



# Final Well Report

**Well: 6305/8-1**

**PL 208/ 209/ 250**



Hydro

Statoil

Shell

Esso

BP-Amoco



**NORSK HYDRO**  
**FINAL WELL REPORT**  
**WELL 6305/8-1**

**May 2001**

**LIST OF CONTENTS**

LIST OF CONTENTS, WELL 6305/8-1

INTRODUCTION:

Preface	page I
Location map	page II
Summary of well data	page III

SECTION A:	GEOLOGY
SECTION B:	OPERATIONS
SECTION C:	ATTACHMENTS

## **LIST OF CONTENTS**

### PREFACE

License PL 250 was awarded to Norske Shell, Norsk Hydro, Statoil, and Esso in 1999 with Norske Shell as the licence operator. The well was a joint appraisal well on the Ormen Lange field between licences 208/209 and 250.

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

Licence 250: Norsk Hydro (17,96%), Statoil (46,77%), Norske Shell (17,2%), Esso (7,18%), BP (10,89%)

The well was drilled by Norsk Hydro ASA., on behalf of the licenses, during 2000 (see Location Map, page 3).

All depths in this report are mMD RKB unless otherwise stated



**NORSK** FINAL WELL REPORT  
**HYDRO** WELL 6305/8-1

No. :  
Rev. :  
Date : 20-09-2000  
Page :5

**SUMMARY OF WELL DATA**

<b>SUMMARY OF WELL DATA</b>	
LOCATION:	63 28' 34.84"N 05 24' 14.59" E 7 041 085.0 mN 619 768.0mE ED 50, UTM Zone 31, CM 03°E
OPERATOR: RIG:	Norsk Hydro a.s on behalf of Norske Shell Scarabeo 5
CONTRACTOR:	Saipem
KB ELEVATION (to MSL):	25 m
WATER DEPTH (MSL):	837 m
START OF OPERATIONS:	10.07.2000
WELL SPUDDED:	13.07.2000
REACHED TD ON:	17.8.2000
COMPLETED:	8.9.2000
STATUS:	Oil & Gas discovery
FORMATION AT TD:	Kyrre fm. (Upper Cretaceous)
TD DRILLER (mRKB):	3175m
TD LOGGER (mRKB):	3172m
DRILLING DEPTHS:	36" to 942 m 26" to 1550m 12 1/4" to 2860m 8 1/2" to 3175m
CASING DEPTHS:	30" to 941m 20" to 1544 m 9 5/8" to 2852m

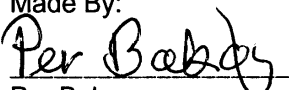
NORSK FINAL WELL REPORT  
HYDRO WELL 6305/8-1

No. :  
Rev. :  
Date : 20-09-2000

## SECTION A

## GEOLOGY

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**LIST OF CONTENTS SECTION A**

	PAGE
1 OBJECTIVES .....	9
2 RESULTS .....	10
3 BIOSTRATIGRAPHY .....	10
4 LITHOSTRATIGRAPHY .....	13
4.1 Nordland Group (862-1745m) .....	13
4.2 Hordaland Group (1745-2508m) .....	14
4.3 Rogaland Group (2508-2976m) .....	15
4.4 Shetland Group ( 2976-3175m) .....	18
5 HYDROCARBON SHOWS .....	20
5.1 Gas Record .....	20
5.2 Oil stain and fluorescence .....	22
6 CORING .....	23
6.1 Conventional cores .....	23
6.2 Sidewall cores .....	23
7 LOGGING .....	24
7.1 Wireline logs .....	24
7.2 MWD logs .....	25
7.3 Bottom hole temperatures from wireline logs .....	25
8 PETROPHYSICAL RESULTS .....	27
8.1 Formation Fluid Contacts .....	27
8.2 Core and log porosity .....	27
8.3 Water saturation calculation .....	28
8.4 Petrophysical averages .....	28
8.5 Pore pressure evaluation .....	31
9 GEOPHYSICAL RESULTS .....	34
10 POST SITE SURVEY REPORT .....	36
11 STANDARD AND SPECIAL STUDIES .....	40

**LIST OF CONTENTS SECTION A**

SECTION A: LIST OF FIGURES, TABLES AND APPENDICES

FIGURES PAGE

3.1	Chrono- and lithostratigraphy	12
5.1	Gas summary	22
8.1	CPI/MDT static pressure plot	31
8.2	Pore Pressure summary	34
9.1	Time versus depth plot	36

TABLES

3.1	Chronostratigraphy	11
5.1.	Shows summary	22
6.1	Conventional cores	23
6.2	Sidewall cores	23
7.1	Wireline logs	24
7.2	Bottom hole temperatures from logs	25
8.1	Net reservoir averages cut-offs	28
8.2	Net pay averages	29
9.1	Geophysical summary	34

APPENDICES

I	Core descriptions
II	Sidewall core descriptions
III	Well Summary
	Geological Well Summary
	MDT Results

## 1 OBJECTIVES

Well 6305/8-1 was an appraisal well which was committed to test the reservoir potential of the Tertiary sequence in the 250 license. The main target was the Egga sandstone in the Våle Formation.

The objectives of the well was to:

Further appraise the Tertiary / Cretaceous Ormen Lange gas accumulation and provide information and data required for development planning:

- } Prove a common Free Water Level to the North of the Saddle Area
- } Provide information about variation and trends in reservoir quality
- } Provide information about the chemical composition of the reservoir fluids, in particular the water
- } Improve biostratigraphic control
- } Test fluid flow in the reservoir, particularly in the water zone
- } Test vertical pressure communication
- } Secure an optimal seismic tie to the subsurface
- } Provide input to improve depth conversion
- } Provide information on the lateral extent and thickness of the residual gas zone observed in the 6305/7-1 well
- } Gather critical information on drilling hazards in Brygge Formation ooze sediments
- } Gather critical information on the risk of regional scale instability of ooze sediments in response to gas production.
- } Test the hydrocarbon potential, and type of hydrocarbons in an undrilled Miocene Channel feature, which represents a secondary target
- } Test the seal of the Miocene Channel prospect
- } Test potential of Miocene Channel for water disposal

## 2 RESULTS

The well was spudded 13th of July 2000 and reached a total depth of 3175 m on the 17 of August 2000 in the Cretaceous (Campanian) Kyrre Fm of the Shetland Group. The well was permanent plugged and abandoned on the 8th of September 2000.

The main results of the well were as follows:

- No potential reservoir sandstone was encountered in the Miocene channel sequence, penetrated at 1653 mMD.
- The Egga reservoir sandstone was penetrated approx. 20 m higher than prognosed at 2898m. A gas column of approx. 20 m was penetrated in the well with a thin (2-5m) oil leg.
- The gas/oil/Water contact was approx. 20m higher than prognosed (2996,5mMSL), implying a more complex fluid/pressure system within the Ormen Lange field.
- The upper part of Egga Member, from 2900 mMD to 2935 mMD, consist of a loose sand interbedded with thin claystone beds. The lower part of the Egga reservoir unit consisted of a more massive sand sequence down to approx. 2950m.
- The Jorsalfare Formation consists of heterolitic sediments (interbedded sands and mudstones), with a thickening and upwards coarsening trend.
- Good quality water, oil and gas samples were collected in the reservoir. Analysis of the water shows a diagenetically altered fresh water system. The gas analysis seems to fit well with the gas tested in well 6305/7-1.
- The entire reservoir in the well was cored. 5 cores were cut through the Egga and Jorsalfare sandstones. from 2895m to 2989m. Core recovery was excellent (92 - 100%, se Table 6.1 in this report).
- No problems were experienced drilling through the ooze sequence.
- Formation pressure and fracture gradient was according to pressure prognosis.
- Details of the petrophysical evaluations can be found in section 8 of this report.

## 3 BIOSTRATIGRAPHY

The biostratigraphical evaluation report of well 6305/8-1 was carried out by Robertson Research.

The analysis were based on lithology, micropaleontology and palynology.

The analysis for the routine study were performed from ditch cuttings, sidewall cores and core pieces covering the interval 1550 m - 3175 m RBK. Also 5 samples collected with the ROV at seabed with the ROV was analysed for biostratigraphy. The biostratigraphic results are presented in Table 3.1.

**STRATIGRAPHY**

Depth	Chronostratigraphy	
	Period/Epoch	Age
1550m	Late Miocene	Messinian
1600m		Tortonian
1650m		Serravallian
1700m	Middle Miocene	Langhian
1750m	Late Oligocene	Chattian
1800m		
1850m	Early Oligocene	Rupelian
1900m		
1950m		
2000m		
2050m		
2100m		
2150m	Late Eocene - Middle Eocene	Priabonian - Bartonian
2200m		
2250m	Middle Eocene	Lutetian
2300m		
2350m		
2400m	Early Eocene	Ypresian
2450m		
2500m		
2550m		
2600m		
2650m		
2700m	Late Paleocene	Thanetian
2750m		
2800m		
2850m		Selandian
2900m	Early Paleocene	Danian
2950m		
3000m	Late Cretaceous	late Maastrichtian
3050m		early Maastrichtian
3100m		late Campanian - ?late Santonian
3150m		late Santonian

Table 3.1 Chronostratigraphy

STRATIGRAPHY

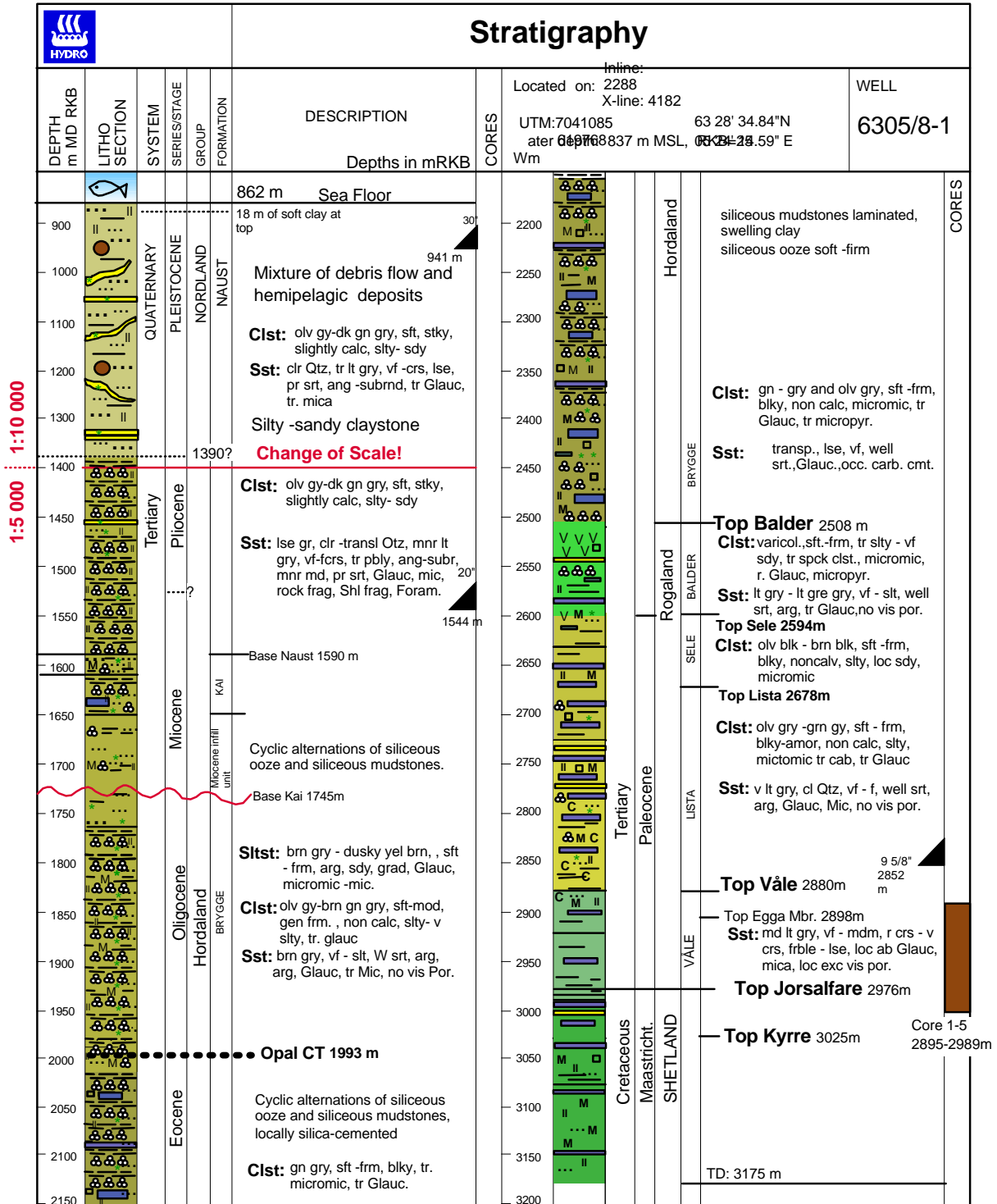


Figure 3.1: Chrono- and lithostratigraphy

**STRATIGRAPHY**

4 LITHOSTRATIGRAPHY

All depths are in mMD RKB (RKB is 25 m). The well was drilled close to vertical with a difference of only 16 cm between mMD and mTVD.

This summary is compiled predominantly from ditch cuttings descriptions, cores and side wall cores.

A total of 5 conventional cores were cut in the interval from 2895m to 2988,9m in the well (see Table 6.1). A total of 45 mechanical side wall cores were cut in this well, with 35 recovered (see Table 6.2).

Wireline and MWD logs were used to aid lithological interpretation and the placement of formation boundaries.

The well was drilled with returns to seabed from the sea floor at 862 m to 1550m before setting 20" casing at 1544m. Seabed sampling in the 26" section was attempted by using the ROV and purpose built sampling containers supplied by Oceaneering. A total of 6 samples were successfully collected at the 30" conductor, before a leakage in the ROV 's 7-function arm caused an abandonment of the seabed sampling. Lithology interpretation through this interval is primarily based on MWD logs and drilling parameters.

The first drill cuttings samples were taken at 1550m

4.1 Nordland Group (862m - 1745m)

**Age:** Undifferentiated Quaternary - Middle Miocene

**Naust Formation (862-1590m)**

**Age:** Undifferentiated Quaternary to Late Miocene

This interval comprises claystone and sandstone.

Claystone: medium grey - medium light grey, some dark green grey at top of interval, soft, sticky, non - slightly calcareous, silty - sandy

Sandstone: loose grains, clear - translucent to pink translucent quartz, minor light grey, predominantly very fine, occasionally fine - rare very coarse quartz grains, subangular - subrounded, minor rounded, well sorted, trace - locally abundant

**STRATIGRAPHY**

glaucanite, slightly micaceous, rare shell and fossil fragments

**Kai Formation (1590 - 1745m)**

The upper part of this interval (1590 -1653) is dominated by glauconitic claystone. The lower part of the interval (1653 -1745) comprises alternations between brown claystones and siliceous oozes (diatomites). This part corresponds to the secondary prospect "Miocene Channel" and showed an increased gas content relative to the rest of this sequence.

The ooze can not be identified without scanning electron microprobe (SEM) but is revealed indirectly by the response of the density log. The grains (diatom fragments and mineral grains) are silt to sand size and both the grain size and the portion of the ooze increase towards the base of the interval, which represents an erosional (?) unconformity (Middle Miocene on late Oligocene) and is lined by a thin calcite cemented zone.

Due to the lack of sandstone the term "channel" does not appear to be justified for the feature. However based on the characteristic log and seismic response as well as biostratigraphic evidence the unit is designated "the Miocene Infill Unit". The presence of primary reworked Cretaceous and Upper Jurassic microfossils in combination with the basal hiatus suggests that the Miocene feature represents the infill of an erosional topography rather than being purely structural in origin.

Claystone/Siltstone (ooze): silty olive grey - dark green grey, homogeneous soft, slightly calcareous, laminated sandy, locally very sandy grading argillaceous sandstone, glauconitised, micromicaceous -micaceous

Ooze/Sandstone: clear- translucent quartz, rare greenish quartz, rare rose quartz, very fine to fine grain size, occasional medium, subrounded to subangular, occasionally angular, subspherical, moderately sorted, loose, silty matrix, abundant glauconite, mica and traces of pyrite.

**Age:** Middle Miocene

4.2 Hordaland Group (1745m - 2508m)

**Age:** Early Eocene to Late Oligocene

**Brygge Formation (1745 - 2508m)**

1745m - 1993m: This interval comprises claystones /ooze alternations with traces of sandstone and carbonate cemented intervals.



**STRATIGRAPHY**

Ooze (Siltstone)/Claystone: brown grey - dark yellow brown, soft - friable, subblocky, non-calcareous to slightly calcareous, argillaceous to locally claystone, sandy micromicaceous, glauconite common, pyrite rare.

Carbonate cemented intervals: light brown gray, firm-hard, friable to brittle, silty, very fine sandy, glauconite, trace micromicaceous, microcrystalline.

Sand/Sandstone: predominantly clear translucent quartz, traces of rose and greenish quartz, very fine to fine grain size, angular to subrounded, subspherical, moderately sorted, loose

1993m-2508m This interval comprises the same components as the overlying one but generally more fine grained (higher content of claystone) and more consolidated (opal CT). It also shows a higher frequency of carbonate cemented intervals

Claystone/Ooze brown grey - olive black, firm - friable, locally soft, subblocky deformation, non-calcareous to locally slightly calcareous, very silty, grading into siltstone (diatomaceous ooze), traces of very fine sand, trace micromicaceous, glauconite and pyrite rare.

carbonate cemented intervals: pale brown, pale - dark yellow brown, hard, brittle, platy-blocky, partly argillaceous, grading into claystone, partly dolomitic, partly crypto - microcrystalline calcite, partly coarse crystalline calcite.

**Age:** Early Eocene to Late Oligocene

4.3 Rogaland Group (2508 - 2976m)

The Rogaland Group consists of the Balder, Lista, Sele, Våle Formations and the Egga Member.

**Age:** Early Palaeocene to Early Eocene

**Balder Formation (2508 - 2594m)**

This interval comprises tuffaceous claystone

## STRATIGRAPHY

Claystone: varicoloured, predominantly grey green - olive grey, occasionally light grey, occasionally moderately green, blocky, firm, tuffaceous, silty when olive grey, predominantly non-calcareous.

Age: Early Eocene

### Sele Formation (2594-2678m)

This interval comprises claystone with limestone stringers and tuff intercalations.

Claystone: varicoloured, predominantly olive grey - brown black, minor dark green grey, non - moderately calcareous, slightly to moderately silty, rare micromicaceous, locally rare glauconite, firm - moderately hard, occasionally soft, friable, deformation subblocky.

Tuff: medium dark grey, speckled black and light grey, moderately hard - friable, subblocky non-calcareous, slaty texture, micropyrrite

Carbonate cemented intervals: light brown grey, locally dusky, yellow brown, friable - soft, locally hard, argillaceous, cryptocrystalline - locally microcrystalline, locally traces of coarse crystalline calcite.

Age: Late Palaeocene - earliest Eocene

### Lista Formation (2678-2880m)

This interval comprises claystone with carbonate cemented horizons.

Claystone: varicoloured, dark green grey, brown grey-olive grey, medium grey, minor yellow brown, dusky green, dusky yellow brown, else as in Sele Formation.

carbonate cemented horizons: light grey, moderately hard, brittle, platy, slightly argillaceous, microcrystalline.

Age: Late Palaeocene

### Våle Formation (2880-2898m)

This interval comprises claystone and occasional thin sandstone beds, often calcareous. The Egga Member within the Våle Formation is described separately.

## STRATIGRAPHY

Claystone: predominantly silty, occasionally arenitic, medium grey - dark grey, blocky, firm, non-calcareous - calcareous, marly towards the base of the interval.

Calcareous sandstone: olive grey, very fine to fine (fining upwards), angular - subangular, moderately to well sorted, loose - hard, predominantly friable, predominantly calcareous, slightly silty, argillaceous, glauconite and mica.

Age: Early Palaeocene

### **Egga Member (2898-2976m)**

The interval is dominated by sandstone but contains additionally siltstone, claystone and limestone stringers, and rare dolomite. Below ca. 2959m there is a conspicuous facies of black mudstones with thin intercalations of silty and/or sandy material. This interval, which corresponds to similar intervals in the other appraisal wells of the Ormen Lange Field, has recently be assigned the informal stratigraphic term "Pinstriped Black Shale Member".

Sandstone: olive grey - green grey,, trace rose quartz, very fine - medium, rare coarse - very coarse, predominantly fine - medium, subangular - subrounded, moderately - well sorted, very loose -friable, occasionally firm - hard, generally non - calcareous, locally slightly - in part strongly calcareous cemented beds, common glauconite, trace - locally abundant mica, in part weak micaceous laminae, generally good visible porosity.

Claystone: predominantly medium grey - dark green grey, dark grey - medium dark grey, olive black - dark black below 2959m, firm, generally non calcareous, micromicaceous, subblocky, silty, trace glauconite, occasionally abundant micropyrite nodules, occasionally inclusions of sandstone

Age: Early Palaeocene

#### 4.4 Shetland Group 2780-3175m

The Shetland Group consists of the Jorsalfare and Kyrre Formation.

Age: late Santonian to late Maastrichtian

**STRATIGRAPHY**

**Jorsalfare Formation (2976-3025m)**

The interval consist of calcareous sandstone, siltstone, claystone and some minor limestone stringers.

**Sandstone:** medium light grey - light grey, light olive grey - green grey, clear translucent quartz, very fine - coarse, predominantly fine - medium, occasionally very coarse, subangular - subrounded, moderately - poorly sorted, friable - firm, occasionally firm - hard, predominantly loose quartz grains, slightly - very calcareous cemented, trace glauconite, rare carbonaceous material, glauconite, mica, in part weak micaceous laminae, occasionally slightly argillaceous, generally fair visible porosity, only trace of visible porosity closer the base.

**Claystone:** light olive grey-green grey - olive black, loose - hard, brittle, subfissile - fissile, subblocky, in part calcareous cemented, slightly silty becoming very silty and locally sandy, micromicaceous, trace glauconite, micropyrite, occasionally grading to siltstone, in part inclusions of sandstone

**Limestone:** white, subblocky, firm - hard, occasionally very fine sandy, may grade into calcareous sandstone, blocky, locally argillaceous, predominantly microcrystalline.

**Age:** early to late Maastrichtian

**Kyrre Formation (3005-3175m, TD)**

This interval comprises claystones with lenses of sandstones, siltstones, and occasional stringers of limestones and dolomites.

**Claystone:** generally light olive grey - green grey, medium dark grey - olive black, occasionally very fine sandy, silty, locally grading into argillaceous siltstone, firm - hard, subfissile, predominantly brittle, amorphous - blocky, non calcareous - calcareous, micromicaceous, micropyrite, slightly glauconitic, rare carbonaceous material, abundant micropyrite at 3150m, close to T.D.

**Siltstone:** moderately red shaded brown, very fine black spots, amorphous, soft, occasionally very fine sandy, argillaceous to very argillaceous, grading into claystone, non calcareous to slightly calcareous, micromicaceous.

**STRATIGRAPHY**

- Sandstone:** light grey - medium light grey, clear translucent quartz, very fine - coarse, predominantly fine, subangular - subrounded, moderately to well sorted, predominantly loose, generally carbonate cemented, micropyrrite, glauconite, mica, rare carbonaceous material, fair - traces of visible porosity.
- Limestone:** white, subblocky, firm - hard, occasionally very fine sandy, locally grading into calcareous sandstone, glauconite, occasionally argillaceous, predominantly microcrystalline.
- Dolomite :** dark yellowish brown, subblocky - subplaty, hard, microcrystalline.
- Age:** late Santonian to early Maastrichtian

**STRATIGRAPHY**

5 HYDROCARBON SHOWS

The evaluation of hydrocarbon shows at the wellsite was carried out in a conventional manner. A standard (Geoservices) hydrocarbon total gas detector system together with a gas chromatograph for automatic and continuous gas analysis, recorded as ppm by volume of C1 through nC4, were operational below 1544 m down to the TD of the well.

Hydrocarbon shows on ditch cuttings, cores and sidewall cores were evaluated according to procedures described in Norsk Hydro's "Wellsite Geologist's Manual".

The background gas during drilling was generally low (<2%). In the top of the Brygge formation in the "Miocene channel" interval from 1653 to 1755 the background gas raised to a level between 4-8%, mostly methane. (Fig. 5.1) This is probably an explanation for the seismic anomaly observed in this sequence.

The background gas dropped to close to zero before entering into the reservoir. In the reservoir no continuous gas curve was obtained due to coring and tripping out of hole. For the upper gas zone a background gas of 2-3% was observed, mainly methane.

Only weak gas shows was observed in the cores in the Egga reservoir. The shows was described as weak odour, no stain, no fluorescence, slow streaming weak pale yellow-bluish white cut, weak pale yellow white residue.

In the interval 2922 to 2926m, the following oil shows were described; Fair odour, no stain, 70% moderate bluish white fluorescence, fast streaming weak-moderate bluish white cut giving a yellow white residue.

A general drop in background gas to less than 1% was observed when drilling in the water zone in the Egga, followed by a gradually increase in background gas to 2-3 % when reaching TD.

5.1 Gas Record

863 - 1544m:

This interval was drilled with returns to sea bed.

1544 - 3053 m:

The gas summary for the well is presented in the Figure 5.1 on the next page.

STRATIGRAPHY

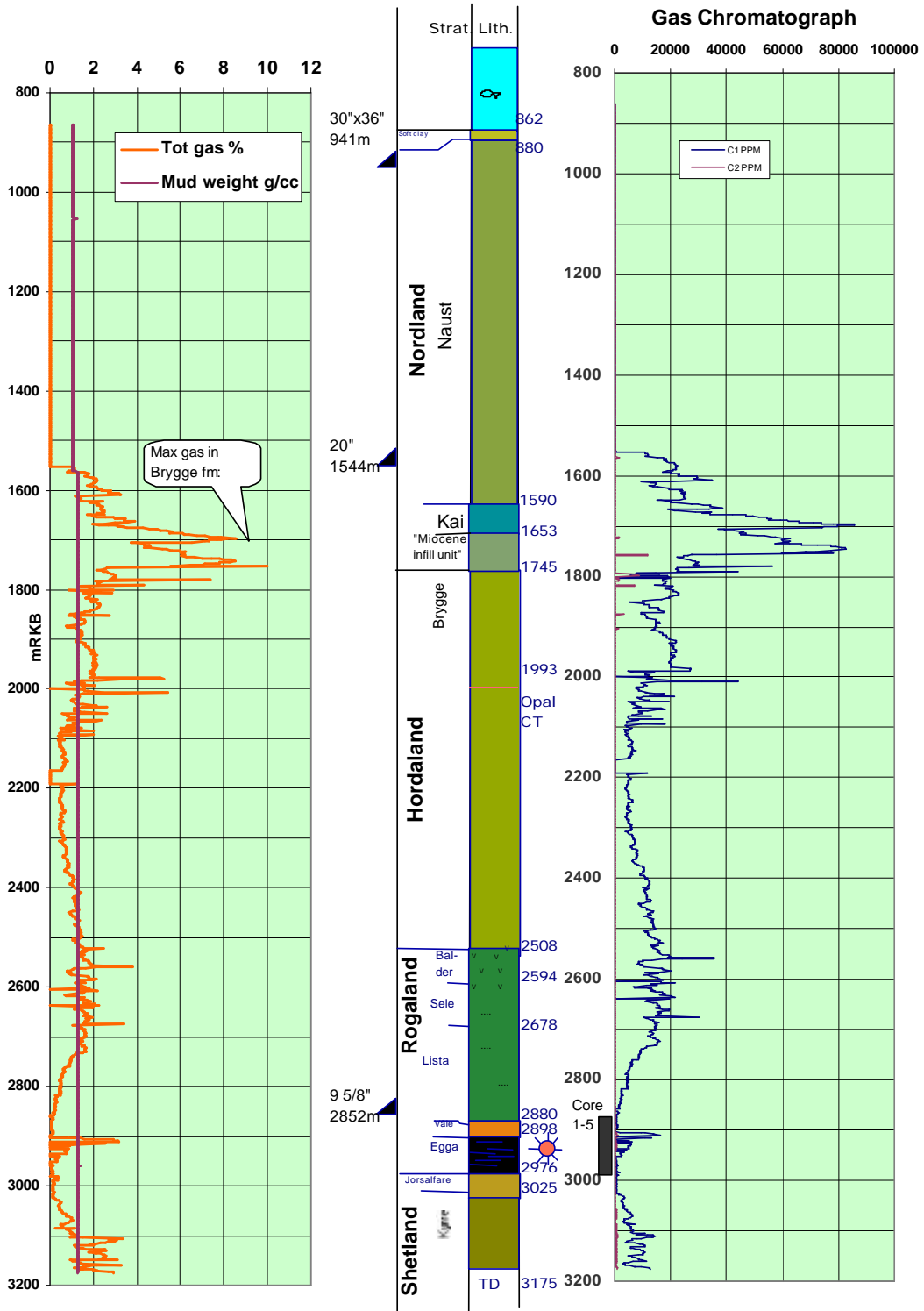


Fig. 5.1 Gas summary Well 6305/8-1

**STRATIGRAPHY**

Oil stain and fluorescence

A summary of the observed shows is given in Table 5.1 below:

<b>INTERVAL (mRKB)</b>	<b>SOURCE</b>	<b>LITHOLOGY</b>	<b>SHOWS DESCRIPTION</b>
2900- 2922m	Core	Sandstone	Weak Petroliferous odour, no oil stain, no Fluorescence, slowly streaming weak pale yellow blue-white cut, weak pale yellow white residue
2922- 2925m	Core	Sandstone	Fair HC odour, no stain, moderate bluish white fluorescence, fast streaming flash very weak bluish white cut, bright yellow-bluish white residue.
2925- 2937m	Core	Sandstone	Weak-fair odour, no stain, weak-moderate bluish white fluorescence, slowly streaming cloudy weak bluish white cut, moderate yellow-bluish white residue
2937- 2976	Core	Sandstone/ Siltstone	No odour, no oil stain, no direct fluorescence, no fluorescent cut, no visible cut, no fluorescent residue, trace moderate reddish/orange visible residue
2975 2979m	Core	Sandstone/ Siltstone	No odour, no oil stain, no direct fluorescence, no fluorescent cut, no visible cut, Trace dull yellow fluorescence residue, rare trace moderate reddish-orange visible residue

Table 5.1. Shows summary



**CORING**

6 CORING

6.1 Conventional cores

A total of 6 cores were cut in Våle Formation. A summary of the cores is presented in the Table 6.1 below and the core descriptions can be found in Appendix I.

