

NORSK HYDRO a.s

FINAL WELL REPORT

WELL 30/6-17A

LICENCE 053

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FINAL WELL REPORT

WELL: 30/6-17, 30/6-17R AND 30/6-17A

Distribuert til:	Report	Completion	Completion	Dato:
	log, papir	log, papir	log, sepia	
	Antall	Antall	Antall	
NORSK HYDRO				
Operasjonskontor, Væ	1	1		6/1
Operasjonskontor, Bg	2	2		6/1
Operasjonskontor, Ha	1	1		6/1
Utforskningsleder og prosjektgruppe (sirk.)	2	2		6/1
Reservoir, K. Kopren	1	1		6/1
Arkiv, Væ	2	2	1	6/1
Arkiv, Bg	2	2	1	6/1
Arkiv, Sd	1	1	1	6/1
OLJEDIREKTORATET	2	2	1	5/1
PARTNERE				
Statoil, Bg Attn: Let-Arkiv	2	2	1	5/1
Elf, St. Attn: D. Stensland	2	2	1	5/1
Total, Bg. Attn: J. Vallet	2	2	1	5/1
Saga, St. Attn: R. Myrland	2	2	1	5/1
Mobil, St. Attn: R.B. Peacock	2	2	1	5/1
Ekstra	3	3		
Totalt	27	27	9	

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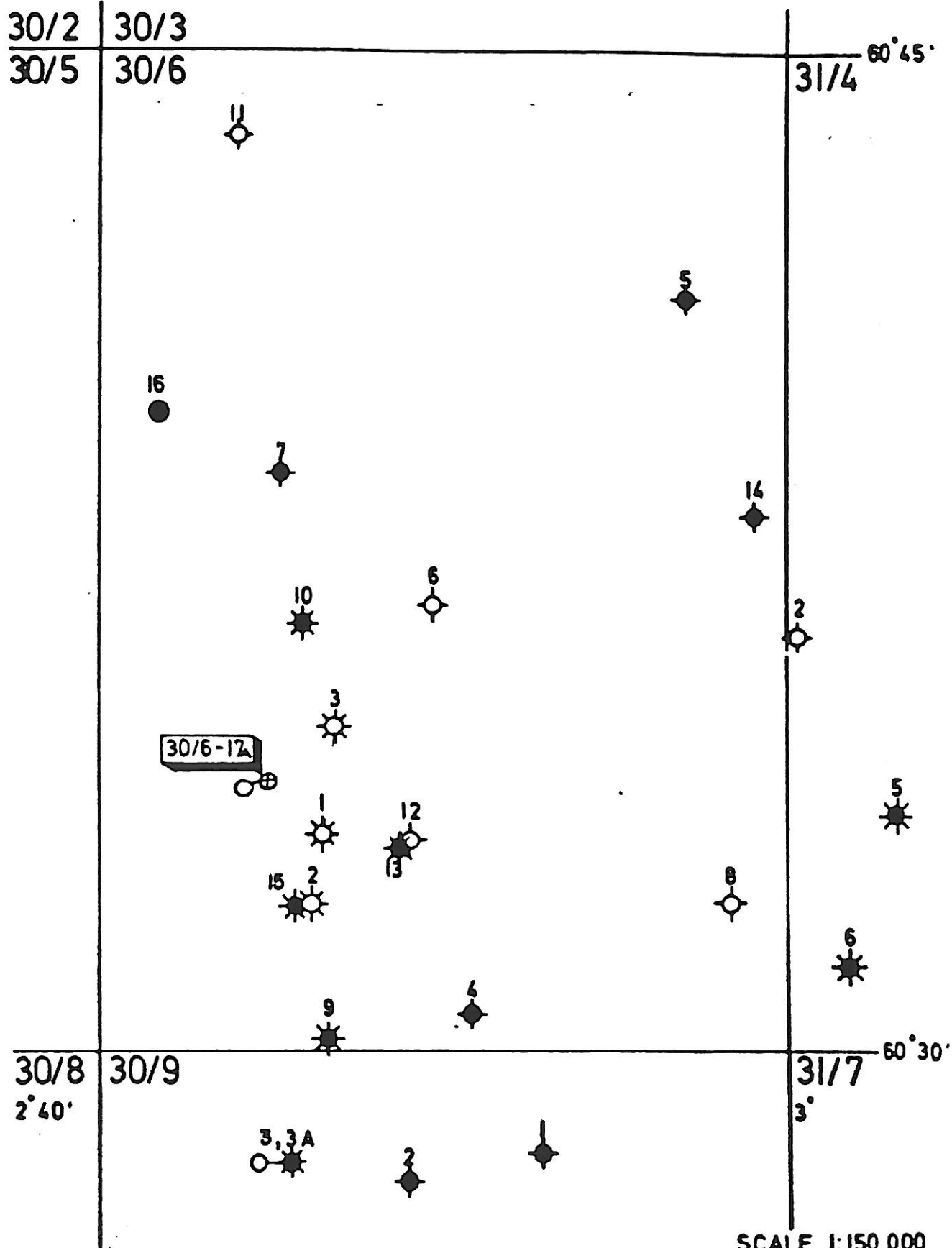
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Operations 30/6-17R

Section C Completion Log

PREFACE

The well 30/6-17R did not penetrate the Statfjord formation in a high structural position as assumed. In order to fulfill the objectives, the well was sidetracked. The sidetracked well was called 30/6-17A.



 **Norask Hydro**
Drilling Department

LOCATION MAP
WELL 30/6-17A

Gr. no.:

2

Fig.:

1

Date: 14.02.86

Sign: GKG/AHJ

Dwg. no.:

76

General information

..Date..
19860908(((
(ooo)System : Boredata Sandnes
Well: 30/6-17A Field: OSEBERG
Structure: ALPHANorsk
Hydro

1:

Lic: 053

Country: NOR

LOCATION Coordinates Surface-----> Target----->

UTM	N (m):	6715194.4	:6715210.9
UTM	E (m):	486293.4	:485814.2
Geographical	N	60dg34'15.77"	:60dg34'16.24"
Geographical	E	02dg44'59.84"	:02dg44'28.36"

Water depth :110 m

Formation at TD :Statfjord

Operator :HYDRO 12.25%

Partners,	:STATOIL 56.4%, SAGA 7.35%
(interests)	:ELF 10.66%, MOBIL 8.0%,
	:TOTAL 5.34%

RIG name	:TREASURE HUNTER
RIG contractor	:WILHELM WILHELMSSEN
MUD contractor	:PROMUD
CEMENT contractor	:HALLIBURTON
EL.LOGG contractor	:GECO WELLSERVICES
MUD LOGG contractor	:EXLOG
Other contractors:	

Total depth (m RKB) :	Measured	Vertical
	-----	-----
	2686m	2528m

Rotary Table elevation : 25m

TIME SUMMARY Spudding date:19860204 Abandonment date:860319

Operations:	Moving	Drilling	Form.eval	Prod.test	PlugAband	Downtime	Comple:
Hours :	0	408	193	0	110	304	0
Days :	.0	17.0	8.0	.0	4.6	12.7	.0
% of total:	0	40	19	0	11	30	0

TOTAL : 1014hrs 42days

Hole and Casing record

Hole	Depth(m)	Casing	Depth(m)
12 1/4	2335	30	223
8 3/8	2686	20	601
		16	367
		13 3/8	1593
		9 5/8	2323

Well status :Perm. abandonment

S E C T I O N A

G E O L O G Y

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Geological well summary

1. OBJECTIVES

Well 30/6-17A was sidetracked from the well 30/6-17R.

The well was sidetracked due west from below the 13 3/8" casing, with the kick off point at 1633 mRKB.

The main target for well 30/6-17A was the Statfjord Formation updip of the waterbearing Statfjord Fm. in 30/6-17R and 30/6-2 at a location 469 m west of 30/6-17R.

The prime objectives of this well were:

- to prove hydrocarbons in the Statfjord Formation
- to drill into the Statfjord Formation at a location which left a minimum of reserves updip of the well
- to improve the stratigraphical and structural knowledge of the area
- to acquire input of further exploration activity in block 30/6.

Secondary objectives of the well were:

- to acquire further knowledge of the lateral development of the Cook Formation
- to acquire input to establish a possible oil/gas contact in the Cook Formation
- to find possible hydrocarbons within Cretaceous sandstones and to acquire further geological knowledge of these sands.

The well was planned to be drilled to a minimum of 50 m (TVD) into the Statfjord Formation to a total depth of 3532 mRKB TVD (2690 mRKB MD) 508 m west of the 30/6-17R location.

2. RESULTS

The well encountered a gas bearing Cook Formation. The Statfjord Formation was found waterbearing.

Hydrocarbon shows seen on Tertiary and Cretaceous limestones, and in a approx. 5 meter thick sandstone bed associated with the Base Cretaceous Unconformity, were considered uninteresting.

The Cook Formation (2460-2489 m, 2357.5-2379 mTVD) is developed as an overall coarsening upward sequence. The grain size is fine to medium at the upper part, becoming very fine to fine with an increasing silt content downwards. The whole of the Cook Formation was found gas bearing with a net pay of 27.9 m. The average porosity (ϕ) is 24.1% and the average watersaturation (S_w) is 28%.

Cut off criteria for petrophysical evaluation was: $\phi < 12\%$, $S_w > 60\%$, $V_{sh} > 40\%$.

The Statfjord Formation (2632-2686 m (T.D), 2487-2528 mTVD) waterbearing. The net sand calculated from logs is 22.1 m with an average porosity of 23.8%.

Seven conventional cores were taken in the well.

Core no. 1 was cut in sandstones and shales at the boundary between the Cretaceous and the Lower Jurassic from 2420-2430 m (measured driller's depth).

Cores no. 2-4 were taken in the Cook Formation and the upper part of the Amundsen Formation from 2466 m to 2511 m.

Cores no. 5-7 were taken in the Statfjord Formation from 2636 m to 2676 m.

The wellsite core descriptions can be found in Appendix I.

The well was not production tested. (The 30/6-17R well encountered the Cook Formation oil bearing down-structure at 2401.5 m, with an oil-water contact at 2419.5 mRKB. Due to gasconing effects during the production test in that well an gas-oil contact was here inferred immediately upstructure from the well).

Due to unfavourable hole conditions no SFT pressure tests or fluid sampling were performed in the well.

Details on the petrophysical evaluation on the well can be found in the separate report "Formation Evaluation Report Well 30/6-17R and 30/6-17A".

3. STRATIGRAPHY

The biostratigraphical evaluation was carried out by Robertson Research Int. Ltd. Paleodating analysis were routinely performed from 2340 m and down to TD at 2686 m.

Ditch cuttings samples were collected at 5 m intervals from well kick off point at 1633 m down to 2335 m, and at 2 and 3 m intervals below 2335 m and down to TD. Due to difficult hole conditions sidewall cores were not taken in this well.

The first sample analysed was claystones of the Shetland Group of Upper Maastrichtian age. Lower Maastrichtian - Campanian is suggested from 2385 m. The Shetland Group rests unconformably on an unassigned sand and shale unit between 2410.5-2420 m (log). A Middle-Upper Jurassic age is indicated from paleodating. However, based on geological knowledge of the area and seismic data there is reasons to believe that this unit represents redeposited sediments. The nature of the boundary between this unassigned unit and the underlying Lower Jurassic Drake Formation is also unconformable.

The Dunlin Group is of Lower Toarcian to Pliensbachian - ? Sinemurian age. The Drake Formation extends from 2420 m (2327.5 mTVD) down to 2460 m (2357.5 mTVD) and the Cook Formation from 2460 m down to 2489 m (2379 mTVD). The interval between 2489 m and 2632 m (2487 mTVD) is assigned to the Amundsen Formation. The well was terminated in the Statfjord Formation at 2686 m (2528 mTVD).

A discrepancy between driller's depths and logger's depths was noticed. At the top Cook Formation this depth difference was approximately 2 meters, and at the top Statfjord Formation 4 meters, the driller's depths being the deeper.

The well was deviated approximately due west. The maximum hole angle was measured to 41.7° at a depth of 2468 m (2363.5 mTVD). The Statfjord Formation, which was the main target for this well, was encountered approx. 475 m to the west of the 30/6-17R well.

The Cook Formation, which was the secondary target for this well, was encountered approx. 362 m west of 30/6-17R.

The bio-litho stratigraphy is summarized in the diagram on page 8.



WELL : 30/6-17A

NOT TO SCALE

ELEVATION K B 25 m

ALL DEPTH IN METERS (m)

CHRONOSTRATIGRAPHY				LITHOSTRATIGRAPHY	
SYSTEM	SERIES / STAGE	DEPTH	THICKNESS	GROUP	FORMATION / MEMBER
	NOTE CUTTINGS ANALYSED FOR PALEODATING FROM 2340 M		NOTE MEASURED THICKNESS		WELL SIDETRACKED DUE WEST FROM 30/6-17R KICK OFF POINT AT 1633 m RKB NOTE DEPTHS ARE IN MD W/M TVD IN BRACKETS
				HORDALAND GROUP - (1915)	 1924
				(1991.5) ROGALAND GROUP (2058)	BALDER FM 2009 SELE FM 2089 LISTA FM 2216
				(2165) MONTROSE G. (2181.5)	MAUREEN FM. EQ 2235
CRET.	UPPER UPPER MAASTRICHTIAN LOWER MAAS.- UPPER CAMPANIAN	2340 2385	35	SHETLAND GROUP (2327.5)	2410.5 UNASSIGNED UNIT 2420
JURASSIC	UPPER-MIDDLE JURASSIC LOWER TOARCICAN UPPER PLIENSACHIAN LOWER PLIENSACHIAN ? SINEMURIAN	2417 2420 2455 2560 2686 - T.D.	3 35 105 126	DUNLIN GROUP (2357.5) (2379) (2487)	DRAKE FM 2460 COOK FM 2489 AMUNDSEN FM 2632 STATFJORD FM
	DRILLER'S T.D.: 2686 m RKB MD 2528 m RKB TVD			LOGGER'S T.D.:	2676 m RKB MD

4. LITHOSTRATIGRAPHY

This summary is based predominantly on ditch cuttings descriptions. Wire line logs were used for assistance in the lithological interpretation and to place formation boundaries. Seven conventional cores were available from the well, one at the boundary Jurassic/Cretaceous, three in the Cook Formation and three in the Statfjord Formation. No sidewall cores were run in the well due to bad hole conditions.

4.1 TERTIARY 1633-2235 M (1633-2181.5 mTVD)

HORDALAND GROUP (1633-1924 M, 1633-1915 mTVD)

The part of the Hordaland Group that was penetrated by this well comprises claystones with limestone and dolomite stringers.

The claystones are medium to dark gray and dark olive gray to olive gray, becoming bluish gray to grayish green, firm to moderately hard, subfissile to blocky, locally pyritic, locally slightly silty, and they are non to locally slightly calcareous.

The limestones are light to medium gray to light brown, moderately hard to firm, locally chalky, occasionally oolitic, locally slightly argillaceous and microcrystalline to crystalline.

The dolomites are light brown, hard to very hard, locally sucrosic and microcrystalline.

The interval is of Miocene and Oligocene age.

The depositional environment was marine, outer shelf to upper bathyal.

ROGALAND GROUP (1924-2216 m) (1915-2165 mTVD)

Balder Formation (1924-2009 m) (1915-1991.5 mTVD)

The Balder Formation is dominated by claystones and occasional stringers of dolomite and limestone. Minor amounts of tuffaceous material is characteristic for this formation.

The claystones are medium brown to dusky yellowish brown, soft to firm but occasionally moderately hard, subfissile to blocky, slightly silty and slightly calcareous.

The limestones occur in the upper parts of the formation. They are light gray to medium gray, occasionally dark yellowish orange, coarse crystalline to occasionally cryptocrystalline, moderately hard, blocky, occasionally slightly dolomitic, slight to moderately argillaceous and contain poor visible porosity.

The dolomites occurs in the lower parts of the formation. They are light olive gray to light gray, occasionally dark yellowish orange, coarse crystalline to cryptocrystalline, hard, angular fragmental, slightly argillaceous, micropyrictic, occasionally slightly calcareous and contain poor visible porosity.

The tuffaceous material is light gray with black to dark gray speckles and firm. The fragments are rounded to blocky. The tuffaceous material is non to slightly calcareous and contains occasionally traces of black lamina.

Sele Formation (2009-2089 m) (1991.5-2058 mTVD)

The upper boundary of this formation is characterized by a significant increase in gamma ray values.

This formation comprises dominantly claystones with rare limestone stringers.

The claystones are olive gray to brownish gray, blocky, very to slightly silty and occasionally very micropyrritic. Rarely the claystones contain very fine clear quartz grains which are subangular to subrounded and medium spherical.

The limestones are light gray to medium gray, coarse to lutitic, firm, blocky and chalky. They contain poor visible porosity.

Lista Formation (2089-2216 m (2058-2165 mTVD)

The formation is characterized by claystones with occasionally stringers of limestones and more rarely stringers of dolomites.

The claystones are bluish gray to dark gray, firm and blocky. They contain occasionally pyrite and glauconite. Occasionally the claystones contain lamina of medium brown to grayish brown, firm and blocky claystones.

The limestones are yellowish gray to white, firm to moderately hard, microcrystalline, locally chalky and moderately argillaceous.

The dolomites are light brown to pale yellowish brown, microcrystalline and moderately hard.

The environment was outer shelf to upper bathyal.

MONTROSE GROUP (2216-2235 M) (2165-2181.5 mTVD)

Maureen Formation Eq. (2216-2235 m, 2165-2181.5 mTVD)

This group compise claystones with minor limestone stringers.

The claystones are predominatly grayish brown, but also medium gray to medium dark gray and occasionally greenish gray. They are firm to locally soft, blocky and locally slightly silty. They are pyritic and non to slightly calcareous.

The limestones are similar to the limestones of the Lista Formation.

The Montrose Group is of Paleocene age. The Montrose Group was deposited in a marine outer shelf environment.

4.2 CRETACEOUS (2235-2417 m) (2181.5-2325.5 mTVD)

UPPER CRETACEOUS (2235-2417 m) (2181.5-2325.5 mTVD)

SHETLAND GROUP (2235-2410.5 m) (2181.5-2320 mTVD)

This group is separated from the overlying Montrose Group by an unconformity. The group is characterized by claystones, locally grading into marls, alternating with limestones at the upper part. Stringers and beds of limestones are developed throughout with a 5 meter thick bed defining the base of the section.

The claystones are dark gray to medium dark gray to olive black, soft to firm and blocky, to locally subfissile. They are in part silty and are locally grading to marls.

The marls are olive gray to medium dark gray, soft to firm, slightly sticky and locally slightly silty.

The limestones are predominantly light brown, locally white to light gray, firm to moderately hard, blocky and slightly argillaceous. They are cryptocrystalline or rarely crystalline and contain minor fossils of crinoids and foraminifers.

The dolomites are grayish brown to pale yellowish brown, locally red brown, moderately hard, blocky microcrystalline and rarely crystalline.

The age of this group is Upper Maastrichtian to Lower Maastrichtian-Campanian (2385-2417 m).

The depositional environment is as for the strata above.

(2410.5-2420 M, 2320-2327.5 mTVD) Possible redeposited Brent Group sediments

Between the Upper Cretaceous Shetland Group and the Lower Jurassic Drake Formation, with boundaries of unconformable nature, lies an unassigned sand and claystone unit. A similar interval was also penetrated in the 30/6-17R well. Those sediments are thought to represent redeposited products, derived by erosion of mainly Middle Jurassic rocks.

The paleodating, based on cuttings and core, (not depth adjusted to match logger's depths), indicate Lower Maastrichtian to Campanian age down to 2417 m, and undifferentiated Middle-Upper Jurassic between 2417-2420 m.

The sandstones are described as composed of clear quartz grains which have a dark yellowish brown stain. They are fine grained, subangular to subrounded and well sorted. The sandstones are moderately hard to friable, slightly micaceous and rarely carbonaceous and contain a moderate visible porosity.

The claystones are medium dark gray to olive gray, hard, blocky, non calcareous, very silty, slightly micromicaceous and contain abundant plant remnants.

4.3 JURASSIC (2420-2686 m, TD (2327.5-2528 mTVD))

LOWER JURASSIC (2420-2686 mTD)

DUNLIN GROUP (2420-2632 m) (2327.5-2487 mTVD)

Drake Formation (2420-2460 m) (2327.5-2357,5 mTVD)

This formation is separated from the overlying Cretaceous sediments by an unconformity.

The formation comprises claystones with traces of limestones. The claystones are predominantly medium dark gray, variably soft to firm to moderately hard, subfissile, very silty, occasionally slightly carbonaceous and non calcareous.

The limestones are light gray, occasionally with dark yellow brown spots. They are soft to firm, occasionally hard with traces of fossil fragments, rarely glauconitic and occasionally very silty grading calcitic siltstone which occasionally are dolomitic and micritic.

The age of the Drake Formation is Lower Toarcian (2420-2455 m) to Upper Pliensbachian (2455-2560 m).

