U-532

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NORSK HYDRO A.S

FINAL WELL REPORT

WELL 6407/7-2

LICENCE 107

0317o
sn,POP/SAN

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0317o
sn,POP/SAN

PREFACE

Licence 107 was awarded to the Statoil/Shell/Agip/Norsk Hydro in March 1985 with Norsk Hydro a.s as operator.

The licence includes the block 6407/7 on the Norwegian Continental shelf.

The licencees' percentage share of the block is as follows:

Den norske stats oljeselskap a.s (Statoil)	50.0%
Shell	20.0%
Norsk Hydro a.s	20.0%
Agip	10.0%

The well 6407/7-2 was drilled by Norsk Hydro a.s on behalf of the group.

((((ooo) ------- Norsk Hydro	General informations	Date 27/3-1987
	System : Boredata Sandnes	
	Well: 6407/7-2	
	Field: Haltenbanken	
	Structure:	1

Lic: 107 Country: NOR

LOCATION Coordinates		Surface-------->	Target-------->
UTM	N (m):	7127130	7127112
UTM	E (m):	411732	411724
Geographical	N	: 64 15' 26.39"	64 15' 25.80"
Geographical	E	: 07 10' 42.65"	07 10' 42.10"

Water depth : 338 m
Formation at TD: Triassic

Operator : HYDRO. Operator's share (%): 20

Partners, : Statoil 50%
(interests) : Shell 20%
Agip 10%

RIG name : POLAR PIONEER
RIG contractor : Polar Frontier Drilling
MUD contractor : Dresser Magcobar
CEMENT contractor : BJ Hughes
EL.LOGG contractor : Schlumberger
MUD LOGG contractor : Exlog
Other contractors: Teleco

Total depth (m RKB):	Measured	Vertical
	3320m	3319m

Rotary Table elevation: 23m

TIME SUMMARY Spudding date: 861119 Abandonment date: 870121

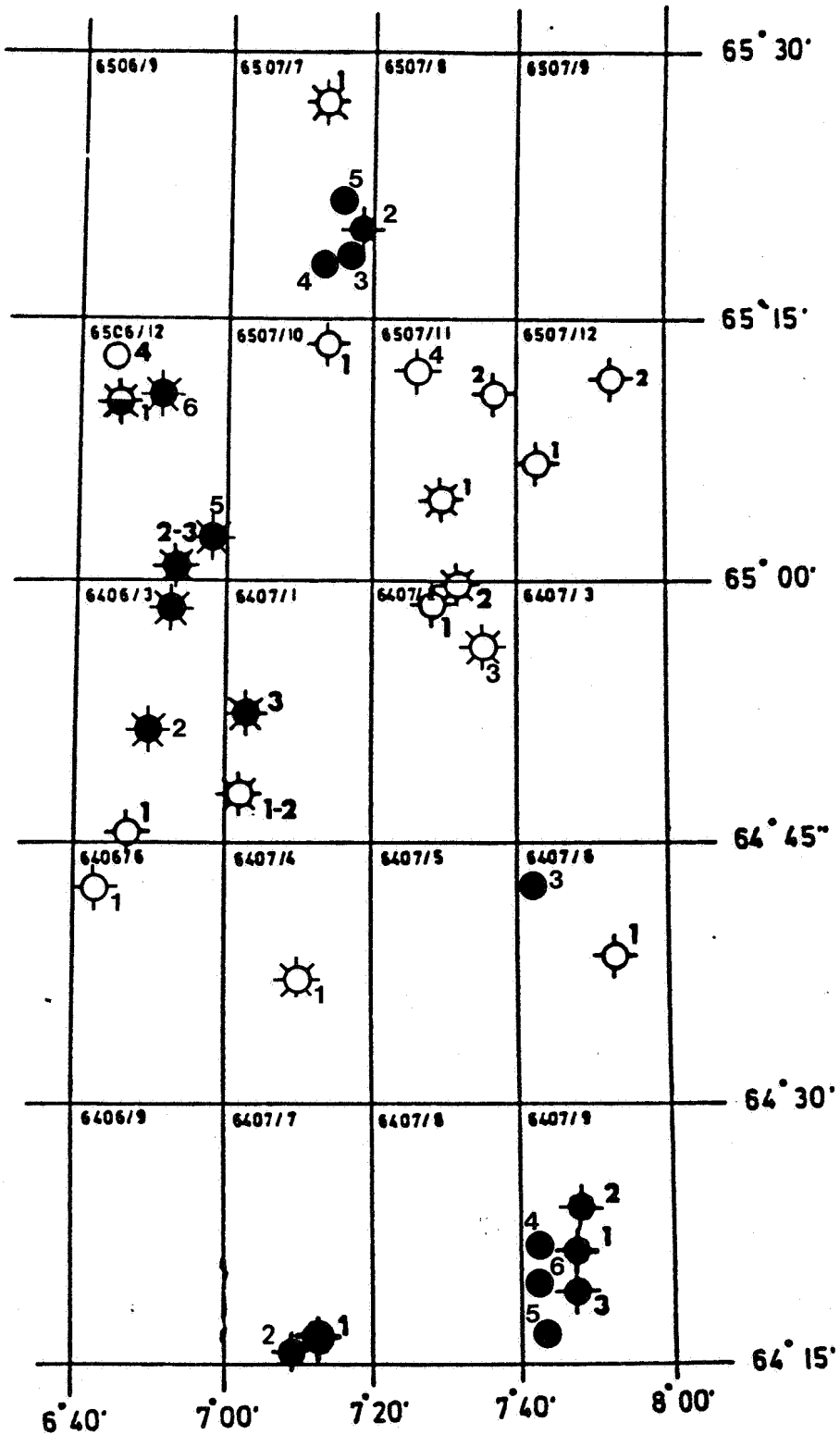
Main Op:	Moving	Drilling	Form.eval	Prod.test	PlugAband	Downtime	Compl
Hours :	65	807	237	264	22	156	0
Days :	2.7	33.6	9.9	11.0	.9	6.5	.0
% :	4	52	15	17	1	10	0

TOTAL : 1549 hrs, 65 days

Hole and Casing record

Hole	Depth m,MD	Casing	Depth m,MD
36	446	30	445
26	780	20	757
17 1/2	1517	13 3/8	1502
12 1/4	2550	9 5/8	2533
8 3/8	3320	7	3316

Well status :Temporary abandoned



Norsk Hydro Drilling Department	LOCATION MAP WELL 6407/7-2	Gr. no.:	Fig.: 3
		Date: 10.10.86 Sign: LaB/HGD	Dwg. no.:

SECTION A

GEOLOGY

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TABLES

1 OBJECTIVES

The main objectives for the well 6407/7-2 were to:

- Test volumetric potential and depth to the oil-water contact on the central part of the A-structure.

- Test reservoir properties of the pre-Aldra sequence above the oil-water contact. Estimated top Frøya Fm equivalent was at 2598 m $\pm$ 65 m.

- Test the reservoir properties and the geological model of the sedimentary package above pre-Aldra on the central part of the A-structure.

- Penetrate the flat seismic event at approximately 2570 ms TWT on the central part of the A-structure.

- Test the trunctation patterns for the main reservoir in well 6407/7-1.

- Obtain good seismic calibration to

    - base Cretaceous unconformity
    - strong Intra Jurassic events
    - intra Triassic seismic event.

2 RESULTS

The well 6407/7-2 was spudded on November 19th 1986 and respudded on November 20th on the A-structure of the Njord field. The well was completed on January 21st 1987.

The well was drilled to a total depth of 3320 m RKB and terminated in Triassic Claystones.

- Gas was encountered in Reservoir 1 (2697.5 - 2711.5 m)
  - net pay was 5.13 m
  - gas down to 2711.5 m RKB
  - gas density was 0.07g/cc

- Oil was encountered in Reservoir 2 (2771 - 2877.5 m)
  - net pay was 67.88 m
  - oil down to 2877.5 m RKB
  - the reservoir tested 125 Sm3/d and 575 Sm3/d in two tests.
  - oil density was 0.829 g/cc and 0.825 g/cc respectively in the two tests.

- Reservoir 3 as defined in well 6407/7-1 was not present.

The cut off values were <13% for porosity, >40% for shale volume and >60% for water saturation.

Details of DST and RFT data are found in Appendix III.

Details of log interpretation are given in the Norsk Hydro report: "Petrophysical Evaluation Report Well 6407/7-2".

Details of well tests are given in the Norsk Hydro report: "Production test evaluation report, 6407/7-2, Haltenbanken."

3 STRATIGRAPHY

The biostratigraphic evaluation of the well was performed by Stratlab a.s., Norway.

The analysis is based on samples from ditch cuttings, sidewall cores and chips from conventional cores. The interval from 790 - 3320 m was analysed.

The results of the analysis can be summarized as follows:

Tertiary

The first analysis was taken at 790 m. Late Pliocene marginal marine sediments were recognized down to 930 m whereas an Early Pliocene age was represented from 940 - 1000 m.

A non sequence representing Late and probable Middle Miocene is between 1000 m and 1010 m. Miocene and Oligocene marginal marine sediments are recorded between 1010 and 1210 m.

Eocene, outer marginal marine sediments were penetrated from 1220 - 1675 m.

The Paleocene is nearly complete and is present from 1720 - 1956.5 m.

Cretaceous

A non sequence is between 1956.5 and 1960 m which comprises the Maastrichtian and probably parts of the Late Campanian.

Cretaceons beds of Campanian age, probably within the Campanian II zone, were penetrated at 1960 m. There are slight indications of a break at around 2008 m, on the top of Campanian III. The thickness of the sequence is ca 170 m.

Santonian to Turonian and Turonian sediments are present in a ca 300 m thick interval. They rest unconformably on a nearly 100 m thick Cenomanian sequence. Turonian to Late Cenomian sediments seem to be absent.

Only 40 m of Early Cretaceous sediments are represented in the well.

Jurassic

Upper Jurassic to Early Cretaceous black shales are present from 2638 m.

A hiatus is present between 2652 and 2653 m and covers parts of the Kimmeridgian.

The Oxfordian, probably Late Oxfordian is present at 2653 m. Inner marginal marine, Early Callovian to Late Bathonian beds are recorded from 2662 - 2685 m whereas the Early Bathonian to Late Bajocian is represented down to 2701 m. A low energy environment is indicated for the latter period.

Aalenian to Toarcian and Toarcian sediments were encountered between 2708.9 and 2760 m. The environment was marginal marine with a considerable terrestrial input in the Toarcian. At 2768 m an Early Toarcian age was recorded.

The Pliensbachian is represented from 2776.5 - 2864.9 m. A shallow inner marginal marine to non marine environment is indicated for this interval.

Between 2879 and 2886.5 a Sinemurian to Hettangian age is recorded, whereas Hettangian sediments are present down to 2923 m. The deposition is supposed to have taken place in a low to medium energy non marine environment.

Triassic

At 2934 m sediments of Late Triassic, Middle to Late Rhaetian age were penetrated. Oxidizing conditions were present in a non marine environment. Indications of a hiatus is represented at the top of the interval.

Sediments of Early Rhaetian to possibly Norian age were recorded in the sidewall cores at 3276 and 3283 m. Deposition took place in a non marine environment.

The Chrono- and Lithostratigraphy of well 6407/7-2 is also displayed in table 1 on page 6 and 7.

HYDRO

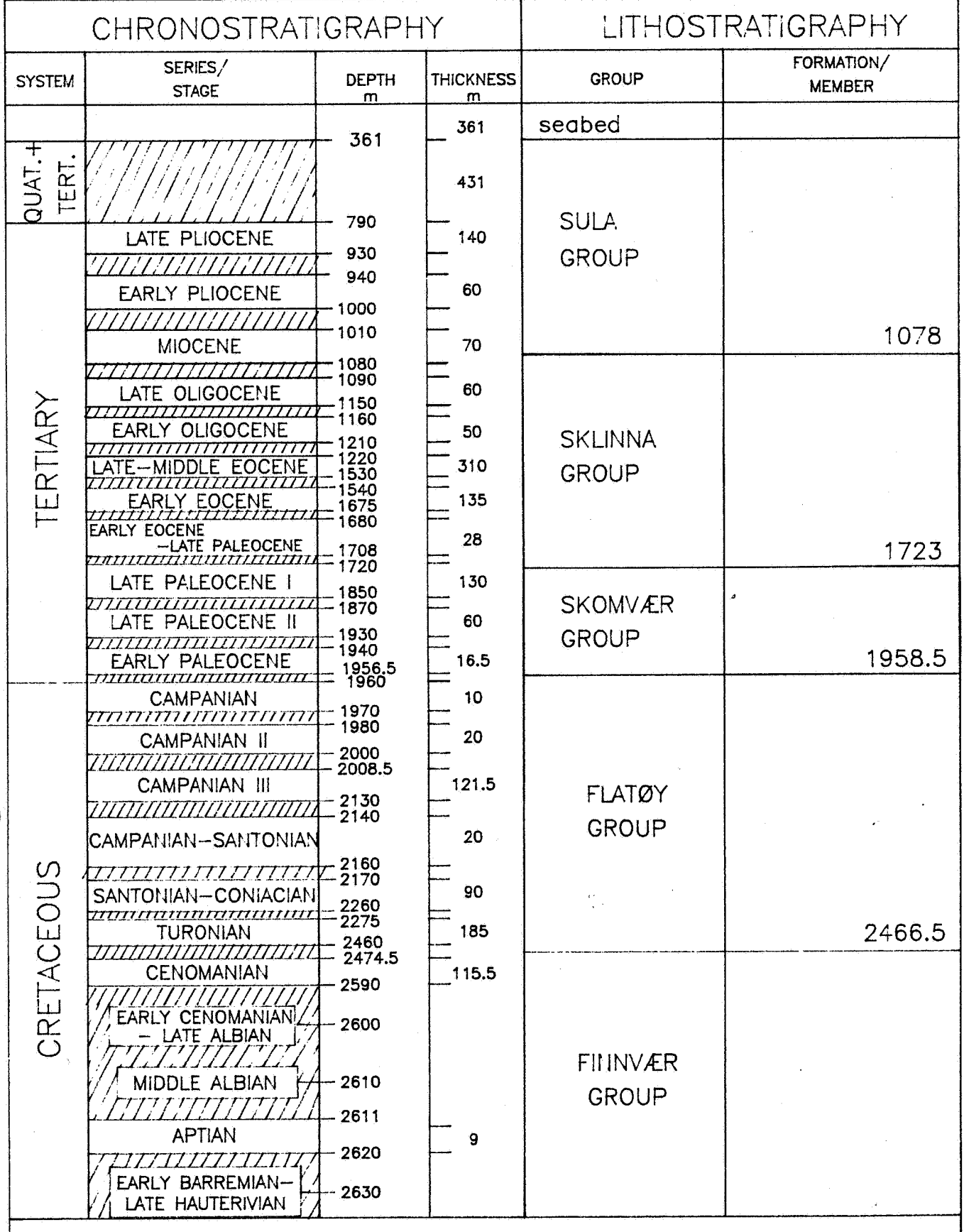
Oslo – Norway

DEPTH RKB (23m)

ELEVATION KB: 23m

WELL: 6407/7-2

NB! NOT TO SCALE
ALL DEPTH IN METERS (mRKB)



HYDRO

Oslo – Norway

WELL: 6407/7--2

DEPTH RKB

ELEVATION KB: 23m

NBI NOT TO SCALE

ALL DEPTH IN METERS (mRKB)

CHRONOSTRATIGRAPHY				LITHOSTRATIGRAPHY	
SYSTEM	SERIES/ STAGE	DEPTH m	THICKNESS m	GROUP	FORMATION/ MEMBER
CRET	HAUTERIVIAN – ? EARLY BARREMIAN	2630 2636	8	FINNVÆR GP.	ALL DEPTH IN METERS (m)
		2638			2637
JURASSIC	RYAZANIAN – PORTLANDIAN		14	GRIP GP.	NESNA FM. 2651.5
		2652			
	OXFORDIAN	2653			ENGELVÆR FM.
		2662			2667.5
	EARLY CALLOVIAN – LATE BATHONIAN		23		MID–JURASSIC SEQUENCE
		2685			
		2690			
	EARLY BATHONIAN – ? LATE BAJOCIAN		11		
		2701			2712
		2708.9			
	AALENIAN – TOARCIAN		8.1		
		2717			
		2724			LEKA FM.
	TOARCIAN		36		
		2760			2771
	EARLY TOARCIAN	2768			
		2776.5			ALDRA FM.
	PLIENSBACHIAN		88.4		2877.5
		2864.9			
		2879			HITRA FM.
	HETTANGIAN – SINEMURIAN		7.5		
		2886.5			
		2890			
	HETTANGIAN		33		
		2923			2934
		2934			
TRIASSIC	MIDDLE – LATE RHAETIAN		338.5	TRIASSIC GREY BEDS	2980
		3272.5		TRIASSIC RED BEDS	INTRA TRIAS EVENT 3270
		3276.5			
	EARLY RHAETIAN – ? NORIAN		43.5		
		3320 (TD)			3320 (TD)

4 LITHOSTRATIGRAPHY

Ditch cuttings, sidewall cores and conventional core chips were used to define the lithologies, while wireline logs were used to help define the lithologic and lithostratigraphic boundaries.

4.1 QUATERNARY (361 - 477 m)

SULA GROUP (361 - 477 m)

The top section of the well was drilled with return to the seabed. The lithology was interpreted from the drillrate, torque, WOB, RPM and the MWD-log through the 26" hole section.

The Sula Group is of Quaternary and Late Tertiary age. Based on the MWD and drilling data the Quaternary is believed to be composed of sands with consolidated clay layers containing pebbles and boulders.

4.2 TERTIARY (477 - 1958.5 m)

SULA GROUP (477 - 1078 m)

The top of the Tertiary was picked from a break on the MWD-log. This log break corresponds to a negative drillbreak at the same depth. The 26" hole was drilled down to 780 m, from this depth the riser was connected and cuttings evaluation started.

The lithology in the 26" hole section is supposed to consist of clays with traces of sand. The lower Sula Group consisted of light grey to olive grey clays. They were soft, amorphus, silty to very fine sandy and slight calcareous. Abundant rock fragments and traces of

carbonaceous material, mica and shell fragments were recorded. In the lower parts also glauconite - partly glauconite clays and claystones.

The Sula Group ranges in age from Miocene to Late Pliocene.

SKLINNA GROUP (1078 - 1723 m)

The top of the Sklinna Group was picked in the very glauconitic claystones.

The upper section consisted predominantely of dusky yellow brown and soft claystones. They were occasionally slightly blocky, silty and micro-micaceous. A slight colour change occured with increasing depth and traces of sandstones, limestones and dolomites were recorded in this lower sequence.

The sandstones were light grey to light olive grey and consisted of clear to milky grey quartz which was very fine to medium, predominately fine grained, firm to friable and subangular to subrounded.

They were moderate to well sorted with traces of argillaceous matrix and slight calcite cemented.

The limestones were white to light orange, occasionally light brown, firm to hard, blocky to platy and exhibited a micro- and cryptocrystalline texture. They were locally slightly argillaceous/dolomitic - grading to dolomite.

The dolomites were light brown and grey brown, moderate hard to hard, blocky, slightly argillaceous and exhibited both micro- and cryptocrystalline texture like the

limestones. Traces of micromica, pyrite and glauconite were recorded sporadically throughout the interval.

The Sklinna Group is of Early Eocene to Late Oligocene age.

SKOMVÆR GROUP (1723 - 1958.5 m)

The Skomvær Group comprises the lowermost interval of the Tertiary sequence. It was composed of predominantely brown grey to brown black claystones which were firm to moderate hard, blocky to subfissile, micromicaceous and contained traces of carbonaceous material.

Traces of sandstones, limestones and dolomites were also seen in this group. These were quite similar to their equivalents in the Sklinna Group.

The Skomvær Group is of Paleocene age.

4.3 CRETACEOUS (1958.5 - 2638 m)

4.3.1 UPPER CRETACEOUS (1958.5 -2600 m)

FLATØY GROUP (1958.5 - 2466.5 m)

The Flatøy Group consisted of predominantely olive grey to medium dark grey claystones with minor sandstones, and traces of limestones and dolomites.

The claystones were occasionally variecoloured - olive black, green grey to dark green grey and brown grey to brown. They were further soft to firm and occasionally moderate hard, occasionally blocky and slightly subfissile, non to slight calcareous - occasionally moderate calcareous, occasionally slightly silty to very fine sandy and partly grading to siltstone. Traces of pyrite, micromica and glauconite were also recorded.

The sandstones were light grey to grey, and predominantely composed of clear to milky white quartz. They were friable to moderate hard, partly loose, predominately very fine grained - grading to silt/siltstone, subangular to subrounded and were moderately to extremely well sorted.

Calcite cement and argillaceous matrix occured sporadically, and traces of mica, pyrite and glauconite were recorded.

The limestones were off white to light orange, occasionally medium grey, soft to firm, occasionally moderate hard and brittle, blocky, slightly amorphus and exhibited a micritic - cryptocrystalline texture.

The dolomites were light brown to brown grey, moderate hard to very hard, brittle, blocky and micro - cryptocrystalline.

The Flatøy Group ranges in age from Campanian to Turonian.

4.3.2 LOWER CRETACEOUS (2466.5 - 2637 m)

FINNVÆR GROUP (2466.5 - 2637 m)

The Finnvær Group consisted of claystones with minor dolomites and traces of sandstones overlying marly claystones - grading to limestones.

The top of the group was picked when a reddish brown claystone first appeared. This change was abrupt - from predominantely olive grey claystones to varicoloured reddish brown to brown, olive grey to dark grey and medium dark grey claystones. They were further soft to moderate hard, occasionally blocky and subfissile, slight to moderate calcareous - very calcareous with depth, micromicaceous and with traces of pyrite.

The dolomites were brown to brown grey, occasionally orange, hard to very hard, blocky, occasionally brittle and micro-cryptocrystalline. The limestone were off white to light grey, soft to firm, occasionally hard, occasionally blocky and brittle, micritic to cryptocrystalline and locally dolomitic partly grading to dolomites.

The Finnvær Group was dated Cenomanian to Hauterivian.

4.4 JURASSIC (2638 - 2934 m)

4.4.1 UPPER JURASSIC (2637 - 2667.5 m)

GRIP GROUP (2637 - 2667.5 m)

Nesna Formation (2637 - 2651.5 m)

The top of the Nesna Formation was clearly marked on the QR logs. This abrupt log break corresponded to an introduction of dusky yellow brown to brown black claystones. These claystones were soft to firm, blocky, sticky, micromicaceous, pyritic and slight calcareous. Traces of carbonaceous material silty sequences were recorded.

The Nesna Formation ranges from Ryazanian to Portlandian in age.

Engelvær Formation (2651.5 - 2667.5 m)

A very clear log break back to normal readings occured at the top of the formation, However, this didn't correspond to any particular change in lithology at this depth.

The upper part of the formation consisted of dusky yellow brown - brown black claystones like in the overlying Nesna Formation. With depth then was a slight gradual transition into siltstones which again alternated with sandstone intervals. The lower parts of the formation was again dominated by claystones with minor coal seams.

The claystones were quite similar to claystones in the Nesna - the only visual difference was a slight increase in the silt content with depth.

The sandstones consisted of very light grey, transparent to translucent quartz. They were very fine to fine grained, moderate to well sorted, subangular to subrounded, micaceous, argillaceous and with traces of pyrite and calcite cement.

The siltstones were dusky yellow brown, moderate hard, fissile, very argillaceous, very carbonaceous, calcareous and generally very fine sandy grading to sandstone in laminations.

The coals were black, hard, blocky, brittle and exhibited conchoidal fracture planes. They were occasionally argillaceous and graded to carbonaceous shales.

The Engelvær Formation was dated Oxfordian (one sample at 2653 m).

4.4.2 MIDDLE JURASSIC (2667.5 - 2712 m)

HALTEN GROUP (2667.5 -2934 m)

Middle Jurassic sequence (2667.5 - 2712 m)

The top of this interval was defined by a sandstone unit which was not reflected by any clear log response. This sand was overlying a claystone/siltstone interval which in turn was underlain by another sand body.

The sandstones at the top were medium grey to dusky yellow brown, consisting of transparent to transherent quartz and generally very fine grained with a moderate sorting. They were also very silty, very argillaceous and carbonaceous and in parts graded into siltstones and claystones.

The lower sandstones were light olive grey, dark grey to grey black, and consisted of transparent to translucent quartz, fine to medium grained, occasionally very fine to silty, subangular to subrounded and generally moderate sorted. Quartz cement dominated, but traces of kaolin were also recorded. They were generally micaceous to very micaceous/argillaceous, had traces of pyrite, coal fragments and exhibited non to poor visible porosity. A thin pebbly conglomerate was also noted at the base of this sequence.

The claystones were generally olive grey, but also brown grey and grey black, soft to firm, blocky, sticky, locally subfissile to fissile, very micro-miceaceous, carbonaceous and very silty - grading to siltstone.

The siltstones were dark grey to grey black, hard, very fine laminated, very micaceous, sandy, argillaceous, slightly to very calcite cemented and also contained carbonaceous coal fragments, bioturbation and pyrite. They exhibited no to poor visible porosity.

The Mid-Jurassic sequence ranges in age from Bathonian to Aalenian.

4.4.3 LOWER JURASSIC (2712 - 2934 m)

HALTEN GROUP (2667.5 - 2934 m)

Leka Formation (2712 - 2771 m)

The Leka Formation consisted of interbedded sandstones, siltstones and shales.

The sandstones were light to dark grey, consisting of transparent to transherent, very fine to fine grained quartz. The sands were poorly to well sorted, slightly calcite or silica cemented and were generally micaceous and carbonaceous with no to poor visible porosity.

The siltstones were dark grey to brown black or dusky yellow brown, in places very fine sandy grading to sandstone and very argillaceous. They were also miicaceous and carbonaceous.

The shales were brown black, moderately hard, fissile, very silty, very carbonaceous, micromicaceous and non calcareous.

Both siltstones and shales displayed slickensides and bioturbation was common in all lithologies.

The Leka Formation was date Aalenian/Toarcian to Early Toarcian.

Aldra Formation (2771 - 2877.5 m)

The Aldra Formation comprises the main reservoir in this well and consisted predominatenly of sandstones with minor siltstones and shales/claystones.

The sandstones were pale yellow brown to yellow grey, occasionally grey brown, light grey and light brown. They consisted predominantely of transparent to translucent quartz, which graded from very fine to very coarse - occasionally pebbly, with fine to medium as an average size. They were subangular to subrounded, moderate to well sorted, friable to moderate hard, occasionally loose, locally quartz and/or calcite cemented, with traces of carbonaceous material, pyrite, mica and kaolinite as cement/matrix. They exhibited generally poor visible porosity, occasionally moderate visible porosity.

The siltstones were brown black to dusky yellow brown, moderate hard, fissile, carbonaceous, micaceous and quite often very fine sandy - grading to sandstone.

The shales were dusky yellow brown, moderate hard, fissile, very micaceous and with traces of bioturbation. These shales quite often contained very fine sandstone - siltstone and coaly laminae/lenses. Traces of micropyrite and pyrite nodules were also recorded.

The Aldra Formation is of Pliensbachian age.

Hitra Formation (2877.5 - 2934 m)

In the 6407/7-1 well this formation comprised the lower Jurassic section and top Triassic. Where to put the boundary was rather uncertain because no marked lithology change nor log break which could define top Triassic were recorded. It is therefore believed that the Jurassic gradually turns into Triassic without any clear break.

The Hitra formation consisted of sandstone with minor claystones and siltstones. Some traces of coal stringers were also recorded. In the lower parts of the formation there was a gradual transition into alternating sandstones and claystones.

The sandstones were light grey to grey, occasionally olive grey and medium grey. They consisted of clear to milky white, - translucent quartz, predominantely medium to coarse, occasionally very coarse to pebbly, friable to moderate hard, subangular to subrounded, poor to moderate sorted, with very abundant kaolin as matrix/cement and traces of mica, carbonaceous material and pyrite. They exhibited no to poor visible porosity.

The claystones were light brown, grey brown and occasionally red brown, soft to firm, sticky, non calcareous, micromicaceous, carbonaceous and very silty - often grading to siltstone.

The carbonaceous content was sometimes very high and the claystone graded now and then to carbonaceous shales and coal, which were dark grey to shiny black, friable to moderate hard, blocky and brittle, occasionally with conchoidal fractures and pyrite replacements.

The siltstones were olive grey, moderate hard to hard, subfissile to fissile, very fine sandy - occasionally grading to very fine sandstones and with abundant mica and traces of pyrite and carbonaceous material.

The Hitra Formation was mainly dated Hettangian but ranged into Sinemurian.

4.5 TRIASSIC (2934 m - TD AT 3320 m)

TRIASSIC GREY BEDS (2934 - 2980 m)

The Triassic Grey Beds were composed of interbedded sandstones, coales, shales and claystones.

The sandstones were made up of clear, occasionally smokey to milky guartz grains which were loose, subangular to subrounded and of fine to coarse size. The sands were poorly to moderately well sorted and included traces of mica, pyrite, kaolinite and carbonaceous material.

Coaly shales grading to coal were described as dark grey to shiny black, friable to moderately hard, brittle and blocky containing wood fragments and pyrite.

The claystones were light brown to grey brown, occasionally red brown, soft to firm, sticky, non calcaveous, micromicaceous, carbonaceous and very silty.

The Grey Beds were of Middle to Late Rhaetian age.

TRIASSIC RED BEDS (2980 m - T.D. 3320 m)

Like the overlying interval this sequence was made up of interbedded sandstones and claystones but with a decreasing sand content towards the base. A few limestone stringers were also present.

The sandstones were similar to the sands of the grey beds, but were partly angular and less carbonaceous and micaceous.

The claystones were of more reddish appearance, described as moderate brown to red brown, soft to moderately hard, occasionally stickey, subfissile, silty or very silty, micromicaceous and slightly to very calcareous.

From appx. 3250 m downwards the claystones became dominant and were described as moderate to dark yellow brown or grey brown to medium dark grey. They were fine to hard, blocky, slightly silty, micromicaceous and moderately to very calcareous.

The limestones were either light orange to light brown, moderately hard to hard, blocky and crypto-crystalline or grey white, soft to firm, slightly argillaceous and micro-cryptocrystalline.

The Red Beds ranged in age from (possibly) Norian to Early Rhaetian into Middle to Late Rhaetian.

5 HYDROCARBON SHOWS

The evaluation of hydrocarbon shows at the wellsite was carried out in a conventional manner. Below 774 m a complete hydrocarbon gas detector (50 units = 1%) was operational together with a gas chromatograph for automatic and continous gas analysis, recorded as ppm by volume of C1 through C5,.

Hydrocarbon shows in ditch cuttings were evaluated according to Norsk Hydro's Wellsite Geologist's manual.

5.1 Gas Records

361 - 780 m

This interval was drilled with return to sea bed.

730 - 1517 m

The gas readings in this interval ranged from 0.15 - 1.7% methane only. The lithology was mainly Tertiary claystones. The pore pressure increased from 1.03 to 1.20 rd from 1250. This caused an increase in gas readings from ca 1280 m and possible connection gases were observed at 1365 and 1394 m. Mud density was increased from 1.20 - 1.25 rd at 1403 m.

1517 - 2106 m

This interval represents claystones of the Sklinna Group, the Skomvær Group and the top of the Flatøy Group. The gas readings varied from 0.06 - 0.8% C1-C3 with traces of C4. A gas peak of 7% at 1717 m corresponds to the top of the Skomvær Group. The pore pressure increased to 1.54

rd through the section which resulted in repeated increases of the mudweight to a final value of 1.60 rd from 1754 m. From ca. 1950 - 2000 m the pore pressure dropped from 1.60 to 1.40 below 2100 m.

2106 - 2230 m

The gas readings in this interval of Upper Cretaceous claystones varied between 0.06 - 0.23% C1 - C3 with traces of C4. The mudweight vas kept at 1.60 rd and the pore pressure was estiamted to be 1.40 rd.

2230 - 2550 m

Upper Cretaceous claystones are represented in this interval. The gas readings range from 0.05 - 0.13% C1 - NC4. The mudweight was 1.60 rd and the pore pressure was 1.40 rd.

2550 - 2569 m

This interval represents the uppermost section of the 8 3/8" hole. Only 0.01 - 0.04% C1 was recorded. The lithology comprises claystones of the Finnøy Group. The mudweight was 1.48 rd and the pore pressure was estimated to be 1.34 rd. At 2569 m there was a trip gas of 0.14 % above a background of 0.02 %.

2569 - 2653 m

In this section the gas varied from 0.01 - 0.17% C1 - C3. The lithology comprised claystones and marly claystones of the Finnøy Group and shales of the Upper Jurassic Nesna Formation. The pore pressure was estimated to be 1.39 rd and the mudweight was 1.48 rd.

2653 - 2742 m

This interval represents the Engelvær Formation, the Mid Jurassic sequence and the top of the Leka Formation. The Engelvær Fm comprised claystones with minor hydrocarbon bearing sandstones and siltstones. The Mid Jurassic sequence comprised gas bearing sandstone. The Mid Jurassic Sequence and parts of the Leka Formation were cored. The gas level in the section varied, with a maximum of 14.5% and a minimum of 0.01% C1 - C4. The maximum value is from the circulation of bottoms up after a drilling break at the top of the Sand II of the Mid Jurassic Sequence.

The mudweight was kept at 1.48 rd and the pore pressure was estimated to be 1.39 rd.

2742 - 2775 m

The uncored section of the Leka and the very top of the Aldra Formation are represented in this interval. The lithology consisted of shaly claystones interbedded with sandstones. The gas values ranged from 0.04 - 0.6% in the Leka Formation with a marked increase to 2.84 - 18.5% in the three meters of the Aldra sandstones. The mudweight was 1.98 and the pore pressure 1.39 rd.

2775 - 2916 m

This interval represents the cored sections of the Aldra and Hitra Formation including the main oil bearing reservoir. The lithology comprises mainly sandstones with minor claystones. The background gas varied between 0.05 and 4.1% through the interval. The mudweight was 1.48 rd and the pore pressure estimated to be 1.39 rd in the section.

2916 - 2994 m

Generally low gas values were recorded in this interval. The gas values varied between 0.02 - 0.3% C1 - C4. The interval includes water bearing sandstones of the Hitra Formation and alternating Triassic claystones and sandstones.

The pore pressure was 1.39 rd and the mudweight was 1.48 rd in the section.

2994 - 3029 m

Very low values are characteristic for this interval, only ranging from 0.02 - 0.05% methane only. The lithology comprises alternating sandstones and claystones of Triassic age. The mudweight was kept at 1.48 rd and the pore pressure was estimated to be 1.39 rd.

3029 - 3320 m (TD)

The lowermost section of the well comprises alternating Triassic claystones and sandstones with a decreasing sandstone content from ca. 3220 m. The gas values were very low, only ranging from 0.01 - 0.07% C1-C3. No changes were observed in the pore pressure through the section and the mud was kept at 1.48 rd.

5.2 Oil Stain and Fluorescence

2673 - 2686.9 m

Only poor shows were observed in this interval, which represents very fine to finegrained sandstones in core number 1. A very weak petroleum odour was noticed, but

no direct flourescence was observed. The cut showed a very weak to instant streaming blue white fluorescence, or a very slightly weak, yellow white fluorescence. No visible cut was observed. A yellow white fluorescent residue was not visible under white light.

