	16,580.-
SODA ASH/ SOD. BICARBONATE	50 KG	21.-/24.-	68/116	4.212.-
DRISPAC REG./XC POLYMER	25 KG	154.-/395.-	3/4	2,042.-
SPERCELL C	25 KG	19.50	1998	38,961.-
DESCO	25 LBS	38.-	640	24,320.-
CMC LOVIS	25 KG	65.-	522	33,930.-
CMC HIVIS	25 KG	67.-	123	8,241.-
GYPSUM	50 KG	13.20	1377	18,176.40
CHROME LIGNITE	25 KG	32.-	530	16,960.-
ANCO RESIN	25 KG	81.25	172	13,975.-
ANCO DETERGENT	200 L	495.-	13	6,435.-
ANCOMEL	25 KG	52.-	100	5,200.-
ANCONOL DEFOAMER	LTR	4.72	125	590.-
NUT PLUG COARSE	25 KG	22.-	44	968.-
MICA FINE	25 KG	22.-	76	1,672.-
$ZnCO_3$	25 KG	90.-	3	270.-
IMCO SPOT	25 KG	99.-	200	19,800.-
PIPELAX	200 L	1,089.-	10	10,890.-

COST/DAY US$ 8,142.-

TOTAL CHEMICAL COSTS US$ 817,870.40

COST/ MT US$ 193.67

TOTAL ENGINEERING CHARGES US$ 77,750.-

TOTAL DRILLING FLUID RELATED COSTS US$ 895,620.40

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL . RIG. ROSS ISLE
MUD SYSTEM SPUD MUD
ENGINEERS TORGERSEN/MARKEN/CHAVEZ

Day No.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	MUD PROPERTIES DENSITY PPG ☐ SG ☐ 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	Excess gyp #/bbl	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
1	27/ 4	297	1.09	150																				
2	28/ 4	349	1.07	110																				
3	29/ 4	353	1.07	150																				
4	30/ 4	354	1.06	52	20.5	5	31	14 / 15				11.0										.19	11.18	
5	1/ 5	748	1.09	47	22.0	4	36	18 / 21				10.2										.14	16.98	
6	2/ 5	962	1.09	39	14.5	3	23	12 / 14				10.4										.16	9.74	
7	3/ 5	962	1.10	42	18.0	3	30	14 / 15				10.3										.13	15.09	
8	4/ 5	962	1.08	42	21.0	5	32	15 / 16				10.2										.18	11.84	
9	5/ 5	962	1.17	44	30.5	10	41	8 / 10				10.0										.26	10.19	
10	6/ 5	962	1.17	60	30.5	10	41	8 / 10				10.0										.26	10.19	
11	7/ 5	962	1.17	60	31.0	10	41	8 / 10				10.0										.26	10.19	
12	8/ 5	962	1.13	39	8.0	5	6	2 / 2	11.2	1		9.2	9	3000	.05	0.0	5.00	.50	27.50	8.5		.54	.38	
13	9/ 5	962	1.11	50	16.0	10	12	3 / 10	11.5	1		11.5	10	3000	.20	0.0	8.00	.50	10.00	5.5		.54	.76	
14	10/ 5	1018	1.11	46	19.5	5	29	10 / 12	35.0	3		12.5	12	2800	1.30	0.0	10.00	.50	15.00	5		.20	9.90	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GYP/LIGNO

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG. ROSS ISLE
ENGINEERS CHAVEZ/KORSVOLD/TORGERSEN

Day No.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	DENSITY PPG ☐ SG ☐ 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 X 1000	Filtrate Analysis Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	EXCESS gyp #/bbl	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
15	11/ 5	1460	1.17	47	20.0	13	14	4/30	14.0	2		11.1	13	2200	.20	0.0	14.00	.25	20.00	3.0		.57	.79	
16	12/ 5	1654	1.30	51	24.0	17	14	9/56	13.0	2		10.2	13	2200	.10	0.0	15.00	.25	25.00	2.2		.63	.61	
17	13/ 5	2008	1.45	63	25.5	15	21	22/66	20.0	2		10.0	14.5	2000	.15	0.0	17.00	.75	27.50	2.2		.50	1.57	
18	14/ 5	2112	1.59	72	26.0	18	16	18/99	13.0	2		9.7	14	1800	.20	0.0	20.00	.50	28.00	2.7		.61	.75	
19	15/ 5	2169	1.59	55	22.0	13	18	11/52	17.0	2		10.0	14.5	2000	.20	0.0	20.00	.50	20.00	4.8		.50	1.33	
20	16/ 5	2177	1.70	48	23.5	15	17	28/63	21.0	2		10.4	16.5	1440	.20	0.0	24.00	.75	25.00	3.6		.55	1.01	
21	17/ 5	2177	1.70	47	22.5	14	17	20/86	18.5	2		9.8	17	1760	.10	0.0	24.00	1.00	22.50	2.9		.54	1.09	
22	18/ 5	2177	1.70	52	26.5	15	23	22/59	22.0	3		11.4	18	1960	.50	0.0	24.00	1.00	23.00	2.4		.48	1.91	
23	19/ 5	2177	1.71	44	19.5	13	13	20/36	21.5	3		10.9	18	2160	.30	0.0	24.00	1.00	23.00	4.5		.58	.68	
24	20/ 5	2177	1.71	47	22.5	14	17	28/52	21.0	3		10.6	18.5	2160	.30	0.0	24.00	.75	21.00	2.4		.54	1.09	
25	21/ 5	2177	1.71	57	22.5	14	17	28/54	19.0	2		10.7	18.5	2200	.30	0.0	24.00	.75	21.00	2.0		.54	1.09	
26	22/ 5	2177	1.71	48	20.5	14	13	21/60	18.5	2		10.6	18	2120	.30	0.0	24.00	.75	21.00	2.2		.60	.63	
27	23/ 5	2180	1.77	54	26.0	17	18	28/54	26.0	3		11.4	17	2280	.60		26.00	1.50	20.00	3.2		.57	1.00	
28	24/ 5	2180	1.77	56	34.0	18	32	31/36	27.0	3		11.8	17	2280	2.00	0.0	26.00	2.00	19.00	4.0		.44	3.15	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM: GYP/LIGNO