Cook Formation (2460-2489 m) (2357.5-2379 mTVD)

The top of this formation is defined by clear log break and lithology change.

The formation consists of sandstones with interbeds of siltstones.

The sandstones are brownish gray with transparent to translucent quartz which are very fine to medium grained, but predominantly fine grained, subangular to subrounded and moderately sorted. They are friable and locally silty, locally calcareous cemented, micaceous, and they contain moderate visible porosity.

The siltstones are dark gray to grayish black, argillaecous, firm, calcareous and carbonaceous and contain minor mica.

Amundsen Formation (2489-2632 m) (2379-2487 mTVD)

Claystones with rare stringers of limestones dominate this formation. Locally the formation contained traces of sandstones.

The claystones are dark gray to olive gray to brownish gray, firm to moderately hard, occasionally soft, blocky to subfissile and occasionally splintery. They contain traces of lignite, are moderately calcareous, very slightly micromicaceous very slightly micropyrritic, and they are moderately silty to locally grading to siltstones.

The limestones are grayish white to yellowish gray, soft to firm, locally hard, cryptocrystalline and very argillaceous.

The sandstones are grayish white with clear quartz grains which are very fine grained, subrounded to rounded, well sorted, calcitic cemented, slightly micaceous and pyritic.

The age is Upper Pliensbachian and Lower Pliensbachian to possible Sinemurian (2560-TD)

The Dunlin Group was deposited in a marine inner shelf environment with locally strong terrestrial influence.

Statfjord Formation (2632-2686 mTD) (2487-2528 mTVD)

Clear log breaks define the top of the Statfjord Formation which comprises sandstones with interbeds of claystones/shales and rare coal beds.

The claystones/shales are dark gray to brownish gray, moderately hard, subfissile to fissile, non calcareous, silty and micromicaceous. They contain traces of mica, are slightly carbonaceous with traces of plant remnants.

The sandstones are light olive gray clear to translucent quartz grains. They are fine to very coarse grained, but predominantly medium to coarse grained and moderately to well sorted. The grains are subangular to subrounded and are cemented by silica although locally kaoline cement is abundant. The sandstones contain traces of mica and are slightly to very pyritic and slightly to moderately carbonaceous. They are planar crosslaminated and locally ripple laminated. They contain poor to locally good visible porosity.

The coal beds are shiny black, moderately hard, brittle and fissile and very pyritic in parts.

The Statfjord Formation is of Lower Pleinsbachian to ? Sinemurian age.

The depositional environment is interpreted as a fan delta/delta system.

5. HYDROCARBON SHOWS

The evaluation of hydrocarbon shows at the well site was performed in a conventional manner. A complete hydrocarbon total gas detector (50 u = 1%) was operational together with a gas chromatograph for automatic and continuous gas analysis, recorded as ppm by volume of C1 through C5.

Hydrocarbon shows on ditch cuttings were evaluated according to Norsk Hydro's Wellsite Geologist Manual.

5.1 GAS RECORD

1633-1770 m

Gas values ranged between 0.1-0.3% C1-C3 (methane, ethane, propane) and occasionally NC4 (normal butane) through this interval. The Lithology is claystones of the Hordaland Group. The mudweight was 1.48 rd.

1770-2242 m

This interval covers the lower part of the Hordaland Group, the Rogaland Group, the Montrose Group and the very upper part of the Shetland Group. The gas varied between 0.2% to 1.8% C1-IC4 (Isobutane) and NC4. The mudweight was kept around 1.48 r.d.

2242-2300 m

This is the upper part of the Shetland Group comprising limestones with hydrocarbon shows and claystones. The gas was generally reading higher, ranging between 0.6-5.3% C1-IC4, NC4. At 2261 m a peak reaching 17% was recorded. The mudweight was 1.49 r.d.

2300-2410 m

This interval makes up the lower part of the Shetland Group. The gas varied between 0.1% to 0.45%, C1-IC4, NC4. Below 2335 m the mudweight was reduced to 1.35 r.d. Gas peaks of 1.2% and 1.61% were recorded at 2341 m and 2367 m respectively.

2410-2417 m

This interval is an unassigned unit between the Shetland Group and Drake Formation with sandstones as the dominant lithology. The gas read between 1.1-7.82% C1-IC4, NC4. The mudweight was kept at 1.35 r.d.

2417-2466 m

This interval is composed of mainly Drake Formation claystones and stringers of limestones, and the uppermost part of the Cook Fm. The gas ranged between 0.17% to 0.69% C1-IC4, NC4. At 2425 m the gas peaked up to 1.56% and at 2465-2466 m up to 1.92%. The mudweight remained at 1.35 r.d.

2466-2686 m T.D.

This interval comprises most of the sandstones of the Cook Formation, claystones of the Amundsen Formation and sandstones and claystones of the Statfjord Formation. The gas readings ranged from 0.08-0.8% C1-nC4. The mudweight was kept at 1.35 rd.

5.2 OIL STAIN AND FLUORESCENCE

1633-2235 m

Shows of varying quality were reported from dolomite and limestone stringers throughout this section. The shows are described as generally weak light brown oil stain with fair to good direct yellowish fluorescence and slow streaming yellowish white fluorescence cut, but no visible cut. Locally a bluish white fluorescence residue and a non to weak light brown visible residue were observed.

2235-2410 m

In this section poor shows were recorded on limestone stringers and strong shows on rare sand stringers. In the limestones there was non to weak oil stain, a slow streaming very pale brown visible cut and a fast streaming very pale yellow-white crush fluorescence cut was observed. Also reported was a pale brown visible residue and a very pale yellow white fluorescence residue.

The sand stringers carried a moderate hydrocarbon odour and 100% light brown oil stain. They also showed a light brown visible cut and a moderate, occasionally slow, streaming yellow white fluorescence cut, a medium brown visible residue and yellow white fluorescence residue.

2460-2489 m

This section of the Cook Formation carried shows in sandstones and siltstones. A weak hydrocarbon odour together with non to weak light yellow brown oil stain was observed. 10-30% spotted dull yellow brown fluorescence with weak light yellow brown visible cut and non to very slow streaming light yellow fluorescence cut were seen. There was a light brown visible residue and a bright white yellow fluorescence residue.

2489-2632 m

In this section shows were reported from sandstone stringers. A moderate yellow brown fluorescence was observed, but no visible cut. A very slow to non streaming yellow white fluorescence cut was also observed together with a light brown visible residue and a moderate bright white yellow fluorescent residue.

2632-2686 m

This section represents the Statfjord Formation and shows were reported from the sandstones in this interval. A very strong odour was prominent and a light olive gray oil stain was observed. There were traces to 40% of moderately streaming orange fluorescence and 30-80% of a very dull orange brown to medium brown fluorescence. There was a light brown visible cut, very slow to non streaming white yellow fluorescence cut with a light brown visible residue and a bright yellow white fluorescence residue.

6. CORES

6.1 CONVENTIONAL CORES

A total of seven cores were cut from three separate intervals. Core number 1 was taken at the Cretaceous-Jurassic boundary, cores number 2-4 were taken in the Drake Formation and the Amundsen Formation. Cores number 5-7 cover the top of the Statfjord Formation.

Core No. 1 was cut from 2420-2430 m, of which interval the lower 2.80 m were not recovered (72% recovery). The upper 1.75 m comprise massive sandstones with claystone clasts near the lower boundary. The lower section comprises claystones with beds of siltstones and sandstones. Ripple lamination are observed in the lower sandstone beds.

Core No. 2 was cut from 2466-2493.8 m, (100% recovery). The lithology is bedded sandstones. The lowermost 3 meters are interbedded/laminated with siltstones. Lenticular and flaser bedding are common as well as bioturbation.

Core No. 3 was cut from 2493.8-2501 m with only 4% recovery. The core was retrieved in broken pieces. The lithology is sandstones, siltstones and calcitic siltstones.

Core No. 4 was cut from 2501-2511 m (100% recovery). The lithology is dominated by shaly siltstones with traces of calcitic siltstones and rare sandstone laminae.

Core No. 5 was cut from 2636-2649 m, the lower 1.3 m was not recovered, giving a recovery of 90%. The lithology was mainly sandstones with a few beds of siltstones. Minor ripple lamination occur in the upper 6 m, while minor through cross-bedding and flaser bedding are common from 2643-2645 m.

Core No. 6 was cut from 2649–2651 m. The recovery was 1.9 m (92.5%). The lithology was dominated by claystones grading to siltstones with depth, with a coal bed from 2649.5–2650.1 m.

Core No. 7 was cut from 2651–2676 m. The recovery was 13.3 m (93%). The upper 4 m comprise shaly claystones with traces of plant remnants. The underlying 10 meters consist of sandstones, in part with normally graded beds, with ripple lamination and planar crossbedding as common features. The lower section contains shaly claystones with a few beds of carbonaceous shales and sandstones in the lowermost 1.6 m.

Detailed core descriptions are contained in Appendix 1.

6.2 SIDEWALL CORES

No sidewall cores were taken due to unfavourable hole conditions.

7. WIRELINE LOGGING

The following is a summary of wireline logs run in the well 30/6-17A and presents the dates, logged interval and run numbers for each log.

LOG	DATE	LOGGED INTERVAL	RUN NO.
DIL/LSS/GR/SP	18.02.86	1591-2331 M	1A
DIL/BHC	06.03.86	2311-2675.5 M	2B
CDL/CNS/CAL	18.02.86	1591-2329 M	1A
	06.03.86	2300-2667 M	2B
CBL/VDL/CCL/GR	05.03.86	1500-2317 M	2A
VSP	09.03.86	1400-2396 M	2A
DLL/MSFL	05.03.86	2318-2457 M	2A

8. SPECIAL STUDIES

The biostratigraphic evaluation of the well was performed by the laboratories of Robertson Research Int. Ltd. in Wales, UK. The results are contained in the report:

Norsk Hydro 30/6-17A
Norwegian North Sea Well
Biostratigraphy of the interval 2340-2686 m TD

The petrophysical evaluation are presented in the report:

Formation Evaluation Report
Well 30/6-17R and 30/6-17A
Alpha Structure
Cook and Statfjord Formations

APPENDIX 1

CORE DESCRIPTIONS



Well no		Core report			Core no
30/6-17A					1
Interval 2420-2425 m 2327.4-2331.2 m TVD)		Area Norwegian North Sea	Cut 2420-2430 m	Date 23.02.86	
Scale 1:25		Well RKB 25 m	Recovery 2420-2427.2 m, 72 %	Geologist Sæther/Rønning	
Depth scale	Re- covery	Lithological column	Depths (m)	Lithological descriptions	Shows
2420				Sst: dk yel brn, clr Qtz, f, subang-subrnd, wl srted, mod hd-fir, sl mica, tr carb, plan lam (x-lam?), occ clyst clasts near btn, mod vis por.	In Sst: mod HC odour, 100% lt brn oil stn, 100% yel brn flu, lt brn vis cut, slow strmg bri yel wh flu cut, m brn vis resd, mod-bri yel wh flu resd.
2421			2421.00 Sealed sample 2421.18 2421.73	Clyst: m dk gy-olv gy, hd, blk, non calc, v slty, sl micromic, abdt plt remn. Clyst altn carb Sh: Clyst: lt olv gy-olv gy, m dk gy, frm, blk, noncalc, slty, com pyr, com plt remn. Sh: blk, in pt shiny, mod hd, subfis, non calc, sl slty, v carb.	
2422			2422.00 Sealed sample 2422.15 2422.20		
2423			2423.40	Clyst: a/a, deformed lam top 20 cm.	
2424			2424.05 2424.18 2424.58 2424.68	Carb Sh: a/a. Carb Sh: a/a.	
2425			2424.85	Clyst minor Sst.	
Well 30/6-17A		Core report 1 of 2			Core no 1



30/6-17A



Well no. 30/6-17A		Core report			Core no s 2
Interval 2466 -2471 m (2362-2366 m TVD)		Area Norwegian North Sea	Cut 2466-2493.8 m	Date 25.02.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2466-2493.8 m, 100%	Geologist Tønseth/Sæther	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2466				Sst: brn gy, transp-transl Qtz, vf-m, subang-subrnd, mod srted, fri, slty cmt, mica, non calc, mod vis por.	Wk HC odour, no wk lt yel brn oil stn, 10-30% spotty duell yel brn flu, wk lt yel brn vis cut, non-v slo strong lt flu cut, lt brn vis resd.
2467					
2468			2468 Sealed sample 2468.2		
2469				Carb. lam.	
2470					
2471					
Well 30/6-17A		Core report 1 of 6			Core nos 2



Well no. 30/6-17A		Core report			Core nos 2	
Interval 2471-2476 m (2366-2369.5 m TVD)		Area Norwegian North Sea		Cut 2466-2493.8 m		Date 25.02.86
Scale 1:25		Well R.K.B. 25 m		Recovery 2466-2493.8 m, 100%		Geologist Sæther/Tønseth
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions		Shows
2471				Sst: brn gy, transp-transl Qtz, f-m, pred m, subang-subrnd, w srtd, fri, slty-vf sdy cmt, mica, mod vis por.		Wk HC odour, no-wk lt yel brn oil stn, 10-30 % spoty dull yel brn flu, wk lt yel brn vis cut, non-v sloc strmg lt yel flu cut, lt brn vis resd, bri wh yel flu resd.
2472			2472 Sealed sample 2472.20			
2473						
2474			2474.2 2474.4	Bioturb Sst/Sh w flazer and len bdg.		
			2475.78	Sst a/a.		
				Sst: a/a, v calc.		
2475						
2476						
Well 30/6-17A		Core report 2 of 6				Core nos 2



Well no		Core report			Core nos
30/6-17A					2
Interval 2476-2481 m (2369.5-2373.5 mTVD)		Area Norwegian North Sea	Cut 2466-2493.8 m	Date 25.02.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2466-2493.8 m, 100%	Geologist Tønseth/Sæther	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2476			2476.15	Sst: brn gy, transp-transl Qtz, f-m, bcm more slty at base, subang-subrnd, mod srtd, fri, mica, mod vis por.	Wk Hc odor, no-wk lt yel brn oil stn, 10-30% spotty dull yel brn flu, wk lt yel brn viscut, hon-v slo strmg lt yel flu cut, lt brn vis resd, bri wh yel flu resd.
2477			2477 Sealed sample 2477.16 2477.18	Sst a/a.	
2478			2478	Sst: brn gy, transp-transl Qtz, vf-f, occ m, bcm less slty at base, ele a/a.	
2479			2479 05	Lam Sst/Slst. Sst w/flazer bdg and carb lam in upper pt, bcm less slty downwards. Sst: brn gy, transp-transl Qtz, vf-f, v mica, calc cmt, pr vis por. Slst: dk gy-gysh blk, arg, frm, calc, carb, (plant stems), v mica.	
2480					
2481					
Well 30/6-17A		Core report 3 of 6			Core nos 2



Well no 30/6-17A		Core report			Core no s 2
Interval 2481-2486 m (2373.5-2377 m TVD)		Area Norwegian North Sea	Cut 2466-2493.8 m	Date 25.02.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2466-2493.8 m, 100%	Geologist Tønseth/Sæther	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2481			2481.00	Sst. brn gy, transp-trasn l Qtz, vf-m, subang-subrnd, mod srted, mod hd, v - sl calc, no carb, mica, no vis por.	Wk HC odour, no-wk lt yel brn stn, 10-30% spotty dyll yel brn flu, wk lt yel brn vis cut, non-v slo strmg lt yel flu cut, lt brn vis resd, bri wh yel flu resd.
			2481.5	Sst a/a bcmg less calc and more massive downwards.	
2482			2482 Sealed sample 2482.20		
			2483	Sst alt w lam Slst. Sst: brn gy, transp-transl Qtz, vf-m, pred f, subang- subrnd, mod srted, fr-mod hd, v slty cmt, no calc, no vis por, mica. Slst: dk gy-gy blk, arg, frm, carb, no calc, mica.	
2483					
			2484		
2484			2484.3	Sst: a/a bcm more slty downwards.	
2485			2485 Sealed sample 2485.2	Carb lams.	
2486					
Well 30/6-17A		Core report 4 of 6			Core no s 2



Well no		Core report			Core no s
30/6-17A					2
Interval 2486-2491 m (2377-2381 m TVD)		Area Norwegian North Sea	Cut 2466-2493.8 m	Date 25.02.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2466-2493.8 m, 100%	Geologist Tønseth/Sæther	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2486				Sst: brn gy, transp-transl Qtz, vf-f, occ m, slty, mod srtd, fri, occ calc, carb lam, pr vis por, mica.	Wk HC odour, no-wk lt yel brn oil stn, 10-30% spotty dull yel brn flu, wk lt yel brn vis cut, no-v slo strmg lt yel flu cut, lt brn vis resd, bri wh yel flu resd.
2487					
			2487.65	Sst a/a w/interlams Slst: dk gy-gy blk, mod hd, arg, occ calc, carb.	
2488					
			2488.4	vf-f sdy Lst: lt gy-dk gy, v hd, mica, microxln, no vis por.	
			2488.7		
2489				Sst: brn gy, transp-transl Qtz, frm, fri, subrnd-rnd, slty, w srtd, mica, calc in pts, fair vis por.	
2490			2490 Sealed sample 2490.2	Sst: a/a bcm more sdy.	
				Sst: brn gy, trasnp-transl Qtz, bcm more slty grdg sdy slst, occ rich in calc cmt.	
2491					
Well 30/6-17A		Core report 5 of 6			Core no s 2



Well no. 30/6-17A		Core report			Core no s 2
Interval 2491-2493.8 m (2381-2383.1 m TVD)		Area Norwegian North Sea	Cut 2466-2493.8 m	Date 25.02.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2466-2493.8 m, 100%	Geologist Tønseth/Sæther	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2491				Sst: brn gy, trasnp-transl Qtz, vf, occ f, frm-mod hd, fri, subrnd-subang, slty-v slty, mod srted, mica, pyr, v calc cmt in pts, calc concr, no vis por? intbdd/lam w: Slst/Sh: dk gy, arg, frm, mod hd, carb, occ calc, also lt gy, grdg vf sd, less carb, else a/a. Incr downward.	Wk HC odour, no-wk lt yel brn oil stn, 10-30% spotty dull yel brn flu, wk lt yel brn vis cut, non-v slo strmg lt yel flu cut, lt brn vis resd, bri wh yel flu resd.
2492					
2493					
2494			2493.8		
2495					
Well 30/6-17A		Core report 6 of 6			Core no s 2



Well no 30/6-17A		Core report			Core no s 3
Interval 2493.8-2491.1 m (2383-2383.2 m TVD)		Area Norwegian North Sea	Cut 2493.8-2501 m	Date 26.02.86	
Scale 1:5		Well R.K.B 25 m	Recovery 2493.8-2494.1 m, 4%	Geologist Sæther/Tønseth	
Depth scale	Re - covery	Lithological column	Depths	Lithological descriptions	Shows
2493.8			2493.8	Sst: brn gy, transp-transl Qtz, vf-f, frm-mod hd, fri, subrnd-subang, mod srtd, slty-vf sdy mtx, loc calc, sl micromic, pr vis por. Slst: dk gy-gy blk, frm-mod hd, non calc, v mica, v arg, v sdy loc Sst , carb. Calc Slst: m dk gy, minor lt olv gy, v hd. v calc, sl dol, loc calcite veins, com plt rmns, loc pyr.	In Sst: Wk-mod HC odour, lt yel brn oil stn, 10-30% spotty dull yel brn flu, wk lt yel brn vis cut, non-v slo strmg lt yel flu cut, lt brn vis resd, bri wh yel flu resd. In calc Slst: no vis cuit, non strmg v pl lt yel flu cut, no vis resd, dull wh yel flu resd.
2493.9			?		
2494			?		
2494.1			2494.1		
Scale		Not recovered		Note: Core recovered as broken pieces.	
2496					
2497					
2498					
2499					
2500					
2501					
Well 30/6-17A		Core report 1 of 1			Core no s 3



Well no. 30/6-17A		Core report			Core no s 4
Interval 2501-2506 m (2388-2392 m TVD)		Area Norwegian North Sea	Cut 2501-2511 m	Date 26.02.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2501-2511 m, 100%	Geologist Sæther/Tønseth	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2501		⊥ ⊥ M C		Slst/Sh Calc Slst : dk gy-brn gy, hd-v hd, blk, mod calc, v arg, sl micromic, loc carb, foss (belemnite, shell imprint) Slst/Sh : dk gy-olv blk, mod hd, subfis-fis, non calc, v mica-micromic, tr carb, sdy, loc vt Sst lam (<1 mm).	Gen no shows In thin Sst lam: 30% dull yel brn flu, no vis cut, no-v slo strmg wh yel flu cut, no vis resd, dull yel flu resd.
2502		M			
2503		M ⊕		Calc concr, 3 cm.	
2504		□ M □		Slst/Sh : a/a, loc pyr mod.	
2505		M □			
2506		□			
Well 30/6-17A		Core report 1 of 2			Core no s 4