2701 - 2718.8 m

In this interval, representing core number 2, shows were observed in very fine to medium grained sandstones and occasionally in siltstones. They carried a none to very weak petroleum odour together with none to traces of a light straw coloured oil stain and speckled to homogenous moderate to bright blue white, occasionally yellow white flourescence. The none visible cut had a slow to instantly streaming weak to strong bright blue white to yellow white fluorescence. The residue which had a dull to bright blue white to yellow white fluorescence was not visible under white light.

2771 - 2775 m

Shows were observed in very fine to fine grained sandstone cuttings in this interval. They carried a light brown oil stain with a strong bright yellow direct fluorescence. The very weak light straw coloured cut showed a strong fast streaming yellow white fluorescence. The weak light straw coloured residue showed a strong yellow white fluorescence.

2775 - 2855.2 m

This section had shows in very fine to fine and occasionally coarse sandstones. The interval covers cores number 4 to 7 and parts of number 8. A fair to strong petroleum odour together with a fair to excellent

uniform light brown oil stain was reported. They had a good to excellent uniform bright yellow to yellow white direct fluorescence. The fluorescent cut was strong, fast to instant streaming, although occasionally blooming and yellow white. The visible cut was light straw coloured. The dark straw to straw coloured residue showed a strong, yellow white fluorescence.

2856.3 - 2869.4 m

Parts of core no 8 in addition to core number 9 are represented in this interval. The shows were reported from very fine to coarse grained sandstones. They had none to a very weak petroleum odour with none to rare patchy and local pale yellow brown oil stain., Generally no direct fluorescence was observed although occasionally a weak blue to blue white direct fluorescence occured. The cut showed generally a very weak blue white fluorescence, but was not visible under normal light. A very weak to weak blue white fluorescent crush cut was reported. No residue was observed under normal light although a pale yellow to blue yellow fluorescence did occur under ultraviolet light.

6 CORING

A total of 11 cores were taken from 2673 m to 2915.5 m through the Engelvær Formation, the Middle Jurassic sequence and the Leka, Aldra and Hitra Formations. See Table 2 below and Core Reports (Appendix 1) for details.

6.1 CONVENTIONAL CORING

Table 2: Conventional cores, 6407/7-2

No.	Interval Cut	% Recovered	Interval Rec.
1	2673.00-2688.00	92.3	2673.00-2686.85
2	2701.00-2723.00	81.1	2701.00-2718-85
3	2723.00-2742.00	87.1	2723.00-2739.55
4	2775.00-2791.50	73.0	2775.00-2787.05
5	2791.00-2804.50	90.0	2791.50-2803.20
6	2804.50-2823.50	100.00	2804.50-2823.50
7	2823.50-2841.50	97.5	2823.50-2841.05
8	2841.50-2869.50	99.6	2841.50-2869.40
9	2869.50-2879.00	3.1	2869.50-2869.80
10	2879.00-2896.00	100.00	2879.00-2896.00
11	2896.00-2915.50	90.7	2896.00-2913.50

6.2 SIDEWALL CORING

Sidewall cores were taken from below the 13 3/8" casing at 1708 m down to 3315 m.

A total of 120 bullets were requested in 3 runs. 104 were fired, 16 misfired, 20 were lost, 4 were empty and 80 were accepted by the operator.

Full description of all sidewall cores can be found in Appendix II, and gross lithology is reported on the completion log.

7 WIRELINE AND MWD LOGGING

7.1 WIRELINE LOGS

The following is a summary of the wireline logs run in well 6407/7-2 and shows dates, logged intervals and run number for each log.

Log type	Date	Logged interval (m RKB)	Run no
DIL/LSS/GR/SP	07.12.86	1501 -2548 m	1A
DIT-E/LSS/MSFL/ GR/SP	29.-30.12.86	2533 -3320 m	2A
DLL/SP	32.12.86-01.01.87	2600 -3000 m	2A
LDL/CNL/NGT	30.12.86	2533 -3321 m	2A
SHDT/GR	07.12.86	1501 -2550 m	1A
SHDT/GR	01.01.87	2533 -3320.5 m	2B
RFT/GR	30.12.86	2698.5-2884 m	2A
RFT/GR	31.12.86	2701.5-2925 m	2B
RFT/GR	31.12.86	2816.5-3093 m	2C
CBL/VDL	07.12.86	435 -1501 m	1A
CBL/VDL	05.01.87	1300 -3248 m	2B
CET/GR	05.01.-06.01.87	2491 -3184 m	2A
VSP	05.01.87	1080 -3260 m	2A
CST/GR	07.12.86	1708 -2550 m	1A
CST/GR	01.01.87	2553 -3315 m	2B
CST/GR	01.01.87	2553 -3315 m	2C

7.2 MWD LOGS

An MWD service (Teleco) yielding GR/Resistivity data was run in the following sections: 361 - 2520 m and 3025 - 3305 m.

An RLL tool (NL-Baroid) with GR/EWR (Resistivity) sensors was run over the interval 2608 - 2996 m.

7.3 BOTTOM HOLE TEMPERATURES FROM LOGS

Table 3 below (page 32) gives a summary of the bottom hole temperatures measured from wireline logs.

HYDRO

Well: 6407/7-2

Bottom hole temperatures from logs

Log	Run no.	Loggers depth (mRKB)	Recorded temperatures (°C) T_1	T_2	T_3	Time since circ.stopped (hrs)	Circ.time	Remarks
DIL/LSS	1A	2551	74.5	74.5	74.5	8 hrs	1/2 hr	
SHDT/GR	1A	2551	82	82	82	12 hrs 5 min	1/2 hr	
CBL/VDL	1A	1501	50	50	51	20hrs 45min	1/2 hr	Tool not on bottom
DIT-E/ LSS/MSFL /CAL	2A	3323	99	99	100	8 hrs 15 min	1hr 30m	
LDL/CNL /NGT/CAL	2A	3323	110	110	111	15hrs 05min	1hr 30m	
DLL/SP	~~2A~~	~~3000~~	~~102~~	~~102~~	~~102.5~~	~~20hrs 45min~~	~~1hr 20m~~	Tool not on bottom
SHDT/GR	2B	3321	115	115	116	24hrs 20min	1hr 20m	

2869,8 - 2878,8 ≙ 109°C

2801,5 - 2819,5 ≙ 111,2°C

ca 110°C i reservoaret.

Well: 6407/7-2 Page:

Checked: KOH
Date: 30.07.87

8 SPECIAL STUDIES

The biostratigraphical evaluation of the well 6407/7-2 was carried out by Stratlab a.s at their laboratories in Skjetten, Norway. The results of these analyses are contained in the report "Well 6407/7-2 Biostratigraphy".

The petrophysical evaluation of the well is presented in the Norsk Hydro report entitled "Petrophysical Evaluation Report, Well 6407/7-2."

The production test results are found in the Norsk Hydro report: "Production test evaluation report, 6407/7-2, Haltenbanken".

PVT-analysis of segregated RFT-sample is reported in the Norsk Hydro report: "RFT sample from well 6407/7-2 - Well stream composition and PVT relation".

APPENDIX I

CORE DESCRIPTION

(CORES 1 - 11)

HYDRO

NB! Core description are based on spot samples every 1 m from core

Well no.	Core report	Core no.
6407/7–2		1

Interval	Area	Cut	Date
2673–2678 m	Haltenbanken	2673–2688 m	16.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2673–2686,85 m (92.3%)	Kalgraff/Dons

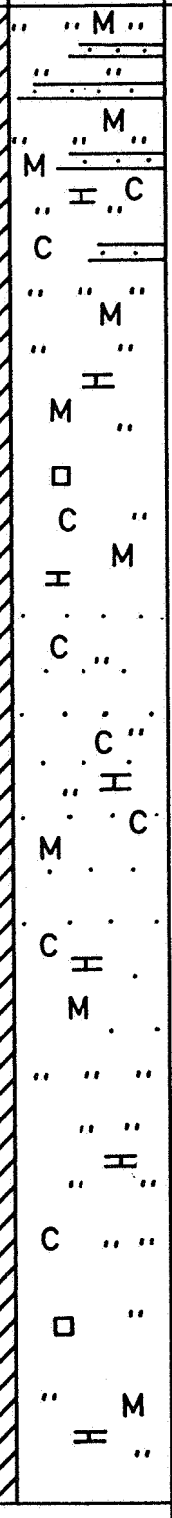
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2673				**Sst:** m gy, trnsp - transl Qtz, gen v f, subang - subrnd, mod srtd, gen wh cmt (kas), tr calc, v arg mtx, i.p. v carb arg mtx, v mic, v carb, tr lt grn min, tr bio-turb, rr rpl, no vis por	Show: v wk pet odour, no dir flu, v weak mod - inst strmg bl wh flu cut, also v sl weak yel wh flu cut, no vis cut, yel wh flu resd, no vis resd
2674				**Sst** gen a/a w/mcr **Slst** ∈ incr arg	
2675					
2676				**Sst:** m gy - dusky yel brn, trnsp-transl Qtz, vf, subang - subrnd, pr - mod srtd, tr calc, loc v arg, loc v slty grd **Slst,** carb, tr lt grn min, no vis por	Show a/a
2677					
2678					

HYDRO

NB! Core description are based on spot samples every 1 m from core

Well no.	Core report	Core no.
6407/7–2		1

Interval	Area	Cut	Date
2678–2683 m	Haltenbanken	2673–2688 m	16.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2673–2686,85 m (92.3%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2678				**Slst:** dusky yel brn, mod hd, fis, v arg, gen v f sndy grd **Sst** in lam, v mic, v carb, calc	Gas bleeding, no dir flu, v wk slow strmg yel wh flu cut, no vis cut, v wk dull wh yel flu resd no vis resd
2679				**Sh/Clyst:** dusky yel brn - brn blk, mod hd, fis, v carb, v mic, tr pyr, vf sdy, v slty grdg **Slst**, calc	
2680				**Sst:** dusky yel brn, trnsp - transl Qtz, vf, subang - subrnd, pr mod srtd, calc cmt, v slty, v arg, v mic, v carb, no vis por	Show a/a
2681				**Sh/Clyst** a/a	
2682					
2683					

HYDRO

NB! Core description are based on spot samples every 1 m from core

Well no.	Core report	Core no.
6407/7–2		1

Interval	Area	Cut	Date
2683–2688 m	Haltenbanken	2673–2688 m	16.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2673–2686,85 m (92.3%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2683				**Slst:** dusky yel brn - brn blk, mod hd, subfis - fis, v carb, v arg loc grd **Sh** also v sdy grd **Sst** v f, v mic tr pyr, calc, bur	No dir flu, v wk slo strmg dull yel wh flu cut, no vis cut v wk dull orng flu resd no vis resd
2684				**Slst** a/a	
2685					
2686				**Sh/Clyst:** brn blk, gy blk, sft - mod hd, blky, v carb, loc slty, loc sdy vf, sl calc	Show a/a
			2686,85 m		
2687	Not recovered				
2688			2688,0 m		

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7-2		2

Interval	Area	Cut	Date
2701–2706 m	Haltenbanken	2701–2723 m	17.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2701–2718,85 m (81.1%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2701				**Clyst:** blk - brn blk, mod hd, fis grd **Sh,** carb, v mic, tr pyr nod (2–5 mm) and xls, non calc	
2702				**Sst:** lt olv gy, trnsp - trnsl Qtz, f - m, sub-ang - subrnd, mod srtd, fri, sl calc cmt, occ tr v lt gy kao ? cmt, mic occ v mic lam, tr grn + dk gy min + rock frag, tr rnd **Clyst** intra - clas, occ arg lam, mod - pr vis por	wk pet odour, tr lt straw stn, wk spec bl wh flu, fast - inst strmg mod - bri yel wh - bl wh flu cut, no vis cut dull - bri yel wh flu resd, no vis resd
2703				**Sst:** pred f, incr mic and arg lam, tr coal frag, pr vis por else a/a	Shows gen a/a, but wk, slo strmg cut
2704				**Sst:** pred f a/a, less bdg w/sdy **Clyst** a/a, **Clyst** slickd and strng ly brec	No odour, no stn, spec - hosn wh occ bri bl wh flu,slo strmg bl wh flu cut, no irs cut, dull - bri blu wh flu resd, no vis resd
2705				**Sst:** pred vf, also f, incr arg lam bcm vf lam, non calc, pr vis por, else a/a sst se-ems brec	Shows a/a
2706					

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7–2		2

Interval	Area	Cut	Date
2706–2711 m	Haltenbanken	2701–2723 m	17.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2701–2718,85 m (81.1%)	Dons/Kalgraff

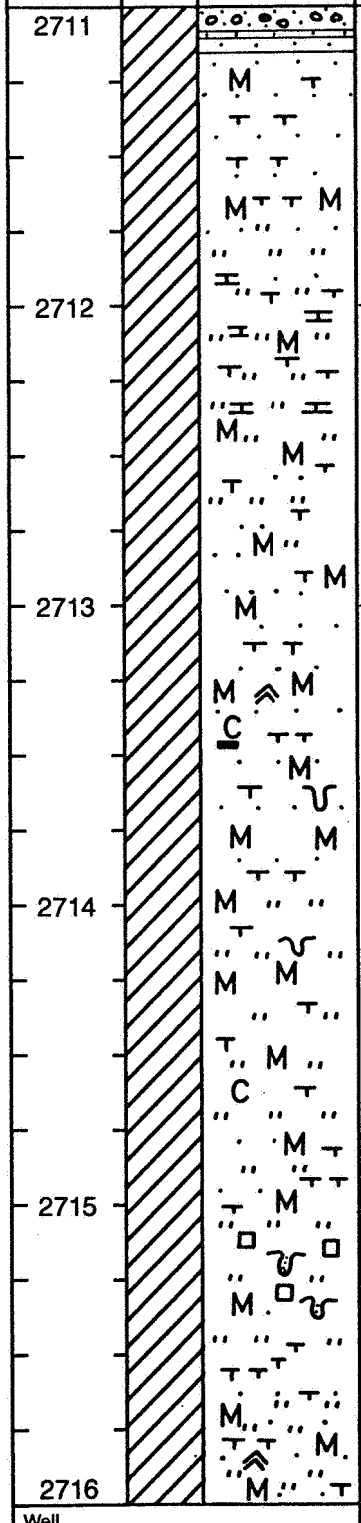
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2706				**Sst:** dk gy - lt olv gy, trnsp - trnsl Qtz pred vf, tr f, subang - subrnd, mod srtd, mod hd, non calc, silic cmt ?, v mic, abdt org lam, dk grn min + gy rock frag, pr vis por in sdy lam, no vis por in arg/ mic lam	No pet odour or stn, spec - hom bri bl wh flu along sdy lam, slo strmg bri bl wh flu cut, no vis cut, bri - dull bl wh flu resd, no vis resd Shows a/a
2707				**Sst:** gen a/a, tr m, abdt dk grn rock frag, rnd 1 mm, sl calc cmt	
2708				**Sst:** gen as 2707 m	Shows: spotty flu along sdy lam, else a/a
2709				**Sst:** as 2706 m	Shows: gen a/a along sdy lam
2710				**Sst:** gy - brn blk, trnsp - trnsl Qtz, vf - slt, subang, mod srtd, mod hd, silic cmt, tr pyr, v arg grd sdy **Clyst,** v mic, vf lam, no vis por	v wk shows tr flu a/a tr flu cut a/a tr flu resd a/a
				Sst a/a intbd w/pbl **cgl** in sdy mtx, f - m and **Clyst** as 2701 m. Clyst is slickd, tr bnr, sl calc cmt	wk pet odour, spec bri yel wh - hom dull yel wh flu, sl strmg bl wh flu cut, else a/a
2711					

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7–2		2

Interval	Area	Cut	Date
2711–2716 m	Haltenbanken	2701–2723 m	17.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2701–2718,85 m (81.1%)	Dons/Kalgraff



Depths	Lithological descriptions	Shows
2712	**Slst:** dk gy - blk, hd, vf lam, v mic, sdy, arg, carb/**Coal**, v calc cmt, no vis por Dull orng min flu	No shows
2713	**Sst:** lt olv gy - dk gy, trnsp - trnsl Qtz, vf, subang - subrnd, mod srtd, hd, silic cmt, sl arg, loc v arg lam, tr dk grn min, tr carb frag, v mic, vf lam, bioturb, rpl, pr vis por	No pet odour, no stn, hom bri bl wh - yel wh flu in sdy lam, slo strmg bl wh flu cut, no vis cut, bl wh flu resd, no vis resd
2714	**Slst:** gen a/a intbd w/vf lam **Sst** a/a bioturb	tr Shows a/a in sdy lam
2715	Slst: a/a w desin pyr patches, tr biotrub w/vf sst infill	tr pr Shows a/a in sdy lam
2716	**Sst** interlam w/**Slst** a/a rpl lam, non calc	

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7–2		2

Interval	Area	Cut	Date
2716–2721 m	Haltenbanken	2701–2723 m	17.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2701–2718,85 m (81.1%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2716					
2717				**Slst:** gy blk - brn blk, hd, vf lam, v mic, v arg, carb/coal frag, vf lam of vf **Sst,** non calc, no vis por	No Shows
2718				**Slst:** a/a, incr sdy lam, occ mud intra clas	tr wk Shows as 2713 m in sdy lam
			2718,85 m	**Sst:** lt olv gy, trnsp - trnsl Qtz, vf, sub-ang - subrnd, mod srtd, fri, sl occ v calc, sl mic, tr arg, tr carb, tr grn min, mod vis por	wk pet odour, no stn, hom mod yel wh - bl wh flu, bri bl wh - yel wh mod strmg flu cut, no vis cut, bri bl wh flu resd, no vis resd
2719					
2720		Not recovered			
2721					

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7–2		2

Interval	Area	Cut	Date
2721–2723 m	Haltenbanken	2701–2723 m	17.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2701–2718,85 m (81.1%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2721	Not recovered				
2722					
2723			2723		

HYDRO

Well no.	Core report	Core no.
6407/7–2		3

Interval	Area	Cut	Date
2723–2728 m	Haltenbanken	2723–2742 m	18.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2723–2739,55 m (87.1%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2723				**Sst:** lt gy, trnsp - transl Qtz, vf - f, sub-ang - subrnd, w srtd, fri, calc cmt, tr carb, tr mic, rr cly lam, rr rpl, no vis por	Wk pet odour, no dir flu, v wk slo strmg wh bl flu cut, no vis cut wk dull wh flu resd
2724				**Sst/Slst:** dusky yel brn, trnsp - trnsl Qtz, vf, subang - subrnd, pr srtd, v carb, v arg, def, bioturb, gen v slty grd **Slst,** no vis por	No show
2725				**Sst:** dk gy, trnsp - trnsl Qtz, vf - f, pred f, subang - subrnd, mod srtd, fri - mod had, sl calc cmt, v com dk grn min, com mic in lam, tr carb, no vis por	No show
2726				**Sst:** pred f a/a w/incr arg lam, rr carb lam, else a/a	
2727					
2728					

HYDRO

Well no.	Core report	Core no.
6407/7–2		3

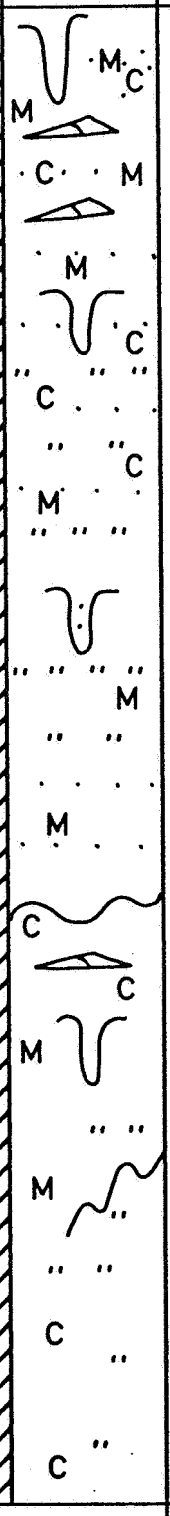
Interval	Area	Cut	Date
2728–2733 m	Haltenbanken	2723–2742 m	18.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2723–2739,55 m (87.1%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2728		C T M		**Sst:** m dk gy trnsp - trnsl Qtz, gen vf, subang - subrnd, mod - pr srtd, hd calc cmt, tr mic, lam sh/cly lam, com rpl lam, no vis por	Wk pet odour, no dir flu, v wk sl strmg yel wh flu cut, no vis cut, dull wh flu resd, no vis resd
		C T M			
2729		M C		**Clyst:** dusky yel brn, brn blk, frm - mod hd, fis, v carb, v mic (pap sh) sl - no calc	
		M C		**Sst** gen a/a w/bioturb, rpl lam,l x strat, tr pbls	
		M C T			
		M C			
		M			
2730		C			
		C			
		M		**Sst** a/a vf, v arg, calc cmt carb, lam sh, v slty grd **Slst,** bur, def, slick, no vis por	No show
		C			
2731		M			
2732				**Sst/Slst:** dusky yel brn, trnsp - trnsl Qtz gen vf, subang - subrnd, pr srtd, mod hd sl calc cmt, v arg, loc cln **Sst** lens (len), v mic, bcmg slty grd **Slst**, com slick, no vis por	No show
2733					

HYDRO

Well no.	Core report	Core no.
6407/7–2		3

Interval	Area	Cut	Date
2733–2738 m	Haltenbanken	2723–2742 m	18.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2723–2739,55 m (87.1%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2733				**Sst:** lt gy - dusky yel brn, trnsp - trnsl Qtz, gen vf, subang - subrnd, pr - w srtd, fri - mod hd gen calc cmt, clr **Sst** rpl in pr srtd **Sst** mtx, bioturb len ¢ flazer bdg?, loc v slty, mic, carb, arg, no vis por	No shows
2734					
2735				**Slst:** dusky yel brn, mod hd, blky - sub-fis, v mic, v carb, slick, gen vf sdy grd **Sst,** ang wh frags (kao), calc, bioturb	
2736				Contorted ¢ slick len bdg	No shows
2737				**Sh** w/len bdg: brn blk, mod hd, fis bcmg blky, v carb, v slty, bcmg v f sdy in len lens, slick non calc	
2738					

HYDRO

Well no.	Core report	Core no.
6407/7–2		3

Interval	Area	Cut	Date
2738–2742 m	Haltenbanken	2723–2742 m	18.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2723–2739,55 m (87.1%)	Kalgraff/Dons

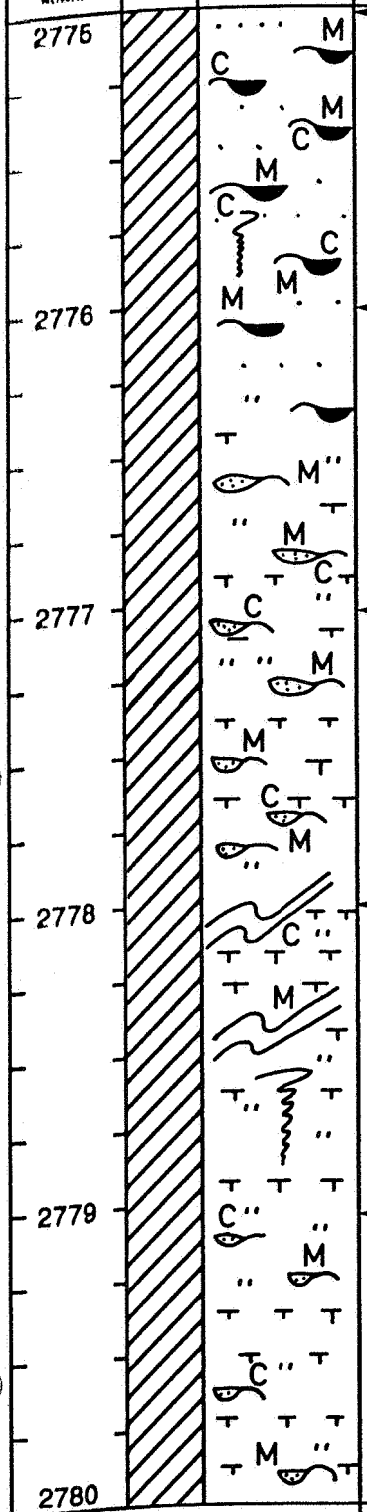
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2738		M, C, M, C, M		**Sh w/len ∉ flazer bdg** brn blk, mod hd, fis, blky, v carb, v slty, rr v f sdy slick, slty, len and flazer bdg, gen micromic, mic, non calc	No shows
2739			2739,55 m		
2740		Not recovered			
2741					
2742			2742,0 m		

HYDRO

NB! All descriptions are based on chips from every 1 m of core

Well no	Core report	Core no.
6407/7-2		4

Interval	Area	Cut	Date
2775–2780 m	Haltenbanken	2775–2791,5 m	19.12.86
Scale 1:25	**Well R.K.B.** 23 m	**Recovery** 2775–2787,05 m (73%)	**Geologist** Kalgraff/Dons



Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
				Sst: pl yel brn - lt olv gy, clr - mlky Qtz g, gen vf, subang - subrnd, w srtd, fri - mod hd, tr silic cmt, tr yel wh cmt, mic in lam, tr mic in hom pt, tr carb, tr bioturb mnr **Sh** lam ℓ drapes i.e. flazer bdg, **Sh** incr downward grd len bdg below 2776 m gen pr vis por on **Sst** len	Fnt pet odour, fain lam - uni v lt brn oil stn, excell uni strng wh bl dir flu, (on sst len), no vis cut, gd fast - inst strmg wh bl flu cut, strng wh vis flu resd, no vis resd
				Sh: brn blk, dusky yel brn, mod hd, fis, carb, mic, gen slty grd **Slst** also com **Sst** len vf, non calc	No show
				Sh/Slst: brn blk, mod hd, blky, subfis, v carb, v mic, gd tr **Sd** vf - crs, tr micro (2 mm) **Sh** ball, contortion, bioturb non calc	
				Sh/Slst: brn blk, mod hd - hd, subfis - fis, v carb, v mic, tr **Sd** in thin len, non calc	

HYDRO

NB! All descriptions are based on chips from every 1 m of core

Well no.	Core report	Core no.
6407/7–2		4

Interval	Area	Cut	Date
2780–2785 m	Haltenbanken	2775–2791,5 m	19.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2775–2787,05 m (73%)	Kalgraff/Dons

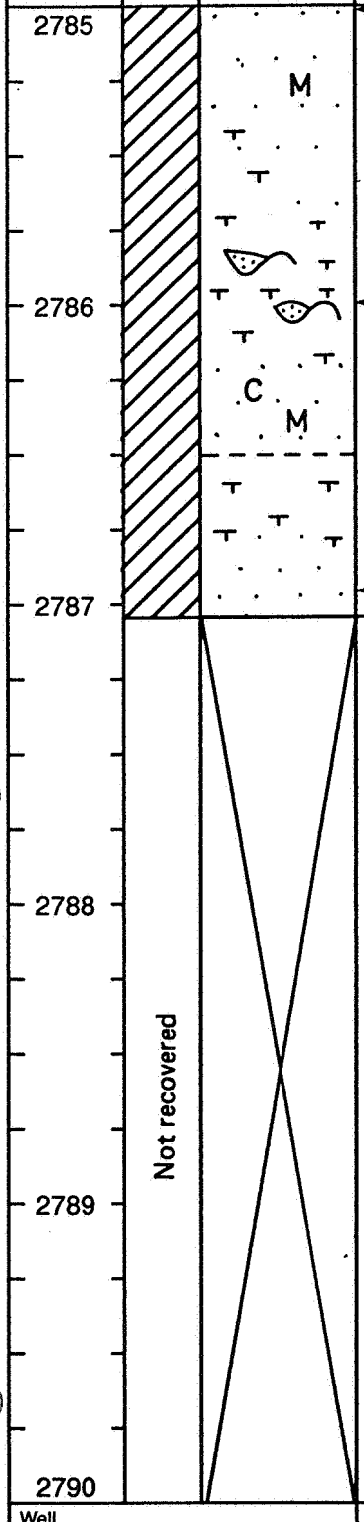
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2780		M M M		**Sst:** pl yel brn, clr - mlky Qtz g, vf - f, gen vf, subang - subrnd, w srtd, fri - mod hd, tr silic cmt, rr tr yel wh cmt, v mic in rpl lam, tr carb, gen tr mic,fair vis por	Fair pet odour, excell uni lt brn oil stn, excell uni bri wh bl dir flu, lt straw vis cut, gd inst - fast strmg wh bl flu cut strng wh bl flu resd, straw vis resd
2781		C			
		M M M C C M		**Sst:** pl yel brn, clr - mlky Qtz g, vf - f, gen f, subang - subrnd, mod - w srtd, fri, tr silic cmt, tr mic, tr carb,fair vis por	Strng pet odour, fair - ex-cell uni - lam lt brn oil stn, excell uni bri yel dir flu, straw - lt amber vis cut, excell inst - fast strmg yel wh flu cut, strng yel wh flu resd, mod straw vis resd
2782		C M M C M C		**Sh** w/**Sst** rpl (len bdg) **Sh:** brn blk, frm - mod hd, fis, v mic, v carb tr len vf sd, subang - subrnd, w srtd, fri, tr mic tr carb, slick, non calc	
2783		M		**Sst:** pl yel brn, clr - mlky Qtz g, vf - m, pred f, ang - subrnd, mod srtd fri, tr silic cmt, tr carb, tr mic, fair - gd vis por	Strng pet odour, fair - ex-cell uni lt brn oil stn, ex-cell uni bri yel dir flu, straw - lt amber vis cut, excell inst - fast strmg yel wh flu cut, strng yel wh flu resd, dk straw vis resd
2784		M		**Sst** a/a vf - f, incr mic lam	
2785		C			

HYDRO

NB! All descriptions are based on chips from every 1 m of core

Well no.	Core report	Core no.
6407/7–2		4

Interval	Area	Cut	Date
2785–2790 m	Haltenbanken	2775–2791,5 m	19.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2775–2787,05 m (73%)	Kalgraff/Dons



Depths	Lithological descriptions	Shows
	Sst: dk yel brn - pl yel brn, clr mlky Qtz g, v f - m, rr crs, gen m, ang - subrnd, mod pr srtd, fri, occ silic cmt, tr mic, tr carb, f mic lam i.p. gd vis por	Strng pet odour, excell uni lt brn oil stn, excell uni bri yel dir flu, gd lt amber vis cut, excell inst - fast strmg bri yel flu cut, strng yel wh flu resd, dk straw vis resd
	Sh w/**Sst** len **Sh:** brn blk, frm - mod hd, fis, v mic, v carb, tr len vf sst, subang - subrnd, w srtd fri, tr mic, tr carb, non calc	On Sst len show a/a
2786,5 m		
	Sh a/a Rubble zone	
2787.05 m	**Sst:** pl yel brn, clr - mlky Qtz g, vf - f, subang - subrnd, w srtd, fri, tr silic cmt rr tr wh yel cmt, tr carb occ mic in lam, fair vis por	Fair pet odour, excell uni lt brn oil stn, excell uni bri yel dir, flu, straw - vis cut, excell inst - fast strmg bri yel flu cut, strng yel orng flu resd, dk straw vis resd

HYDRO

Well no.	Core report	Core no.
6407/7–2		4

Interval	Area	Cut	Date
2790–2795 m	Haltenbanken	2775–2791,5 m	19.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2775–2787,05 m (73%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2790	Not recovered				
2791			2791,5 m		
2792					
2793					
2794					
2795					

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7–2		5

Interval	Area	Cut	Date
2791–2796 m	Haltenbanken	2791,5–2804,5 m	20.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2791,5–2803,20 m (90%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2791			2791,5 m	**Sst:** pl yel brn - yel gy, trnsl - trnsp Qtz, vf - f, subrnd, w srtd, fri, non calc, sl silic cmt, tr mic, rr carb, mod vis por	Strng pet odour, uni lt straw stn, uni 100% strng bri yel - yel wh dir flu, strng fast - inst strmg bri yel flu cut, v lt brn - lt yel brn vis cut, strng bri yel flu resd, lt brn vis resd
2792				**Sst:** gen a/a, pred vf w/mud drapings, len bdg, slick, flazer bdg	
2793				**Sst:** gen a/a, pred len bdg w/ **Sh/Slst:** drapings and mic lam	Shows a/a
				Sh/Slst: dusky yel brn, mod hd subfis - fis, v mic, carb, slty - v f sdy, non calc	
2794				**Sst:** gen a/a, pred hom, abdt len bdg w/ **Sh/Slst** a/a and occ carb/coal frag	Shows a/a
2795				**Sst:** gen a/a, pred hom w/tr mic, **Sh** and carb/coal lam and strk	Shows a/a
2796					Shows on Sst as below

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7–2		5

Interval	Area	Cut	Date
2796–2801 m	Haltenbanken	2791,5–2804,5 m	20.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2791,5–2803,20 m (90%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2796				**Sst:** yel yg - lt gy, trnsp - trnsl Qtz, f - m, subrnd, w srtd, hd - mod hd, loc v calc cmt, silic cmt, tr carb, Sh mic lam, loc bioturb, vns, pr vis por	Mod pet odour, pchy lt straw oil stn, pchy strng - mod bri yel - yel wh dir flu, slo - fast strmg bri yel flu cut, v lt brn - yel brn vis cut, bri yel flu resd, tr lt brn vis resd
2797				**Sst:** m dk gy - olv gy occ pl yel brn, gen vf - slt loc f in lam, subang - subrnd, pr loc mod srtd, hd - mod hd, loc v calc cmt, tr silic cmt, tr carb, v mic,wry vf lam, rpl lam, gen pr - no vis por,mod por in sdy lam	Gen pr shows. No shows in **Slst** Gd shows in **Sst** lam
2798				**Sst:** gen a/a, incr cln f - vf sdy lam, mod vis por	Approx 60% gd shows in sdy lam No shows in **Slst/Sh** drapings
2799				**Sst:** gen vf - slt a/a v calc cmt w/brn calc vns	gen no shows
2800				**Slst:** brn gy, mod hd, loc fis, arg in pt, sdy - v sdy grd vf **Sst** in pts, pr srtd, arg, v mic, loc carb/coal frag, non calc, no vis por	gen no shows. loc tr pr oil shows a/a
2801					Excell shows as below

HYDRO

NB! Core described from corechips.
Core taken in glassfibre innerbarrell.
Corechips depths

Well no.	Core report	Core no.
6407/7–2		5

Interval	Area	Cut	Date
2801–2806 m	Haltenbanken	2791,5–2804,5 m	20.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2791,5–2803,20 m (90%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2801		M C		**Sst:** pl yel brn - yel gy, trnsp - trnsl Qtz, f - vf, subrnd, w srtd, fri, non calc, sl silic cmt, tr mic, tr - rr carb frag, mod vis por	Strng pet odour, uni lt straw oil stn, uni 100% strng bri yel - yel wh dir flu, strng fast - inst strmg bri yel flu cut, v lt brn - lt yel brn vis cut, strng bri yel flu resd, v lt brn vis resd
2802		M		**Sst:** gen a/a, rr mic lam	
2803		M C	2802,92 m sealed sample 2803,20	**Sst:** pred f a/a, fri - lse, gd vis por	Excell. Shows a/a
2804	Not recovered		2804,50 m		
2805					
2806					