WELL NAME: 6406/3-1 | AREA: HALTENBANKEN
OPERATOR: STATOIL | RIG: ROSS ISLE
ENGINEERS: TORGERSEN/MARKEN/CHAVEZ/KORSVOLD

Day No.	DATE 1984	DEPTH Meter	DENSITY 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 X 1000	Ca ++ ppm T.H.	Pf	% OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	Excess gyp #/bbl	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
29	25/ 5	2226	1.77	65	34.5	20	29	28/69	26.0	3		11.8	17	2200	1.80	0.0	26.00	1.50	19.00	5.2		.49	2.26	
30	26/ 5	2400	1.85	68	34.0	24	20	33/99	17.9	3		11.0	18	3000	.60	0.0	28.00	1.50	19.00	3.8		.63	.88	
31	27/ 5	2695	1.85	66	33.5	26	15	17/65	11.3	2	30.0	10.5	18.5	2640	.20	0.0	29.00	1.50	20.00	5.8		.71	.50	
32	28/ 5	2760	1.85	75	35.5	26	19	20/99	10.5	2	29.0	10.5	18	2400	.40	0.0	29.00	1.50	21.00	3.0		.66	.75	
33	29/ 5	2829	1.85	68	33.0	24	18	16/99	10.4	2	34.0	10.6	18.5	2520	.40	0.0	30.00	1.00	21.00	2.6		.65	.72	
34	30/ 5	2932	1.85	61	30.5	23	15	15/97	10.2	2	34.0	10.4	18.5	2520	.35	0.0	29.00	.75	20.00	2.6		.68	.54	
35	31/ 5	2932	1.85	74	32.0	23	18	8/102	10.0	2	32.0	10.0	18	2400	.40	0.0	30.00	.75	20.00	2.5		.64	.75	
36	1/ 6	3000	1.85	56	31.0	23	16	5/68	10.4	2	30.0	10.6	17	2200	.30	0.0	30.00	.50	17.50	3.2		.67	.60	
37	2/ 6	3098	1.85	53	29.0	22	14	5/68	10.2	2	32.0	10.0	17	2200	.17	0.0	30.00	.50	17.50	2.9		.69	.49	
38	3/ 6	3166	1.85	51	28.0	21	14	6/60	10.2	2	28.0	10.0	16.5	2300	.12	0.0	30.00	.75	15.00	3.1		.68	.51	
39	4/ 6	3258	1.85	52	26.5	20	13	7/55	10.0	2	28.0	10.6	15	2000	.30	0.0	30.00	.50	16.50	5.0		.68	.47	
40	5/ 6	3285	1.85	55	27.5	21	13	5/59	10.0	2	26.0	10.0	13	2000	.20	0.0	30.00	.50	15.00	3.0		.69	.45	
41	6/ 6	3350	1.85	55	28.0	21	14	3/58	10.0	2	26.0	10.3	12.5	2000	.30	0.0	30.00	.25	16.00	4.0		.68	.51	
42	7/ 6	3431	1.85	52	26.5	20	13	6/42	10.0	2	30.0	10.1	11.5	1900	.15	0.0	30.00	.25	17.50	4.4		.68	.47	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GYP/LIGNO

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG. ROSS ISLE
ENGINEERS TORGERSEN/MARKEN/CHAVEZ/KORSVOLD

Day No.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	MUD PROPERTIES DENSITY PPG ☐ SG ☐ 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	Excess gyp #/bbl	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
43	8/ 6	3522	1.85	57	26.5	19	15	11/73	10.5	2	32.0	10.4	12	1800	.20	0.0	30.00	.25	17.50	3.2		.64	.63	
44	9/ 6	3601	1.85	54	27.5	21	13	11/73	10.5	2	35.0	10.4	13	1850	.20	0.0	30.00	.25	17.50	3.7		.69	.45	
45	10/ 6	3681	1.85	53	26.5	20	13	9/64	10.0	2	36.0	10.3	14	1900	.25	0.0	30.00	.25	17.50	4.1		.68	.47	
46	11/ 6	3740	1.85	52	27.5	20	15	5/50	10.0	2	38.0	10.1	15	1800	.15	0.0	30.00	.25	15.00	2.9		.65	.60	
47	12/ 6	3740	1.85	50	25.0	17	16	5/57	10.0	2	38.0	10.0	15	1850	.15	0.0	30.50	.50	16.20	3.3		.60	.79	
48	13/ 6	3775	1.85	50	26.0	19	14	10/63	11.5	2	38.0	10.4	15	1900	.25	0.0	30.00	.25	18.50	3.6		.66	.55	
49	14/ 6	3775	1.85	50	26.5	20	13	9/64	10.5	2		9.8	15	1900	.13	0.0	30.00	.50	17.50	3.8		.68	.47	
50	15/ 6	3775	1.85	54	26.0	19	14	11/57	10.2	2	36.0	9.8	15	1840	.10	0.0	30.00	.50	17.50	3.5		.66	.55	
51	16/ 6	3775	1.85	60	24.5	19	11	10/55	11.0	2	36.0	10.3	15	1680	.25	0.0	30.00	.50	18.00	3.0		.71	.36	
52	17/ 6	3775	1.50	52	22.5	13	19	22/35	24.0	3		11.2	14.5	920	.60	0.0	18.00	.25	17.50			.49	1.49	
53	18/ 6	3775	1.40	48	17.0	12	10	3/24	22.0	3		11.9	14	260	1.90	0.0	15.00	.25	19.00			.63	.44	
54	19/ 6	3783	1.87	63	31.5	26	11	4/38	10.5	2	30.0	11.4	13	200	.70	0.0	29.00	1.00	17.50			.77	.31	
55	20/ 6	3803	1.87	72	31.0	26	10	3/29	8.8	2	29.0	11.2	13	240	.60	0.0	29.00	1.00	19.00			.78	.27	
56	21/ 6	3847	1.87	72	30.0	25	10	4/31	8.5	2	28.0	11.2	13	260	.65	0.0	29.00	1.00	18.00			.78	.27	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GYP/LIGNO

WELL NAME 6406/3-1 AREA HALTENBANKEN

OPERATOR STATOIL RIG. ROSS ISLE

ENGINEERS TORGERSEN/MARKEN/VASTVEIT/KORSVOLD

Day No.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	DENSITY PPG ☐ SG ☐ 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL		POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
57	22/ 6	3857	1.89	78	37.0	31	12	3/32	7.2	1	25.0	11.2	12.5	240	.55	0.0	30.00	1.00	19.00			.78	.33	
58	23/ 6	3879	1.89	92	43.5	37	13	4/36	6.3	1	22.0	10.6	12	360	.40	0.0	30.00	1.00	17.50			.80	.34	
59	24/ 6	3930	1.89	84	43.5	37	13	4/31	6.6	1	19.5	10.6	12.5	260	.50	0.0	30.00	1.00	20.00			.80	.34	
60	25/ 6	4043	1.89	76	39.0	33	12	3/24	6.2	1	19.5	10.0	13	220	.50	0.0	30.00	1.00	19.50			.79	.32	
61	26/ 6	4050	1.89	90	41.5	35	13	3/24	6.0	1	20.0	10.3	13	300	.55	0.0	30.00	1.00	20.00			.79	.35	
62	27/ 6	4111	1.89	76	39.0	33	12	3/24	5.6	1	16.8	10.2	13.5	180	.60	0.0	30.00	1.00	20.00			.79	.32	
63	28/ 6	4153	1.89	75	39.5	34	11	3/25	5.3	1	14.6	10.6	14.5	220	.80	0.0	30.00	1.00	20.00			.81	.29	
64	29/ 6	4181	1.89	90	38.0	32	12	3/23	5.1	1	14.0	10.0	15	200	.50	0.0	30.00	1.00	20.00			.79	.32	
65	30/ 6	4296	1.89	76	38.5	33	11	3/24	5.0	1	13.0	10.4	15	240	.60	0.0	31.00	1.00	20.00			.81	.29	
66	1/ 7	4410	1.89	78	40.5	34	13	3/28	5.0	1	14.0	10.1	15	240	.50	0.0	32.00	1.00	20.00			.78	.35	
67	2/ 7	4445	1.89	70	38.5	33	11	3/25	5.3	1	15.5	10.4	15.5	260	.60	0.0	31.00	1.00	19.00			.81	.29	
68	3/ 7	4473	1.89	95	41.0	35	12	4/31	5.2	1	14.5	10.2	14.5	240	.50	0.0	32.00	1.00	20.00			.80	.32	
69	4/ 7	4498	1.89	83	38.5	32	13	3/26	4.8	1	12.8	10.5	15	200	.60	0.0	32.00	1.00	20.00			.77	.36	
70	5/ 7	4498	1.89	75	29.0	24	10	3/20	5.2	1	13.4	10.8	15	160	.80	0.0	32.00	1.00	20.00			.77	.28	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