Well no. 30/6-17A		Core report		Core nos 4	
Interval 2506-2511 m (2392-2396 m TVD)		Area Norwegian North Sea		Date 26.02.86	
Scale 1:25		Well R.K.B. 25 m		Recovery 2501-2511 m, 100%	
				Geologist Sæther/Tønseth	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2506			2506 2506.1 2506.3	Slst/Sh w abdt calc concr Calc Slst : dk gy-brn gy, hd-v hd, blk, mod calc, v arg, sl micromic, loc carb, foss. Slst/Sh : dk gy-olv blk, mod hd, subfis-fis, non calc, v mica-micromic, tr carb, sdy, loc vf sst : lam (<1mm)	Gen no shows In thin sst lam: 30% dull yel brn glu, no vis cut, no-v slo strmg wh yel flu cut, no vis resd, dull yel flu resd.
2507					
2508				Slst/Sh : a a, sl calc.	
2509			2509 Sealed sample 2509.2		Tr bldg gas.
2510					
2511			2510.5?	Calc Slst : a/a.	
Well 30/6-17A		Core report 2 of 2		Core nos 4	

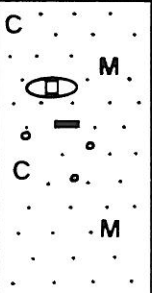
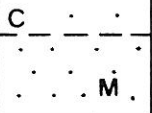


Well no. 30/6-17A		Core report			Core no s 5
Interval 2636-2641 m (2490-2494 m TVD)		Area Norwegian North Sea	Cut 2636-2649 m	Date 01.03.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2636-2647.7 m, 90%	Geologist Tønseth/Sæther	
Depth scale	Recovery	Lithological column	Depths	Lithological descriptions	Shows
2636			2636	Slst w/incr sd downwards. Dk gy-olv blk, mod hd, lam, non calc, mica. Sd: clr-milky Qtz, f-m, transl-occ transp, also tr pbls.	V stng H2S odour, yel brn oil stn, 100% mod orng brn vlu, wk lt brn vis cut, non-slo strmg dull-mod yel wh flu cut, lt brn vis resd, bri yel wh flu resd.
			2636.9		
2637			2637.25		
				Sst: w/Slst lams. lt gy, occ clr Qtz, f-m, transp-transl, hd, ang-subrnd, w srted, mica, non calc, gd vis por.	
2638					
			2638.6		
				Sst: altg c and m-f, lt gy-m gy Qtz, transl, ang-subrnd, w srted, hd-mod hd, mica, sl calc, Kao cmt ?, v gd vis por.	
2639					
2640			2640 Sealed sample 2640.3		
2641			2640.92 2641	Slst: dk gy-olv blk, mod hd, lam v mica, non calc, tr v sdy, tr lign	
Well 30/6-17A		Core report 1 of 3			Core no s 5

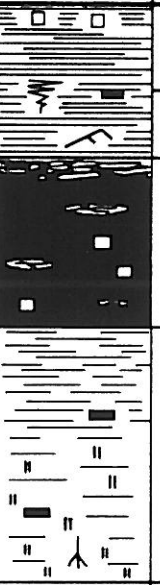


Well no.		Core report			Core no.s
30/6-17A					5
Interval 2641-2646 m (2494-2497 m TVD)		Area Norwegian North Sea	Cut 2636-2649 m	Date 01.03.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2636-2647.7 m, 90%	Geologist Tønseth/Sæther	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2641		C. . . . M		Sst: altg c and m-f, lt gy-m gy QTz, transl, ang-subrnd, w srted, hd-mod hd, mica, Kao cmt, gd vis por.	V strng H ₂ S odour, yel brn oil stn, 100% mod orng brn flu, wk lt brn vis cut, non-slo stmg dull-mod yel wh flu cut, lt brn vis resd, bri yel wh flu resd.
2642		C. . . . M	2642.05 2642.25	Wavy bd Sst in fin lam Slst	
		C. . . . M		Sst: lt gy-m gy, m-c Qtz, bcm more c in low pt, trasnp-transl, ang-subrnd, mod-q srted, hd-mod hd, mica, Kao cmt, gd vis por.	
2643		C. . . . M	2643 Sealed sample sample 2643.3 2643.35	Sst a/a.	
2644		C. . . . M			
2645		C. . . . M	2645 Sealed sample sample 2645.3		
2646		C. . . . M	2646.92	Altg thin bds/lams of sst/Slst .	
Well 30/6-17A		Core report 2 of 3			Core no.s 5



Well no 30/6-17A		Core report			Core no s 5
Interval 2646-2649 m (2497.5-2500 m TVD)		Area Norwegian North Sea	Cut 2636-2649 m	Date 01.03.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2636-2647.7 m, 90%	Geologist Tønseth/Sæther	
Depth scale	Recovery	Lithological column	Depths	Lithological descriptions	Shows
2646			2646.35	Sst: dk gy-olv blk, frm-mod hd, lam occ c carb m lams, coaly Sh , v mica, non calc. Sst: lt gy-m gy Qtz, f, transl-transp, mod hd-hd, ang- subrnd, mod-w srted, non calc, Kao cmt, no vis por. Sst: lt gy, lt brn Qtz, f-m, occ crs, transp-transl, hd, ang- subrnd, pr-mod srted, mica, tr lign, Kao cmt, mod vis por, occ pbly. Sst: lt gy, occ clr Qtz, f, transp-transl, frm-lse, ang- subrnd, w srted, mica, gd vis por (mnr cmt).	V strng H2S odour, yel brn oil stn, 100% mod orng brn flu, wk lt brn vis cut, no-slo strng dull-mod yel wh flu cut, lt brn vis resd, bri yel wh flu resd.
2647			?		
2648			2647.7		
			2649		
Well 30/6-17A		Core report 3 of 3			Core no s 5



Well no. 30/6-17A		Core report			Core no s 6
Interval 2649-2650.85 m (2500-2501.5 m TVD)		Area Norwegian North Sea	Cut 2649-2651 m	Date 01.03.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2649-2650.85 m, 92.5%	Geologist Tønseth/Sæther	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2649			2649 Sealed sample sample 2649.3 2649.5 2650 2650.13 2650.85 2651 m	Clyst/Sh: shiny dusky brn, mod hd, fis, v pyr, sl slty, mod mica, non calc. Coal: shiny blk, mod hd, brit, lam, v pyr in pt, incl of clyst len a/a. Clyst. brnsh blk, mod hd. blkly-subfis, sl slty, micromic, micropyr, grdg downwards into: Slst: m dk, mod hd, lam, mica, plant frags, non calc.	Gen no sbows. In clyst len in Coal: tr bldg fas, no-wk lt brn vis cut, 100% dull orng brn flu, non strmg dull-mod yel wh flu cut, tr lt brn vis resd, mod-bri yel wh flu resd.
Well 30/6-17A		Core report 1 of 1			Core no s 6



Well no.		Core report			Core no s
30/6-17A					7
Interval 2651-2656 m (2501-2505 m TVD)		Area Norwegian North Sea	Cut 2651-2676 m	Date 02.03.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2651-2674.3 m, 93%	Geologist Sæther/Tønseth	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2651		M ⚡ C " " ⚡		Clyst/Sh: dk gy-brn gy, mod hd, subfis-fis, noncalc, slty, micromic, tr mica, sl carb, tr plant rmns, occ Clyst clasts, varying orn content.	No show.
2652		C " " M			
2653		C " " M			
2654		C " " M " "			
2655		C M □ M	2655 C.U.	Sst bcm lam Clyst/Sh; Sst: Sst: lt olv gy, mod hd, fri, clr-transl Qtz, f-vf, tr m, subang- subrnd, w srtd, mica, micropyr, com Coal frag, coarsening upwards, pr vis por. Clyst/Sh: a/a, bcm more carb.	In Sst: Wk HC odour , lt olv gy stn, tr mod strng orng flu, 70% dull brn flu, lt brn vis cut, v slo-non strng mod strng wh yel flu cut, lt brn vis resd, bri yel wh flu resd.
2656					
Well 30/6-17A		Core report 1 of 5			Core no s 7



Well no. 30/6-17A		Core report			Core nos 7
Interval 2656-2661 m (2505-2509 m TVD)		Area Norwegian North Sea	Cut 2651-2676 m	Date 02.03.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2651-2674.3 m, 93%	Geologist Sæther/Tønseth	
Depth scale	Recovery	Lithological column	Depths	Lithological descriptions	Shows
2656			C.U. 2656.35	Lam Clyst/Sh, Sst. Sst: It olv gy, clr-transl Qtz, f-v crs, pred m-crs, loc altg crs-v crs, m-crs, subang-occ subrnd, mod - w srtd, silic cmt, loc abdt Kao cmt?, tr mica, tr-v pyr, tr-mod carb, plan x-lam, loc ripple lam, pr-loc v gd vis por.	V stng H2S odour, It olv gy stn, tr-20% spotty-pchy mod strng orng flu, also 60-80 % v dull orng brn-m brn flu, It brn vis cut, v slo-non strmg mod strng wh yel flu cut, It brn vis resd, bri yel wh flu resd.
2657			2657.2 2657.35		
2658			2657.75 2657.83 2658 Sealed sample sample 2658.3 2658.45	Sst w/Coal frag, deformed bdg, mnr Clyst clasts.	
2659			2659.65		
2660					
2661					
Well 30/6-17A		Core report 2 of 5			Core nos 7



Well no. 30/6-17A		Core report		Core no s 7	
Interval 2661-2666 m (2509-2513 m TVD)		Area Norwegian North Sea		Cut 2651-2676 m	
Scale 1:25		Well R.K.B. 25 m		Recovery 2651-2674.3 m, 93%	
				Date 02.03.86	
				Geologist Sæther/Tønseth	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2661		M . . . □ . . . C . . . M . . . 2662	2661 Sealed sample sample 2661.3	Sst: lt olv gy, clr-transl qtz, f-v crs, pred m-crs, loc altg crs-v crs, m-crs, subang-occ subrnd, mod-w srted, silic cmt, loc abdt Kao cmt?, tr mica, tr-v pyr, tr-mod carb, plan x- lam, pr-loc v gd vis por.	V stng H2S odour, lt olv gy oil stn, tr - 20 % såptu- pchy mod strng orng flu, also 60-80% v dull orng brn- m brn flu, lt brn vis cut, v slo - non strmg mod strng wh yel flu cut, lt brn vis resd, bri yel wh flu resd.
2663		M . . . C . . . □ . . . M . . . C . . . □ . . . 2664	2664 Sealed sample sample 2664.3	Plnt rmns.	
2665		M C " " M C " " M		Clyst/Sh: dk gy-brn gy, mod hd, subfis-fis, non calc, slty, micromic, tr mica, sl carb, tr plnt rmns.	No show.
2666		M			
Well 30/6-17A		Core report 3 of 5		Core no s 7	



Well no		Core report			Core no s
30/6-17A					7
Interval 2666-2671 m (2513-2517 m TVD)		Area Norwegian North Sea	Cut 2651-2676 m	Date 02.03.86	
Scale 1:25		Well R.K.B. 25 m	Recovery 2651-2674.3 m, 93%	Geologist Sæther/Tønseth	
Depth scale	Re- covery	Lithological column	Depths	Lithological descriptions	Shows
2666			2666 Sealed sample sample	Clyst/Sh: dk gy-brn gy, mod hd, subfis-fis, non calc, slty, micromic, tr mica, sl carb, tr plnt rmns. More carb Sh .	No show.
		M	2666.3		
		C	2666.65		
2667		M			
		M			
		C C λ	2667.6 2667.7	Carb Sh: olv blk, dk gy, mod hd, fis, non calc, v carb, com plnt rmns.	
2668		C			
		M			
		C C λ	2668.3 2668.4	Carb Sh: a/a.	
				Clyst/Sh: a/a.	
2669		M			
		C			
		M			
2670		C			
		M			
2671					
Well 30/6-17A		Core report 4 of 5			Core nos 7

7

APPENDIX 2

SIDEWALL CORE DESCRIPTIONS

No sidewall core were taken due to bad borehole conditions.

APPENDIX 3

WELL SUMMARY
GEOLOGICAL WELL SUMMARY

PRELIMINARY

WELL SUMMARY

Coord: 60°34'15.77"N UTM: 6 715 194.4 mN
 02°44'59.84"E 486 293.4 mE
 At T.D.: 60°34'15.64"N At T.D.: 6 715 192.5 mN
 02°44'26.32"E 485 783.1 mE
 Zone: 31
 Line: NH 82-214 CDP 424 (at T.D. 404)
 Rig: Treasure Hunter
 Waterdepth: 135.5 mRKB
 Stopped in: Statfjord Fm.

Op. start: February 4th, 1986
 Kick off: February 9th, 1986.
 At T.D.: March 3rd, 1986.
 Completed: March 19th, 1986
 T.D. Driller: 2686 mMD, 2528 mTVD.
 T.D. Logger: 2676 mMD.
 Wireline Logging: Geco Well Services.
 Mudlogging: Exploration Logging

WELL
30/6-17A
 (sidetrack)
COUNTRY
Norway

OPERATOR NORSK HYDRO

LICENCE 053

OWNED BY NH/Statoil/Saga/Mobil/Elf/Total

TARGETS

Primary: Statfjord Fm.
 Secondary: Cook Fm.

RESULTS

The Statfjord Fm was found waterbearing from 2632m MD (2487mTVD).

The Cook Fm (2460-2489m MD, 2357.5-2379m TVD) is gasbearing

net sand : 27.9m
 net pay : 27.9m
 Ø_{av} : 24.1 %
 Sw_{av} : 28 %

CASING

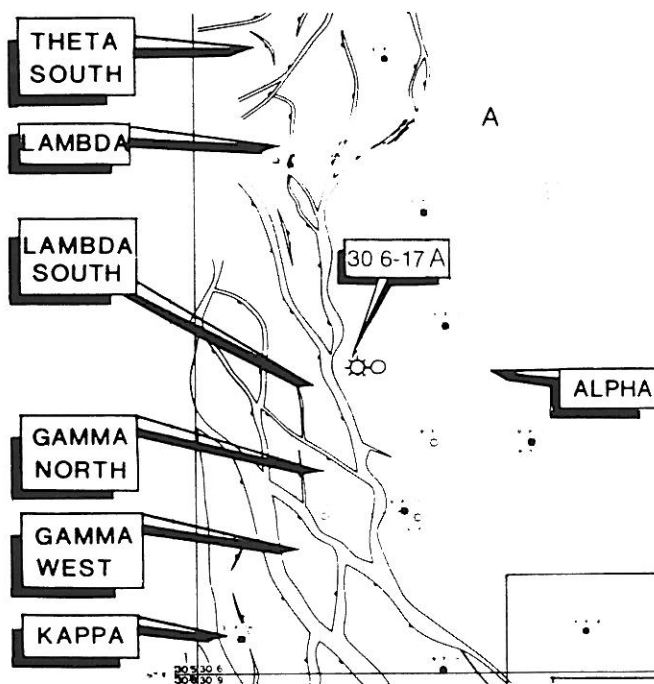
30" 223 m
 20" 601 m
 13 3/8" 1593 m
 9 5/8" 2324 m

CORES

Core no 1	Cut: 2420-2430 m Rec: 2420-2427.2 m 72 %
Core no 2	Cut: 2466-2493.8 m Rec: 2466-2493.8 m 100 %
Core no 3	Cut: 2493.8-2501 m Rec: 2493.8-2494.1 m 4 %
Core no 4	Cut: 2501-2511 m Rec: 2501-2511 m 100 %
Core no 5	Cut: 2636-2649 m Rec: 2636-2647.7 m 90 %
Core no 6	Cut: 2649-2651 m Rec: 2649-2650.9 m 92.5 %
Core no 7	Cut: 2651-2676 m Rec: 2651-2674.3 m 93.2 %

GAS RECORD

From depth (m)	Gas %	Comp
1633-1690	0.1-0.2	C1-C3
1690-1770	0.2-0.3	C1-C3
		NC4
1770-2242	0.2-1.8%	C1-IC4
		NC4
2242-2300	0.6-5.3%	"
peak 2261	17%	"
2300-2410	0.1-0.45%	"
peak 2341	1.2%	"
peak 2367	1.61%	"
2410-2417	1.1-7.82%	"
2417-2462	0.17-0.69	"
peak 2425	1.56%	"
peak 2465-66	1.92	"
2466-2640	0.2-0.77	"
2640-TD	0.08-0.33	C1-NC4
		OCC-IC4



LOGS

DIL/LSS /GR	1591-2331m	1A
DIL/BHC	2311-2675.5m	2B
CDL/CNS /CAL	1591-2329m	1A
	2300-2667m	2B
CBL/VDL /CCL/GR	1500-2317m	2A
DLL/MSFL	2318-2457m (misrun)	2A
VSP	1400-2396m	2A
SFT	misrun	2A

OIL SHOWS

On Lst strgs in the Tertiary and the Cretaceous 1690-2410 m:
 non-gd lt brn oil stn, dull-bri yel-gold yel dir flu, non-fast strmg wh-pl yel flu cut, non vis cut, pl brn vis resd, v pl yel-wh - lt brn vis resd.
 On Sst from cores:
 Core no. 1: mod HC odour, 100% lt brn oil stn, 100% yel brn flu, lt brn vis cut, loc mod slo strmg yel wh flu cut, mod brn vis resd, yel wh flu resd.
 Cores no. 2,3: wk HC odour, no-wk lt brn stn, 10-30% spotty dull yel brn flu, wk lt yel brn vis cut, non-v slow strmg lt yel flu cut, lt brn vis resd, bri yel-wh flu resd.
 On core no. 4 shows on thin Sst lam a/a.
 Cores no. 5,6,7: V strong odour, loc yel brn oil stn, tr-100% mod strong orgn brn-m, brn dir flu, wk lt brn vis cut, non-v slo strmg yel wh flu cut, lt brn vis resd, bri yel wh flu resd.

GEOLOGICAL WELL SUMMARY

DEPTH m FMS	LITHO SECTION	SYSTEM	SERIES/STAGE	FORMATION	DESCRIPTIONS.	SHOWS	LOCATED ON 60°34'15.77"N 02°44'59.84"E	LINE NH 82-214	SP CDP 424	WELL 30/6-17A
							WATER DEPTH 110.5 m MSL			
50										
100										
150										
200										
250										
300										
350										
400										
450										
500										
550										
600										
650										
700										
750										
800										
850										
900										
950										
1000										
1050										
1100										
1150										
1200										
1250										

Well sidetracked
from 30/6-17 R.
Kick off point at 1633 m

Note m M D (m T V D)

Clyst: dk olv gy - bl gy - gy grn, firm
- occ mod hd, blkly subls, loc sl slty,
non - sl calc

Lst: lt gy - occ lt brn, vf - f xln, firm -
mod hd, loc gd intgran por from
1790

Occ **Dol** strgs.

1924 (1915)

Clyst: bcm lt gy - lt bl gy, slt - frm, tr
pyr, else a/a.

Dol: pl yel brn, frm - mod hd, blkly,
xln

2009 (1991.5 m)

Tuff: lt bl gy, mod hd - frm, non
calc

Clyst: dk gy, pred frm - mod hd, sl
slty, pyr, blkly, non - sl calc

2089 (2058)

Clyst: bl gy - gy grn, m - dk gy, frm -
slt, loc mod hd, else a/a

2216 (2165.5)

2235 (2181.5)

Lst: lt gy - mod yel brn, microxin,
blkly, firm - mod hd

Mrl: olv gy - m dk gy, slt - firm, v
calc

Sst: dk yel brn, clr Qtz, vf - f,
subang - subnd, wl - mod strd,
mod - pr vis por.

2410.5 (2320)

2420 (2327.5)

2460 (2357.5)

Sst: brn gy, transp - trans l Qtz, f - m,
wl strd, pr - loc no vis
por

2489 (2379)

Gas peak at
2261 m 1.7%
C1-IC4, NC4

1.1-7.8%

Gas peaks
2341 m 1.2 %
2367 m 1.61%
2425 m 1.56%
2463 m 1.92%

0.17-0.69% 0.1-0.45% 0.6-5.3% 0.2-1.8% C1-IC4, NC4 — — — — — 0.2-0.3% C1-C3 NC4

GEOLOGICAL WELL SUMMARY

DEPTH E RKB	LITHO SECTION	SYSTEM	SERIES/STAGE	FORMATION	DESCRIPTIONS.	SHOWS	LOCATED ON			WELL
							60°34'15.77"N	LINE NH82	SP 214 COP 424	
							02°44'59.84"E			30/6-17A
							WATER DEPTH 110.5 m MSL			
Cores no 2-4	• • •	JURASSIC	SIN.-L.PIENSB.	U.PIENSB.	COOK FM.	0.08-0.33 0.2-0.77 C1-IC4, NC4				
2500	" " "									
2550	M" C H"									
2600	" " "									
Cores no 5-6	• • •									
2650	" " "									
2700	///									
2750										
2800										
2850										
2900										
2950										
3000										
3050										
3100										
3150										
3200										
3250										
3300										
3350										
3400										
3450										
3500										
3550										
3600										
3650										
3700										
					T D Driller 2686 m (2528 m) T D Logger 2676 m					

SECTION B
OPERATIONS

0754e
sa,LTS/LLa

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1. OPERATION RESUME

1.1 Summary Drilling

The well 30/6-17A began on February 4th. The 9 5/8" casing was cut at 1696 m and then retrieved. A cementplug was set from 1652 m to 1622 m and the sidetrack was started at 1633 m.