Well	Core report	Core no.
6407/7–2	3 of 3	5

HYDRO

NB! Core description are based on core chips every 1 m of core

Well no.	Core report	Core no.
6407/7–2		6

Interval	Area	Cut	Date
2804–2809 m	Haltenbanken	2804,5–2823,5 m	20.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2804,5–2823,50 m (100%)	Kalgraff/Dons

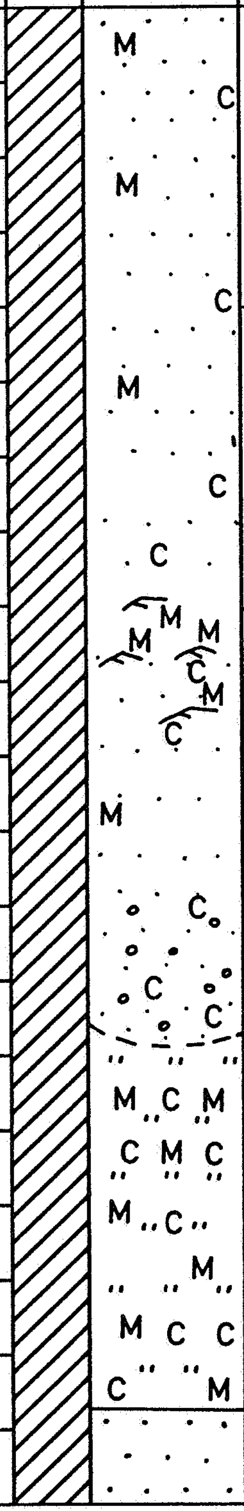
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2804			2804,5 m	**Sst:** lt gy, clr - mlky Qtz g, f, subang - subrnd, mod srtd, hd, calc cmt, v mic in lam, v carb in lam **Sh** drapes, no vis por	No show
2805		C M		**Sst:** mod yel brn, clr - mlky Qtz g, vf - f, gen f, subang - subrnd, mod - w srtd, fri - mod hd, non calc, tr silic, tr yel wh cmt, tr mic loc v mic in lam, tr carb, pr - fair vis por	Fair pet odour, fair - ex-cell uni v lt brn oil stn, ex-cell uni bri yel dir flu, straw vis cut, gd fast - inst strmg yel wh flu cut, strng yel wh flu resd, lt brn vis resd
2806		M M C C M M		**Slst:** dusky yel brn, hd, fis, v mic, v carb, loc v sdy vf grd **Sst,** non calc	No show
2807		M C M C		**Sst:** mod yel brn, clr - mlky Qtz g, vf - f, subang - subrnd, mod srtd, mod hd, tr silic cmt, tr yel wh cmt (kao?), loc v carb in lam (poss on lrg forsets), also v mic on same, no - fair vis por	Gd pet odour, excell uni v lt brn oil stn, excell uni bri yel dir flu, straw - lt straw vis cut, excell fast - inst strmg yel wh flu cut, strng yel wh flu resd, lt brn vis resd
2808		M C M C			
2809					

HYDRO

NB! Core description are based on core chips every 1 m of core

Well no.	Core report	Core no.
6407/7-2		6

Interval	Area	Cut	Date
2809–2814 m	Haltenbanken	2804,5–2823,5 m	20.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2804,5–2823,50 m (100%)	Kalgraff/Dons



Depth scale	Depths	Lithological descriptions	Shows
2809		**Sst:** mod yel brn, clr - mlky Qtz g, f, sub-ang - subrnd, w srtd, fri - mod hd, tr silic cmt, tr yel wh cmt (kao?)	Gd pet odour, excell uni lt brn oil stn, gd uni yel wh dir flu, lt straw vis cut, strng inst - fast strmg wh yel flu cut, strng yel wh flu resd, v lt brn vis resd
2810		**Sst:** mod yel brn, clr - mlky Qtz g, vf - m, tr crs gen m, arg - subrnd, pr - mod srtd, fri - mod hd, tr silic cmt tr yel wh cmt, tr mic, com mic ¢ carb on thin lam poss lam on log scaled x strat, pr vis por	Show gen a/a
2811		**Sst:** lt olv gy, clr - mlky Qtz g, vf, subang - subrnd, w srtd, mod hd, sl silic cmt, sl wh yel cmt, com mic and carb lam on rpl, pr vis por	Show gen a/a
2812		**Sst:** lt brn, clr - mlky Qtz g, m - crs, tr pbly, gen crs, ang - subang, pr - mod srtd,fri - lse, tr silic, tr wh yel cmt, tr mic, tr carb, gd vis por	SAMPLE MUD FLUSHED! Strng pet odour, gd uni lt brn - brn oil stn, pr - fair srtd bri yel dir flu, lt amber vis cut, strng fast strmg yel wh flu cut, strng yel wh flu resd, lt brn vis resd
2813		**Slst:** dusky yel brn, hd, fis, v mic v carb, v arg grd **Sh**, non calc	No show
	2813,70 m	**Sst:** lt brn, clr - mlky Qtz, vf - crs, pred m, ang - subrnd, pr srtd, fri, sl wh yel (kao) tr mic, tr carb, fair gd vis por	Gd pet odour, excell uni lt brn oil stn, excell uni bri yel dir flu, straw vis cut, excell inst - fast strmg yel wh flu cut, yel wh flu resd
2814			

HYDRO

NB! Core description are based on core chips every 1 m of core

Well no.	Core report	Core no.
6407/7–2		6

Interval	Area	Cut	Date
2814–2819 m	Haltenbanken	2804,5–2823,5 m	20.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2804,5–2823,50 m (100%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2814					
				Sst: mod yel brn, clr - mlky Qtz g, gen f, tr m, ang subrnd, mod - w srtd, fri - mod hd, sl silic cmt, sl wh yel cmt, tr mic, tr carb,on forsets v mic, v carb, poss lrg scaled x strat, fair vis por	Strng pet odour, excell uni lt brn oil stn, excell uni bri yel dir flu, straw - lt amber vis cut, excell fast - inst strmg yel wh flu cut, strng yel wh flu resd, dk straw - brn vis resd
2815					
2816				**Sst:** mod yel brn, clr - mlky Qtz g, f - m, gen f, ang - subrnd, mod - pr srtd, silic cmt, tr wh yel cmt, tr mic, tr carb, lse v carb, v mic,fair vis por	Shows a/a
2817				**Sst** a/a bcmg vf - f	Shows a/a
2818				**Sst:** mod yel brn, clr - mlky Qtz g, vf - m, pred f - m, subang - subrnd, w - mod srtd, fri - mod hd, non calc, sl silic, sl wh yel cmt (kao?), tr carb strks, sl mic occ **Sh** lens, fair vis por	Strng pet odour, excell uni lt brn oil stn, excell - gd uni yel wh - bri yel dir flu, straw vis cut, excell fast . strmg yel wh flu cut, strng yel wh flu resd, lt brn vis resd
2819					

HYDRO

NB! Core description are based on core chips every 1 m of core

Well no.	Core report	Core no.
6407/7–2		6

Interval	Area	Cut	Date
2819–2824 m	Haltenbanken	2804,5–2823,5 m	20.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2804,5–2823,50 m (100%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2819				**Sst:** lt brn, clr - mlky Qtz g, vf - crs, tr pbly, pred m - crs, (tr **Sst** intraclas), ang - subrnd, pr srtd, mod hd, gen sl - mod calc, in pt v calc in thin lam, in pt v kao (yel wh cmt), tr mic	Fair pet odour, fair - pr lt brn oil stn, stri bri yel dir flu, straw vis cut, fast strmg yel wh flu cut, strng yel wh flu resd, brn vis resd
2820				**Sst:** lt brn, clr - mlky Qtz g, vf - crs, pred m, ang - subrnd, mod - pr srtd, fri - mod hd, sl calc - calc cmt, tr yel wh (kao) cmt, tr silic cmt?, occ v mic in lam, poss lrg scaled x strat pr vis por	Gd pet odour, fair uni v lt brn oil stn, excell uni strng bri yel dir flu, straw vis cut, excell inst - fast strmg wh yel flu cut, strng yel wh flu resd, dk straw vis resd
2821				**Sst:** lt brn, clr - mlky Qtz g, vf - f, tr m, ang - subrnd, w srtd, fri, tr silic, tr mic tr carb, pr - fair vis por	
2822				**Sst:** mod yel brn, clr - mlky Qtz g, vf - m, pred m, ang - subrnd, mod - pr srtd, fri - mod hd, sl silic cmt, sl yel wh cmt (kao?), v mic in lam v carb in lam, occ gd tr **Coal** strks	Show a/a gen strng pet odour, excell uni lt brn oil stn Strng pet odour, excell uni lt brn oil stn, excell uni strng bri yel dir flu, straw - lt amber vis cut, excell inst - fast strmg yel wh flu cut, strng yel wh flu resd dk straw vis resd
2823			2823,07 m	**Sst** a/a, f - m, gen m	
				Coal: brn blk - blk, hd, brit, shiny blky poss as frags in **Sst** (g)	No show
			2823,34 m	**Sst:** lt gy, clr - mlky Qtz g, gen m, tr crs, ang, mod srtd, v hd, v calc cmt, tr carb, no vis por	Show a/a
			2323,50 m	**Sst** gen a/a gen m, tr crs, non calc	
2824					

Well	Core report	Core no.
6407/7–2	4 of 4	6

HYDRO

NB! Core description are based on corechips.
Core taken in glassfibre innerbarrel.
Corechip depths.

Well no.	Core report	Core no.
6407/7–2		7

Interval	Area	Cut	Date
2823–2828 m	Haltenbanken	2823,5–2841,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2823,5–2841,05 m (97,5%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2823					
			2823,5 m	**Sst:** pl yel brn - olv gy, trnsp - trnsl Qtz, pred vf, tr f, pred subrnd, w srtd, mod hd, non calc, tr silic cmt, cln, tr mic, rr pyr, rr carb, rr turmalin?, len bdg, loc v mic + **Sh** lam w slick, rpl lam, loc **Sh** intra - clas, mod vis por	Mod petr odour, hom lt straw oil stn, uni 100% bri yel wh dir flu, mod slo - fast strmg yel wh flu cut, tr v lt straw vis cut, bri yel flu resd, lt yel brn vis resd
2824					
2825				**Sst:** pl yel brn - lt brn, trnsp - trnsl Qtz, rr rose Qtz, pred m, f - crs, ang - subrnd, pr occ mod srtd, mod hd, non - tr calc cmt, kao loc v kao cmt, tr pyr, tr rock/ Fldsp frag tr mic loc v mic lam, vf lam of **Sh** w vf **Sst/Slst,** rr carb/coal frag, gen pr vis por loc mod vis por	Shows gen a/a mod v lt brn vis cut
2826				**Sst:** gen as 2824 m, pred f, hom, w srtd, tr kao cmt, tr rock/Fldsp frag, mod hd - fri, mod vis por	Shows gen a/a, fast strmg cut mod v lt brn vis cut
2827				**Sst:** gen as 2824 m, pred f - vf, tr kao cmt, len bdg + Sh lam, mod vis por	Shows gen a/a fast strmg cut, mod v lt brn vis cut
				Sh: dusky yel brn, mod hd, fis, v mic, vf lam slty - vf sdy, non calc	
2828					

Well	Core report	Core no.
6407/7–2	1 of 4	7

HYDRO

NB! Core description are based on corechips.
Core taken in glassfibre innerbarrel.
Corechip depths.

Well no.	Core report	Core no.
6407/7–2		7

Interval	Area	Cut	Date
2828–2833 m	Haltenbanken	2823,5–2841,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2823,5–2841,05 m (97,5%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2828		M		**Sst:** pl yel brn, trnsp - trnsl Qtz, pred f, pred subrnd, w srtd, mod hd - fri, non calc, tr silic, tr kao, gen cln, rr mic, rr pyr, rr carb, rr rock/Fldsp frag, loc **Sh** drapings + v mic lam, mod vis por	Mod - gd pet odour, hom lt straw oil stn, uni 100% bri yel wh dir flu, fast - inst strmg yel wh flu cut, gd lt brn vis cut, strng bri yel flu resd, lt yel brn vis resd
		C M			
2829		M		**Sst:** a/a, pred f **Sh:** dusky yel brn - brn blk, mod hd, fis, v mic, slty - vf sdy, non calc, as vf lam in cln **Sst** a/a	
		M			
2830		M		**Sst:** gen a/a, pred m, mod srtd, sl incr kao cmt + rock/Fldsp frag, tr rose Qtz	Shows a/a
2831			2831,0 m Sealed sample 2831,33 m	**Sst:** gen a/a, pred f - m, mod srtd, tr kao cmt, tr rock/Fldsp frag	
		M			
		M			
2832				**Sst:** gen a/a, pred f tr m, mod srtd, incr tr kao cmt, incr flaser bdg	Fair Shows a/a
2833		M			

HYDRO

NB! Core description are based on corechips.
Core taken in glassfibre innerbarrel.
Corechip depths.

Well no.	Core report	Core no.
6407/7–2		7

Interval	Area	Cut	Date
2833–2838 m	Haltenbanken	2823,5–2841,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2823,5–2841,05 m (97,5%)	Dons/Kalgraff

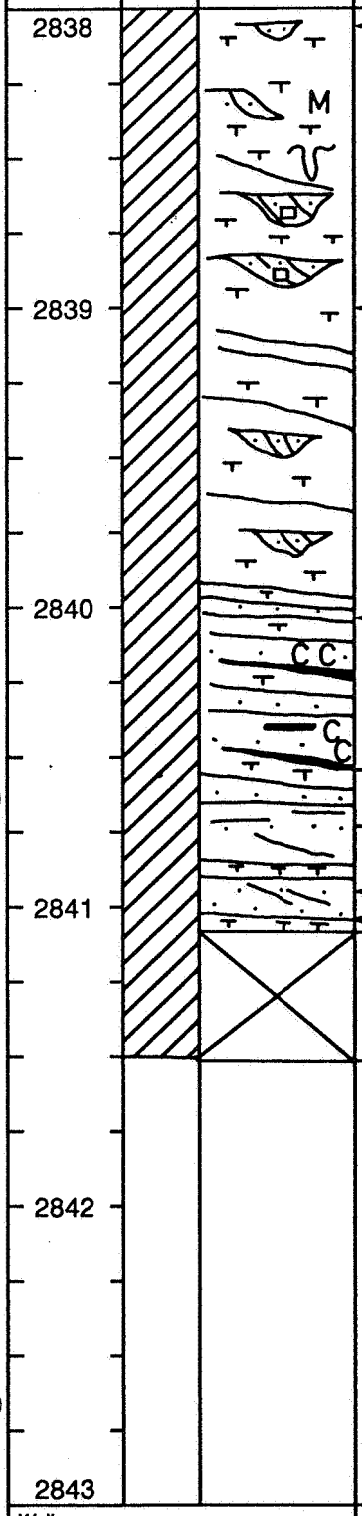
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2833		C M		**Sst:** pl yel - mod yel brn, trnsp - trnsl Qtz, pred m, tr crs, subang - subrnd, mod srtd, fri, non calc, tr silic, tr kao cmt, tr mic, rr carb, rr rock frag, gd - mod vis por	Strng pet odour, excell uni dk straw oil stn, uni 100% bri yel wh dir flu, strng fast - inst strmg yel wh flu cut, gd yel brn vis cut, strng bri yel flu resd, yel brn vis resd
2834		H		**Sst:** pl yel brn, trnsp - trnsl Qtz, pred f, subrnd, mod srtd, mod hd - hd, non calc, tr silic cmt, tr mic, rr carb, rr pyr, abn **Sh** flakes and ang intra - clasts floating in sdy mtx, pr - mod vis por	Fair shows a/a bcmg weaker
2835		H H		**Sst:** gen a/a, pred as len bdg, abdt **Sh** intraclas, v mic lam, loc v calc cmt, hd, pred no vis por	Wk shows a/a loc No shows in calc **Sst**
2836		M M K K		**Sh:** dusky yel brn, mod hd, fis, v mic, vf sdy - slty, loc tr - abn pyr nod intbd/interlam w/ **Sst:** gen a/a, pred vf, abdt kao + silic cmt loc tr pyr cmt, no - tr vis por	Wh - No shows in v tight **Sst**
2837		K M		**Sh:** dusky yel brn, mod hd, v fis, sl slty, micromic, tr vf sdy lam, non calc	No shows
2838				Brec zone	

HYDRO

NB! Core description are based on corechips.
Core taken in glassfibre innerbarrel.
Corechip depths.

Well no.	Core report	Core no.
6407/7–2		7

Interval	Area	Cut	Date
2838–2843 m	Haltenbanken	2823,5–2841,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2823,5–2841,05 m (97,5%)	Dons/Kalgraff



Depths	Lithological descriptions	Shows
	Sh: dusky yel brn, hd, fis, mic, sl slty, non calc, rpl lam w vf **Sst,** sl bioturb	No shows
	Sst: lt gy, vf - f, trnsp - trnsl Qtz, mod - w srtd, hd, silic cmt, kao + pyr cmt, no vis por	
	Sh/Sst/Coal: vf interlam gen descr a/a **Coal:** 1–3 mm discon flks between **Sh/Sst** lam, hd, blky, brit, shny, conch frac	No shows
	Sst: crs grd vf w/incr mic flks/lam, pr srtd, abdt rock frag, gd tr kao cmt, pr vis por	Fair oil shows
	Sh: gen a/a, pred vf lam w/vf **Sst**	

HYDRO

NB! Core description are based on core chips every 1 m of core.

Well no.	Core report	Core no.
6407/7–2		8

Interval	Area	Cut	Date
2841,5–2846 m	Haltenbanken	2841,5–2869,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2841,5–2869,40 m (99,6%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2841			2841,5 m	**Sst:** pl yel brn - lt brn, clr mlky Qtz g, vf - crs, gen m, subang - subrnd, loc ang, por - mod srtd, v hd, non calc, silic cmt, kao cmt, loc v mic in rpl lam and **Sh** drapes, loc v carb, no vis por	Wk - fair pet odour, fair v lt yel brn oil stn, pr - fair pch bri yel, also pr - fair pch wh bl dir flu, fair - pr fast strmg wh flu cut, v lt straw vis cut, fair wh flu resd, v wk lt brn vis resd
2842					
2843				**Sst:** mod yel brn, clr - mlky Qtz g, vf - crs, gen m, ang - subrnd, mod - pr srtd, fri, sl silic, kao cmt, tr carb loc v mic ¢ v carb on forsets, poss from lrg scaled x strat, pr - no vis por	Strng pet odour, excell uni lt brn oil stn, excell uni bri yel dir flu, lt amber vis cut, excell fast strmg wh yel flu cut, strng yel wh flu resd, brn vis resd
2844				**Sst** a/a f - m	
2845				**Sst** a/a, f - pbly gen crs	
2846					

HYDRO

NB! Core description are based on core chips every 1 m of core.

Well no.	Core report	Core no.
6407/7-2		8

Interval	Area	Cut	Date
2846–2851 m	Haltenbanken	2841,5–2869,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2841,5–2869,40 m (99,6%)	Kalgraff/Dons

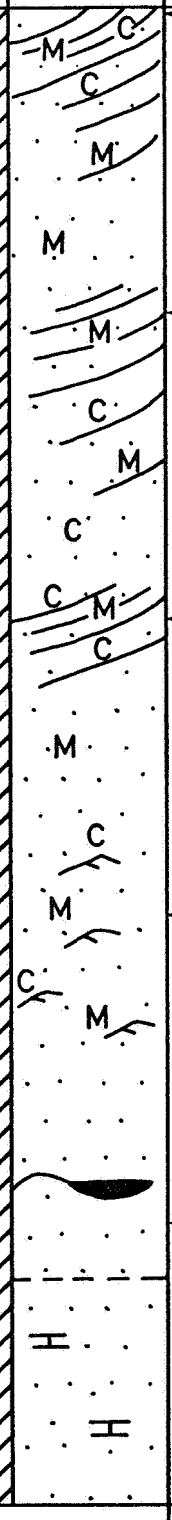
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2846		M C M		**Sst:** mod yel brn, clr - mlky Qtz g, vf - m, tr crs, gen m, ang - subrnd, pr - mod srtd, fri - mod hd, fair silic cmt, var kao cmt, tr mic, tr carb, poss lrg scaled x strat, pr vis por	Strng pet odour, excell uni lt brn oil stn, excell uni bri yel dir flu, lt amber vis cut, excell fast strmg wh yel flu cut, strng yel wh flu resd, brn vis resd
2847		C M		**Sst:** gen a/a, pred crs, tr pbly, tr **Coal** frag	
2848		M		**Sst:** mod yel brn, clr - mlky tr rose Qtz g, vf - pbly, gen crs a/a	
2849		M C M M M		**Sst:** pl yel brn, clr - mlky Qtz g, vf - f, pred f, subang, subrnd, w srtd, mod hd, silic kao cmt, loc **Sh** drapes, v mic, loc **Coal** lens: blk, brn blk, mod hd, brit, blky, loc v shiny, loc v arg grd bit m, in **Sst** tr dk grn min (glau)?, no vis por	Fair pet odour else a/a
2850		C M M C	2850, 0 m Sealed samle 2850,24 m	**Sst:** gen a/a, vf - m, gen f, occ len bdg, kao € silic cmt	
2851					

HYDRO

NB! Core description are based on core chips every 1 m of core.

Well no.	Core report	Core no.
6407/7–2		8

Interval	Area	Cut	Date
2851–2856 m	Haltenbanken	2841,5–2869,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2841,5–2869,40 m (99,6%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2851				**Sst:** pl yel brn, clr - mlky Qtz g, f, sub-bang - subrnd, w srtd, fri - mod hd, silic cmt, tr kao cmt, loc gd tr mic and carb on lrg foresets, no vis por	Fair pet odour, gd uni straw oil stn, excell uni bri yel dir flu, lt amber vis cut, excell fast strmg yel wh flu cut, strng yel wh flu resd, lt brn vis resd
2852					Wk - fair pet odour, fair uni straw oil stn, gd - fair wh yel dir flu, straw vis cut, fair - gd mod - fast strmg wh flu cut, fair wh yel flu resd, v lt brn vis resd
2853				**Sst** gen a/a, incr silic cmt	Wk pet odour, fair uni straw oil stn, fair stri yel wh dir flu, lt straw vis cut, fair mod - fast strmg wh yel flu cut, fair - wk yel wh flu resd, wk lt brn vis resd
2854				**Sst:** pl yel brn, clr - mlky Qtz g, vf - f, sub-bang - subrnd mod - w srtd, mod hd, silic cmt, v mic, gen rpl lam, pr vis por	**Sour stky odour** fair stri yel wh dir flu, lt straw vis cut, fair fast strmg wh yel flu cut from stri, fair yel wh flu resd, v wk lt brn vis resd
2855				**Sst** a/a w/**Cly** drapes	
2856				**Sst:** m gy, clr - mlky Qtz g, f - pbly, ang - subrnd, pr srtd, v hd, calc cmt, loc v mic v carb, **Cly** balls (loc kao balls) tr dk grn min (glau), no vis por	No show

HYDRO

NB! Core description are based on core chips every 1 m of core.

Well no.	Core report	Core no.
6407/7–2		8

Interval	Area	Cut	Date
2856–2861 m	Haltenbanken	2841,5–2869,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2841,5–2869,40 m (99,6%)	Kalgraff/Dons

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2856				**Sst:** m gy, clr - mlky Qtz g, f - pbly ang - subrnd, pr srtd, v hd, calc cmt, loc v mic, v carb, tr dk grn min (glau)?, no vis por	No show
		H			Wk pet odour, pch v lt brn oil stn, pchy wh yel - dull yel dir flu, no vis cut, wk mod strmg wh yel flu cut, fair - wk wh flu resd, wk lt brn vis resd
2857				**Sst:** gen a/a, m, w/loc kao clsts, gen silic cmt kao cmt no vis por	
		M		**Sst:** pl yel brn, clr - mlky Qtz g, vf - f, loc mud balls, subang - subrnd, pr srtd, fri - mod hd, v mic, v carb, tr silic cmt, tr kao cmt, non calc, no vis por	Fair pet odour, gd uni straw oil stn, gd uni, rr stri, bri yel dir flu, straw vis cut, excell fast strmg wh flu cut, fair yel wh flu resd, v lt brn vis resd
2858					
		C			
2859		(M)			
		(M)		**Sst:** a/a	
		M			
			2859,72 m Sealed sample 2859,93 m		Show a/a
2860		C		**Sst** a/a gen f, lt olv gy, v silic cmt, kao cmt,no vis por	
		M			
2861					

HYDRO

NB! Core description are based on core chips every 1 m of core.

Well no.	Core report	Core no.
6407/7–2		8

Interval	Area	Cut	Date
2861–2866 m	Haltenbanken	2841,5–2869,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2841,5–2869,40 m (99,6%)	Kalgraff/Dons

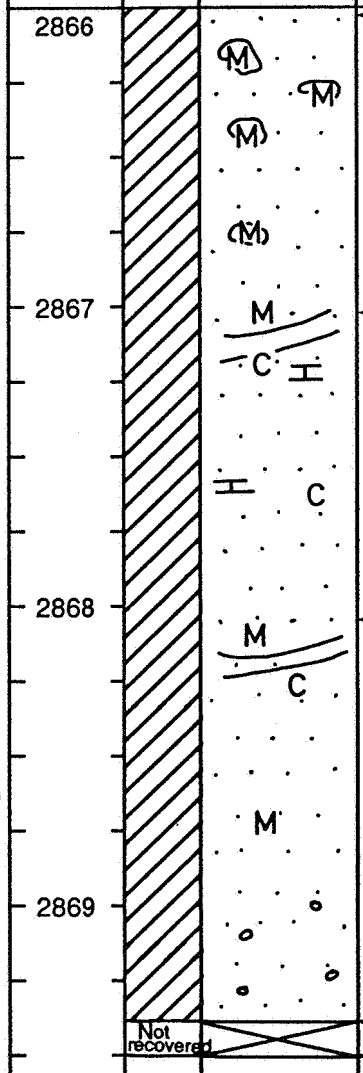
Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2861		C M M C		**Sst:** m gy, clr - mlky Qtz g, f - m, subang - subrnd, mod - pr srtd, hd, loc v silic cmt, and kao cmt, tr bri grn min (glau?), incr mic and carb mat on foresets of lrg scaled x strat, no vis por	Wk pet odour, no oil stn pch - stri yel wh dir flu, no vis cut, wk mod strmg wh flu cut, wk wh flu resd, no vis resd
		M			
2862					Fair pet odour, gd uni straw oil stn, gd uni bri yel dir flu, straw vis cut, excell fast strmg wh yel flu cut, strng - mod yel wh flu resd, lt brn vis stn
		C		**Sst:** m gy - pl yel brn, clr - mlky Qtz g, f, subang - subrnd, mod srtd, fri, silic cmt, com Cly drapes w/kao balls no vis por	
		M			
2863		C			
		M			Gd pet odour a/a
2864		M		**Sst** gen f w/md ball	
		M			
		M			
		C			
2865				**Sst** a/a, non calc	Show a/a
		M			
2866					

HYDRO

NB! Core description are based on core chips every 1 m of core.

Well no.	Core report	Core no.
6407/7–2		8

Interval	Area	Cut	Date
2866–2869,5 m	Haltenbanken	2841,5–2869,5 m	21.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2841,5–2869,40 m (99,6%)	Kalgraff/Dons



Depths	Lithological descriptions	Shows
	Sst: m gy, clr - mlky Qtz g, f, subang - subrnd, mod srtd, fri, silic cmt, com **Cly** balls, mic, carb, no vis por	Wk pet odour, no stn, pr pch dull wh - bri yel dir flu, v lt straw - no vis cut, wk mod strmg wh bl flu cut, dull yel wh flu resd, v wk lt straw vis resd
	Sst: lt olv gy, clr - mlky Qtz g, gen f, sub-ang - subrnd, w srtd, hd, v calc, tr mic, tr carb, no vis por	Wk pet odour, fair uni lt straw stn, gd uni wh yel dir flu, wk lt straw vis cut, gd fast strmg wh bl flu cut, wk wh bl flu resd, no tr v lt brn vis resd
	Sst: gen pl yel brn, clr - mlky Qtz g, vf - crs, gen m, ang - subrnd, pr srtd, mod hd, v kao cmt (pl gy, v lt gy) Cly frag, tr bri dk grn min, no vis por	Gd pet odour, pch lt brn oil stn, fair pch - spotted bri yel dir flu, loc pch dull yel dir flu, v lt straw vis cut, fair - wk wh bl wh mod strmg flu cut, wk - fair dull wh flu resd, v wk lt brn vis resd.
	Sst a/a grd **cgl**	
2869,40 m		
2869,50 m		

HYDRO

Well no.	Core report	Core no.
6407/7–2		9

Interval	Area	Cut	Date
2869–2874 m	Haltenbanken	2869,5–2879 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2869,5–2869,80 m (3,1%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2869 2870 2871 2872 2873 2874	Not recovered		2869,5 m Rubble core 2869,8 m	**Cgl :** pl - dk yel brn, pred mlky, gy, smokey Qtz plts (max 1,5 cm), strngly alt Fldsp + rock frag loc grd pl yel brn kao **Cly,** plts floating in m - f- crs sd mtx, subang - subrnd sd, subrnd - rnd pbls, pr srtd, abdt porefilling lt yel brn loc wh - v lt gy kao cmt, rr pyr cmt, non calc, mod hd - fri, bimodal g size distribution, gen pr vis por tr **Coal:** brn blk - v dusky rd strk, mod hd, 1–5 mm lam on bdg planes, loc brit w/conch frac, not typical **Anthr** coal, loc tr dull orng brn flu, no cut **Sst:** lt gy w vf blk **Coal** - carb occ mic lam, Qtz, vf loc m, f - crs, gen subang, gen mod srtd loc v pr srtd, hd, non calc, loc silic, pred kao - v kao cmt, tr - gd tr pyr, tr mic loc v mic/chl lam, no vis por	V wk pet odour, pch loc pl yel brn oil stn pred on kao mtx, mod loc strmg spty - pch (80%) bri yel - yel wh dir flu, best on kao mtx, pred no flu on sd g, mod strng, slo - fair loc fast strmg yel wh flu cut, pl straw vis cut, strng - mod bri yel flu resd, v lt brn vis resd. Best shows on **Cgl** Best flu on mtx. No - tr shows on tight vf - f **Sst**

HYDRO

Well no.	Core report	Core no.
6407/7–2		9

Interval	Area	Cut	Date
2874–2879 m	Haltenbanken	2869,5–2879 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2869,5–2869,80 m (3,1%)	Dons/Kalgraff

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2874	Not recovered				
2875					
2876					
2877					
2878					
2879			2879,0 m		

HYDRO

Well no.	Core report	Core no.
6407/7–2		10

Interval	Area	Cut	Date
2879–2884 m	Haltenbanken	2879–2896 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2879–2896 m (100%)	Eide/Knudsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2879				**Cly:** mod brn - gy brn, sft - stky, slty - v slty, mod calc, micromic	
2880				**Sh:** olv gy - md dk gy, frm - mod hd, occ hd, blky, subfis - fis (slick on frac planes), tr carb, tr mic, micromic, non calc	
2881				**Sst:** lt gy - gy wh, pred clr - smokey Qtz, occ rd - orng fldsp, gen m - crs, occ v crs - pbly, mod hd - hd, loc fri, ang - rnd, gen subang - subrnd, pr srtd , non calc, kao cmt - mtx, tr glau, gd tr lt mic pr vis por	V wk bl - bl wh dir flu, no vis cut, v wk bl wh flu crush cut, pl yel - bl yel flu resd, no vis resd
2882				**Sst:** gen a/a, altg w/arg lyrs, pred Biot, Musc + Chlor w/tr kao, pyr - repl wood frag	no dir flu, no cut, v wk bl wh flu crsh cut, pl yel bl flu resd, no vis resd
2883				**Sst:** gen a/a, but sl crs, also sl calc in pts, no - pr vis por, spty (10%) wk orng flu - poss min flu	a/a 2882 m
2884					

HYDRO

Well no.	Core report	Core no.
6407/7–2		10

Interval	Area	Cut	Date
2884–2889 m	Haltenbanken	2879–2896 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2879–2896 m (100%)	Eide/Knudsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2884				**Sst:** gen a/a, + gd tr carb, non calc	no dir flu, wk slo strmg bl wh flu cut, pl bl wh flu crush cut, pl yel bl flu resd, no vis resd, v wk lt brn vis resd ring
2885				**Cgl Sst:** lt gy - spty wh, pred clr - lt gy/mlky wh Qtz, m - v crs, occ pbly, sub-ang - w rnd, gen subrnd, pr - v pr srtd, frm - mod hd, loc mod calc, occ kao cmt, tr pyr, tr glau, tr lt mic, pr vis por	
2886				**Sst:** a/a	v wk pchy bl - bl wh dir flu, no cut/crsh cut
2887				**Sst:** gen a/a, but non calc, pr vis por	
2888				**Sst:** gen a/a, but occ fri - lse, abdt kao mtx, tr carb w/abdt coal lams **Coal:** brn blk - blk, pt shiny blk, mod hd - hd, brit - occ conch frac, gd tr micropyr on frac planes	
2889					

HYDRO

Well no.	Core report	Core no.
6407/7–2		10

Interval	Area	Cut	Date
2889–2894 m	Haltenbanken	2879–2896 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2879–2896 m (100%)	Eide/Knudsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2889				**Coal:** brn blk - blk, occ shiny blk, mod hd, brit - occ conch frac, tr pyr in vn + frac	no dir flu, v wk bl wh flu cut, wk bl wh - bl yel flu crsh cut, mod bri yel bl flu resd, no vis resd
2890				**Sh/Clyst:** olv gy - md dk gy, mod hd - hd, occ v hd, blky, subfis - fis (abdt slick on frac planes), tr carb, micromic, non calc	no dir flu, wk bl wh flu crush cut, no vis resd
2891				**Sst:** gy - md gy, w/dk specs, pred clr - lt gy + smokey Qtz, hd - v hd, vf - f, sub-ang - subrnd, mod srtd, mod - v calc, pt silic cmt, v gd tr abdt Biot, Chlor + Musc	wk bl wh flu crsh cut, no vis resd
2892				**Sh/Clyst:** a/a	a/a 2890 m
2893				**Sst:** md gy - md dk gy, olv gy w/dk specs, clr - mlky wh Qtz, occ orng - orng rd Fldsp, v arg, mod hd - hd, spltry, pr srtd, non calc, pr vis por	wk bl wh flu crsh cut, no vis resd
2894					

HYDRO

Well no.	Core report	Core no.
6407/7–2		10

Interval	Area	Cut	Date
2894–2896 m	Haltenbanken	2879–2896 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2879–2896 m (100%)	Eide/Knudsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2894				**Sst:** olv gy - md gy, w/dk and wh specs, pred clr - lt gy/mlky wh Qtz, mod hd - hd, brit, f - crs, occ v crs, subang - subrnd, v pr srtd, non calc, silic cmt in pts, kao whtd Fldsp, tr kao mtx, tr mic, tr carb, tr glau, no - v pr vis por	wk spty - pchy (20%) bl wh dir flu, no - v slo strmg flu cut, wk bl wh flu crsh cut, no vis cut
2895				**Sst:** lt gy - gy, w/wh spec, pred clr - mlky wh Qtz, occ orng - orng rd, gy Fldsp, fri - mod hd, occ hd, m - crs, occ v crs, sub-ang - subrnd, abdt kao mtx, tr mic, no - v pr vis por	a/a
2896			2896 m	**Sst:** a/a	v wk pet odour, else a/a