WELL NAME 6406/3-1 AREA HALTENBANKEN

OPERATOR STATOIL RIG. ROSS ISLE

ENGINEERS VASTVEIT/KORSVOLD/TORGERSEN

Drilling Mud Properties Record

MUD SYSTEM GYP/LIGNO

Day No.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	DENSITY PPG ☐ SG ☐ 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
71	6/ 7	4498	1.89	98	45.5	38	15	4/35	5.5	1	17.0	10.5	16	160	.70	0.0	33.00	.75	20.00			.78	.41	
72	7/ 7	4498	1.89	84	38.0	32	12	3/24	5.3	1	16.5	10.6	15.5	160	.80	0.0	32.00	1.00	20.00			.79	.32	
73	8/ 7	4498	1.89	81	37.0	32	10	3/28	5.6	1	17.5	10.3	17	120	.60	0.0	32.00	1.00	20.00			.82	.26	
74	9/ 7	4498	1.86	83	39.5	32	15	3/35	5.8	1	16.0	10.0	18	160	.60	0.0	31.00	1.00	20.00			.75	.44	
75	10/ 7	4496	1.86	58	25.0	21	8	2/20	6.0	1	17.0	10.4	18.5	160	.60	0.0	31.00	1.00	19.00			.79	.22	
76	11/ 7	4498	1.86	72	37.5	33	9	3/22	6.2	1	18.0	10.8	18	120	.90	3.0	30.00	.75	19.00			.84	.23	
77	12/ 7	4432	1.86	65	37.5	33	9	2/28	7.2	1		11.2	18	240	1.60	3.0	29.00	.75	20.00			.84	.23	
78	13/ 7	4432	1.74	65	27.5	23	9	2/18	8.3	1	22.0	11.2	15	200	1.20	3.0	25.00	1.25	20.00			.78	.25	
79	14/ 7	4521	1.74	75	31.5	26	11	4/34	6.4	1	19.5	11.0	15.5	200	1.00	2.0	25.00	1.00	21.50			.77	.31	
80	15/ 7	4537	1.74	63	27.5	22	11	3/27	6.0	1	17.5	11.0	15.5	260	.90	2.0	25.00	.50	21.50			.74	.33	
81	16/ 7	4549	1.74	66	29.5	24	11	3/35	6.3	1	17.5	10.6	15.5	240	.70	2.0	25.00	.50	22.00			.75	.32	
82	17/ 7	4601	1.74	58	30.0	24	12	5/40	6.0	1	16.8	10.3	15.5	260	.40	2.0	25.00	.25	22.00			.74	.36	
83	18/ 7	4649	1.74	54	28.0	23	10	5/34	5.9	1	15.2	10.6	16	260	.55	2.0	25.00	.25	22.00			.76	.28	
84	19/ 7	4699	1.74	56	30.0	24	12	8/45	6.3	1	16.4	10.7	16	120	.60	2.0	26.00	.25	23.00			.74	.36	

REMARKS

AN[illegible]OR DRILLING FLUIDS AS
OSLO — STAVANGER

rilling Mud Properties Record

UD SYSTEM GEL/LIGNITE/RESIN

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG. ROSS ISLE
ENGINEERS TORGERSEN/MARKEN

ay lo.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	MUD PROPERTIES: DENSITY PPG ☐ SG ☐ 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	Filtrate Analysis: Cl⁻ ppm X 1000	Filtrate Analysis: Ca ++ ppm T.H.	Filtrate Analysis: Pf	RETORT: % OIL	RETORT: % SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
35	20/ 7	4734	1.74	54	29.5	23	13	12/48	5.8	1	17.5	10.0	16.5	180	.60	1.5	26.00	.50	21.50			.71	.42	
36	21/ 7	4740	1.74	68	27.5	22	11	7/40	5.0	1	17.2	10.3	16.5	160	.60	1.5	26.00	.25	21.00			.74	.33	
37	22/ 7	4764	1.74	54	28.0	22	12	7/41	4.3	1	17.4	10.4	17	140	.80	1.0	26.00	.25	21.50			.72	.38	
38	23/ 7	4828	1.74	54	28.5	23	11	5/32	4.2	1	12.0	10.5	17	160	.60	1.0	26.00	.25	20.50			.74	.33	
39	24/ 7	4859	1.74	54	29.0	23	12	5/34	4.2	1	13.2	10.5	17.5	160	.80	1.0	26.00	.25	20.50			.73	.37	
90	25/ 7	4881	1.74	55	27.5	22	11	6/37	4.2	1	12.6	10.3	18	160	.90	1.0	26.00	.25	21.00			.74	.33	
91	26/ 7	4902	1.74	52	26.0	21	10	4/27	4.0	1	12.8	10.4	18	160	1.00	1.0	26.00	.25	20.50			.75	.30	
92	27/ 7	4902	1.74	78	29.0	22	14	8/40	4.2	1	12.8	10.4	18	140	1.20	1.0	26.00	.25	21.00			.69	.49	
93	28/ 7	4902	1.74	59	24.0	21	6	3/31	5.0	1	13.4	11.8	18	200	1.90	1.0	26.00	.25	21.00			.83	.15	
94	29/ 7	4902	1.89	59	26.0	23	6	3/22	4.4	1	13.8	11.3	18	140	1.40	1.0	32.00	.75	22.00			.84	.15	
95	30/ 7	4902	1.89	58	31.0	27	8	3/33	5.8	1	13.2	10.9	18	160	1.20	1.0	32.00	.75	21.00			.82	.20	
96	31/ 7	4902	1.89	59	27.0	24	6	3/32	4.8	1		10.9	18	140	1.20	1.0	32.00	.75	21.00			.85	.15	
97	1/ 8	4902	1.89	56	26.0	23	6	3/26	4.4	1		10.8	18	140	1.10	1.0	32.00	.75	20.00			.84	.15	
98	2/ 8	4902	1.89	48	21.0	19	4	2/18	4.2	1		10.5	18	120	.80	1.0	33.00	.75	20.00			.87	.10	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

rilling Mud Properties Record

ID SYSTEM GEL/LIGNO/LIGNITE

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG ROSS ISLE
ENGINEERS BLANCHARD