12 1/4" section

The 12 1/4" hole was drilled from 1633 m to 2075 m and the BOP was tested. The hole was drilled to 2335 m and logged with LSS/DIL and CNT/CDT/GR. The 9 5/8" casing was run and landed with the shoe at 2323 m.

8 3/8" section

The 8 3/8" hole was drilled to 2338 m. The old mud was displaced with 1.36 rd NaCl mud and then a leak off test was performed to 1.70 rd equivalent mud weight. The 8 3/8" hole was drilled to 2420 m and core no. 1 was cut to 2430 m. The hole was drilled to 2466 m and three cores were cut to 2511 m. The hole was drilled to 2630 m and the BOP was tested. Three cores were cut to 2767 m. Tried to run the LSS/DIL/GR log but could not pass 2423 m The hole was logged with DIL/BHC/GR/SP/CAL and CDL/CNS/GR/CAL from 2423 m to 2677 m, had problems with getting the logs down. A VSP was run.

The well was plugged back and permanent abandoned as described in chapter 3 and fig. B-3.

```

=====
:                               D a i l y   r e p o r t                               :
:                               -----                               :
:                               System : Boredata Sandnes                               :
:                               Well: 30/6-17A                               :
: Norsk :Casing Size (in):|30      :20      :16      :13 3/8:9 5/8 :
: Hydro :Setting depth (m):| 223|   601|   367|  1593|  2323|
:                               -----                               :
Report:Mid :EST.PORE: Mud : Stop :Short Summary                               :
number:depth:PRESSURE:dens.: time :                               :
      : (m) :   (SG) : (SG) :      :                               :
-----:-----:-----:-----:-----:-----:
1: 1600:    1.22:1.50 : 21:00:Start of operations well 30/6-17A.                               :
      :      :      :      : 24:00:Made up 9 5/8" casing cutter and ran in :
      :      :      :      :      :the hole to 950 m.                               :
-----:-----:-----:-----:-----:-----:
2: 1600:    1.22:1.50 : 01:30:Ran in the hole to 1696 m.                               :
      :      :      :      : 02:00:Cut the 9 5/8" casing.Flow checked - ok.:
      :      :      :      : 05:30:Pulled out of the hole and laid down the:
      :      :      :      :      :casing cutter.                               :
      :      :      :      : 08:00:Made up the spear assembly and ran in :
      :      :      :      :      :the hole to retrieve the 9 5/8" casing. :
      :      :      :      : 09:30:Engaged the spear, closed the upper :
      :      :      :      :      :annular and released the 9 5/8" seal :
      :      :      :      :      :assembly from the wellhead. Flow checked:
      :      :      :      :      :- the well was flowing. Closed in on the:
      :      :      :      :      :choke.                               :
      :      :      :      : 13:00:Started to circulate out the kick. :
      :      :      :      :      :The lowest mud weight out was 1.31 rd. :
      :      :      :      :      :Maximum gas was 1340 units. :
      :      :      :      : 16:00:Flow checked - OK. Opened the upper :
      :      :      :      :      :annular and circulated up the riser. :
      :      :      :      : 16:30:Laid out one bended pup joint and one :
      :      :      :      :      :joint of drill pipe. :
      :      :      :      : 17:30:Slugged the pipe. Fluid was still coming:
      :      :      :      :      :up the drill pipe. Circulated 23 m3. :
      :      :      :      : 19:30:Pulled out of the hole with the 9 5/8" :
      :      :      :      :      :casing retrieving assembly and laid it :
      :      :      :      :      :down. :
      :      :      :      : 24:00:Pulled out of the hole and laid down the:
      :      :      :      :      :9 5/8" casing.                               :
-----:-----:-----:-----:-----:-----:
3: 1600:    1.10:1.50 : 05:30:Pulled out of the hole with the 9 5/8" :
      :      :      :      :      :casing. :
      :      :      :      : 07:30:Ran in the hole and set the wear :
      :      :      :      :      :bushing. :
      :      :      :      : 13:30:Made a wipertrip to 1696 m, flow checked:
      :      :      :      :      :at 1090 m. :
      :      :      :      : 15:30:Circulated and conditioned the mud. :
      :      :      :      :      :Maximum gas was 320 units. :
      :      :      :      : 18:30:Pulled out of the hole, flow checked at :
      :      :      :      :      :bottom, at 900 m and at 350 m. :
      :      :      :      : 22:30:Ran in the hole with 21 joints 3 1/2" :
      :      :      :      :      :drill pipe and 5" drill pipe to 1900 m. :
      :      :      :      : 24:00:Circulated on bottom until the gas :
      :      :      :      :      :readings decreased. :
-----:-----:-----:-----:-----:-----:
4: 1540:    1.10:1.50 : 00:30:Pumped viscous mud from 1900 m to :
      :      :      :      :      :1800 m. Pulled out to 1750 m. :
      :      :      :      : 03:30:Pressure tested the cement lines. :
=====

```

```

=====
:                               D a i l y   r e p o r t                               ..Date.. :
:   (((                               -----                               19860822 :
:   (ooo)                               System : Boredata Sandnes                               :
:                               Well: 30/6-17A                               :
: Norsk :Casing Size (in):|30      :20      :16      :13 3/8:9 5/8 :                               :
: Hydro :Setting depth (m):| 223|    601|    367|   1593|   2323|                               :
=====
Report:Mid  :EST.PORE: Mud : Stop :Short Summary                               :
number:depth:PRESSURE:dens.: time :                               :
      : (m) : (SG) : (SG) :      :                               :
-----:-----:-----:-----:-----:-----:
:                               :Pumped and displaced 14 m3 cement.       :
:                               :Pulled out to 1463 m and reverse         :
:                               :circulated.                             :
11:00:Laid down 8 stands 4 3/4" drill collars.:
15:30:Ran in the hole and retrieved the wear :
      :bushing. Installed a new 13 3/8" wear :
      :bushing.                             :
16:00:Installed the diverter. Flushed the    :
      :flow line, the overboard line and the :
      :trip tank return line with sea water. :
20:00:Made up the kick off assembly and      :
      :tested the Teleco tool. Racked all in :
      :the derrick.                         :
24:00:Made up 12 1/4" slick bottom hole      :
      :assembly and ran in the hole to 900 m. :
-----:-----:-----:-----:-----:-----:
5: 1540:    1.10:1.49 : 00:30:Ran in the hole from 900 m to 1535 m. :
02:00:Tagged the top of the cement at 1550 m. :
      :Attempted to pressure test the 13 3/8" :
      :casing to 225 bar. The maximum pressure :
      :obtained was 149 bar.                 :
03:00:Washed down and tagged the cement at   :
      :1599 m.                             :
06:00:Drilled cement from 1647 m to 1652 m.  :
08:00:Circulated high viscous mud.           :
08:30:Drilled cement from 1647 m to 1652 m.  :
11:30:Circulated the hole clean.             :
14:00:Pulled out of the hole.                :
16:30:Ran in the hole with 7 stands 3 1/2"   :
      :drillpipe and 5" drillpipe. Tagged the :
      :bottom at 1648 m, had 3 m fill on     :
      :bottom.                             :
17:30:Circulated high viscous mud.           :
19:00:Pressure tested the cement lines.      :
      :Pumped and displaced 10 m3 cement.    :
      :Pulled out to 1392 m.                 :
21:00:Circulated the long way.               :
22:30:Pulled out of the hole.                :
24:00:Ran in the hole with 12 1/4" bit.      :
-----:-----:-----:-----:-----:-----:
6: 1633:    1.10:1.48 : 02:30:Continued to run in the hole to 1278 m. :
08:30:Circulated and conditioned the hole.  :
11:30:Waited on the cement.                 :
12:00:Continued to run in the hole to 1533 m. :
13:30:Washed down from 1533 m to 1622 m.    :
14:30:Drilled cement from 1622 m to 1633 m.  :
16:00:Pumped high viscous mud to clean the   :
      :hole.                               :
=====

```

```

=====
:                               D a i l y   r e p o r t                               :
:                               -----                               :
:   (((                               ..Date..                               :
:   (ooo)                               19860822                               :
:                               :                               :
:                               System : Boredata Sandnes                               :
:                               Well: 30/6-17A                               :
:   Norsk :Casing Size (in):|30      :20      :16      :13 3/8:9 5/8 :
:   Hydro :Setting depth (m):| 223|    601|    367|   1593|   2323|
:                               :                               :
=====
Report:Mid   :EST.PORE: Mud : Stop :Short Summary                               :
number:depth:PRESSURE:dens.: time :                               :
      : (m) : (SG) : (SG) :      :                               :
-----:-----:-----:-----:-----:-----:
16:30:Pulled out of the hole.
23:30:Ran in the hole with 12 1/4" bit and
      :kick off assembly to 1633 m.
24:00:Drilled 12 1/4" from 1633 m to 1636 m.
-----:-----:-----:-----:-----:
7: 1791:    1.20:1.48 : 08:30:Drilled 12 1/4" hole from 1636 m to
      :1724 m.
09:00:Circulated.
10:30:Rigged up Eastman and ran in the hole
      :with the Sigma 175. Surveyed to 1684 m.
      :Pulled out of the hole.
16:00:Drilled 12 1/4" hole from 1724 m to
      :1791 m.
17:30:Circulated bottoms up.
20:00:Pulled out of the hole. Laid down the
      :Navidrill.
24:00:Made up bit and new bottom hole assembly:
      :and ran in the hole to 550 m.
-----:-----:-----:-----:-----:
8: 1919:    1.20:1.48 : 01:00:Continued to run in the hole to 1637 m.
      :06:30:Reamed down to 1791 m.
      :15:30:Drilled a 12 1/4" hole from 1791 m to
      :1919 m.
      :17:00:Circulated bottoms up.
      :20:30:Flow checked. Pulled out of the hole.
      :Laid down 25 joints 5" drillpipe.
      :24:00:Made up bit and new bottom hole assembly:
      :and ran in the hole to 1050 m.
-----:-----:-----:-----:-----:
9: 2075:    1.20:1.48 : 01:00:Continued to run in the hole from 1050 m:
      :to 1897 m.
      :01:30:Washed down to TD at 1919 m.
      :Had 2 m fill.
      :09:30:Drilled a 12 1/4" hole from 1919 m to
      :2018 m.
      :10:00:Circulated.
      :11:00:Dropped the survey and retrieved it.
      :13:30:Drilled 12 1/4" hole from 2018 m to
      :2047 m.
      :14:00:Circulated.
      :15:00:Dropped the survey and retrieved it.
      :17:30:Drilled 12 1/4" hole from 2047 m to
      :2075 m.
      :19:00:Circulated bottoms up.
      :23:00:Dropped a survey. Pulled out of the
      :hole. Laid down the stabilizers and the
      :Teleco tool. Pressure tested the choke
      :and kill manifold, while pulling out of

```

System : Boredata Sandnes

: Norsk	: Casing Size (in):	: 30	: 20	: 16	: 13 3/8	: 9 5/8	:
: Hydro	: Setting depth (m):	: 223	: 601	: 367	: 1593	: 2323	:

: (m) : (SG) : (SG) :

24:00:Made up and ran in the hole with the
:wear bushing retrieving tool.

```
00:30:Retrieved the wear bushing.
05:00:Made up the BOP test tool and ran in the:
:hole. Tested the RAM's and the annulars.:
:Pulled out of the hole with the test
:tool.
```

```
06:00:Ran in the hole and installed the wear :
      :bushing. :
```

07:30:Pressure tested the surface equipment. :

16:00:Made up bit and new bottom hole assembly:
:and function tested the Teleco tool. Ran:
:in the hole and tagged a bridge at :
:2030 m. :

```

19:00:Washed and reamed from 2030 m to 2066 m.:
      :Was not able to pass 2066 m.

```

22:30:Pulled out of the hole.

24:00: Changed out the bent sub and the Navi-
:drill and function tested it.

04:00:Ran in the hole with bit no.4. Had a
:tight spot at 2050 m.

05:00:Washed down to 2075 m. :

```

19:00:Drilled 12 1/4" from 2075 m to
      :2180 m.

```

20:30:Pumped a high viscous pill. Maximum gas :
:was 57 units. :

24:00:Pulled out of the hole to pick up the
:build up assembly.

05:30:Made up bit no.5 and build up assembly. :
:Ran in the hole to the casing shoe. :

06:30:Slipped and cut the drilling line. :

08:30: Continued to run in the hole. Tested the:
:Teleco tool - OK. Worked through the :
:spot at 1860 m. :

11:00:Washed and reamed from 2122 m to 2180 m.:

24:00: Drilled 12 1/4" hole from 2180 m to :
: 2253 m. :

06:30: Drilled 12 1/4" hole from 2253 m to
:2282 m.

08:00: Circulated to clean the hole and bled
: off the gas.

17:30: Pulled out of the hole and changed the :
: bit. Picked up a longer short drill- :

D a i l y r e p o r t

..Date.. :

19860828 :

System : Boredata Sandnes

Well: 30/6-17A

Norsk :Casing Size (in):|30 :20 :16 :13 3/8:9 5/8 :

Hydro :Setting depth (m):| 223| 601| 367| 1593| 2323|

Report:Mid :EST.PORE: Mud : Stop :Short Summary

number:depth:PRESSURE:dens.: time :

: (m) : (SG) : (SG) :

:collar. Ran in the hole and tagged a
:bridge at 2237 m.

19:00:Reamed and washed from 2237 m to 2282 m.

24:00:Drilled 12 1/4" hole from 2282 m to
:2300 m.

14: 2335: 1.25:1.50 : 09:30:Drilled 12 1/4" hole from 2300 m to
:2335 m.

11:00:Circulated the bottom up.

14:00:Maximum over-pull was 500 kN.Worked
:the pipe down from 2246 m.

17:30:Circulated the hole. There were lots of
:cavings. Maximum gas was 120 units.

:Increased the mud weight to 1.50 r.d.

21:30:Pulled out of the hole. Maximum over-
:pull was 300 kN. Laid down the Teleco
:tool.

24:00:Rigged up Geco logging equipment and ran:
:the LSS/DIL.

15: 2335: 1.25:1.50 : 09:30:Ran the logs: LSS/DIL and CNT/CD/GR.
:Rigged down Geco.

13:00:Made up the 9 5/8" casing hanger and
:racked it in the derrick.

:Laid down 3 joints heavy weight drill
:pipe. Picked up the cement kelly, loaded:
:it and racked it in the derrick.

14:00:Repaired and replaced the drill line
:guide.

18:30:Made up bit no. RR5 and ran in the hole.
:Tagged a bridge at 2304 m.

19:30:Washed and reamed to TD at 2335 m.

21:30:Circulated bottoms up and continued to
:circulate until the gas readings where

:down to the back ground gas - 21 units.

24:00:Pulled out of the hole to 900 m.
:Maximum overpull was 300 kN at 1883 m.

16: 2335: 1.25:1.50 : 01:30:Pulled out of the hole from 900 m.

02:30:Retrieved the wear bushing.

03:00:Rigged up to run the casing.

22:30:Ran 175 joints of casing. Landed the
:casing in the wellhead.

:Rigged up the cement hose.

24:00:Circulated the casing.

17: 2335: 1.25:1.50 : 00:30:Circulated.

03:30:Cemented the 9 5/8" casing. Displaced

D a i l y r e p o r t

..Date.. :
19860822 :

System : Boredata Sandnes
Well: 30/6-17A

: Norsk :Casing Size (in):|30 :20 :16 :13 3/8:9 5/8 :
: Hydro :Setting depth (m):| 223| 601| 367| 1593| 2323|

Report:Mid :EST.PORE: Mud : Stop :Short Summary
number:depth:PRESSURE:dens.: time :
: (m) : (SG) : (SG) :

03:30:Cemented the 9 5/8" casing. Displaced
:with 1.5 rd mud. Bumped the plug and
:tested the casing to 331 bar.
05:30:Made up the seal assembly and tested it
:to 393 bar. Pulled out of the hole with
:the landing string.
06:00:Made up the BOP. Tested the tool and ran
:in the hole.
08:30:Tested the BOP on the yellow pod.
09:30:Pulled out of the hole with the test
:plug due to leak. Changed the o-ring.
:Ran in the hole with the test plug.
11:30:Continued to test the BOP. Tested the
:blue pod. Pulled out of the hole.
13:00:Set the wear bushing.
16:00:Tested the surface equipment.
24:00:Laid down the 12 1/4" bottom hole
:assembly. Tested the choke and kill
:manifold while laying down the bottom
:hole assembly.

18: 2335: 1.25:1.48 : 02:30:Continued to lay down 8" drill collar.
:Laid down the cement kelly.
12:00:Made up new 8 3/8" bottom hole assembly
:and bit no. 7 and ran in the hole.
:Tested the MWD. Continued to run in the
:hole.
16:30:Drilled the float and the shoe track,
:shoe at 2323 m. Cleaned out of the
:rathole to 2335 m. The pressure dropped
:from 258 bar to 110 bar.
21:30:Pulled out of the hole with the wet pipe:
:- found the box on 6 1/2" drill collar
:splitted (20 cm crack). Laid it down and:
:picked up 1 joint of 6 1/2" drill collar:
22:30:Repaired the shaft cover on the dolly.
24:00:Continued to pull out of the hole to
:check the bit.

19: 2413: 1.25:1.35 : 04:30:Ran in the hole with bit no 7 to 2317 m.
:Laid down one 6 1/2" drill collar.
05:00:Reamed out of the shoe track. Washed
:down to 2335 m.
06:30:Drilled 8 3/8" hole from 2335 m to
:2338 m.
08:30:Worked the junk sub. Pumped 7 m3 high
:viscous spacer and displaced the hole
:with 1.35 rd NaCl mud.

D a i l y r e p o r t

..Date.. :
19860822 :

System : Boredata Sandnes

Well: 30/6-17A

Norsk : Casing Size (in): | 30 : 20 : 16 : 13 3/8 : 9 5/8 :
Hydro : Setting depth (m): | 223 | 601 | 367 | 1593 | 2323 |

Report: Mid : EST.PORE: Mud : Stop : Short Summary

number: depth: PRESSURE: dens.: time :

: (m) : (SG) : (SG) :

09:30: Pulled the bit up in the shoe. Made up
: the cement hose. Closed the upper
: annular and performed a formation
: integrity test to 1.70 rd equivalent
: mudweight.

15:00: Continued to drill 8 3/8" hole from
: 2338 m to 2366 m.

16:00: Circulated for sample.

23:00: Continued to drill 8 3/8" hole from
: 2366 m to 2413 m.

24:00: Circulated for sample.

20: 2430: 1.25:1.35 :

00:30: Circulated for sample.

01:00: Continued to drill 8 3/8" hole from
: 2413 m to 2420 m.

02:30: Circulated for sample.

05:30: Pulled out of the hole. Broke out bit
: no. 7.

12:30: Made up 8 3/8" core assembly and ran in
: the hole with it. Changed out the jar.
: Ran in the hole to 2420 m.

14:00: Picked up the kelly and circulated
: bottoms up.

19:30: Cut core no. 1 from 2420 m to 2430 m.
: The core jammed.

20:30: Pulled out of the hole to 1800 m.

21:00: Had a H2S drill.

24:00: Continued to pull out of the hole.

21: 2466: 1.25:1.35 :

01:00: Continued to pull out of the hole from
: 50 m. Recovered core no.1, 72% recovery.

05:30: Made up bit no. 8 and ran in the hole.
: Tested the Teleco tool and laid down the
: 8 1/4" stabilizer while running in the
: hole to 2410 m. Picked up the kelly and
: took a survey to check the Teleco tool.

12:30: Drilled the 8 3/8" hole from 2430 m to
: 2466 m.

14:00: Circulated for sample.

18:00: Pulled out of the hole with bit no. 8.
: Held a kick drill while pulling out of
: the hole.

24:00: Picked up the 90' core barrel and ran in
: the hole with it.

22: 2501: 1.25:1.35 :

01:00: Picked up the kelly and broke the circu-
: lation. Dropped the ball.

05:30: Cut core no. 2 from 2466 m to 2493 m.