HYDRO

Well no.	Core report	Core no.
6407/7–2		11

Interval	Area	Cut	Date
2896–2901 m	Haltenbanken	2896–2916 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2896–2913,50 m (87,5%)	Knudsen/Eide

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2896		M, C		**Sst:** lt gy - gy, pred clr - mlky Qtz, occ smoky, rr lt orng, gy Fldsp, fri - mod hd, pred subang m - pbly, pred v crs, abdt kao mtx, silic cmt in pt, tr micromic, mic, tr carb, no - pr vis por	On **Sst:** wk bl grn flu, no vis flu crush cut
2897		M, C			
2898		M, C		**Sst:** crs - v crs, tr pbls, else a/a	No show
2899		M, C		**Sst:** v crs - pbly, else a/a	
2900		M, C		**Sst:** a/a	
2901		M		**Sst:** tr lt orng Qtz, else a/a	

HYDRO

Well no.	Core report	Core no.
6407/7–2		11

Interval	Area	Cut	Date
2901–2906 m	Haltenbanken	2896–2916 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2896–2913,50 m (87,5%)	Knudsen/Eide

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2901		M C M M			
2902		M M		**Slst:** olv gy, mod hd - hd, subfis - fis, vf sdy, loc grd **Sst** abdt mic (Musc + Biot) tr pyr tr carb	On **Slst:** No dir flu, v wk - wk v slow strmg bl wh - grn wh flu crsh cut
		M			
2903		M C		**Sst:** lt gy - v lt gy, gy, pred clr - mlky Qtz, occ smky, rr - tr lt orng, gy Fldsp, fri - mod hd, pred subang, pr srtd loc mod srtd, pred crs - v crs loc pbls, abdt kao mtx, loc silic mtx, tr micromic, tr mic, rr - tr carb, no - pr vis por	No show
2904					
2905		M C M		**Sst:** less pbls, else a/a	
2906		C		**Sst:** gen a/a, pred m - crs, no pbls	

HYDRO

Well no.	Core report	Core no.
6407/7–2		11

Interval	Area	Cut	Date
2906–2911 m	Haltenbanken	2896–2916 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2896–2913,50 m (87,5%)	Knudsen/Eide

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2906		M M C M M		**Sst:** a/a, bnds of mic, carb	No shows
		M			
2907		MC		**Sst:** pred f - m, occ crs, bnds a/a, else a/a	
		M			
		M			
2908		M C		**Sst:** a/a	
2909		C		**Sst:** pred v crs - pbly, loss mic no bnds, else a/a	
2910				**Sst:** pred m, else a/a	
2911		M			

HYDRO

Well no.	Core report	Core no.
6407/7–2		11

Interval	Area	Cut	Date
2911–2916 m	Haltenbanken	2896–2916 m	22.12.86
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2896–2913,50 m (87,5%)	Knudsen/Eide

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2911		C T M T M T C		**Sst:** lt gy - v lt gy, gy, pred clr - mlky Qtz, occ smoky, gy Fldsp, fri - mod hd, pred subang, pr - mod srtd, pred m - crs, tr - rr pbls, abdt kao mtx, tr micromic, rr carb, no - pr vis por	No shows
2912				In **Sst: Clyst fills,** v mic, pred Biot, loc Musc, tr carb	
2913				**Sst:** No **Clyst fills,** else a/a	
			2913,5 m		
2914					
2915	Not recovered				
2916					

APPENDIX II

SIDEWALL CORE DESCRIPTION

(RUNS 1A, 2B AND 2C)

koh870813ems
Vkb148

HYDRO

Service company: Schlumberger	
Asked:	30
Shot	30
Lost	4
Empty:	1
Misfire:	
Samples recovered:	25
Geologist:	Eide / Day

Well no: 6407/7-2	Side wall core descriptions	
Licence: 107	Run no: 1A	
Date: 08.12.86	Page No: 1 of 2	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu m	Flu g	Cut tr	Cut m	Cut g
1	2550	2.5	Clyst: olv gy–olv blk,sft–frm,sl blky–blky,occ subfis,sl–mod calc,sl slty,rr micromic.						
2	2522.5	2.5	Clyst: olv gy–olv blk,sft–frm,sl blky–blky,occ subfis,non–sl calc,sl slty,rr micromic						
3	2500	–	Lost.						
4	2474.5	2.5	Clyst: gy blk,frm–mod hd,blky–subfis,mod–v calc,sl slty,micromic						
5	2442	–	Lost.						
6	2425	3	Clyst: gy blk,frm–mod hd,subfis,non–v sl calc,sl slty in pts, rr micromic						
7	2400	–	Lost						
8	2375	2.5	Clyst: olv gy–olv blk,sft–frm,non–sl calc,rr glau.						
9	2349	2.5	Clyst: brn blk–olv blk,sft–frm,sl blky,non–sl calc,mod calc in pts,sl slty in pts.						
10	2326	–	Lost.						
11	2300	2	Clyst: brn blk–olv blk,sft–frm,sl blky,mod–v calc,sl slty in pts.						
12	2275	2.5	Clyst: olv blk–brn blk,sft–frm,sl blky,occ sl fis,non calc.						
13	2251	3	Clyst: olv blk–brn blk,sft–frm,sl blky,occ sl fis,non calc.						
14	2225	2.5	Clyst: gy blk–brn blk,sft–frm,sl blky,sl calc–occ mod calc.						
15	2199.5	2.5	Clyst: md dk gy–dk gy,sft–frm,pred frm,sl blky,sl subfis,sl–mod calc,sl slty–vf sdy,tr Sst lenses,rr micromic.						
16	2139	3	Clyst: gen a/a,abdt Slst/Sst lenses: lt gy–gy,w/grn specs,pred mlky wh–clr Qtz,vf–slty,fri,subang–rnd,w srtd,non–sl calc,arg mtx,gd tr glau.						
17	2100	3	Clyst: w/abdt Slst/Sst–lenses a/a Clyst gen a/a,but frm–mod hd.						
18	2075	3.5	Clyst: md dk gy–olv gy,md gy,frm–mod hd,blky,sl subfis,non–sl calc,tr–abdt Sst/Slst–lenses,tr micromic–mica, tr glau.						

HYDRO

Service company: Schlumberger	
Asked:	30
Shot	30
Lost	4
Empty:	1
Misfire:	
Samples recovered:	25
Geologist:	Eide/Day/Kalgraff

Well no: 6407/7-2	Side wall core descriptions	
Licence: 107	Run no: 1A	
Date: 08.12.86	Page No: 2 of 2	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu M	Flu G	Cut tr	Cut M	Cut G
19	2050	4	Clyst: md dk gy–olv gy,frm–mod hd,blky,subfis,non–sl calc, tr Sst/Slst–lenses, tr micromic–mica.						
20	2025	4	Clyst: md dk gy–olv gy,frm–mod hd,blky,sl subfis,non calc,abdt Sst/Slst–lenses,tr micromic–mica.						
21	2008.5	4.5	Clyst: olv gy–md gy,dk gy,frm–mod hd,blky,sl subfis,non calc, abdt Sst/Slst–lenses,tr glau,tr micromic–mica.						
22	1975	4.5	Clyst: olv gy–md dk gy,frm–mod hd,blky,sl subfis,non calc, tr micromic–mica,tr carb? frags.						
23	1960	–	Empty.						
24	1958	5	Clyst: dusky yel brn,frm,subfis–blky,v calc grdg Lst,micromic, tr tuff.						
25	1956.5	5	Clyst/Lst: dusky yel brn,frm–mod hd,subfis,gen v calc,conc spher,micromic,tuff?						
26	1889.5	4.5	Clyst/Tuff: grn blk–dk grn gy,olv gy,frm–mod hd,blky–subfis, calc,micromic,w/ang blk shiny frags (specs).						
27	1824	4.5	Clyst: olv gy–dusky yel brn,mod hd,blky–subfis,non calc, micromic.						
28	1775	3.5	Clyst: dusky yel brn,frm,subfis–fis,gen non calc,rr sl calc, tr slty,micromic.						
29	1716	4.5	Clyst: olv gy–dusky yel brn,frm–mod hd,subfis,non calc, micromic.						
30	1708	4	Clyst: olv gy–brn gy,frm,subfis,v sl calc,gen non calc,tr micromic.						

HYDRO

Service company: Schlumberger	
Asked:	60
Shot	60
Lost	7
Empty:	3
Misfire:	16
Samples recovered:	34
Geologist: Jim Day	

Well no: 6407/7-2	Side wall core descriptions	
Licence: 107	Run no: 2B	
Date: 01.01.87	Page No: 1 of 4	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu M	Flu G	Cut tr	Cut M	Cut G
31	3315	–	Empty.						
32	3310	–	Lost.						
33	3305	1.5	Clyst: mod–dk yel brn,frm,occ mod hd,v calc,v slty–vf sdy grdg to Slst/arg Sst in pt.						
34	3298	2.5	Clyst: mod brn–gy brn,amor–blky,v calc,slty,micromic in pt.						
35	3283	1.5	Clyst: m–dk gy,sft–frm,amor–sl blky,mod calc w/abdt wh calc, microxln,sft.						
36	3276	2	Clyst: m gy w/dk gy blk carb lams,blky,mod calc in pt,sl slty–slty,tr calc a/a.						
37	3272.5	2	Clyst: olv gy–m dk gy,mod hd–hd,blky,mod calc,loc v calc,sl slty,occ micromic.						
38	3268	2	Clyst: dusky brn–dusky yel brn,mod hd–hd,brit,sl blky,mod calc sl slty in pt,occ micromic.						
39	3263	2	Clyst: dusky yel brn,frm–mod hd,fis,v calc,loc v sl slty.						
40	3256	–	Lost.						
41	3243	4	Clyst: mod brn–dusky yel brn,mod hd,occ hd,sl blky–blky,v calc sl slty in pt.						
42	3210	–	Lost.						
43	3177	2.5	Sdy/Lst: wh,sft–frm,crptoxln,occ microxln,w/m–vc floating Qtz gs,mlky,trnsl occ pl orng,ang–subrnd,occ rnd,pr srtd+rr lt–m dk gy Clyst clas.						
44	3128	2	Clyst: gy rd–mod rd brn,mod hd–hd,brit,sl blky,v calc,w/rr calc,v slty loc grdg to Slst:						
45	3120	2	Sdy/Lst as 43						
46	3109.5	4.5	Clyst: mod–dk rd brn,frm,amor,sl blky in pt,v calc,sl slty in pt, occ micromic.						
47	3105	2.5	Sst: lt gy–mlky,occ dk yel orng Qtz,f–crs,pred m,subang–subrnd pr–mod srtd,abdnt kaol cmt,occ calc cmt,rr glau.						

HYDRO

Service company: Schlumberger	
Asked:	60
Shot	60
Lost	7
Empty:	3
Misfire:	16
Samples recovered:	34
Geologist: Jim Day	

Well no: 6407/7-2	Side wall core descriptions	
Licence: 107	Run no: 2B	
Date: 01.01.87	Page No: 2 of 4	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu M	Flu G	Cut tr	Cut M	Cut G
48	3097	1.5	Clyst: lt brn,frm,occ mod hd+brit,v calc grdg to Mrl.						
49	3068	–	Lost.						
50	3042	–	Lost.						
51	3032	–	Misfire.						
52	2996.5	2	Clyst: grn gy,sft–frm,amor,mod calc,slty in pt.						
53	2952	3	Clyst: dk grn gy,sft–frm,sl fis in pt,non calc,slty,abdt micromic.						
54	2934	–	Misfire.						
55	2923	–	Lost.						
56	2880	1.5	Clyst: lt brn gy,m gy,sft–frm,amor–sl blky,non–sl calc,loc mod calc,sl slty,occ slty,rr pyr.						
57	2879	–	Misfire.						
58	2878	2	Sst: lt gy,mlky,trnsl Qtz,sft–frm,vf–f,subang–subrnd,mod srtd, w/carb specs+occ microlams,rr pyr,micromic. No shows.						
59	2877	–	Empty.						
60	2876	–	Misfire.						
61	2875	3	Sst: lt gy,mlky,trnsl Qtz,fri,vf–f,subang–subrnd,mod srtd,kaol cmt,sl arg mtx in pt,occ thin carb lams,micromic. Mod pet odour no vis stn,mod bri pl wh yel–bl wh flu,inst mod bri mlky wh flu cut,no vis cut,bri mlky wh flu resd,v pl yel brn vis resd.						
62	2874	3.5	Sst: lt gy,mlky,trnsl Qtz,occ pl yel brn,Qtz(?),fri,vf–f,subang–subrnd mod srtd,kaol cmt,sl arg mtx,occ sl calc,pr vis por,rr glau, rr micromic. Show gen a/a.						
63	2873	1.5	Sst: lt gy,mlky,trnsl Qtz,fri–mod hd,vf–f,subang–subrnd,pr–mod srtd,kaol cmt,occ silic cmt,sl arg mtx–sl calc in pt,pr vis por, rr coal,rr pyr,rr mica. No shows.						

HYDRO

Service company: Schlumberger	
Asked:	60
Shot	60
Lost	7
Empty:	3
Misfire:	16
Samples recovered:	34
Geologist: Jim Day	

Well no: 6407/7-2	Side wall core descriptions	
Licence: 107	Run no: 2B	
Date: 01.01.87	Page No: 3 of 4	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu M	Flu G	Cut tr	Cut M	Cut G
64	2872	3.5	Sst: gen as 62 w/mod–gd pet odour,rr pch wh pl brn stn,bri wh blu flu,dull mlky wh cut flu,mod bri–bri crush cut flu,v wk pl brn vis cut,bri mlky wh–wh yel flu resd,wk pl yel brn vis resd						
65	2871	3	Sst: gen as 62,but w/occ silic cmt. Mod–gd odour,bri pl wh flu mod bri inst mlky wh cut,no vis flu,v wk mlky wh resd,no vis resd.						
66	2772	1.5	Clyst: dusky yel brn,mod hd,brit,sl blky,non–occ v sl calc,sl slty,abdt mica+micromic.						
67	2768	2	Clyst: olv gy,frm–mod hd,blky,non calc,loc v sl calc,sl slty, occ micromic.						
68	2760	2	Clyst: olv gy,frm–mod hd,gen a/a, v mica.						
69	2755	1.5	Clyst: gen a/a but mod calc.						
70	2750	–	Misfire.						
71	2698	1	Sst: lt gy,trnsl Qtz,fri,vf–f,subang–subrnd,w srtd,kaol cmt, arg mtx in pt,rr micromic. No shows (poor sample).						
72	2695	–	Lost.						
73	2693	–	Misfire						
74	2690	1.5	Clyst: olv gy,frm,blky–subfis,mod calc,slty in pt,loc v slty/ vf sdy grdng to Slst,abdt mica+micromic,rr carb lams.						
75	2673	2.5	Clyst: olv gy–olv blk,sft–frm,blky,non calc,occ v sl calc,v slty/ vf sdy lams grdng to Slst,micromic,rr carb,dull mlky wh crsh cut flu.						
76	2671	–	Misfire.						
77	2661	1.5	Clyst: brn blk,frm–mod hd,blky–sl fis,sl calc,slty,vf sdy in pt,micromic,bri blky wh–wh bl crush cut flu.						
78	2653	2	Clyst: dusky yel brn–brn blk,sft–frm,sl blky–blky,non sl calc, loc mod calc,v slty/vf sdy w/lams grdg Slst. Dull mlky wh crush cut flu.						
79	2650	–	Misfire.						

HYDRO

Service company: Schlumberger	
Asked:	60
Shot	60
Lost	7
Empty:	3
Misfire:	16
Samples recovered:	34
Geologist: Jim Day	

Well no: 6407/7-2	Side wall core descriptions	
Licence: 107	Run no: 2B	
Date: 01.01.87	Page No: 4 of 4	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu M	Flu G	Cut tr	Cut M	Cut G
80	2647	1.5	Clyst: brn blk–olv blk,frm,sl blky–subfis,sl calc,sl slty,rr carb,rr micropyr,occ micromic,dull mlky wh–wh blu crush cut flu.						
81	2645	–	Empty						
82	2643	–	Misfire.						
83	2640	1.5	Clyst: gen as 80.						
84	2638	–	Misfire						
85	2636	–	Misfire						
86	2632.5	–	Misfire						
87	2631	–	Misfire						
88	2622	–	Misfire						
89	2587	–	Misfire						
90	2553	–	Misfire						

HYDRO

Service company: Schlumberger	
Asked:	30
Shot	30
Lost	9
Empty:	–
Misfire:	–
Samples recovered:	21
Geologist:	Jim Day

Well no: 6407/7–2	Side wall core descriptions	
Licence: 107	Run no: 2C	
Date: 01.01.87	Page No: 1 of 2	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu M	Flu G	Cut tr	Cut M	Cut G
91	3315	1.5	Clyst: gy brn–dusky yel brn,sft–occ frm,amor–sl slty,v calc micromic.						
92	3256	–	Lost						
93	3243	–	Lost						
94	3210	–	Lost						
95	3105	3	Sst: as 47						
96	3097	–	Lost						
97	3068	–	Lost						
98	3042	2.5	Clyst: mod brn,sft–frm,amor–sl blky,mod–v calc,sl slty,loc v slty,grdg to Slst: also occ Sst clas,lt gy–mlky wh,trnsl Qtz, fri,vf–f,ang–subrnd,mod srtd,w/kaol cmt,sl arg mtx,sl calc in pt. No show.						
99	3037	4	Clyst: mod brn,frm,occ mod hd,amor–sub blky,sl–mod calc,sl slty,micromic.						
100	2934	2	Clyst: gy blk,frm–mod hd,hd in pt,blky–sl fis,non calc,slty, loc v slty,v carb w/blk shny Coal incl.						
101	2923	2	Clyst: olv gy,sft–frm,sl blky–sl fis,non calc,v slty occ vf sdy,occ micromic in pt.						
102	2897	–	Lost.						
103	2876	3.5	Sst: lt gy,mlky,trnsl Qtz,fri,vf–f,subang–subrnd,mod–w srtd,kaol cmt,sl arg in pt,micromic,rr glau,pr vis por. V wk odour,pch mod bri pl wh yel flu,dull–mod bri mlky wh–wh bl cut flu,bri wh bl crush cut flu,no vis dut,bri pl wh yel–wh bl flu resd, lt brn vis resd.						
104	2750	1	Clyst: olv gy,frm,blky,occ sl fis,mod calc,v slty/vf sdy,grdg to Slst in pt, micromic.						
105	2695	2	Clyst: gy blk,sft–frm,sl blky–occ sl fis,non calc,occ v sl calc,v sl slty in pt,rr micromic.						
106	2693	1	Clyst: gen a/a but more slty + micromic (poor sample)						

HYDRO

Service company: Schlumberger	
Asked:	30
Shot	30
Lost	9
Empty:	–
Misfire:	–
Samples recovered:	21
Geologist:	Jim Day

Well no: 6407/7–2	Side wall core descriptions	
Licence: 107	Run no: 2C	
Date: 01.01.87	Page No: 2 of 2	

tr:trace – M:medium – G:good

No:	Depths: mRKB	Rec: cm	Lithology	Flu tr	Flu M	Flu G	Cut tr	Cut M	Cut G
107	2671	–	Lost.						
108	2650	2	Clyst: olv gy,pred frm,occ mod hd–hd,blky,occ sl fis,mod calc slty,micromic.						
109	2645	–	Lost.						
110	2643	–	Lost.						
111	2638	3	Clyst: gy blk–olv blk,mod hd,occ mod hd,non calc,sl slty in pt rr mic+micromic,v wk mlky wh crush cut.						
112	2636	2	Clyst: lt–m gy,frm,sl blky–sl fis,v calc grdg Mrl,slty loc v slty/vf sdy.						
113	2632.5	1	Clyst: olv gy–m lt gy,frm,amor–sl blky,v calc grdg Mrl,v slty in pt.						
114	2631	1.5	Clyst: gy brn–mod brn,frm–hd,brit,sl blky,occ blky,v calc,occ sl slty.						
115	2625	3.5	Clyst: mod brn a/a						
116	2622	1	Clyst: a/a (poor sample)						
117	2611	3	Clyst: gy blk,dk gy,sft–frm,amor–sl fis in pt,mod calc–calc, sl slty in pt,rr micromic.						
118	2587	1.5	Clyst: gy brn–dusky yel brn,frm–mod hd,sl blky–blky,occ sl fis calc,v slty/vf sdy.						
119	2575	1.5	Clyst: m dk gy,frm–mod hd,blky,sl–mod calc,slty in pt.						
120	2553	2	Clyst: gy blk–blk,frm–mod hd,brit,spltry–sl fis,non calc, sl slty in pt.						

APPENDIX III

WELL SUMMARY

GEOLOGICAL WELL SUMMARY

RFT RESULTS

DST RESULTS

WELL SUMMARY

Coord: 64°15'26,39"N UTM 7127130,2m N
07°10'42,65" E 411732,2m E
Line: NH 8604-235 SP 960
Rig: Polar Pioneer
Water depth: 338m MSL
RKB elev: 23m

On location: Nov. 19, 1986
Spudded: Nov. 19, respud Nov. 20
At TD: Dec. 29, 1986
Completed: Jan. 21, 1987
TD logger: 3323m TD driller 3320m
Wireline logging: Schlumberger
Mud logging: Exlog

WELL 6407/7-2

COUNTRY NORWAY

OPERATOR Norsk Hydro Produksjon A/S

LICENCE 107

OWNED BY N.Hydro, Statoil, Shell, Agip

TARGETS

Middle and lower Jurassic sandstones

RESULTS

Reservoir	Fluid	Gross Sand	Net. Pay	Ø(AV)	Sw(AV)
1	Gas	73.5 m	5.13 m	23.6 m	29.1 %
2	Oil	106.5 m	67.88 m	21.3 %	30.3 %

Gas down to 2771.5 m, oil down to 2877.5 m
Cutoff : Ø< 13 % , Sw> 60 %, V SH> 40 %

CASING

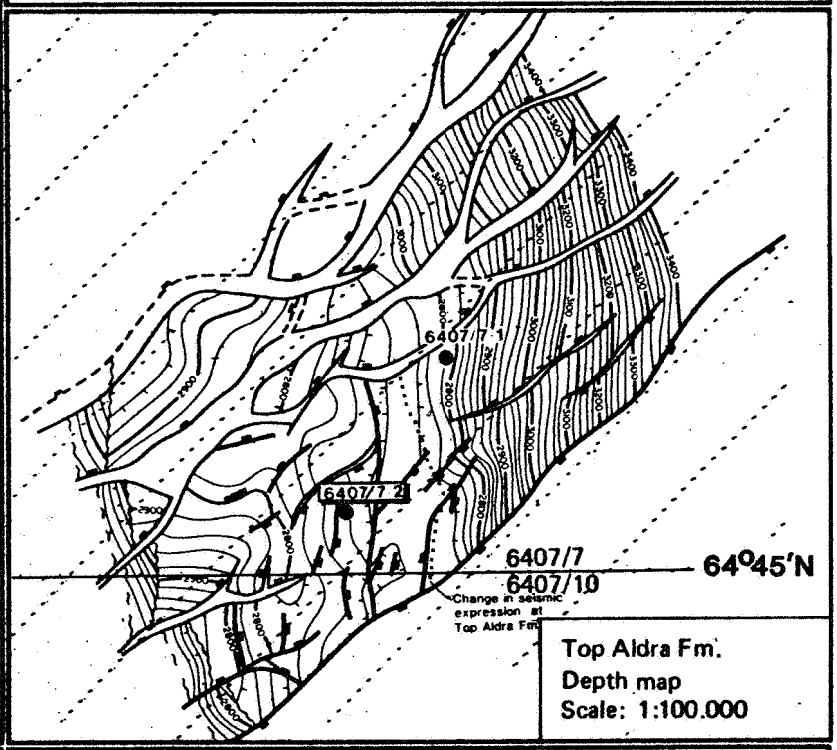
30": 445m
20": 757m
13 3/8": 1502m
9 5/8": 2533m
7" liner: 3316m

CORES

No.	C=Cut(m) R=Recovered	REC %
1	C: 2673-2688 R: 2673-2686.5	92.3
2	C: 2701-2723 R: 2701-2718.85	81.1
3	C: 2723-2742 R: 2723-2739.55	87.1
4	C: 2775-2791.5 R: 2775-2787.05	73.0
5	C: 2791.5-2804.5 R: 2791.5-2803.2	90.0
6	C: 2804.5-2823.5 R: 2804.5-2823.5	100
7	C: 2823.5-2841.5 R: 2823.5-2841.05	97.5
8	C: 2841.5-2869.5 R: 2841.5-2869.4	99.6
9	C: 2869.5-2879 R: 2869.5-2869.8	3.1
10	C: 2879-2896 R: 2879-2896	100
11	C: 2896-2915.5 R: 2896-2913.5	90

GAS RECORD

Returns to seabed down to 780m
780-1517m: 0,15-1,7% C1 only
1517-2106m: 0,06-0,8% C1-C3, tr C4
2106-2230m: 0,06-0,23% C1-C3, tr C4
2230-2550m: 0,05-0,13% C1-NC4
2550-2569m: 0,01-0,04% C1 only
2569-2653m: 0,01-0,17% C1-C3
2653-2742m: 0,01-14,5% C1-NC4
2742-2775m: 0,04-18,5% C1-NC4
2775-2916m: 0,05-4,1% C1-NC4
2916-2994m: 0,02-0,3% C1-NC4
2994-3029m: 0,02-0,05% C1 only
3029-3320m: 0,01-0,07% C1-C3



Top Aldra Fm.
Depth map
Scale: 1:100.000

LOGS

DIL,LSS, GR,SP	1501-2548m	1A	MWD	361-2520m	
SHDT,GR	1501-2550m	1A	MWD	3025-3305m	
CBL,VDL	435-1501m	1A	RLL	2608-2996m	
DIT-E,LSS MSFL,CAL GR,SP	2533-3320m	2A			
CNL,LDL NGT,CAL, GR	2533-3321m	2A			
RFT,GR	2698,5-2884m	2A			
RFT,GR	2701,5-2925m	2B			
RFT,GR	2816,5-3093m	2C			
DLL,SP	2600-3000m	2A			
SHDT,GR	2533-3320,5m	2B			
L/VDL	1300-3248m	2B			
VSP	1080-3260m	2A			
CET/GR	2491-3184m	2A			

CST

No.	Depth int. (m)	Rec.
1A	1708-2550	25/30
2B	2553-3315	34/60
2C	2553-3315	21/30

OIL SHOWS

2673-2686.9m : In vf-f Sst: v wk petr odour, no dir flu, v wk mod-inst strmg bl wh flu cut, also v sl weak yel wh flu cut, no vis cut, yel wh flu resd, no vis resd

2701-2718.8m : In vf-m Sst occ Slst: wk-no petr odour, no-tr lt straw stn, spec-hom mod-bri bl wh occ yel wh flu, slo-inst strmg wk-strng-bri bl wh-yel wh flu cut, no vis cut, dull-bri bl wh-yel wh flu resd, no vis resd

2772-2775m In vf-f Sst: tr lt brn oil stn, strng bri yel dir flu, v wk lt straw vis cut, strng fast strmg yel wh flu cut, strng yel wh flu resd, wk lt straw vis resd

2775-2855.2m : In vf-f, occ crs Sst: fair-strng petr odour, fair-excell uni lt brn oil stn, gd-excell uni bri yel-yel wh dir flu, strng fast-inst strmg occ blooming yel wh flu cut, lt straw vis cut, strng yel wh flu resd, dk straw-straw vis resd

2856.3-2869.8m : In vf-crs Sst: v wk-no petr odour, no-rr patchy loc pl yel brn oil stn, gen no flu, occ wk bl-bl wh dir flu, gen v wk bl-sh wh flu cut, no vis cut, v wk-wk blsh wh flu crush cut, pl yel-blsh yel flu resd no vis resd

Checked : KOH
Date : July 1987

GEOLOGICAL WELL SUMMARY

LOCATED ON 64°15'26,39"N 07°10'42,65"E
LINE SP UTM 7127 130,2 m N 411732,2 m E
WATER DEPTH 338 m MSL
WELL 6407/7-2

DEPTH m RKB | LITHO SECTION | SYSTEM | STAGE | GROUP | FORMATION | DESCRIPTIONS. | SHOWS

SEALEVEL 23m RKB

SEABED 361m RKB

Drilled w/returns to seabed to780 m

Lithology from drilling parameters and MWD

30" 445m

20" 757m

Cly: m dk gy-olv gy, sft slty-vf shdy, sl calc shl frags

Sd: clr-mlky-rose Qtz f-vers ang-subrnd, lse, forams
Tr Lst: frm, arg, grdg
Mrl

Clyst: pred dk grn gy-md md k gy, sl calc, slty, rock frags, tr mica
Glau: grn blk-blk gy, f-crs, lse
1078m

Clyst: pred dusky yel brn, loc v slty

Clyst: olv gy, sft-frm pred non calc, sl slty tr micromic, forams

0.15-1.7% C1

Clyst: lt gy-olv gy, dusky yel
tr Lst: wh-v lt orng, frm, microxln, sl arg

Clyst: occ dk grn gy

Tr Sst: lt gy-lt olv gy, clr Qtz, gen f, subang-subrnd, mod-w srtd, sl calc cmt occ micromic, tr pyr

13 3/8 1502m

Clyst: olv gy-grn gy-dk grn gy, non calc, loc slty, occ micromic, tr glau

Lst: dolomitic

Clyst: pred grn gy, non calc non slty

1723m

Tr Tuff

Tr Lst: gy wh-lt orng gy, sl arg, microxln

1958,5m

Clyst: pred m dk gy-olv gy, frm-mod hd, non calc sl slty
rr Sst: clr-mlky Qtz, vf, non-sl calc
tr Lst wh, mod hd

Clyst: olv gy-olv blk

0.06-0.8% C1—C3 tr C4

0.06-0.23% C1—C3 tr C4

0.5-0.13% C1—NC4

Checked : KOH
Date : July 1987

GEOLOGICAL WELL SUMMARY

LOCATED ON 64°15'26,39"N 07°10'42,65"E
LINE UTM 7127 130,2 m N
SP 411732,2 m E
WATER DEPTH 338 m MSL
WELL 6407/7-2

DEPTH m RKB | LITHO SECTION | SYSTEM | STAGE | GROUP | FORMATION | DESCRIPTIONS. | SHOWS

2466,5m
Clyst: pred olv gy, occ varicol, sl calc in pt, sl slty

Tr **Sst:** lt gy, clr Qtz, vf-crs pr-mod srtd, tr calc cmt

9 5/8
2533m

Dol: dusky yel brn, hd-vhd

Clyst: rd brn,

2637m **Clyst:** dusky yel brn-brn blk

2651,5m
Sst: vf-slty **wk-shows**

2667,5m
Sst: f-crs, pred f-m, gen mod srtd, gen silic cmt

2712 m
tr kao cmt. **wk shows core no 2**
No shows core no 3

2771m
Sst: vf-vcrs, w-mod srtd, tr silic cmt, loc calc cmt, tr kao, gen fair vis por.
Shows in Sst: Excellent fair

2877,5m **Sst:** %
wk-no shows

2934 m

2980m
Altg **Clyst/sst**

Clyst: pred red brn-mod brn, non-v calc

Sst: clr-mlky Qtz, f-crs, occ, v crs, pr-mod srtd, tr calc cmt, occ kao cmt, pr -no vis
Tr **Lst:** gy wh, sft-frm, sl arg

Clyst: olv gy-m dk gy, brn gy

3270m Intra Triassic event

7"
3316m

3320m (TD)

SHOWS: C1–C3 0.01-0.17% | C1–NC4 0.01-18.5% | C1–NC4 0.05-4.1% | C1–NC4 0.02-0.3% | 0.02-0.07% C1–C3

Checked : KOH
Date : July 1987

HYDRO

RFT RESULTS	WELL: 6407/7-2

RUN NO. 2A, 2B and 2C

Run/ Test no.	Depth (mRKB)	IHP (psia)	FP (psia)	FHP (psia)	Permeability/ Remarks
2A/1	2698.5	5688.1	5251.3	5686.0	Excellent
2	2701.0	5691.4	5251.9	5691.0	Excellent
3	2706.5	5702.6	5343.7	5702.0	Poor
4	2711.0	5712.7	5257.8	5790.0	Excellent
5	2720.5	5732.6	2574.2	5732.5	Mod.–fair
6	2725.9	5743.9	5284.3	5743.6	Good
7	2729.0	5750.3	5292.1	5750.0	Good
8	2772.0	5939.8	5558.4	5840.0	Excellent
9	2780.0	5857.4	5565.1	5857.3	Excellent
10	2790.5	5879.7	5581.1	5879.0	Excellent
11	2803.5	5908.3	5585.9	5907.8	Excellent
12	2810.0	5921.2	5589.3	5921.0	Excellent
13	2815.0	5930.9	5593.2	5930.7	Excellent
14	2829.0	5960.6	5606.3	5960.0	Excellent
15	2943.0	5990.4	5620.0	5990.4	Excellent
16	2847.5	5999.4	5623.2	5999.0	Excellent
17	2864.5	6035.0	5638.9	6033.9	Good
18	2872.0	6050.5	5646.9	6050.7	Good
19	2884.0	6054.0	5700.0	6077.0	Low
2B/1	2701.5	–9999.0	5253.2	–9999.0	Excellent
2	2843.0	5998.5	5620.4	5997.8	Very good
3	2896.1	6120.6	5631.6	6118.6	Moderate
4	2907.0	6141.4	5649.5	6138.7	Moderate
5	2915.0	–9999.0	5657.1	–9999.0	Moderate
6	2925.0	6182.0	5667.4	6174.0	Moderate
2C/1	2816.2	5656.0	5595.2	5933.0	Excellent
2	2925.0	6153.0	5664.5	6145.0	Moderate
3	2987.5	6287.0	5885.0	6290.0	Low
4	3093.0	6511.0	–9999.0	6516.3	Low

Segrated sample at 2701.9m – Results from drainage on rig floor
$2\frac{3}{4}$ gal chamber : 73.9 scf gas (91% C1,6.1% C2,2.5% C3)
1.85 l condensate
0.9 l filtrate
1 gal chamber : Sent onshore for PVT–analysis

Note: Values of –9999.0 indicates missing data (tight formation or tool failure).