ay o.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	DENSITY PPG ☐ SG ☐ 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
99	3/ 8	4902	1.89	51	20.5	18	5	3/17	4.0	1		10.3	18	120	.70	1.0	32.00	.25	21.00			.83	.13	
00	4/ 8	4902	1.89	53	21.0	19	4	3/17	4.3	1		10.3	18	120	.70	1.0	32.00	.25	20.00			.87	.10	
01	5/ 8	4902	1.89	53	23.5	20	7	3/18	4.8	1		10.8	17.5	200	.90	1.0	33.00	.50	20.00			.80	.18	
02	6/ 8	4902	1.89	57	24.5	21	7	3/15	5.0	1		11.2	18	250	1.10	1.0	33.00	.50	19.00			.81	.18	
03	7/ 8	4902	1.90	56	24.5	21	7	3/15	5.2	1		11.2	18	250	1.00	1.0	33.00	.50	18.00			.81	.18	
04	8/ 8	4902	1.89	62	24.0	20	8	4/15	5.5	1		11.0	18	230	.80	1.0	33.00	.50	17.00			.78	.22	
05	9/ 8	4902	1.90	55	25.5	22	7	3/16	5.0	1		11.0	18	240	.90	1.0	33.00	.50	17.00			.81	.18	
06	10/ 8	4902	1.89	56	25.0	22	6	3/16	5.0	1		10.9	18	230	.90	1.0	33.00	.50	16.00			.84	.15	
07	11/ 8	4902	1.71	47	19.0	16	6	3/10	7.0	1		10.3	18	300	.40	1.0	27.00	.25	13.00			.79	.16	
08	12/ 8	4902	1.71	52	20.5	18	5	4/10	7.1	1		10.3	17.5	250	.40	1.0	27.00	.25	13.00			.83	.13	
09	13/ 8	4902	1.71	49	19.0	17	4	3/10	7.0	1		10.2	18	250	.40	1.0	27.00	.25	13.00			.86	.10	
10	14/ 8																							
11	15/ 8																							
12	16/ 8																							

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GYP/LIGNO

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG ROSS ISLE
ENGINEERS TORGERSEN/MARKEN/CHAVEZ/KORSVOLD

Day No.	DATE 1984	DEPTH Meter	DENSITY 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	EXCESS gyp #/bbl	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
29	25/ 5	2226	1.77	65	34.5	20	29	28/69	26.0	3		11.8	17	2200	1.80	0.0	26.00	1.50	19.00	5.2		.49	2.26	
30	26/ 5	2400	1.85	68	34.0	24	20	33/99	17.9	3		11.0	18	3000	.60	0.0	28.00	1.50	19.00	3.8		.63	.88	
31	27/ 5	2695	1.85	66	33.5	26	15	17/65	11.3	2	30.0	10.5	18.5	2640	.20	0.0	29.00	1.50	20.00	5.8		.71	.50	
32	28/ 5	2760	1.85	75	35.5	26	19	20/99	10.5	2	29.0	10.5	18	2400	.40	0.0	29.00	1.50	21.00	3.0		.66	.75	
33	29/ 5	2829	1.85	68	33.0	24	18	16/99	10.4	2	34.0	10.6	18.5	2520	.40	0.0	30.00	1.00	21.00	2.6		.65	.72	
34	30/ 5	2932	1.85	61	30.5	23	15	15/97	10.2	2	34.0	10.4	18.5	2520	.35	0.0	29.00	.75	20.00	2.6		.68	.54	
35	31/ 5	2932	1.85	74	32.0	23	18	8/102	10.0	2	32.0	10.0	18	2400	.40	0.0	30.00	.75	20.00	2.5		.64	.75	
36	1/ 6	3000	1.85	56	31.0	23	16	5/68	10.4	2	30.0	10.6	17	2200	.30	0.0	30.00	.50	17.50	3.2		.67	.60	
37	2/ 6	3098	1.85	53	29.0	22	14	5/68	10.2	2	32.0	10.0	17	2200	.17	0.0	30.00	.50	17.50	2.9		.69	.49	
38	3/ 6	3166	1.85	51	28.0	21	14	6/60	10.2	2	28.0	10.0	16.5	2300	.12	0.0	30.00	.75	15.00	3.1		.68	.51	
39	4/ 6	3258	1.85	52	26.5	20	13	7/55	10.0	2	28.0	10.6	15	2000	.30	0.0	30.00	.50	16.50	5.0		.68	.47	
40	5/ 6	3285	1.85	55	27.5	21	13	5/59	10.0	2	26.0	10.0	13	2000	.20	0.0	30.00	.50	15.00	3.0		.69	.45	
41	6/ 6	3350	1.85	55	28.0	21	14	3/58	10.0	2	26.0	10.3	12.5	2000	.30	0.0	30.00	.25	16.00	4.0		.68	.51	
42	7/ 6	3431	1.85	52	26.5	20	13	6/42	10.0	2	30.0	10.1	11.5	1900	.15	0.0	30.00	.25	17.50	4.4		.68	.47	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GYP/LIGNO

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG. ROSS ISLE
ENGINEERS TORGERSEN/MARKEN/CHAVEZ/KORSVOLD

Day No.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	DENSITY PPG ☐ SG ☐ 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	Excess gyp #/bbl	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
43	8/ 6	3522	1.85	57	26.5	19	15	11/73	10.5	2	32.0	10.4	12	1800	.20	0.0	30.00	.25	17.50	3.2		.64	.63	
44	9/ 6	3601	1.85	54	27.5	21	13	11/73	10.5	2	35.0	10.4	13	1850	.20	0.0	30.00	.25	17.50	3.7		.69	.45	
45	10/ 6	3681	1.85	53	26.5	20	13	9/64	10.0	2	36.0	10.3	14	1900	.25	0.0	30.00	.25	17.50	4.1		.68	.47	
46	11/ 6	3740	1.85	52	27.5	20	15	5/50	10.0	2	38.0	10.1	15	1800	.15	0.0	30.00	.25	15.00	2.9		.65	.60	
47	12/ 6	3740	1.85	50	25.0	17	16	5/57	10.0	2	38.0	10.0	15	1850	.15	0.0	30.50	.50	16.20	3.3		.60	.79	
48	13/ 6	3775	1.85	50	26.0	19	14	10/63	11.5	2	38.0	10.4	15	1900	.25	0.0	30.00	.25	18.50	3.6		.66	.55	
49	14/ 6	3775	1.85	50	26.5	20	13	9/64	10.5	2		9.8	15	1900	.13	0.0	30.00	.50	17.50	3.8		.68	.47	
50	15/ 6	3775	1.85	54	26.0	19	14	11/57	10.2	2	36.0	9.8	15	1840	.10	0.0	30.00	.50	17.50	3.5		.66	.55	
51	16/ 6	3775	1.85	60	24.5	19	11	10/55	11.0	2	36.0	10.3	15	1680	.25	0.0	30.00	.50	18.00	3.0		.71	.36	
52	17/ 6	3775	1.50	52	22.5	13	19	22/35	24.0	3		11.2	14.5	920	.60	0.0	18.00	.25	17.50			.49	1.49	
53	18/ 6	3775	1.40	48	17.0	12	10	3/24	22.0	3		11.9	14	260	1.90	0.0	15.00	.25	19.00			.63	.44	
54	19/ 6	3783	1.87	63	31.5	26	11	4/38	10.5	2	30.0	11.4	13	200	.70	0.0	29.00	1.00	17.50			.77	.31	
55	20/ 6	3803	1.87	72	31.0	26	10	3/29	8.8	2	29.0	11.2	13	240	.60	0.0	29.00	1.00	19.00			.78	.27	
56	21/ 6	3847	1.87	72	30.0	25	10	4/31	8.5	2	28.0	11.2	13	260	.65	0.0	29.00	1.00	18.00			.78	.27	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG. ROSS ISLE
ENGINEERS TORGERSEN/MARKEN/VASTVEIT/KORSVOLD