No	C: Cut(m) R: Recovery(m)	Rec. %	Lithology	Formations
1	C:2895-2915,5 R:2895-2914,5	95.1	Shale/Sandstone	Våle
2	C:2915,5-2943,3 R:2915,5-2943,3	100	Sandstone	Våle
3	C:2943,0-2959,1 R:2943,0-2959,1	100	Sandstone	Våle
4	C:2959,1-2981,0 R:2959,1-2980,2	96.6	Sandstone/Siltstone	Våle
5	C:2981,0-2989,0 R:2981,0-2987,6	83.1	Sandstone/Siltstone/ Shale	Våle/Jorsalfare

Table 6.1: Conventional cores

6.2 Sidewall cores

Mechanical sidewall cores were taken from 1732 m to 3030 m. Details of recovery are given in Table 6.2 below.

Descriptions of the sidewall cores can be found in Appendix II, and gross lithology is reported on the Completion Log.

Run	Requested	Recovered	Rec.%
1A	28	18	64
3B	27	27	100

Table 6.2: Sidewall cores

**LOGGING**

7 LOGGING

7.1 Wireline logs

The following table is a summary of wireline logs run in the well and shows log type, date run, logged intervals and run number for each log.

<b>Logs</b>	<b>Date</b>	<b>Logged interval (mRKB)</b>	<b>Run</b>
PEX/DSI	25.07.00	1848-862(DSI in csg.)	1A
VSP	25.07.00	1770-900	1A
MSCT/GR	25.07.00	1820-1562	1A
PEX/HALS/TLD/HGNS	9.8.00	2978-2852	2B
MDT pressures - misrun due to pump/probe plugging	9.8.00	2948-2933	2A
MDT sampling	10.8.00	2974-2898	2B
MDT sampling-Egga water	11.8.00	2945-2942	2C
MDT sampling misrun due to pump failures	12.8.00	2908-2908	2D
MDT Egga Gas & Oil sampling	13.8.00	2922-2908	2E
DSI(PEX misrun)	18.8.00	3172-1750	3B
PEX/HALS/TLD/HGNS	18.8.00	3170-2852	3C
MDT pressures (tool failure - sampling aborted)	19.8.00	3010-2917	3F
MDT Josalfare water & Egga residual zone sampling	19.8.00	2980-2926	3G
CMR + ECS - HNGS (HNGS & CMR+ failure)	21.8.00	3050-2852	3A
MSCT/GR	21.8.00	3030-2860	3B
VSP	21.8.00	3172-2040	3B
FMI-HRLA-HNGS	22.8.00	3156-2852	3A
MDT Egga low shock gas/oil sampling - 109.5 hr fishing operation	23.8.00	2923-2919	3H
CMR-200 (re-run due to failed CMR+)	29.8.00	3022-2900	3A

Table 7.1: Wireline logs

**LOGGING**

7.2 MWD logs

A MWD service Baker Hughes/Pathfinder yielding gamma ray, resistivity and survey measurements was run in the following section:

914.5 - 3053m

MWD neutron porosity and density was also recorded in the 12 1/4" section.

Detailed MWD results can be found in the report "End of Well Report, MWD, for Norsk Hydro, Well 6305/8-1."

7.3 Bottom hole temperatures from wireline logs

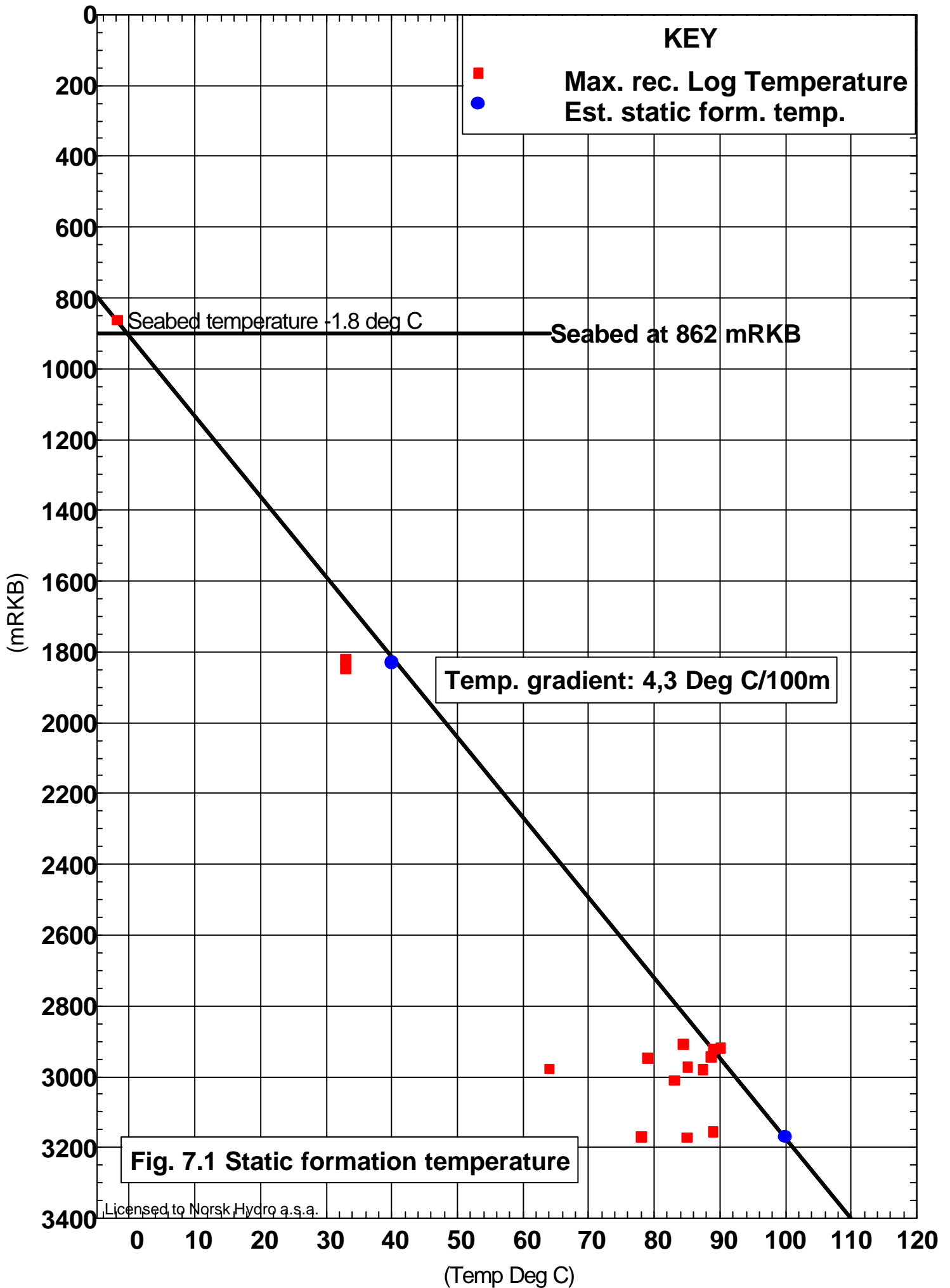
The table below gives a summary of the bottom hole temperatures measured from wireline logs.

Log suite	Run	Depth (mRKB)	Temp ° C	Time since circ. (hrs.)	Circ. time (hrs.)
PEX-DSI	1A	1848	33	11:10	2:20
MSCT	1A	1 820	33	25:10	2:20
PEX	2B	2 978	64	14:30	00:30
MDT (plugging)	2A	2 948	79	20:30	00:30
MDT pressures	2B	2 974	85.1	43:00	00:30
MDT water sampling	2C	2 945	88.7	81:00	00:30
MDT misrun	2D	2908	84.4	102:30	00:30
MDT gas/oil sampling	2E	2 922	89	133:00	00:30
DSI	3B	3172	85	14:00	14:00
PEX	3C	3 170	78	24:00	14:00
MDT pressures	3F	3 010	83.1	31:00	14:00
MDT water sampling	3G	2 980	87.4	65:00	14:00
FMI-HRLA-HNGS	3A	3 156	89	116:30	14:00
MDT gas/oil sampling	3H	2 923	90.1	160:00	2:00

Table 7.2: Bottom hole temperatures from logs

The static formation temperature is summarised in fig. 7.1

# Well 6305/8-1 Formation Temperature



**END OF WELL REPORT**

8 PETROPHYSICAL RESULTS

8.1 Formation Fluid Contacts

In the gas zone the gradient from the formation pressure and the PVT gradient are in agreement and in the further evaluation the PVT gradient is used.

Residual oil has been found from retort core analysis from 2921.8m MD KB (2922.25m core depth) down to the last sample taken at 2927.9m MD KB (2928.35m core depth).

The fluorescence observed in cores starts within a good permeable sand at 2921.5m MD KB (2921.5m core depth). Based on the core data and the wire line logs the gas-oil contact is determined at **2996.5m MSL** (2921.5m MD KB).

The PVT analysis from the MDT sample taken at 2922m MD KB indicates 2 phases (oil and gas) and the measured oil density is 0.064 bar/m.

The oil gradient of 0.064 (figure 8.1) has been drawn from the gas-oil contact at 2996.5m MSL. The oil gradient and the water gradient intersect at **2898.5m MSL**, which is the FWL determined for well 6305/8-1, see figure 8.1. and the resistivity logs decrease rapidly at the same depth. The change in resistivity values occurs in a homogenous and high permeable interval.

Shale Calculation

Shale volumes have been calculated using shale volumes derived from gamma ray and density/neutron cross plot techniques respectively. The minimum calculated shale volumes from the two methods were used as the final values.

Parameters were chosen from histograms and cross plots. Sand and shale intervals were qualitatively verified using core photographs, core description

8.2 Core and Log Porosity

Conventional core porosity were measured every 25 cm. where possible. These were helium porosities at ambient conditions. The core porosities were then corrected for overburden effects by a correction factor of 0.96 to estimate in situ porosity.

The porosity has been calculated based on the density log measurements. The matrix density has been estimated from histograms of core grain density. The pseudo fluid density has been estimated by regression analysis of measured bulk density versus in situ estimated corrected core porosity. A forced fit was applied through the zero porosity line and the matrix density from the grain density histograms

### 8.3 Water Saturation Calculation

The Indonesia equation was used to calculate the water saturation from logs . Electrical parameters for the saturation equation were determined from laboratory analysis of core samples from well 6305/7-1. The formation water resistivity is calculated by using picket plots from the water zone

### 8.4 Petrophysical averages

The net sand intervals were determined by applying a shale volume fraction cut off of 0.40 and cemented intervals were removed by a density and neutron cut off. The choice of shale cut off has been quantitatively verified by comparing calculated net sand intervals with core photographs, core description and conventional core analysis.

The net sand average petrophysical parameters are summarized in the table below

Zone	Top TVD MSL	Top MD RKB	Net/ Gross	Phi log	Sw log	Phi Core	Perm Core Aritmet.	Perm Core Geometr.
Egga Tight	2872.4	2897.5	0.873	0.13	0.97	0.141	16.8	1.44
Egga RU	2874.8	2899.9	0.937	0.28	----	0.272	415	220
Egga Gas	2874.8	2899.9	0.948	0.28	0.50	0.266	326	143
Egga Oil	2896.4	2921.5	1.000	0.29	0.67	0.284	645	572
Egga Residual	2898.5	2923.6	0.945	0.26	0.78	0.258	309	187
Egga Water	2906.8	2931.9	0.921	0.29	0.95	0.282	490	281
Våle Tight	2933.8	2959.0	0.096	0.23	1.00			
Våle Hetero.	2935.1	2960.2	0.710	0.29	0.99	0.319	454	274
Jorsalfare RU	2951.1	2976.2	0.689	0.22	0.96	0.116	0.58	0.58
Jorsalfare I.S	2956.9	2982.1	0.335	0.19	0.94	0.134	19.8	1.33
Bottom	2980.2	3005.3						

Table 8.1: Petrophysical Net Sand Averages

Core No.	FORMATION	RECOVERED CORE INTERVAL (m)	REC. (%)	DEPTH SHIFTS TO BE APPLIED (m)*
1	Våle	2895.00 - 2914.50	95.1	+ 0.90
2	Våle	2915.50 - 2943.30	100	- 0.30
3	Våle	2943.30 - 2958.90	99.4	-0.30
4	Våle	2959.10 - 2980.25	96.6	0.45
5	Våle/Cretaceous	2981.00 - 2987.65	83.1	0.15

\* PEX-HALS-GR Run 3C used as depth reference log

Ormen Lange  
Well 6305/8-1

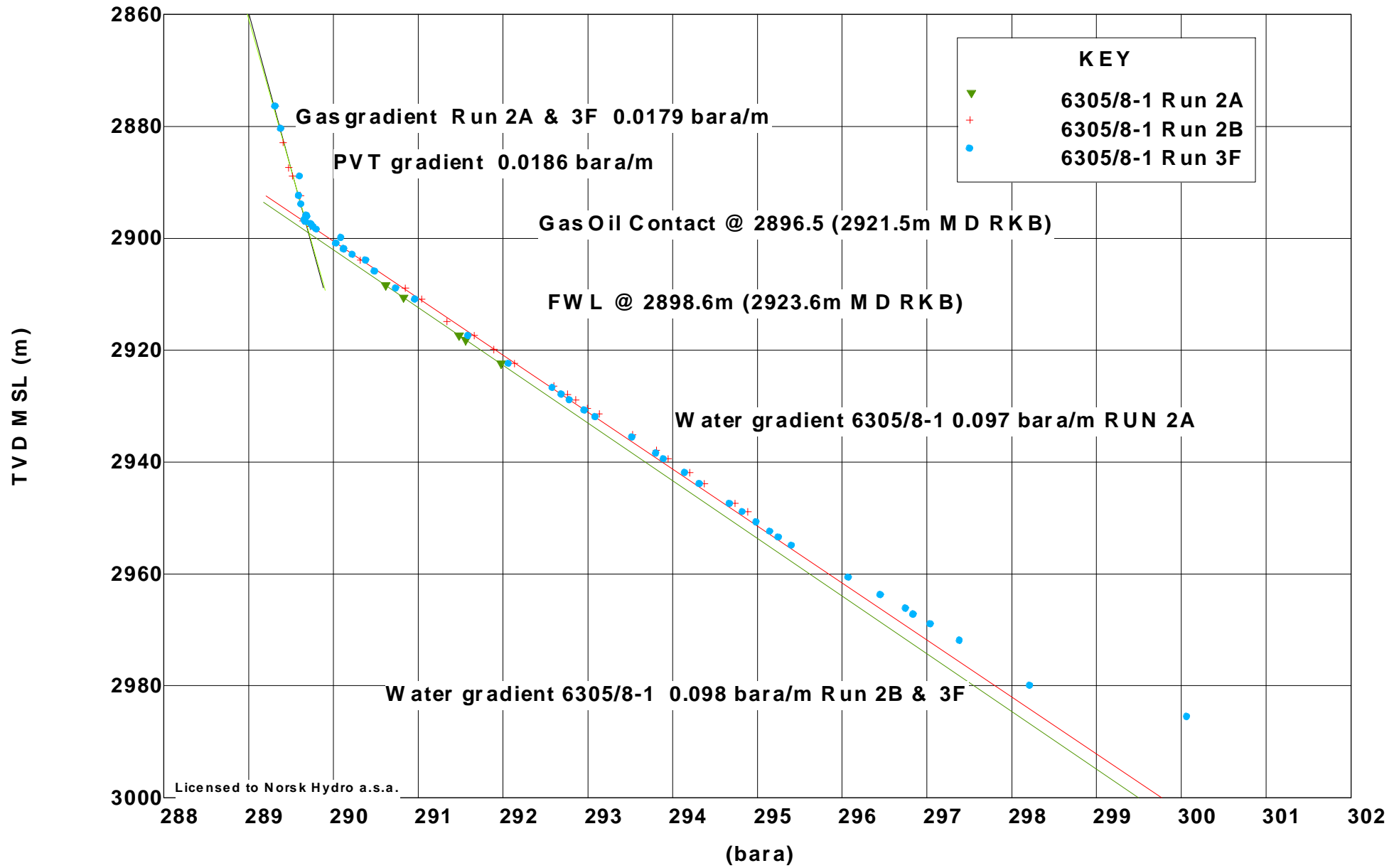


Fig. 8.1 Static pressure plot



## 8.5 Pore pressure evaluation

The pore pressure and fracture gradient in the well was more or less as prognosed. (Fig. 8.2). Drilling parameters together with MWD and wireline logs gave a good fundament for pressure evaluation in the well.

The MWD sonic log were run in memory mode in the 17 1/2" hole section, and pressure evaluation during drilling was mainly based upon the D-exponent, MWD resistivity and gas measurements.

In the 17 1/2" section the D-exponent and resistivity log indicates a very minor pore pressure increase from 1,03 SG to 1,06 in the ooze interval from 1670 - 1990m. With a mudweight of 1,3 g/cc, the background gas in the upper part of the Miocene "infill unit" 1670 to 1750m was relatively high with a background gas level exceeding 5%, and gas peaks in the order of 8 to 9 %.

This correlates well with the brightening on the seismic over this interval, and the sequence proved to consist of a mixture of clay & ooze with very low density and high microporosity.

The total gas decreased to less than 2% after drilling through this zone, implementing that the gas was **not** related to porepressure. Below 1900m the lithology was dominated by claystone with limestone stringers. Both the D-exponent and resistivity indicates increasing pore pressure down to 2600m which is approximately 100 meter into the Paleocene Balder formation. Increasing gas values in the interval supports the pressure increase, but is also related to increased penetration rates. Based upon experience from other deepwater wells like 6305/7-1 and drilling on the Helland-Hansen, Vema and Nyk, maximum pore pressure was estimated to be 1,20 SG based upon the D-exponent and MWD resistivity.

Further down in the Balder formation towards TD for the section at 2857 m, both the D-exponent and the resistivity implies a regression in pore pressure gradient. The gas level drops from max. 2% to 0,4% in an interval with relatively constant penetration rate indicating a pore pressure regression. Pore pressure at section TD was estimated to be 1,16 g/cc. The pore pressure parameters correlates well with the observed parameters in well 6305/7-1 in the southern part of the Ormen Lange field.

During pulling out of hole, some drag (20-30tonnes) was observed at the boundary with the Balder formation at 2511m. This is most likely related to reactive claystones in a waterbased mud system.

The sonic log supports the pressure estimates from D-exponent and resistivity, with a more significant pressure regression below 2600m. Based upon the sonic log, pore pressure at TD of the section is estimated to be 1,10 g/cc. The sonic log is evaluated to be the best pore pressure tool for this sequence, due to it's less dependency on lithology changes, and the use of PDC drill bit giving less reliable D-exponent data.

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**NORSK** FINAL WELL REPORT  
**HYDRO** WELL 6305/8-1

No. :  
Rev. :  
Date : 20-09-2000  
Page: Page 32 of 40

**END OF WELL REPORT**

In the 8,5" section drilling was controlled to 5 m/hr below 2870m for geological control, and for treatment of the mud with barium chloride. To obtain this, the WOB was reduced to 2-6 tonnes. The D-exponent reflect this, and indicates gradually decreasing pore pressure, giving a pore pressure close to hydrostatic close to top reservoir.

The resistivity is more affected by lithology changes, getting gradually more silty towards the reservoir making a quantitative pressure estimate more difficult.

Low background gas during drilling supports the picture of relatively high overbalance (MW: 1.30 SG). No signs of connection gases or trip gases was observed while drilling towards core point in the Egga sand. Only 0,1% gas was recorded at top Egga at 2898m. During coring a maximum of 3,2% BG was recorded. During drilling to TD at 3175, the logs indicates a minor increase in the pore pressure gradient, with a max. gradient of 1,10 SG at TD. The pore pressure and fracture gradient profile is presented in fig. 8.2.



# Well 6305/8-1

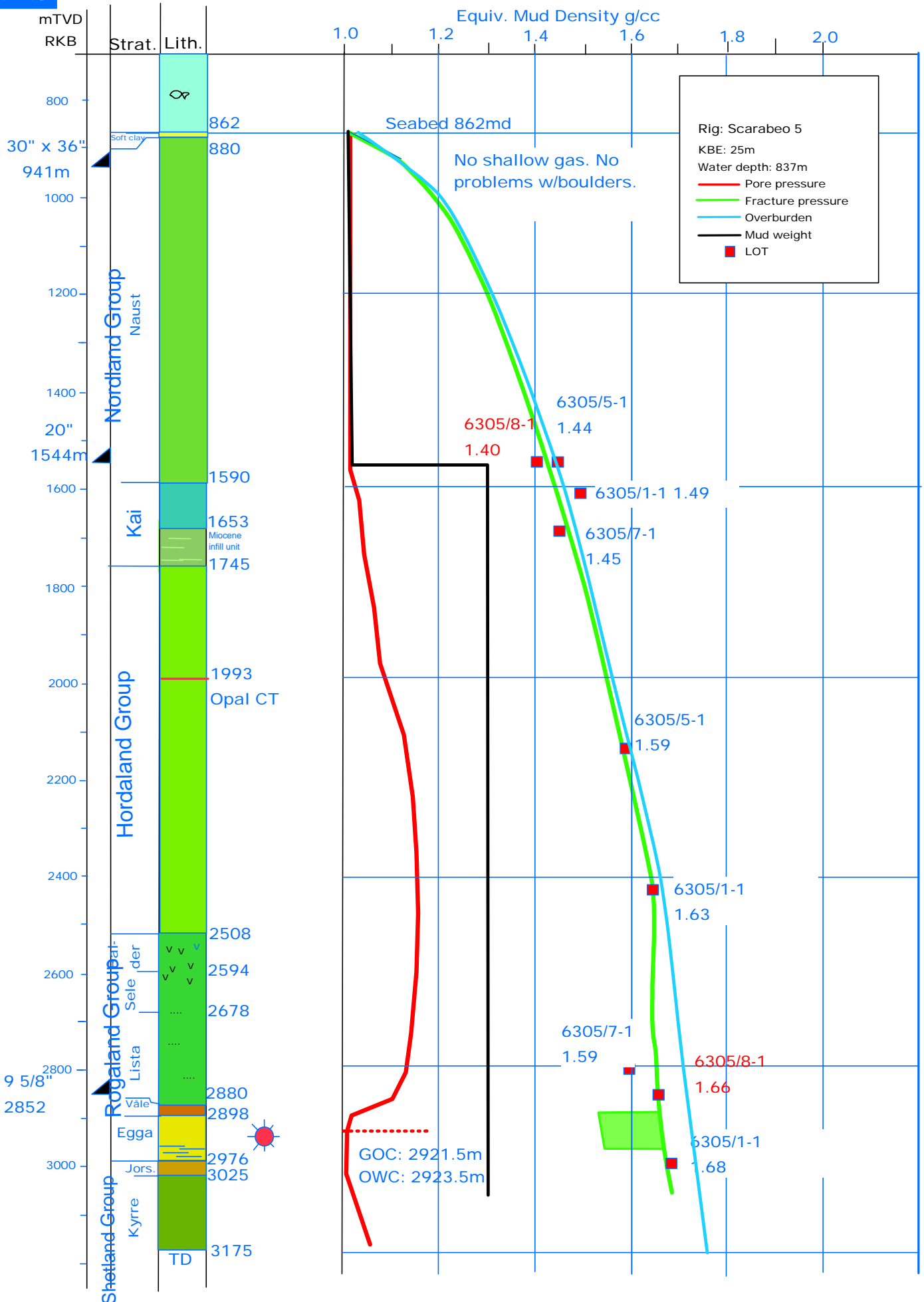


Fig. 8.1 Pore pressure summary Well 6305/8-1

9 GEOPHYSICAL RESULTS

Prognosed and actual time/depth values from well 6305/8-1 are listed in Table 9.1 and a time versus depth plot is included in Figure. 9.1.

The depth prognosis in shallow intervals was based on stacking velocities and seismic interpretation of 3D survey NH9602. High uncertainties were defined for shallow layers due to the Miocene infill unit which was not drilled through before. Low gas saturations were proven, as expected.

The depth prognosis at reservoir level was based on 2 assumptions: 1) Flatspot at same depth (2920mTVD msl) as in well 6305/7-1 and 2) same residual gas zone thickness (15 m) as in well 6305/7-1. Both these two assumptions failed and explains most of the deviation in depth of the seismic defined events at reservoir level.

All stratigraphic levels were encountered within the prognosed uncertainty range.

Formation Tops	Prognosed TWT (ms) NH9602	Actual** (TWT ms)	Mismatch between actual and NH9602 (TWT ms)	TWT (ms) from OL00M1	Mismatch between actual and OL00M1 (TWT ms)	Prognosed (mRKB)	Actual (mRKB)	Deviation (m)
Sea Bottom	1139	1139	0	1127	+12 (t)	862	862	0
Base Naust	1847	1856	+9	1847	+9 (p)	1591	1590	-1
Top Mioc. Infill Unit	1932	1923	-9	1912	+11 (p)	1650	1653	+3
Base Mioc. Infill Unit	2050	2038	-12	2028	+10 (t)	1762	1745	-17
Base Kai ***	1894	2038	+139			1613	1745	+132
Opal CT	2298	2286	-12	2275	+9 (t)	2012	1993	-19
Top Balder	2781	2797	+16	2780	+20 (t)	2511	2508	-3
Top Våle	3149	3133	-16	3127	+6 (t)	2901	2880	-21
Top Egga	-	3147	-	-	-	2916	2897,5	-18,5
Flatspot	3182	3166	-16	3167	-1 (t)	2945	2923,6	-21,5
Top Våle Tight	-	3190	-	-	-	2984	2959	-25
Top Våle Heterolithic	-	3191	-	-	-	2988	2960	-28
Top Jorsalfare	3220	3202	-18	3200	+2 (t)	2995	2976	-19
Base Jorsalfare Sand	-	3221	-	-	-	3026	3005	-21
TD	-	-	-	-	-	3176	3175	-1

\* The time prognosis is based on the 3D survey NH9602. Relatively large mismatch. The mismatch between the actual and reprocessed 3D survey, OL00M1, is less at reservoir level. The further seismic work will be performed on the OL00M1 data.

\*\* The actual TWT pick is taken from the Zero Offset VSP report.

\*\*\* Base Kai = Base Miocene Infill unit.