Written: R.Hope Checked: K.O.Häger Date: 31.07.87

HYDRO

DST RESULTS		WELL:6407/7-2	
DST NO.	1	2	
PERFORATED INTERVAL	2869.8– 2878.8 mRKB	2801.5 – 2819.5 mRKB	
OIL/COND.FLOW RATE (Sm^3/D)	125	575	
GAS FLOW RATE (Sm^3/D)	23750	105800	
CHOKE SIZE (mm)	12.7	12.7	
GOR (Sm^3/Sm^3)	190	184	
OIL/COND.GRAVITY (g/cc)	0.829	0.825	
GAS GRAVITY (to air=1)	0.744	0.685	
WHP (bar)	31.9	148.3	
FBHFP (bar)	116.3	308.9	
FBHSIP (bar)	364.49	346.64	
WHT (°C)	28.0	66.1	
BHT (°C)	109.0	111.2	
BS & W (%)	0	0	
CO_2(%)	1.5	1.5	
H_2S (ppm)	0.2	1.5	
K (mD)	5	117	

Written: R.Hope Checked: K.O.Häger Date: July 31,1987

SECTION B

OPERATIONS

LIST OF CONTENT

SECTION B

TABLES

FIGURES

1. LOCATION SURVEY

The site survey for the 6407/7-2 location was performed between the 14. and 24. June 1986 by A/S Geoteam from the survey vessel M/V "Geo Scanner".

The purpose of the survey was to obtain bathymetric information and to detect any seabed obstruction or sub-seabed hazards to drilling operation.

At the time the site survey was done no excact well location was decided. The site survey centre location is described as the crosspoint between lines NH8654-403 and NH8654-205, which gives coordinates:

N 7 127 554 m
E 411 420 m

An area of approximately 6 km x 12 km was surveyed around this centre. The area was covered by 30 NW-SE lines, 10.5 km to 12 km in length and spaced 200 metres apart, and 5 NE-SW lines, 6 km in length and spaced 2000 metres apart.

Systems used were echo-sounder, side scan sonar, deep towed sparker and analog sparker.

17 high resolution seismic profiles were shot. 8 NE-SW lines, 5 km in length, 5 NW-SE lines, 14 km in length; 3 ENE-WSW lines, 9 km in length and one 39 km long tieline heading north to block 6407/-4.

The shallow geology at the given cross-point according to the survey:

361-372 m RKB:	Soft, silty sandy clay
372-407 m RKB:	Medium to stiff silty clay
407-419 m RKB:	Very stiff clay w/boulders at base
419-445 m RKB:	Hard clay
455-462 m RKB:	Sandy layer
462-623 m RKB:	Sandy, silty clay w/sandlayers
623- RKB:	Soft claystone w/sand beds.

When drilling this section, boulders were observed in the intervals: 347-377 m MSL and 413-416 m MSL. No shallow gas was experienced when drilling the well.

0351o
sn,POP/SAN

2. POSITIONING AND ANCHORING OF THE RIG

The well 6407/7-2 was located on the seismic line NH 8604 row 235 column 960.

Planned position of the well was:

	Geographical	UTM
Lat:	64°15'25.8"N	7.127.112 mN
Long:	07°10'42.1"E	411.724 mE

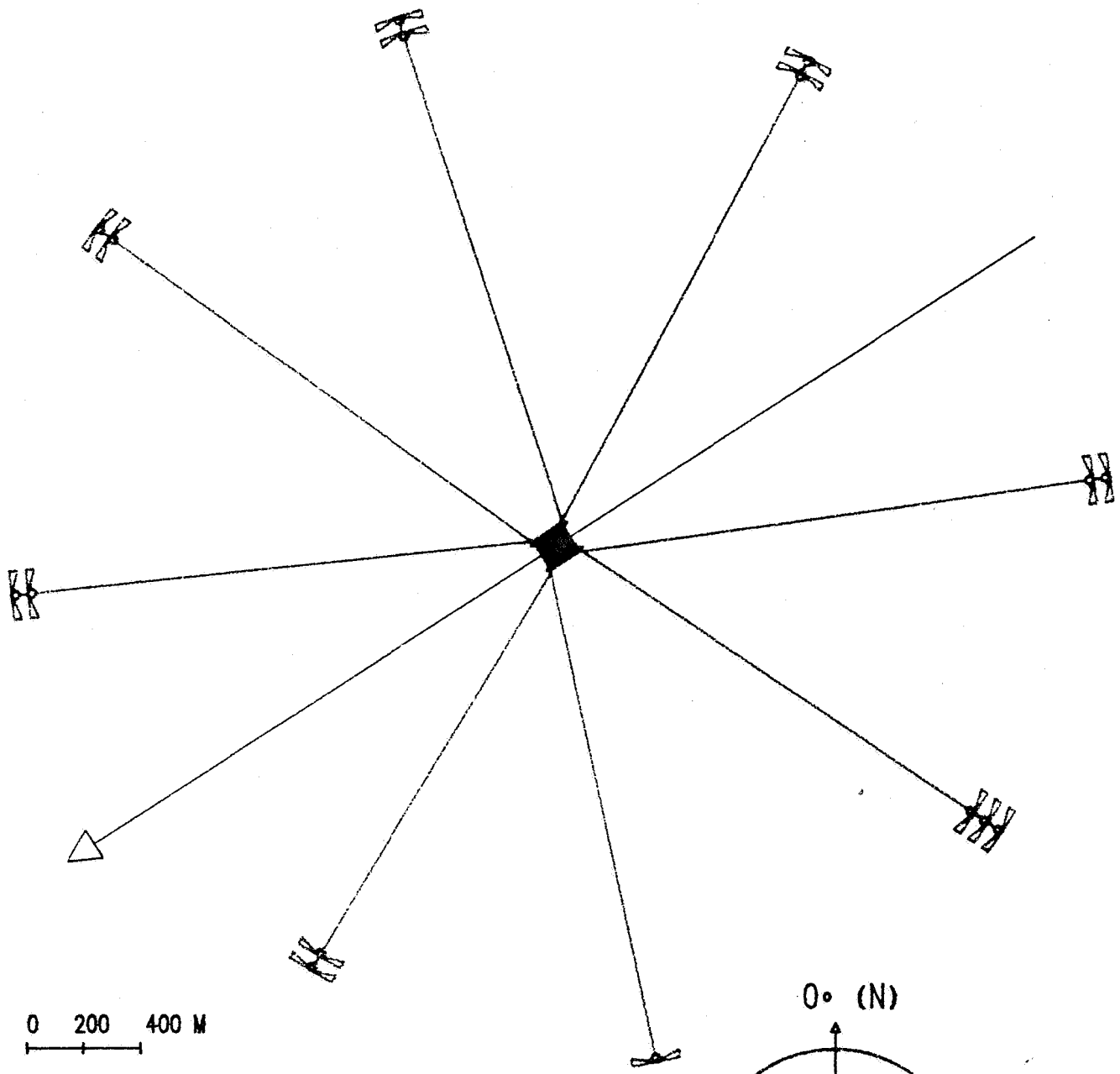
The equipment onboard the rig for navigation and positioning the rig was Syledis and Navstar. A satelite navigation system was used to determine the final coordinates to be:

	Geographical	UTM
Lat:	64°15'26.39"N	7.127.130 mN
Long:	07°10'42.65"E	411.732 mE

Zone 32
The rig heading was 237° and the distance from the intended location was 19.9 m in direction 24.4°.

The mooring line pattern is shown in fig. B-1, next page.

FIGURE B-1



ANCHOR NO	1	DIRECTION	264	LENGTH	1747
	2	DEGREES	306	METERS	1800
	3		342		1788
	4		28		1767
	5		82		1787
	6		124		1629
	7		168		1741
	8		211		1555

Norsk Hydro
Drilling Department
Date:19870310

MOORING LINE PATTERN
POLAR PIONEER
6407/7-2

3. OPERATION RESUME

3.1 Drilling summary

Polar Pioneer left the 34/8-2 location on 17 November. The rig passed 62 degrees north at 01:00 hrs and arrived the location for well 6407/7-2 at 23:30 hours on 18 November.

36" hole section

Well 6407/7-2 was spudded at 19:30 hours on 19 November 1986 and the 36" hole was drilled from 361 m MD to 383 m MD. At this depth the MWD showed an inclination of 7.1 degree. The well was respudded at 09:00 hours on 20 November and the 36" hole was drilled from 361 m MD to 446 m MD. The sections from 370 m to 400 m and from 436 m to 439 m contained boulders.

MWD was used for surveying purposes in this section and because of high hole angle the boulder section from 436 m to 439 m was reamed. The 30" casing was set on bottom and cemented. Return of cement to the seabed was not observed, caused by a leaking valve on the 30" casing running tool. The 30" x 36" annulus was grouted from 383 m to the seabed.

26" hole section

Before drilling out of the shoe at 445 m MD, cement was washed and reamed from 400 m MD to 440 m MD and drilled from 440 m MD. The 12 1/4" pilot hole was drilled from 445 m MD to 780 m MD and the hole was displaced to 1.2 rd high viscous mud. The hole was then opened to 26" down to 774 m MD. The hole was displaced to 1.2 rd mud before the 20" casing was run. The casing was cemented back to the seabed. The BOP-stack and the marine riser was run.

MWD was used for recording gammaray, resistivity and directional data in this section.

17 1/2" hole section

The shoe was drilled out at 757 m MD. The 12 1/2" hole was then cleaned down to 780 m MD and to 783 m MD where a leak-off test was performed to 1.66 rd. The 17 1/2" hole was drilled to 1517 m MD in one bit run. During this interval the mudweight was raised from 1.20 rd to 1.30 rd. Wipertrips to the casing shoe were performed at 1148 m MD and at 1403 m MD. A maximum overpull of 550 kN was recorded. The interval from 1158 m MD to 1185 m MD was reamed. At the bottom of the section, a wiper trip was performed prior to run casing. A maximum drag of 300 kN was observed.

The 13 3/8" casing was run. the casing took 250 kN weight at 1450 m MD and was circulated down to setting depth at 1502 m MD. The casing was cemented with top of cement at 485 m in the 13 3/8" x 20" annulus.

MWD was used for recording gammaray, resistivity and directional data in this section.

12 1/4" hole section

Cement was drilled from 1458 m MD to 1499 m MD while raising the mudweight to 1.40 rd. The shoe was drilled out at 1502 m MD. The 12 1/4" hole was then drilled to 1520 m MD where a leak-off test to 1.76 rd was performed. The 12 1/4" hole was drilled to 2550 m MD in three bit runs, the interval from 2230 m MD to TD of the section at 2550 m MD, was drilled with a turbine assembly. During the hole section the mudweight was raised to 1.60 rd. At 1705 m MD a drilling break was flowchecked and a wipertrip was done to the casing shoe, no drag was observed. At 1915 m the well was flowchecked and a wipertrip was done to 1750 m MD. A maximum overpull of 250 kN was observed. When reaming the interval from 2033 m MD to 2230 m MD an overpull of 500 kN was observed.

MWD was used only for directional surveying in this section.

The following logs were run: IFS/GR/LSS/SP, SHDT/GR, CST, CBL/VDL/GR.

A wiper trip was performed prior to run the 9 5/8" casing. The casing was cemented with top of cement at 2025 m MD in 9 5/8" x 12 1/4" annulus. The lower marine riser package was pulled due to a leak in the kill-line stab connector.

8 3/8" hole section

The casing shoe was drilled out at 2533 m and the mudweight lowered to 1.48 rd. The shoe was squeeze cemented before 8 3/8" hole was drilled to 2553 m MD and a leak-off test was performed to 1.87 rd. The 8 3/8" hole was then drilled to 2673 m MD in three bit runs. Core no. 1 was cut from 2673 m MD to 2688 m MD. The hole was then drilled to 2701 m MD where the coring continued. Two cores were cut from 2701 m MD to 2742 m MD. The hole was drilled to 2775 m MD, and then eight cores were cut from 2775 m MD to 2916 m MD. A total of eleven cores were cut in the 8 3/8" section. The 8 3/8" hole was drilled from 2916 m MD to 3320 m in five more bit runs. Tight spots were worked from 2940 m to 2800 m with a maximum overpull of 200 kN.

MWD was only used for directional surveying in this interval.

The following logs were run: DIT/LSS/MSFL/SP/GR, LDT/CNL/NGT/CAL, RFT/GR, DLT, SHDT, CST.

A wiper trip was made before the 7" liner was run and cemented. The liner was set with the shoe at 3316 m MD and the top of the liner at 2371 m.

After a clean out run was done, the liner lap was tested and the following logs were run: CBL/VDL, VSP, CET/GR.

Plugging and abandonment

2 drill stem tests were performed (ref. chapter 3.2) before the well was temporary abandoned (ref. chapter 4). The temporary abandonment was done because the well is planned as a possible future production well or for long term testing using a PTS.

3.2 Production test summary

Production test no. 1 (oil test)

The test string and the surface production test equipment was made up. The test string was run in the hole. A packer was set at 2840 m and the 7" liner was perforated from 2870 to 2879 m.

Initial flow and clean-up flow was performed. The well was shut in on the sub sea test tree. The main flow and final build-up were performed. One run with five bottom hole samplers was done. Mud was squeezed into the formation and the well was circulated before the test string was pulled out of the hole.

A squeeze packer was set at 2861 m and squeeze cementation was performed. Due to a negative pressure test on the packer a bridgeplug was set at 2859 m.

Production test no. 2 (oil test)

The test string for production test no. 2 was run. A packer was set at 2772 m, and the liner was perforated from 2801.50 m to 2819.50 m. Initial flow, initial build-up and clean-up flow was performed. One run with 5 bottom hole samplers was done while the well was flowing. The main flow was performed on a 1/2" fixed choke with the average flowdata as follows: Flowrate 598 m^3/day, GOR 184 m^3/m^3, WMP 150 bar, gasgradient 0.685 and oilgradient 0.825.

The well was shut in for the main build up period which lasted 2 times the main flow. A new run with bottom hole samplers was done before the well was killed.

The surface test equipment was laid down, and the teststring was pulled out of the hole.

A squeeze packer was set at 2796 m and pressure tested to 475 bar. A balanced cement plug with 1.90 rd was set on top of the packer from 2796 m to 2690 m.

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 |	
	Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
1	0	.00	1.05	01:00	Rig in transit to 6407/7-2. Passed 62 deg. north at 01:00 hrs.
				23:30	Rig in transit to 6407/7-2.
				24:00	Started to lay out anchors.
2	382	1.05	1.05	04:00	Laid out anchor no. 1, 8 and 4 with piggyback.
				06:30	Laid out anchor no. 7, 2 and 6 with piggyback on no. 2 and 6.
				12:00	Laid out anchor no. 3 with piggyback and reset anchor no. 5 with piggyback.
				13:00	Pretensioned the anchors. Anchor no. 6 slipped.
				15:00	Set a second piggyback on anchor no. 6.
				18:30	Repositioned the rig. Anchor no. 8. slipped. Test tensioned anchor no. 8.
				19:00	Ran in to the seabed with bit no. 1 and 36" hole opener. Tagged the seabed at 361 m.
				19:30	Picked up one joint of drill pipe and spudded the well from 361 m to 365 m.
				24:00	Drilled 36" hole from 365 m to 382 m.
3	406	1.05	1.05	00:30	Drilled 36" hole from 382 m to 383 m.
				01:30	Took a MWD survey at 383 m and 370 m. Took a singleshot survey at 365 m.
				08:30	Reset and retested anchor no. 5. Repositioned the rig.
				09:00	Respudded the well from 361 m to 365 m.
				11:45	Drilled 36" hole from 365 m to 372 m.
				12:45	Repositioned the rig. Reamed the hole while moving the rig.
				16:30	Drilled 36" hole from 372 m to 383 m. Had boulders from 370 m.
				24:00	Drilled 36" hole from 383 m to 400 m in boulders.
4	446	1.05	1.05	09:00	Drilled 36" hole from 406 m to 439 m.
				10:00	Reamed boulder section from 436 m to 439 m because of high hole angle.
				12:30	Drilled 36" hole from 439 m to 446 m.
				13:00	Reamed boulder section from 439 m to 441 m.
				13:30	Circulated 15 m3 high viscous mud.
				14:00	Made a wipertrip from 446 m to 374 m with no drag. Ran in the hole and tagged fill at 441 m.
				14:30	Washed down from 441 m to 445 m. Reamed

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987

Casing Size (in):	30	20	13 3/8	9 5/8	7	
Setting depth m,MD:	445	757	1502	2533	3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					the hole from 445 m to 446 m.
				15:30	Circulated 20 m3 high viscous mud. Pulled out of the hole to 425 m and ran back in. Washed from 445 m to 446 m and circulated 80 m3 high viscous mud.
				18:00	Pulled out of the hole and laid out the bit and the hole opener.
				19:30	Prepared to run the 30" casing.
				21:30	Ran in to the seabed with the 30" casing and stabbed into the hole. Ran in the hole and landed the casing on bottom. Inspected the guidebase with the ROV.
				23:30	Tested the cement lines and pumped 55 m3 cement slurry. Displaced the slurry with seawater.
5	780	1.05	1.05	00:30	Prepared to release the 30" casing running tool.
				01:30	Released and pulled out with the 30" casing running tool.
				03:00	Made up bit no. 2 and the 12 1/4" pilot assembly.
				03:30	Function tested the MWD tool at surface.
				04:30	Continued to run in with the 12 1/4" bottom hole assembly.
				05:00	Made up the 8" drilling jar.
				06:00	Ran in to the seabed with bit no. 2, stabbed into the wellhead and ran in the hole. The string started to take weight at 400 m.
				07:00	Washed and reamed cement from 400 m to 440 m.
				08:00	Drilled cement from 440 m to 445 m. Drilled out of the 30" casing shoe at 445 m.
				16:00	Drilled 12 1/4" pilot hole from 447 m to 654 m.
				16:30	Made a wiper trip to the 30" casing shoe without drag or fill.
				20:00	Drilled 12 1/4" pilot hole from 654 m to 780 m and flow checked the well.
				23:00	Pulled out of the hole with bit no. 2.
				23:30	Made up the 2 3/8" grouting stinger.
				24:00	Installed the four armed guide frame.
6	780	1.05	1.05	02:00	Ran in to the seabed with the 2 3/8" cement stinger. Stabbed into the grouting funnel and worked the stinger

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 |	
	Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					down to the top of cement at 383 m.
				03:30	Pressure tested the cement line. Mixed and pumped 12 m3 1.92 rd. cement slurry.
				04:00	Pulled out and laid down the 2 3/8" cement stinger.
				05:30	Made up the 18 3/4" wellhead housing to the running tool. Installed the 20" sub sea plug and set the wellhead back in the derrick.
				09:30	Made up the 26" hole opener assembly and ran in the hole to 400 m.
				13:30	Reamed cement from 400 m to 447 m.
				24:00	Opened the 12 1/4" pilot hole to 26" from 447 m to 774 m.
7	780	1.05	1.05	01:30	Circulated a 30 m3 high viscous pill and displaced the hole to 1.20 rd. mud.
				04:00	Pulled out of the hole.
				04:30	Installed the two-armed guide frame.
				05:00	Rigged up to run the 20" casing.
				10:00	Ran the 20" casing.
				12:00	Circulated 75 m3 sea water and pressure tested the cement lines.
				14:00	Mixed and pumped cement.
				15:00	Displaced the cement and bumped the cement plug with 62 bar.
				16:00	Pulled out of the hole with the running tool.
				17:00	Rigged up the riser handling equipment.
				21:00	Prepared to run the BOP.
				24:00	Ran the BOP and the riser.
8	780	1.05	1.20	09:00	Ran the BOP and the riser.
				10:00	Rigged down the riser handling equipment.
				10:30	Ran in the hole with BOP test plug.
				15:30	Tested the BOP. Pulled the yellow pod for repair of one fast response valve.
				16:00	Pulled out of the hole with the BOP test plug.
				17:00	Installed the nominal seat protector.
				20:00	Laid down 36" and 26" bottom hole assembly.
				24:00	Made up bit no. 3 and 17 1/2" bottom hole assembly.

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987

Casing Size (in):	30	20	13 3/8	9 5/8	7	
Setting depth m,MD:	445	757	1502	2533	3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
9	1160	1.03	1.20	01:00	Ran in the hole to 730 m.
				01:30	Pressure tested the lower pipe ram to 62 bar.
				05:30	Drilled float, cement and casing shoe to 757 m. Cleaned the hole to 780 m.
				06:00	Drilled 17 1/2" hole from 780 m to 783 m.
				07:00	Performed a leak off test to 1.66 rd.
				11:30	Drilled 17 1/2" hole from 783 m to 895 m.
				12:00	Cleaned out the shale shakers and the shaker box.
				20:30	Drilled 17 1/2" hole from 895 m to 1148 m.
				21:30	Circulated a 10 m3 high viscous pill and flowchecked, -OK.
				23:00	Performed a wiper trip to the 20" casing shoe. Maximum overpull was 550 kN.
				24:00	Drilled 17 1/2" hole from 1148 m to 1160 m.
10	1517	1.20	1.30	10:30	Drilled 17 1/2" hole from 1160 m to 1403 m. Had 200 kN drag on four last connections.
				12:45	Raised the mud weight to 1.25 rd.
				14:30	Performed a wipertrip to 1117 m. Maximum drag 400 KN. up to 1148 m. Reamed from 1158 m to 1185 m. Ran back to 1403 m.
				20:00	Drilled 17 1/2" hole from 1403 m to 1517 m.
				22:00	Pumped a 10 m3 high viscous pill and raised the mud weight to 1.30 rd.
				23:00	Performed a wipertrip to 1325 m. Maximum drag: 300 KN. up to 1403 m. Ran back to 1517 m.
				24:00	Pumped a 10 m3 high viscous pill and circulated to clean the hole.
11	1517	1.20	1.30	00:30	Circulated to clean the hole.
				04:00	Pulled out of the hole. Worked tight spots from 1072 m to 1016 m,- maximum overpull was 200 kN.
				06:45	Made up seat protector running and retrieving tool. Ran in the hole and retrieved the seat protector.
				08:00	Made up the casing hanger.
				19:00	Rigged up and ran the 13 3/8" casing.

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2 Casing Size (in): 30 | 20 | 13 3/8 | 9 5/8 | 7 Setting depth m,MD: 445 | 757 | 1502 | 2533 | 3316	Date 27/3-1987 2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					Took 250 kN weight from 1450 m to 1485 m. Could not pass 1485 m. Installed the circulating hose. Circulated and landed the casing.
				19:30	Circulated and tested the cement lines.
				21:00	Mixed and pumped cement.
				22:30	Displaced the cement and bumped the plug with 200 bar.
				23:00	Pressure tested the casing.
				24:00	Made up and pressure tested the seal assembly.
12	1517	1.20	1.40	00:30	Washed and cleaned the wellhead. Set back the cementing kelly. Made up one stand of drill pipe and stung back into the hanger.
				03:00	Tested the BOP.
				04:30	Pulled out of the hole and laid down the landing string.
				05:30	Slipped and cut the drilling line.
				09:00	Ran in the hole and attempted to set the wear bushing,- negative. Pulled out of the hole and serviced the wearbushing and the running tool.
				12:00	Ran in the hole with 4 stands of heavy weight drill pipe, made up the wear bushing running tool and ran in the hole. Were unable to lock into the J - slot. Pumped off the wearbushing.
				14:30	Laid down the 17 1/2" bottom hole assembly.
				18:30	Made up bit no. 4, 12 1/4" bottom hole assembly and ran in the hole.
				20:30	Pressure tested the middle pipe ram and the lower pipe ram. Function tested the blue pod.
				21:00	Ran in the hole to the top of the cement at 1458 m.
				24:00	Drilled cement from 1458 m to 1499 m while raising the mud weight to 1.40 rd.
13	1839	1.52	1.60	00:30	Drilled cement from 1499 m to 1503 m. Drilled out of the casing shoe at 1502 m. Washed down to 1517 m.
				01:00	Drilled 12 1/4" hole from 1517 m to 1520 m.
				02:30	Performed a leak-off test to 1.76 rd. equivalent mud weight.

((((ooo) ------- Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987

Casing Size (in):	30	20	13 3/8	9 5/8	7	
Setting depth m,MD:	445	757	1502	2533	3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
				05:00	Drilled 12 1/4" hole from 1520 m to 1588 m.
				07:30	Made a pump off test and increased the mud weight to 1.55 r.d.
				11:30	Drilled 12 1/4" hole from 1588 m to 1678 m. Maximum drag on connections: 150 kN.
				13:00	Made a pump off test and circulated bottoms up, no gas.
				16:30	Drilled 12 1/4" hole from 1678 m to 1754 m. Flowchecked drilling brake at 1705 m.
				19:00	Made a pump off test, circulated bottoms up and raised the mud weight to 1.60 rd.
				20:00	Performed a wiper trip to the casing shoe. Had no drag.
				24:00	Drilled 12 1/4" hole from 1754 m to 1839 m.
14	2016	1.54	1.60	04:00	Drilled 12 1/4" hole from 1839 m to 1915 m. Teight connection from 1877 m.
				05:30	Circulated bottoms up.
				06:00	Made a wiper trip to 1750 m. Max over pull 250 KN.
				09:00	Drilled 12 1/4" hole from 1915 m to 1973 m.
				15:30	Changed rotary table engine fan motor.
				23:00	Drilled 12 1/4" hole from 1973 m to 2106 m.
				23:30	Circulated and slugged the pipe.
				24:00	Pulled out of the hole.
15	2190	1.54	1.60	03:00	Continued to pull out of the hole.
				07:00	Ran in the hole with bit number 5 to 2077 m. Filled the pipe at the casing shoe and tested the Measurement While Drilling tool.
				07:30	Washed and reamed the hole from 2077 m to 2106 m.
				24:00	Drilled the 12 1/4" hole from 2106 m to 2190 m.
16	2230	1.54	1.60	07:30	Drilled the 12 1/4" hole from 2190 m to 2230 m.
				08:00	Circulated.
				10:30	Pulled out to 1900 m. Teight spot at 2154 m and from 2115m to 2100 m. Max overpull: 545 KN. Picked up the kelly and backreamed from 2134 m to 2069 m.

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 |	
	Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
				12:30	Ran in the hole to 2125 m. Washed and reamed to 2230 m.
				14:00	Circulated bottoms up.
				17:30	Pulled out of the hole.
				24:00	Picked up and tested the turbine. Made up bit number 6 and ran in the hole.
17	2310	1.54	1.60	02:30	Reamed from 2033 m to 2230 m. 500 KN max overpull at 2033 m.
				24:00	Drilled the 12 1/4" hole from 2230 m to 2310 m.
18	2409	1.54	1.60	24:00	Drilled the 12 1/4" hole from 2310 m to 2409 m.
19	2513	1.54	1.60	24:00	Drilled the 12 1/4" hole from 2409 m to 2513 m.
20	2550	1.54	1.60	08:30	Drilled the 12 1/4" hole from 2513 m to 2550 m.
				09:00	Circulated.
				14:00	Pulled out of the hole with bit number 6 . Worked string through spots from 2100 m to 2035 m. 300 KN max overpull.
				19:00	Ran log number 1: IFS/GR/LSS/SP.
				23:00	Ran log number 2: SHDT/GR.
				24:00	Ran log number 3: CST.
21	2550	1.54	1.60	05:30	Ran log number 3: CST.
				08:30	Ran log number 4: CBL/VDL/GR.
				10:00	Made up and racked the 9 5/8" casing hanger in the derrick.
				13:30	Made up bit number 7,junk sub and bit sub and ran in the hole.
				15:00	Circulated the hole clean.
				18:30	Pulled out of the hole. Laid down the bit and junk sub.
				20:00	Retrieved the wear bushing.
				23:30	Rigged up and ran the 9 5/8" casing.
				24:00	Repaired the hydraulic stabbing board.
22	2550	1.54	1.60	05:00	Ran the 9 5/8" casing.
				05:30	Broke circulation at 1502 m.
				09:30	Continued to run the 9 5/8" casing. Picked up and landed the casing hanger in the wellhead.
				12:00	Rigged up the cement hose and

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987
	Casing Size (in): 30 | 20 | 13 3/8 | 9 5/8 | 7	
	Setting depth m,MD: 445 | 757 | 1502 | 2533 | 3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					circulated casing volume.
				13:00	Flushed through the cement line and tested the same. Mixed and pumped the cement. No indication of top plug sheared.
				14:30	Displaced the cement with 1.60 r.d. mud. The plug did not bump.
				16:00	Held 46 bar back pressure on the casing. Tested the kill line. Found a leak in the kill line connector.
				17:00	Made up the seal assembly and tested same against upper pipe ram.
				17:30	Tested the annular preventer and the outer kill valve.
				18:00	Rigged down the surface equipment.
				19:30	Pulled the casing landing string.
				21:30	Laid down the plug running mandrel and broke the cement head for inspection.
				24:00	Rigged up to pull the lower marine riser package due to leak on the kill line connector. Started to pull the diverter.
23	2550	1.30	1.49	18:45	Pulled the lower marine riser package. Changed seals on kill/choke connector and changed the VX-ring. Ran the riser and latched on the lower marine riser package. Made overpull test to 300 KN. Tested k/c line while running riser.
				21:00	Installed the diverter and tested the kill/choke stab connectors.
				22:30	Displaced the kill and choke line to 1.60 r.d. mud and tested the casing, negativ.
				24:00	Laid down the 12 1/4" bottom hole assembly.
24	2550	1.30	1.48	00:30	Continued to lay down the 12 1/4" bottom hole assembly.
				04:00	Picked up the and racked the 8 3/8" bottom hole assembly in the derrick.
				07:45	Ran in the hole with the BOP test plug and tested the BOP. Function tested the accoustic control system.
				08:15	Pulled out with the BOP test plug.
				12:00	Ran in the hole with the wear bushing. Pullled out found wear bushing on the running tool. Reran the wear bushing.
				16:45	Made up bit number 8 and casing scraper

((((ooo) ------- Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2 Casing Size (in): 30 | 20 | 13 3/8 | 9 5/8 | 7 Setting depth m,MD: 445 | 757 | 1502 | 2533 | 3316	Date 27/3-1987 2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					and ran in the hole.
				18:30	Drilled float and shoe and washed to bottom. The casing shoe at 2533 m.
				20:00	Pumped a high viscous pill. Circulated and conditioned the mud to 1.48 r.d.
				22:30	Slugged the pipe and pulled out of the hole.
				24:00	Picked up 3 1/2" drill pipe stinger and ran in open ended.
25	2553	1.30	1.48	02:30	Ran in the hole with open ended drill pipe.
				04:00	Made up the circulation head and tested the cement line. Established injection rate.
				05:00	Mixed and pumped the cement.
				06:30	Pulled out to 2270 m and reverse circulated.
				07:30	Squeeze cemented the shoe.
				09:00	Held 71 bar back pressure on the cement.
				09:30	Bled off the pressure.
				10:30	Slipped and cut the drilling line.
				13:00	Pulled out of the hole.
				14:30	Made up and racked the core barrel in the derrick.
				15:00	Tested the casing against the shear ram.
				15:30	Backed out bit number 8, casing scraper and bit sub.
				19:30	Made up bit number 9 and ran in the hole Tagged the cement at 2490 m.
				22:30	Drilled cement from 2490 m to 2550 m.
				24:00	Drilled 8 3/8" hole from 2550 m to 2553 m.
26	2582	1.34	1.48	01:00	Circulated while checking the pipe tally.
				02:30	Circulated for 15 min and performed leak off test.
				12:00	Drilled 8 3/8" hole from 2553 m to 2569 m.
				15:00	Pulled out of the hole. Broke out bit number 9.
				18:00	Made up bit number 10 and ran in the hole.
				18:30	Reamed from 2539 m to 2569 m.
				24:00	Drilled the 8 3/8" hole from 2569 m to 2582 m.

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987

Casing Size (in):	30	20	13 3/8	9 5/8	7	
Setting depth m,MD:	445	757	1502	2533	3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
27	2651	1.39	1.48	24:00	Drilled the 8 3/8" hole from 2582 m to 2651 m.
28	2680	1.39	1.48	01:00	Drilled the 8 3/8" hole from 2651 m to 2653 m.
				01:30	Circulated
				02:00	Flow checked and dropped a survey.
				04:30	Pulled out of the hole.
				07:30	Made up bit number 11 and ran in the hole to 2633 m.
				08:00	Washed and reamed the hole from 2633 m to 2653 m.
				13:00	Drilled the 8 3/8 hole from 2653 m to 2673 m.
				15:00	Flow checked and circulated for samples.
				18:30	Flow checked and pulled out of the hole.
				22:30	Made up core bit no 1 and RLL and ran in the hole.
				24:00	Cut core no. 1 from 2673 m to 2680 m.
29	2701	1.39	1.48	03:30	Cut core no. 1 from 2673 m to 2688 m.
				06:00	Flowchecked and pulled out of the hole.
				07:30	Recovered core no.1
				11:00	Made up bit no. 12 and ran in the hole.
				12:00	Washed and reamed from 2648 m to 2688 m while logging with RLL.
				13:30	Drilled the 8 3/8" hole from 2688 m to 2696 m. Lost 35 bar pump pressure.
				14:30	Checked the surface equipment.
				18:30	Flowchecked and pulled out of the hole with wet pipe.
				23:30	Changed out RLL and jar and ran in the hole.
				24:00	Drilled the 8 3/8" hole from 2696 m to 2698 m.
30	2731	1.39	1.48	00:15	Drilled the 8 3/8" hole from 2696 m to 2701 m.
				02:00	Circulated for samples.
				04:30	Pulled out of the hole.
				08:00	Made up corebit and ran in the hole.
				09:00	Slipped and cut the drilling line.
				09:30	Ran in the hole.
				14:00	Dropped the ball and cut core no. 2 from 2701 m to 2723 m. The core jammed.
				17:00	Flowchecked and pulled out of the hole.
				18:30	Recovered core and serviced corebarrel.

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 |	
	Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
				22:30	Ran in the hole.
				24:00	Cut core no. 3 from 2723 m to 2731 m.
31	2775	1.39	1.48	04:00	Cut core no. 3 from 2723 m to 2742 m.
				07:00	Flowchecked and pulled out of the hole.
				08:30	Recovered core no.3. Serviced and racked the core barrel in the derrick.
				12:00	Made up bit no. 13 and ran in the hole to 2710 m.
				13:00	Logged the hole with the RLL from 2710 m to 2742 m.
				18:30	Drilled the 8 3/8" hole from 2742 m to 2775 m.
				19:30	Circulated for sample.
				20:00	Dropped a survey.
				23:00	Flowchecked and pulled out of the hole.
				24:00	Made up corehead no.2 and ran in the hole.
32	2805	1.39	1.48	02:30	Ran in the hole.
				06:00	Dropped the ball and cut core no. 4 from 2775 m to 2791.5 m.
				09:30	Flowchecked and pulled out of the hole.
				11:00	Recovered core no. 4. Serviced the core barrel and racked it back in the derrick
				12:00	Made up the BOP testplug and ran in the hole.
				16:00	Tested the BOP to NH specifications, meanwhile tested the surface equipment.
				17:00	Pulled out of the hole with the BOP testplug.
				21:30	Ran in the hole to cut core no. 5.
				24:00	Dropped the ball and cut core no. 5 from 2791.5 m to 2804.5 m.
33	2842	1.39	1.48	00:30	Cut core no.5 from 2803 m to 2804.5 m.
				03:30	Flowchecked and pulled out of the hole.
				04:30	Recovered core no.5 and serviced the corebarrel.
				07:30	Ran in the hole to cut core no.6.
				11:00	Dropped the ball and cut core no.6 from 2804.5 m to 2823.5 m.
				14:30	Flowchecked and pulled out of the hole.
				16:30	Recovered core no.6
				20:00	Made up corehead no.3 and ran in the hole.
				24:00	Cut core no.7 from 2823.5 m to 2841.5 m.