Drilling Mud Properties Record

MUD SYSTEM GYP/LIGNO

Day No.	DATE 1984	DEPTH (FEET □ METERS □) Meter	DENSITY PPG □ SG □ 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	Filtrate Analysis Cl⁻ ppm X 1000	Filtrate Analysis Ca ++ ppm T.H.	Filtrate Analysis Pf	RETORT % OIL	RETORT % SOLIDS CORR.	% SAND	BENTONITE #/BBL		POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
57	22/ 6	3857	1.89	78	37.0	31	12	3/32	7.2	1	25.0	11.2	12.5	240	.55	0.0	30.00	1.00	19.00			.78	.33	
58	23/ 6	3879	1.89	92	43.5	37	13	4/36	6.3	1	22.0	10.6	12 .	360	.40	0.0	30.00	1.00	17.50			.80	.34	
59	24/ 6	3930	1.89	84	43.5	37	13	4/31	6.6	1	19.5	10.6	12.5	260	.50	0.0	30.00	1.00	20.00			.80	.34	
60	25/ 6	4043	1.89	76	39.0	33	12	3/24	6.2	1	19.5	10.0	13	220	.50	0.0	30.00	1.00	19.50			.79	.32	
61	26/ 6	4050	1.89	90	41.5	35	13	3/24	6.0	1	20.0	10.3	13	300	.55	0.0	30.00	1.00	20.00			.79	.35	
62	27/ 6	4111	1.89	76	39.0	33	12	3/24	5.6	1	16.8	10.2	13.5	180	.60	0.0	30.00	1.00	20.00			.79	.32	
63	28/ 6	4153	1.89	75	39.5	34	11	3/25	5.3	1	14.6	10.6	14.5	220	.80	0.0	30.00	1.00	20.00			.81	.29	
64	29/ 6	4181	1.89	90	38.0	32	12	3/23	5.1	1	14.0	10.0	15	200	.50	0.0	30.00	1.00	20.00			.79	.32	
65	30/ 6	4296	1.89	76	38.5	33	11	3/24	5.0	1	13.0	10.4	15	240	.60	0.0	31.00	1.00	20.00			.81	.29	
66	1/ 7	4410	1.89	78	40.5	34	13	3/28	5.0	1	14.0	10.1	15	240	.50	0.0	32.00	1.00	20.00			.78	.35	
67	2/ 7	4445	1.89	70	38.5	33	11	3/25	5.3	1	15.5	10.4	15.5	260	.60	0.0	31.00	1.00	19.00			.81	.29	
68	3/ 7	4473	1.89	95	41.0	35	12	4/31	5.2	1	14.5	10.2	14.5	240	.50	0.0	32.00	1.00	20.00			.80	.32	
69	4/ 7	4498	1.89	83	38.5	32	13	3/26	4.8	1	12.8	10.5	15	200	.60	0.0	32.00	1.00	20.00			.77	.36	
70	5/ 7	4498	1.89	75	29.0	24	10	3/20	5.2	1	13.4	10.8	15	160	.80	0.0	32.00	1.00	20.00			.77	.28	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

rilling Mud Properties Record

UD SYSTEM GYP/LIGNO

WELL NAME 6406/3-1 AREA HALTENBANKEN
OPERATOR STATOIL RIG. ROSS ISLE
ENGINEERS VASTVEIT/KORSVOLD/TORGERSEN

ay lo.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	DENSITY PPG ☐ SG ☐ 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 X 1000	Ca.⁺⁺ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
71	6/ 7	4498	1.89	98	45.5	38	15	4/35	5.5	1	17.0	10.5	16	160	.70	0.0	33.00	.75	20.00			.78	.41	
72	7/ 7	4498	1.89	84	38.0	32	12	3/24	5.3	1	16.5	10.6	15.5	160	.80	0.0	32.00	1.00	20.00			.79	.32	
73	8/ 7	4498	1.89	81	37.0	32	10	3/28	5.6	1	17.5	10.3	17	120	.60	0.0	32.00	1.00	20.00			.82	.26	
74	9/ 7	4498	1.86	83	39.5	32	15	3/35	5.8	1	16.0	10.0	18	160	.60	0.0	31.00	1.00	20.00			.75	.44	
75	10/ 7	4496	1.86	58	25.0	21	8	2/20	6.0	1	17.0	10.4	18.5	160	.60	0.0	31.00	1.00	19.00			.79	.22	
76	11/ 7	4498	1.86	72	37.5	33	9	3/22	6.2	1	18.0	10.8	18	120	.90	3.0	30.00	.75	19.00			.84	.23	
77	12/ 7	4432	1.86	65	37.5	33	9	2/28	7.2	1		11.2	18	240	1.60	3.0	29.00	.75	20.00			.84	.23	
78	13/ 7	4432	1.74	65	27.5	23	9	2/18	8.3	1	22.0	11.2	15	200	1.20	3.0	25.00	1.25	20.00			.78	.25	
79	14/ 7	4521	1.74	75	31.5	26	11	4/34	6.4	1	19.5	11.0	15.5	200	1.00	2.0	25.00	1.00	21.50			.77	.31	
80	15/ 7	4537	1.74	63	27.5	22	11	3/27	6.0	1	17.5	11.0	15.5	260	.90	2.0	25.00	.50	21.50			.74	.33	
81	16/ 7	4549	1.74	66	29.5	24	11	3/35	6.3	1	17.5	10.6	15.5	240	.70	2.0	25.00	.50	22.00			.75	.32	
82	17/ 7	4601	1.74	58	30.0	24	12	5/40	6.0	1	16.8	10.3	15.5	260	.40	2.0	25.00	.25	22.00			.74	.36	
83	18/ 7	4649	1.74	54	28.0	23	10	5/34	5.9	1	15.2	10.6	16	260	.55	2.0	25.00	.25	22.00			.76	.28	
84	19/ 7	4699	1.74	56	30.0	24	12	8/45	6.3	1	16.4	10.7	16	120	.60	2.0	26.00	.25	23.00			.74	.36	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