**Defintions:**  
 t = trough  
 p = peak

**Table. 9.1. Prognosed and actual time and depths in well 6305/8-1.**

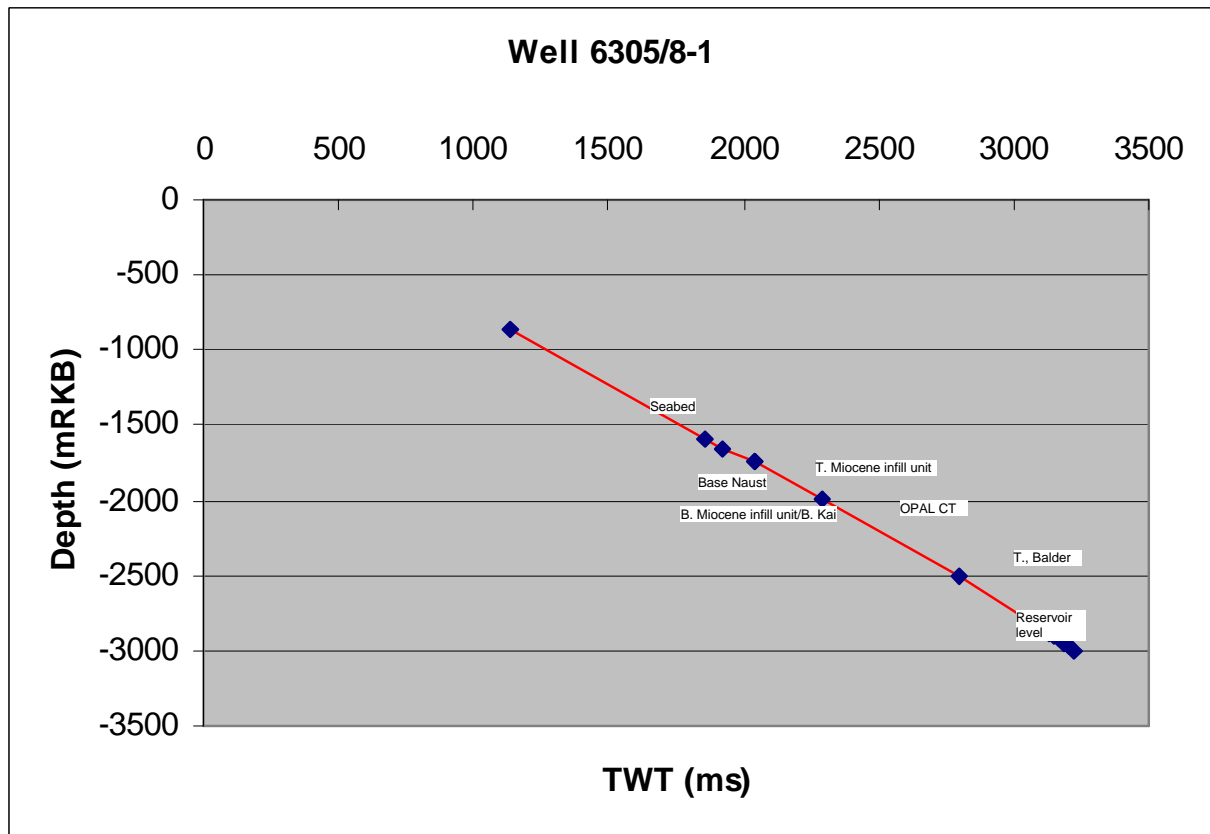


Fig. 9.1 Time versus depth plot

NORSK FINAL WELL REPORT

HYDRO WELL 6305/8-1

No. :

Rev. :

Date : 20-09-2000

Page: Page 36 of 40

**END OF WELL REPORT**

10

**POST SITE SURVEY REPORT FOR WELL 6305/8-1, NOCS**

**WELL DATA :**

<b>1</b>	<b>Distance from rig floor to sea level:</b>	25 m
<b>2</b>	<b>Water depth (MSL):</b>	837 m
<b>3a</b>	<b>Setting depth for conductor (m RKB):</b>	941 m
<b>3b</b>	<b>Leak Off / Formation Integrity Test (g/cc):</b>	N/A
<b>4a</b>	<b>Setting depth (m RKB TVD) for casing on which BOP mounted:</b>	1544 m
<b>4b</b>	<b>Formation Integrity Test (g/cc):</b>	1.40 sg
<b>5</b>	<b>Depth (m RKB (TVD) &amp; Two Way Time) to formation/section/layer tops:</b>	
	Seabed	: 862 m (1139 ms)
	Top Naust S (TNS)	: 981 m (1271 ms)
	Intra Naust S (OLIN4)	: 1170 m (1470 ms)
	Top Naust U (TNU)	: 1286 m (1577 ms)
	Top Naust W (TNW)	: 1379 m (1671 ms)
	Base Naust Fm (BNAUST)	: 1590 m (1860 ms)
	Top Amplitude Anomaly (TMC)	: 1653 m (1927 ms)
	Base Amplitude Anomaly (BMC)	: 1745 m (2038 ms)
	Opal CT contact (OPAL_CT)	: 1993 m (2286 ms)

**Note:**

No chronostratigraphic information was collected in the tophole section of the well (from seabed down to 1544 m RKB TVD). Consequently, the interpretation of the different formations in this area is based on the MWD logs, seismic character and previous work.

The name "Miocene anomaly" unit used in the the site survey report is renamed to the "Miocene infill" unit in the final well report for well 6305/8-1

Base Kai formation (BKAI) is the same as Base Amplitude Anomaly (BMC) in well 6305/8-1. Mud logging commenced at 1544 m RKB MD. Samples for description were taken at 10 m intervals. All formation tops are based upon MWD logs and cuttings analysis.

**END OF WELL REPORT**

**6 Depth interval (m RKB (TVD) & Two Way Time) and age of sand bodies shallower than 1000 m under the seabed. Note which layers if any contain gas:**

The MWD logs show no indication of sand layers in this section. No data exists on background gas levels from seabed down to 1544 m (section drilled with returns to seabed). However, no gas indications were reported from the ROV observation of the well head when drilling this interval.

**7 By what means is the presence of gas proven:**

The well is drilled with returns to seabed above 1544 m RKB MD. Below this level gas analyses were accomplished using flame ionization detectors (FID) with gas measured as percentage methane (C1) equivalent in air and chromatographic analyses expressed in parts per million.

**8 Composition and origin of gas:**

Section 1544 m - 1653 m RKB TVD: Background gas level is between 1.0 % and 2.0 %. No clear gas peaks, but an increase from 2 % to 3% in the interval 1599 m -1610 m RKB TVD are observed .

Section 1653 m - 1755 m RKB TVD: Background gas level is between 3.0 % and 5.0 %. Peak values of 8.5 % are observed at 1696 m and 1742 m and peak value of 10 % at 1754 m.

Section 1755 m - 2015 m RKB TVD: Background gas level is between 1.0 % and 3.0 %. Peak value of 7.5 % are observed at 1781 m RKB TVD and peak values of 5 % at 1978 m and 2012 m RKB TVD.

**9 Describe all measurements taken in gas bearing layers: N/A**

**END OF WELL REPORT**

**SEISMIC DATA:**

**10 Given depth (m RKB & ms TWT) and extent of sand layers (communication, continuity, truncation etc.):**

No distinct sand layers were predicted from the seismic data.

**11 Given depth and extent of any gas blanking ("gass-skygging"), seismic anomalies etc.:**

In the site survey report amplitude anomalies indicative of shallow gas were mapped below two levels in the area of 6308/1-1:

Horizon TNU: 1254 m  $\pm$  24 m, 145 m west of the planned well location

Horizon TMC: 1625 m  $\pm$  39 m, at the planned well location

The amplitude anomalies at horizon TNU is seen as brightening of small segments and the amplitude values are below the levels normally mapped as amplitude anomalies (<50 % of max. value). The brightening is observed in sediments that represent contouritic drift with assumed low permeability. Due to the low amplitude values and distance of 145 m to the nearest bright segment no gas warning is given at this level.

Horizon TMC represents top of a large seismic anomaly that has the outline of a large channel or canyon. High amplitudes are observed within this body, which may either be related to gas filling or to contrasting lithologies, e.g. porous sandstone. The anomaly represents a secondary target for Well 6305/8-1.

**A gas warning was given for the anomaly at 1625 m  $\pm$  39 m, at the planned well location for well 6305/8-1.** The BOP was set above this level to test the secondary target for Well 6305/8-1.

**12 Note any indication of gas originating from deeper levels. Give description in cases where gas comes from deeper layers:**

The gas is interpreted to represent migration gas from the reservoir.

**13 How does the interpretation of the site survey correspond to the well data with respect to:**

**13a Shallow Gas:**

The tophole section of the well was drilled with returns to seabed to 1544 m RKB TVD. No log indications of shallow gas were recorded, and no gas observation at wellhead were observed.

High gas content was measured between 1653 m RKB and 1755 m RKB. This interval corresponds to seismic anomaly that represented a secondary target in well 6305/8-1.



**END OF WELL REPORT****13b Sand Bodies:**

No exact sand layers were predicted from the seismic data and the MWD logs gave no distinct indication of sand layers.

**13c Boulders:**

No boulder layers were mapped, but scattered boulders were prognosed between 880 m  $\pm$ 5 m and 974 m  $\pm$ 14 m, and between 1168 m  $\pm$ 21 m and 1279 m  $\pm$ 24 m.

No boulders or boulder layers were observed in the predicted interval, but very low ROP (5.3 m/h) was experienced in the 36 " section (862 m RKB and 941 m RKB).

**13d Unconformities (depths in metres RKB (TVD)):**

Horizon	Prognosed (m RKB)	Observed (m RKB)	Difference (m)
Seabed	862 $\pm$ 2	862	0
Top Naust S	974 $\pm$ 14	981	7 (deeper)
Top Naust U	1279 $\pm$ 21	1 286	7 (deeper)
Top Naust W	1376 $\pm$ 28	1 379	3 (deeper)
Base Naust Fm	1591 $\pm$ 35	1 590	1 (shallower)
Top Amplitude Anomaly	1650 $\pm$ 39	1 653	3 (deeper)
Base Amplitude Anomaly	1762 $\pm$ 41	1 745	17 (shallower)
Opal CT contact	2012 $\pm$ 59	1 993	19 (shallower)

The differences between the prognosed and observed depths to different formation tops were within the uncertainty limits. The difference between the predicted and observed depth may be caused by discrepancies in either the seismic pick, the velocity model used for depth conversion or a combination of both.

**13e Correlation to Nearby Wells:**

In general, the drilling conditions experienced in well 6308/1-1 are as predicted. In tie-well 6305/5-1 problems with borehole instability was experienced in the Eocene deposits. No such problems were reported from well 6305/8-1, but constant loss of mud to the formation was experienced after extended leak off test at 1544 m RKB.

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**NORSK** FINAL WELL REPORT  
**HYDRO** WELL 6305/8-1

No. :  
Rev. :  
Date : 20-09-2000  
Page: Page 40 of 40

**END OF WELL REPORT**

- **Norsk Hydro,2000:** Standard core description, Well 6305/8-1
- **Norsk Hydro,2000:** Formation Evaluation Report 6305/8-1
- **Baker Hughes Inteq,2000:** End of Well Report, measurement while drilling, well 6305/8-1.
- 
- **Reslab ,2000:** Final Report, conventional core analysis, 6305/8-1.
- **Read Well Services,2000:** VSP Report, 6305/8-1.

**APPENDIX I**  
**CORE DESCRIPTIONS**



# Core Report

Well: 6305/8-1 Date: 05.08.00 Geologists: Carstens/Scottlien Scale: 1:200

Depth m MD RKB	Core No.	Rec.	Grain Size								Lith Struct	Lithological Description	Oil Stair		Dir Flu		Flu Cut		Vis Cut		Shows Description		
			pb	v	cs	m	f	sl	cl	gt			pr	m	gr	pr	m	gr	pr	m		gr	
2895	1	X											Claystone 2895-2897.2m										
2896														Clst: med gry-dk gry, wxy Surf, frm, aren, slily slty-slty,									
2897														calc-v calc									
2898												*		Sandstone 2897.2-2902m									Wk od, no stn, no flor,
2899												M		Sst: olv gry, v f-f, ang- sbang, wl- mod srt, lse-fri, occ									slw strmg wk pl yel bl,
2900												*		fri-hd, occ calc, slily arg, slily slty, slily mic, slily glauc,									wh cut, wk pl yel wh res
2901														pred g vis por, occ fr vis por									
2902												*		Sandstone 2902-2914.2m									
2903														Sst: lt olv gry, v f-m, occ crs, pred f-m, sbang, mod									
2904														srt, pred v lse, slily arg, pred non calc, slily glauc,									
2905												M		g-ex vis por									
2906												*		Sst: lt olv gry, f-m, occ crs, sbang, mod									
2907														srt, pred v lse, slily arg, non calc, slily glauc,									
2908												*		g-ex vis por									
2909																							
2910												*		Sst: lt olv gry, v f-m, occ crs, sbang, mod									
2911												M		srt, pred v lse, slily arg, non-sl calc, slily glauc,									
2912												*		g-ex vis por									
2913												M											
2914												Siltstone 2914.2-2914.5m											
2915										M****		Silst: dk gn fry, frm, slily sdy lam, micromic, non calc											



# Core Report

Well:

Date:

Geologist:

Scale: 1:200

Depth m MD RKB	Core No.	Rec.	Grain Size								Lith Struct	Litological Description	Oil Stain		Dir Flu		Flu Cut		Vis Cut		Shows Description	
			pbl	v	crs	c	m	f	vf	slt			cl	pr	m	gd	pr	m	gd	pr		m
2915											" " "											
2916											" " "	Sandstone with minor Siltstone beds										
2917											" " "	Siltst: gn gry-dk gn gry, frm, blk, sdy, carb frag,										Wk od, no stn, no flor,
2918											" " "	mica, non calc										slw strmg cldy wk pl
2919											" " "	Sst: lt olv gry-gn gry, clr trnsl-mlky wh Qtz, f-m, occ										
2920											" " "	crs, sbang-sbrmdd, wl-mod srt, v lse-fri, occ slily arg,										yel res
2921											" " "	non-occ calc, pred non calc, mica, r carb frag, slily										
2922											" " "	glauc, g-ex vis por										
2923											" " "											Fr od, no stn, mod bl
2924											" " "											wh flor, fst strmg flash
2925											" " "											v wk bl wh cut, brt
2926	2										" " "	Sst: lt gry-lt olv gry, clr trnsl-occ mlky wh Qtz, f-m, occ										yel-bl wh res
2927											" " "	crs, sbang-sbrmdd, mod srt, pred lse-fri, occ frm, r arg,										
2928											" " "	calc cmt, occ v calc cmt, mica, slily glauc, fr-g vis por										Wk-fr od, no stn, wk-
2929											" " "											mod bl wh flor, slw
2930											" " "	Sst: med lt gry-lt olv gry, clr trnsl-occ mlky wh Qtz, f-m,										strmg cldy wk bl wh cut,
2931											" " "	occ crs, sbang-sbrmdd, wl-mod srt, lse-frm, occ slily										mod yel-bl wh res
2932											" " "	arg, slily calc cmt, r carb frag, slily mica, slily glauc,										
2933											" " "	g vis por										Wk-fr od, no stn, wk-
2934											" " "											mod bl wh flor, slw
2935											" " "	Siltst: med gry-dk gn gry, frm, blk, v sdy, arg, r Tr										strmg cldy wk bl wh
2936											" " "	Glauc, mica, non-occ slily calc										cut, mod yel-bl wh res
2937											" " "	Sst: med lt gry-med gry, clr trnsl Qtz, f-m, pred f,										
2938											" " "	sbang-sbrmdd, wl srt, lse-frm, calc cmt, mica,										No od, no stn, no flor,
2939											" " "	g vis por										slw strmg v wk bl wh
2940											" " "											cut, v wk yel bl res
2941											" " "	Sst: med lt gry-lt olv gry, clr trnsl Qtz, f-m, occ crs,										
2942											" " "	sbang-sbrmdd, wl-mod srt, v lse-fri, occ slily arg,										
2943											" " "	non-slily calc cmt, mica, r Tr Glauc, g vis por										
2944											" " "											



# Core Report

Well: 6305/8-1 Date: 08.08.00 Geologists: Carstens/Skottlien Scale: 1:200

Depth m MD RKB	Core No.	Rec.	Grain Size								Lith Struct	Litological Description	Oil Stain		Dir Flu		Flu Cut		Vis Cut		Shows Description		
			pbl	v	crs	c	m	f	vf	slt			cl	pr	m	gd	pr	m	gd	pr		m	gd
2943	3	[Black bar]											Sandstone 2943.3-2959m										
2944												M	Sst: lt gry-lt olv gry, clr trnsl Qtz, f-m, sbang-sbrnidd,										No od, no stn, no flor,
2945												M	occ v crs rnidd, wl-mod srt, v lse-fri, slily arg, non-slily										no cut, v wk yel bl res
2946													calc cmt, mica, Tr Glauc, g vis por										
2948												M											
2949													Sst: lt gry-lt olv gry, clr trnsl Qtz, f-m, occ v f, occ crs,										No od, no stn, no flor,
2950												M	sbang-sbrnidd, mod srt, v lse-fm, pred fri, slily arg,										no cut, v wk yel bl res
2951													non-slily calc cmt, mica, Tr Glauc, g vis por										
2952												M											
2953													Sst: lt brn gry-lt olv gry, clr Qtz, f-m, r crs gn, sbang-										No od, no stn, no flor,
2954											sbrnidd, mod srt, v lse-fm, pred fri, slily arg, non-slily										no cut, v wk yel bl res		
2955										M	calc cmt, mica, r f carb frag, Tr Glauc, g vis por												
2956										C													
2957										M											No shows		
2958											Claystone 2959-2959.1m												
2959										M	Clst: med gry-dk gn gry, sft-fm, sbbkly, slily stky,										v f sdy, slily slty, non calc, micromic		



# Core Report

Well: 6305/8-1 Date: 09.08.00 Geologists: Kjellin/Skottlien Scale: 1:200

Depth m MD RKB	Core No.	Rec.	Grain Size								Lith Struct	Litological Description	Oil Stain		Dir Flu		Flu Cut		Vis Cut		Shows Description		
			pbl	v	crs	c	m	f	vf	slt			cl	pr	m	gd	pr	m	gd	pr		m	gd
2958	4	[Black bar]										M	Sandstone with Claystone layers										
2959													2959.1-2981.25m										
2960												M	Clst: m gry - dk gn gry, frm - mod hd, sbbkly,										
2961													slty, vf sdy, non calc, micromic, Glauc										No od, no O stn, no dir
2962													Sst: lt gry - lt olv gry, clr - trnsl Qtz, vf - m,										Fluor, no fluor cut, no
2963												M	sbang - sbrndd, mod srt, lse - frm, slily arg, no										vis cut, Tr v dull yel
2964													calc cmt, mica, Glauc, gd vis por										fluor res, no vis res
2965												M											
2966													Clst: m gry, frm - mod hd, sbbkly, slty, vf sdy,										
2967												M	non calc, micromic, Tr Glauc, Tr carb Mat										
2968													Sst: lt gry - lt olv gry, clr - trnsl Qtz, vf - m, pred f,										No od, no O stn, no dir
2969													sbang - sbrndd, mod srt, frm, slily arg, no calc										Fluor, no fluor cut, no
2970												M	cmt, mica, Glauc, gd vis por										vis cut, no fluor res, Tr
2971																							mod rdsh or vis res
2972										M	Clst: olv gry - olv blk, hd, sbbkly, r vf sdy, non												
2973											calc, gd Tr micropyr, micromic, r Glauc												
2974											Sst: lt gry - lt olv gry, clr - trnsl Qtz, f - occ m, pred												
2975										M	f, sbang - sbrndd, wl srt, frm - mod hd, slily arg,												
2976											v slily calc cmt, Glauc, Tr Mic, gd vis por												
2977										M											No od, no O stn, no		
2978											Clst: olv gry - m dk gry, hd, sbbkly - fis, occ vf										dir Fluor, no fluor cut, no		
2979											sdly, v calc, micropyr, Glauc, r carb Mat,										vis cut, Tr dull yel fluor		
2980										C	Sst: lt gry - lt olv gry, clr - trnsl Qtz, vf - f, occ m,										res, r - Tr mod rdsh or		
2981											sbang - sbrndd, mod srt, lse, r calc cmt, arg,										vis res		
											arg, mica, Glauc, fair vis por												



# Core Report

Well: 6305/8-1 Date: 15.08.00 Geologists: Kjellin/Skottlien Scale: 1:200

Depth m MD RKB	Core No.	Rec.	Grain Size								Lith Struct	Litological Description	Oil Stain		Dir Flu		Flu Cut		Vis Cut		Shows Description				
			pbl	v	crs	c	m	f	vf	sl			cl	pr	m	gd	pr	m	gd	pr		m	gd	pr	m
2981	5	[Black bar]										C	M	Sandstone and Claystone beds											
2982												C	M	Sh: med dk gry-dk gn gry, sliily v f sdy, v calc, micropyr,									No shows		
2983														M	C	micropyr vn, glauc, Musk, Biot, calc frag									
2984													M		Sst: clr wh-lt gn gry, clr trnsl Qtz, v f-m, pred v f-f, occ crs,										
2985														M	sbang-sbrndd, pred sbrndd-rndd, mod srt, hd-v hd, l/P										
2986													M		fri-fm, calc-v calc cmt, micropyr, glauc, Musc, Biot, occ										
2987													C	M	carb frag, occ calc frag, no vis por										
2988																									



**APPENDIX II**

**SIDEWALL CORE DESCRIPTIONS**

<b>NORSK HYDRO</b>	<b>SIDEWALL CORING REPORT</b> <span style="color: red;">N/A see: 1A MSCT_GR.lwp</span>	WELL: 6305/8-1
		RIG:

Date :	Run no :	Tool type :
Engineer :	Witness :	Last csg shoe (m):

TD driller (m) :	Core capacity :	Bullet size / type :
TD logger (m) :	Recovered :	Charge size / type :
Logged from (m) :	Misfire :	Wire length :
Logged to (m) :	Lost :	Ring size :
	Empty :	Rings normal / reversed:

QUALITY CONTROL

Was sonic/density reviewed prior to tool preparation?

Intervals and amounts of major washouts?

Intervals of lost bullets?

Reasons for intervals of lost bullets?

Reasons for intervals of empty/missing cores ?

Interval of 2 or more consecutive misfires/malfunctions

Reasons for misfires/malfunction

Tie in with log / depth:

Describe any problems tying in:

Evidence of unreliable depths for recovered samples?

Was transfer of samples from tool to bottles supervised by the WSG?

Additional comments / problems / recommendations:

Operation	From	To	Time
Rig up			
RIH			
Tie in			
Logging			
POOH			
Rig down			
Total time			
Lost time			
Reason for lost time:			

N/A see: 1A MSCT\_GR.lwp



<b>NORSK</b>	<b>MSCT</b>	<b>SIDEWALL CORE DESCRIPTION</b>	<b>WELL: 6305/8-1</b>
<b>HYDRO</b>			<b>RIG : Scarabeo 5</b>

Run:	1A	Date:	26.7.00	Logging:	Schlumberger	Page :	1	of	3		
Cut:	28	Misfired:	n/a	Lost:	10	Empty :	n/a	Recoverd :	18	Geologist :	Carstens/Henderson
No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence							
				Direct			Cut				
				Tr	M	G	Tr	M	G		
28	1562.5	2	Clst: slty, olv gry-dk gn gry, hom, sft, stky, sl calc.								
27	1568	4.5	Clst; slty, aren, dk gn gry, hom, pref frm, calc.								
26	1585	0									
25	1590	0.5	Slstst (Sil ooze/mudstone): arg, aren, brn gry.brn blk, hom, lse, micropyr? sli glauc, non calc.								
24	1595	0									
23	1600	0									
22	1605	1.8	Slstst (Sil ooze/mudstone): arg, aren, brn gry, hom, lse-frm, glau, sl calc.								
21	1622	0									
20	1633	1	Slstst (Sil ooze/mudstone): arg, sli aren, brn gry-gn gry, hom, lse-frm, non-sl calc.								
19	1645	1.5	Slstst(Sil ooze/mudstone): arg, sl aren, brn gry-gn blk, hom, lse-frm, sl glauc, calc, Tr carb Deb.								
				Tr:Trace M:Medium G:Good							
Comments:											

<b>NORSK</b>	<b>MSCT</b>	<b>SIDEWALL CORE DESCRIPTION</b>	<b>WELL: 6305/8-1</b>
<b>HYDRO</b>			<b>RIG : Scarabeo 5</b>

Run: 1A	Date: 26.7.00	Logging: Schlumberger	Page : 2 of 3
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Cut: 28	Misfired: n/a	Lost: 10	Empty : n/a	Recoverd : 18	Geologist : Carstens/Henderson
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No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence						
				Direct			Cut			
				Tr	M	G	Tr	M	G	
18	1650	0								
17	1655	4.2	Sltst(Sil ooze/mudstone): arg, sli aren, brn gry, hom, frm, sli glauc, sli calc.							
16	1665	1.5	Sltst (Sil ooze/mudstone): arg, aren, brn gry, hom, frm, micromic, sli calc.							
15	1677.5	1.5	Sltst (Sil ooze/mudstone): arg, aren, brn gry, hom, frm, sl i mic mica, glauc, non calc. tr carb debris.							
14	1690	0								
13	1797.5	3.8	Sltst (Sil ooze/mudstone): arg, sli aren, brn gy-brn blk, hom, frm, sl glauc, sl mic mica, sli calc.							
12	1712	3	Sltst (Sil ooze/mudstone): arg, sli aren, brn gy- brn blk, frm glauc, sli mic mic mica, non calc.							
11	1722	4.2	sltst (Sil ooze/mudstone): arg, sli aren, sl bnd text, brnj gy- brn blk, frm, glauc, non -sl calc.							
10	1726.5	0								
9	1730.5	0								
				Tr:Trace M:Medium G:Good						

Comments:

<b>NORSK</b>	<b>MSCT</b>	<b>SIDEWALL CORE DESCRIPTION</b>	<b>WELL: 6305/8-1</b>
<b>HYDRO</b>			<b>RIG : Scarabeo 5</b>

Run:	1A	Date:	26.7.00	Logging:	Schlumberger			Page :	3	of	3
Cut:	28	Misfired:	n/a	Lost::	10	Empty :	n/a	Recoverd :	18	Geologist :	Carstens/Henderson
No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence							
				Direct			Cut				
				Tr	M	G	Tr	M	G		
8	1732,5	0									
7	1745	0									
6	1762,5	5	Sltst (Sil ooze/mudstone): arg, sli aren, brn gy-sl brn blk, hom, frm, glauc, sl mic mica, non -sli calc								
5	1775	5	Sltst (Sil ooze/mudstone): arg sli aren, mbrn gy-brn blk, hom, frm, glauc, non - sli calc.								
4	1752,5	4,6	Sltst (Sil ooze/mudstone): arg sli aren, mbrn gy-brn blk, hom, frm, glauc, non - sli calc.								
3	1800	5	Sltst (Sil ooze/mudstone): arg, sli aren, brn gy, frm, hom, glauc, non - sl calc.								
2	1813	4,5	Sltst (Sil ooze/mudstone):sample as above.								
1	1820	4	Sltst; (Sil ooze/mudstone) sample as above								
								Tr:Trace M:Medium G:Good			
Comments:											

<b>NORSK HYDRO</b>	<b>SIDEWALL CORING REPORT</b> <span style="color: red;">N/A see: 3BMSCT_GR.lwp</span>	WELL: 6305/8-1 RIG:
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Date :	Run no :	Tool type :
Engineer :	Witness :	Last csg shoe (m):

TD driller (m) :	Core capacity :	Bullet size / type :
TD logger (m) :	Recovered :	Charge size / type :
Logged from (m) :	Misfire :	Wire length :
Logged to (m) :	Lost :	Ring size :
	Empty :	Rings normal / reversed:

QUALITY CONTROL

Was sonic/density reviewed prior to tool preparation?

Intervals and amounts of major washouts?

Intervals of lost bullets?

Reasons for intervals of lost bullets?

Reasons for intervals of empty/missing cores ?

Interval of 2 or more consecutive misfires/malfunctions

Reasons for misfires/malfunction

Tie in with log / depth:

Describe any problems tying in:

Evidence of unreliable depths for recovered samples?

Was transfer of samples from tool to bottles supervised by the WSG?