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987

Casing Size (in):	30	20	13 3/8	9 5/8	7	
Setting depth m,MD:	445	757	1502	2533	3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
34	2879	1.39	1.48	03:00	Flowchecked and pulled out of the hole.
				04:00	Recovered core no.7 and serviced the corebarrel.
				06:30	Ran in the hole to 9 5/8" casing shoe.
				07:30	Slip and cut 34 m drilling line.
				08:00	Ran in the hole to bottom.
				13:00	Dropped the ball and cut core no. 8 from 2841.5 m to 2869.5 m.
				15:30	Flowchecked and pulled out of the hole.
				17:00	Recovered core no.8 and serviced the corebarrel.
				20:00	Made up corehead no.5 and ran in the hole.
				22:30	Dropped the ball and cut core no.9 from 2869.5 m to 2879 m.
				24:00	Flowchecked and pulled out of the hole.
35	2915	1.39	1.48	02:00	Pulled out of the hole with core no. 9.
				02:30	Recovered core no. 9 and serviced the core barrel.
				05:30	Made up core head no. 6 and ran in the hole.
				11:30	Dropped the ball and cut core no. 10 from 2879 m to 2896 m.
				15:00	Flow checked and pulled out of the hole.
				16:00	Recovered core no. 10 and serviced the core barrel.
				19:00	Made up core head no. 6 and ran back in the hole.
				21:30	Dropped the ball and cut core no. 11 from 2896 m to 2915 m.
				24:00	Flow checked and pulled out of the hole.
36	2994	1.39	1.48	00:30	Pulled out of the hole with core no. 11.
				01:30	Recovered core no. 11 and racked the core barrel in the derrick.
				05:00	Made up bit no. 14 and ran in the hole.
				07:00	Reamed from 2846 m to 2915.5 m.
				08:30	Drilled the 8 3/8" hole from 2915.5 m to 2928 m and flow checked,ok.
				10:00	Circulated for sample.
				24:00	Drilled the 8 3/8" hole from 2928 m to 2994 m.
37	3028	1.39	1.48	00:30	Circulated and dropped the survey.
				04:30	Pulled out of the hole and retrieved the survey.

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): 30 | 20 | 13 3/8 | 9 5/8 | 7	
	Setting depth m,MD: 445 | 757 | 1502 | 2533 | 3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
				08:00	Made up bit no. 15 and ran in the hole.
				10:30	Reamed from 2846 m to 2994 m.
				13:00	Kelly hose bursted. Changed the kelly hose and presure tested the same.
				19:30	Drilled the 8 3/8" hole from 2994 m to 3028 m and flow checked.
				22:30	Pulled out of the hole. Laid down the bit, bit sub, stabilizer and the RLL tool.
				23:30	Slipped and cut the drilling line.
				24:00	Made up the turbine.
38	3039	1.39	1.48	05:00	Continued to make up the turbine and the MWD tool and tested the same. Made up bit number 16 and ran in the hole.
				09:00	Reamed from 2816 m to 3028 m.
				11:30	Drilled the 8 3/8" hole from 3028 m to 3028.5 m.
				15:00	Flow checked and pulled out of the hole. Backed out bit number 16.
				20:30	Made up bit number 17 and 5 joint of drill collars. Replaced a stabilizer and changed out the measurement while drilling tool and ran in the hole.
				21:00	Reamed and washed from 3005 m to 3028.5 m.
				24:00	Drilled the 8 3/8" hole from 3028.5 m to 3038 m.
39	3078	1.39	1.48	10:00	Drilled the 8 3/8" hole from 3038 m to 3060 m.
				14:00	Slugged the pipe and pulled out of the hole. Broke out bit number 17 and laid down the stabilizer and the bit sub.
				19:00	Made up the turbine and tested the same. Made up bit number 18 and ran in the hole. Worked the pipe from 2768 m to 3034 m.
				19:30	Reamed and washed the hole from 3034 m to 3060 m.
				24:00	Drilled the 8 3/8" hole from 3060 m to 3077 m.
40	3182	1.39	1.48	24:00	Drilled the 8 3/8" hole from 3077 m to 3182 m.
41	3276	1.39	1.48	24:00	Drilled the 8 3/8" hole from 3182 m to 3267 m.

((((ooo) Norsk Hydro	Daily report — System : Boredata Sandnes					Date 27/3-1987
	Well: 6407/7-2					
	Casing Size (in):	30	20	13 3/8	9 5/8	7
	Setting depth m,MD:	445	757	1502	2533	3316

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
42	3320	1.32	1.48	13:30	Drilled 8 3/8" hole from 3267 m to 3320 m.
				15:00	Circulated the hole clean and slugged the pipe.
				20:00	Pulled out of the hole. Tight spots from 2940 m to 2800 m. Max. 200 KN overpull.
				21:00	Rigged up the logging equipment.
				24:00	Ran log no.1:DIT/LSS/MSFL/SP/GR.
43	3320	1.32	1.48	04:00	Completed log no.1 and pulled out of the hole.
				05:00	Attempted to run log no. 2: LDT/CNL/NGT/CAL. Pulled out due to tool failure.
				09:00	Reran log no.2.
				19:00	Ran log no. 3: RFT/GR.
				21:30	Got stuck with the RFT tool at 2884 m. Worked the RFT tool free, pulled out of the hole and rigged down the logging equipment.
				24:00	Ran in the hole for wiper trip.
44	3320	1.32	1.48	01:30	Continued to run in the hole with bit no.12 to 3304 m.
				02:30	Broke circulation and washed down to 3320 m. Had 6 m fill. Circulated bottoms up.
				06:00	Pulled out of the hole with bit no.12.
				09:30	Rigged up the logging equipment and reran log no.4.
				22:00	Completed log no.4: RFT/GR. Ran log no.5: RFT/GR.
				24:00	Ran log no.6: DLT.
45	3320	1.32	1.48	14:00	Completed log no.6: DLT. Ran log no.7: SHDT. Ran log no.8: CST. Recovered 34, lost 7, 3 empty, 16 misfire.
				20:30	Ran log no.9: CST. Recovered 21, lost 9.
				21:00	Made up the liner cement head and swiwel
				24:00	Ran in the hole with bit no.12 and casing scraper for wiper trip.
46	3320	1.41	1.48	01:30	Continued to run in the hole with bit no.12 and casingscraper for wiper trip.
				03:30	Circulated to clean the hole.

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987

Casing Size (in):	30	20	13 3/8	9 5/8	7	
Setting depth m,MD:	445	757	1502	2533	3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
				08:00	Pulled out of the hole with bit no.12.
				10:00	Rigged up and started to run the 7" liner.
				10:30	Repaired broken wire for hoseguide on forward catwalk machine.
				15:00	Continued to run the 7" liner.
				16:00	Made up the liner hanger. Circulated through liner to check for leaks. Rigged down the liner equipment.
				22:00	Ran in the hole with the 7" liner and the liner running string.
				22:30	Made up the cement kelly and tagged bottom at 3318 m.
				23:00	Circulated and pressure tested the cement line.
				24:00	Dropped and seated the liner setting ball, sat the liner hanger and released the liner running tool.
47	3266	1.41	1.49	01:30	Pumped 15 m3 pretreated mud and 7 m3 mud spacer. Was not able to rotate the liner.
				02:30	Mixed and pumped 5 m3 scavenger slurry and 17.5 m3 cement slurry. Displaced the cement with 1.5 m3 water and 35.75 m3 mud, and bumped the plug.
				03:30	Checked for backflow, sat the liner packer and laid down the cement kelly. Pulled out of the hole three stands.
				04:30	Reverse circulated out the drillpipe.
				05:30	Pulled out of the hole with the liner running string to 1262 m.
				06:30	Slipped and cut the drill-line.
				09:00	Cut 419 m drill-line because of worn out line.
				13:30	Continued to pull out of the hole with the liner running string.
				14:00	Had problems with backlatch on the drill line drum.
				24:00	Made up bit no.19 and a 9 5/8" casing scraper and ran in the hole. Tagged top of the liner at 2371 m.
48	3265	1.41	1.48	01:30	Circulated bottoms up.
				02:30	Pressuretested the liner lap.
				07:00	Pulled out of the hole with bit no.19.
				15:00	Ran in the hole with 6 "bit and 7" casing scraper. Tagged cement at 2375 m.

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 |	
	Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
				15:30	Washed and cleaned the liner hanger for cement.
				16:00	Continued to run in the hole to 2396 m.
				17:00	Drilled cement from 2396 m to 2436 m.
				18:00	Continued to run in the hole to 3255 m with dress mill on top of liner.
				18:30	Milled the liner top.
				20:00	Circulated the hole clean.
				20:30	Pressuretested the liner.
				24:00	Pulled out of the hole with bit no.20 and liner dress mill.
49	3265	.00	1.48	01:00	Pulled out of the hole and laid down bit, casing scraper and bit sub.
				01:30	Hooked down the flowline hose from the derrick to test the testing equipment.
				07:30	Rigged up and ran log no. 10: CBL / VDL.
				11:00	Ran log no. 11: VSP.
				13:30	Pulled out due to communication failure in the VSP tool. Ran back in to 3200 m.
				22:30	Ran log no. 11: VSP.
				24:00	Ran log no. 12: CET / GR.
50	3265	.00	1.48	02:00	Were not able to pass the liner lap with the CET tool. Pulled out and installed the LSS tool to increase the weight. Ran in the hole and passed the liner lap.
				05:00	Ran log no. 12 CET and rigged down the logging equipment.
				08:30	Made up sub sea test tree, lubricator valve and surface test tree and laid them down.
				13:30	Ran the BOP test tool and pressure tested the BOP.
				17:30	Prepared and ran the test string.
				18:00	Pressure tested the string below the multi opening reversing valve.
				19:30	Ran in the hole with the test string.
				20:00	Pressure tested the string below the first joint of PH-6 tubing.
				24:00	Ran in the hole with the test string.
51	3265	.00	1.48	01:30	Ran in the hole with the test string.
				02:00	Pressure tested the string.
				05:30	Rigged up casing tong and ran 308 m of 5 1/2" insulated tubing.
				06:00	Pressure tested the string.
				09:00	Rigged up and installed the sub sea test

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2	Date 27/3-1987
	Casing Size (in): 30 | 20 | 13 3/8 | 9 5/8 | 7	
	Setting depth m,MD: 445 | 757 | 1502 | 2533 | 3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					tree.
				10:00	Pressure and function tested the sub sea test tree.
				16:30	Ran in the hole with 5 1/2" insulated tubing and installed the lubricator.
				19:00	Rigged up and ran a GR / CLL log for depth correlation.
				23:00	Picked up flowhead and coiled tubing frame assembly. Installed the flowhead and landed the the sub sea test tree.
				24:00	Function tested the emergency shut down system. Flushed and pressure tested the line from the cementing unit.
52	3265	.00	1.46	03:00	Pressure tested surface testing equipment according to test program. Set the packer at 2840 m.
				05:30	Rigged up and ran GR / CLL log.
				06:30	Flushed to burners while pressure testing the packer. Applied 330 bar on tubing to perforate.
				07:00	Well shut in.
				07:30	Initial flow.
				08:30	Initial build up.
				19:30	Flowed the well for clean up.
				20:30	Attempted to shut in the well on the pressure controlled tester valve three times, but failed.
				21:00	Closed the sub sea test tree and the lubricator valve. Pressure tested both, -OK.
				21:30	Flowed the well due to low temperature reading at lubricator valve.
				22:30	Shut in the well on sub sea test tree. Attempted to pressure test the sub sea test tree, but failed.
				23:30	Opened and closed the sub sea test tree and pressure tested it, -OK. Closed the lubricator valve and pressure tested it, -OK.
				24:00	Rigged up wireline to run bottom hole samplers.
53	3265	.00	1.48	00:30	Attempted to rig up for bottom hole sampling. Was not able to due to failure in a cross over for the wireline BOP.
				10:00	Prepared for main flow and opened up the sub sea test tree for main flow from

((((ooo) ------- Norsk Hydro	Daily report ---------- System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 |	
	Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					01:30 hrs.
				22:30	Shut in for main build up from 10:08 hrs.
				24:00	Injected glycol to flowhead and sub sea test tree and flowed the well from 22:45 hrs.
54	3265	.00	1.48	00:30	Bled off pressure on annulus to close the pressure controlled tester valve, -negative. Closed the choke manifold.
				01:30	Pressured up on annulus to positively keep the pressure controlled tester valve open. Closed the lubricator valve and pressure tested it. Rigged up wire-line equipment for bottom hole sampling.
				02:00	Steam heated the wireline BOP.
				03:00	Rigged up wireline equipment for bottom hole sampling.
				04:30	Stabbed in the bottom hole samplers and pressure tested the wireline lubricator.
				05:30	Were unable to run the bottom hole samplers due to a restriction in the tubing above the lubricator valve. Closed the lubricator valve and filled the pipe with diesel and opened the valve.
				09:30	Ran 5 bottom hole samplers.
				10:30	Were unable to pass the lubricator with the bottom hole samplers when pulling out. Closed the sub sea test tree, bled off the pressure above and the tool came free. Pumped methanol into the string.
				11:00	Laid down the bottom hole samplers and rigged down the wireline equipment.
				13:00	Opened up the lubricator valve and bull-headed the tubing volume.
				14:30	Flushed the lines to the burners.
				15:00	Attempted to open the single shot annulus reversing valve, -negative.
				16:30	Opened the multi opening reversing valve and reverse circulated 38 cu.m.
				17:00	Attempted to release the test packer.
				17:30	Attempted to bullhead into the annulus, but found the packer still set.
				18:00	Released the test packer.
				18:30	Bullheaded 2.4 m3 into the annulus.
				19:00	Attempted to circulate, but did not succeed because the pressure controlled

((((ooo) ------- Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2 Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 | Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	Date 27/3-1987 2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					tester valve had closed.
				20:00	Attempted to open the multi opening reversing valve, -negative.
				23:30	Rigged down coil tubing frame and flow head.
				24:00	Installed one joint of 5 1/2" tubing and cementing hose.
55	2861	.00	1.48	02:00	Sat the test packer. Opened the single shot annulus reversing valve. Attempted to release the test packer.
				03:00	Pulled out and laid down the lubricator valve.
				05:30	Released the test packer and circulated through the single shot annulus reversing valve.
				19:00	Laid down the cement hose and the cementing head. Pulled out of the hole with the landing string. Laid down the sub sea test tree and rigged down the testing equipment. Pulled out with the test string.
				22:00	Rigged up and sat squeeze packer at 2861 m.
				24:00	Picked up cement stinger and casing scraper.
56	2859	.00	1.48	02:00	Ran in the hole with cement stinger and casing scraper. Worked the scraper inside the 7" liner.
				02:30	Broke the circulation and stung into the squeeze packer.
				03:30	Established injection rate.
				04:30	Pulled out of the squeeze packer and circulated and conditioned the mud.
				07:00	Made up circulating head. Mixed and pumped 1.3 m3 of cement. Stung into the squeeze packer and squeezed 1.0 m3 into the perforations.
				07:30	Pulled out of the squeeze packer and reverse circulated.
				08:00	Attempted to test the squeeze packer but failed.
				09:00	Reverse circulated the string volume and got some cement back.
				12:00	Circulated and conditioned the mud. Swept a high viscous pill. Displaced the liner to fresh mud and set a high

((((ooo)	Daily report System : Boredata Sandnes	Date 27/3-1987
Norsk Hydro	Well: 6407/7-2 Casing Size (in): 30 | 20 | 13 3/8 | 9 5/8 | 7 Setting depth m,MD: 445 | 757 | 1502 | 2533 | 3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					viscous pill above the liner.
				15:30	Pulled out of the hole with the cement stinger.
				18:30	Rigged up and set a bridge plug at 2859 m. Pressure tested the plug against closed shear ram when rigging down the wireline equipment.
				19:30	Ran the BOP test plug.
				23:30	Pressure tested the BOP.
				24:00	Retrieved the BOP test plug.
57	2819	.00	1.48	03:00	Rigged up and ran in the hole with bottom hole assembly for production test no. 2.
				03:30	Pressure tested the bottom hole assembly.
				05:00	Continued running in the hole with the bottom hole assembly.
				05:30	Pressure tested the bottom hole assembly.
				11:30	Ran in the hole with the test string.
				12:00	Pressure tested the test string.
				14:30	Continued running the test string.
				15:00	Pressure tested the test string.
				17:30	Installed the sub sea test tree.
				18:00	Attempted to pressure test the sub sea test tree, but failed.
				19:00	Changed out the valve assembly on the sub sea test tree.
				20:00	Pressure tested the sub sea test tree.
				23:00	Ran in the hole with test string and installed the lubricator valve. Function tested the lubricator valve.
				24:00	Picked up coil tubing frame and flow-head.
58	2819	.00	1.48	03:00	Made up coil tubing frame and flowhead. Made up kill- and flowline hose and landed the test string.
				06:30	Pressure tested surface testing equipment and the lubricator valve.
				10:00	Rigged up and ran CCL/GR log for depth correlation. Set the packer at 2772 m and checked the depth.
				10:15	Pressure tested the test packer against the choke. Perforated for production test no. 2 from 2801.5 m to 2819.5 m. Held the well shut in for build up.

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes	Date 27/3-1987
	Well: 6407/7-2	
	Casing Size (in): 30 | 20 | 13 3/8 | 9 5/8 | 7	
	Setting depth m,MD: 445 | 757 | 1502 | 2533 | 3316	2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
				10:30	Opened the well for initial flow at 10:20 hrs.
				12:00	Closed the well for initial build up from 10:30 hrs.
				18:00	Flowed the well from 12:03 hrs. Changed from 25.4 mm choke to 12.7 mm choke at 16:15 hrs.
				23:00	Shut in the well at 18:00 hrs. Prepared and ran 5 bottom hole samplers in the hole.
				24:00	Flowed the well on 16/64" choke from 22:53 hrs.
59	2819	.00	1.48	03:00	Flowed the well on 16/64" choke. Closed the well and pulled out with the bottom hole samplers.
				10:30	Flowed the well on 32/64" choke from 03:15 hrs.
				24:00	Shut the well in for main build up from 10:40 hrs.
60	2819	.00	1.48	01:30	Well shut in for main build up.
				02:30	Flowed the well on 16/64" choke.
				07:00	Rigged up and ran bottom hole samplers. Took gradient readings on the way down.
				09:00	Pulled out of the hole and retrieved the bottom hole samplers.
				09:30	Rigged down the wireline equipment.
				10:00	Flushed the surface lines with glycol.
				11:00	Bullheaded 21 m3 and squeezed 1.6 m3 of mud into the perforations.
				12:00	Observed the well. Had back flow. Bullheaded 1 m3. Observed the well for 30 min, -OK.
				13:00	Closed the production tester valve and opened the single shot annulus reversing valve. Circulated out the glycol in the kill line.
				14:00	Reverse circulated two times test string volume.
				17:00	Released the test packer and bullheaded 2 m3. Circulated the long way and flow checked.
				21:30	Pumped slug, laid down the coil tubing frame, the flowhead and the lubricator valve.
				24:00	Pulled out of the hole with the landing

((((ooo) ------- Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2 Casing Size (in): | 30 | 20 | 13 3/8 | 9 5/8 | 7 | Setting depth m,MD: | 445 | 757 | 1502 | 2533 | 3316 |	Date 27/3-1987 2

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					string.
61	2796	.00	1.48	01:30	Laid down the sub sea test tree and rigged down the surface testing equipment on the rig floor.
				18:00	Pulled out of the hole and laid down the test string.
				21:00	Rigged up and set a squeeze packer at 2796 m. A brass piece off the running tool was lost in the hole.
				24:00	Made up and ran in the hole with cement stinger.
62	650	.00	.00	01:00	Continued to run in the hole with cement stinger.
				02:15	Tagged the squeeze packer at 2796 m. Set down with 90 kN weight and attempted to pressure up annulus to 30 bar, but failed. Circulated and increased the weight to 133 kN to work the stinger into the packer, negative.
				03:30	Pressure tested the squeeze packer to 475 bar.
				04:30	Pumped 8 m3 inhibitive mud and set a balanced cement plug from 2796 m to 2690 m.
				05:30	Pulled out to 2440 m and reverse circulated.
				06:30	Set a balanced cement plug from 2440 m to 2330 m.
				07:00	Pulled out to 2300 m and reverse circulated.
				08:30	Displaced the hole to inhibitive mud.
				18:00	Pulled out of the hole and laid down drill pipe.
				19:30	Rigged up and set a bridge plug at 650 m.
				22:30	Retrieved the wearbushing.
				24:00	Rigged up to pull BOP and riser.
63	0	.00	.00	02:00	Rigged up to pull BOP and riser.
				16:00	Pulled the BOP. Slow progress due to rough weather. The anchor handling boats waited on weather from 03:00 hrs. to retirieve the anchors.
				22:30	Waited on weather to pull the anchors. Waited with the BOP in the water.
				24:00	Pulled the BOP out of the water.

((((ooo) Norsk Hydro	Daily report System : Boredata Sandnes Well: 6407/7-2					Date 27/3-1987
	Casing Size (in):	30	20	13 3/8	9 5/8	7
	Setting depth m,MD:	445	757	1502	2533	3316

Report number	Mid. depth m,MD	Est.Pore Pressure (SG)	Mud dens. (SG)	Stop time	Short Summary
					Waited on weather for anchor handling.
64	0	.00	.00	03:30	Landed the BOP on the trolly. Moved the BOP out of the moonpool area and rigged down the riser handling equipment.
				09:30	Waited on weather for anchor handling.
				15:00	Intalled the corrosion cap on the wellhead and displaced to anti corrosion fluid.
				24:00	Pulled anchor number: 2,7,6 and 3.
65	0	.00	.00	14:00	Pulled anchor number: 8,4,1 and 5. Left location at 14:00 hrs.

3.4 Time distribution

The total time used to move the rig to the location, drill the well, production test and temporary abandon the well 6407/7-2, was 64.5 days.

The time distribution is shown in Table B-1 and fig. B-2.

The operation can be broken down into the following main groups:

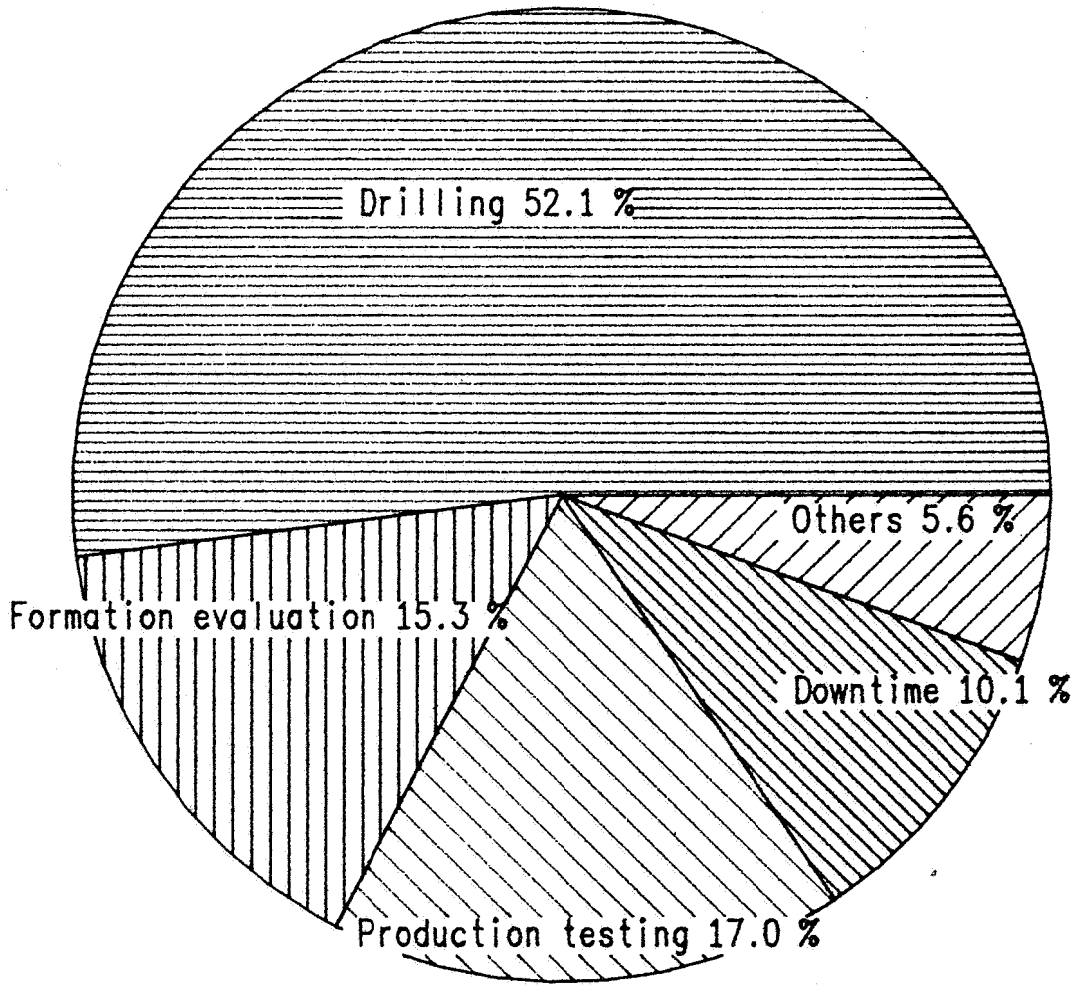
- Moving and anchorhandling	2.7 days
- Drilling the well to TD including tripping	33.6 days
- Formation evaluation	9.8 days
- Production testing	11.0 days
- Lost time	6.5 days
- Temporary abandonment	0.9 days

((((ooo) Norsk Hydro	Time distribution System : Boredata Sandnes Well : 6407/7-2 Rig name: POLAR PIONEER Phase : All phases	Date 5/2-1987 6

Operations	Hrs	%	Hrs	%	Subtotal
Rig moving.....					
Rig moving	22.5	1.45			
Mooring	42.0	2.71			
Sum			64.50	4.16	64.50
Drilling.....					
Drilling	355.3	22.93			
Opening hole	10.5	.68			
Tripping	123.5	7.97			
Circ. and cond. hole and mud	15.3	.98			
Pressure detection	4.0	.26			
Formation leak off test	4.0	.26			
Surveying	2.5	.16			
Sub sea equipment handling	47.8	3.08			
BOP testing/activities	22.3	1.44			
Other equipment testing	.5	.03			
Running casing	173.0	11.17			
Primary cementing	18.0	1.16			
Squeezing	24.0	1.55			
Slip and cut drilling line	6.0	.39			
Sum			806.50	52.07	871.00
Formation evaluation.....					
Tripping	85.0	5.49			
Circ and cond mud/hole	1.5	.10			
Circulating for samples	6.3	.40			
Coring	60.5	3.91			
Logging	73.5	4.74			
RFT/FMT	10.0	.65			
Sum			236.75	15.28	1107.75
Production testing.....					
Circulating	18.0	1.16			
Wire line operations	22.5	1.45			
Tripping workstring	89.0	5.75			
Tripping other	4.0	.26			
Rigging up/down	12.0	.77			
Equipment testing	28.0	1.81			
Flowing/injection	37.3	2.40			
Pressure build up/fall off	32.3	2.08			
Plugging and squeezing	20.5	1.32			
Other	.5	.03			
Sum			264.00	17.04	1371.75
Plug and abandonment.....					
Tripping	9.5	.61			
Circ and cond mud/hole	1.5	.10			
Cement plug	3.5	.23			
Mechanical plug	1.5	.10			
Other	5.5	.36			
Sum			21.50	1.39	1393.25
Downtime.....					
Reaming	19.0	1.23			
Wiper trip	13.3	.86			
Fishing> due to RFT/FIT	6.0	.39			

((((ooo) Norsk Hydro	Time distribution System : Boredata Sandnes Well : 6407/7-2 Rig name: POLAR PIONEER Phase : All phases	Date 5/2-1987 6

Operations		Hrs	%	Hrs	%	Subtotal
Waiting on weather	:	12.5	.81			
Sub sea equipment repair	:	27.0	1.74			
Drilling equipment repair	:	22.5	1.45			
Drilling wait	:	2.0	.13			
Formation eval equip repair	:	12.0	.77			
Production test equip repair	:	18.0	1.16			
Downtime equipment repair	:	.5	.03			
Other	:	23.0	1.48			
Sum				155.75	10.05	1549.00
Completion.....						
Sum				.00	.00	1549.00
Reported time (100.00 % of well total 1549.00 hours) :						1549.00



TIME REPORTED (HRS): 1549 OF TOTAL 1549

Others:

Rig moving : 4.2 %
Plug and abandonment: 1.4 %

Norsk Hydro Drilling Department Date:19870310	TIME DISTRIBUTION WELL: 6407/7-2		

3.5 TABLE B-2

((((ooo) ------- Norsk Hydro	Hole deviation System : Boredata Sandnes Well: 6407/7-2 Proposed direction (deg): 0 Data from table 19	Date 17/3-1987 11

Measured Depth (m)	Incli-nation (deg)	Dir-ection (deg)	Surveytool	Vert. Depth (m)	Coordinates North (m)	Coordinates East (m)	Vert. Section (m)	Dogleg Severity deg/30m
356	0.8	348.8	MWD	356.0	2.44	-.48	2.4	.07
366	2.1	135.7	MWD	366.0	2.38	-.37	2.4	8.41
374	2.2	130.1	MWD	374.0	2.17	-.15	2.2	.87
385	1.2	80.2	MWD	385.0	2.06	.13	2.1	4.63
392	1.4	73.8	MWD	392.0	2.09	.28	2.1	1.06
403	1.1	131.1	MWD	403.0	2.06	.49	2.1	3.35
412	1.3	127.3	MWD	412.0	1.94	.64	1.9	.72
421	1.4	109.7	MWD	421.0	1.84	.82	1.8	1.42
429	1.6	107.6	MWD	429.0	1.78	1.02	1.8	.78
438	1.1	97.7	MWD	438.0	1.73	1.22	1.7	1.83
446	1.1	105.8	MWD	446.0	1.69	1.37	1.7	.58
542	1	81.2	MWD	541.9	1.57	3.09	1.6	.14
636	0.4	62.6	MWD	635.9	1.85	4.19	1.8	.20
732	0.3	35.9	MWD	731.9	2.21	4.64	2.2	.06
772	0.2	356.1	MWD	771.9	2.36	4.69	2.4	.15
865	0.3	39.2	MWD	864.9	2.71	4.84	2.7	.07
953	0.2	26.6	MWD	952.9	3.03	5.05	3.0	.04
1045	0.4	65.3	MWD	1044.9	3.30	5.41	3.3	.09
1138	0.2	23.4	MWD	1137.9	3.59	5.77	3.6	.09
1246	0.4	263.5	MWD	1245.9	3.72	5.47	3.7	.15
1338	0.4	325.1	MWD	1337.9	3.95	4.97	3.9	.13
1433	0.3	258.6	MWD	1432.9	4.17	4.54	4.2	.12
1509	0.2	337.4	MWD	1508.9	4.25	4.29	4.3	.13
1601	0.3	344.7	MWD	1600.9	4.63	4.17	4.6	.03
1698	0.7	27.6	MWD	1697.9	5.40	4.37	5.4	.16
1795	0.4	61	MWD	1794.9	6.09	4.94	6.1	.13
1890	0.8	104.3	MWD	1889.9	6.09	5.88	6.1	.18
1987	0.5	114.5	MWD	1986.9	5.75	6.92	5.7	.10
2080	0.5	122.6	MWD	2079.9	5.36	7.63	5.4	.02
2174	2.2	159.1	MWD	2173.9	3.45	8.62	3.5	.58
2194	2.9	167.9	MWD	2193.9	2.60	8.86	2.6	1.20
2203	3.3	167.2	MWD	2202.8	2.12	8.97	2.1	1.34
2212	3.4	169.7	MWD	2211.8	1.61	9.07	1.6	.59
2222	3.7	168.6	MWD	2221.8	1.00	9.19	1.0	.92
2230	4	163	MWD	2229.8	.48	9.32	.5	1.80
2250	4	167	MWD	2249.7	-.87	9.68	.9	.42
2268	4	170.1	MWD	2267.7	-2.10	9.93	2.1	.36
2296	3.9	166.8	MWD	2295.6	-3.98	10.32	4.0	.27
2326	3.4	166.5	MWD	2325.6	-5.84	10.76	5.8	.50
2382	3	164.8	MWD	2381.5	-8.87	11.53	8.9	.22

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(ooo)
Norsk Hydro

Hole deviation

System : Boredata Sandnes

Date 17/3-1987

Well: 6407/7-2
Proposed direction (deg): 0
Data from table 19

11

Measured Depth (m)	Inclination (deg)	Direction (deg)	Surveytool	Vert. Depth (m)	Coordinates North (m)	Coordinates East (m)	Vert. Section (m)	Dogleg Severity deg/30m
2410	2.5	169.7	MWD	2409.4	-10.18	11.83	10.2	.59
2468	2.5	186.5	MWD	2467.4	-12.68	11.91	12.7	.38
2520	2.2	166.9	MWD	2519.4	-14.78	12.01	14.8	.49
2649	0.75	140	Singelshot	2648.3	-17.84	13.11	17.8	.36
2734	1.3	126.4	MWD	2733.3	-18.84	14.25	18.8	.21
2974	0.75	220.5	Singelshot	2973.3	-21.65	15.42	21.6	.19
3022	2.4	37.8	MWD	3021.3	-21.09	15.83	21.1	1.97
3052	2.4	35.4	MWD	3051.2	-20.08	16.58	20.1	.10
3145	2.5	38.2	MWD	3144.1	-16.90	18.96	16.9	.05
3238	2.2	43.5	MWD	3237.1	-14.01	21.45	14.0	.12
3297	1.9	53.7	MWD	3296.0	-12.61	23.01	12.6	.24
3320	1.9	53.7	MWD	3319.0	-12.16	23.63	12.2	.00

4. TEMPORARY ABANDONMENT OF THE WELL

Well 6407/7-2 was planned as a possible future production well or for long term testing using a PTS.

The temporary abandonment is shown in fig. B-3, and was carried out in the following way:

1. After production test no. 2 was finished, a squeeze packer was set at 2796 m. The packer was pressure tested to 475 bar.