rilling Mud Properties Record

UD SYSTEM: GEL/LIGNITE/RESIN

WELL NAME: 6406/3-1 AREA: HALTENBANKEN
OPERATOR: STATOIL RIG: ROSS ISLE
ENGINEERS: TORGERSEN/MARKEN

ay No.	DATE 1984	DEPTH Meter	DENSITY SG	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 X 1000	Ca ++ ppm T.H.	Pf	% OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
85	20/ 7	4734	1.74	54	29.5	23	13	12/48	5.8	1	17.5	10.0	16.5	180	.60	1.5	26.00	.50	21.50			.71	.42	
86	21/ 7	4740	1.74	68	27.5	22	11	7/40	5.0	1	17.2	10.3	16.5	160	.60	1.5	26.00	.25	21.00			.74	.33	
87	22/ 7	4764	1.74	54	28.0	22	12	7/41	4.3	1	17.4	10.4	17	140	.80	1.0	26.00	.25	21.50			.72	.38	
88	23/ 7	4828	1.74	54	28.5	23	11	5/32	4.2	1	12.0	10.5	17	160	.60	1.0	26.00	.25	20.50			.74	.33	
89	24/ 7	4859	1.74	54	29.0	23	12	5/34	4.2	1	13.2	10.5	17.5	160	.80	1.0	26.00	.25	20.50			.73	.37	
90	25/ 7	4881	1.74	55	27.5	22	11	6/37	4.2	1	12.6	10.3	18	160	.90	1.0	26.00	.25	21.00			.74	.33	
91	26/ 7	4902	1.74	52	26.0	21	10	4/27	4.0	1	12.8	10.4	18	160	1.00	1.0	26.00	.25	20.50			.75	.30	
92	27/ 7	4902	1.74	78	29.0	22	14	8/40	4.2	1	12.8	10.4	18	140	1.20	1.0	26.00	.25	21.00			.69	.49	
93	28/ 7	4902	1.74	59	24.0	21	6	3/31	5.0	1	13.4	11.8	18	200	1.90	1.0	26.00	.25	21.00			.83	.15	
94	29/ 7	4902	1.89	59	26.0	23	6	3/22	4.4	1	13.8	11.3	18	140	1.40	1.0	32.00	.75	22.00			.84	.15	
95	30/ 7	4902	1.89	58	31.0	27	8	3/33	5.8	1	13.2	10.9	18	160	1.20	1.0	32.00	.75	21.00			.82	.20	
96	31/ 7	4902	1.89	59	27.0	24	6	3/32	4.8	1		10.9	18	140	1.20	1.0	32.00	.75	21.00			.85	.15	
97	1/ 8	4902	1.89	56	26.0	23	6	3/26	4.4	1		10.8	18	140	1.10	1.0	32.00	.75	20.00			.84	.15	
98	2/ 8	4902	1.89	48	21.0	19	4	2/18	4.2	1		10.5	18	120	.80	1.0	33.00	.75	20.00			.87	.10	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

rilling Mud Properties Record

UD SYSTEM	GEL/LIGNO/LIGNITE
WELL NAME	6406/3-1
AREA	HALTENBANKEN
OPERATOR	STATOIL
RIG	ROSS ISLE
ENGINEERS	BLANCHARD

ay o.	DATE 1984	DEPTH FEET ☐ METERS ☐ Meter	MUD PROPERTIES DENSITY PPG ☐ SG ☐ 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 X 1000	Ca ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
99	3/ 8	4902	1.89	51	20.5	18	5	3/17	4.0	1		10.3	18	120	.70	1.0	32.00	.25	21.00			.83	.13	
00	4/ 8	4902	1.89	53	21.0	19	4	3/17	4.3	1		10.3	18	120	.70	1.0	32.00	.25	20.00			.87	.10	
01	5/ 8	4902	1.89	53	23.5	20	7	3/18	4.8	1		10.8	17.5	200	.90	1.0	33.00	.50	20.00			.80	.18	
02	6/ 8	4902	1.89	57	24.5	21	7	3/15	5.0	1		11.2	18	250	1.10	1.0	33.00	.50	19.00			.81	.18	
03	7/ 8	4902	1.90	56	24.5	21	7	3/15	5.2	1		11.2	18	250	1.00	1.0	33.00	.50	18.00			.81	.18	
04	8/ 8	4902	1.89	62	24.0	20	8	4/15	5.5	1		11.0	18	230	.80	1.0	33.00	.50	17.00			.78	.22	
05	9/ 8	4902	1.90	55	25.5	22	7	3/16	5.0	1		11.0	18	240	.90	1.0	33.00	.50	17.00			.81	.18	
06	10/ 8	4902	1.89	56	25.0	22	6	3/16	5.0	1		10.9	18	230	.90	1.0	33.00	.50	16.00			.84	.15	
07	11/ 8	4902	1.71	47	19.0	16	6	3/10	7.0	1		10.3	18	300	.40	1.0	27.00	.25	13.00			.79	.16	
08	12/ 8	4902	1.71	52	20.5	18	5	4/10	7.1	1		10.3	17.5	250	.40	1.0	27.00	.25	13.00			.83	.13	
09	13/ 8	4902	1.71	49	19.0	17	4	3/10	7.0	1		10.2	18	250	.40	1.0	27.00	.25	13.00			.86	.10	
10	14/ 8																							
11	15/ 8																							
12	16/ 8																							

REMARKS

III 11. DRILLING EQUIPMENT FAILURES

Equipment failures

27.04	30" casing	Failure on connection. Unable to install lock block due to snap ring beeing approximately 4 cm above slot in Vetco ATD box connection.
28.04	Super charge pump	Changed impeller on super charge pump no. 2.
01.05	Sub sea camera	Did not work.
22.05	BOP	Had problems passing UAP with the wear bushing.
29.05	Rotary	Breakdown on coupling between rotary motor and rotary gear.
01.06	Mud pump no. 1	Changed piston and discharge valve.
03.06	Mud pump no. 1	Changed piston and repaired cooling hose.
05.06	Kelly	Changed wash pipe packing assembly on swivel.

07.06	Mud pump no. 1	Changed piston and liner two times.
09.06	Mud pump no. 1	Changed liner and piston.
09.06	Mud pump no. 2	Changed suction valve and seat.
15.06	Casing	McEvoy 9 5/8" fullbore running tool threads did not fit with 9 5/8" pup joint threads.
03.07	Exlog DLWD-tool	Did not work at surface.
18.07	Travelling block	Repaired block extend.
25.07	Drill collar and monel	Washout in tool joints. Laid out 4 joints.
26.07	Draw works	The shaft for the sandline drum broke.
26.07	Logging equipment	BHC-log did not work properly. GR malfunctioned.
04.08	Flopetrol test equipment	The EZ tree control hose started leaking during main flow. Had to pump continously to keep valve open.

05.08	7" csg. cutter	Attempted to cut the 7" casing 4 times without success. Bad design of cutter.

IV MARINE REPORT

The well 6406/3-1 was drilled during the summer months. The weather was fairly calm and stable and did not affect the drilling operations at all.

The main wind speed reported varied between 5 m/s and 15 m/s and the main direction was from SW.

The main wave height reported varied between 1 m and 3 m and the main direction was from SW.

Maximum wind speed and wave height reported were 27 m/hr and 8 m respectively.

Ross Isle was anchored up with 8 anchors.

Prior to spudding in the well, all anchors were pretensioned to 150 metric tons.

Maximum tension recorded was 165 metric tons on anchor no. 5.

Rig heading was 235 degrees.