Additional comments / problems / recommendations:

Operation	From	To	Time
Rig up			
RIH			
Tie in			
Logging			
POOH			
Rig down			
Total time			
Lost time			
Reason for lost time:			

N/A see: 3BMSCT\_GR.lwp





<b>NORSK</b>	<b>MSCT</b>	<b>SIDEWALL CORE DESCRIPTION</b>	<b>WELL: 6305/8-1</b>
<b>HYDRO</b>			<b>RIG : Scarabeo 5</b>

Run: 3B	Date: 21-22/8-00	Logging: Schlumberger	Page : 1 of 3
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Cut: 27	Misfired: n/a	Lost: 0	Empty : n/a	Recoverd : 27	Geologist : Kjellin
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No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence						
				Direct			Cut			
				Tr	M	G	Tr	M	G	
1	3030	4	Clst: olv gry - olv blk, m dk gry, sbfis, brit - mod hd, non calc, occ slty, micropyr, Glauc							
2	3027.5	3	Clst: olv gry - olv blk, m dk gry, sbfis, mod hd - hd, non calc, occ slty, micropyr, Glauc, micromic							
3	3025	4	Clst: olv gry - olv blk, dk gry, sbfis, hd, non calc, micropyr, Glauc							
4	3023	5	Clst: olv gry - olv blk, dk gry, sbfis, hd, non calc, micropyr, Glauc, carb Mat							
5	3021	4.5	Clst: olv gry - olv blk, dk gry, sbfis, hd, v calc, micropyr, Glauc							
6	3017	4.7	Clst: olv gry - m dk gry, sbfis, hd, calc, micropyr, Glauc							
7	3013	3	Clst: grysh rd - mod rdsh brn, sbfis, hd, non calc, occ slily slty, micropyr, Glauc, micromic							
8	3007.5	5	Sst: dk gnsh gry, f - crs, sbang - sbrndd, mod srt, fri - mod hd, abd arg Mtrx, grad v sdy Clst, micropyr, Glauc, carb Mat, chlor, no vis por, no shows							
9	3005	0.5	Sst: clr - trnsl Qtz, lse, f - m, sbang - sbrndd, mod srt, calc, micropyr, Glauc, carb Mat, chlor, fair vis por, no shows							
10	3001.5	4	Sst: m lt gry - m gry, clr - trnsl Qtz, f - m, occ crs, sbang - sbrndd, mod srt, fri, slily calc cmt, arg Mtrx, micropyr, Glauc, chlor, tr vis por, no shows							

Tr:Trace M:Medium G:Good

Comments:

<b>NORSK</b>	<b>MSCT</b>	<b>SIDEWALL CORE DESCRIPTION</b>	<b>WELL: 6305/8-1</b>
<b>HYDRO</b>			<b>RIG : Scarabeo 5</b>

Run: 3B	Date: 21-22/8-00	Logging: Schlumberger	Page : 2 of 3
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Cut: 27	Misfired: n/a	Lost: 0	Empty : n/a	Recoverd : 27	Geologist : Kjellin
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No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence						
				Direct			Cut			
				Tr	M	G	Tr	M	G	
11	2999.5	3.5	Sst: m lt gry - lt olv gry, clr - trnsl Qtz, f - m, occ crs, sbang - sbrndd, mod srt, hd, abd calc cmt, abd mica (musc, biot), abd Glauc, carb Mat, no vis por, no shows							
12	2996.5	4.5	Clst: dk grnsh gry - olv gry, sbfis - sbblky, frm - mod hd, calc, occ vf sdy, micropyr, r Glauc, carb Mat							
13	2994.5	5	Sst: m lt gry - lt olv gry, clr - trnsl Qtz, f - m, occ crs, sbang - sbrndd, mod srt, fri, slily calc cmt, Glauc, mica, carb Mat, fair vis por, no shows							
14	2992	4	Clst: m dk gry - dk gry, sbfis - sbblky, mod hd, calc, occ vf sdy, Glauc, biot, musc, micropyr, Shl frgs, carb Mat							
15	2991	4	Clst: m dk gry - dk gry, sbfis - sbblky, mod hd - hd, v slily calc, vf sdy, Glauc, mic, micropyr							
16	2895	4	Clst: olv blk, sbfis, hd, calc, mic, carb Mat, micropyr							
17	2893	5	Clst: olv blk, sbfis, v hd, calc, micropyr, r carb Mat							
18	2890	4.5	Clst: olg gry - olv blk, sbfis, mod hd, slily calc - calc, mic, Glauc, micropyr							
19	2885.5	5	Clst: dk gry - olv blk, sbfis, mod hd - hd, calc, micropyr, Glauc							
20	2881	4	Clst: olv gry - olv blk, sbfis, hd, calc, micropyr, micromic							

Tr:Trace M:Medium G:Good

Comments:

<b>NORSK MSCT SIDEWALL CORE DESCRIPTION</b>	<b>WELL: 6305/8-1</b>
	<b>RIG : Scarabeo 5</b>

Run: 3B	Date: 21-22/8-00	Logging: Schlumberger	Page : 3 of 3
Cut: 27	Misfired: n/a	Lost: 0	Empty : n/a
		Recoverd : 27	Geologist : Kjellin

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence						
				Direct			Cut			
				Tr	M	G	Tr	M	G	
21	2879	4	Clst: dk gry - grysh blk, sbfis - sbbkly, hd, slily calc, occ vf sdy, micropyr, micromic							
22	2874	5	Clst: olv blk - grysh blk, sbfis, mod hd - hd, non - v slily calc, micropyr							
23	2870	4	Clst: olv blk, sbfis, hd, non calc, micropyr, micromic							
24	2867.5	4	Clst: a/a							
25	2865	4	Clst: a/a							
26	2862	5	Clst: olv blk - dk gry, sbfis, v hd, non calc, micropyr							
27	2860	5	Clst: dk gry, sbfis, hd, non calc, micropyr, carb Mat							

Tr:Trace M:Medium G:Good

Comments:

**APPENDIX III**

**WELL SUMMARY**

**GEOLOGICAL WELL SUMMARY**

**MDT RESULTS**

## FORMATION PRESSURE WORKSHEET RUN 2A

**Well :** 6305/8-1      **Rig :** Scarabeo 5      **Date :** 10.08.00      **Conveyance**      **Wireline**  
**Pressure Units :** Bars      **RKB-MSL**      25 m.      **MSL-SBe**      837 m.      **Witnessed by :** Williams, Mangseth, Kjellin, Skottlien  
**Samples:**      **Sample depths:**

Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure		Formation Pressu		Final Hydrostatic Pressure			Time hh:mm		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol
			Quartz	Strain	BQP1 Quartz	BSG1 Strain	Quartz	Strain	Diff	Set	Retract								
1	2933,51	2933,51	375,8416	376,1151	290,6044	291,0466						1,011	#VALUE!	1,306	68,0	N	55,11	large probe	20
2	2935,71	2935,71	376,1573	376,4568	290,8162	291,2579						1,011	0,981	1,306	69,4	N	8,19	large probe	20
3	2943,29	2943,29	377,1258	377,4389	291,5555	292,0440						1,011	0,994	1,306	70,5	N	393,89	large probe	20
4	2942,52	2942,52	377,0352	377,3676	291,4753	291,9632						1,011	1,062	1,306	71,8	N	320,70	large probe	1,6
5	2947,49	2947,49	377,6534	377,9832	291,9783	292,4609	377,6444	377,9880	0,00896			1,011	1,032	1,306	72,9	Y	113,61	large probe	20
6	2942,53	2942,53	377,0227	377,3665	291,4789	291,9638						1,011	1,026	1,306	73,5	N	387,50	large probe	2,1
7	2943,20	2943,20	376,8106	377,0118	291,5666	291,9206						1,011	1,334	1,305	78,6	N	265,92	large probe	20
8	2943,23	2943,23	376,7767	376,9857	291,5566	291,9165						1,011	-3,398	1,305	78,8	N	485,77	large probe	20

## FORMATION PRESSURE WORKSHEET RUN 2B

**Well :** 6305/8-1      **Rig :** Scarabeo 5      **Date :**      **Conveyance**      **Wireline**  
**Pressure Units :** Bars      **RKB-MSL**      25 m.      **MSL-SBe**      837 m.      **Witnessed by :**  
**Samples:**      **Sample depths:**

Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time hh:mm		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol
			Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract								
1	2 898,5	2 898,4	371,20	376,08	0,000		371,10		0,1	06:45	06:49	#VALUE!	N/A	1,306	68,2	N	1	Tight	20
2	2 901,5	2 901,4	371,59	371,58	289,315	289,44	371,55	371,62	0,04	06:52	06:56	1,017	983,062	1,306	70,1	Y	213,3		20
3	2 903,0	2 902,9	371,77	371,8	292,600				#VALUE!	07:00	07:05	#VALUE!	22,324	1,305	70,1	N	3,5	Superchar	20
4	2 903,5	2 903,4	371,82	371,9	289,480	289,68	371,75	371,94	0,07	07:09	07:18	1,017	-63,609	1,305	72,9	n	37,5	Tight?	1,6
5	2 905,5	2 905,4	372,06	372,2	289,378	289,59	372,74	372,23	-0,68	07:23	07:30	1,016	-13,138	1,305	73,7	Y	454,9	bad seal?	20
6	2 907,0	2 906,9	372,22	372,4	292,797	293,02	372,12	372,4	0,1	07:34	07:42	1,028	23,235	1,305	74,3	N	14,4	Superchar	2,1
7	2 911,0	2 910,9	372,72	372,89	289,832	290,06	372,93	372,93	-0,21	07:46	07:51	1,016	-7,556	1,305	74,5	n	49,4	Superchar	20
8	2 908,0	2 907,9	372,33	372,51	289,406	289,65	372,33	372,54	0	07:55	08:03	1,015	1,448	1,305	75,0	y	387		20
9	2 912,5	2 912,4	372,92	372,1	289,530	289,74	372,92	373,1	0	08:09	08:14	1,014	-2,052	1,305	75,3	n	165,4		20
10	2 914,0	2 913,9	373,12	373,3	289,566	289,76	373,14	373,3	-0,02	08:18	08:24	1,014	0,245	1,305	75,7	n	518,5		20
11	2 916,0	2 915,9	373,39	373,56	289,612	289,81	373,40	373,6	-0,01	08:29	08:35	1,013	0,234	1,305	76,2	n	319,1		20
12	2 917,5	2 917,4	373,58	373,75	289,648	289,87	373,56	373,75	0,02	08:40	08:48	1,013	0,245	1,305	76,5	n	637,9		20
13	2 919,0	2 918,9	373,76	373,94	289,648	289,89	373,75	373,97	0,01	08:59	09:06	1,012	0,000	1,305	77,3	n	183,9		20
14	2 921,5	2 921,4	374,07	374,27	291 ??	291??	374,06	374,26	0,01	09:10	09:17	#VALUE!	#VALUE!	1,305	77,5	N	19,5	Superchar	4,2
15	2 922,0	2 921,9	374,15	374,4	291??	291??	374,13	374,36	0,02	09:21	09:35	#VALUE!	#VALUE!	1,305	77,7	N	21,8	Superchar	4,2
16	2 922,5	2 922,4	374,20	374,42	290,307	290,57	374,21	374,44	-0,01	09:40	09:50	1,014	#VALUE!	1,305	77,9	n	135,3		4,2
17	2 923,0	2 922,9	374,28	374,48	291,025	291,29	374,30	374,45	-0,02	09:52	10:00	1,016	14,638	1,305	78,1	n	98,2	Superchar	4,1
18	2 923,5	2 923,4	374,30	374,51	290,127	290,4	374,36	374,52	-0,06	10:02	10:13	1,013	-18,308	1,305	78,4	n	110,2		4,1
19	2 925,0	2 924,9	374,52	374,75	290,9?		374,53	374,74	#NAME?	10:16	10:31	#VALUE!	#VALUE!	1,305	78,8	N	3,7	Tight?	3,9
20	2 926,0	2 925,9	374,67	374,9	290,427	290,71	374,62	374,87	0,05	10:36	10:50			1,305	79,2	n	53,1	Tight??	3,9
21	2 927,0	2 926,9	374,75	375	290,304	290,6	374,77	374,95	-0,02	10:55	11:02	0,098	#VALUE!	1,305	79,4	n	92,3		4
22	2 929,0	2 928,9	374,99	375,23	290,561	290,86	374,98	375,22	0,01	11:05	11:15	1,012	1,310	1,305	79,7	n	171,3		3,4
23	2 931,0	2 930,9	375,22	375,47	291,073	291,37	375,21	375,44	0,01	11:19	11:30	1,013	0,904	1,305	79,7	n	63,6		3,9
24	2 934,0	2 933,9	375,57	375,84	290,849	291,15	375,58	375,83	-0,01	11:34	11:42	1,012	0,701	1,305	79,9	Y	269,8		20
25	2 936,0	2 935,9	375,81	376,08	291,040	291,34	375,84	376,11	-0,03	11:46	11:53	1,012	0,767	1,305	80,2	Y	153,1	followed b	20
26	2 940,0	2 939,9	376,22	376,63	291,340	291,81	376,28	376,66	-0,06	12:24	12:31	1,012	0,765	1,304	83,0	Y	559,1		20
27	2 942,5	2 942,4	376,58	376,93	291,584	292,01	376,63	376,9	-0,05	12:36	12:46	1,012	0,995	1,305	82,0	n	1143		20
28	2 945,0	2 944,9	376,91	377,27	291,893	292,25	376,87	377,45	0,04	12:52	12:57	1,012	1,260	1,305	81,6	n	792		20
29	2 947,5	2 947,4	377,22	377,55	292,135	292,48	377,26	377,5	-0,04	13:00	13:05	1,012	0,987	1,305	81,6	Y	390,7		20
30	2 951,5	2 951,4	377,72	378,03	292,599	292,96	377,71	378,06	0,01	13:10	13:18	1,012	1,182	1,305	81,6	y	14,6		20
31	2 953,0	2 952,9	377,91	378,2	292,760	293,1	377,88	378,24	0,03	13:21	13:25	1,012	1,094	1,305	81,7	y	70,9		20
32	2 954,0	2 953,9	378,04	378,36	292,859	293,2	378,04	378,35	0	13:28	13:32	1,012	1,009	1,305	81,9	y	47,9		20
33	2 955,5	2 955,4	378,23	378,54	292,995	293,35	378,23		0	13:40	13:45	1,012	0,924	1,305	82,2	y	39,2		20
34	2 956,5	2 956,4	378,32	378,65	293,134	293,48	378,37	378,64	-0,05	13:54	13:56	1,012	1,417	1,304	82,4	y	67,4		20
35	2 958,5	2 958,4	378,61	378,97	0,000		378,59	378,95	0,02	14:02	14:07	#VALUE!	#####	1,305	82,6	n		Tight	12,8
36	2 960,2	2 960,1	378,83	379,14	293,528	293,92	378,82	379,14	0,01	14:14	14:18	1,012	#####	1,305	82,8	y	136,7		20

## FORMATION PRESSURE WORKSHEET RUN 2B

**Well :** 6305/8-1      **Rig :** Scarabeo 5      **Date :**      **Conveyance**      **Wireline**  
**Pressure Units :** Bars      **RKB-MSL**      25 m.      **MSL-SBe**      837 m.      **Witnessed by :**

Test No.	Depth		Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol
	mMD RKB	mTVD RKB	Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract								
37	2 963,0	2 962,9	379,16	379,49	293,808	294,19	379,17	379,51	-0,01	14:24	14:27	1,012	1,019	1,304	83,0	y	34,7		20
38	2 964,5	2 964,4	379,37	379,71	293,945	294,35	379,36	379,68	0,01	14:33	14:40	1,012	0,931	1,305	83,4	y	36,4		20
39	2 967,0	2 966,9	379,67	379,96	294,203	294,62	379,70	380,03	-0,03	14:44	14:47	1,012	1,052	1,304	83,7	y	186,2		20
40	2 969,0	2 968,9	379,93	380,26	294,375	294,79	379,93	380,29	0	14:55	14:57	1,012	0,877	1,304	84,1	y	261,5		20
41	2 972,5	2 972,4	380,40	380,742	294,736	295,154	380,38	380,746	0,017	15:04	15:09	1,012	1,051	1,305	84,7	y	70,9		20
42	2 974,0	2 973,9	380,60	380,935	294,888	295,308	380,61	380,968	-0,009	15:17	15:22	1,012	1,033	1,305	85,1	y	39,16		20
43	2 921,0	2 920,9	373,78	374,267	0,000		373,78	374,247	0,0035	15:39	15:43	0,000	56,717	1,304	82,1	n		Tight	Dry
44	2 922,0	2 921,9	373,94	374,325	289,644	290,077	373,93	374,296	0,003	15:49	15:54	1,012	#####	1,305	80,7	y	93,6		20
45	2 923,0	2 922,9	374,08	374,404	289,728	290,126	374,07	374,393	0,005	15:59	16:04	1,012	0,856	1,305	80,3	y	18,2		20
46	2 925,0	2 924,9	374,33	374,639	290,131	290,498	374,34	374,631	-0,016	16:11	16:16	1,012	2,054	1,305	79,9	n	9,4	superchar	20
47	2 927,0	2 926,9	374,61	374,886	290,121	290,479	374,60	374,912	0,008	16:31	16:36	1,012	-0,051	1,305	79,9	y	72		20
48	2 929,0	2 928,9	374,59	375,15	290,320	290,67	374,86	375,15	-0,27	16:44	16:47	1,012	1,014	1,304	80,0	y	161,7		20
49	2 912,5	2 912,4	372,77	373,06	289,473	289,86	372,78	373,09	-0,01	17:00	17:04	1,015	0,523	1,305	79,8	y	99,9		20
50	2 914,0	2 913,9	372,99	373,28	289,516	289,9	372,96	373,28	0,029	17:12	17:15	1,014	0,292	1,305	79,2	y	731,5		20
51	2 916,0	2 915,9	373,22	373,48	289,624	289,97	373,23	373,49	-0,013	17:24	17:27	1,014	0,550	1,305	78,9	y	329,3		20
52	2 917,5	2 917,4	373,47	373,7	289,611	289,94	373,44	373,72	0,029	17:32	17:38	1,013	-0,088	1,305	78,9	y	759		20
53	2 919,0	2 918,9	373,66	373,9	289,613	289,96	373,64	373,9	0,024	17:45	17:49	1,013	0,014	1,305	79,1	y	79,1		20
54	2 942,5	2 942,4	376,62	376,83	291,658	291,97	376,60	376,88	0,022	18:02	18:04	1,012	0,887	1,305	80,1	y	784,8		20
55	2 945,0	2 944,9	376,92	377,25	291,891	292,23	376,94	377,21	-0,02	18:08	18:12	1,012	0,950	1,305	80,8	y	477,9		20

**AVERAGE**      NB: Fmtn Press sg calculated from RKB      **1,305**      Page : 1 of :

**FORMATION PRESSURE WORKSHEET RUN 2C**

**Water sampling Run**

Well : 6305/8-1 Rig : Scarabeo 5 Date : 11.08.00 Conveyance Wireline  
 Pressure Units : Bars RKB-MSL : 25 m. MSL-SBed: 837 m. Witnessed by : Williams, Mangset, Kjellin, Skottlien  
 Toolstring: PC-MS2(3x250,3x450)-MS1(3x250,3x450)-SC2-SC1-PO-IO-PO-OFA-HY-SP(Mart)-SP(Mart)

Test No.	Probe	Depth		Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol
		mMD RKB	mTVD RKB	Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract								
1	lower	2 943,0	2942,9	376,59	376,84			376,55	376,90	0,04	23:26	23:32	#VALUE!	#VALUE!	#VALUE!	78,8	n		Seal failure	20
2	lower	2942,5	2942,4	376,54	376,85	291,602	292,00			#VALUE!	23:41	23:47	1,012	#REF!	1,304	79,8	y	75	Low perm - due to Martineay probe	20
3	lower	2942,7	2942,6	376,56	376,87	291,632	292,03			#VALUE!	23:52	23:56	1,012	#REF!	1,304	80,4	y	68,7	Low perm - due to Martineay probe	20
4	lower	2942,5	2942,4	376,48	376,77	291,602	291,99			#VALUE!	00:03	00:40	1,012	#REF!	1,304	80,9	y	60,1	Low perm - due to Martineay probe	20
											00:40								Attempt pumping - very low rate - abort	
5	upper	2942,5	2942,4	376,32	376,07	291,455	291,41			#VALUE!	00:58	01:04	1,010	#REF!	1,304	80,8	y	20,6	Very low perm	20
6	lower	2943,2	2943,1	376,52	376,84	291,632	292,07			#VALUE!	01:11	01:28	1,012	#REF!	1,304	82,2	N	51,8	Seal failure	20
7	lower	2 945,0	2944,9	376,74	377,13					#VALUE!	01:24		#VALUE!	#VALUE!	1,304	82,2	N		Seal failure	20
8	upper	2942,6	2942,5	376,38	376,21	291,466	291,44			#VALUE!	01:30		1,010	#REF!	1,304	81,1	y	41,1	Low perm - due to Martineay probe	20
9																			Start clean up for water sampling	
10																				

AVERAGE NB: Fmtr Press sg calculated from RKB #VALUE!



**FORMATION PRESSURE WORKSHEET 2D**

**Gas/Condensate sampling run**

Well : 6305/8-1 Rig : Scarabeo 5 Date : 12.08.00 Conveyance Wireline  
 Pressure Units : Bars RKB-MSL : 25 m. MSL-SBed: 837 m. Witnessed by : Williams, Mangset, Kjellin, Skottlien  
 Samples: Sample depths: Toolstring: PC-HY-SP(MART)-SP(STD)-OFA-PO-IO-PO-SC3-SC2-SC1-MS2(2X250,4X450)-MS1(1X250,5X450)

Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol	
			Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract									
1	2905.5	2905.4	370.79	3712.14	289.383	289.83	370.74	371.11	0.05	15:25	15:30	1.017	#REF!	1.301	79.6	Y	36.5	Too tight too sample - standard probe	20	
2	2908	2907.9	371.08	371.48	289.405	289.9			371.08	15:35		1.016	#REF!	1.301	80	Y	764	Good perm - select for sampling	20	
									0			#DIV/0!	#REF!	#DIV/0!					Pump failure at 18:30	20
3	2908	2907.9	371.124	371.6	289.476	290			371.124	20:15		1.017	#REF!	1.301	83.8	Y	416	Test prior to sampling		
									0			#DIV/0!	#REF!	#DIV/0!					Further pump problems	
4	2908	2907.9			289.407				0	22:00		0.000	#REF!	0.000	83	Y	454	Test prior to sampling		
									0			#DIV/0!	#REF!	#DIV/0!					Completed samples of poor quality	

AVERAGE

NB: Fmtn Press sg calculated from RKB

#REF!

Page : 1 of :

**FORMATION PRESSURE WORKSHEET 2E**

**Gas & Condensate sampling run 2**

Well : 6305/8-1 Rig : Scarabeo 5 Date : 13/08/00 Conveyance Wireline  
 Pressure Units : Bars RKB-MSL : 25 m. MSL-SBed: 837 m. Witnessed by : Williams, Mangset, Kjellin, Skottlien  
 Toolstring: PC-HY-SP(MART)-SP(STD)-OFA-PO-IO-PO-SC3-SC2-SC1-MS2(2X250,4X450)-MS1(1X250,5X450)

Test No.	Depth mMD	Depth mTVD	Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol	
			Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract									
																				Pressure
1	2 914,0	2 913,9	371,71	371,29	289,413	289,18			371,709	13:25	18:35	1,012	#REF!	1,300	87,3	Y	65,6	Sampling point	20	
2	2 922,5	2 922,4	372,63	372,13				372,62	372,06	0,01	18:51	15:58	0,000	#REF!	1,300	86,7	N	74,7	Very tight, Supercharged	20
3	2 922,5	2 922,4	372,57	372,04					372,57	19:15	19:17	0,000	#REF!	1,300	86,9	N	9,5	Very tight, Supercharged	20	
4	2 922,0	2 921,9	372,46	372,96					372,461	19:22	19:24	0,000	#REF!	1,299	87	N	16,5	Very tight, Supercharged	20	
5	2 922,0	2 921,9	372,53	373,08	289,643	290,25		372,52	373,06	0,01	19:32	19:36	1,013	#REF!	1,300	86,6	Y	13	Very tight, Standard probe	20
6	2 921,8	2 921,7	379,49	371,97				372,42	371,94	7,07	19:48	19:55	0,000	#REF!	1,324	87,6	N	4,7	Very tight, Supercharged	20
7	2 922,0	2 921,9	372,52	371,98					372,52	20:15	20:20	0,000	#REF!	1,300	88,3	N	9,2	Very tight, Supercharged	20	
8	2 921,9	2 921,8	372,52	372,01				372,49	372,06	0,03	20:28	20:30	0,000	#REF!	1,300	89,4	N	14,2	Very tight, Supercharged	20
9	2 922,0	2 921,9	372,58	372,1					372,58	20:38		0,000	#REF!	1,300	90,3	N	90,3	Supercharged	20	
10	2 908,0	2 907,9							0	03:40	03:42	0,000	#REF!	0,000	84,6	N		Lost seal	20	
11	2 908,0	2 907,9							0	03:42	03:44	0,000	#REF!	0,000	84,6	N		Lost seal	3,3	
12	2 908,2	2 908,1			289,326				0	04:00	12:00	0,000	#REF!	0,000	87,3	Y	161,8	Sampling point	20	

AVERAGE

NB: Fmtn Press sg calculated from RKB

#REF!

Page : 1 of :

**FORMATION PRESSURE WORKSHEET**

**RUN 3F**

**Pressure profiling and water sampling**

Well : 6305/8-1 Rig : Scarabeo 5 Date : 19 Aug 2000 Draw down limited tests  
 Pressure Units : Bars RKB-MSL : 25 m. MSL-SBed: 837 m. Witnessed by : Williams, Mangset, Kjellin  
 Toolstring: PC-HY-SP(Mart)-SP(STD)-OFA-PO-IO-PO-SC2-SC1-MS1(6x450cc) Conveyance: Wireline 250 bar dd & 35 cc/min

Test No.	Depth		Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time		Formation Pressure	Fluid Gradient	Mud Pressure	Test Temp	Good Data?	Quartz Mobility	Remarks	Pre Test Vol
	mMD	mTVD	Pressure		Quartz	Strain	Quartz	Strain	Diff	hh:mm	sg EMD	g/cc	sg EMD	degC	Y/N	md/cp			
	RKB	RKB	Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract	sg EMD	g/cc	sg EMD	degC	Y/N	md/cp		
1	3 010,6	3 010,5	387,13	387,54	300,064	387,6	387,13	387,6	-0,002	22:40	22:44	1,016	-	1,311	88,1	Y	25,2		20
2	3 005,0	3 004,9	386,44	386,93	298,211	298,77	386,43	386,93	0,006	22:51	22:58	1,012	3,373	1,311	88,1	Y	52,1		20
3	3 001,6	3 001,5	386,02	386,5			386,00	385,54	0,019	23:04	23:07	0,000	894,079	1,311	88,1	N	0,6	Tight	2,8
4	3 001,5	3 001,4	386,04	386,48			386,11		-0,068	23:16	23:20	0,000	0,000	1,311	88,1	N	2,1	Tight	1,8
5	2 997,0	2 996,9	385,48	385,96	297,382	297,85	385,45	385,974	0,023	23:27	23:30	1,011	-673,648	1,311	88,2	Y			20
6	2 994,0	2 993,9	385,09	385,56	297,040	297,57	385,09	385,95	0,005	23:34	23:39	1,011	1,162	1,311	88,3	Y	53,2		20
7	2 992,3	2 992,2	384,89	385,37	296,838	297,35	384,91	385,36	-0,022	23:44	23:50	1,011	1,211	1,311	88,2	Y	91,9		20
8	2 991,2	2 991,1	384,76	385,23	296,748	297,27	384,81	385,12	-0,048	23:54	23:58	1,011	0,834	1,311	88,2	Y	33,7		20
9	2 988,8	2 988,7	384,47	384,96	296,451	296,99	384,54	384,98	-0,071	00:02	00:07	1,011	1,261	1,311	88,1	Y	28,9		20
10	2 985,7	2 985,6	384,09	384,56	296,074	296,62	384,15	384,55	-0,059	00:13	00:20	1,011	1,240	1,311	88,0	Y	5,2		20
11	2 984,2	2 984,1	383,89	384,37			383,91	384,39	-0,023	00:25	00:27	0,000	2 012,056	1,311	82,7	N	0,9	Tight	1,8
12	2 980,5	2 980,4	383,37	383,85			383,46	383,93	-0,088	00:32	00:36	0,000	0,000	1,311	82,6	N	0,8	Tight	1,8
13	2 980,0	2 979,9	383,38	383,85	295,401	295,94	383,39	383,85	-0,006	00:39	00:43	1,010	-6 022,446	1,311	82,5	Y	59,3		20
14	2 978,5	2 978,4	383,13	383,6	295,246	295,8	383,22	383,67	-0,09	00:46	00:51	1,010	1,053	1,311	82,3	Y	26,2		20
15	2 977,5	2 977,4	383,06	383,51	295,145	295,69	383,05	383,52	0,007	00:58	01:05	1,010	1,030	1,311	82,1	Y	5,9		20
16	2 975,8	2 975,7	382,83	383,31	294,984	295,52	382,84	383,29	-0,008	01:10	01:14	1,010	0,965	1,311	81,9	Y	36,1		20
17	2 974,0	2 973,9	382,60	383,09	294,822	295,35	382,62	383,09	-0,014	01:22	01:25	1,011	0,917	1,311	81,8	Y	32,9		20
18	2 972,5	2 972,4	382,42	382,88	294,671	295,2	382,42	382,88	0,006	01:28	01:35	1,011	1,026	1,311	81,6	Y	134,4		20
19	2 969,0	2 968,9	381,97	382,42	294,316	294,84	382,00	382,49	-0,026	01:42	01:46	1,010	1,034	1,311	81,4	Y	93		20
20	2 967,0	2 966,9	381,75	382,21	294,145	294,67	381,76	382,2	-0,01	01:52	01:58	1,011	0,872	1,312	81,2	Y	141,5		20
21	2 964,5	2 964,4	381,36	381,82	293,894	294,41	381,37	381,83	-0,008	02:08	02:11	1,011	1,023	1,311	81,0	Y	19,1		20
22	2 963,0	2 962,9	381,15	381,6			381,20	381,62	-0,044	02:16	02:19	0,000	1 997,241	1,311	80,8	N	10	limited draw down - reject	1,7
23	2 963,5	2 963,4	381,21	381,66	293,803	294,31	381,26	381,71	-0,052	02:27	02:31	1,011	5 989,867	1,311	80,7	Y	33		20
24	2 960,2	2 960,1	380,82	381,26			380,84	381,26	-0,02	02:35	02:38	0,000	907,556	1,311	80,4	N	1,2	tight at top of sand	1,6
25	2 960,6	2 960,5	380,84	381,27	293,524	294,03	380,86	381,31	-0,016	02:48	02:52	1,011	7 480,224	1,311	80,4	Y	79,9		20
26	2 958,5	2 958,4	380,58	381,03			380,62	381,03	-0,045	02:56	02:58	0,000	1 424,805	1,311	80,6	N	1,8	tight - bed too thin to locate	1,7
27	2 957,0	2 956,9	380,37	380,81	293,088	293,59	380,43	380,87	-0,055	03:01	03:07	1,010	-1 991,764	1,311	80,3	Y	42,7	Break in gradient - Top Josalfare ?	20