2. A balanced cement plug was set from 2796 m to 2690 m.

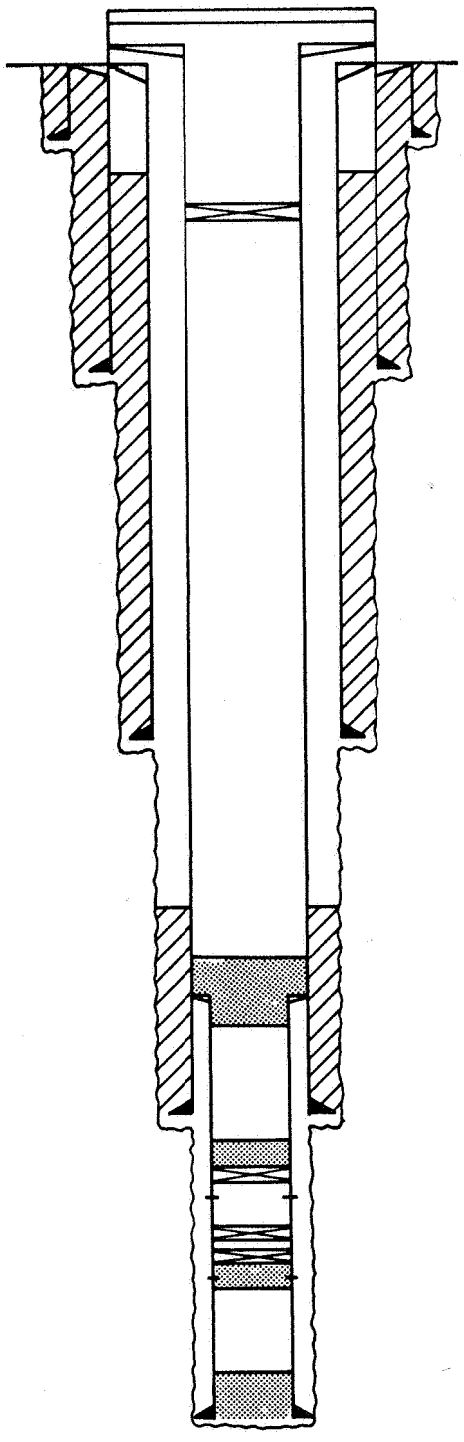
3. A balanced cement plug was set across the liner lap from 2440 m to 2330 m.

4. A bridgeplug was set at 650 m.

5. The BOP and the marine riser was retrieved.

6. A corrosion cap was run and installed on the wellhead. The water was displaced with anti corrosion fluid.

ALL DEPTHS WITH REFERENCE TO RKB (MD)
SEABED AT 361m



CORROSION CAP

30" CSG. SET AT 445m
TOP CMT. IN 13 3/8" x 20" ANNULUS AT 485m
BRIDGE PLUG SET AT 650m

20" CSG. SET AT 757m

13 3/8" CSG. SET AT 1502m

TOP OF CEMENT IN 9 5/8" x 12 1/4" ANNULUS AT 2025m

7" LINER TOP AT 2371m
CEMENTPLUG FROM 2440m TO 2330m

9 5/8" CSG. SET AT 2533m

CEMENTPLUG FROM 2796m TO 2690m
SQUEEZE PACKER AT 2796m
7" LINER PERFORATED FROM 2819.5-2801.5m

BRIDGE PLUG SET AT 2859m

SQUEEZE PACKER SET AT 2861m
7" LINER PERFORATED FROM 2879m-2870m
LANDING COLLAR AT 3263m
7" LINER SET AT 3316m

TD AT 3320m

Norsk Hydro Drilling Department	TEMPORARY ABANDONMENT OF WELL 6407/7-2	Gr. no.: 5	Fig.: B-3
		Date: 25.03.87 Sign: POP/AHJ	Dwg. no.: 07

PORE PRESSURE, FORMATION INTEGRITY, OVERBURDEN GRADIENT AND FORMATION TEMPERATURE

Pore pressure

The pore pressure in well 6407/7-2 is estimated taking into consideration the DC-exponent, the Sonic-log, the RFT-log and gas readings.

Main emphasis have been put on the Sonic-log and the RFT-log. All depths are in TVD with reference to RKB, unless stated otherwise.

Seabed (361 m) to base Pliocene (1078 m)

The DC-exponent indicates normal compaction, i.e. normal pore pressure of 1.03 rd throughout this section.

1078 m to top Cretaceous (1958) m)

At approx. 1200 m the DC-exponent shows a divergence from the normal trend, indicating that the pore pressure start to increase. The gradient increases to 1.54 rd at approx. 1800 m.

This is indicated by both the DC-exponent and the Sonic-log, and backed up by gas readings. In the interval 1800 m - 1958 m the pore pressure is believed to be constant at 1.54 rd.

1958 m to top Jurassic (2651 m)

From 2000 m both the DC-exponent and the Sonic-log indicates that the pore pressure is decreasing, and it is estimated to 1.30 rd at 2300 m. In the interval 2300 m - 2500 m the Sonic-log indicates that the pressure start to increase, and it is estimated to 1.35 rd at 2651 m.

1610e
sn, SHo/Lil

2651 m to top of Triassic (2934 m)

The pore pressure is believed to stay constant at 1.36 rd down to TD. This is due to the fact that none of the previously mentioned indicators shows any signs of changes in the pore pressure.

Formation integrity

A total of 3 leak off tests (L.O.T.) were performed with the following results:

Depth (m TVD)	LOT (rd)
757	1.66
1502	1.76
2533	1.87

Overburden gradient

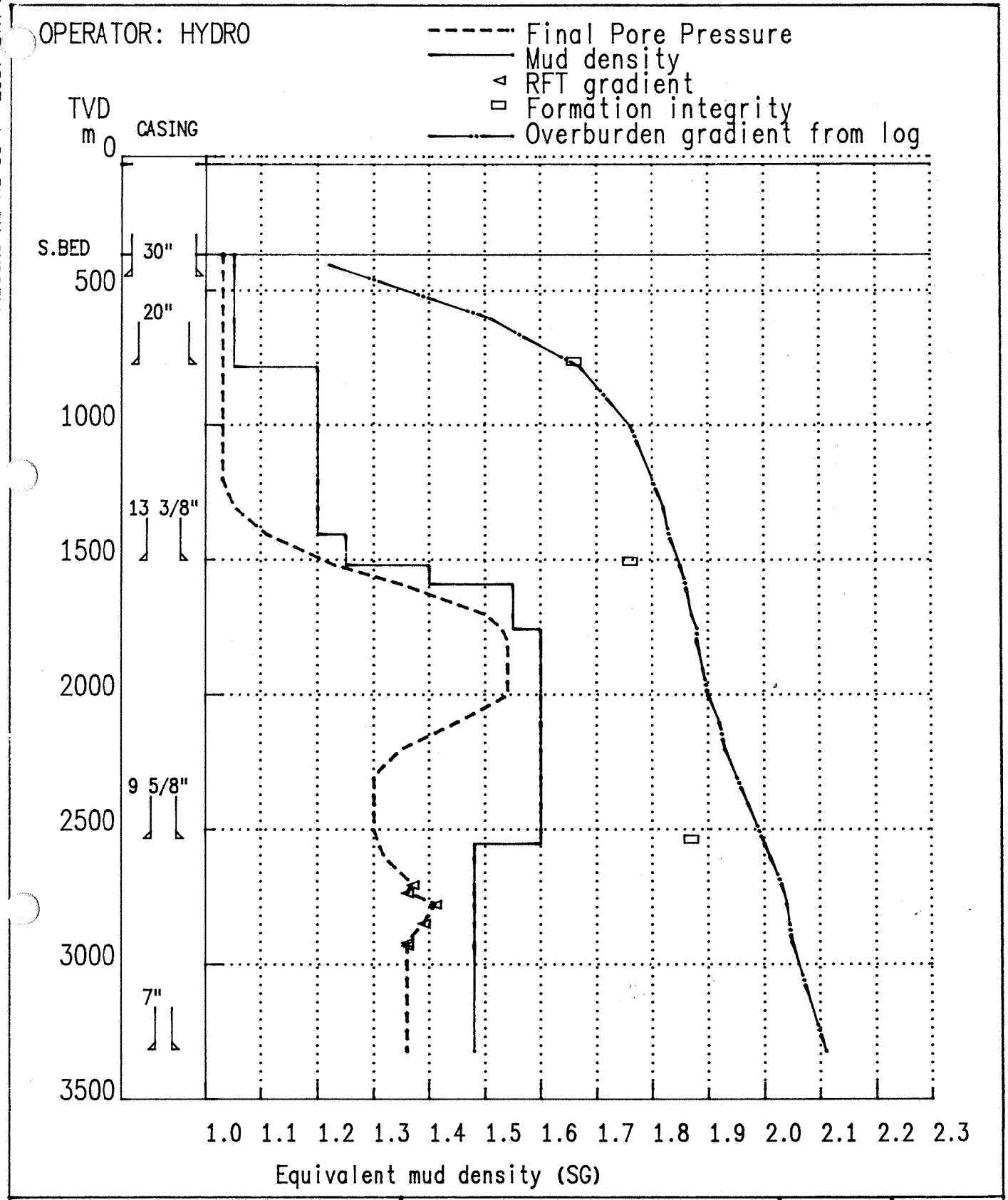
The overburden gradient in well 6407/7-2 is calculated from the Litho Density Log. Data from 6407/7-1 are used down to 2540 m.

Formation temperature

The temperature gradient is based on actual B.H.S.T. recorded while performing DST's.

1610e
sn, SHo/Lil

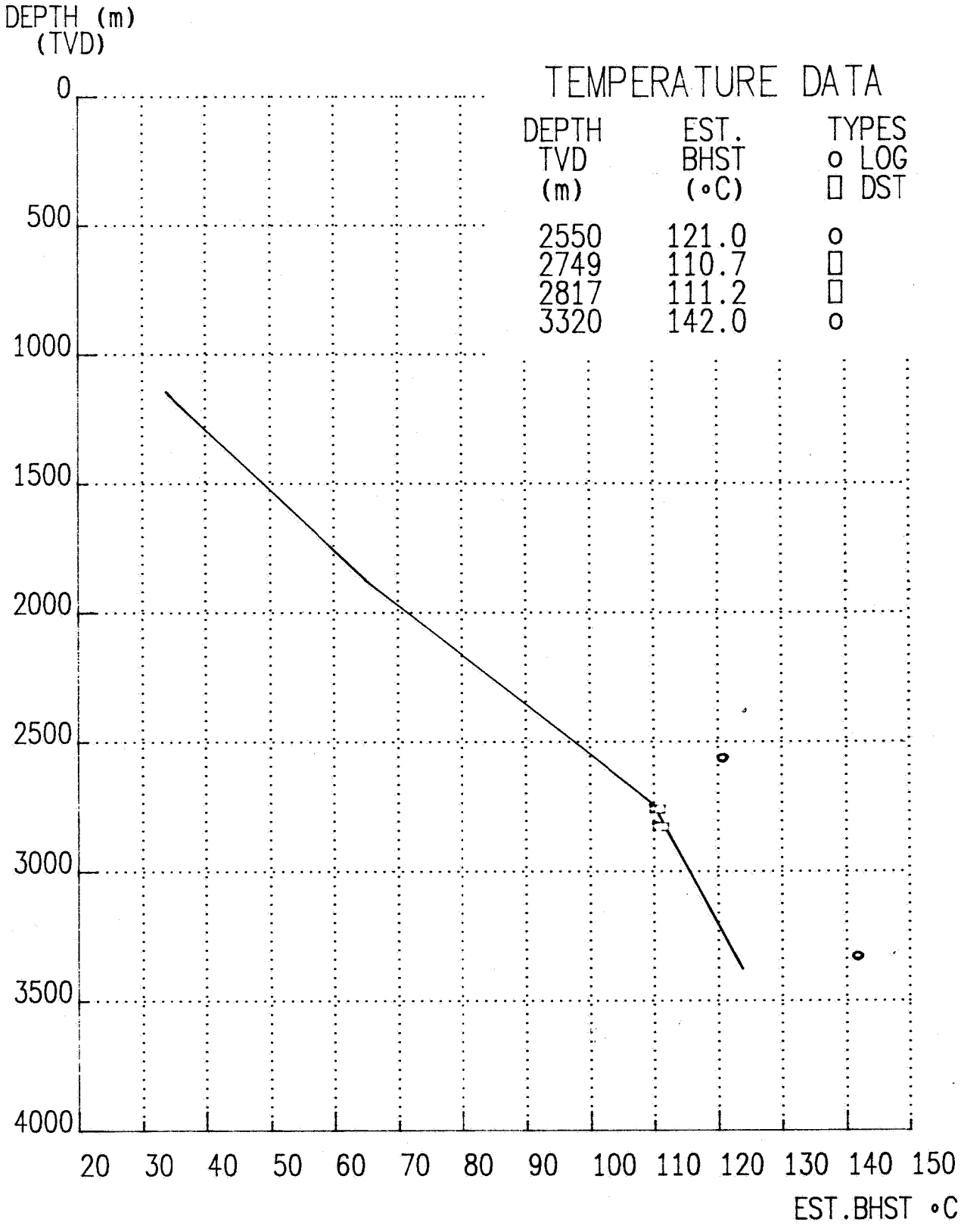
FIGURE B-4



Norsk Hydro
Drilling Department

Date:19870323

FINAL PORE PRESSURE
MUD DENSITY,
RFT AND OVERBURDEN GRAD.
FORMATION INTEGRITY.
WELL: 6407/7-2



TEMPERATURE DATA

DEPTH TVD (m)	EST. BHST (°C)	TYPES o LOG □ DST
2550	121.0	o
2749	110.7	□
2817	111.2	□
3320	142.0	o

Norsk Hydro
Drilling Department

Date:19870126

TEMPERATURE PROFILE
WELL: 6407/7-2

TABLE B-3

((((ooo) Norsk Hydro	Pore pressure System : Boredata Sandnes Well: 6407/7-2 Seabed at : 360 m RKB Total depth: 3320 m,MD,RKB	Date 23/3-1987 8

Vertical depth (m)	Pore pressure from soniclog (SG)	Pore pressure from DC-exp. (SG)	RFT/FMT (SG)	Most probable pore pressure (SG)	Actual mud density used (SG)
361				1.03	1.05
400		1.03		1.03	1.05
600		1.03		1.03	1.05
780		1.03		1.03	1.20
1000		1.03		1.03	1.20
1200		1.03		1.03	1.20
1300		1.05		1.05	1.20
1403		1.11		1.11	1.25
1517		1.23		1.23	1.40
1588		1.35		1.35	1.55
1700	1.50	1.50		1.50	1.55
1754	1.53	1.50		1.53	1.60
1800	1.54	1.51		1.54	1.60
1900	1.54	1.52		1.54	1.60
2000	1.54	1.53		1.54	1.60
2100	1.45	1.44		1.45	1.60
2200	1.35	1.35		1.35	1.60
2300	1.30			1.30	1.60
2400	1.30			1.30	1.60
2500	1.30			1.30	1.60
2550	1.31			1.31	1.48
2600	1.32			1.32	1.48
2699			1.37	1.37	1.48
2729			1.36	1.36	1.48
2772			1.41	1.41	1.48
2843			1.39	1.39	1.48
2915			1.36	1.36	1.48
2925			1.36	1.36	1.48
3319				1.36	1.48

TABLE B-4

((((ooo) Norsk Hydro	Formation integrity System : Boredata Sandnes Well: 6407/7-2 Seabed at : 360 m RKB Total depth: 3320 m,MD,RKB	Date 17/3-1987 9

Casing shoe depth (m,MD)	Open hole depth (m,MD)	Form int strenght (SG)
757	783	1.66
1502	1520	1.76
2533	2553	1.87

6. MATERIALS REPORT

6.1 Main consumption casing and wellhead
6.2 Main consumptions cement and additives
6.3 Bit record
6.4 Bottom hole assembly
6.5 Mud report
6.6 Cement report

((((ooo) Norsk Hydro	Main consumptions System : Boredata Sandnes Well: 6407/7-2 Wellhead: Vetco SG-5 Data from table 8	Date 17/3-1987 5

CASING

size (in)	grade	weight (kg/m)	threads type	length (m)
36	B	461	Lynx	87
20	X-56	197.9	LS	413
13 3/8	N-80	72	Buttress	1141
9 5/8	P-110	79.7	VAM	2176
7	P-110	42.74	VAM	937

((((ooo) Norsk Hydro	Main consumptions System : Boredata Sandnes Well: 6407/7-2 Cement contractor: BJ Hughes Data from table 9	Date 17/3-1987 5

Casing size (in)	Additive name	Total used (l)
30	- - - - - - -	- - - -
Spacer		
- - -	- - - - - - -	- - - -
Lead-	Cement	10444
	Seawater	23112
	A-3L	875
- - -	- - - - - - -	- - - -
Tail-	Cement	8571
	Seawater	11059
	A-7L	959
- - -	- - - - - - -	- - - -
Flush		
20	- - - - - - -	- - - -
Spacer	Seawater	75000
- - -	- - - - - - -	- - - -
Lead-	Cement	25905
	Seawater	89474
	A-3L	3623
- - -	- - - - - - -	- - - -
Tail-	Cement	3778
	Freshwater	5055
	A-7L	212
- - -	- - - - - - -	- - - -
Flush		
13 3/8	- - - - - - -	- - - -
Spacer	Seawater	10000
- - -	- - - - - - -	- - - -
Lead-	Cement	15873
	Seawater	34905
	A-3L	1330
	R-15L	490
- - -	- - - - - - -	- - - -
Tail-	Cement	6222
	Freshwater	8544
	R-12L	139
- - -	- - - - - - -	- - - -
Flush	Freshwater	2000
9 5/8	- - - - - - -	- - - -
Spacer	Mud	8000
- - -	- - - - - - -	- - - -
Lead-	Cement	5873
	Freshwater	7764
	D-19LN	377
	R-12L	155
	D-6L	14

((((ooo) ------- Norsk Hydro	Main consumptions	Date 17/3-1987
	System : Boredata Sandnes	
	Well: 6407/7-2	
	Cement contractor: BJ Hughes	
	Data from table 9	5

Casing size (in)	Additive name	Total used (l)
- - -	- - - - - - - -	- - - -
Tail-	Cement	
- - -	- - - - - - - -	- - - -
Flush	Freshwater	2500
7	- - - - - - - -	- - - -
Spacer	Mud	22000
- - -	- - - - - - - -	- - - -
Lead-	Cement	1841
	Freshwater	2955
	D-19LN	126
	R-12L	67
- - -	- - - - - - - -	- - - -
Tail-	Cement	7238
	Freshwater	9259
	D-19LN	606
	R-12L	182
	D-47L	223
- - -	- - - - - - - -	- - - -
Flush	Freshwater	2000

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(ooo)
Norsk Hydro

Bit record

System : Boredata Sandnes

Well: 6407/7-2

Data from table 4

Date 17/3-1987

Date 17/3-1987

BIT NUMBER	SIZE (in)	Manu-factur-er	Trade Name	Serial number	IADC Code	Nozzles diameter (../32")				BHA no.	Depth out m,MD	Bit meter (m)	Drill time (hrs)	Rot. hours (hrs)	ROP (m/h)	Rotation min/max (rpm)	Total bit revol.	Weight min/max (KN)	Flow min/max (m3/h)	Wear T	B	G	Other	Remarks
1P	17 1/2	SMITH	SDS	X-E9237	114	16	16	16	16	1	382	21	8.00	4.70	4.5	30/50	10555	40/60	150/150	4	4	5		
1 HO	36	Grant		6980		24	24	24	24	1	382	21	8.00	4.70	4.5	30/50	10555	30/80	150/150	4	4	0		
1P RR1	17 1/2	SMITH	SDS	X-E9237	114	16	16	16	16	1	447	86	26.00	23.70	3.6	40/100	118471	0/40	245/245	4	4	5		
1 HORR1	36	Grant		6980		24	24	24	24	1	447	86	26.00	23.70	3.6	40/100	118471	0/40	245/245	4	4	5		
2	12 1/4	HTC	X3A	596 BK	114	18	18	18	16	2	780	333	12.30	7.30	45.6	120/120	44753	0/70	196/196	4	3	3		
2P RR1	12 1/4	HTC	X3A	596 BK	114	18	18	18	16	3	774	327	10.50	8.50	38.5	100/100	44165	20/120	307/307	4	3	3		
2 HO	17 1/2	Grant		18470		12	12	12		3	773	326	10.50	8.50	38.4	100/100	44165	20/120	307/307	2	2	0		
2 HO	26	Grant		18470		12	14	14		3	773	326	10.50	8.50	38.4	100/100	44165	20/120	307/307	2	2	0		
2 HO	26	Servc		15024						3	761	314	10.50	8.50	36.9	100/100	44165	20/120	307/307	2	2	0		
3	17 1/2	SMITH	SDS	XE9269	114	22	22	22	16	4	1517	737	29.50	18.40	40.1	100/150		88/221	190/190	2	3	3		
4	12 1/4	HTC	X3A	636RL	114	14	14	14	14	5	2106	589	26.00	16.60	35.5	100/150	130053	80/250	122/122	3	8	0	12 BT	CMT,FC,FS
5	12 1/4	SMITH	SDGH	XE 6470	135	14	14	14	12	6	2230	124	24.00	21.10	5.9	60/130	101132	130/250	127/130	3	7	1		
6	12 1/4	Crist	S 260L	CR 1409	241					7	2550	320	70.00	68.65	4.7	660/680	2974650	130/225	122/130				40%	
7	12 1/4	HTC	X3A	388 CK	114	0	0	0	14	8	2550	0	.00	.10	.0					1	1	0		Wipertrip
8	8 3/8	SMITH	SDGH	CJ 5811	135	11	11	11		9	2550	0	1.75	.75	.0	40/50	1284	5/45	97/97	1	1	0		Cmt.FC.FS
9	8 3/8	HTC	XDV	633 XK	215	11	11	11		10	2569	19	14.00	10.30	1.8	57/83	44736	75/197	99/102	8	5	2		60 m cmt.
10	8 3/8	HTC	J22	488 HF	517	11	11	11		10	2653	84	30.00	27.90	3.0	78/82	131565	140/200	102/102	5	5	0	17 BT	
11	8 3/8	SMITH	F2	XD 7716	517	11	11	11		10	2673	20	8.00	4.80	4.2	80/90	22547	190/220	102/102	1	3	2		PO to core
1c	8 3/8	DB	CT303HS	7860187						11	2688	15	4.80	4.60	3.3	90/100	26274	130/150	60/60				5%	
12	8 3/8	SMITH	SDGH	ACO 222	135	12	12	12		12	2701	13	2.30	2.30	5.7	80/90	11726	140/170	120/120	1	1	0		
1c RR1	8 3/8	DB	CT303HS	7860187						13	2723	22	4.00	4.00	5.5	90/110	23684	125/140	60/60				25%	
1c RR2	8 3/8	DB	CT303HS	7860187						14	2742	19	5.50	4.30	4.4	95/97	25667	100/140	60/60				30%	
13	8 3/8	HTC	XDV	713XK	215	11	11	11		15	2775	33	5.50	4.60	7.2	100/100	26567	130/190	108/108	2	3	0		
2C	8 3/8	CB	CT303HS	7860484						16	2792	17	2.90	2.90	5.9	110/120	19234	140/150	60/60				15%	
2C RR1	8 3/8	CB	CT303HS	7860484						17	2804	12	2.50	2.50	4.8	110/120	14694	110/110	60/60				30%	
2C RR2	8 3/8	CB	CT303HS	7860484						17	2824	19	2.60	2.60	7.3	110/120	16254	110/110	60/60				40%	
3C	8 3/8	CB	CT303HS	7860491						17	2842	18	3.50	3.50	5.1	110/110	22602	90/90	60/60				40%	
4C	8 3/8	CB	CT303HS	7860291						17	2870	28	3.30	3.30	8.5	110/110	22129	85/95	60/60				50%	
5C	8 3/8	CB	CT303LS	7860486						17	2879	9	2.00	2.00	4.5	104/104	14455	110/110	60/60				40%	
6C	8 3/8	CB	CT303HS	7860302						17	2896	17	5.40	5.40	3.1	75/75	27014	70/100	58/58				20 %	
6C RR1	8 3/8	CB	CT303HS	7860302						17	2916	20	1.55	1.55	12.9	100/100	9675	100/100	58/58				30 %	
14	8 3/8	SMITH	SVH	XE 4455	225	12	12	12		18	2994	78	20.00	15.90	4.9	75/92	76800	138/188	110/115	7	3	3		
15	8 3/8	Crist	M310	CP 1770	403					19	3028	34	7.00	5.30	6.4	190/195	59800	100/170	110/115				100 %	
16	8 3/8	DB	TBT 703	7850418	347					20	3029	1	2.50	2.20	.5	895/895	132436	50/200	80/80				5 %	
17	8 3/8	SMITH	SVH	CR 8901	225	12	12	12		21	3060	31	13.50	12.10	2.6	70/90	63462	140/200	100/100	7	8	0	Skidded	
18	8 3/8	Chris	T 51	122330						22	3320	260	65.50	61.70	4.2	0/1140	4209056	70/122	83/89				40 %	
12 RR1	8 3/8	SMITH	SDGH	ACO 222	135	32	32	32		23	3320	0		1.00	.0					1	1	0		Wiper trip
12 RR2	8 3/8	SMITH	SDGH	ACO 222	135	32	32	32		23	3320	0		1.00	.0					1	1	0		Wiper trip
19	8 3/8	HTC	JD3	575VS	137	32	32	32		24	2371	0		1.00	.0					0	0	0		Cl.lin.top
20	6	HTC	R3	610HL	131	32	32	32		25	3255	0		1.00	.0					0	0	0		Clean lin.

((((ooo) Norsk Hydro	Bottom hole assembly System : Boredata Sandnes Well: 6407/7-2 Data from table 7 and table 10 ("Depth interval")	Date 17/3-1987 7

BHA no.:1 Item no./Name/OD,in/Length,m Depth interval md: 361-447

1	Bit	17 1/2	0.43	6	DC Steel	9 1/2	37.61
2	Hole Opener	36	2.44	7	X-over	9 1/2	1.08
3	MWD	9 1/2	11.95	8	DC Steel	8	140.9
4	Nonmag collar	9 1/2	9.04	9	X-over	8	1.12
5	Steel stab	36	1.98	10	HWDP	5	137.7

BHA no.:2 Item no./Name/OD,in/Length,m Depth interval md: 447-780

1	Bit	12 1/4	0.3	7	DC Steel	8	93.97
2	Bit Sub	8	1.22	8	Jar	8	9.31
3	X-over	8	0.56	9	DC Steel	8	28.11
4	MWD	8	11.85	10	X-over	8	1.12
5	Nonmag collar	8	9.01	11	HWDP	5	137.7
6	Steel stab	12 1/4	1.55				

BHA no.:3 Item no./Name/OD,in/Length,m Depth interval md: 447-774

1	Bit	12 1/4	0.3	8	X-over	9 1/2	1.08
2	Hole Opener	26	1.83	9	DC Steel	8	112.7
3	Bit Sub	9 1/2	0.9	10	Jar	8	9.64
4	DC Steel	9 1/2	9.39	11	DC Steel	8	28.2
5	X-over	9 1/2	1.23	12	X-over	8	1.12
6	Hole Opener	26	1.74	13	HWDP	5	137.7
7	DC Steel	9 1/2	28.22				

BHA no.:4 Item no./Name/OD,in/Length,m Depth interval md: 774-1517

1	Bit	17 1/2	0.43	8	X-over	9 1/2	1.08
2	Bit Sub	9 1/2	0.9	9	DC Steel	8	112.7
3	X-over	9 1/2	0.58	10	Jar	8	9.64
4	MWD	9 1/2	11.99	11	DC Steel	8	28.21
5	Nonmag collar	9 1/2	8.89	12	X-over	8	1.12
6	Steel stab	17 1/2	1.93	13	HWDP	5	146.88
7	DC Steel	9 1/2	37.61				

BHA no.:5 Item no./Name/OD,in/Length,m Depth interval md: 1517-2106

1	Bit	12 1/4	0.31	8	Steel stab	12 1/4	1.59
2	Bit Sub	8	1.19	9	DC Steel	8	177.43
3	X-over	8	0.67	10	Jar	8	9.64
4	MWD	8 1/4	11.68	11	DC Steel	8	28.2

((((ooo) Norsk Hydro	Bottom hole assembly System : Boredata Sandnes Well: 6407/7-2 Data from table 7 and table 10 ("Depth interval")	Date 17/3-1987 7

5	Nonmag collar	8	9.01	12	X-over	8	1.12
6	Steel stab	12 1/4	2.13	13	HWDP	5	137.7
7	DC Steel	8	9.4				

BHA no.:6 Item no./Name/OD,in/Length,m Depth interval md: 2106-2230

1	Bit	12 1/4	0.31	8	DC Steel	8	9.4
2	Junksub	9 5/8	0.81	9	Steel stab		1.59
3	Bit Sub	8	1.19	10	DC Steel	8	177.43
4	X-over	8	0.67	11	Jar	8	9.64
5	MWD	8	11.68	12	DC Steel	8	28.2
6	Nonmag collar	8	9.01	13	X-over	8	1.12
7	Steel stab		2.13	14	HWDP	5	137.7

BHA no.:7 Item no./Name/OD,in/Length,m Depth interval md: 2230-2550

1	Bit	12 1/4	0.8	7	Nonmag collar	8	9.01
2	Turbine	9 1/2	20.21	8	DC Steel	8	131.14
3	X-over	9 1/2	0.91	9	Jar	8	9.64
4	Steel stab		1.55	10	DC Steel	8	28.2
5	X-over	8	0.67	11	X-over	8	1.12
6	MWD	8	11.68	12	HWDP	5	55.08

BHA no.:8 Item no./Name/OD,in/Length,m Depth interval md: 2549-2550

1	Bit	12 1/4	0.31	5	Jar	8	9.64
2	Junksub	9 9/16	0.82	6	DC Steel	8	28.2
3	Bit Sub	8	1.23	7	X-over	8	1.12
4	DC Steel	8	112.33	8	HWDP	5	55.08

BHA no.:9 Item no./Name/OD,in/Length,m Depth interval md: 2549-2550

1	Bit	8 3/8	0.24	5	Jar	6 1/2	9.32
2	Other	9 5/8	1.09	6	DC Steel	6 1/2	28.21
3	Bit Sub	6 1/2	1.22	7	HWDP	5	137.7
4	DC Steel	6 1/2	168.73				

BHA no.:10 Item no./Name/OD,in/Length,m Depth interval md: 2550-2673

1	Bit	8 3/8	0.24	7	DC Steel	6 1/2	9.47
2	Junksub	6 9/16	1.18	8	Steel stab	8 3/8	1.48
3	Bit Sub	6 1/2	1.22	9	DC Steel	6 1/2	168.73

Norsk Hydro	Bottom hole assembly	Date 17/3-1987
	System : Boredata Sandnes	
	Well: 6407/7-2	
	Data from table 7 and table 10 ("Depth interval")	7

4	Nonmag collar	6 1/2	9.08		10	Jar	6 1/2	9.32
5	DC Steel	6 1/2	9.41		11	DC Steel	6 1/2	28.21
6	Steel stab	8 3/8	1.44		12	HWDP	5	137.7

BHA no.:11 Item no./Name/OD,in/Length,m Depth interval md: 2673-2688

1	Core bit	8 3/8	0.3	:	5	DC Steel	6 1/2	140.62
2	Core barrel	6 7/8	29.05		6	Jar	6 1/2	9.32
3	X-over	6 1/2	0.53		7	DC Steel	6 1/2	28.21
4	Other	6 3/4	5.15		8	HWDP	5	137.7

BHA no.:12 Item no./Name/OD,in/Length,m Depth interval md: 2688-2701

1	Bit	8 3/8	0.24	:	7	DC Steel	6 1/2	9.47
2	Junksub	6 9/16	1.18		8	Steel stab	8 3/8	1.48
3	Bit Sub	6 1/2	1.22		9	DC Steel	6 1/2	168.73
4	Nonmag collar	6 1/2	9.08		10	Jar	6 1/2	9.32
5	DC Steel	6 1/2	9.41		11	DC Steel	6 1/2	28.21
6	Steel stab	8 3/8	1.44		12	HWDP	5	137.7

BHA no.:13 Item no./Name/OD,in/Length,m Depth interval md: 2701-2723

1	Core bit	8 3/8	0.3	:	4	Jar	6 1/2	9.37
2	Core barrel	6 3/4	29.05		5	DC Steel	6 1/2	28.21
3	DC Steel	6 1/2	149.87		6	HWDP	5	137.7

BHA no.:14 Item no./Name/OD,in/Length,m Depth interval md: 2723-2742

1	Core bit	8 3/8	0.3	:	6	Nonmag collar	6 1/2	9.08
2	Core barrel	6 3/4	29.05		7	DC Steel	6 1/2	131.23
3	X-over	6 1/2	0.53		8	Jar	6 1/2	9.37
4	Other	6 3/4	5.06		9	DC Steel	6 1/2	28.21
5	Steel stab	8 3/8	1.48		10	HWDP	5	137.7

BHA no.:15 Item no./Name/OD,in/Length,m Depth interval md: 2742-2775

1	Bit	8 3/8	0.24	:	8	DC Steel	6 1/2	9.47
2	Bit Sub	6 1/2	1.22		9	Steel stab	8 3/8	1.48
3	X-over	6 1/2	0.53		10	DC Steel	6 1/2	168.43
4	Other	6 3/4	5.15		11	Jar	6 1/2	9.32
5	Nonmag collar	6 1/2	9.08		12	DC Steel	6 1/2	28.21
6	DC Steel	6 1/2	9.41		13	HWDP	5	137.7

((((ooo) Norsk Hydro	Bottom hole assembly System : Boredata Sandnes Well: 6407/7-2 Data from table 7 and table 10 ("Depth interval")	Date 17/3-1987 7

7 Steel stab	8 3/8	1.44					

BHA no.:16 Item no./Name/OD,in/Length,m Depth interval md: 2775-2792

1 Core bit	8 3/8	0.3	:	4 Jar	6 1/2	9.37	
2 Core barrel	6 3/4	29.05		5 DC Steel	6 1/2	28.21	
3 DC Steel	6 1/2	149.87		6 HWDP	5	137.7	

BHA no.:17 Item no./Name/OD,in/Length,m Depth interval md: 2792-2916

1 Core bit	8 3/8	0.3	:	6 Nonmag collar	6 1/2	9.08	
2 Core barrel	6 3/4	29.05		7 DC Steel	6 1/2	131.23	
3 X-over	6 1/2	0.53		8 Jar	6 1/2	9.37	
4 Other	6 3/4	5.06		9 DC Steel	6 1/2	28.21	
5 Roller Reamer	8 3/8	2.04		10 HWDP	5	137.7	

BHA no.:18 Item no./Name/OD,in/Length,m Depth interval md: 2916-2994

1 Bit	8 3/8	0.24	:	8 DC Steel	6 1/2	9.47	
2 Bit Sub	6 1/2	1.22		9 Steel stab	8 3/8	1.48	
3 X-over	6 1/2	0.53		10 DC Steel	6 1/2	168.73	
4 Other	6 3/4	5.06		11 Jar	6 1/2	9.32	
5 Nonmag collar	6 1/2	9.08		12 Jar	6 1/2	28.21	
6 DC Steel	6 1/2	9.41		13 HWDP	5	137.7	
7 Steel stab	8 3/8	1.44					

BHA no.:19 Item no./Name/OD,in/Length,m Depth interval md: 2994-3028

1 Bit	8 3/8	0.44	:	8 Steel stab	8 3/8	1.44	
2 Bit Sub	6 1/2	1.22		9 DC Steel	6 1/2	9.47	
3 X-over	6 1/2	0.53		10 Steel stab	8 3/8	1.48	
4 Other	6 3/4	5.06		11 DC Steel	6 1/2	168.73	
5 Other	6 1/2	0.42		12 Jar	6 1/2	9.32	
6 Nonmag collar	6 1/2	9.08		13 DC Steel	6 1/2	28.21	
7 DC Steel	6 1/2	9.41		14 HWDP	5	137.7	

BHA no.:20 Item no./Name/OD,in/Length,m Depth interval md: 3028-3029

1 Bit	8 3/8	0.66	:	7 Nonmag stab	8 3/8	1.53	
2 Other	6 1/2	0.76		8 Nonmag collar	6 1/2	9.08	
3 Turbine	6 3/4	10.1		9 DC Steel	6 1/2	187.64	
4 Steel stab	8 3/8	1.48		10 Jar	6 1/2	9.32	

((((ooo) Norsk Hydro	Bottom hole assembly System : Boredata Sandnes Well: 6407/7-2 Data from table 7 and table 10 ("Depth interval")	Date 17/3-1987 7

5	X-over	6 1/2	0.7		11	DC Steel	6 1/2	28.21
6	MWD	6 3/4	12.2		12	HWDP	5	137.7

BHA no.:21 Item no./Name/OD,in/Length,m Depth interval md: 3029-3060

1	Bit	8 3/8	0.24	:	7	DC Steel	6 1/2	9.4
2	Bit Sub	6 1/2	1.22		8	Steel stab	8 3/8	1.48
3	X-over	6 1/2	0.7		9	DC Steel	6 1/2	225
4	MWD	6 3/4	12.11		10	Jar	6 1/2	9.32
5	Nonmag collar	6 1/2	9.08		11	DC Steel	6 1/2	28.21
6	Steel stab	8 3/8	1.44		12	HWDP	5	137.7

BHA no.:22 Item no./Name/OD,in/Length,m Depth interval md: 3060-3320

1	Bit	8 3/8	0.49	:	7	Nonmag stab	8 3/8	9.08
2	Turbine	6 3/4	10.1		8	DC Steel	6 1/2	178.15
3	Other	6 3/4	0.76		9	Jar	6 1/2	9.32
4	Steel stab	8 3/8	1.48		10	DC Steel	6 1/2	28.09
5	X-over	6 1/2	0.7		11	HWDP	5	137.7
6	MWD	6 3/4	12.11					

BHA no.:23 Item no./Name/OD,in/Length,m Depth interval md: 3319-3320

1	Bit	8 3/8	0.24	:	6	DC Steel	6 1/2	103.12
2	Bit Sub	6 1/2	1.22		7	Jar	6 1/2	9.32
3	Nonmag collar	6 1/2	9.08		8	DC Steel	6 1/2	28.21
4	DC Steel	6 1/2	18.75		9	HWDP	5	137.7
5	Steel stab	8 3/8	1.44					

BHA no.:24 Item no./Name/OD,in/Length,m Depth interval md: 2370-2371

1	Bit	8 3/8	0.24	:	5	Jar	6 1/2	9.32
2	Other	9 5/8	1.09		6	DC Steel	6 1/2	27.9
3	Bit Sub	6 1/2	1.22		7	HWDP	5	137.7
4	DC Steel	6 1/2	130.2					

BHA no.:25 Item no./Name/OD,in/Length,m Depth interval md: 3250-3255

1	Bit	6	0.18	:	5	DP	3 1/2	595.55
2	Other	6 7/16	0.84		6	Other	6 7/16	1.9
3	Bit Sub	4 3/4	1.22		7	Bit Sub	4 3/4	1.22
4	DC Steel	4 3/4	282.53		8	HWDP	5	82.62

6.5 Mud report

36" hole

The 36" hole was drilled to 446 m after the well was respudded once due to high hole inclination. The hole was drilled with high viscosity gel pills pumped at every connection. A 15 m^3 high viscosity sweep was pumped at total depth before a wiper trip was performed. A 20 m^3 sweep was pumped prior to displacing the hole to high viscosity gel.