LOCATION WEATHER DATA SUMMARY

statoil
Den norske stats oljeselskap a.s

WELL: 6406/3-1 RIG: ROSS ISLE

TIME PERIOD: FROM 26.04 TO 14.08 -19 84

READINGS PR. MONTH: 30

WIND

m/sec. / dir.	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	> 30	total
N	3	9	7	2				21
NNE		1	2					3
NE	3	4	7	3				17
ENE		2	2	1				5
E	1		1					2
ESE								
SE		1		2	1			4
SSE								
S		2	4	1	1			8
SSW		1	1	2				4
SW	6	7	7	5	2	2		29
WSW		3		1				4
W	1	2		1				4
WNW								
NW	2	2	2					6
NNW		4						4
total	16	38	33	18	4	2		111 / 111

WAVE

height (m) / dir.	0 – 1	1 – 2	2 – 3	3 – 5	5 – 7	7 – 10	> 10	total
N	5	8	6	3	1			23
NNE	1	1						2
NE	5	9	3	1				18
ENE		2						2
E		1	2					3
ESE								
SE			2			1		3
SSE								
S	1	2	1	1				5
SSW	1	3	1					5
SW	11	13	6	4		1		35
WSW	1			1				2
W	1	1	2					4
WNW								
NW	2	4	1					7
NNW					2			2
total	28	44	24	10	3	2		111 / 111

NAVIGATION REPORT

RIG MOVE OF "ROSS ISLE" TO WELL 6406/3-1

1. Final position ED 1950

64° 45' 29.77"N 06° 49' 21.77"E
Accuracy : +/- 5 meters (Translocation)
Rig heading: 235°
Deviation from intended position: 18 m - 030°

2. Observed Decca Main Chain readings

Chain : Trøndelag 4E
Red : I 23,68
Green : E 36,00
Purple : A 62,07

3. Navigation/positioning method

a) Navigation
Decca Main Chain navigation system with HP 985 computer.
Contractor: Racal-Decca Survey Norway A/S, Bergen
Personnel : Rune Lindseth

b) Positioning
MK-1502 satellite positioning system. Translocation against fixed point in Tromsø.
Contractor: A/S Geoteam, Oslo
Personnel : O. Nordgård (Rig)
E.B. Johannessen (Tromsø)

4. Duration of the rig move

Equipment and personnel onboard	: 24 March 1984
Rig left CCB, Ågotnes	: 25 March 1984 at 06.30 hrs
Start run in 10 km from location	: 26 March 1984 at 17.15 hrs
Dropped first anchor (no.5)	: 26 March 1984 at 17.55 hrs
Dropped last anchor (no.3)	: 27 March 1984 at 05.30 hrs
All anchors tensioned tested and position ready for drilling	: 27 March 1984 at 07.50 hrs

5. Techniques/problems

The operation was performed according to Statoil's procedures without navigational problems.

To improve navigation control at location two Simrad transponders with symbol x and y were dropped at the intended location by a site survey boat mid March 1984.

By using the rig's Simrad HPR system together with the Decca Main Chain, these transponders were of great help positioning the rig during the anchorhandling. The Decca Main Chain system can be unstable from time to time especially at night. The system can also have unknown fixed errors in the order of 50-150 meter.

The final position of the rig was fixed by satellite using the translocation method. A geodetic point ashore at NTH, Trondheim was used for the fixed point satellite receiver.

Discreapency between Decca Main Chain position and Satnav. position was 72 m - 220° (Decca Main Chain S.W. of Sat. nav. position).

EXLOG

GAS RATIO COMPOSITE PLOT

WELL NAME : Statoil : 6406/3-1

Scale 1:1000

EXLOG

COMPANY	STATOIL DEN NORSKE STATS OLJESELSKAP A.S.
WELL	6406/3-1
FIELD	WILDCAT
REGION	NORWEGIAN NORTH SEA
COORDINATES	64° 45' 29·3" N, 06° 49' 22·1" E
API WELL INDEX NO.	
SPUD DATE	27 APRIL 1984
ELEVATION	R.K.B. 22m ABOVE M.S.L. WATER DEPTH 256m
TOTAL DEPTH	4902 m
CONTRACTOR	ROSS DRILLING
RIG / TYPE	'ROSS ISLE', SEMI-SUB

LOG INTERVAL

DEPTH FROM 352 m TO 4902 m
DATE FROM 1 MAY TO 26 JULY
SCALE 1:500 UNIT 256
LOG PREPARED BY CROOK, HAYNES, KNIGHT, LAVER, THICTHENER

HOLE SIZE

36" TO 353m	12 1/4" TO 3775m
26" TO 962m	8 1/2" TO 4498m
17 1/2" TO 2177m	6" TO 4902m

CASING RECORD

30" AT 352m	9 5/8" AT 3769m
20" AT 945m	7" AT 4470m
13 3/8" AT 2146m	AT

MUD TYPES

GEL / SEAWATER TO 962m
GYP / LIGNO TO 3775m
GEL/LIGNO/LIGNITE TO 4902m

LITHOLOGY SYMBOLS

LIMESTONE, DOLOMITE, ANHYDRITE AND GYPSUM, HALITE, COAL AND LIGNITE, CLAY, SHALE, SILT AND SILTSTONE, SILTY SANDSTONE, SAND AND SANDSTONE, CONGLOMERATE, CHERT, IGNEOUS (OR)METAMORPHIC

EXLOG SUITE

FORMATION EVALUATION LOG, PRESSURE EVALUATION LOG, DRILLING DATA PRESSURE LOG, WIRELINE DATA PRESSURE LOG, TEMPERATURE DATA LOG, GEMDAS COMPUTER LOGS

ABBREVIATIONS

NB NEW BIT
RRB RERUN BIT
CB CORE BIT
WOB WEIGHT ON BIT
RPM REVS PER MINUTE
FLC FLOW CHECK
CR CIRCULATE RETURNS
PR POOR RETURNS
NR NO RETURNS
LAT LOGGED AFTER TRIP
BG BACKGROUND GAS
TG TRIP GAS
STG SHORT TRIP GAS
CG CONNECTION GAS
SWG SWAB GAS
SVG SURVEY GAS
C CARBIDE TEST
W MUD DENSITY SG
V FUNNEL VISCOSITY
F FILTRATE – API
FC FILTER CAKE
PV PLASTIC VISCOSITY
YP YIELD POINT
SOL SOLIDS – %
SD SAND – %
S SALINITY – PPM Cl
RM MUD RESISTIVITY
RMF FILTRATE RESISTIVITY

CASING SEAT, CORED INTERVAL, NO RECOVERY, SIDEWALL CORE, WIRELINE LOG RUN, TEST INTERVAL, WIRELINE TEST

COMPANY STATOIL DEN NORSKE STATS OLJESELSKAP A S
WELL 6406/3-1
FIELD WILDCAT
REGION NORWEGIAN NORTH SEA
COORDINATES 64° 44' 29.7" N
06° 49' 29.8" E
API WELL INDEX NO.
SPUD DATE 27 APRIL 1984
ELEVATION RKB 22 m ABOVE MSL
WATER DEPTH 256 m
TOTAL DEPTH 4902 m
CONTRACTOR ROSS DRILLING
RIG / TYPE 'ROSS ISLE', SEMI-SUB