System : Boredata Sandnes

Norsk	Casing Size (in):	30	20	16	13 3/8	9 5/8
Hydro	Setting depth (m):	223	601	367	1593	2323

: (m) : (SG) : (SG) :

```
06:30:Circulated. :
10:00:Pulled out of the hole with core no. 2. :
11:30:Recovered core no. 2, 100 % recovery. :
12:30:Dressed the core barrel and made up core:
      :head no. 2. :
17:30:Ran in the hole with core head no. 2. :
19:30:Circulated bottoms up. :
23:00:Cut core no. 3 from 2493 m to 2501 m. :
      :The core barrel jammed. :
24:00:Circulated for sample. :
```

```

23: 2511: 1.25:1.35 : 00:30:Circulated for sample.
05:00:Pulled out of the hole with core no. 3,
:4 % recovery. Held a kick drill while
:pulling out of the hole.
06:30:Broke out the corehead, 20 % worn.
:Serviced the core barrel.
09:30:Made up core head no. 3 and ran in the
:hole to 2301 m.
10:30:Slipped and cut the drilling line.
11:00:Continued to run in the hole to 2490 m.
11:30:Picked up the kelly and circulated.
:Dropped the ball. Tagged the bottom at
:2501 m.
16:30:Cut core no. 4 from 2501 m to 2511 m.
20:30:Pulled out of the hole.
22:00:Broke out the bit and recovered core no.
:4, 100 % recovery. Made up new inner-
:barrel. Serviced the core barrel.
24:00:Made up bit no. 9. Picked up bottom hole
:assembly no. 14. Function tested the MWD
:tool. Ran in the hole to 60 m.

```

```
24: 2605:      1.25:1.35 : 00:40:Ran in the hole to 2466 m.
                                06:30:Reamed from 2466 m to 2511 m.
                                24:00:Drilled 8 3/8" hole from 2511 m to
                                      :2605 m.
```

25: 2636: 1.25:1.35 : 04:30:Drilled 8 3/8" hole from 2605 m to :
:2636 m. :
05:30:Circulated. :
10:00:Pulled out of the hole with bit no. 9. :
11:30:Retrived the wear bushing and ran in the :
:hole with the BOP test plug. :
14:30:Tested the BOP. :
16:30:Pulled out of the hole with the test :
:plug. Ran in the hole with the wear :
:bushing. :

D a i l y r e p o r t

..Date.. :
19860822 :

System : Boredata Sandnes
Well: 30/6-17A

: Norsk : Casing Size (in): | 30 : 20 : 16 : 13 3/8 : 9 5/8 :
: Hydro : Setting depth (m): | 223 | 601 | 367 | 1593 | 2323 |

Report: Mid : EST. PORE: Mud : Stop : Short Summary

number: depth: PRESSURE: dens.: time :

: (m) : (SG) : (SG) :

17:30: Pressure tested the surface equipment.
19:00: Attempted to set the wear bushing, with-
: out success. Pulled out of the hole and
: changed running tool.
20:00: Ran in the hole and set the wear bushing:
: Pulled out of the hole.
21:00: Made up the core barrel and ran in the
: hole.
21:30: Picked up 3 joints of 6 1/2" drill
: collar.
24:00: Continued to run in the hole to 1600 m.

26: 2651: 1.25:1.35 : 01:00: Ran in the hole with the core head to
: 2636 m.

01:30: Circulated and dropped the ball.
05:00: Cut core no. 5 from 2636 m to 2649 m.
09:30: Pulled out of the hole.
11:30: Broke out the core head. Laid down the
: core, 90 % recovery.
16:00: Made up core head no. RR-CH3 and ran in
: the hole.
16:30: Circulated and dropped the ball.
18:00: Cut core no. 6 from 2649 m to 2651 m.
22:30: Pulled out of the hole.
23:30: Broke out the core head and recovered
: core no. 6, 92 % recovery.
24:00: Made up core head no. 4, Stratapax 502
: and ran in the hole to 30 m.

27: 2676: 1.25:1.35 : 03:30: Ran in the hole with core head no. 4 to
: 2651 m.

04:00: Circulated and dropped the ball. Made a
: slow circulating rate.
13:30: Cut core no. 7 from 2651 m to 2676 m.
17:30: Pulled out of the hole.
20:00: Recovered core no. 7, 93 % recovery.
: Laid down the core barrel. The connect-
: ions were belled because of over torque.
24:00: Rigged up Geco logging equipment and ran:
: in the hole with the LSS/DIL/GR, was
: unable to pass 2423 m.

28: 2686: 1.25:1.35 : 01:00: Ran in the hole with the LSS/DIL/GR,
: unable to pass 2411 m. Rigged down Geco.
05:00: Made up bit no. 10 and ran in the hole
: to 2413 m.
11:30: Washed and reamed from 2413 m to 2476 m,
: had 1 m fill.

```

D a i l y   r e p o r t
-----
System : Boredata Sandnes
Well: 30/6-17A
Norsk :Casing Size (in):|30      |20      |16      |:13 3/8:9 5/8 :
Hydro :Setting depth (m):| 223|    601|    367|   1593|   2323|
-----
Report:Mid :EST.PORE:Mud : Stop :Short Summary
number:depth:PRESSURE:dens.: time :
       : (m) :   (SG) : (SG) :
-----
12:30:Drilled 8 3/8" hole from 2676 m to
      :2686 m.
14:00:Circulated 7 m3 high viscous mud around.
17:00:Did a wipertrip to the shoe. Ran in the
      :hole. Tight spot from 2465 to 2500 m.
19:00:Circulated bottoms up and displaced
      :15 m3 high viscous mud in the open hole
      :section.
24:00:Pulled out of the hole to 90 m.
      :Laid down 21 joints of drillpipe while
      :pulling out of the hole.
-----
29: 2686:      1.25:1.36 : 00:30:Continued to pull out of the hole with
      :bit no. 10.
06:30:Rigged up Geco logging equipment. Ran in:
      :the hole with the DIL/SONIC/GR/SP, was
      :unable to pass 2460 m. Ran in the hole
      :with the DIL/SONIC/CAL/GR/SP, was unable:
      :to pass 2411 m. Rigged down Geco.
12:30:Made up 8 3/8" bit and new bottom hole
      :assembly and ran in the hole to 2401 m.
17:00:Washed and reamed down to 2504 m.
17:30:Continued to run in the hole to 2647 m.
19:00:Washed and reamed down to 2686 m.
20:30:Pumped 6 m3 high viscous mud pill and
      :circulated out.
24:00:Pulled out of the hole to 255 m.
-----
30: 2686:      1.25:1.36 : 00:30:Continued to pull out of the hole with
      :bit no. 10.
10:30:Logged, ran DIL/SONIC/CAL/GR/SP, unable
      :to pass 2411 m, removed the bow spring
      :centralizer. Ran DIL/SONIC/CAL/GR/SP,
      :unable to pass 2411 m. Ran DIL/GR/SP,
      :unable to pass 2407 m. Ran DDL/MSFL/GR/
      :SP, unable to pass 2410 m.
15:00:Prepared and ran in the hole with the
      :CBL/VDL and logged from 2324 m to 1500 m:
      :Rigged down Geco logging equipment.
17:00:Ran in the hole with 11 stands 5" drill
      :pipe and laid it down.
20:30:Tested the surface equipment.
24:00:Made up 8 3/8" bit and new bottom hole
      :assembly. Ran in the hole to 414 m.
-----
31: 2686:      1.25:1.36 : 02:00:Continued to run in the hole from 414 m
      :to 2400 m.
09:30:Reamed down from 2400 m to 2686 m.

```

D a i l y r e p o r t

..Date.. :
19860822 :

System : Boredata Sandnes
Well: 30/6-17A

Norsk : Casing Size (in): | 30 : 20 : 16 : 13 3/8 : 9 5/8 :
Hydro : Setting depth (m): | 223 | 601 | 367 | 1593 | 2323 |

Report: Mid : EST.PORE: Mud : Stop : Short Summary
number: depth: PRESSURE: dens.: time :
: (m) : (SG) : (SG) :

: Tight spots from 2412 m to 2415 m,
: 2512 m to 2516 m and 2661 m to 2666 m.
11:00: Pumped 5.4 m3 high viscous pill and
: circulated out.
15:00: Pulled out of the hole. Broke out bit
: no. 10 and the roller reamers.
24:00: Rigged up Geco logging equipment. Ran
: DIL/BCS/CAL/GR/SP and CDL/CNS/CAL/GR.
: Prepared to run DDL/MSFL/GR.

32: 2686: 1.25:1.36 : 08:30: Prepared to run in the hole with
: DDL/MSFL/GR, unable to pass 2457 m.
: Ran in the hole with SGR, not able to
: pass 2406 m. Rigged down Geco logging
: equipment.
12:30: Made up bit no. 10 and ran in the hole
: to 2395 m. Laid down 15 joints of drill
: pipe on the way in.
15:30: Reamed down from 2395 m to 2506 m.
16:00: Continued to run in the hole to 2631 m.
19:00: Circulated 5 m3 high viscous mud around.
23:59: Pulled out of the hole. Broke out bit
: no. 10.
24:00: Rigged up Geco logging equipment.

33: 2686: 1.25:1.3 : 02:30: Ran in the hole with SFT, was not able
: to pass 2380 m. Started to pull out. The
: tool was stuck at 2332 m, had 135 kN
: overpull.
07:00: Cut the cable and rigged up to strip
: over.
16:00: Stripped over the wire line with an
: overshot to 2332 m. Engaged to the fish.
: Pulled loose and sheared out the weak
: point. Spooled the line back on to the
: reel. Rigged down the Geco logging
: equipment.
20:00: Pulled out of the hole with the fish.
: Broke out the overshot and laid down the
: SFT.
24:00: Made up bit no. 10 and ran in the hole
: to 1930 m. Laid down 21 joints of 5"
: drillpipe on the way in.

34: 2686: 1.25:1.36 : 00:30: Continued to run in the hole from 1930 m:
: to 2324 m.
02:00: Slipped and cut 29 m drilling line.
04:30: Reamed from 2324 m to 2500 m.

```

:      :      D a i l y   r e p o r t      ..Date.. :
:      :      -----                        19860822 :
:      :      System : Boredata Sandnes      :
:      :      Well: 30/6-17A                :
:      :      Norsk :Casing Size (in):|30   :20   :16   :13 3/8:9 5/8 :
:      :      Hydro :Setting depth (m):| 223 | 601 | 367 | 1593 | 2323 |

```

Report:Mid	:EST.PORE:	Mud	:	Stop	:	Short	Summary	:
number:depth:	PRESSURE:	dens.:	:	time	:			:
:	(m)	:	:	(SG)	:	(SG)	:	:
-----	:	:	:	-----	:	-----	:	:

```

05:00:Ran in the hole to 2631 m.
06:00:Reamed to TD at 2686 m.
07:30:Pumped 5.8 m3 high viscous mud and
      :circulated it out.
09:00:Pulled out of the hole to 1500 m.
09:30:The retractor hose bundle hung up in the:
      :derrick beams. Tied them up.
13:30:Continued to pull out of the hole. Laid :
      :down 1 6 1/2" drill collar, 3 6 1/2"
      :NMDC, 2 short 6 1/2" NMDC, 2 8 3/8"
      :stabilizer and the Teleco tool.
24:00:Rigged up Geco logging equipment. Ran in:
      :the hole with a VSP to increase the gain:
      :of the signals. The gain was not satis- :
      :factory. Changed out the tool and ran in:
      :the hole to 2380 m. Had tight hole.
      :Shot up from 2380 m to 1640 m.

```

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35: 2250:      0:1.37 : 02:30:Ran in the hole with a VSP log.
                        :Continued to shoot up from 1640 m to
                        :1400 m. Rigged down Geco.
07:30:Ran in the hole with 3 1/2" open ended
                        :drillpipe stinger to 2686 m.
09:00:Pumped 5.8 m3 high viscous mud and
                        :circulated out.
14:00:Pressure tested the cement line. Set
                        :cement plug no 1 from 2686 m to 2528 m.
                        :Reverse circulated. Set plug no 2 from
                        :2530 m to 2370 m and reverse circulated.
                        :Set a balanced cement plug from 2370 m
                        :to 2250 m and reverse circulated.
19:00:Pulled out of the hole. Laid down 1
                        :8 3/8" stabilizer, 2 8 3/8" roller
                        :reamers and 49 joints 5" drillpipe.
22:30:Made up 8 3/8" bit and ran in the hole
                        :to 2215 m.
23:30:Circulated and conditioned the mud.
24:00:Washed down to tag the top of the cement:

```

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36: 2227:      0:1.36 : 01:30:Washed down from 2250 m to the top of :
      :the cement at 2333 m. Tagged the cement :
      :with 1000 kN. :
      04:30:Pulled out of the hole. :
      08:00:Ran in the hole with 3 1/2" open ended :
      :drillpipe stinger and 5" drillpipe to :
      :2333 m and tagged the top of the cement.:
      10:00:Tested the cement lines to 140 bar. Set :
      :a balanced cement plug from 2333 m to :

```


D a i l y r e p o r t

..Date.. :
19860822 :

System : Boredata Sandnes
Well: 30/6-17A

: Norsk :Casing Size (in):|30 :20 :16 :13 3/8:9 5/8 :
: Hydro :Setting depth (m):| 223| 601| 367| 1593| 2323|

Report:Mid :EST.PORE: Mud : Stop :Short Summary

number:depth:PRESSURE:dens.: time :

: (m) : (SG) : (SG) :

:2224 m, and reverse circulated.

13:00:Pulled out of the hole with the 3 1/2" :
:drillpipe stinger.

16:00:Ran in the hole with 8 3/8" bit.

18:00:Circulated and conditioned the mud.

19:00:Tagged the top of the cement at 2227 m. :
:Closed the middle pipe ram and pressure :
:tested the cement to 140 bar.

23:00:Pulled out of the hole and laid down

:30 joints of 5" drillpipe on the way out:

24:00:Rigged up Geco and ran in the hole with :
:8.15" gaugering and junk basket.

37: 1835: 0:1.37 : 08:30:Ran in the hole with 8.15" gaugering and:

:junkbasket to 1900m. Set a bridge plug :

:at 1880m. Ran in the hole with 4" casing:

:gun. Perforated the 9 5/8" casing from :

:1853 m to 1855 m. Ran in the hole with :

:9 5/8"ez squeeze packer. Set it at 1835m:

10:30:Ran in the hole with the 9 5/8" EZSV :

:stinger and 5" drillpipe to 1835 m. :

:Tagged the packer.

20:00:Rigged up Geco and ran in the hole with :

:the SDP gauges to 1829 m. Stinged in :

:with 90 kN and applied 34 bar on the :

:annular. Performed a fracture test. The :

:surface fracture pressure was 97.5 bar. :

:Retrieved the gauges. Rigged down Geco. :

22:30:Made up the circulation head and tested :

:the lines to 200 bar. Pumped 4m3 cement :

:and displaced with 11.7 m3 mud. Stinged :

:in and squeezed in 3 m3 cement. Maximum :

:pressure was 94 bar. Left 1 m3 cement on:

:the top. Reverse circulated at 1788 m. :

23:00:Tested the packer to 165 bar. :

24:00:Pulled out of the hole with the stinger.:

38: 185: 0:1.37 : 04:30:Laid down 143 joints 5" drillpipe and :

:13 joints of heavy weight drillpipe. :

06:30:Ran in the hole with 3 1/2" open ended :

:drillpipe and 5" drillpipe to 450 m. :

09:30:Rigged up Geco 2" perforating gun with :

:the stuffing box, and pressure tested. :

:Perforated 9 5/8" and 13 3/8" casings at:

:500 m. The pressure dropped to zero. :

:Observed the well and rigged down Geco. :

:Checked the injection rate. :

14:00:Ran in the hole to 500 m. Tested the :

[illegible]


```

=====
:      :      D a i l y   r e p o r t      ..Date.. :
:  ((( :      -----      19860822 :
: (ooo) :      System : Boredata Sandnes :
: -----:      Well: 30/6-17A :
: Norsk :Casing Size (in):|30 :20 :16 :13 3/8:9 5/8 :
: Hydro :Setting depth (m):| 223| 601| 367| 1593| 2323|
=====
Report:Mid :EST.PORE: Mud : Stop :Short Summary :
number:depth:PRESSURE:dens.: time :
: (m) : (SG) : (SG) : :
-----:-----:-----:-----:-----:
-----:-----:-----:-----:-----:
44: 0: 0:0 : 03:15:Pulled anchor no: 1, 4, 5 and 8, anchor :
: : : : :no 4 was off bottom at 03:15. :

```

1.3 Time Distribution

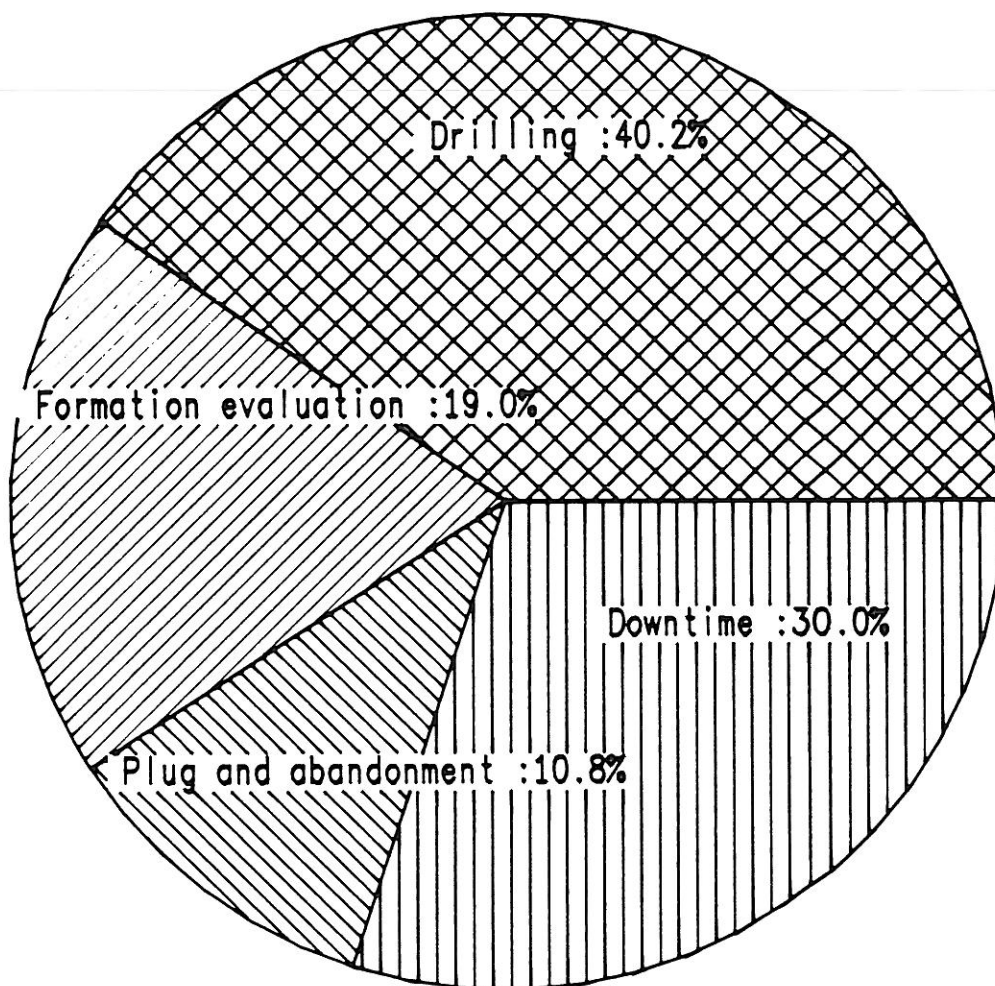
The total time used to cut and retrieve the 9 5/8" casing, kick-off, drill the well and plug and abandon the well 30/6-17A was 42,26 days.