Bentonite was prehydrated into high viscosity gel.

Materials used in this section:
Magcogel, Soda Ash, Caustic.

26" hole

The 12 1/4" pilot hole was drilled to 780 m and high viscosity gel pills were pumped on every third connection. A 10 m^3 sweep was pumped prior to dicplacing the hole to 1.20 rd high viscosity gel mud.

During this drilling bentonite was prehydrated into high viscosity gel, the gel was then weighted up to 1.20 rd, and the gel was flocculated with seawater and lime to use as high viscosity pills. After the hole was opened to 26" down to 774 m a 30 m^3 high viscosity sweep was pumped before the hole was displaced to 1.20 rd high viscosity mud. During the hole opening the prehydrated bentonite was streched using seawater and lime.

Materials used in this section:
Magcogel, Soda Ash, Lime, Caustic.

17 1/2" hole

Before drilling this section all pit contents were dumped and the pits were cleaned. New KCl-mud was built and weighted to 1.20 rd. The hole was displaced to 1.20 rd KCl-Polymer mud prior to drilling out of the 20" casing shoe. At 1430 m the mud weight was increased to 1.25 rd and a wiper trip was done. At TD of this section at 1517 m the mud weight was increased to 1.30 rd prior to a 10 m^3 high vis pill was pumped around.

In attempt to avoid the very hydratable shale to be incorporated in the mud the KCl concentration was maintained at ± 130 kg/m^3, and the polymers at ± 7 kg/m^3. Throughout the 17 1/2" section a 5 m^3 high vis pill was pumped on every 3 singles, and 10 m^3 high vis pills was pumped on every wiper trip. These pills were made of XCD polymers and this caused the overall viscosity to increase to a maximum reading of 18-19 pascal YP.

The viscosity, the high pumprate (3.5-4 m^3/min), the high ROP (average 40 m/hr), flushing of shakerbox on every connection and while drilling, and the heave of the rig, all contributed to heavy losses over the shale shakers. A total of 238 m^3 KCl-polymer mud was lost on surface during this section.

Materials used in this section:
Barite, Polymer Reg, Polymer S/LO, XCD-Polymer, SAPP, KCl-Powder, KCl-Brine.

12 1/4" hole

Due to the rather soft nature of the cement inside the 13 3/8" casing, 37 m^3 of badly contaminated returns were discarded at the shakers and a further 70 m^3 less contaminated volume was channeled to a reserve pit. The remainer of the system was treated with SAPP to reduce the effects of the cement.

Light treatment with XC-Polymer was required to restore rheology and some PAC polymers were added to maintain concentrations and fluid loss properties.
Due to connection gas between 1526 m and 1584 m the mud weight was increased to 1.55 rd. A gas peak of 350 units was recorded at 1754 m and the mudweight was raised to 1.60 rd. In this section Soda Ash was added in an attempt to reduce cement contamination to a less harmful level.
At 1915 m a wiper trip to 1750 m was made. After the wiper trip a rapid drop in KCl concentration to 90 kg/m^3 was noted along with an increase in very fine solids and MBT. Discarding of the desilters underflow became necessary in order to reduce the increasing volume of fine solids and high CEC.
The hole was drilled to 2230 m where the drilling continued with a turbine assembly and a diamond bit.
The de-silter underflow was selectively discarded to control solids level in this interval. Small additions of polymers and KCl were made to maintain concentrations and rheology. SAPP was utilized to further reduce pH and calcium levels.
While drilling to 2550 m with diamond bit and turbine a rapid build up of ultra fine solids in the system was observed. The main treatment consisted of dilution with new premix while discarding high solids mud via the desilter underflow. To maintain rheology and fluid loss control treatments of polymers were made. Soda Ash was utilized to reduce calcium and small treatments of caustic were made to maintain pH.

Materials used in this section:
Magcobar, Caustic, Soda Ash, Celpol Reg, Celpol S/LO, XC-Polymer, Drispac S/LO, Antisol Reg, Antisol S/LO, KCl-powder, KCl-brine, SAPP, Spersene.

8 3/8" hole

While drilling the cement and the 9 5/8" shoe the hole was displaced to 1.48 rd mud. The formation was squeeze cemented, and when drilling the relatively fresh cement the mud suffered from severe cement contamination. To reduce the effect of the cement contamination, bicarbonate and replacement polymers were mixed in the active system. Prehydrated bentonite and Resinex were added to decrease the high pressure high temperature fluid loss. Before coring was started at 2669 m the mud was treated with Antisol-100 to maintain fluid losses and polymer concentration. During coring the rheology, fluid losses and density of the mud were maintained using small additions of Antisol-30000, Antisol-100 and premixed KCl-polymer mud. At 2940 m a claystone section was drilled and caused a slow increase in gel strength due to a larger part of the drilled material staying in the mud, and the system stopped needing additions of viscosifying polymers. To reduce these effects the mud was treated with KCl-polymer premixes containing more than 85 kg/m^3 KCl and dry KCl-powder. The interval from 3034 m to TD at 3320 m was drilled with a diamond bit and a turbine. This caused the gel strength to increase rapidly, the yield point increased and negligible volumes of cuttings were produced on the shaker screens (200 mesh screen). The explanation for this behaviour is believed to be that the soft, (hydrated) very fine cuttings escaping the shaker screens are torn apart in the turbine to the extent that they exhibit partitional charges, start attracting each other and thus cause increased gel strength and yield point.

Materials used in this section:
Magcobar, Magcogel, Caustic, Bicarbonate, Resinex, Antisol 30000, Antisol 100, Drispac S/LO, XC-Polymer, KCl-powder, KCl-brine, SAPP, Spersene.

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Norsk Hydro

Daily mud properties — Date 5/2-1987

System : Boredata Sandnes
Well: 6407/7-2
Mud Contractor: Dresser Magcobar
Data: "Mid depth" from table 3, otherwise from table 14 — 3

Date 5/2-1987
14 3

Date	Mid. depth m,MD	Mud dens. (SG)	PV cps	YP mPa	GEL 0 mPa	GEL 10 mPa	Ph	100 psi (cc)	HP/HT (cc)	Cl- inn/out mg/l	Alkalinity Pf	Alkalinity Pm	Alkalinity Mf	Ca++ inn/out mg/l	Oil %	Sol %	H2O %	V.G. meter at 115 gr. F 600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	Mud type
861118	0	1.05	0	0																				Spud
861119	382	1.05	0	0																				Spud
861120	406	1.05	0	0																				Spud
861121	446	1.05	0	0																				Spud
861122	780	1.05	0	0																				Spud
861123	780	1.05	0	0																				Spud
861124	780	1.05	0	0																				Spud
861125	780	1.2	18	10	1	2		7.3		62000/62000			0.2	280/280		10		46	38					KCl Polymer
861126	1160	1.2	24	18	2	3	9.7	5.6		68000/68000	0.05	0.55	0.4	640/640		13		84	60	46	35	7	5	KCl Polymer
861127	1517	1.3	20	13	2	3	8.7	7.5		70000/70000	0	0.5	0.4	1080/1080		14		66	46	37	27	5	3	KCl Polymer
861128	1517	1.3	20	15	2	3	8.6	7.3		72000/72000	0	0.4	0.4	1080/1080		14		69	49	39	27	5	3	KCl Polymer
861129	1517	1.4	22	9	2	3	10.5	8.5		70000/70000	0.2	0.9	0.6	800/800		17		62	40	28	17	3	2	KCl Polymer
861130	1839	1.6	30	15	3	10	10.4	9.5	28	66000/66000	0.3	0.9	0.7	960/960		23		90	60	51	38	9	5	KCl Polymer
861201	2016	1.6	33	10	3	25	10.1	9.2	26	70000/70000	0.2	0.6	0.6	600/600		24		85	52	37	24	7	6	KCl Polymer
861202	2190	1.6	28	8	4	23	9.4	6.6	28	71000/71000	0.1	0.35	0.5	720/720		23		70	43	33	21	5	5	KCl Polymer
861203	2230	1.6	28	8	4	25	9.2	8.2	26	73000/73000	0	0.3	0.4	1020/1020		23		73	45	33	21	8	6	KCl Polymer
861204	2310	1.6	30	10	6	34	9.1	8.6	27	73000/73000	0	0.3	0.4	720/720		23		80	50	37	24	7	6	KCl Polymer
861205	2409	1.6	25	7	2	22	8.7	7	23	73000/73000	0	0.25	0.5	840/840		23		65	40	30	19	4	3	KCl Polymer
861206	2513	1.6	27	9	4	30	9.2	6.6	21	72000/72000	0	0.5	0.7	680/680		24		71	44	34	23	7	6	KCl Polymer
861207	2550	1.6	25	8	3	27	9	6.6	22	73000/73000	0	0.35	0.7	720/720		24		65	40	31	20	6	6	KCl Polymer
861208	2550	1.6	29	9	6	40	8.7	7.6	26	75000/75000	0	0.2	0.8	1080/1080		25		76	47	31	25	10	9	KCl Polymer
861209	2550	1.6	29	9	5	40	8.7	7.6	26	74000/74000	0	0.2	0.8	1080/1080		24		76	47	36	25	10	9	KCl Polymer
861210	2550	1.49	20	4	1	5	9.3	7.6		64000/64000	0.1	0.4	0.65	640/640		19		48	28	20	12	2	2	KCl Polymer
861211	2550	1.48	21	5	1	7	9.5	6		70000/70000	0.2	0.6	0.8	640/640		19		53	32	22	13	2	2	KCl Polymer
861212	2553	1.48	17	8	2	20	11.6	10		68000/68000	0.6	3.7	1.1	320/320		20		49	32	25	16	6	4	KCl Polymer
861213	2582	1.48	20	8	2	14	11.6	6.1	23	69000/69000	0.4	3.3	1	200/200		19		55	35	25	16	3	2	KCl Polymer
861214	2651	1.48	24	8	3	22	11	4.2	15	64000/64000	0.2	3.2	1	160/160		19		64	40	30	20	7	4	KCl Polymer
861215	2680	1.48	21	8	2	18	10.9	4.4	15	63000/63000	0.2	2.5	0.9	140/140		19		57	36	28	13	4	3	KCl Polymer
861216	2701	1.48	21	8	2	18	10.8	4.5	14.8	59000/59000	0.2	2.4	0.9	480/480		19		57	36	28	12	4	3	KCl Polymer
861217	2731	1.48	19	7	2	18	10.9	5	15.6	59000/59000	0.2	2.8	0.9	280/280		19		52	33	26	16	3	2	KCl Polymer
861218	2775	1.48	22	8	2	21	10.7	4.4	14	60000/60000	0.1	2	0.6	600/600		20		60	38	30	19	4	3	KCl Polymer
861219	2805	1.48	23	8	2	19	10.7	4.5	13.5	60000/60000	0.2	2.3	0.8	640/640		20		62	39	28	18	4	3	KCl Polymer
861220	2842	1.48	22	8	2	19	11.2	4.4	14	58000/58000	0.2	2	0.7	720/720		20		60	38	30	19	4	3	KCl Polymer
861221	2879	1.48	23	7	2	16	10.7	4.6	14.5	56000/56000	0.2	1.9	0.7	480/480		20		60	37	29	19	4	3	KCl Polymer
861222	2915	1.48	24	8	2	15	10.4	4.4	14.6	52000/52000	0.05	1.7	0.5	400/400		20		63	39	30	19	4	3	KCl Polymer
861223	2994	1.48	25	9	2	21	10.1	4	14	56000/56000	0.05	1.4	0.5	440/440		20		68	43	34	22	6	5	KCl Polymer
861224	3028	1.48	23	8	2	19	10	4	14.4	60000/60000	0.1	0.7	0.6	480/480		20		62	39	31	20	5	4	KCl Polymer
861225	3039	1.48	23	8	2	20	10.3	4.2	14.6	59000/59000	0	1	0.5	480/480		20		62	39	30	20	5	4	KCl Polymer
861226	3078	1.48	23	8	3	23	9.8	4.2	14.8	60000/60000	0.05	0.55	0.55	640/640		20		62	39	31	20	6	5	KCl Polymer
861227	3182	1.48	24	9	4	29	10.1	4.2	14.6	61000/61000	0.05	0.65	0.65	580/580		20		65	41	33	22	7	6	KCl Polymer

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Norsk Hydro

Daily mud properties

Date 5/2-1987

System : Boredata Sandnes
Well: 6407/7-2
Mud Contractor: Dresser Magcobar
Data: "Mid depth" from table 3, otherwise from table 14

3

Date 5/2-1987

14 3

Date	Mid. depth m,MD	Mud dens. (SG)	PV cps	YP mPa	GEL 0 mPa	GEL 10 mPa	Ph	100 psi (cc)	HP/HT (cc)	Cl- inn/out mg/l	Alkalinity Pf	Alkalinity Pm	Alkalinity Mf	Ca++ inn/out mg/l	Oil %	Sol %	H2O %	V.G. meter at 115 gr. F 600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	Mud type
861228	3276	1.48	24	10	3	26	10.2	4.2	14.6	59000/59000	0.05	0.7	0.6	520/520		20		67	43	34	23	7	5	KCl Polymer
861229	3320	1.48	23	8	2	20	10	4.2	14.4	58000/58000	0.05	0.6	0.8			20		61	38	30	19	4	3	KCl Polymer
861230	3320	1.48	23	8	2	20	10	4.2	14.4	58000/58000	0.05	0.6	0.8			20		61	38	30	19	4	3	KCl Polymer
861231	3320	1.48	24	8	2	18	9.8	4.6	14.6	56000/56000	0.05	0.6	0.7			18		64	40	31	20	4	3	KCl Polymer
870101	3320	1.48	24	8	2	18	9.8	4.6	14.6	56000/56000	0.05	0.6	0.7			18		64	40	31	20	4	3	KCl Polymer
870102	3320	1.48	24	6	2	16	10.3	5	15.8	54000/54000	0.05	0.7	1			18		60	36	29	19	4	3	KCl Polymer
870103	3266	1.49	25	6	2	21	11.8	5.4		53000/53000	0.3	1.3	2			19		62	37	31	20	5	4	KCl Polymer
870104	3265	1.48	22	7	2	17	11.8	6.8		50000/50000	0.4	3.5	1.6			18		57	35	26	17	3	2	KCl Polymer
870105	3265	1.48	22	7	2	18	11.8	6.8		50000/50000	0.4	3.5	1.6			18						3	2	KCl Polymer
870106	3265	1.48	22	7	2	18	11.8	6.8		50000/50000	0.4	3.5	1.6			18		57	35	26	17	3	2	KCl Polymer
870107	3265	1.48	22	7	2	18	11.8	6.8		50000/50000	0.4	3.5	1.6			18		57	35	26	17	3	2	KCl Polymer
870108	3265	1.46	21	5	1	13	11.7	8.2		47000/47000	0.3	3.3	1.7			18		56	31	21	15	3	2	KCl Polymer
870109	3265	1.48	23	6	2	14	11.6	8.4		46000/46000	0.3	3.3	1.7			18		58	35	26	17	3	2	KCl Polymer
870110	3265	1.48	18	6	1	22	12.1	10.2		46000/46000	0.7	6	1.7			17		47	29	23	16	3	2	KCl Polymer
870111	2861	1.48	19	7	2	17	11.9	11		46000/46000	0.5	5.6	1.1			18		52	33	24	16	4	3	KCl Polymer
870112	2859	1.48	23	8	3	29	11.5	9.8		46000/46000	0.5	4.8	1.2			18		61	38	30	20	5	4	KCl Polymer
870113	2819	1.48	24	8	3	30	11.4	10		46000/46000	0.5	4.8	1.2			18		64	40	31	20	5	4	KCl Polymer
870114	2819	1.48	20	6	2	20	11.4	8.8		46000/46000	0.5	4.8	1.2			18		52	32	25	16	4	3	KCl Polymer
870115	2819	1.48	20	6	2	20	11.4	9		46000/46000	0.5	4.8	1.2			18		52	32	25	16	4	3	KCl Polymer
870116	2819	1.48	20	6	2	20	11.4	9		46000/46000	0.5	4.8	1.2			18		52	32	25	16	4	3	KCl Polymer
870117	2796	1.48	20	6	2	20	11.4	9		46000/46000	0.5	4.8	1.2			18		52	32	25	16	4	3	KCl Polymer
870118	650	0	0	0																				KCl Polymer
870119	0	0	0	0																				KCl Polymer
870120	0	0	0	0																				KCl Polymer
870121	0	0	0	0																				KCl Polymer

TABLE B-7

((((ooo) Norsk Hydro	Mud consumption System : Boredata Sandnes Well: 6407/7-2 Mud company: Dresser Magcobar	Date 23/3-1987 13

Hole size: 36

BENTONITE	(Mt)	39
CAUSTIC SODA	(Kg)	150
SODA ASH	(Kg)	80

Hole size: 26

BENTONITE	(Mt)	21
CAUSTIC SODA	(Kg)	200
LIME	(Kg)	556
SODA ASH	(Kg)	169

Hole size: 17.5

BARITE	(Mt)	106
POTASSIUM CL. (KCl)	(Kg)	8635
POTASSIUM CL. (KCl) Brine	(m3)	186
S.A.P.P.	(Kg)	200
PAC POLYMER REG	(Kg)	1336
XANTAN POLYMER	(Kg)	1008
Others:		
CELPOLYMER REG	(Kg)	1713
ANTISOL 3000	(Kg)	2276
CELPOLYMER S/LO	(Kg)	250

Hole size: 12.25

BARITE	(Mt)	438
BENTONITE	(Mt)	2
CAUSTIC SODA	(Kg)	650
POTASSIUM CL. (KCl)	(Kg)	21807
POTASSIUM CL. (KCl) Brine	(m3)	205
SODA ASH	(Kg)	880
SODIUM BICARBONATE	(Kg)	400
S.A.P.P.	(Kg)	300
PAC POLYMER SUPER	(Kg)	796
CHROME LIGNOSULFONATE	(Kg)	1194
XANTAN POLYMER	(Kg)	1049
RESINEX	(kg)	2580
Others:		
ANTISOL 3000	(Kg)	2878
CELPOLYMER S/LO	(Kg)	1289
CELPOLYMER REG	(Kg)	240
ANTISOL 100	(Kg)	1673

Hole size: 8.375

BARITE	(Mt)	62
BENTONITE	(Mt)	1
CAUSTIC SODA	(Kg)	564
POTASSIUM CL. (KCl)	(Kg)	3208

((((ooo) ------- Norsk Hydro	Mud consumption System : Boredata Sandnes Well: 6407/7-2 Mud company: Dresser Magcobar	Date 23/3-1987 13

POTASSIUM CL. (KCl) Brine	(m3)	55
SODIUM BICARBONATE	(Kg)	445
S.A.P.P.	(Kg)	350
PAC POLYMER SUPER	(Kg)	683
CHROME LIGNOSULFONATE	(Kg)	200
RESINEX	(kg)	2283
Others:		
ANTISOL 100	(Kg)	703
ANTISOL 3000	(Kg)	329

Hole size: 1

BARITE	(Mt)	41
SODIUM BICARBONATE	(Kg)	1040
S.A.P.P.	(Kg)	250
XANTAN POLYMER	(Kg)	276

Hole size: 2

BARITE	(Mt)	41
BENTONITE	(Mt)	3
CAUSTIC SODA	(Kg)	300
SODIUM BICARBONATE	(Kg)	470
CHROME LIGNITE	(Kg)	500
XANTAN POLYMER	(Kg)	135
Others:		
ANTISOL 3000	(Kg)	23
ANTISOL 100	(Kg)	132
INHIBITOR 101	(L)	1600
DOWICIL 75	(Kg)	120
AMONIUM BISULFAT	(L)	110

Hole size: 99

BARITE	(Mt)	8

Hole size 1: DST no 1

Hole size 2: DST no 2

Hole size 99: Temporary abandonment

TOTAL MUD MATERIALS CONSUMPTION

Product	No. units	size of units
Barite	696	mt
Bentonite	66	mt
Caustic	1 864	ltr
Soda Ash	1 129	kg
Bicarbonate	2 355	kg
Pac Polymer Reg	1 336	kg
Cel Polymer Reg	1 953	kg
Antisol 30000	5 506	kg
Pac-Polymer Super	1 479	kg
Cel Polymer Super	1 539	kg
Antisol 100	2 508	kg
XC-Polymer	2 468	kg
KCl-powder	33 650	kg
KCl-brine	446	m^3
Resinex	4 863	kg
Spersene (chrome-lignosulfonate)	1 394	kg
SAPP	1 100	kg
Lime	556	kg
Chrome lignite (XP-20)	500	kg
Inhibitor 101	1 600	ltr
Dowicil 75	120	kg
Amonium Bisulfat	110	ltr

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((((ooo) ------- Norsk Hydro	Cement reports System : Boredata Sandnes Well: 6407/7-2 Cement contractor: BJ Hughes Data from table 9	Date 17/3-1987 10

Casing Size (in)	SLURRY VOLUME (m3)	SLURRY DENSITY (SG)	Thickening Time (hrs)	BHST (deg.C)	Additive name	Compo-sition (l/100kg)	Total used (l)
Lead-30	34	1.68	5	7	Seawater	70.25	23112
					A-3L	2.66	875
Tail-30	21	1.92	3.45	7	Seawater	40.96	11059
					A-7L	3.55	959
Lead-20	119	1.5	7	19	Seawater	109.65	89474
					A-3L	4.44	3623
Tail-20	9.1	1.92	5	19	Freshwater	42.48	5055
					A-7L	1.78	212
Lead-13 3/8	52	1.68	6	49	Seawater	69.81	34905
					A-3L	2.66	1330
					R-15L	.98	490
Tail-13 3/8	15	1.9	3.08	49	Freshwater	43.59	8544
					R-12L	.71	139
Lead-9 5/8	14	1.9	3.95	98	Freshwater	41.97	7764
					D-19LN	2.04	377
					R-12L	.84	155
					D-6L	.08	14
Tail-9 5/8				98			
Lead-7	5	1.8	5	121	Freshwater	50.94	2955
					D-19LN	2.18	126
					R-12L	1.15	67
Tail-7	18	1.9	3.56	121	Freshwater	40.61	9259
					D-19LN	2.66	606
					R-12L	.80	182
					D-47L	.98	223

((((ooo) ------- Norsk Hydro	Cement reports ---------- System : Boredata Sandnes Well: 6407/7-2 Cement contractor: BJ Hughes Data from table 16	Date 17/3-1987 10

Type of Job	Depth bot. m,MD	Slurry Volume (m3)	Slurry Density (SG)	Compress. strenght (bar/hrs)	Thickening time (hrs)	Additive name	Compo-sition l/100kg	Total used (l)
Squeeze	2550	9.2	1.9	300/12	4.53	Freshwater	44.56	5347
						D-19L	1.78	214
						R-12L	.80	96
Squeeze	2878	1.3	1.9	500/24	4.02	Freshwater	41.97	713
						D-19L	1.78	30
						R-12L	.80	14
Plug	2796	2.1	1.9	500/24	4.02	Freshwater	41.97	1133
						D-19L	1.78	48
						R-12L	.80	22
Plug	2440	2.9	1.9	500/24	4.02	Freshwater	41.97	1595
						D-19L	1.78	68
						R-12L	.80	30

7. TOTAL COST REPORT

NORSK HYDRO A.S.
DRILLING SECTOR

REPORT NO: 04 FINAL COST

DATE: 22.01.86

WELL : 6407/7-2 DRILLING
LIC : 107
RIG : POLAR PIONEER
DEPTH : 3320 M
RIG RATE : NOK 659.000
EXCHANGE : USD 7.50
START DATE : 18.11.86
FINISH DATE: 08.01.87
TOTAL DAYS : 48.896

ESTIMATED COSTS
(in 000 NOK)

401	Site survey	3.000	
402	Resurvey	0	
403	Location clean up	0	
404	Positioning	860	
Class 40 Site surv & posit.costs.			3.860
410	Rig costs	36.512	
411	Drilling tools, equipm.& services	3.672	
412	Wellheads	1.455	
413	Casing & casing services	3.071	
414	Cement & cementing services	1.130	
415	Mud & mud services	2.355	
416	Wire line logging	4.551	
417	Test tools, equipm.& services	526	
418	Norsk Hydro offshore personnel	1.711	
419	Other costs	2.884	
Class 41 Rig controllable costs			57.867
420	Supply vessels	3.587	
421	Standby vessels	1.799	
423	Helicopter costs	2.675	
424	Fixed wing transport	0	
429	Other transport & dir. freight	489	
Class 42 Transportation costs			8.550
438	Warehouse costs	4.889	
439	Drill.dept.adm. & facilities	1.467	
Class 43 Warehouse costs			6.355
448	Onshore drilling supervision	2.444	
Class 44 Onshore supervision			2.444
458	Onshore geology & reservoir	978	
459	Lab. studies geol. & reservoir	416	
Class 45 Laboratory studies			1.393
CLASS 4 WELL COSTS TOTAL			80.471

NORSK HYDRO A.S.
DRILLING SECTOR

REPORT NO: 01 FINAL COST

DATE: 02.02.87

WELL : 6407/7-2 TEST
LIC : 107
RIG : POLAR PIONEER
DEPTH : 3320 M
RIG RATE : NOK 659.000
EXCHANGE : USD 7.50
START DATE : 02.01.87
FINISH DATE: 18.01.87
TOTAL DAYS : 15.667

ESTIMATED COSTS
(in 000 NOK)

401	Site survey	0	
402	Resurvey	0	
403	Location clean up	0	
404	Positioning	0	
Class 40 Site surv & posit.costs.			0
410	Rig costs	11.781	
411	Drilling tools, equipm.& services	34	
412	Wellheads	0	
413	Casing & casing services	461	
414	Cement & cementing services	241	
415	Mud & mud services	417	
416	Wire line logging	486	
417	Test tools, equipm.& services	8.450	
418	Norsk Hydro offshore personnel	548	
419	Other costs	924	
Class 41 Rig controllable costs			23.342
420	Supply vessels	1.236	
421	Standby vessels	595	
423	Helicopter costs	660	
424	Fixed wing transport	0	
429	Other transport & dir. freight	188	
Class 42 Transportation costs			2.680
438	Warehouse costs	1.567	
439	Drill.dept.adm. & facilities	470	
Class 43 Warehouse costs			2.037
448	Onshore drilling supervision	783	
Class 44 Onshore supervision			783
458	Onshore geology & reservoir	0	
459	Lab. studies geol. & reservoir	0	
Class 45 Laboratory studies			0
CLASS 4 WELL COSTS TOTAL			28.842

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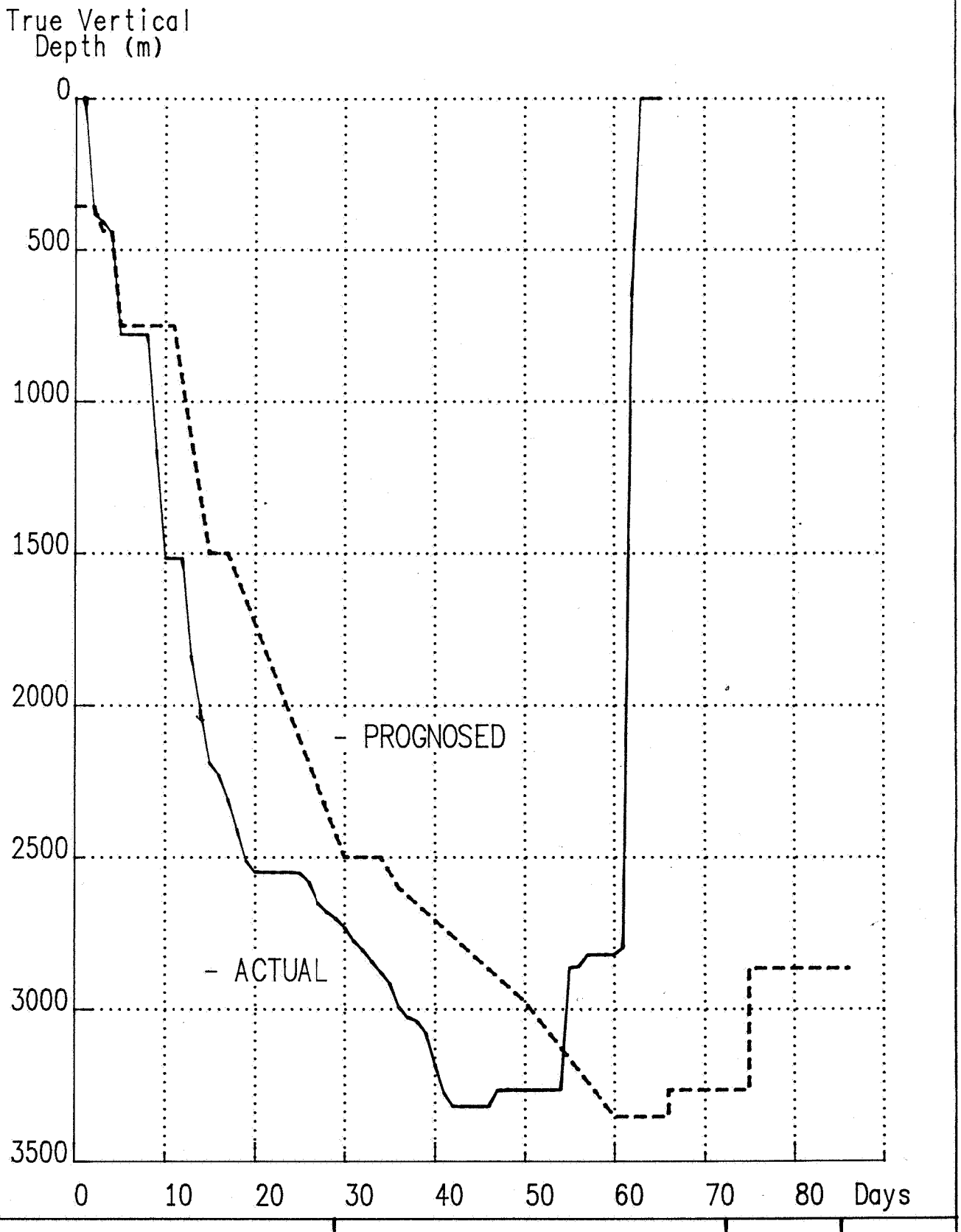
((((ooo) Norsk Hydro	Equipment failure summary System : Boredata Sandnes Well: 6407/7-2 Data from table 11	Date 17/3-1987 15	Hydro	Data from table 11	15

Report No.	Date of failure/ problem	Equipment involved	Failure/problem	Cause of failure/problem	Recommendations for future	NSFI cat.
1	861123	Camactuated running tool	One of the ball valves on the 30" camactuated tool started leaking while displacing the cement.	Valve shifted from closed to partly open. Reason unknown. The ROV may have moved it when it was used to inspect the PGB and the slope indicator.	1) Remove handles after closing the valves after filling csg w/water. or 2) Remove valves compl., replace them w/bullplugs, or 3) Install pos locking device f/valve handles.	381
2	861209	Cement head	The ball and dart did not launch from the cement head when cementing 9 5/8" csg. Pressure surge f/sticky mud which broke thru fins of dart activated flag sub. Plugs gone.	The ball did not drop from ball drop releaser when operated. The dart was jammed between dart release rod and lower inlet on cmt head.	Ball release: Smaller ball ID,heavier ball or pump a small volume before ball drop releaser is retracted. Dart release: Inspect bore+inlet bore om cmt head w/dart.	3712
3	861216	Double acting hydraul.jar	Circulating pressure dropped from 240 bar to 205 bar while drilling. Pulled out of hole and tested jar. Found that jar was leaking when pressure testing.	Had to pull out of the hole and trace the leak. Lost time: testing surface equipment 1 hr, POOH 4 hrs, change jar and RIH 5 hrs.	Get report from manifacture or owner of equipment after the tool has been disassembled and inspected	375

FIGURE B-6



Norsk Hydro
Drilling Department

Date:19870323

PROGNOSED AND ACTUAL
DRILLING CURVES

WELL: 6407/7-2