**FORMATION PRESSURE WORKSHEET**

**RUN 3F**

**Pressure profiling and water sampling**

Well : 6305/8-1 Rig : Scarabeo 5 Date : 19 Aug 2000 Draw down limited tests  
 Pressure Units : Bars RKB-MSL : 25 m. MSL-SBed: 837 m. Witnessed by : Williams, Mangset, Kjellin  
 Toolstring: PC-HY-SP(Mart)-SP(STD)-OFA-PO-IO-PO-SC2-SC1-MS1(6x450cc) Conveyance: Wireline 250 bar dd & 35 cc/min

Test No.	Depth		Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time		Formation Pressure	Fluid Gradient	Mud Pressure	Test Temp	Good Data?	Quartz Mobility	Remarks	Pre Test Vol
	mMD	mTVD	Pressure		Quartz	Strain	Quartz	Strain	Diff	hh:mm	sg EMD	g/cc	sg EMD	degC	Y/N	md/cp			
	RKB	RKB	Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract	sg EMD	g/cc	sg EMD	degC	Y/N	md/cp		
28	2 955,8	2 955,7	380,27	380,72	292,960	293,46	380,30	380,72	-0,035	03:12	03:17	1,010	1,087	1,311	80,2	Y	45		20
29	2 954,0	2 953,9	380,05	380,48	292,781	293,28	380,05	380,5	-0,003	03:24	03:29	1,010	1,014	1,311	80,1	Y	55,9		20
30	2 953,0	2 952,9	379,88	380,31	292,688	293,19	379,92	380,33	-0,038	03:33	03:38	1,010	0,948	1,311	80,1	Y	35,9		20
31	2 951,8	2 951,7	379,77	380,18	292,580	293,07	379,73	380,17	0,04	03:42	03:49	1,010	0,917	1,311	80,0	Y	21,9		20
32	2 947,5	2 947,4	379,19	379,61	292,064	292,56	379,18	379,63	0,006	03:56	04:02	1,010	1,223	1,311	80,0	Y	133,1		20
33	2 942,5	2 942,4	378,52	378,95	291,587	292,08	378,55	379,02	-0,032	04:07	04:11	1,010	0,972	1,311	79,9	Y	316		20
34	2 936,0	2 935,9	377,66	378,12	290,961	291,47	377,69	378,13	-0,026	04:15	04:21	1,010	0,982	1,311	79,7	Y	63		20
35	2 934,0	2 933,9	377,38	377,83	290,737	291,24	377,40	377,84	-0,019	04:27	04:31	1,010	1,142	1,311	79,4	Y	78,2		20
36	2 931,0	2 930,9	376,98	377,42	290,486	290,97	377,02	377,43	-0,038	04:36	04:45	1,010	0,853	1,311	79,3	Y	26,6		20
37	2 929,0	2 928,9	376,74	377,16	290,380	290	376,75	377,2	-0,01	04:52	04:58	1,011	0,540	1,311	79,0	N	17,5	Low perm	1,6
38	2 928,0	2 927,9	376,62	377,04	290,223	290,68	376,63	377,02	-0,006	05:03	05:07	1,010	1,600	1,311	79,0	Y	45		20
39	2 927,0	2 926,9	376,47	376,87	290,122	290,58	376,50	376,91	-0,032	05:13	05:17	1,010	1,030	1,311	79,0	Y	53		20
40	2 926,0	2 925,9	376,37	376,75	290,031	290,49	376,36	376,76	0,013	05:22	05:28	1,010	0,928	1,311	79,1	Y	39,5		20
41	2 925,0	2 924,9	376,22	376,62	290,087	290,55	376,25	376,61	-0,026	05:33	05:41	1,011	-0,571	1,311	79,1	N	5,1	Supercharged	20
42	2 923,5	2 923,4	376,02	376,39	289,798	290,25	376,03	376,42	-0,012	05:45	05:54	1,010	1,964	1,311	79,1	Y	76,8	Autoreset twice - inverted build up	20
43	2 923,0	2 922,9	375,99	376,36	289,757	290,21	375,97	376,39	0,021	06:03	06:08	1,010	0,836	1,311	79,0	Y	57,3	Autoreset twice - inverted build up	20
44	2 922,7	2 922,6	375,90	376,31	289,743	290,19	375,91	376,3	-0,01	06:14	06:20	1,011	0,476	1,311	79,0	Y	27,3	Sped up drawn down rate	20
45	2 922,5	2 922,4	375,88	376,23	289,734	290,19	375,81	376,2	0,073	06:26	06:32	1,011	0,459	1,311	79,0	Y	42,3		20
46	2 922,1	2 922,0	375,80	376,18	289,671	290,12	375,80	376,18	0,003	06:38	06:45	1,011	1,606	1,311	79,1	Y	83,9		20
47	2 921,8	2 921,7	375,75	376,14	289,659	290,11	375,76	376,13	-0,011	06:50	06:58	1,011	0,408	1,311	79,1	Y	46,9		20
48	2 921,5	2 921,4	375,71	376,09	289,674	290,12	375,68	376,08	0,03	07:04	07:13	1,011	-0,510	1,311	79,2	Y	61,3	auto-reset - PS module oil leak ?	20
49	2 921,2	2 921,1	375,67	376,04	289,687	290,12	375,64	376,03	0,025	07:20	07:27	1,011	-0,442	1,311	79,2	Y	21,2		20
50	2 921,0	2 920,9	375,60	375,97	289,680	290,12	375,63	376	-0,033	07:35	07:42	1,011	0,357	1,311	79,4	Y	14,9		20
51	2 919,0	2 918,9	375,33	375,71	289,616	290,06	375,37	375,71	-0,036	07:52	08:00	1,011	0,326	1,311	79,3	Y	229		20
52	2 917,5	2 917,4	375,17	375,54	289,589	290,03	375,16	375,54	0,013	08:10	08:16	1,012	0,183	1,311	79,3	Y	441,7		20
	2 914,0	2 913,9								08:25		#VALUE!	#VALUE!	0,000	N			Probe hydraulic leak / use other probe	
53	2 914,0	2 913,9	374,64	375,01	289,601	290,03	374,66	375,04	-0,02	09:10	09:20	1,013	-0,035	1,311	79,1	Y		Increase hydraulic duty cycle for PS	20

**FORMATION PRESSURE WORKSHEET**      **RUN 3F**      **Pressure profiling and water sampling**

Well : 6305/8-1      Rig : Scarabeo 5      Date : 19 Aug 2000      Draw down limited tests  
 Pressure Units : Bars      RKB-MSL : 25 m.      MSL-SBed: 837 m.      Witnessed by : Williams, Mangset, Kjellin  
 Toolstring: PC-HY-SP(Mart)-SP(STD)-OFA-PO-IO-PO-SC2-SC1-MS1(6x450cc)      Conveyance: Wireline      250 bar dd & 35 cc/min

Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time hh:mm		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol
			Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract								
	2 914,0	2 913,9			Guage offsets		-0,91	-0,34	0,911	08:25		#VALUE!	#VALUE!	0,000	N		Probe hydraulic leak / use other probe		
53	2 917,5	2 917,4	374,08		289,589	290,03	374,09	375,04	-0,012	08:42	00:00	1,012	#VALUE!	1,307	79,0	N	0	Use Martineau with offset	20
54	2 914,0	2 913,9							0	00:00	00:00	0,000	843,422	0,000	0,0		0		0
55	2 912,5	2 912,4							0	00:00	00:00	0,000	0,000	0,000	0,0		0		0
56	2 908,0	2 907,9							0	00:00	00:00	0,000	0,000	0,000	0,0		0		0
57	2 905,5	2 905,4							0	00:00	00:00	0,000	0,000	0,000	0,0		0		0
58	2 901,5	2 901,4							0	00:00	00:00	0,000	0,000	0,000	0,0		0		0
									0			#DIV/0!	0,000	#DIV/0!					
53	2 917,5	2 917,4	374,99	374,72	290,500	290,37	375,00	374,7	-0,012	08:42		1,015	1,015	1,310	79,0	n		Slow build up in gas with Martineau	20
54	2 914,0	2 913,9							0			0,000	846,075	0,000		n			
55	2 912,5	2 912,4							0			0,000	0,000	0,000		n			
56	2 908,0	2 907,9							0			0,000	0,000	0,000		n			
57	2 905,5	2 905,4							0			0,000	0,000	0,000		n			
58	2 901,5	2 901,4							0			0,000	0,000	0,000		n			

**FORMATION PRESSURE WORKSHEET                      RUN 3G                      Water sampling**

Well : 6305/8-1                      Rig : Scarabeo 5                      Date : 20 Aug 2000  
 Pressure Units : Bars                      RKB-MSL : 25 m.                      MSL-SBed: 837 m.                      Witnessed by : Williams, Mangset, Kjellin  
 Toolstring: PC-HY-SP(Mart-20)-OFA-PO-IO-PO-SC2-SC1-MS1(6x450cc)                      Conveyance: Wireline

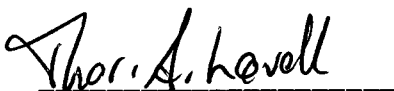
Test No.	Depth mMD	Depth mTVD	Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure			Time		Formation Pressure sg EMD	Fluid Gradient g/cc	Mud Pressure sg EMD	Test Temp degC	Good Data? Y/N	Quartz Mobility md/cp	Remarks	Pre Test Vol
			Quartz	Strain	Quartz	Strain	Quartz	Strain	Diff	Set	Retract								
1	2 980,0	2 979,9	383,85	382,45			382,83		1,021	16:48	16:54	0,000	-	1,313				Tight	4,8
2	2 980,5	2 980,4	382,88	382,5	295,345	295,16			382,88	16:58		1,010	6 021,305	1,309	81,0	Y	40,9	Good for sample depth 1	19,2
									0			#DIV/0!	1,010	#DIV/0!				Sampling at 2980,5	
3	2 930,5	2 930,4	376,10	375,64	290,298	290			376,099	09:07		1,010	1,010	1,308	86,4	Y	14,3	Good for sample depth 2	20
									0			#DIV/0!	1,010	#DIV/0!				Start pumping at 09:12	
4	2 926,0	2 925,9	375,68	375,22	289,856	289,57			375,68	13:40		1,010	1,010	1,309	84,7	Y	8,5	Attempt to mover down 0,5 m	20
5	2 926,5	2 926,4	375,73	375,27	289,902	289,63			375,73	13:52		1,010	0,938	1,309	84,9	Y	10,4	Aborted attempt to pump	19,7
	2 926,5	2 926,4	375,74	375,43					375,74	14:20		0,000	#DIV/0!	1,309				Aborted attempt to pump	
	2 926,5	2 926,4	375,76	375,45	289,926	289,7			375,76	14:30		1,010	#DIV/0!	1,309	84,2			Begin pumping 14:50 for last sample depth	20
									0			#DIV/0!	1,010	#DIV/0!					
									0			#DIV/0!	#REF!	#DIV/0!					



# SECTION B

# OPERATIONS

Made by:



Thor Andre Løvoll

Approved by:



Tor Johan Skakstad



<u>LIST OF CONTENTS</u>		<u>Page</u>
	<b>DRILLING SUMMARY AND EXPERIENCES</b>	
1	Mobilising	B-3
2	Anchor handling/ DP trial	B-3
3	36" x 42" hole section/ 30" x 36" conductor casing	B-3
4	26" hole section/ 20" casing	B-3
5	17 1/2" clean out section	B-4
6	12 1/4" hole section/ 9 5/8" casing	B-4
7	8 1/2" Hole Section	B-5
8	Plug and Abandonment	B-7

Tables

General Information on Well	B-8
Final Cost Reports	B-9
Down Time Reports	B-10
Daily Report	B-15
Time Distribution	B-31
Hole Deviation	B-33
Main Consumption	B-35
Bit Record	B-36
Bottom Hole Assemblies	B-37
Cement Slurry Report	B-40
Cement Consumption Per job	B-43
Total Consumption of Cement Additives	B-44
Daily Mud Properties: Rheology Parameters	B-45
Daily Mud Properties: Other Parameters	B-48
Total Consumption of Mud Additives	B-51

FIGURES

B-1 Pore Pressure, Mud Density, Fracture and Overburden Gradients	B-52
B-2 Temperature Gradient	B-53
B-3 Formation Strength Test Reports	B-54
B-6 Time Distribution	B-57
B-7 Drilling Curves	B-58
B-8 Well Status After Abandonment	B-59

**1 Mobilising**

Total time used:	96.5 hrs	
Operational time:	69.5 hrs	(100)%

"Scarabeo 5" started on budget for well 6305/8-1 when it departed the yard Hanøytangen at 10:30 hrs the 10.07.00. The rig moved towards Ormen Lange and well 6305/8-1 location and arrived location at 00:30 hrs the 12.07.00.

**2 Anchor handling/ DP trial**

Total time used:	45 hrs	
Operational time:	39.5 hrs	(87.8)%

The rig was deballasted and thrusters were calibrated. A DP trial was performed.

**3 36" x 42" hole section/ 30" x 36" conductor casing**

Total time used:	67 hrs	
Operational time:	66 hrs	(98.5)%

**3.1 Drilling**

Made up BHA and drillpipe during transit and DP trial. RIH and spudded the well at 862 mTVD at 21:00 hrs the 13.07.00. Spud location approximately 4 m at 190 degrees from spud marker bouy.

Drilled 36" hole from 862 m to 942 m w/ seawater and hi-vis pills. Opened up upper part of hole in the same run to 42" with a hole opener to allow for 36" conductor casing. Had max inclination 0.7 deg. No boulders were experienced. Observed drillpipe with ROV to confirm TD of section with little success. Pumped 20 m3 hi-vis pill and displaced hole to 1.50 sg before pulling out of hole. Placed a transponder and two marker bouys around hole to be able to relocate hole.

**3.2 Casing/ cementing**

Ran the 30" x 36" conductor casing with fibre inner string, PGB running tool and guideplate to avoid gas migration. No need for moving the rig to spud in hole with casing.

Landed the casing, and cemented the conductor with 51 m3 1.45 sg Rapid cement. Noted returns in annulus. Bulls eye readings 0.5 deg. Dropped dart and circulated through Titus system. Waited 3.5 hours on cement while circulating and then performed top up job with additional 14 m3 of Rapid cement and Drilquip Titus cmt system. Waited 8 hours on cement. Disconnected running tool and pulled out of hole. Final bullseye 0.5 degrees, stickup 2.5 m.

**4 26" hole section/ 20" casing**

Total time used:	144 hrs	
Operational time:	142 hrs	(98.6)%

4.1 Drilling

Made up and racked cement head and wellhead rigid lockdown tool. Made up and RIH with 26" motor BHA. Tagged cement at 936 m. Drilled shoe track and 26" hole from 942 m to 1550 m with seawater and hi-vis pills. Drilled with 30 - 50 m/h ROP. Oriented from 1422 - 1433 m. Sand detected from 1296 - 1303 m, no boulders, shallow gas or waterflow detected. Circulated hole clean with 20 m3 hi-vis pill. Displaced hole to 1.30 sg mud and pulled out of hole. Had max 12 mt overpull when pulling out of hole.

4.2 Casing/ cementing

Made up and ran in hole with 20" casing. Installed bow centralisers around each connection. Ran in hole to 930 m while filling the casing w/ seawater. Displaced the casing to 1.30 sg mud and continued to run in hole to TD. Not able to get 25 mt overpull when landing wellhead on 36" housing due to premature shearing of lockpins on wellhead running tool. Verified correct landing depth with ROV. Preloaded wellhead and 36" housing to 250 tons.

Cemented the 20" casing with 210 m3 1.60 sg rapid cement. Used remote operated cement head. Bumped plug and tested the casing to 110 bar. Pulled out of hole and laid down running tool, 26" BHA and cmt head.

4.3 Running BOP

Ran BOP and riser, tested kill/ choke lines to 207 bar every 10th joint. Landed BOP and performed connector pressure test.

**5 17 1/2" clean out section**

Total time used:	32 hrs	
Operational time:	21 hrs	(65.6)%

5.1 Drilling

Made up 17 1/2" drill out assembly and RIH. Function tested upper annular connector on BOP and accidentally cut drillpipe with BOP shear ram. Pulled out of hole and laid out damaged joint. Troubleshoot BOP control system. Failure due to malfunction of control system.

Ran in hole and drilled out shoe track and 3 m new formation to 1553 m. Took an ELOT to 1.39 sg EMW and pulled out of hole.

Observed static and dynamic loss up to 400 lph to formation after ELOT had been performed.

**6 12 1/4" hole section/ 9 5/8" casing**

Total time used:	159.5 hrs	
Operational time:	155.5 hrs	(97.5)%

6.1 Drilling

Made up 12 1/4" BHA, ran in hole and drilled 12 1/4" hole from 1553 m to 1850 m with controlled ROP for good realtime log on MWD. Circulated hole clean and pulled out of hole for intermediate wireline logging.

## 6.2 Wireline logging

Rigged up and ran intermediate wireline logs (for details see chapter A-7):

Run #1 (1A):            PEX/DSI/GR  
 Run #2 (1A):            VSP  
 Run #3 (1A):            MSCT/GR

Rigged down wireline equipment.

## 6.3 Drilling

Ran in hole with 12 1/4" assembly and drilled 12 1/4" hole from 1850 m to 9 5/8" casing point at 2857 m. Had 45.7 m/ h average ROP on bit run with controlled drilling. Used 6 5/8" drillpipe, 12 1/4" PDC bit ABD 536P with small nozzles, giving a HSI of 10 - 12. No bit balling experienced. Pumped 8 m3 1.60 sg hi-vis pill and circulated hole clean. Had tight hole from 2733 m to 2628 m and 2020 m to 1896 m. Max 30 ton overpull.

## 6.4 Casing/ cementing

Retrieved wear bushing. Made up and racked cement head and casing hanger. Ran 9 5/8" casing with reamer shoe and rigid centralisers. Landed casing on 6 5/8" drillpipe. Installed cement head, landed in wellhead and established circulation. Cement head was plugged due to poor cleaning, and had to be opened up and circulated clean. Cemented 9 5/8" casing, bumped plug and pressure tested casing to 210 bar. Installed wear bushing. Laid down 12 1/4" BHA.

## **7 8 1/2" hole section**

Total time used:	725.5 hrs	
Operational time:	480.5 hrs	(66.2)%

## 7.1 Drilling

Made up 8 1/2" BHA, ran in hole and tagged float collar at 2804 m. Drilled shoe track and formation from 2857 m to 2860 m while adding BaCl<sub>2</sub> to active mud system. Circulated and conditioned mud and performed a LOT to 1.66 sg EMW. Drilled from 2860 m to 2862 m with poor penetration, probably due to aluminium shoe on 9 5/8" casing. Pulled out of hole.

Ran in hole with reverse circulating junk basket. Misrun due to plugged junk basket. Ran in hole to 2858 m, washed and reamed down to TD. Cut formation from 2862 m to 2863 m. Pulled out of hole and recovered only minor junk.

Ran in hole with 8 1/2" BHA and drilled from 2863 m to coring point at 2895 m. Treated active mud system with BaCl<sub>2</sub> to reduce sulphate content in mud prior to coring. Had great difficulties with reducing SO<sub>4</sub> content in mud system. Pulled out of hole and racked 8 1/2" BHA.

7.2 Coring

Ran in hole with core #1 and cut core from 2895 m to 2915.5 m. Pulled out of hole and recovered 19.5 m (93%).

Ran in hole with core #2. Waited on weather due to rig in yellow alert on DP risc. analysis.

Ran in hole and cut core from 2915.5 m to 2943.3 m. Pulled out of hole and recovered 27.8 m (100%).

Ran in hole with core #3 and cut core from 2943.3 m to 2959.1 m. Pulled out of hole and recovered 15.8 m (100%).

Ran in hole with core #4 and cut core from 2959.1 m to 2981 m. Pulled out of hole and recovered 21.1 m (96.3%).

7.3 Wireline logging

Rigged up wireline and ran wireline logs (for details see chapter A-7):

Run #1 (2B):	PEX/HALS
Run #2 (2A):	MDT pressure (misrun due to pump/probe plugging)
Run #3 (2B):	MDT samples
Run #4 (2C):	MDT watersamples
Run #5 (2D):	MDT samples (misrun due to pump failure)
Run #6 (2E):	MDT gas and oil samples
Rigged down wireline.	

7.4 Coring

Ran in hole with core #5 and cut core from 2981 m to 2989 m. Pulled out of hole and recovered 6.65 m (83.1%).

7.5 Drilling

Ran in hole with BOP test tool. Unable to pass shear ram with string below test tool. troubleshoot BOP controlsystem. Tested BOP.

Ran in hole with 8 1/2" drilling assembly, reamed and logged the cored interval and drilled 8 1/2" hole from 2989 m to TD of well at 3175 m. Swept hole with 5 m3 hi-vis pill and circulated hole clean. Pulled out of hole. Racked assembly.

7.6 Wireline logging

Rigged up wireline and ran wireline logs (for details see chapter A-7):

Run #7 (3B):	HALS/PEX/DSI (PEX misrun)
Run #8 (3C):	PEX/HALS/TLD/HGNS
Run #9 (3F):	MDT pressure/GR (misrun due to toolfailure)
Run #10 (3G):	MDT water samples
Run #11 (3A):	CMR/ECS/HNGS (HNGS and CMR misrun)
Run #12 (3B):	MSCT/GR
Run #13 (3B):	VSP/GR
Run #14 (3A):	FMI/HRLA/HNGS
Run #15 (3H):	MDT gas and oil samples (109.5 hrs fishing operation)

Fished the MDT tool on run #15 with cut and thread due to stuck MDT tool. Broke cable. Fished cable with spear and special 3 1/2" DP arrangement. Retrieved MDT fish with overshot.

Run #16 (3A): CMR-200/GR  
Rigged down wireline equipment.

## 8 **Plug and abandonment**

Total time used:	237 hrs	
Operational time:	166.5 hrs	(70.3)%

### 8.1 Cement plugs

Made up 3 1/2" DP and RIH. Ran travelling block into upper racking arm, causing repair of upper racking arm.  
Ran in hole to TD at 3175 m. Circulated bottoms up, set a balanced cement plug from 3175 m to 2963 m. Pulled out to 2937 m and reverse circulated out excess cement.  
Set a balanced cement plug from 2937 m to 2726 m. Pulled out of hole to 2680 m and reverse circulated out excess cement.

Ran in hole with fishing tool and tried to recover wire in wellhead area without success. Ran in hole and tried to retrieve wear bushing without success. Tagged top of cement at 2680 m with 10 tons, tested cmt plug to 170 bar.

Set an additional cement plug from 2015 m to 1880 m due to possibility of pulling BOP. reverse circulated out excess cement at 1615 m. Pulled out of hole.

### 8.2 Casing cutting

Attempted to fish for wire in wellhead without success. Retrieved wear bushing with spear assembly. Had one misrun before managing to retrieve the seal assembly.  
Ran in hole and cut the 9 5/8" casing at 1501 m. Retrieved casing in separate run.

### 8.3 Cement plug

Ran in hole with parabow extrusion tool and 3 1/2" DP stinger. Set a balanced cement plug from 1491 m to 1279 m. Pulled out to 1200 m and circulated bottoms up.  
Laid down DP while waiting on cement. Tagged top of cement at 1279 m with 5 tons. Pressure tested the cement plug to 85 bar.

Set a balanced cement plug from 1050 m to 950 m. Pulled out to 900 m and circulated out excess cement. Laid down drillpipe. Tagged cement at 932.5 m with 5 tons. Pulled out of hole.

### 8.4 Retrieved BOP/ Casing cutting

Pulled BOP and riser. Picked up MOST tool and ran in hole. Latched on to wellhead and cut 36" and 20" casing at 867 m (5 m below seabed). Pulled wellhead free with 30 ton overpull. Secured wellhead on trolley.

Departed location at 18:00 hrs, the 08.09.00. Arrived Fjordbase at 05:00 hrs, the 11.09.00. Rig off contract.

**GENERAL INFORMATION ON WELL 6305/8-1**

Field : ORMEN LANGE Country : NORWAY  
 Licence : ORMEN LANGE UNIT  
 UTM zone : 31 Central Median : 3' E Horiz. Datum: ED50

Location coordinates:		Surface	Target
UTM	North [m]:	7041085.0	
UTM	East [m]:	619768.0	
Geographical	North :	63 28'34.84"	
Geographical	East :	05 24'14.59"	

Water Depth: 837.0 m Reference Point Height: 25.0 m  
 Formation at TD: KYRRE at 3022 m MD

<b>Operators:</b>	NORSK HYDRO PRODUKSJON A/S	<b>Share:</b>	17.96 %
<b>Partners:</b>	DEN NORSKE STATS OLJESELSKAP A/S	<b>Share:</b>	46.77 %
	A/S NORSKE SHELL		17.20 %
	BRITISH PETROLEUM NORWAY LIMITED U.A		10.89 %
	ESSO NORGE A/S		7.18 %

**Total depth (RKB) :** 3175.0 m MD 3174.8 m TVD

**TIME SUMMARY**  
**Start Time** : 2000-07-10 10:30:00  
**Spudding date** : 2000-07-13  
**Abandonment date** : 2000-09-08

Main operation	Hours	Days	%
MOBILIZATION	136.0	5.7	9.0
DRILLING	463.5	19.3	30.8
FORMATION EVALUATION MWD	7.0	0.3	0.5
FORMATION EVALUATION LOGGING	253.5	10.6	16.8
FORMATION EVALUATION CORING	141.0	5.9	9.4
PLUG AND ABANDONMENT	166.5	6.9	11.1
DOWNTIME MOBILIZATION	5.5	0.2	0.4
DOWNTIME DRILLING	42.5	1.8	2.8
DOWNTIME FORM. EVAL. LOGGING	182.0	7.6	12.1
DOWNTIME FORM. EVAL. CORING	39.5	1.6	2.6
DOWNTIME PLUG AND ABANDONMENT	69.5	2.9	4.6
<b>Sum:</b>	<b>1506.5</b>	<b>62.8</b>	

**Hole and casing record**

Hole	Track	Depth [m MD]	Casing/Tubing	Track	Depth [m MD]
36"		942.0	30"		940.8
26"		1550.0	20"		1544.0
17 1/2"		1553.0	9 5/8"		2852.1
12 1/4"		2857.0			
8 1/2"		3175.0			

**Well status:** PERMANENTLY ABANDONED

**Rig name:** SCARABEO 5

**DRILLING**

B-9

**WELL**

6305/8-1

**LICENCE**

ORMEN LANGE UNIT

**RIG**

SCARABEO 5

**DEPTH IN METER (Planned)**

3 075

**DEPTH IN METER**

3 175

**RIG RATE NOK/DAY**

1 265 902

**EXCHANGE RATE USD 1=**

NOK 9,00

**DAYS (Planned)**

54.8 + 2,7 dg Exp. logging program

**DAYS**

62.8

**DATE**

2000-10-17

**ESTIMATED COSTS (in 1.000 NOK)**

AFE-ORM-01

	AFE	EST. COST
<b>0 Employee related costs</b>	<b>13 530</b>	<b>19 326</b>
<b>1 Rig costs</b>	<b>69 650</b>	<b>74 558</b>
<b>2 Rig support costs</b>	<b>4 420</b>	<b>4 416</b>
3 A Fuel/luboil	3 620	7 268
3 C Bits	3 290	801
3 D Casing/casing equipment	5 575	5 497
3 E Wellhead	2 590	3 221
3 F Cement/cement additives	3 620	3 803
3 G Mud/mud chemicals	3 530	4 789
<b>3 Consumables costs, sub total</b>	<b>22 225</b>	<b>25 380</b>
4 B Fixed wing transport	0	0
4 C Other transport	275	314
4 D Standby vessels	3 575	4 080
4 F Helicopter transport	1 650	1 883
4 G Supplyboat	4 650	5 900
<b>4 Transportation costs, sub total</b>	<b>10 150</b>	<b>12 177</b>
5 A Coring	3 015	1 726
5 B Drilling	1 780	801
5 C Cutting of casing	400	400
5 F MWD-services	1 670	1 930
5 G Casing operations	1 250	750
5 H Mud logging/Services	1 800	1 857
5 I Cementing/press.test	780	1 500
5 J El.logging	8 050	10 722
5 K Velocity survey	550	550
5 L Prod.testing	3 050	5 286
5 M ROV/diving	1 460	3 101
5 N Misc.rental & op.costs (Tampen sub-sea equipm.) 10 mnok (BOP replacement) 15 mnok (Transpondersystem) 3,0 mnok	31 370	33 047
<b>5 Service contracts, sub total</b>	<b>55 175</b>	<b>61 672</b>
6 A Site survey	2 000	2 000
6 B Rig positioning	500	500
6 C Drilling site clean up	350	0
<b>6 Survey costs, sub total</b>	<b>2 850</b>	<b>2 500</b>
<b>7 Warehouse costs</b>	<b>1 650</b>	<b>1 383</b>
<b>8 Lab.costs</b>	<b>5 200</b>	<b>8 000</b>
<b>TOTAL OPERATION COSTS</b>	<b>184 850</b>	<b>209 411</b>
<b>EXPANDED LOGGING PROGRAM</b>	<b>5 940</b>	
<b>Timeprisjustering (Ca 10% på alle NH timer)</b>		<b>2 333</b>
<b>TOTAL OPERATION COSTS</b>	<b>190 790</b>	<b>211 744</b>