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

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

° Drilling the well to TD	17,0 days
° Formation evaluation	8,0 days
° Plugging and abandonment	4,6 days
° Downtime	12,7 days

		Time distribution				..Date..
(((ooo)						19860825
		System : Boredata Sandnes				
		Well: 30/6-17A				
Norsk		Rig name: Treasure Hunter				
Hydro		Phase : All phases				
Operations		Hrs	%	Hrs	%	Subtotal
Rig moving.....						
Sum				.00	.00	.00
Drilling.....						
Drilling		: 129.0	12.72			
Tripping		: 114.2	11.26			
Circ. and cond. hole and mud		: 20.5	2.02			
Formation leak off test		: 1.0	.10			
Surveying		: 3.5	.35			
Sub sea equipment handling		: 2.5	.25			
BOP testing/activities		: 17.0	1.68			
Other equipment testing		: 9.0	.89			
Running casing		: 43.0	4.24			
Primary cementing		: 5.0	.49			
Slip and cut drilling line		: 1.0	.10			
Other		: 62.0	6.11			
Sum				407.67	40.19	407.67
Formation evaluation.....						
Tripping		: 83.0	8.18			
Circ and cond mud/hole		: 15.0	1.48			
Circulating for samples		: 7.0	.69			
Coring		: 33.0	3.25			
Logging		: 42.5	4.19			
Slip and cut drilling line		: 2.5	.25			
Other		: 9.5	.94			
Sum				192.52	18.98	600.19
Production testing.....						
Sum				.00	.00	600.19
Plug and abandonment.....						
Tripping		: 37.5	3.70			
Circ and cond mud/hole		: 6.0	.59			
Perforating		: 6.0	.59			
Cement plug		: 11.0	1.08			
Mechanical plug		: 11.5	1.13			
Squeezing		: 7.0	.69			
Other		: 30.8	3.03			
Sum				109.75	10.82	709.94
Downtime.....						
Reaming		: 50.8	5.01			
Wiper trip		: 45.0	4.43			
Well control		: 7.5	.74			
Fishing> due to logging		: 17.5	1.73			
Waiting on weather		: 97.0	9.56			
Sub sea equipment repair		: 2.5	.25			
Drilling equipment repair		: 9.5	.94			
Drilling wait		: 12.0	1.18			
Plug and abandon equip repair		: .5	.05			
Other		: 62.0	6.11			
Sum				304.31	30.00	1014.25
Completion.....						
Sum				.00	.00	1014.25



TIME REPORTED (HRS) 1014 OF TOTAL:1014

TOTAL OTHERS _____ .0 %



Norsk Hydro
Drilling Department

Date:19860826

TIME DISTRIBUTION

WELL: 30/6-17A

Fig.
B-1

LTS

26 AUG 1986 11:51 AM BY SDRILL3

NORSK HYDRO

H o l e d e v i a t i o n

..Date..
19860729

System : Boredata Sandnes

Proposed direction (deg): 270

Well: 30/6-17A

Norsk
Hydro

11

Measured Depth (m)	Incli- nation (deg)	Dir- ection (deg)	Surveytool	Vert. Depth (m)	Coordinates North (m)	East (m)	Vert. Section (m)	Dogleg Severity deg/30m
1607.0	1.70	322.30	MWD	1606.8	18.86	-14.58	14.6	0.03
1623.0	2.40	326.50	MWD	1622.8	19.33	-14.91	14.9	1.34
1628.0	2.75	330.00	Singelshot	1627.7	19.52	-15.03	15.0	2.30
1633.0	2.50	321.90	MWD	1632.7	19.71	-15.15	15.2	2.68
1643.0	3.40	305.20	MWD	1642.7	20.05	-15.53	15.5	3.71
1653.0	4.00	298.70	MWD	1652.7	20.39	-16.08	16.1	2.19
1662.0	4.90	294.10	MWD	1661.7	20.70	-16.70	16.7	3.22
1671.0	5.10	290.60	MWD	1670.6	21.00	-17.43	17.4	1.22
1680.0	5.30	281.80	MWD	1679.6	21.22	-18.21	18.2	2.74
1690.0	5.70	279.40	MWD	1689.6	21.40	-19.15	19.2	1.38
1699.0	6.00	245.90	MWD	1698.5	21.28	-20.02	20.0	11.26
1707.0	6.90	253.70	MWD	1706.5	20.97	-20.87	20.9	4.70
1716.0	7.40	244.90	MWD	1715.4	20.58	-21.91	21.9	4.01
1726.0	8.70	273.40	MWD	1725.3	20.35	-23.25	23.2	12.44
1735.0	9.70	261.40	MWD	1734.2	20.27	-24.68	24.7	7.19
1745.0	10.70	267.80	MWD	1744.0	20.11	-26.44	26.4	4.53
1754.0	11.80	268.50	MWD	1752.9	20.06	-28.19	28.2	3.69
1764.0	13.00	265.70	MWD	1762.6	19.94	-30.34	30.3	4.03
1774.0	14.30	264.60	MWD	1772.3	19.74	-32.69	32.7	3.98
1796.0	16.30	264.20	MWD	1793.6	19.18	-38.47	38.5	2.73
1817.0	17.20	264.60	MWD	1813.7	18.59	-44.49	44.5	1.30
1834.0	17.80	266.70	MWD	1829.9	18.20	-49.59	49.6	1.54
1853.0	18.30	267.80	MWD	1847.9	17.92	-55.47	55.5	0.96
1872.0	19.00	269.20	MWD	1866.0	17.76	-61.54	61.5	1.31
1900.0	20.00	269.90	MWD	1892.3	17.69	-70.89	70.9	1.10
1910.0	20.30	269.50	MWD	1901.7	17.67	-74.33	74.3	0.99
1929.0	21.70	270.60	MWD	1919.5	17.68	-81.14	81.1	2.30
1948.0	23.70	272.00	MWD	1937.0	17.85	-88.47	88.5	3.27
1967.0	26.00	273.70	MWD	1954.2	18.25	-96.44	96.4	3.80
1986.0	27.90	274.40	MWD	1971.2	18.86	-105.03	105.0	3.04
1991.0	28.20	274.60	Singelshot	1975.6	19.05	-107.37	107.4	1.89
2020.0	31.20	275.60	Singelshot	2000.8	20.33	-121.68	121.7	3.15
2049.0	34.10	276.60	Singelshot	2025.2	22.00	-137.24	137.2	3.05
2068.0	36.80	278.70	MWD	2040.7	23.47	-148.16	148.2	4.68
2077.0	36.40	278.30	MWD	2047.9	24.26	-153.46	153.5	1.55
2086.0	35.40	278.30	MWD	2055.2	25.02	-158.68	158.7	3.33
2096.0	34.40	277.60	MWD	2063.4	25.82	-164.35	164.4	3.23
2106.0	33.30	276.20	MWD	2071.7	26.49	-169.88	169.9	4.04
2115.0	33.00	274.80	MWD	2079.2	26.96	-174.78	174.8	2.74
2124.0	32.90	273.70	MWD	2086.8	27.32	-179.66	179.7	2.02

Hole deviation

..Date..
19860729

((
(ooo)

System : Boredata Sandnes

Proposed direction (deg): 270

Norsk
Hydro

Well: 30/6-17A

11

Measured Depth (m)	Incli- nation (deg)	Dir- ection (deg)	Surveytool	Vert. Depth (m)	Coordinates North (m)	East (m)	Vert. Section (m)	Dogleg Severity deg/30m
2133.0	31.70	272.00	MWD	2094.4	27.56	-184.46	184.5	5.02
2143.0	31.00	270.90	MWD	2102.9	27.69	-189.66	189.7	2.71
2153.0	30.70	269.20	MWD	2111.5	27.70	-194.79	194.8	2.77
2162.0	30.40	267.80	MWD	2119.3	27.58	-199.36	199.4	2.57
2176.0	30.10	264.60	MWD	2131.4	27.11	-206.40	206.4	3.51
2195.0	31.30	263.50	MWD	2147.7	26.10	-216.05	216.0	2.09
2214.0	32.90	263.90	MWD	2163.8	25.00	-226.08	226.1	2.55
2233.0	34.20	264.30	MWD	2179.6	23.92	-236.53	236.5	2.08
2253.0	35.00	264.60	MWD	2196.1	22.82	-247.83	247.8	1.23
2271.0	35.40	265.00	MWD	2210.8	21.88	-258.16	258.2	0.77
2279.0	35.80	265.00	MWD	2217.3	21.47	-262.80	262.8	1.50
2298.0	36.90	265.00	MWD	2232.6	20.49	-274.02	274.0	1.74
2317.0	37.80	265.00	MWD	2247.7	19.49	-285.50	285.5	1.42
2322.0	38.10	264.60	MWD	2251.6	19.21	-288.57	288.6	2.33
2332.0	38.50	266.40	MWD	2259.5	18.72	-294.74	294.7	3.56
2351.0	39.20	265.70	MWD	2274.3	17.90	-306.63	306.6	1.30
2370.0	39.50	265.70	MWD	2289.0	17.00	-318.65	318.6	0.47
2389.0	39.90	267.40	MWD	2303.6	16.27	-330.76	330.8	1.83
2409.0	40.20	269.20	MWD	2318.9	15.89	-343.62	343.6	1.79
2426.0	40.40	269.20	MWD	2331.9	15.74	-354.62	354.6	0.35
2445.0	41.50	269.90	MWD	2346.2	15.64	-367.07	367.1	1.88
2468.0	41.70	270.20	MWD	2363.4	15.65	-382.34	382.3	0.37
2490.0	41.70	269.90	MWD	2379.9	15.66	-396.97	397.0	0.27
2512.0	41.70	270.60	MWD	2396.3	15.73	-411.61	411.6	0.63
2531.0	41.30	270.60	MWD	2410.5	15.86	-424.20	424.2	0.63
2550.0	41.10	270.60	MWD	2424.8	15.99	-436.71	436.7	0.32
2569.0	40.80	270.60	MWD	2439.2	16.12	-449.16	449.2	0.47
2588.0	40.90	270.60	MWD	2453.5	16.25	-461.59	461.6	0.16
2607.0	40.60	270.90	MWD	2467.9	16.41	-473.99	474.0	0.57
2615.0	40.60	270.90	MWD	2474.0	16.50	-479.20	479.2	0.00

2. PERMANENT ABANDONMENT OF THE WELL

The permanent abandonment well status is shown in fig. B-2. The abandonment was carried out in the following way (all depths in MD).

- 1) Set a cement plug in open hole from 2686 m to 2528 m.
- 2) Set a cement plug in open hole from 2530 m to 2370 m.
- 3) Set a cement plug in open hole from 2370 m to 2333 m.
- 4) Set a cement plug from 2333 m to 2227 m.
- 5) Set a bridge plug at 1880 m.
- 6) Perforated the 9 5/8" casing from 1853 m to 1855 m.
- 7) Set a squeeze packer at 1835 m.
- 8) Performed a fracure test and squeezed 3 m³ cement into the formation.
- 9) Perforated the 9 5/8" casing and 13 3/8" casing at 500 m and squeezed 8,7 m³ cement into the 13 3/8" x 20" annulus. Left 2,3 m³ cement in the 9 5/8" casing from 500 m to 440 m.
- 10) Perforated at 145 m to check for gas.
- 11) Set a cement plug from 385 m to 185 m.

T. Hunter left the well after having set the last cementplug. Later the divingsvessel Wilchief arrived the location and cut and retrieved the casings and the wellhead.

0754e

sa,LTS/LLa

All depths are bellow RKB

Seabed at 135m

Plug 6: 185m-385m

Plug 5: 500m-440m

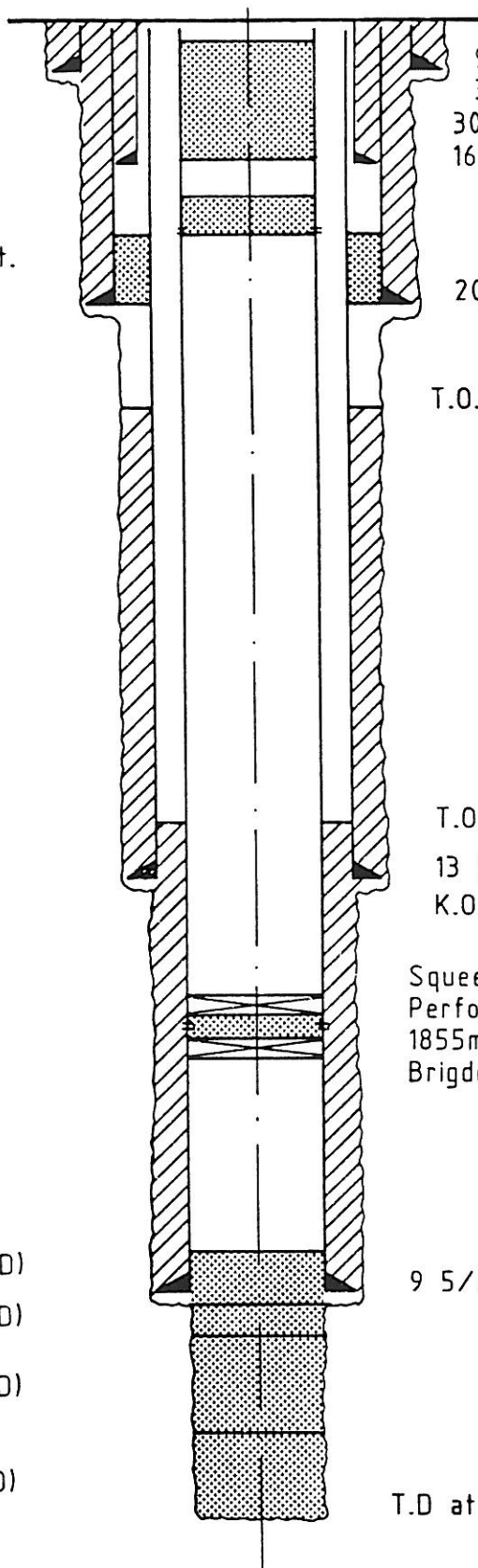
20"x13 3/8" annulus cmt.
plug from 601m to 501m

Plug 4: 2227m-2333m(MD)

Plug 3: 2333m-2370m(MD)

Plug 2: 2370m-2530m(MD)

Plug 1: 2528m-2686m(MD)



9 5/8", 13 3/8", 16", 20" and
30" cut at 140m
30" csg. shoe at 223m
16" csg. shoe at 367m

20" csg. shoe at 601m

T.O.C at 790m

T.O.C at 1500m

13 3/8" csg. shoe at 1593m
K.O.P at 1633m

Squeeze packer at 1835m
Perforations from 1853m to
1855m
Bridge plug at 1880m

9 5/8" csg. at 2323m(MD)/2253m(TVD)

T.D at 2686m(MD)

 **Norsk Hydro**
Drilling Department

PERMANENT ABANDONMENT
WELL 30/6-17A

Gr. no.:

3

Fig.:

B- 2

Date: 26.06.86

Dwg. no.:

29

Sign: LTS/AHJ

3. PORE PRESSURE, FORMATION INTEGRITY, OVERBURDEN GRADIENT AND FORMATION TEMPERATURE

3.1 Pore Pressure

30/6-17A

The pore pressure in well 30/6-17A is estimated using data from the DC-exponent, Sonic-log, Litho-Density-log and RFT-data from well 30/6-17RE.

Seabed - 1580 m TVD

All parameters indicate a normal pore pressure of 1.03 rd throughout this section.

1580 m TVD - Top Cretaceous (2185 m TVD)

The DC-exponent, Sonic-log and Litho-Density-log all indicate a pore pressure build up at 1580 m TVD. This is based on a reduction in Litho-Density-log values and increasing Sonic travel times. The DC-exponent also shows a decreasing trend at this depth.

The pore pressure increases rapidly from 1580 m TVD to approx. 1700 m TVD, where a gradient of 1.16 rd is reached. From this depth a steady increase is seen through the Eocene (Hordaland gp.) and the Paleocene (Rogaland gp), where a maximum pore pressure gradient of 1.28 rd is reached. This is the same development as seen in the 30/6-17RE well.

Top Cretaceous - TD (2528 m TVD)

The pore pressure remains constant at 1.28 rd through the Cretaceous, and a decrease is seen in the upper Jurassic.

Based on RFT data in 30/6-17RE and communication to 30/6-17A a pore pressure gradient of 1.23 rd (using a oil/gas gradient) is estimated in the top Cook sand at 2358 m TVD.

At the top Statfjord at 2487 m TVD, RFT data from 30/6-17RE indicate a pore pressure of 1.23 rd, using a watergradient between 30/6-17RE and 30/6-17A.

Through the Statfjord formation a watergradient is seen, and the pore pressure at TD is estimated to be 1.22 rd.

3.2 Formation Integrity Test

RKB - Seabed = 135 m

Total depth = 2686 m MD/2528 m TVD

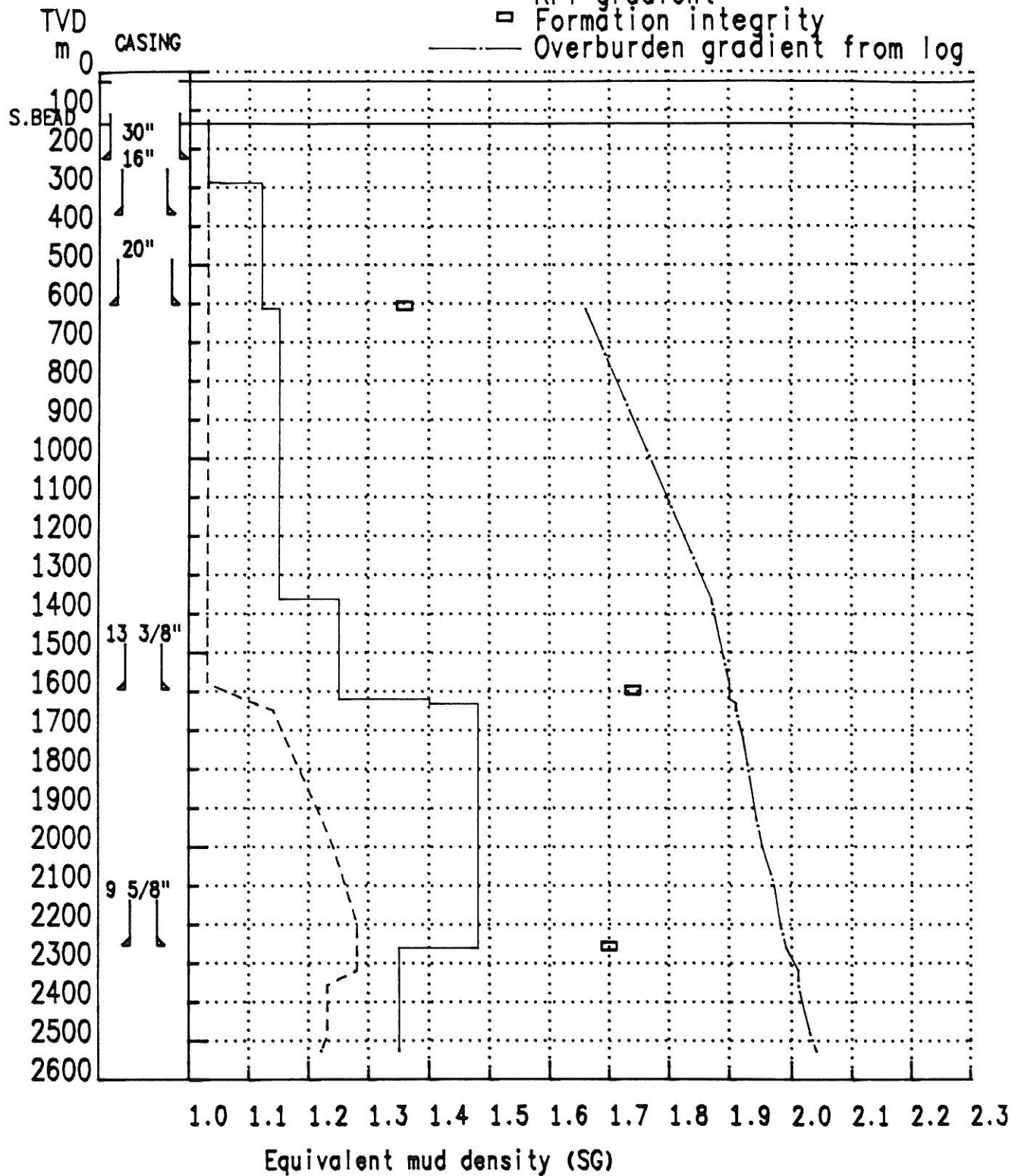
Casing depth (mTVD)	!	Open hole depth (mTVD)	!	Formation Integrity SG
---------------------	---	------------------------	---	------------------------

	!		!	
601	!	618	!	1.36 (FIT)
1593	!	1623	!	1.74 (LOT)
2253	!	2262	!	1.70 (FIT)

26 AL 1986 1:34 PM BY SDRILL3

OPERATOR: HYDRO

----- Final Pore Pressure
—— Mud density
▲ RFT gradient
□ Formation integrity
—— Overburden gradient from log



Norsk Hydro
Drilling Department

Date:19860826

FINAL PORE PRESSURE
MUD DENSITY,
RFT AND OVERBURDEN GRAD.
FORMATION INTEGRITY.
WELL: 30/6-17A

Fig.
B-3

LTS

NORSK HYDRO

```

:      :      P o r e   p r e s s u r e      ..Date.. :
:  ((( :      -----      19860815 :
:  (ooo) :      System : Boredata Sandnes :
:-----:      Well: 30/6-17A :
: Norsk :      Seabed at: 135 mRKB :
: Hydro :Total depth: 2686 m,MD,RKB :

```

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)
128				1.03:	1.03:
288				1.03:	1.05:
290				1.03:	1.12:
614	1.03:	1.03:		1.03:	1.12:
615	1.03:	1.03:		1.03:	1.15:
1363	1.03:	1.03:		1.03:	1.15:
1364	1.03:	1.03:		1.03:	1.25:
1580	1.03:	1.03:		1.03:	1.25:
1620	1.09:	1.09:		1.09:	1.25:
1621	1.09:	1.09:		1.09:	1.40:
1632				1.11:	1.40:
1633				1.11:	1.48:
1650				1.14:	1.48:
1720				1.16:	1.48:
1926				1.22:	1.48:
2000				1.24:	1.48:
2100				1.26:	1.48:
2200				1.28:	1.48:
2261				1.28:	1.48:
2262				1.28:	1.35:
2320				1.28:	1.35:
2358				1.23:	1.35:
2487				1.23:	1.35:
2528				1.22:	1.35:

```

=====
:      :      F o r m a t i o n   i n t e g r i t y      ..Date.. :
:  (((  :      -----      19860815 :
:  (ooo) :      System : Boredata Sandnes      :
:-----:      Well: 30/6-17A      :
: Norsk :      Seabed at: 135 mRKB      :
: Hydro :Total depth: 2686 m,MD,RKB      :
=====