LOG INTERVAL

DEPTH FROM 352m TO 4902 m
DATE FROM 1 MAY TO 26 JULY '84
SCALE 1:5000 UNIT 256
LOG PREPARED BY M.KINGSLEY, V.KUBY
K.CANTRELL, T.WATTS, T.FITZPATRICK

HOLE SIZE

36"	TO 353 m	12 1/4"	TO 3775 m
26"	TO 962 m	8 1/2"	TO 4498 m
17 1/2"	TO 2177 m	6"	TO 4902 m

CASING RECORD

30"	AT 352 m	9 5/8"	AT 3769m
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13 3/8"	AT 2148 m		AT

MUD TYPES

GEL/SEAWATER TO 962 m
GYP/LIGNO TO 3775 m
GEL/LIGNO/LIGNITE TO 4902 m

LITHOLOGY SYMBOLS

LIMESTONE
DOLOMITE
ANHYDRITE AND GYPSUM
HALITE
COAL AND LIGNITE
CLAY
SHALE
SILT AND SILTSTONE
SILTY SANDSTONE
SAND AND SANDSTONE
CONGLOMERATE
CHERT
IGNEOUS UNDIFFERENTIATED

EXLOG SUITE

FORMATION EVALUATION LOG ■
PRESSURE EVALUATION LOG ■
DRILLING DATA PRESSURE LOG ■
WIRELINE DATA PRESSURE LOG ■
TEMPERATURE DATA LOG ■
GEMDAS COMPUTER LOGS ■

ABBREVIATIONS

NB	NEW BIT	SVG	SURVEY GAS
RRB	RERUN BIT	C	CARBIDE TEST
CB	CORE BIT	W	MUD DENSITY SG
WOB	WEIGHT ON BIT	V	FUNNEL VISCOSITY
RPM	REVS PER MINUTE	F	FILTRATE — API
FLC	FLOW CHECK	FC	FILTER CAKE
CR	CIRCULATE RETURNS	PV	PLASTIC VISCOSITY
PR	POOR RETURNS	YP	YIELD POINT
NR	NO RETURNS	SOL	SOLIDS — %
LAT	LOGGED AFTER TRIP	SD	SAND — %
BG	BACKGROUND GAS	S	SALINITY — PPM Cl
TG	TRIP GAS	RM	MUD RESISTIVITY
STG	SHORT TRIP GAS	RMF	FILTRATE RESISTIVITY
CG	CONNECTION GAS		
SWG	SWAB GAS		

CASING SEAT
WIRELINE LOG RUN
CORED INTERVAL
TEST INTERVAL
NO RECOVERY
WIRELINE TEST
SIDEWALL CORE

GAS — 100 Total gas units is equivalent to 2% methane-in-air
OIL — Based on live oil in unwashed cuttings and percentage staining of washed cuttings

WIRELINE DATA PRESSURE LOG

EXLOG

HOLE SIZE

36"	TO	353 m	12 1/4"	TO	3775 m
26"	TO	962 m	8 1/2"	TO	4498 m
17 1/2"	TO	2177 m	6 "	TO	4902 m

CASING RECORD

30"	AT	352 m	9 5/8"	AT	3769 m
20"	AT	945 m	7"	AT	4470 m
13 3/8"	AT	2148 m		AT	

MUD TYPES

GEL / SEAWATER TO 962 m
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LITHOLOGY SYMBOLS

LIMESTONE
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ANHYDRITE AND GYPSUM
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CLAY
SHALE
SILT AND SILTSTONE
SILTY SANDSTONE
SAND AND SANDSTONE
CONGLOMERATE
CHERT
IGNEOUS UNDIFFERENTIATED

COMPANY STATOIL DEN NORSKE STATS OLJESELSKAP A.S.
WELL 6406 / 3-1
FIELD WILDCAT
REGION NORWEGIAN NORTH SEA
COORDINATES 64° 44' 29.7" N
06° 49' 29.8" E
API WELL INDEX NO.
SPUD DATE 27 APRIL 1984
ELEVATION RKB 22 m ABOVE MSL
WATER DEPTH 256 m
TOTAL DEPTH 4902 m
CONTRACTOR ROSS DRILLING
RIG / TYPE 'ROSS ISLE', SEMI-SUB

LOG INTERVAL

DEPTH FROM 352 m TO 4902 m
DATE FROM 1 MAY TO 26 JULY '84
SCALE 1:5000 UNIT 256
LOG PREPARED BY M.KINGSLEY, V.KUBY
K.CANTRELL, T.WATTS, T.FITZPATRICK

EXLOG SUITE

FORMATION EVALUATION LOG ■
PRESSURE EVALUATION LOG ■
DRILLING DATA PRESSURE LOG ■
□
WIRELINE DATA PRESSURE LOG ■
TEMPERATURE DATA LOG ■
GEMDAS COMPUTER LOGS ■
□

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STG	SHORT TRIP GAS	RMF	FILTRATE RESISTIVITY
CG	CONNECTION GAS		
SWG	SWAB GAS		

CASING SEAT
WIRELINE LOG RUN
CORED INTERVAL
TEST INTERVAL
NO RECOVERY
WIRELINE TEST
SIDEWALL CORE

GAS — 100 Total gas units is equivalent to 2% methane-in-air

OIL — Based on live oil in unwashed cuttings and percentage staining of washed cuttings

DRILLING DATA PRESSURE LOG

EXLOG

COMPANY: STATOIL DEN NORSK STATS OLJESELSKAP A.S.
WELL: 6406/3-1
FIELD: WILDCAT
REGION: NORWEGIAN NORTH SEA
COORDINATES: 64° 44' 29.7" N
06° 49' 29.8" E
API WELL INDEX NO.:
SPUD DATE: 27 APRIL 1984
ELEVATION: RKB 22m ABOVE MSL
WATER DEPTH 256 m
TOTAL DEPTH: 4902 m
CONTRACTOR: ROSS DRILLING
RIG / TYPE: 'ROSS ISLE', SEMI-SUB

LOG INTERVAL

DEPTH FROM 352 m TO 4902 m
DATE FROM 1 MAY TO 26 JULY '84
SCALE 1:5000 UNIT 256
LOG PREPARED BY M.KINGSLEY, V.KUBY K.CANTRELL, T.WATTS, T.FITZPATRICK

HOLE SIZE

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CASING SEAT — WIRELINE LOG RUN
CORED INTERVAL — TEST INTERVAL
NO RECOVERY — WIRELINE TEST
SIDEWALL CORE

GAS — 100 Total gas units is equivalent to 2% methane-in-air
OIL — Based on live oil in unwashed cuttings and percentage staining of washed cuttings

PRESSURE EVALUATION LOG

DEPTH AND DRILLING DATA	ESTIMATED PORE PRESSURE +	MUD DENSITY OUT (●) EQUIVALENT CIRCULATING DENSITY (ECD) (○)		FORMATION FRACTURE PRESSURE GRADIENT ESTIMATED □ LEAK-OFF TEST ■	ESTIMATED OVERBURDEN PRESSURE GRADIENT (▲)

EXLOG

GAS RATIO COMPOSITE PLOT

WELL NAME : Statoil : 6406/3-1

Scale 1:5000