**DOWNTIME REPORT SCARABEO 5**

Last 310 days

Inst.	Wellname	Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
SCA5	6305/8-1	2000-07-13	1	5.0	Equipment failure	SAIPEM S.P.A.	SAIPEM S.P.A.	Trouble shoot problem in communication cable between main and backup DP positioning computers.	MISCELLANEOUS EQUIPMENT/SYS	DRILLING	RIG UTILITIES	380.00	Miscellaneous equipment, systems and services	
SCA5	6305/8-1	2000-07-14	2	1.0	Equipment failure	SAIPEM S.P.A.	SIMRAD SUBSEA A/S	ROV repositioned Transponder No.8 closer to wellbore.	SERVICE EQUIPMENT/SYS	DRILLING	ROV	375.02	ROV	
SCA5	6305/8-1	2000-07-17	3	1.0	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Checked and calibrated the operation of the floor and crown saver sensors.	HOISTING EQUIPMENT	DRILLING	DRILLING CONTRACTOI	305.00	Other Hoisting Equipment	
SCA5	6305/8-1	2000-07-18	4	0.5	Equipment failure	SAIPEM S.P.A.	OILWELL	Unable to release drawwork brake after a connection.	HOISTING EQUIPMENT	DRILLING	DRILLING CONTRACTOI	301.00	Derrick Structure	
SCA5	6305/8-1	2000-07-20	5	0.5	Equipment failure	SAIPEM S.P.A.	SAIPEM S.P.A.	Repaired park cylinder on BOP carrier.	HOISTING EQUIPMENT	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOI	305.00	Other Hoisting Equipment	
SCA5	6305/8-1	2000-07-22	6	3.0	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Pulled out of hole to check pipe for damage after BOP pressure test with accidental shear with shear ram.	WELLCONTROL EQUIPMENT/SYS	DRILLING	SUB-SEA EQUIPMENT	332.00	Bop Control System	
SCA5	6305/8-1	2000-07-22	6.1	2.0	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Trouble shoot system and evaluate options regarding the problem with the accoustic / shear ram problem	WELLCONTROL EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	332.00	Bop Control System	
SCA5	6305/8-1	2000-07-23	6.2	6.0	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Tripping in and out of hole to function test and verify shear ram functionality.	WELLCONTROL EQUIPMENT/SYS	DRILLING	RIG UTILITIES	331.00	BOP Stack	
SCA5	6305/8-1	2000-07-25	7	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Repaired fault on upper racking arm.	PIPE HANDLING EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	342.00	Drillfloor Tubular Handling	

**DOWNTIME REPORT SCARABEO 5**

Last 310 days

Inst.	Wellname	Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
SCA5	6305/8-1	2000-07-25	9	1.0	Equipment failure	READ WELL SERVICE A/S	READ WELL SERVICE A/S	Rigged up and ran log#2 - VSP. Lost 1 hrs due to reconfiguring of tool (30 min) and reduced logging speed due to satellites not opening (30 min).	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.04	Vertical Seismic (VSP)	
SCA5	6305/8-1	2000-07-29	10	2.5	Equipment failure	DOWELL SCHLUMBERG	DOWELL SCHLUMBERG	Installed cement head, but unable to pump through it. Troubleshooted and solved problem. Cement head was blocked, and had to be flushed through by pressuring up to 145 bar.	SERVICE EQUIPMENT/SYS	CASING	CEMENTING	371.02	Cement: Head	
SCA5	6305/8-1	2000-08-01	32	13.5	Other	WEATHERFOR NORGE A/S		Made up reverse circulating junk basket (RCJB). Attempted to fish junk below 9 5/8" shoe.		DRILLING				
SCA5	6305/8-1	2000-08-01	11	1.0	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Rig repair - upper racking arm.	PIPE HANDLING EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	341.00	Vertical Pipe Handling	
SCA5	6305/8-1	2000-08-01	12	5.0	Equipment failure	SAIPEM S.P.A.	BOWEN TOOLS INC.	Pulled out of hole with RCJB, unplugged same with 207 bar. Inspected RCJB, ran back in hole with same.	DRILLSTRING/DC EQUIPMENT	DRILLING	DRILLING CONTRACTOI	356.00	Fishing Tools	
SCA5	6305/8-1	2000-08-03	33	28.5	Equipment failure	MI NORGE	MI NORGE	Circulated and conditioned mud prior to coring. Attempted to treat mud with BaCl2.	MUD AND BULK SYSTEMS	CORING	DRILLING FLUID	320.01	Drilling Fluids	
SCA5	6305/8-1	2000-08-05	13	11.0	Waiting on weather			Pulled out above BOP due to weather conditions.		CORING				
SCA5	6305/8-1	2000-08-10	14	5.5	Other	SCHLUMBERG WIRELINE		MDT water sampling failed.		LOGGING				

**DOWNTIME REPORT SCARABEO 5**

Last 310 days

Inst.	Wellname	Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
SCA5	6305/8-1	2000-08-12	15	19.0	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	MDT downhole pump malfunction and surface wireline computer error. Reset computer system / back up system.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.02	Formation Tester (RFT)	
SCA5	6305/8-1	2000-08-15	17	4.5	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Not able to pass lower shear ram with HW drill pipe. Troubleshoot BOP control system.	WELLCONTROL EQUIPMENT/SYS	BOP RIG INSTALLATION AND TESTING		332.00	Bop Control System	
SCA5	6305/8-1	2000-08-18	18	8.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	PEX and HALS logs failed.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.15	Other logging equipment	
SCA5	6305/8-1	2000-08-18	19	1.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Troubleshoot and repaired wireline termination head.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-19	20	10.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Hydraulic leakage in the MDT probe.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-20	21	1.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Troubleshoot MDT pumping unit.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-20	22	0.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Reconnected electrical terminations inside cablehead.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-21	23	1.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Removed one bowspring centralizer. Add extra logging tools to increase toolstring weight.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-21	25	1.0	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Repaired surface logging equipment.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-21	26	5.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Troubleshoot downhole logging equipment.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-22	24	0.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Changed wireline cable head due to mud penetration.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	

**DOWNTIME REPORT SCARABEO 5**

Last 310 days

Inst.	Wellname	Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
SCA5	6305/8-1	2000-08-23	27	7.5	Equipment failure	SCHLUMBERG WIRELINE	SCHLUMBERG WIRELINE	Electrical "short" within tool while performing depth correlation. Pulled out of hole with tool string.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-24	28	111.5	Other	SCHLUMBERG WIRELINE		Stuck with MDT tool at 2923,5 m, after sampling.		LOGGING				
SCA5	6305/8-1	2000-08-29	29	6.5	Equipment failure	SCHLUMBERG OFFSHORE SERVICES LTD	SCHLUMBERG OFFSHORE SERVICES LTD	Telemetry failed while logging CMR200. Replaced telemetry and recalibrated CMR200.	SERVICE EQUIPMENT/SYS	LOGGING	ELECTRIC LOGGING	374.01	Electric Logging Eq. in General	
SCA5	6305/8-1	2000-08-30	30	40.0	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Ran travelling block into upper racking arm while tripping in hole. Damaged upper racking arm and top drive.	PIPE HANDLING EQUIPMENT/SYS	PLUG AND ABANDONMEI	DRILLING CONTRACTOR	341.00	Vertical Pipe Handling	
SCA5	6305/8-1	2000-09-01	28.1	17.5	Equipment failure	SCHLUMBERG WIRELINE		Made up fishing tool and ran in hole to fish for wire in riser/well head area. Tagged with fishing tool at 856 m. Pulled out of hole and laid down fishing tool. No wire recovered.		PLUG AND ABANDONMEI				
SCA5	6305/8-1	2000-09-01	28.2	3.0	Other	SCHLUMBERG WIRELINE		Setting of additional cement plug due problems with wear bushing after wireline junk in hole when stuck MDT.		PLUG AND ABANDONMEI				
SCA5	6305/8-1	2000-09-02	34	5.0	Equipment failure	DRIL-QUIP	DRIL-QUIP	Re-ran multi purpose tool to retrieve seal assembly.	SERVICE EQUIPMENT/SYS	PLUG AND ABANDONMEI	WELLHEAD	376.01	Wellhead	
SCA5	6305/8-1	2000-09-04	31	2.0	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Repaired forward gantry crane.	MATERIAL HANDLING SYSTEM	PLUG AND ABANDONMEI	DRILLING CONTRACTOR	362.00	Overhead Cranes	
SCA5	6305/8-1	2000-09-05	35	0.5	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Repaired catwalk machine.	PIPE HANDLING EQUIPMENT/SYS	PLUG AND ABANDONMEI	DRILLING CONTRACTOR	347.00	Other Pipe Handling Equipment	

**DOWNTIME REPORT SCARABEO 5**

Last 310 days

Inst.	Wellname	Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
SCA5	6305/8-1	2000-09-07	36	1.0	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Trouble shoot on torque assembly. Hoses not correctly installed.	PIPE HANDLING EQUIPMENT/SYS	PLUG AND ABANDONMEI	CASING CUTTING	347.00	Other Pipe Handling Equipment	
SCA5	6305/8-1	2000-09-08	37	2.0	Other	TO BE NAMED		Waited on weather		RIG MOVE/SKIDDI				
SCA5	6305/8-1	2000-09-10	38	0.5	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Trolley was parked with hydraulic brake engaged. During rigmove the brake malfunctioned and the trolley on the BOP crane started to move uncontrolled. Stopped and trimmet rig to be able to secure trolley.	HOISTING EQUIPMENT	RIG MOVE/SKIDDI	DRILLING CONTRACTOI	305.00	Other Hoisting Equipment	

**Sum:** 339.0

**Total Sum:** 339.0

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 1                      **Date:** 2000-07-10  
**Midnight depth :** 0 m MD              **Estimated PP:** sg                      **Mud weight:** 1.30 sg

Stop time	Description
-----------	-------------

10:30	No activity on well, rig at Hanøytangen yard for 10Y class work.
23:59	Rig departed Hanøytangen at 10:30 hrs for well 6305/8-1. Rig in transit to Ormen Lange

**Daily report no :** 2                      **Date:** 2000-07-11  
**Midnight depth :** 0 m MD              **Estimated PP:** sg                      **Mud weight:** 1.30 sg

Stop time	Description
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23:59	Rig underway to Ormen Langne drilling location.
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**Daily report no :** 3                      **Date:** 2000-07-12  
**Midnight depth :** 862 m MD              **Estimated PP:** sg                      **Mud weight:** 1.30 sg

Stop time	Description
-----------	-------------

00:30	Completed the rig move to location.
05:30	Ballasted the rig down to operational draft.
14:00	Calibrated the thrusters.
23:59	Performed DP trails.

**Daily report no :** 4                      **Date:** 2000-07-13  
**Midnight depth :** 890 m MD              **Estimated PP:** 1.03 sg                      **Mud weight:** 1.30 sg

Stop time	Description
-----------	-------------

15:00	Continued with DP trails.
17:00	Trouble shoot problem in communication cable between main and backup DP positioning computers.
20:00	Replaced damaged section of the communication cable.
21:00	Completed running hole and tagged seabed at 862 m and spudded well to 865 m .
22:00	Repositioned original reference Well Marker Bouy and transponder (no.8) with ROV away from spud location
23:59	Drilled 36" from 865 - 890 m.

**Daily report no :** 5                      **Date:** 2000-07-14  
**Midnight depth :** 942 m MD              **Estimated PP:** 1.03 sg                      **Mud weight:** 1.50 sg

Stop time	Description
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13:30	Drilled 36" hole from 890 - 938 m.
14:00	ROV observed the position of the depth reference paint rings on the BHA in relation to the marker bouys.
14:30	Drilled from 938 - 940 m.
15:00	ROV observed the position of the depth reference paint rings on the BHA in relation to the marker bouys.
15:30	Drilled from 940 - 942 m.
16:30	ROV repositioned Transonder No.8 closer to wellbore.
17:30	Pumped 20 m3 1.30 sg Hivis mud and displaced same with 70 m3 seawater.Displaced wellbore with 81 m3 1.50 sg mud.
18:30	Pulled out of the hole to above seabed with BHA.
19:00	Inspected the Top Drive and derrick for any loose items after drilling the section - none found.
23:00	Completed pulling out of the hole with the bottom hole assembly and racked back same.
23:59	Rigged up on the drill floor to run the 30" conductor.

**Daily report no :** 6                      **Date:** 2000-07-15  
**Midnight depth :** 942 m MD              **Estimated PP:** 1.03 sg                      **Mud weight:** 1.50 sg

Stop time	Description
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04:00	Picked up and made up the 30" conductor string.
06:00	Ran the inner string and installed the 30" Running Tool.
08:30	Installed the 30" housing into the guideplate and made up the grouting hose to the running tool and guideplate.
11:30	Ran in the hole with the 30" conductor on drill pipe to just above seabed.
12:00	.ROV observed the relative positions of the 30" conductor shoe and wellbore.
13:00	Stabbed into the wellbore with the 30" conductor shoe without incident.Continued to run in hole with the conductor and positioned the shoe at 941 m.

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 6                      **Date:** 2000-07-15  
**Midnight depth :** 942 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.50 sg

Stop time	Description
13:30	Pumped 18,5 m3 seawater with rig pumps.
14:00	Pressure tested cement lines to 150 bar.
16:00	Mixed and pumped cement as per programme. Checked for backflow - negative.
19:30	ROV opened up the fill up valve on the running tool. Dropped the grouting dart and sheared open valve for grouting job. Waited on cement.
21:00	Performed grouting job on first joint of the conductor.
21:30	Disconnected grouting hose with ROV and flushed drillpipe and hose with 50 m3 seawater.
23:59	Waited on cement.

**Daily report no :** 7                      **Date:** 2000-07-16  
**Midnight depth :** 942 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.50 sg

Stop time	Description
05:30	Waited on cement.
06:00	Slacked off casing weight and release running tool.
09:00	Pulled out of the hole with the 30" conductor Running Tool.
10:00	Laid out inner string string used for the 30" cementation.
14:30	Laid out 36" hole section's bottom hole assembly.
16:00	Laid out the 30" Cement Head
17:30	Made up and racked back the 20" Cement Head.
19:00	Made up the 18 3/4" wellhead housing mechanical lock down Running Tool and rack back same.
21:00	Made up the mud motor and MWD tool to be used in the 26" hole section's bottom hole assembly.
22:30	Completed making up the 26" hole section bottom hole assembly.
23:59	Ran in with the bottom hole assembly on 6 5/8" drillpipe to 790 m.

**Daily report no :** 8                      **Date:** 2000-07-17  
**Midnight depth :** 1320 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Checked and calibrated the operation of the floor and crown saver sensors.
02:00	Completed running in the hole to the top of cement and tagged same at 936 m
03:00	Drilled out cement left inside the 30" conductore and float shoe.
23:59	Drilled 26" hole from 942 - 1320 m.

**Daily report no :** 9                      **Date:** 2000-07-18  
**Midnight depth :** 1550 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
03:00	Drilled from 1320 - 1366 m.
03:30	ROV performed inspection of wellhead and bullseye.
05:30	Drilled from 1366 - 1394 m.
06:00	Unable to release drawwork brake after a connection.
17:00	Drilled 26" hole from 1394 - 1550 m.
18:00	Pumped a 20 m3 1.30 sg HiVis pill and displaced same out of well with sewer.
20:00	Dispaced the wellbore to 1.30 sg HiVis mud.
21:00	Pulled out of the hole.
21:30	Pulled out of the hole to just above the 30" conductor housing.
22:30	Cleaned cuttings off the guide plate around the 30" conductor.
23:59	Completed pulling out of the hole to the bottom hole assembly.

**Daily report no :** 10                      **Date:** 2000-07-19  
**Midnight depth :** 1550 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Racked back the bottom hole assembly
02:00	Rigged up and prepared to run 20" casing
13:30	Pick and run in the hole with the 20" casing.

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 10                      **Date:** 2000-07-19  
**Midnight depth :** 1550 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
16:00	Picked 18 3/4" wellhead housing and made up Preload Running Tool onto same.
17:30	Ran in the hole with the casing on drillpipe to 930 m.
18:30	Displaced the casing and the running string to 1.30 sg mud.
21:00	Continued to run in the casing on drillpipe to within 1 stand of landing. Pick up cement stand and landed 18 3/4" housing in to the 30" conductor housing.
23:00	Attempted to take a 25 t overpull - negative. Re landed the housing 2 more time with the same result - no overpull observed. Set down full casing string weight and visually verified housing in correction position. Applied 250 t preload.
23:59	Broke circulation and circulated casing with 1.30 sg mud.

**Daily report no :** 11                      **Date:** 2000-07-20  
**Midnight depth :** 1550 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Completed mixing the cement mixwater.
04:30	Mixed and pump 210 m3 of 1.60 sg cement slurry. Dropped dart for top cement plug and displaced same with 3.2 m3 cement mixwater.
05:30	Displaced cement with seawater and bumped plugs. Pressure tested casing to 110 bar/10 mins. Bled off pressure and checked for backflow - negative.
08:00	Released the casing running tool and pulled out of hole with same.
08:30	Laid out casing hanger running tool and subsea plug mandrel.
09:00	Laid out cement head.
10:30	Laid out 26" bottom hole assembly.
11:00	Cleaned and tidied rigfloor.
11:30	Breaked of sub and pup joint on wellhead handling tool.
12:30	Rigged down drilling bails and torque assembly.
14:30	Rigged up riser handling equipment.
15:00	Had safety meeting prior to start running BOP and riser.
17:00	Picked up instrument - and finned riser joints and prepared to make up and connect to the BOP.
17:30	Repaired park cylinder on BOP carrier.
23:00	Continued to prepare to run BOP.
23:59	Tested kill and choke lines.

**Daily report no :** 12                      **Date:** 2000-07-21  
**Midnight depth :** 1550 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Tested conduite lines to 207 bar.
23:59	Continued to run BOP and riser.

**Daily report no :** 13                      **Date:** 2000-07-22  
**Midnight depth :** 1550 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
07:00	Completed running BOP and riser.
09:00	Picked up landing joint and connected support ring and goose necks.
10:00	Pressure tested kill and choke lines to 34,5 bar/5 min and 345 bar/10 min.
12:00	Adjusted rig position and landed BOP. Pressure tested well head connector to 34,5 bar/5 min and 92 bar/10 min while laying down landing joint.
13:00	Rigged down riser handling equipment.
16:00	Rigged up torque assembly and tubular handling equipment.
19:00	Made up 17 1/2" bottom hole assembly.
20:30	Ran in hole.
22:00	Functioned tested upper annular preventer. Not able to move string up or down. Established circulation and confirmed upper annular "Open". Reset acoustic system and string became free.
23:30	Pulled out of hole to check pipe for damage. Laid out damaged drillpipe joint.
23:59	Evaluated options while troubleshooting acoustic system.



**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 14                      **Date:** 2000-07-23  
**Midnight depth :** 1553 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:30	Continued evaluating options while troubleshooting acoustic system.
03:00	Ran in hole and positioned drillpipe across BOP's.
03:30	Functioned tested BOP's.
04:30	Ran in the hole to just above the float collar.
05:00	Performed a choke drill and took SCR's using seawater.
09:00	Drill out the cement plugs and shoetrack to 1530 m.
10:30	Pumped a 10 m3 HiVis mud pill and displaced same out of well with seawater.
12:30	Pulled out of the hole to 500 m.
13:00	Closed Lower Shear Rams and pressure tested same against the casing to 92 bar.
14:00	Ran in the hole picking up drillpipe.
16:00	Ran in the hole to 1530 m.
17:00	Completed drilling out shoetrack and float shoe.
17:30	Cleaned sump down to 1550 m. Drilled 17 1/2" hole from 1550 - 1553 m.
19:00	Completed circulating well to 1.30 sg mud.
20:30	Prepared for, and performed extended Leak off test.
23:59	Pumped slug and pulled out of hole. Laid down pony drill collar and stabilizers

**Daily report no :** 15                      **Date:** 2000-07-24  
**Midnight depth :** 1850 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Picked up and made up 12 1/4" Bottom hole assembly.
01:30	Programmed MWD tools
03:00	Continued making up 12 1/4" bottom hole assembly.
03:30	Installed radioactive source in mwd.
04:30	Completed making up 12 1/4" bottom hole assembly.
06:30	Picked up 27 singles with 6 5/8" drill pipe while running in hole.
09:30	Continued running in hole with stands.
22:30	Drilled and surveyed 12 1/4" hole from 1553 m to 1850 m. Pumped 8 m3 with high viscous mud on each stand.
23:59	Pumped 8m3 high viscous pill. Resiprocated pipe while circulating hole clean.

**Daily report no :** 16                      **Date:** 2000-07-25  
**Midnight depth :** 1850 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
00:30	Continued circulating hole clean. Observed well stabil and pumped slug.
05:00	Pulled out of hole. Flowchecked at the casing shoe prior to pulling the bottom hole assembly through the BOP - ok.
05:30	Repaired fault on upper racking arm.
06:00	Continued to pull out of hole with bottom hole assembly.
07:00	Held pre job meeting prior to, and then retrieved radioactive source in MWD tool.
07:30	Downloaded MWD memory.
08:00	Laid out Sonic MWD tool.
14:00	Rigged up and ran log#1 - PEX/DSI/GR
15:00	Rigged down logging equipment from run#1.
16:00	Rigged up and ran log#2 - VSP. Lost 1 hrs due to reconfiguring of tool (30 min) and reduced logging speed due to satellites not opening (30 min).
22:00	Rigged up and ran log#2 - VSP
23:00	Rigged down logging equipment from run#2.
23:59	Rigged up and ran log#3 - MSCT/GR.

**Daily report no :** 17                      **Date:** 2000-07-26  
**Midnight depth :** 2120 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
06:00	Completed log run#3 - MSCT.
08:00	Rigged down logging equipment.
08:30	Prepared for and started to make up 12 1/4" bottom hole assembly.
09:00	Reset and picked up sonic MWD tool.

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 17                      **Date:** 2000-07-26  
**Midnight depth :** 2120 m MD              **Estimated PP:** 1.03 sg              **Mud weight:** 1.30 sg

Stop time	Description
09:30	Continued making up 12 1/4" bottom hole assembly.
10:00	Installed radioactive source in MWD tool.
10:30	Completed making up 12 1/4" bottom hole assembly.
13:30	Ran in hole with 12 1/4" drilling assembly.
14:00	Washed down from 1819 m to 1850 m.
23:59	Drilled and surveyed 12 1/4" hole from 1850 m to 2120 m. Pumped 10 m3 high viscous mud every third stand.

**Daily report no :** 18                      **Date:** 2000-07-27  
**Midnight depth :** 2857 m MD              **Estimated PP:** 1.16 sg              **Mud weight:** 1.30 sg

Stop time	Description
23:30	Continued drilling and surveying 12 1/4" hole from 2120 m to casing point at 2857 m..
23:59	Pumped 8 m3 of 1,60 sg high viscous mud and circulated to clean hole.

**Daily report no :** 19                      **Date:** 2000-07-28  
**Midnight depth :** 2857 m MD              **Estimated PP:** 1.16 sg              **Mud weight:** 1.30 sg

Stop time	Description
02:30	Continued circulating hole clean.
07:30	Flowchecked well - negative. Pumped slug and started to pull out of hole.
10:30	Flowchecked at 20" casing shoe - negative. Continued pulling out of hole.
11:30	Racked back 12 1/4" bottom hole assembly.
12:00	Removed radioactive source from MWD tool.
12:30	Down loaded MWD memory.
13:00	Laid down MWD sonic tool and racked remaining MWD tools.
17:00	Made up wearbushing running tool and ran in hole with same. Retrived wear bushing and pulled out of hole.
17:30	Made up cement head and racked same.
19:30	Picked up and made up hanger assembly to additional 6 m pup with subsea mandrel. Racked same.
21:00	Rigged up to run casing. Held safety meeting prior to starting job.
23:59	Made up and Baker locked shoe, shoe track and float joint. Checked float equipment separately - ok. Continued running 9 5/8" casing.

**Daily report no :** 20                      **Date:** 2000-07-29  
**Midnight depth :** 2857 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
16:30	Continued running in hole with 9 5/8" casing as per programme.
17:30	Installed hanger and ran in hole on 6 5/8" drill pipe.
21:00	Continued running in hole with 9 5/8" casing on 6 5/8" drill pipe. Took 20 T down weight at 2818 m. Established circulation and washed down.
23:30	Installed cement head, but unable to pump through it. Troubleshooted and solved problem.
23:59	Installed cement head, established circulation and returns, and continued to wash down 9 5/8" casing.

**Daily report no :** 21                      **Date:** 2000-07-30  
**Midnight depth :** 2857 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
00:30	Landed casing according to DrilQuip instructions.
01:00	Pressure tested surface lines to 250 bar/ 10 min - ok.
03:30	Pumped 10 m3 spacer, dropped lower dart and cemented casing according to programme. Bumped plug and pressure tested casing to 210 bar/ 10 minutes. Checked for back flow - negative.
04:00	Set seal assembly according to DrilQuip procedures, and tested same to 210 bar/ 10 min.
05:30	Pressure tested BOP to 210 bar.
06:00	Released casing hanger running tool according to DrilQuip procedures.
08:00	Pulled out of hole with landing string.
08:30	Laid down cement stinger and running tool.
12:00	Made up wearbushing and ran in hole. Set same and pulled out of hole.
12:30	Laid down cement stand.

### DAILY REPORT ON WELL 6305/8-1

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**Daily report no :** 21                      **Date:** 2000-07-30  
**Midnight depth :** 2857 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
14:30	Laid down 12 1/4" stabilizers, MWD tool and 8" Jar.
15:30	Pressure tested lower and upper kelly valves on TDS to 35 bar/ 5 min and 350 bar/ 10 min.
17:30	Prepared and picked up 8 1/2" bottom hole assembly.
18:00	Programmed MWD tool.
20:30	Continued picking up and making up 8 1/2" bottom hole assembly.
23:59	Picking up 5" drill pipe as running in hole.

**Daily report no :** 22                      **Date:** 2000-07-31  
**Midnight depth :** 2862 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
10:30	Continued picking up 5" drill pipe while running in hole with 8 1/2" drilling assembly. Changed to 6 5/8" handling equipment and ran in hole with 6 5/8" drill pipe.
11:00	Washed down from 2780 m and tagged float at 2804 m.
11:30	Performed float drill and took SCR.
17:30	Drilled out float, shoetrack, shoe and sump. Added BaCl <sub>2</sub> to active mud system as per programme.
19:00	Drilled new formation from 2857 m to 2860 m. Pumped 10 m <sup>3</sup> weightened high viscous pill.
21:00	Circulated and conditioned mud.
22:00	Pressure tested surface lines to 120 bar - ok, and performed Leak Off Test to 1,66 sg EMW.
23:59	Continued drilling 8 1/2" hole from 2860 m to 2862 m with great difficulty. At end no penetration.

**Daily report no :** 23                      **Date:** 2000-08-01  
**Midnight depth :** 2863 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
02:00	Pulled into shoe. Circulated and added tracer to mud.
02:30	Attempted to drill from 2862 m - no go. Flowchecked well.
09:00	Pulled out of hole.
09:30	Made up reverse circulating junk basket (RCJB).
10:30	Rig repair - upper racking arm.
13:00	Ran in hole with RCJB. Attempted to fill pipe, RCJB plugged.
18:00	Pulled out of hole with RCJB, unplugged same with 207 bar. Inspected RCJB, ran back in hole with same.
22:00	Filled pipe and continued to run in hole. Tagged fill at 2858 m.
23:00	Washed and reamed down to 2862 m. Worked RCJB and cut formation from 2862 m to 2863 m.
23:59	Flow checked, pumped slug and started to pull out of hole.

**Daily report no :** 24                      **Date:** 2000-08-02  
**Midnight depth :** 2868 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
04:30	Pulled out of hole with RCJB. Onely minor junk recovered.
10:30	Ran in hole with 8 1/2" drilling BHA
11:00	Washed and reamed from 2852 m to 2863 m.
12:00	Drilled 8 1/2" hole from 2863 m to 2868 m
15:00	Circulated and conditioned mud
18:00	Added BaCl <sub>2</sub> while circulating and conditioning mudsystem.
23:59	Circulated and conditioned mudsystem.