```

```

: Casing :Open :Formation integrity:
: depth :hole :   strenght   :
:  (m)  :depth:   (SG)      :
:-----:-----:-----:
:   601:  618:           1.36:
:  1593: 1623:           1.74:
:  2323: 2335:           1.70:

```

4. MATERIAL REPORT

4.1 Main consumption casing and wellheads

4.2 Bit record

4.3 Bottom hole assembly

4.4 Mud reports

4.5 Cement reports

((((ooo) Norsk Hydro	Main consumptions ----- System : Boredata Sandnes Well: 30/6-17A Cement contractor:	..Date.. 19860627
		5

Casing size (in)	Additive name	Total used (l)
9 5/8 Spacer	-----	-----
Lead-	Cement	20698
	Freshwater	28100
	CFR-2L	1040
	HR-6L	230
Tail-	Cement	0
		0
Flush		0
-----	-----	-----

Bit record																		
..Date..										19860821								
System : Boredata Sandnes										19860821								
Well: 30/6-17A										19860821								
Norsk :										19860821								
Hydro :										19860821								
4 :										4 :								
BIT	NUMBER	SIZE	Manu- fact- urer	Trade Name	Serial number	IADC Code	Nozzles diameter (./32")	BHA:Depth no.	Depth out	Bit meter	Drill:Rot. time:hours	ROP (m/h)	Rotations min/max (rpm)	Total bit revol.	Weight min/max (KN)	Flow min/max (m3/h)	Wear T B G : Other	Remarks
1	12	1/4	HTC	XDV	378YL	215	13:13:13	5	1652	53	3.5	15.1:60/						
2	12	1/4	Smith	SDGH	XE6472	135	18:18:18	6	1791	158	12.5	9.8	16.1:285/	173767:40/100	8/		2:3	2
3	12	1/4	Smith	SDGH	XE6467	135	16:16:16	8	1919	282	7.5	5.3	53.2:80/120	27555:200/	8/		5:5	3
4	12	1/4	HTC	XDG	037RL		16:16:16	9	2075	178	13	9.3	19.1:140/160	86151:100/200	9/		6:6	2
5	12	1/4	Smith	SVH	XE1334	215	18:18:20	12	2180	105	14	11	9.5	213521:100/150	9/		3:3	2
6	12	1/4	Smith	SVH	XE1335	215	14:14:14	13	2282	102	19.5	15.6	6.5:100/140	135236:100/220	9/		3:4	2
7	12	1/4	Smith	SVH	XE1388	215	14:14:14	15	2335	53	14.5	12.6	4.2:120/	89102:220/250	9/		4:5	2
8	8	3/8	Smith	F2	XD9091	517	11:11:11	18	2420	103	11.5	11.5	9.0:75/	52328:	6/		1:4	0
1	8	3/8	DB	CT303	7860002			19	2430	10	5.5	5.0	2.0:100/	32520:150/	4/		15% worn:	72 % rec.
9	8	3/8	Smith	F2	EX0125	517	11:11:12	20	2466	36	7	5.3	6.8:75/	24347:170/	6/		1:2	0
1	C	RR1	8	3/8	DB	CT303		22	2493	27	4.5	3.3	8.2:118/	18688:170/	4/		35% worn:	100 % rec.
2	C	8	3/8	DB	CT303			23	2501	8	4.5	3.9	2.1:118/	23941:180/	4/		20% worn:	4 % rec.
3	C	8	3/8	DB	CB303			24	2511	21	5	4.5	4.7:100/	25890:180/	4/		10% worn:	100 % rec.
10	8	3/8	Smith	F2	XD9092	517	11:11:12	25	2636	125	22	17.8	7.0:75/	92385:180/	7/		3:4	0
2	C	RR1	8	3/8	DB	CT303		26	2649	13	3.5	2.7	4.8:90/	15515:150/	4/		50% worn:	90 % rec.
3	C	RR1	8	3/8	DB	CB303		27	2651	2	1.5	1.5	1.3:100/	120/	4/		20% worn:	92 % rec.
4	C	8	3/8	DB	CD502			28	2676	25	8.0	3.1:90/	45075:140/	4/			25% worn:	93 % rec.
11	8	3/8	HTC	J22	473CF	517		29	2686	10	1	0.8	12.5:75/	4020:150/	7/		1:2	0

((((ooo)	B o t t o m h o l e a s s e m b l y ----- System : Boredata Sandnes	..Date.. 19860627
Norsk Hydro	Well: 30/6-17A	7

BHA no.:1 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Other		1.00	3	DC Steel	6 1/2	84.79
2	X-over		.60	4	HWDP		119.95

BHA no.:2 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Other		.89	6	Other		.57
2	X-over		.32	7	Other		2.69
3	DP		9.42	8	X-over		.60
4	X-over		.40	9	DC Steel	6 1/2	113.04
5	Other	9 5/8	1.52	10	DP	5	9.48

BHA no.:3 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	5	DC Steel	8	47.06
2	Bit Sub		1.20	6	X-over		1.19
3	DC Steel	8	9.41	7	HWDP		119.95
4	Steel stab	12 1/4	1.92				

BHA no.:4 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	5	DC Steel	8	18.78
2	Bit Sub		1.20	6	X-over		.78
3	DC Steel	8	112.98	7	HWDP		138.48
4	Jar		11.92				

BHA no.:5 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	6	Jar		11.92
2	Bit Sub		1.20	7	DC Steel	8	18.78
3	Nonmag collar	8	8.82	8	X-over		.78
4	Nonmag collar	8	8.69	9	HWDP		138.48
5	DC Steel	8	122.57				

BHA no.:6 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Nonmag collar	8	8.82
2	Turbine		8.05	9	Nonmag collar	8	8.69
3	1.5 Deg Bentsub		.78	10	DC Steel	8	56.57
4	Short N.M.D.C.	8	3.93	11	Jar		11.92
5	X-over		.69	12	DC Steel	8	28.28
6	MWD		9.13	13	X-over		.78
7	Orienting Sub		.64	14	HWDP		138.48

BHA no.:7 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Steel stab	12 1/4	1.89
2	Nearbit stab	12 1/4	1.72	9	Nonmag collar	8	8.69
3	Short N.M.D.C.	8	4.10	10	DC Steel	8	131.99
4	Other		.69	11	Jar		11.92
5	MWD		9.13	12	DC Steel	8	28.28

((((ooo)		B o t t o m h o l e a s s e m b l y				..Date.. 19860627	
Norsk Hydro		System : Boredata Sandnes					
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						7	

6	Steel stab	12 1/4	1.89	13	X-over		.78
7	Nonmag collar	8	8.82	14	HWDP		138.48

BHA no.:8 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Nonmag collar	8	8.82
2	Turbine		8.05	9	Nonmag collar	8	8.69
3	1.5 Deg Bentsub		.78	10	DC Steel	8	56.57
4	Short N.M.D.C.	8	3.93	11	Jar		11.92
5	X-over		.69	12	DC Steel	8	28.28
6	MWD		9.13	13	X-over		.78
7	Orienting Sub		.64	14	HWDP		138.48

BHA no.:9 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Steel stab	12 1/4	1.89
2	Nearbit stab	12 1/4	1.72	9	Nonmag collar	8	8.69
3	Nonmag collar	8	9.06	10	DC Steel	8	160.27
4	Other		.69	11	Jar		11.92
5	MWD	8 1/4	9.13	12	DC Steel	8	28.28
6	Steel stab	12 1/4	1.89	13	X-over		.78
7	Nonmag collar	8	8.82	14	HWDP		138.48

BHA no.:10 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	7	DC Steel		160.27
2	Nearbit stab	12 1/4	1.72	8	Jar		11.92
3	Nonmag collar	8	9.06	9	DC Steel	8	28.28
4	MWD		9.13	10	X-over		.78
5	Steel stab		1.89	11	HWDP		138.48
6	Nonmag collar		8.69				

BHA no.:11 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Nonmag collar		8.82
2	Turbine		8.03	9	Nonmag collar		8.69
3	1.5 Deg Bentsub		.51	10	DC Steel	8	84.85
4	Short N.M.D.C.		3.93	11	Jar		11.92
5	X-over		.69	12	DC Steel	8	28.28
6	MWD		10.66	13	X-over		.78
7	Orienting Sub		.64	14	HWDP		138.48

BHA no.:12 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Nonmag collar	8	8.82
2	Turbine		8.04	9	Nonmag collar	8	8.69
3	1.5 Deg Bentsub		.50	10	DC Steel	8	141.40
4	Short N.M.D.C.	8	3.93	11	Jar		11.92
5	X-over		.69	12	DC Steel	8	28.28
6	MWD		10.66	13	X-over		.78
7	Orienting Sub		.64	14	HWDP		138.48

((((ooo) ----- Norsk Hydro	B o t t o m h o l e a s s e m b l y		..Date.. 19860627
	System : Boredata Sandnes		7

Well: 30/6-17A

BHA no.:13 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	9	Nonmag stab	12 1/4	1.89
2	Nearbit stab	12 1/4	1.72	10	Short N.M.D.C.	8	8.69
3	Short N.M.D.C.	8	2.83	11	DC Steel	8	160.27
4	Short N.M.D.C.	8	1.96	12	Jar		11.92
5	X-over		.69	13	DC Steel	8	28.28
6	MWD		10.66	14	X-over		.78
7	Nonmag stab	12 1/4	1.89	15	HWDP		138.48
8	Short N.M.D.C.	8	8.82				

BHA no.:14 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Nonmag collar	8	8.69
2	Nearbit stab	12 1/4	1.72	9	DC Steel	8	189.10
3	Short N.M.D.C.	8	4.10	10	Jar		11.92
4	Short N.M.D.C.	8	1.96	11	DC Steel	8	28.28
5	X-over		.69	12	X-over		.78
6	MWD		10.66	13	HWDP		138.48
7	Nonmag stab	12 1/4	1.89				

BHA no.:15 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	8	Nonmag collar		8.82
2	Nearbit stab	12 1/4	1.72	9	Steel stab	12 1/4	1.89
3	Short N.M.D.C.	8	4.10	10	Nonmag collar		8.69
4	Short N.M.D.C.	8	1.96	11	DC Steel	8	188.40
5	X-over		.69	12	Jar		11.92
6	MWD		10.66	13	DC Steel	8	28.28
7	Steel stab	12 1/4	1.89	14	HWDP		138.48

BHA no.:16 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	12 1/4	.30	6	DC Steel	8	188.40
2	Nearbit stab	12 1/4	1.72	7	Jar		11.92
3	Nonmag collar		8.82	8	DC Steel	8	28.28
4	Nonmag collar		8.69	9	X-over		.78
5	Steel stab	12 1/4	1.89	10	HWDP		92.32

BHA no.:17 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	8	Nonmag stab	8 3/8	1.69
2	Junksub		1.17	9	Nonmag collar	6 1/2	8.88
3	Nearbit stab	8 3/8	1.54	10	Nonmag collar	6 1/2	8.83
4	Nonmag collar	6 1/2	3.20	11	DC Steel	6 1/2	207.16
5	Nonmag collar	6 1/2	8.96	12	Jar		11.03
6	Nonmag stab	8 3/8	1.98	13	DC Steel	6 1/2	28.25
7	MWD		10.72	14	HWDP		138.48

BHA no.:18 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	8	Nonmag stab	8 3/8	1.69
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((((ooo)		B o t t o m h o l e a s s e m b l y				..Date..
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2	Junksub		1.17	9	Nonmag collar	6 1/2	17.71
3	Nearbit stab	8 3/8	1.54	10	DC Steel	6 1/2	197.71
4	Short N.M.D.C.	6 1/2	3.20	11	Jar		11.03
5	Nonmag collar	6 1/2	8.96	12	DC Steel	6 1/2	28.25
6	Nonmag stab	8 3/8	1.98	13	HWDP		138.48
7	MWD		10.72				

BHA no.:19 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.30	5	DC Steel	6 1/2	178.79
2	Core barrel	6 3/4	19.92	6	Jar		10.54
3	DC Steel	6 1/2	9.41	7	DC Steel	6 1/2	28.25
4	Steel stab	8 3/8	1.48	8	HWDP		138.48

BHA no.:20 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	8	Nonmag stab	8 3/8	1.69
2	Junksub		1.17	9	Nonmag collar	6 1/2	17.71
3	Nearbit stab	8 3/8	1.54	10	DC Steel	6 1/2	197.71
4	Short N.M.D.C.	6 1/2	3.20	11	Jar		10.59
5	Nonmag collar	6 1/2	8.96	12	DC Steel	6 1/2	28.25
6	Nonmag stab	8 3/8	1.98	13	HWDP		138.48
7	MWD		10.72				

BHA no.:21 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.30	5	DC Steel	6 1/2	178.79
2	Core barrel	6 3/4	29.06	6	Jar		10.54
3	DC Steel	6 1/2	9.41	7	DC Steel	6 1/2	28.25
4	Steel stab	8 3/8	1.48	8	HWDP		138.48

BHA no.:22 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Core bit	8 3/8	.30	5	DC Steel	6 1/2	178.79
2	Core barrel		29.06	6	Jar		10.54
3	DC Steel		9.41	7	DC Steel	6 1/2	28.25
4	Steel stab	8 3/8	1.48	8	HWDP		138.48

BHA no.:23 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Core bit	8 3/8	.30	5	DC Steel	6 1/2	178.79
2	Core barrel		29.06	6	Jar	6 1/2	11.12
3	DC Steel	6 1/2	9.41	7	DC Steel	6 1/2	28.25
4	Steel stab	8 3/8	1.48	8	HWDP		138.48

BHA no.:24 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Core bit	8 3/8	.30	5	DC Steel	6 1/2	178.79
2	Core barrel		29.06	6	Jar	6 1/2	11.12
3	DC Steel	6 1/2	9.42	7	DC Steel	6 1/2	28.25
4	Steel stab	8 3/8	1.48	8	HWDP	5	138.48

((((ooo)	B o t t o m h o l e a s s e m b l y ----- System : Boredata Sandnes	..Date.. 19860627
Norsk Hydro	Well: 30/6-17A	7

BHA no.:25 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	9	Nonmag stab	8 3/8	1.69
2	Nearbit stab	8 3/8	1.54	10	Nonmag collar	6 1/2	8.88
3	Short N.M.D.C.	6 1/2	1.20	11	Nonmag collar	6 1/2	8.83
4	Steel stab	8 1/4	1.50	12	DC Steel	6 1/2	197.71
5	Short N.M.D.C.	6 1/2	1.50	13	Jar		11.12
6	Nonmag collar	6 1/2	8.96	14	DC Steel	6 1/2	28.25
7	Nonmag stab	8 3/8	1.98	15	DC Steel	5	138.48
8	MWD		10.72				

BHA no.:26 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Core bit	8 3/8	.30	5	DC Steel	6 1/2	206.98
2	Core barrel	6 3/4	29.06	6	Jar	6 1/2	11.12
3	DC Steel	6 1/2	9.41	7	DC Steel	6 1/2	28.25
4	Steel stab	8 1/4	1.48	8	HWDP	5	138.48

BHA no.:27 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Core bit	8 3/8	.30	4	Steel stab	8 1/4	1.48
2	Core barrel	6 3/4	29.06	5	DC Steel	6 1/2	47.75
3	DC Steel	6 1/2	9.41				

BHA no.:28 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Core bit	8 3/8	.30	5	DC Steel	6 1/2	216.38
2	Core barrel	6 3/4	29.06	6	Jar	6 1/2	11.12
3	DC Steel	6 1/2	9.41	7	DC Steel	6 1/2	28.25
4	Steel stab	8 1/4	1.48	8	HWDP	5	138.48

BHA no.:29 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	9	Nonmag collar	6 1/2	17.71
2	Nearbit stab	8 3/8	1.54	10	DC Steel	6 1/2	18.93
3	Short N.M.D.C.	6 1/2	1.20	11	Steel stab	8 1/4	1.48
4	Steel stab	8 1/4	1.50	12	DC Steel	6 1/2	216.38
5	Nonmag collar	6 1/2	10.46	13	Jar	6 1/2	11.12
6	Nonmag stab	8 3/8	1.98	14	DC Steel	6 1/2	28.25
7	MWD		10.72	15	HWDP	5	138.48
8	Nonmag stab	8 3/8	11.69				

BHA no.:30 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	8	Steel stab	8 3/8	1.52
2	Nearbit stab	8 3/8	1.54	9	DC Steel	6 1/2	37.63
3	DC Steel	6 1/2	9.41	10	Steel stab	8 1/4	1.50
4	Steel stab	8 1/4	1.48	11	DC Steel	6 1/2	150.52
5	DC Steel	6 1/2	18.81	12	Jar	6 1/2	11.12
6	Steel stab	8 3/8	1.53	13	DC Steel	6 1/2	28.25
7	DC Steel	6 1/2	9.42	14	HWDP	5	138.48

((((ooo) ----- Norsk Hydro	Bottom hole assembly System : Boredata Sandnes Well: 30/6-17A	..Date.. 19860627 7
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BHA no.:31 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	10	DC Steel	6 1/2	9.42
2	Roller Reamer	8 3/8	1.89	11	Steel stab	8 3/8	1.52
3	X-over		.19	12	DC Steel	6 1/2	37.63
4	Roller Reamer	8 3/8	2.03	13	Steel stab	8 1/4	1.50
5	X-over		.66	14	DC Steel	6 1/2	150.52
6	DC Steel	6 1/2	9.41	15	Jar	6 1/2	11.12
7	Steel stab	8 3/8	1.53	16	DC Steel	6 1/2	28.25
8	DC Steel	6 1/2	18.81	17	HWDP	5	138.48
9	Steel stab	8 3/8	1.53				

BHA no.:32 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Other		.26	4	Other		.28
2	Other		.44	5	X-over		.26
3	Other		.53	6	HWDP	5	120.01

BHA no.:33 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	10	DC Steel	6 1/2	9.42
2	Roller Reamer	8 3/8	1.89	11	Steel stab	8 3/8	1.52
3	X-over		.19	12	DC Steel	6 1/2	37.63
4	Roller Reamer	8 3/8	2.03	13	Steel stab	8 1/4	1.50
5	X-over		.66	14	DC Steel	6 1/2	150.52
6	DC Steel	6 1/2	9.41	15	Jar	6 1/2	11.12
7	Steel stab	8 3/8	1.53	16	DC Steel	6 1/2	28.25
8	DC Steel	6 1/2	18.81	17	HWDP	5	138.48
9	Steel stab	8 3/8	1.53				

BHA no.:34 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	DP	3 1/2	198.69	3	HWDP	5	120.06
2	X-over		.60				

BHA no.:35 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	4	Jar	6 1/2	11.12
2	Bit Sub		1.20	5	DC Steel	6 1/2	28.25
3	DC Steel	6 1/2	225.79	6	HWDP	5	138.48

BHA no.:36 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	DP	3 1/2	198.67	3	HWDP	5	120.06
2	X-over	5	.60				

BHA no.:37 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Bit	8 3/8	.25	4	Jar	6 1/2	11.12
2	Bit Sub		1.20	5	DC Steel	6 1/2	28.25
3	DC Steel	6 1/2	225.79	6	HWDP	5	138.48

BHA no.:38 Item:no./name/OD,in/length,m Depth interval MD,m:-

1	Other		.71	2	HWDP	5	120.06
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5.4 Mud Report

Drilled 12 1/4" hole to 2335 m, set 9 5/8" casing at 2320 m and drilled 8 3/8" hole to 2686 m.

12 1/4" hole section

Finished testing of 30/6-17R 2nd February, 1986. Transferred 152 m³ CaCl₂ brine, weight 1.32 rd, to Torbas. Transferred from Torbas 67 m³ KCl-polymer mud and 35 m³ KCl-brine. Displaced the hole to KCl-polymer mud. Ran in the hole with 9 5/8" casing cutter to 1696 m. Cut the 9 5/8" casing and pulled out of the hole. Ran in the hole with spear assembly. Pumped 275 strokes. Gained 2 m³ mud. Circulated out a kick, max gas was 1340 units. The mudweight was down to 1.31 rd on bottoms up. Ran in the hole with a new assembly after having pulled the 9 5/8" casing. Circulated bottoms up, max gas was 320 units. Pulled out of the hole. Pumped a 8 m³ high viscous pill from 1800 m to 1900 m. Set a cement plug from 1750 m to 1550 m. Drilled out. Pumped a second cement plug and kicked off at 1633 m. Drilled and built angle to 1791 m. Pulled out of the hole. Ran in the hole with a new bit and reamed from 1637 m to 1919 m. Drilled to 2076 m. Tested the BOP. Ran in the hole with mudmotor and a 1 1/2° bent sub. Hit a ledge at 2038 m. Reamed through. Ran in the hole, could not pass 2066 m. Pulled out of the hole. Ran in the hole with mudmotor and a 1 1/4" bent sub. Drilled to 2180 m. Pulled out of the hole, had 15 000 lbs overpull. Ran in the hole with a new bit and reamed a new section of hole. Drilled to 2253 m. Diluted the mud due to very sticky clays. Pulled out of the hole.