**Daily report no :** 25                      **Date:** 2000-08-03  
**Midnight depth :** 2895 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
13:00	Circulated and conditioned mud prior to coring.
18:30	Drilled 8 1/2" hole from 2868 m to 2895 m.
21:00	Circulated for sample and conditioned mud prior to coring.
21:30	Pulled bit back into casing shoe.
23:59	Circulated and conditioned mud prior to coring.

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 26                      **Date:** 2000-08-04  
**Midnight depth :** 2895 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
05:00	Circulated and conditioned mud prior to coring.
10:30	Pulled out of hole.
11:30	Downloaded MWD memory.
13:00	Made up 90' core assembly # 1.
14:00	Ran in hole with bottom hole assembly.
18:00	Ran in hole on drill pipe to 2867 m.
23:30	Broke circulation. Add BaCl2 at while circulating and conditioning mudsystem.
23:59	Ran in hole to 2895 m.

**Daily report no :** 27                      **Date:** 2000-08-05  
**Midnight depth :** 2916 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
00:30	Dropped core barrel activating ball and circulated down.
03:00	Cut core # 1 from 2895 m to 2913 m. Lost power on top drive.
03:30	Assinged top drive. Continued cut core from 2913 m to 2915,50 m. Core jammed.
11:00	Pulled out of hole with core # 1.
13:00	Laid down core inner barrel # 1.
14:30	Made up 90' core assembly # 2.
15:30	Ran in hole with bottom hole assembly.
20:30	Ran in hole on drill pipe to 2832 m.
23:30	Pulled out above BOP due to weather conditions.
23:59	Waited on weather.

**Daily report no :** 28                      **Date:** 2000-08-06  
**Midnight depth :** 2943 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
05:00	Waited on weather. Weather at 00:00 : Max wind : 21 m/s, heave : 0,8 m, roll : 1,9 deg, pitch : 1,7 deg and significant wave height: 6,5 m.
07:30	Ran in hole to 2832 m.
08:30	Continued running in hole to 2915,50 m. Established circulation and tagged bottom.
10:30	Circulated and conditioned mud. Dropped core barrel activating ball and circulated down.
13:30	Cut core # 2 from 2915,50 m to 2943,3 m.
14:00	Circulated and conditioned mud.
14:30	Pulled out of hole to 2850 m.
21:30	Pulled out of hole.
23:30	Laid down core inner barrel # 2.
23:59	Made up 90' core assembly # 3.

**Daily report no :** 29                      **Date:** 2000-08-07  
**Midnight depth :** 2959 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
00:30	Continued making up 90' core assembly # 3.
05:30	Ran in hole to 2943 m.
07:30	Circulated and conditioned mud.
08:00	Tagged bottom. Dropped core barrel activating ball and circulated down.
11:30	Cut core # 3 from 2943,3 m to 2959,1 m.
12:00	Circulated and conditioned mud.
13:00	Pulled out of hole to 2850 m.
19:30	Continued pulling out of hole.
21:30	Laid down core inner barrel # 3.
22:30	Made up 90' core assembly # 4.
23:59	Ran in hole with core assembly # 4.

### DAILY REPORT ON WELL 6305/8-1

**Daily report no :** 30                      **Date:** 2000-08-08  
**Midnight depth :** 2981 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
05:30	Ran in hole with core assembly # 4 to 2959 m.
07:30	Circulated and conditioned mud.
08:00	Tagged bottom. Dropped core barrel activating ball and circulated down.
20:00	Cut core # 4 from 2959,1 m to 2981 m.
20:30	Circulated and conditioned mud.
21:30	Pulled out of hole to 2850 m.
23:59	Continued pulling out of hole.

**Daily report no :** 31                      **Date:** 2000-08-09  
**Midnight depth :** 2981 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
05:00	Pulled out of hole.
08:00	Laid down core inner barrel # 4. Racked core stand on setback.
10:00	Rigged up Schlumberger wireline equipment. Made up logging suite # 1 : PEX - HALS.
13:00	Ran in hole with logging suite # 1. Logged from 2980 m to above casing shoe. Pulled out of hole.
15:30	Laid down suite # 1. Made up logging suite # 2 : MDT.
23:59	Ran in hole with logging suite # 2 : MDT. Tested mobility in sand. Sat probes and pump out / flushed at 2943,2 m prior to take formation water samples.

**Daily report no :** 32                      **Date:** 2000-08-10  
**Midnight depth :** 2981 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Continued pump out / flush at 2943,2 m prior to take formation water samples. Flushed a total of 60 liters until MDT pump-out unit start leaking.
03:00	Pulled out of hole with logging suite # 2 : MDT. Laid down tool string.
05:00	Made up logging suite # 3 : MDT.
19:30	Ran in hole with logging suite # 3 : MDT. Took 43 each pressure points between 2901 m to 2974 m. Pulled out of hole.
20:00	Laid down logging suite # 3 : MDT.
23:30	Made up logging suite # 4 : MDT. Ran in hole to 2943,2 m.
23:59	Tested mobility in sand. Sat probes and pump out / flushed at 2943,2 m prior to take formation water samples.

**Daily report no :** 33                      **Date:** 2000-08-11  
**Midnight depth :** 2981 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:30	Tested mobility in the sand. Sat probes at 2943,2 m. Pumped out / flushed prior to take formation water samples.
12:00	Sat probes at 2942,6 m. Pumped out / flushed prior to take formation water samples.
14:00	Took MDT formation water samples # 1: 250 cc, # 2 : 450 cc, # 3 : 250 cc and # 4 : 1 gallon.
19:00	Pumped for clean up.
23:00	Took MDT formation water samples # 5: 250 cc, # 6 : 450 cc and # 7 : 450 cc. Pumped for clean up between samples.
23:59	Pumped for clean up.

**Daily report no :** 34                      **Date:** 2000-08-12  
**Midnight depth :** 2981 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
02:00	Pumped for clean up.
06:00	Took MDT formation water samples # 8: 250 cc, # 9 : 450 cc, # 10 : 250 cc, # 11 : 250 cc, # 12 : 450 cc, # 13 : 450 cc and # 14 : 1 gallon.
07:30	Pulled out of hole with logging suite # 4 : MDT.
13:00	Laid down MDT tool string. Made up logging suite # 5 : MDT.
14:30	Ran in hole with logging suite # 5 to 2908 m.
18:30	Extended MDT probes. Pumped out fluid / gas at 2908 m prior to take formation gas samples.
22:00	Stopped pump out due to downhole pump malfunction and surface wireline computer error. Reset computer system / back up system. Managed to start MDT pump.
23:59	Extended MDT probes. Pumped out fluid / gas at 2908 m prior to take formation gas samples.

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 35                      **Date:** 2000-08-13  
**Midnight depth :** 2981 m MD              **Estimated PP:** 1.10 sg              **Mud weight:** 1.30 sg

Stop time	Description
04:00	Pumped out fluid / gas at 2908 m. Took MDT formation gas samples prior to pull out of hole to troubleshoot tool. Filled 3 each 450 cc bottles and 1 gallon bottle.
06:00	Pulled out of hole with logging suite # 5 : MDT.
10:30	Laid down MDT tool string. Troubleshoot MDT logging tool. Made up logging suite # 6 : MDT.
13:30	Ran in hole with logging suite # 6 to 2914 m.
15:30	Extended MDT probes. Pumped out fluid / gas at 2914 m prior to take formation gas samples.
18:00	Took MDT formation fluid / gas samples at 2914 m. Filled 4 each 450 cc bottles and 1x1 gallon bottle.
20:30	Retracted MDT probes. Ran in hole to 2922 m. Correlated depth and extended MDT probes.
23:59	Pumped out fluid / gas at 2922 m prior to take formation gas samples.

**Daily report no :** 36                      **Date:** 2000-08-14  
**Midnight depth :** 2981 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Continued pumping out fluid / gas at 2922 m prior to take formation gas samples.
02:30	Took MDT formation fluid / gas samples at 2922 m. Filled 2 each 250 cc bottles, 1 x 450 cc bottle and 1 x 2 3/4 gallon bottle.
04:30	Retracted MDT probes. Pulled out to 2908 m. Correlated depth and extended MDT probes.
07:30	Pumped out fluid / gas at 2908 m prior to take formation gas samples.
09:30	Took MDT formation fluid / gas samples at 2908 m. Filled 4 each 450 cc bottles, 1 x 250 cc bottle and 1 x 1 gallon bottle.
12:00	Performed MDT mini test. Flowed well through probe with 18,96 cc/sec. for 40 minutes. Shut in and monitored build up for 58 minutes.
13:30	Pulled out of hole with logging suite # 6 : MDT.
15:00	Laid down MDT tool string. Rigged down logging equipment.
17:00	Made up 90' core assembly # 5.
22:00	Ran in hole with core assembly # 5.
22:30	Continued running in hole with core assembly # 5 to 2975. Tagged bottom at 2981 m.
23:59	Circulated and conditioned mud.

**Daily report no :** 37                      **Date:** 2000-08-15  
**Midnight depth :** 2989 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Continued circulate and condition mud. Dropped core barrel activating ball and circulated down.
11:00	Cut core # 5 from 2981 m to 2989 m.
12:00	Pulled out of hole.
18:00	Continued pulling out of hole.
20:00	Laid down core inner barrel # 5. Laid down coring assembly.
21:00	Made up washing assembly and BOP test-tool.
23:00	Ran in hole with BOP test-tool.
23:30	Not able to pass lower shear ram with HW drill pipe. Troubleshoot BOP control system.
23:59	Ran in and jetwashed wellhead.

**Daily report no :** 38                      **Date:** 2000-08-16  
**Midnight depth :** 3013 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
04:00	Landed BOP test plug in 9 5/8" wear bushing. Pressure and function tested BOP accessories.
06:00	Pulled out of hole with BOP test string.
07:30	Pressure tested top drive upper / lower IBOP and mud hose.
08:00	Picked up MWD stand. Function tested the MWD tool.
12:00	Ran in hole with 8 1/2" drilling assembly to 821 m.
16:00	Troubleshoot the BOP acoustic control system.
19:30	Ran in hole.
20:00	Continued running in hole to 2970 m.
21:00	Reamed and logged cored interval from 2970 m to 2989 m.
23:59	Drilled and surveyed 8 1/2" hole to 3013 m.

### DAILY REPORT ON WELL 6305/8-1

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**Daily report no :** 39                      **Date:** 2000-08-17  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
12:00	Drilled and surveyed 8 1/2" hole from 3013 m to 3175 m.
15:30	Swept hole with 5 m3 hi-vis mud. Circulated and conditioned mud.
17:30	Pulled out to 9 5/8" casing shoe.
22:30	Pulled out of hole.
23:30	Laid down MWD tool.
23:59	Rigged up surface wireline logging equipment.

**Daily report no :** 40                      **Date:** 2000-08-18  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
02:00	Made up logging suite # 7 : HALS - PEX - DSI.
05:00	Ran in hole with logging suite # 7 to 3175 m.
08:30	Attempted to log open hole section.
10:30	Logged from 3175 m to 1800 m with DSI. Pulled out of hole. Laid down logging suite # 7 : HALS - PEX - DSI.
12:00	Laid down logging suite # 7 : HALS - PEX - DSI. Made up logging suite # 8 : PEX - HALS.
13:30	Troubleshoot and repaired wireline termination head.
15:00	Continued making up logging suite # 8 : PEX - HALS.
17:30	Ran in hole and logged open hole section. Pulled out of hole.
18:30	Laid down logging suite # 8.
20:30	Made up logging suite # 9 : MDT - GR.
23:59	Ran in hole. Took 8 pressure points from 3010,5 m to 2991,2 m.

**Daily report no :** 41                      **Date:** 2000-08-19  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
08:30	Ran logging suite # 9 : MDT - GR. Took 52 pressure points from 2988,8 m to 2917,5 m.
12:00	Attempted to take pressure points prior to sampling.
14:00	Troubleshoot MDT downhole toolstring. Made several attempts to retract probe.
16:00	Pulled out of hole with logging suite # 9.
19:00	Repaired MDT toolstring at surface. Reran logging suite # 9 : MDT - GR. Ran in to 2917 m.
23:59	Ran in hole to 2980,5. Extended MDT probes. Pumped out fluid at 2980,5 m prior to take formation water samples.

**Daily report no :** 42                      **Date:** 2000-08-20  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
09:00	Pumped out fluid at 2980,5 m prior to take formation water samples. Filled 3 each 450 cc bottles and 1 x 1 gallon bottle.
14:00	Pulled ou to 2930,5 m. Extended MDT probes. Pumped out fluid prior to take formation fluid samples. Filled 2 each 450 cc bottles.
15:30	Troubleshoot logging equipment due to MDT pumping unit problems.
19:00	Pulled ou to 2926,5 m. Extended MDT probes. Pumped out fluid prior to take formation fluid samples. Filled 1 x 450 cc bottle and 1 x 1 gallon bottle.
20:30	Pulled out of hole with logging suite # 9 : MDT - GR.
21:30	Laid down logging suite # 9.
22:30	Made up logging suite # 10 : CMR - ECS - HNGS.
23:00	Reconnected electrical terminations inside cablehead.
23:59	Made up logging suite # 10 : CMR - ECS - HNGS.

**Daily report no :** 43                      **Date:** 2000-08-21  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
01:30	Continued making up logging suite # 10 : CMR - ECS - HNGS.
03:00	Ran in hole with logging suite # 10 : CMR - ECS - HNGS. Got resistance through riser due to tool configuration. Hung up at 105 m. Pulled out of hole. Removed one bowspring centralizer. Add extra logging tools to increase toolstring weight.
04:30	Ran in hole with logging suite # 10 to the casing shoe.

### DAILY REPORT ON WELL 6305/8-1

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**Daily report no :** 43                      **Date:** 2000-08-21  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
05:00	Completed logging pass 1 with ECS and HNGS logs.
07:00	Completed tuning and logged pass 2 with CMR and ECS logs.
08:00	Completed logging pass 3 with CMR log only.
09:00	Repaired surface logging equipment.
10:30	Completed logging pass 4 with CMR log only.
11:00	Completed logging pass 5 with CMR log only.
12:00	Troubleshoot downhole logging equipment.
13:30	Pulled out of hole with logging suite # 10.
16:00	Laid down logging suite # 10. Made up logging suite # 11 : MSCT.
23:00	Ran in hole with logging suite # 11 : MSCT. Took 27 each side wall cores from 3030 m to 2860 m. Pulled out of hole.
23:30	Laid down logging suite # 11.
23:59	Made up logging suite # 12 : VSP - GR.

**Daily report no :** 44                      **Date:** 2000-08-22  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
00:30	Changed wireline cable head.
01:00	Continued making up logging suite # 12 : VSP - GR. Function tested connections.
03:00	Ran in hole with logging suite # 12 : VSP - GR.
08:30	Completed vertical seismic profile log from 3175 m.pulled out of hole with tool.
09:00	Rigged down VSP- GR tool string.
16:30	Rigged and ran the logging suite #13 FMI-HRLA-HNGS.
19:30	Rigged up and made up up the MDT sampling string.Unable to function tool when completely made up.
23:59	Trouble shoot tool string.Located fault and repaired same.

**Daily report no :** 45                      **Date:** 2000-08-23  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
02:00	Ran in the hole with the MDT tool string
03:30	Electrical "short" within tool while performing depth correlation. Pulled out of hole with tool string.
08:00	Located the electrical "short" to be within the rope socket. Cut off same and reterminated the cable.
09:30	Ran in hole with the MDT tool string.
21:00	Cleaned out at 2919,5 m and took 4 samples.
23:59	Moved to 2923,5 m and begin pumping.

**Daily report no :** 46                      **Date:** 2000-08-24  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
08:00	Continued cleaning out at 2923,5 m and took 4 samples.
11:00	Stuck with MDT tool at 2923,5 m.
17:00	Prepared equipment for cut and thread operation. Made up wireline tool grapple to 5" drill pipe.
18:00	Attempted to run in hole with 5" drill pipe. Hooked up wireline quick connection in 5" drill pipe.
19:00	Made up wireline tool grapple to 5" drill pipe and attempted to run in hole - no go.
23:59	Run in hole with 5" drill pipe with wireline tool grapple, stripping over wireline.

**Daily report no :** 47                      **Date:** 2000-08-25  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
07:00	Continued running in hole with 5" drill pipe and wireline tool grapple, stripping over wireline. Broke wireline cable at 2280 m.
11:30	Pulled out of hole with fishing assembly. Cable lost in hole.
16:30	Rigged down wireline equipment from rig floor and prepared for fishing wireline cable. Ran in hole with wireline fishing spear on 5" drill pipe and tagged at 895 m. Worked spear.



**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 47                      **Date:** 2000-08-25  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg                      **Mud weight:** 1.30 sg

Stop time	Description
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20:00	Pulled out of hole with fishing assembly. Recovered approximately 660 m of cable.
23:00	Ran in hole with fishing assembly. Tagged fish at 1415 m and worked cable spear.
23:59	Pulled out of hole with cable spear - 10 ton overpull.

**Daily report no :** 48                      **Date:** 2000-08-26  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg                      **Mud weight:** 1.30 sg

Stop time	Description
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03:00	Continued pulling out of hole with fishing assembly. Recovered approximately 350 m.
06:00	Ran in hole with fishing assembly. Took 10 tons weight at 1688 m - engaged spear.
10:00	Pulled out of hole with fishing assembly. recovered approximately 260 m wire.
12:00	Ran in hole with fishing assembly.
12:30	Function tested BOP rams on yellow and blue pods.
17:00	Continued running in hole with fishing assembly. Turned pipe at 2798 m and pulled out of hole. Pumped slug.
23:59	Pulled out of hole with wireline cable spear. Flowchecked at well head - ok.

**Daily report no :** 49                      **Date:** 2000-08-27  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg                      **Mud weight:** 1.30 sg

Stop time	Description
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03:30	Continued pulling out of hole with fishing assembly. Recovered approximately 1030 m wireline.
10:00	Ran in hole with wireline cable fishing spear to 2909 m. Turned pipe and pulled out of hole.
15:00	Pulled out of hole with fishing assembly. Flowchecked with assembly below BOP - ok.
16:00	Removed wire from spear. Recovered approximately 100 m.
18:00	Cut and slipped drilling line while modifying fishing assembly.
22:30	Made up fishing assembly and ran in hole on 5" drill pipe. Took weight at 2680 m.
23:30	Circulated from 2680 m into the riser.
23:59	Continued running in hole while circulating out riser volume using booster pump.

**Daily report no :** 50                      **Date:** 2000-08-28  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg                      **Mud weight:** 1.30 sg

Stop time	Description
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00:30	Continued running in hole with wireline fishing spear to theoretical top of the fish at 2911 m.. Slowly rotated pipe to engage any wireline just above fish. Continue to slide in to the hole and took weight at 2915 m. Roated string.
05:30	Pulled out of hole with fishing assembly.
06:00	Recovered fishing spear - no wireline recovered.
08:00	Laid down cable fishing spear and made up new fishing assembly with overshot.
12:00	Ran in hole with bottom hole assembly on 5" and 6 5/8" drill pipe to 9 5/8" casing shoe.
15:00	Washed down from 9 5/8" casing shoe to 2926 m. Tagged fish and made several attempts to engage, no success. Worked pipe and moved fish to TD. Worked overshot down over rope socket and engaged fish by setting down 20 tons.
15:30	Pulled into shoe with fish. Experienced 12 tons overpull when pulling of bottom. Overpull dropped down to 5 tons and stabilized.
16:30	Dropped ball to open circulation sub. Observed pressure increase (210 bar) as sub opened.
22:00	Slugged pipe and pulled out of hole with fish. Flowchecked below BOP - ok.
23:59	Laid down fish. Total logging string recovered.

**Daily report no :** 51                      **Date:** 2000-08-29  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg                      **Mud weight:** 1.30 sg

Stop time	Description
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02:00	Rigged up for wireline logging.
05:30	Ran logging suite # 15; CMR-GR. Telemetry link goes down.
12:00	Pulled out of hole with logging string. Changed out telemetry and recalibrated CMR200 before running in hole to resume logging.
19:30	Completed logging programme and pulled out of hole with wireline tools.
20:30	Rigged down wireline equipment.
21:30	Prepared and made up cement stand. Racked same.

### DAILY REPORT ON WELL 6305/8-1

**Daily report no :** 51                      **Date:** 2000-08-29  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
23:59	Made up cement diverter tool and ran in hole while picked up 3 1/2" drill pipe from deck. Continued running in hole on 5" drill pipe.

**Daily report no :** 52                      **Date:** 2000-08-30  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
03:30	Continued running in hole with 3 1/2" cement stinger on 5" and then 6 5/8" drill pipe.
23:59	Ran travelling block into upper racking arm while tripping in hole. Damaged upper racking arm and top drive. Repaired upper racking arm.

**Daily report no :** 53                      **Date:** 2000-08-31  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
19:30	Continued repairing upper racking arm.
20:30	Ran in hole with cement stinger to 3175 m.
22:30	Circulated bottoms up prior to cement job. Tested surface lines to 100 bar/ 5 minutes - ok.
23:30	Mixed and pumped cement according to programme. Displaced with 1.30 Sg mud using rig pumps.
23:59	Pulled out of hole from 3175 m.

**Daily report no :** 54                      **Date:** 2000-09-01  
**Midnight depth :** 3175 m MD              **Estimated PP:** 1.01 sg              **Mud weight:** 1.30 sg

Stop time	Description
00:30	Continued pulling out of hole with cement stinger to 2937 m.
01:30	Installed cement stand and reverse circulated.
02:30	Pressure tested surface lines to 100 bar/ 5 minutes - ok. Mixed and pumped cement according to programme. Displaced with 1.30 sg mud.
04:00	Pulled out of hole from 2937 m to 2680 m. Installed cement stand and reverse circulated.
06:00	Racked back cement stand and circulated one annulus volume the long way, while rotating and reciprocating pipe.
08:30	Pumped slug and pulled out of hole to 1400 m.
12:00	Made up fishing tool and ran in hole to fish for wire in riser/ well head area. Tagged with fishing tool at 856 m. Pulled out of hole and laid down fishing tool. No wire recovered.
15:30	Picked up multipurpose tool and ran in hole to retrieve wear bushing. Observed 55 tons overpull when pulling out of hole. Not able to recover wear bushing. Pulled out of hole and laid down running tool.
19:00	Ran in hole to test cement plug. Tagged cement at 2680 m and set down 5 tons. Pulled out to 2660 m and pressure tested well to 170 bars/ 10 minutes - ok.
20:30	Pumped slug and pulled out to 2015 m for cement job.
22:00	Established circulation and pressure tested surface lines to 100 bar/ 5 minutes. Mixed and pumped cement according to programme. Displaced cement with 1.30 sg mud.
23:30	Pulled out of hole to 1615 m.
23:59	Installed cement stand and reverse circulated.

**Daily report no :** 55                      **Date:** 2000-09-02  
**Midnight depth :** 1880 m MD              **Estimated PP:** sg              **Mud weight:** 1.30 sg

Stop time	Description
01:00	Racked back cement stand and circulated the long way until bottoms up above BOP's..
04:00	Pumped slug and pulled out of hole with cement stinger.
10:00	Made up new fishing tool and ran in hole to fish for wire in wellhead area. Tagged several times in wellhead area. Pumped slug and pulled out of hole. No wire recovered.
18:00	Picked up spear assembly and ran in hole to retrieve wear bushing. Tagged and worked pipe and spear. Pumped slug and pulled out of hole with spear assembly. Laid down retrieved wear bushing.
20:30	Picked up multi purpose tool and ran in hole to retrieve seal assembly. Washed down through BOP and latched on and retrieved seal assembly with 10 tons overpull.
23:00	Circulated through choke, opened annular preventor and flowchecked - ok. Pumped slug and pulled out of hole. No seal assembly recovered.
23:59	Re-ran multi purpose tool.

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 56                      **Date:** 2000-09-03  
**Midnight depth :** 1880 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
01:00	Continued running in hole with multipurpose tool. Latched onto seal assembly. Closed upper annular and retrieved seal assembly with 15 tons overpull.
04:00	Circulated out gas through choke - max. gas 16%. Opened upper annular and flowchecked - ok. Circulated additional 10 minutes up riser, pumped slug and pulled out of hole. Laid down seal assembly.
07:00	Picked up and ran in hole with 9 5/8" casing cutting assembly.
08:00	Set down 5 - 7 tons on marine swivel and cut casing at 1501 m.
08:30	Flowchecked well - ok, and pulled out of hole.
11:30	Gained in trip tank while tripping out. Closed well and circulated out gas through choke. Opened annular and flow checked well - ok.
14:30	Continued pulling out of hole with cutting assembly. Laid down casing cutter and marine swivel.
19:30	Ran in hole with spear assembly to retrieve 9 5/8" casing. Set spear assembly and pulled out of hole.
20:00	Set casing hanger in rotary table and released spear. Racked same.
23:59	Rigged up for casing handling and started to lay down 9 5/8" casing.

**Daily report no :** 57                      **Date:** 2000-09-04  
**Midnight depth :** 1279 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
02:30	Completed laying down 9 5/8" casing. Laid down casing handling equipment.
06:30	Made up parabow and ran in hole to 1494 m.
07:30	Circulated 20 m3, dropped ball and circulated down. Sheared and set parabow extrusion tool. Pulled up 3 meters.
09:00	Pumped spacer and 1,75 sg cement according to programme. Displaced cement with 1.30 sg mud.
10:00	Pulled out of hole to 1200 m.
11:00	Circulated bottoms up. Checked for cement in returns.
14:00	Continued pulling out of hole from 1200 m. Laid down 6 5/8" drill pipe on way out.
15:30	Repaired forward gantry crane.
16:00	Ran in hole with 6 5/8" drill pipe.
16:30	Repaired forward gantry crane.
23:30	Continued laying down 6 5/8" drill pipe from derrick.
23:59	Ran in hole to tag cement plug.

**Daily report no :** 58                      **Date:** 2000-09-05  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
02:00	Continued running in hole to tag cement plug.
03:00	Washed down from 1190 m to 1279 m. Tagged top of cement at 1279 m with 5 tons.
04:00	Pulled out to 1190 m.
05:00	Conditioned mud and pressure tested the cement plug to 85 bar / 10 minutes - ok.
07:00	Pumped 10 m3 high viscous pill and displaced well to seawater.
08:00	Pulled out to 1150 m. Pumped 17 m3 Hivis pill and displaced same. Pulled out to 1050 m.
09:30	Installed cement stand and pressure tested surface lines to 100 bar. Mixed and pumped cement. Sat cement plug from 1050 m to 950 m. Pulled out to 900 m.
10:30	Circulated the long way until no cement in return.
11:30	Pulled out of hole and laid down 6 5/8" drillpipe for inspection.
12:00	Repaired catwalk machine.
18:30	Continued to lay down 6 5/8" drillpipe. Laid down cement stand.
19:30	Changed to 5" equipment and changed saver sub.
21:00	Run in hole to tag cement plug. Tagged cement at 932.5 m with 5 tons.
22:00	Pulled out of hole.
23:59	Laid down XO and BJ equipment. Broke out spear, circulation sub and logging tool from overshot.

**Daily report no :** 59                      **Date:** 2000-09-06  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
00:30	Laid down marine swivel.
03:30	Rigged down torque assembly and drilling bails. Rigged up BOP handling equipment.
05:30	Pulled diverter and laid down same. Picked up handling joint and made up same.

### DAILY REPORT ON WELL 6305/8-1

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**Daily report no :** 59                      **Date:** 2000-09-06  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
06:30	Prepared and disconnected BOP.
07:00	Moved rig to parking position.
10:00	Hung off support ring and laid down landing and slip joint.
23:59	Pulled riser and BOP.

**Daily report no :** 60                      **Date:** 2000-09-07  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
04:30	Continued to pull riser and BOP.
06:00	Prepared and pulled BOP out of water. Disconnected beacons.
11:30	Changed VX ring and landed BOP on carrier. Disconnected riser and skidded BOP to parking position and secured same. Laid down finned joint, instrument joint and riser handling equipment.
12:00	Installed torque assembly, bails and elevator.
13:00	Trouble shoot on torque assembly.
15:00	Picked up MOST tool and installed safety locks on same.
17:00	Ran in hole with casing cutting assembly.
18:00	Moved rig to well center. Adjusted position and stabbed in with cutting assembly.
23:59	Landed MOST tool on top of wellhead and started to cut 20" x 36" casing @ 867m (5m below sea bed).

**Daily report no :** 61                      **Date:** 2000-09-08  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
02:30	Continued to cut 20" x 36" housing. Observed returns on outside of wellhead. Motor stalled out.
05:00	Stopped cutting, and engaged locking dogs and engaged safety lock with ROV. Pulled wellhead free with 30 t overpull and pulled out of water.
08:30	Secured wellhead on trolley. Released hydrate shield from wellhead and pulled wellhead to drillfloor.
10:30	Welded two padeyes to 36" housing.
12:00	Laid down MOST tool and casing cutter.
13:00	Recovered ROV.
16:00	RIH with 8" drillcollars, intensifier and 6 1/2" drill collars.
18:00	Waited on weather
23:59	In transit to Florø in drilling draft. Sailed 4.5 of 115 nautical miles. Meanwhile laid down drillcollars.