Ran in the hole and reamed from 2245 m to 2282 m. Drilled to 2335 m. Circulated bottoms up and made a trip to the shoe, max overpull was 50 000 lbs. Circulated the hole clean and pulled out of the hole. Logged. Ran in the hole for a wipertrip. Pulled out of the hole. Ran and cemented the 9 5/8" casing.

8 3/8" hole section

Tested the BOP. Ran in the hole and tagged the cement at 2284 m. Drilled float and shoe collar. Pulled out of the hole. Drilled 3 m of new hole. Displaced the hole to NaCl-mud. Performed a leak off test to 1.70 rd equivalent mud weight. Drilled to 2420 m. Cut core no. 1 from 2420 m to 2430 m. Drilled to 2466 m. Cut core no. 2 from 2466 m to 2493 m, core no. 3 from 2493 m to 2501 m and core no. 4 from 2501 m to 2510 m and pulled out of the hole. Ran in the hole to 2466 m, got a sticky spot. Reamed to 2510 m. Drilled shale and claystone to 2605 m. Drilled to 2636 m. Circulated bottoms up and pulled out of the hole. Cut core no. 5 from 2636 m to 2649 m, core no. 6 from 2649 m to 2651 m and core no. 7 from 2651 m to 2676. Ran logs, the logging tool could not pass 2413 m. Pulled out of the hole. Ran in the hole and drilled to 2686 m. Pumped a 7 m³ viscous pill. Ran in the hole with the logging tool, unable to pass 2411 m. Washed and reamed from 2401 m to TD, circulated and pulled out of the hole. Increased the mudweight to 1.36 rd. Ran in the hole with the logs, still unable to pass 2411 m. Ran in the hole with a roller reamer and washed and reamed tight spots to the bottom. Cleaned the hole with 7 m³ high viscous mud. Completed two logging runs, unable to pass 2457 on the third run. Ran in the hole with a roller reamer and reamed from 2395 m to 2506 m. Ran in the hole to 2631 m and reamed to TD. Ran logs, the logging tool got stuck just below the shoe at 2332.

Ran in the hole and fished for the tool, 100% recovery. Ran in the hole and reamed from 2324 m to 2500 m and from 2631 m to 2686 m. The mudweight was 1.36 rd. Pumped a viscous pill and ran a VSP.

Set 3 open hole cement plugs. Ran in the hole and set plug no. 3 again. Tagged top of the plug at 2227 m. Set a bridge plug at 1800 m and perforated from 1855 m to 1853 m. Set a squeeze packer at 1835 m. P & A.

0754e

sa,LTS/LLa

Daily mud properties										..Date..	
System : Boredata Sandnes										19860613	
Well: 30/6-17A										19860613	
Mud Contractor:										3	
(((										..Date..	
(ooo)										19860613	
Norsk											
Hydro											

Date	Mid depth (m)	Mud (SG)	PV cps	YP mPa	GEL 10 mPa	GEL 100 psi	HP/HT (cc)	Cl- inn/out mg/l	Alkalinity Pm Mf mg/l	Ca++ inn/out mg/l	Oil %	Sol %	H2O %	V.G. meter at 600 rpm	115WF 200 rpm	100 rpm	6 rpm	3 rpm	Mud type
860204	1600	1.50	33	10	1	2	8.6	68000/	0.1 0.2 0.2 80/	80/	15	15	85	86	53	40	26	2	0 CaCl2
860205	1600	1.50	33	10	1	2	8.6	68000/	0.1 0.2 0.2 80/	80/	15	15	85	84	52	39	25	2	0 CaCl
860206	1600	1.50	30	9	1	2	8.5	67000/	0.1 0.2 0.2 80/	80/	15	15	85	78	48	35	23	3	1 CaCl
860207	1540	1.50	27	9	1	2	9.3	68000/	0.1 0.3 0.7 100/	100/	15	15	85	72	45	32	21	4	1 CaCl
860208	1540	1.49	23	9	2	4	9.7	68000/	0.2 2.6 1.3 580/	580/	15	15	85	60	40	31	20	4	1 CaCl
860209	1633	1.48	20	9	2	7	10.2	69000/	0.2 1.9 0.7 800/	800/	16	16	84	58	38	26	17	4	3 CaCl
860210	1791	1.48	14	9	3	10	10.1	69000/	0.1 1.9 0.7 840/	840/	16	16	84	42	30	20	13	4	3 CaCl
860211	1919	1.48	14	9	3	10	9.8	69000/	0.1 1.6 0.6 800/	800/	16	16	84	46	32	21	13	4	4 KCl
860212	2075	1.48	14	9	2	13	9.9	75000/	0.1 1.3 0.5 720/	720/	16	16	84	46	32	22	14	5	3 KCl
860213	2075	1.48	14	9	2	10	9.8	78000/	0.1 1.2 0.5 680/	680/	16	16	84	45	31	20	13	5	3 KCl
860214	2180	1.48	15	9	3	11	9.7	78000/	0.1 0.9 0.5 600/	600/	16	16	84	48	33	21	14	5	3 CaCl
860215	2253	1.48	14	8	3	13	9.7	76000/	0.1 0.9 0.6 600/	600/	17	17	83	48	33	21	14	5	3 CaCl
860216	2300	1.48	10	8	1	12	9.5	76000/	0.1 0.5 0.6 600/	600/	17	17	83	38	28	17	12	6	5 CaCl
860217	2335	1.50	20	10	8	20	9.9	76000/	0.1 0.4 0.3 480/	480/	18	18	82	58	38	28	21	12	10 CaCl
860218	2335	1.50	16	8	4	12	8.9	76000/	0.1 0.4 0.3 480/	480/	18	18	82	48	32	24	17	11	9 CaCl
860219	2335	1.50	15	8	9	18	8.9	76000/	0.1 0.4 0.4 500/	500/	18	18	82	46	31	23	17	13	9 CaCl
860220	2335	1.50	15	8	6	19	8.8	76000/	0.1 0.3 0.4 580/	580/	18	18	82	46	31	23	17	13	9 CaCl
860221	2335	1.48	15	8	13	29	11	76000/	520/	520/	16	16	84	47	32	24	19	13	8 CaCl
860222	2413	1.35	17	10	2	7	10.2	62000/	0.2 0.7 0.6 720/	720/	13	13	87	49	32	22	14	4	3 NaCl
860223	2430	1.35	18	8	2	7	10.2	59000/	0.2 0.6 0.5 720/	720/	13	13	87	51	33	24	14	4	2 NaCl
860224	2466	1.35	16	9	2	9	10.2	60000/	0.2 0.6 0.5 700/	700/	12	12	88	50	34	26	16	6	4 NaCl
860225	2501	1.35	16	8	3	8	10.2	60000/	0.2 0.6 0.5 700/	700/	12	12	88	48	32	25	16	6	4 NaCl
860226	2511	1.35	14	10	3	9	9.8	63000/	0.2 0.6 0.7 640/	640/	12	12	88	47	33	25	16	7	4 NaCl
860227	2605	1.35	16	9	2	8	10.2	62000/	0.3 0.5 0.7 540/	540/	12	12	88	49	33	26	17	7	3 NaCl
860228	2636	1.35	16	9	2	8	10.1	62000/	0.2 0.5 0.7 540/	540/	12	12	88	49	33	26	17	7	3 NaCl
860301	2651	1.35	16	9	2	8	10.1	62000/	0.3 0.5 0.7 540/	540/	12	12	88	49	33	26	17	6	3 NaCl
860302	2676	1.35	16	9	3	9	9.6	62000/	0.2 0.5 0.7 540/	540/	12	12	88						NaCl
860303	2686	1.35	16	9	3	9	9.8	63000/	0.2 0.5 0.7 540/	540/	13	13	88	49	33	26	17	6	3 NaCl
860304	2686	1.36	17	9	3	9	9.5	60000/	0.2 0.5 0.6 550/	550/	13	13	87	51	34	27	18	6	3 NaCl
860305	2686	1.36	17	9	3	9	9.5	60000/	0.2 0.5 0.6 550/	550/	13	13	87	51	34	27	18	6	3 NaCl
860306	2686	1.36	17	9	3	9	9.7	60000/	0.2 0.5 0.7 550/	550/	12	12	88	51	34	27	18	6	3 NaCl
860307	2686	1.36	17	9	3	9	9.6	64000/	0.2 0.5 0.7 540/	540/	12	12	88	50	33	26	17	6	3 NaCl
860308	2686	1.3	17	9	3	9	9.5	64000/	0.2 0.5 0.7 540/	540/	12	12	88	51	34	27	17	6	3 NaCl
860309	2686	1.36	17	8	3	9	10.3	64000/	0.3 0.5 0.7 550/	550/	12	12	88	50	33	27	17	7	3 NaCl
860310	2250	1.37	19	8	2	9	9.5	63000/	0.2 0.5 0.7 400/	400/	14	14	86	52	34	26	16	7	3 NaCl
860311	2227	1.36	19	8	3	9	9.8	63000/	0.3 0.6 0.8 400/	400/	14	14	86	52	34	26	16	7	3 NaCl
860312	1835	1.37	12	8	3	11	10.9	60000/	0.2 1.4 0.8 560/	560/	14	14	86	40	28	21	18	8	5 NaCl
860313	1851	1.37	11	10	4	10	10.9	60000/	0.2 1.6 0.9 480/	480/	14	14	86	42	31	22	18	8	4 NaCl
860314	1851	1.37	11	10									100						NaCl
860315	1851	1.37	11	10									100						NaCl

Daily mud properties														
..Date..										19860613				
System : Boredata Sandnes										19860613				
Well: 30/6-17A										19860613				
Mud Contractor:										19860613				
Hydro										19860613				
Date										19860613				
Mid depth (m)										19860613				
Mud dens. (SG)										19860613				
PV										19860613				
YP										19860613				
GEL										19860613				
Ph										19860613				
100 psi (cc)										19860613				
HP/HT										19860613				
Cl-										19860613				
inn/out										19860613				
mg/l										19860613				
Ca++										19860613				
mg/l										19860613				
Alkalinity										19860613				
Pf										19860613				
Oil Sol										19860613				
%										19860613				
H2O										19860613				
%										19860613				
V.G. meter at 115W										19860613				
rpm										19860613				
Mud type										19860613				
NaCl										19860613				
NaCl										19860613				
NaCl										19860613				
NaCl										19860613				
3										19860613				

M u d c o n s u m p t i o n

..Date..

19860627

(((
(ooo)

System : Boredata Sandnes

Norsk
Hydro

Well: 30/6-17A

Mud company:

13

Hole size: 12.25

BARITE	(Mt)	320
POTASSIUM CL. (KCl)	(Kg)	2010
POTASSIUM CL. (KCl) Brine	(m3)	86
SODIUM BICARBONATE	(Kg)	1282
STARCH	(Kg)	5025
PAC POLYMER REG	(Kg)	691.2
PAC POLYMER SUPER	(Kg)	1517.8
DRILLING DETERGENT	(Drum)	18
LIQUID DEFOAMER	(l)	75
Others:		
MILPOLYMER 302	(KG)	2054
CAUSTIC	(L)	260
WO-21	(KG)	250

Hole size: 8.375

BARITE	(Mt)	138
SODIUM BICARBONATE	(Kg)	1480
STARCH	(Kg)	2663
PAC POLYMER REG	(Kg)	776.7
DRILLING DETERGENT	(Drum)	43
LIQUID DEFOAMER	(l)	175
SODIUM CHLORIDE	(kg)	11637
Others:		
MILPOLYMER 302	(KG)	1370
CAUSTIC	(L)	705

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:      :      C e m e n t   r e p o r t s      ..Date.. :
:  ((( :      -----      19860818 :
: (ooo) :      System : Boredata Sandnes :
: -----:      Well: 30/6-17A :
: Norsk :      Cement contractor: HALLIBURTON :
: Hydro :      10:
=====
:      Casing:SLURRY:SLURRY :Thickening:BHST : Additive : Compo- : Total :
:      Size :VOLUME:DENSITY: Time : : name : sition : used :
:      (in) : (m3) : (SG) : (hrs) : (deg.C): : (l/100kg): (l) :
: -----: -----: -----: -----: -----: -----: -----:
: Lead-9 5/8 : 50: 1.90: 4: 80: Freshwater: 43.098 : 28100 :
: : : : : : CFR-2L : 1.595 : 1040 :
: : : : : : HR-6L : 0.353 : 230 :
: -----: -----: -----: -----: -----: -----: -----:
: -----: -----: -----: -----: -----: -----: -----:

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C e m e n t r e p o r t s

..Date.. :
19860818 :

System : Boredata Sandnes

Well: 30/6-17A

Cement contractor: HALLIBURTON

10:

:Type : of :Job	:Depth: : (m)	:Slurry: :Volume: : (m3)	:Slurry :Density: : (SG)	:Compress. :strenght : (bar/hrs)	:Thickening: : time : (hrs)	: Additive : : name	: Compo- : : sition : : l/100kg:	: Total : : used : : (l)
:Plug	: 1649:	: 10:	: 2.04:	:	:	:Freshwater:	: 33.88	: 5082
:	:	:	:	:	:	:HR-6L	: 0.697	: 105
:Plug	: 2686:	: 6.5:	: 1.95:	:	:	:Freshwater:	: 44.286	: 3720
:	:	:	:	:	:	:CFR-2L	: 1.3095	: 110
:	:	:	:	:	:	:Halad 22A	: 0.714	: 60
:Plug	: 2528:	: 6.5:	: 1.90:	:	:	:Freshwater:	: 44.286	: 3720
:	:	:	:	:	:	:CFR-2L	: 1.3095	: 110
:	:	:	:	:	:	:Halad 22A	: 0.714	: 60
:Plug	: 2370:	: 4.8:	: 1.90:	:	:	:Freshwater:	: 44.444	: 2800
:	:	:	:	:	:	:HR-2L	: 0.3175	: 20
:Plug	: 2333:	: 4.5:	: 1.90:	:	:	:Freshwater:	: 44.804	: 2643
:	:	:	:	:	:	:HR-6L	: 0.3407	: 20
:Squeeze:	:	: 4:	: 1.90:	:	:	:Freshwater:	: 44.231	: 2300
:	:	:	:	:	:	:CFR-2L	: 0.9615	: 50
:Squeeze:	:	: 11:	: 1.90:	:	:	:Seawater	: 43.166	: 6043
:	:	:	:	:	:	:CaCl2	: 4.1727	: 584
:Plug	: 385:	:	: 1.90:	:	:	:Seawater	: 43.438	: 4170
:	:	:	:	:	:	:CaCl2	: 4.1667	: 400

5. TOTAL COST REPORT

Period from	to	Total operation
04.02.86 21:00 hrs	13.03.86 06:00 hrs	days: 36.396

Final estimated
cost (1000 NOK)

Site survey	0	
Resurvey	0	
Location clean up	0	
Positioning	0	
Sub Total		0
Rig costs	18,625	
Drilling tools, equipm. & services	2,330	
Wellheads	270	
Casing & casing services	1,300	
Cement & cementing services	840	
Mud & mud services	1,685	
Wire line logging	2,080	
Test tools, equipm. & services	165	
Norsk Hydro offshore personnel	1,620	
Other costs	1,440	
Sub Total		30,355
Supply vessels	2,930	
Standby vessels	1,500	
Helicopter costs	1,000	
Fixed wing transport	0	
Other transport & dir. freight	100	
Sub Total		5,530

0754e

sa,LTS/LLa

Total cost report

Period from	to	Total operation
04.02.86 21:00 hrs	13.03.86 06:00 hrs	days: 36.396

Final estimated
cost (1000 NOK)

Warehouse costs	1,660
Drill.dept. adm. & facilities	1,370

Sub Total	3,030
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Onshore drilling supervision	900
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Sub Total	900
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Onshore geology & reservoir	790
Lab. studies geol. & reservoir	395

Sub Total	1,185
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TOTAL	41,000
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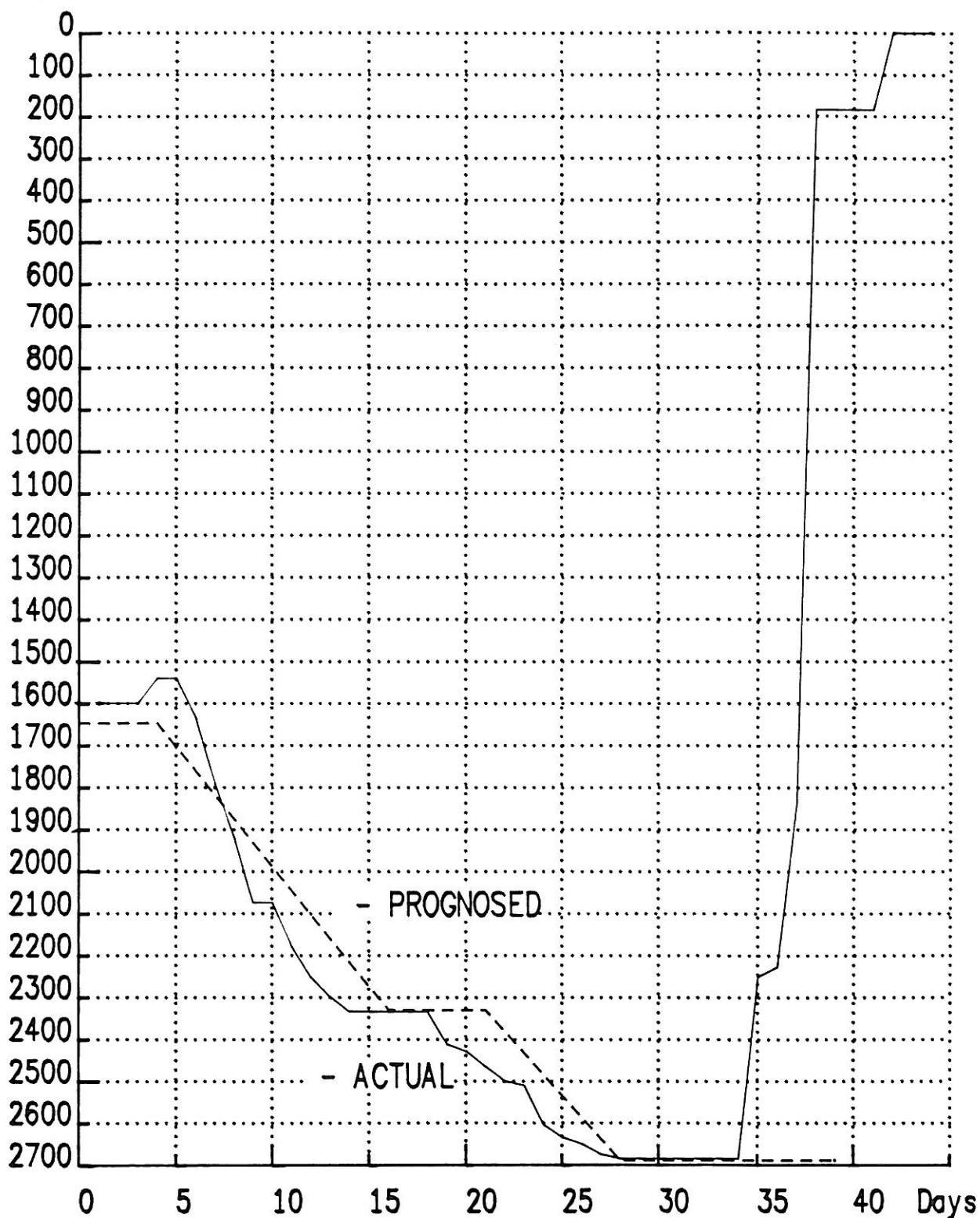
0754e

sa,LTS/LLa

6. Drilling equipment failures and problems

<u>Date</u>	<u>Equipment</u>	<u>Failure</u>
18.02.86	Drill line guide	Repaired and replaced the drill line guide.
20.02.86	BOP test plug	Changed O-ring due to a leakage.
21.02.86	6 1/2" Drill collar	Box on the 6 1/2" drill collar was splitted (20 cm crack).
21.02.86	Dolly	Repaired shaft cower on dolly.
28.02.86	Wear bushing running tool	Changed the running tool.
09.03.86	Retract hose bundles	The retract hose bundles hung up in the derrick beams. Tied them up.

Measured
depth (m)



Norsk Hydro
Drilling Department

Date:19860826

PROGNOSSED AND ACTUAL
DRILLING CURVES

WELL: 30/6-17A

Fig.
B-4

LTS