**Daily report no :** 62                      **Date:** 2000-09-09  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
18:00	In transit to Florø. Due to bad weather the speed is limited to 1knop when the rig is in operational draft.
22:00	Stopped and deballasted rig.
23:59	In transit to Florø. Sailed distance last 24 hrs: 20.5 nautical miles, total sailed 25 nautical miles. Present speed 2 knots.

**Daily report no :** 63                      **Date:** 2000-09-10  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
18:30	In transit to Florø.
19:00	Trolley on BOP crane came loose. Stopped and trimmed rig to starboard side. Secured trolley.
23:59	Continued in transit to Florø. Sailed 82 nautical miles last 24 hrs with a average speed of 3.4 knots. Total sailed 106 nautical miles at an average speed of 2 knots.

**Daily report no :** 64                      **Date:** 2000-09-11  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
05:00	In transit to Fjordbase.

**DAILY REPORT ON WELL 6305/8-1**

**Daily report no :** 64                      **Date:** 2000-09-11  
**Midnight depth :** 932 m MD              **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
11:30	No activity on well on 6305/8-1. Laid out anchor # 8, 4, 6, 2, 3, 1. Last anchor on bottom at 09.18 hrs. Performed tension test to 40 tons.
19:00	No activity on well on 6305/8-1. Lifted off 15.000 psi Cameron BOP with crane barge Uglen and took onboard 5.000 psi Snorre BOP.
23:59	Loaded sub sea equipment onboard.

**Daily report no :** 65                      **Date:** 2000-09-12  
**Midnight depth :** 0 m MD                      **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
22:00	No activity on well on 6305/8-1. Continued to load sub sea equipment. Meanwhile changed out section of crane boom and repair rig crane, BOP crane and drillstring compensator. One drillstring compensator redressed and pressure tested OK.
23:59	No activity on well on 6305/8-1. Continued to repair rig crane, BOP crane and drillstring compensator. One of two cylinders repaired and reinstalled. Meanwhile started to stack up sub sea equipment.

**Daily report no :** 66                      **Date:** 2000-09-13  
**Midnight depth :** 0 m MD                      **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
23:59	No activity on well on 6305/8-1. Continued to repair port rig crane and BOP crane. Compensator cylinders repaired and installed. Stacked up CDT and connection tool frame to TRT. Started to test sub sea equipment.

**Daily report no :** 67                      **Date:** 2000-09-14  
**Midnight depth :** 0 m MD                      **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
01:00	No activity on well on 6305/8-1. Continued to repair rig crane and BOP crane.
03:00	No activity on well on 6305/8-1. Laid down 8" drillcollars and 5" heavy wall drillpipe for inspection. Meanwhile repaired rig and BOP crane.
22:30	No activity onContinued to work on BOP crane. Performed load test on port rig crane to 66 ton, OK. Tested Bailey crown block saver. Changed derrick mans escape line. Load tested BOP crane hooks to 44 t each and performed NDT inspection, OK.
23:59	No activity on well on 6305/8-1. Started anchor handling. Meanwhile prepared to disconnect Lower Marin Riser Package from BOP.

**Daily report no :** 68                      **Date:** 2000-09-15  
**Midnight depth :** 0 m MD                      **Estimated PP:** sg                      **Mud weight:** 1.33 sg

Stop time	Description
04:00	No activity on well on 6305/8-1. Continued anchorhandling. Last anchor on bolster at 03.46 hrs. End of well. Rig figures: Fuel: 1008 m3, Lub oil: 70 m/t, Pot water: 585 m3

### TIME DISTRIBUTION

Well: 6305/8-1      PO: 1      Start date: 1980-01-01      Rig: SCARABEO 5      Depth: 3175.0 m MD  
 All sections      Stop date: 2001-05-16

Operations	Hours	%	Hours	%	Acc. total
<b>MOBILIZATION</b>					
MOVING	96.5	6.41			
MOORING; RUNNING ANCHORS	39.5	2.62			
<b>Sum.....</b>			136.0	9.03	136.0
<b>DRILLING</b>					
BHA HANDLING/TESTING	27.0	1.79			
MWD HANDLING/TESTING/SURVEYING	1.5	0.10			
TRIPPING IN CASED HOLE	63.0	4.18			
TRIPPING IN OPEN HOLE	25.0	1.66			
DRILLING	126.0	8.36			
OTHER	5.0	0.33			
WELLHEAD EQUIPMENT INSTALLATION	5.5	0.37			
REAMING	0.5	0.03			
CIRC. AND COND. MUD/HOLE	21.5	1.43			
CASING HANDLING/TESTING	24.5	1.63			
RUNNING CASING IN CASED HOLE	23.0	1.53			
RUNNING CASING IN OPEN HOLE	27.5	1.83			
DRILLING OUT OF CASING	6.0	0.40			
PRIMARY CEMENTING	27.5	1.83			
DRILLING OUT CEMENT PLUG	5.0	0.33			
FORMATION STRENGTH TESTING	2.5	0.17			
BOP HANDLING	14.5	0.96			
BOP RUNNING/RETRIEVING	34.0	2.26			
BOP TESTING	16.5	1.10			
WELLHEAD EQUIPMENT HANDLING	6.5	0.43			
CONDUCTOR CLEAN OUT	1.0	0.07			
<b>Sum.....</b>			463.5	30.77	599.5
<b>FORMATION EVALUATION MWD</b>					
MWD HANDLING/TESTING/SURVEYING	6.0	0.40			
LOGGING WITH MWD	1.0	0.07			
<b>Sum.....</b>			7.0	0.46	606.5
<b>FORMATION EVALUATION LOGGING</b>					
LOGGING	43.0	2.85			
LOGGING EQUIPMENT HANDLING/TESTING	39.0	2.59			
FORMATION TESTER	144.0	9.56			
SIDEWALL CORING	14.0	0.93			
VERTICAL SEISMIC	13.5	0.90			
<b>Sum.....</b>			253.5	16.83	860.0
<b>FORMATION EVALUATION CORING</b>					
BHA HANDLING/TESTING	1.5	0.10			
CIRCULATING FOR SAMPLE	2.0	0.13			
TRIPPING IN CASED HOLE	55.0	3.65			
CORING EQUIPMENT/CORE HANDLING	16.5	1.10			
TRIPPING IN OPEN HOLE	13.0	0.86			
CORING	31.5	2.09			
CIRC. AND COND. MUD/HOLE	21.5	1.43			
<b>Sum.....</b>			141.0	9.36	1001.0
<b>PLUG AND ABANDONMENT</b>					
TRIPPING IN CASED HOLE	6.5	0.43			
TRIPPING IN OPEN HOLE	3.0	0.20			
OTHER	20.0	1.33			
CIRC. AND COND. MUD/HOLE	2.0	0.13			
TRIPPING FOR CEMENT JOB	32.5	2.16			
BOP RUNNING/RETRIEVING	35.0	2.32			
WELLHEAD EQUIPMENT HANDLING	5.0	0.33			
SET CEMENT PLUG	21.0	1.39			
TRIPPING OF CASING CUTTING EQUIPMENT	20.0	1.33			

**TIME DISTRIBUTION**

**Well:** 6305/8-1      **PO:** 1      **Start date:** 1980-01-01      **Rig:** SCARABEO 5      **Depth:** 3175.0 m MD  
**All sections**      **Stop date:** 2001-05-16

<b>Operations</b>	<b>Hours</b>	<b>%</b>	<b>Hours</b>	<b>%</b>	<b>Acc. total</b>
<b>PLUG AND ABANDONMENT</b>					
CUT CASING/WELLHEAD	9.5	0.63			
CASING RETRIEVING	12.0	0.80			
<b>Sum.....</b>			166.5	11.05	1167.5
<b>DOWNTIME MOBILIZATION</b>					
EQUIPMENT FAILURE AND REPAIR	5.5	0.37			
<b>Sum.....</b>			5.5	0.37	1173.0
<b>DOWNTIME DRILLING</b>					
EQUIPMENT FAILURE AND REPAIR	29.0	1.92			
FISHING	13.5	0.90			
<b>Sum.....</b>			42.5	2.82	1215.5
<b>DOWNTIME FORM. EVAL. LOGGING</b>					
EQUIPMENT FAILURE AND REPAIR	65.0	4.31			
STICKING/GOING STUCK WITH EQUIPMENT	3.0	0.20			
FISHING	108.5	7.20			
OTHER	5.5	0.37			
<b>Sum.....</b>			182.0	12.08	1397.5
<b>DOWNTIME FORM. EVAL. CORING</b>					
EQUIPMENT FAILURE AND REPAIR	28.5	1.89			
WAITING	11.0	0.73			
<b>Sum.....</b>			39.5	2.62	1437.0
<b>DOWNTIME PLUG AND ABANDONMENT</b>					
EQUIPMENT FAILURE AND REPAIR	47.0	3.12			
CEMENTING	3.0	0.20			
FISHING	17.5	1.16			
OTHER	2.0	0.13			
<b>Sum.....</b>			69.5	4.61	1506.5
<b>Reported time ( 100.0 % of well total 1506.5 hours ) :</b>					<b>1506.5</b>

**HOLE DEVIATION**

**Well:** 6305/8-1      **Reference point:** RKB ; 25.0 m ABOVE MSL  
**Waterdepth:** 837.0 m      **Vertical to:** 861.9 m      **Total Depth:** 3175.0 m MD  
**Utm zone:** 31      **Central Median:** 3' E      **Horizontal datum:** ED50  
**Template Centre Coordinates, UTM:**      **North :**      m,      **East:**      m  
**Wellhead Coordinates, UTM:**      **North :** 7041085.00 m,      **East:** 619768.00 m  
**Official Surveys:** Y      **Track :**  
**Coordinates are measured from the wellhead centre.**

Depth MD [m]	Incli- nation [Deg]	Direc- tion [Deg]	Tool Type	#	Depth TVD [m]	Coordinates		Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
						North [m]	East [m]				
862.0	0.00	0.00	MWD	1	862.0	0.00	0.00	0.0	0.00	0.00	0.00
878.0	0.70	275.00	MWD	1	878.0	0.01	-0.10	0.1	1.31	1.31	-159.38
888.0	0.20	0.00	MWD	1	888.0	0.03	-0.16	0.2	2.13	-1.50	255.00
897.0	0.50	211.00	MWD	1	897.0	0.01	-0.18	0.2	2.26	1.00	-496.67
908.0	0.30	308.00	MWD	1	908.0	-0.01	-0.23	0.2	1.67	-0.55	264.55
918.0	0.60	13.70	MWD	1	918.0	0.06	-0.23	0.2	1.65	0.90	197.10
927.0	0.70	113.60	MWD	1	927.0	0.08	-0.17	0.2	3.32	0.33	333.00
944.0	0.30	118.30	MWD	1	944.0	0.02	-0.04	0.0	0.71	-0.71	8.29
973.0	0.50	0.00	MWD	1	973.0	0.11	0.03	0.1	0.72	0.21	-122.38
1002.0	0.40	116.40	MWD	1	1002.0	0.19	0.12	0.2	0.79	-0.10	120.41
1030.0	0.60	152.40	MWD	1	1030.0	0.02	0.27	0.3	0.39	0.21	38.57
1059.0	1.00	149.10	MWD	1	1059.0	-0.33	0.48	0.6	0.42	0.41	-3.41
1088.0	0.80	141.40	MWD	1	1088.0	-0.71	0.73	1.0	0.24	-0.21	-7.97
1116.0	1.00	164.00	MWD	1	1116.0	-1.10	0.92	1.4	0.43	0.21	24.21
1145.0	0.80	163.30	MWD	1	1145.0	-1.54	1.05	1.9	0.21	-0.21	-0.72
1173.0	0.70	160.10	MWD	1	1173.0	-1.88	1.16	2.2	0.12	-0.11	-3.43
1202.0	0.60	178.10	MWD	1	1202.0	-2.20	1.23	2.5	0.23	-0.10	18.62
1229.0	1.00	185.20	MWD	1	1229.0	-2.58	1.21	2.8	0.46	0.44	7.89
1257.0	1.50	189.50	MWD	1	1257.0	-3.18	1.13	3.4	0.54	0.54	4.61
1285.0	1.40	178.60	MWD	1	1285.0	-3.89	1.08	4.0	0.31	-0.11	-11.68
1313.0	1.40	176.90	MWD	1	1313.0	-4.57	1.10	4.7	0.04	0.00	-1.82
1342.0	1.30	178.30	MWD	1	1341.9	-5.25	1.13	5.4	0.11	-0.10	1.45
1370.0	1.60	174.40	MWD	1	1369.9	-5.96	1.18	6.1	0.34	0.32	-4.18
1399.0	1.70	172.80	MWD	1	1398.9	-6.79	1.27	6.9	0.11	0.10	-1.66
1429.0	1.20	163.90	MWD	1	1428.9	-7.53	1.42	7.7	0.55	-0.50	-8.90
1457.0	0.80	161.00	MWD	1	1456.9	-8.00	1.56	8.1	0.43	-0.43	-3.11
1485.0	0.70	173.00	MWD	1	1484.9	-8.35	1.65	8.5	0.20	-0.11	12.86
1513.0	0.20	218.20	MWD	1	1512.9	-8.56	1.64	8.7	0.62	-0.54	48.43
1527.0	0.40	266.40	MWD	1	1526.9	-8.58	1.57	8.7	0.65	0.43	103.29
1543.0	0.30	316.30	MWD	1	1542.9	-8.56	1.49	8.7	0.58	-0.19	93.56
1600.0	0.20	177.10	MWD	1	1599.9	-8.55	1.39	8.7	0.25	-0.05	-73.26
1713.0	0.20	187.50	MWD	1	1712.9	-8.94	1.37	9.0	0.01	0.00	2.76
1742.0	0.20	184.50	MWD	1	1741.9	-9.04	1.36	9.1	0.01	0.00	-3.10
1799.0	0.20	187.50	MWD	1	1798.9	-9.24	1.34	9.3	0.00	0.00	1.58
1827.0	0.20	182.70	MWD	1	1826.9	-9.34	1.33	9.4	0.02	0.00	-5.14
1856.0	0.20	204.90	MWD	1	1855.9	-9.43	1.31	9.5	0.08	0.00	22.97



## HOLE DEVIATION

**Well:** 6305/8-1      **Reference point:** RKB ; 25.0 m ABOVE MSL  
**Waterdepth:** 837.0 m      **Vertical to:** 861.9 m      **Total Depth:** 3175.0 m MD  
**Utm zone:** 31      **Central Median:** 3' E      **Horizontal datum:** ED50  
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**Official Surveys:** Y      **Track :**  
**Coordinates are measured from the wellhead centre.**

Depth MD [m]	Inclination [Deg]	Direction [Deg]	Tool Type	#	Depth TVD [m]	Coordinates		Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
						North [m]	East [m]				
1886.0	0.20	183.90	MWD	1	1885.9	-9.53	1.28	9.6	0.07	0.00	-21.00
1915.0	0.20	177.60	MWD	1	1914.9	-9.63	1.28	9.7	0.02	0.00	-6.52
1944.0	0.20	207.20	MWD	1	1943.9	-9.73	1.26	9.8	0.11	0.00	30.62
2000.0	0.10	205.10	MWD	1	1999.9	-9.86	1.20	9.9	0.05	-0.05	-1.13
2057.0	0.30	141.70	MWD	1	2056.9	-10.02	1.27	10.1	0.14	0.11	-33.37
2086.0	0.30	138.60	MWD	1	2085.9	-10.14	1.37	10.2	0.01	0.00	-3.21
2143.0	0.20	120.80	MWD	1	2142.9	-10.30	1.55	10.4	0.07	-0.05	-9.37
2173.0	0.30	125.40	MWD	1	2172.9	-10.37	1.66	10.5	0.10	0.10	4.60
2200.0	0.20	125.40	MWD	1	2199.9	-10.44	1.75	10.6	0.11	-0.11	0.00
2230.0	0.10	62.80	MWD	1	2229.9	-10.46	1.82	10.6	0.18	-0.10	-62.60
2258.0	0.20	67.20	MWD	1	2257.9	-10.43	1.89	10.6	0.11	0.11	4.71
2287.0	0.20	41.20	MWD	1	2286.9	-10.37	1.97	10.6	0.09	0.00	-26.90
2343.0	0.30	34.30	MWD	1	2342.9	-10.18	2.11	10.4	0.06	0.05	-3.70
2371.0	0.20	34.30	MWD	1	2370.9	-10.08	2.18	10.3	0.11	-0.11	0.00
2399.0	0.30	51.20	MWD	1	2398.9	-9.99	2.27	10.2	0.13	0.11	18.11
2427.0	0.20	51.20	MWD	1	2426.9	-9.91	2.36	10.2	0.11	-0.11	0.00
2485.0	0.30	51.20	MWD	1	2484.9	-9.76	2.56	10.1	0.05	0.05	0.00
2542.0	0.40	34.90	MWD	1	2541.9	-9.50	2.79	9.9	0.07	0.05	-8.58
2570.0	0.50	34.90	MWD	1	2569.9	-9.32	2.92	9.8	0.11	0.11	0.00
2598.0	0.40	16.00	MWD	1	2597.9	-9.12	3.01	9.6	0.19	-0.11	-20.25
2627.0	0.40	13.70	MWD	1	2626.9	-8.93	3.07	9.4	0.01	0.00	-2.38
2656.0	0.40	9.10	MWD	1	2655.9	-8.73	3.11	9.3	0.03	0.00	-4.76
2685.0	0.40	9.10	MWD	1	2684.9	-8.53	3.14	9.1	0.00	0.00	0.00
2713.0	0.50	9.10	MWD	1	2712.9	-8.31	3.17	8.9	0.11	0.11	0.00
2742.0	0.50	5.90	MWD	1	2741.9	-8.06	3.21	8.7	0.03	0.00	-3.31
2826.0	0.60	5.90	MWD	1	2825.9	-7.26	3.29	8.0	0.04	0.04	0.00
2880.0	0.90	35.30	MWD	1	2879.9	-6.63	3.56	7.5	0.27	0.17	16.33
2979.0	0.74	56.90	MWD	1	2978.9	-5.65	4.55	7.3	0.10	-0.05	6.55
3008.0	0.80	48.50	MWD	1	3007.9	-5.41	4.86	7.3	0.13	0.06	-8.69
3035.0	0.50	72.60	MWD	1	3034.9	-5.25	5.11	7.3	0.44	-0.33	26.78
3063.0	0.80	102.50	MWD	1	3062.9	-5.26	5.42	7.5	0.47	0.32	32.04
3090.0	1.30	101.40	MWD	1	3089.9	-5.36	5.90	8.0	0.56	0.56	-1.22
3118.0	1.40	93.70	MWD	1	3117.9	-5.44	6.55	8.5	0.22	0.11	-8.25
3147.0	1.50	85.60	MWD	1	3146.8	-5.44	7.29	9.1	0.24	0.10	-8.38
3163.0	1.70	82.30	MWD	1	3162.8	-5.39	7.73	9.4	0.41	0.38	-6.19

**MAIN CONSUMPTION OF CASING/TUBING ON WELL 6305/8-1 PO: 1**

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Size	Casing string	Grade	Weight		Threads type	Length [m]	No. of joints
			[kg/m]	[lb/ft]			
36"	CONDUCTOR	X-56	822.62	552.80	SL-60	19.5	1
30"	CONDUCTOR	X-52	460.86	309.70	SL-60	61.7	5
20"	SURFACE	X-56	197.92	133.00	E60MT	684.3	57
9 5/8"	SURFACE	P-110	79.61	53.50	NS-CC	1991.9	165

## BITRECORD FOR WELL 6305/8-1 PO: 1

No	Bit		Size (in)	Manu- fact- urer	Trade name	Serial no.	IADC code	Nozzles diameter (./32in)	Flow area (in2)	BHA no.	Depth out (m MD)	Bit meter (m)	Rot. hours (hrs)	ROP (m/hr)	Rotation min/max) (rpm)	Total bit revol.	Weight min/max (kN)	Flow min/max (l/min)	Pump min/max (bar)	Cutting Structure I - O -DC- L - B	Gauge 1/16 (in)	Other Remarks	Pull Cause
	RR	Type																					
1		MITO	17.50	SDBS	SS44GJ4	686677	135M	16,16,16,16	0.785	1	942	80	15.20	5.3	30/145	100000	0/5	1500/3750	11/110	1 - 1 - NO - A - 1	I	NO	TD
2		ISRT	26.00	SDBS	SS80PJ4	731725	415	18,20,20,20	1.169	2	1550	608	25.10	24.2	103/234	322000	2/11	3560/4490	122/186	1 - 1 - NO - A - F	I	SD	TD
1	1	MITO	17.50	SDBS	SS44GJ4	686677	135M	16,22,22,22	1.310	3	1553	3	0.10	30.0	70/80	14000	0/2	2660/2700	121/123	1 - 1 - NO - A - 1	I	NO	TD
3		PDC	12.25	HTC	ABD536	1212950	M323	11,11,11,12,12,12	0.610	4	1850	297	8.00	37.1	98/126	57000	0/12	3218/3528	194/234	1 - 1 - NO - A - X	I	NO	LOG
3	1	PDC	12.25	HTC	ABD536	1212950	M323	11,11,11,12,12,12	0.610	5	2857	1007	28.50	35.3	99/130	156000	0/18	1865/3575	79/261	1 - 1 - NO - A - X	I	NO	TD
4		ISRT	8.50	HTC	MX09DX	G87DA	437	12,12,12	0.331	6	2863	6	4.00	1.5	66/101	31000	5/11	1983/2057	211/299	1 - 1 - WT - A - E	I	NO	PR
4	1	ISRT	8.50	HTC	MX09DX	G87DA	437	13,13,13	0.389	7	2895	32	5.90	5.4	44/125	43000	10/180	2000/2300	251/305	1 - 1 - WT - A - E	I	NO	CP
	1	CORE	8.50	SDBS	FC264RILI	7981239	M233		0.000	8	2916	21	2.80	7.3	60/120	44000	50/180	940/2300	75/318	1 - 1 - WT - S - X	I	NO	CJ
	2	CORE	8.50	SDBS	FC264RILI	7981239	M233		0.000	9	2943	28	2.60	10.6	115/136	16000	50/160	0/996	0/99	1 - 1 - WT - S - X	I	NO	PR
	3	CORE	8.50	SDBS	FC264RILI	7981239	M233		0.000	10	2959	16	2.80	5.7	50/127	21000	10/120	988/1175	76/93	1 - 1 - WT - S - X	I	NO	CJ
		CORE	8.50	SDBS	FC284RLI	7980831	M231		0.000	11	2981	22	11.90	1.8	77/138	75000	60/170	956/1099	78/95	2 - 3 - WT - A - X	1	BT	LOG
	4	CORE	8.50	SDBS	FC264RILI	7981239	M233		0.000	12	2989	8	9.70	0.8	0/92	47000	0/200	0/1044	0/88	1 - 3 - WT - A - X	I	PN	CJ
4	2	ISRT	8.50	HTC	MX09DX	G87DA	437	13,13,13	0.389	13	3175	162	12.83	12.6	73/98	75000	112/201	1900/1987	260/293	1 - 2 - WT - A - E	I	BT	TD

**BOTTOM HOLE ASSEMBLIES USED ON WELL 6305/8-1 PO: 1**

BHA no. 1:	No. / Element / OD(in) / Length(m)	Depth In: 862 m MD	Out: 942 m MD
1	SS44GJ4 17.5 0.43	2	BIGHOLE 36.0 3.46
3	BIT SUB 11.25 0.39	4	DOWNHOLE MOTOR 11.25 9.35
5	MWD 9.5 10.88	6	NON MAG. COLLAR 9.5 2.88
7	STEEL STAB 26.0 2.22	8	DRILL COLLAR STEEL 9.5 27.59
9	X-OVER 9.5 0.63	10	BIGHOLE 42.0 186.00
11	X-OVER 9.5 0.93	12	DRILL COLLAR STEEL 9.5 27.71
13	X-OVER 9.5 0.97	14	DRILL COLLAR STEEL 8.0 27.31
15	JAR 8.0 9.56	16	DRILL COLLAR STEEL 8.0 27.16
17	X-OVER 8.0 0.47		

Reason pulled: TOTAL DEPTH/CASING DEPT| Sum: 337.94

BHA no. 2:	No. / Element / OD(in) / Length(m)	Depth In: 942 m MD	Out: 1550 m MD
1	SS80PJ4 26.0 0.56	2	DOWN HOLE MOTOR WITH ST/ 25.75 9.68
3	STEEL STAB 26.0 2.49	4	X-OVER 9.625 0.52
5	MWD 8.25 16.37	6	SAVER SUB 8.375 0.57
7	X-OVER 9.625 0.75	8	NON MAG. STAB 23.75 1.60
9	X-OVER 9.5 0.97	10	DRILL COLLAR STEEL 8.0 98.97
11	JAR 8.0 9.56	12	DRILL COLLAR STEEL 9.0 27.31
13	X-OVER 8.0 0.47		

Reason pulled: TOTAL DEPTH/CASING DEPT| Sum: 169.82

BHA no. 3:	No. / Element / OD(in) / Length(m)	Depth In: 1550 m MD	Out: 1553 m MD
1	SS44GJ4 17.5 0.44	2	STEEL STAB 17.375 2.20
3	SHORT DRILL COLLAR 9.5 2.87	4	STEEL STAB 17.375 2.03
5	X-OVER 9.5 0.97	6	DRILL COLLAR STEEL 8.0 71.81
7	JAR 8.0 9.56	8	DRILL COLLAR STEEL 8.0 27.16
9	X-OVER 8.0 0.47		

Reason pulled: TOTAL DEPTH/CASING DEPT| Sum: 117.51

BHA no. 4:	No. / Element / OD(in) / Length(m)	Depth In: 1553 m MD	Out: 1850 m MD
1	ABD536 12.25 0.38	2	STEEL STAB 12.125 2.24
3	PIN-PIN SUB 8.0 1.01	4	MWD 8.25 20.68
5	SAVER SUB 8.0 0.57	6	STEEL STAB 8.0 2.18
7	MWD 8.0 9.86	8	DRILL COLLAR STEEL 8.0 89.99
9	JAR 8.0 9.56	10	DRILL COLLAR STEEL 8.0 27.16
11	X-OVER 8.0 0.47		

Reason pulled: RUN LOGS Sum: 164.10

BHA no. 5:	No. / Element / OD(in) / Length(m)	Depth In: 1850 m MD	Out: 2857 m MD
1	ABD536 12.25 0.38	2	STEEL STAB 12.125 2.24
3	PIN-PIN SUB 8.0 1.01	4	MWD 8.25 20.68
5	SAVER SUB 8.0 0.57	6	STEEL STAB 8.0 2.18
7	MWD 8.0 9.86	8	DRILL COLLAR STEEL 8.0 89.99
9	JAR 8.0 9.56	10	DRILL COLLAR STEEL 8.0 27.16
11	X-OVER 8.0 0.47		

Reason pulled: TOTAL DEPTH/CASING DEPT| Sum: 164.10

BHA no. 6:	No. / Element / OD(in) / Length(m)	Depth In: 2857 m MD	Out: 2863 m MD
1	MX09DX 8.5 0.24	2	NEAR BIT STAB 8.25 2.01
3	MWD 6.75 16.96	4	NON MAG. STAB 8.25 1.93
5	DRILL COLLAR STEEL 6.5 25.86	6	JAR 6.5 9.53
7	DRILL COLLAR STEEL 6.5 26.99	8	HWDP 5.0 112.95

Reason pulled: PENETRATION RATE Sum: 196.47

**BOTTOM HOLE ASSEMBLIES USED ON WELL 6305/8-1 PO: 1**

BHA no. 7:		No. / Element / OD(in) / Length(m)		Depth In: 2863 m MD Out: 2895 m MD	
1	MX09DX	8.5	0.24	2	NEAR BIT STAB 8.25 2.01
3	MWD	6.75	16.96	4	STEEL STAB 8.25 1.93
5	DRILL COLLAR STEEL	6.5	25.86	6	JAR 6.5 9.53
7	DRILL COLLAR STEEL	6.5	26.99	8	HWDP 5.0 112.95
9	DRILL PIPE	5.0	2307.55	10	X-OVER 0.0 0.00

Reason pulled: CORE POINT Sum: 2504.02

BHA no. 8:		No. / Element / OD(in) / Length(m)		Depth In: 2895 m MD Out: 2916 m MD	
1	FC264RILI	8.5	0.36	2	CORE BARREL 6.5 30.08
3	FLOAT SUB	6.5	0.65	4	DRILL COLLAR STEEL 6.5 17.05
5	STEEL STAB	8.25	1.93	6	DRILL COLLAR STEEL 6.5 35.80
7	JAR	6.5	9.53	8	HWDP 5.0 112.95
9	DRILL PIPE	5.0	2307.55	10	X-OVER 8.0 1.05

Reason pulled: CORE JAMMED Sum: 2516.95

BHA no. 9:		No. / Element / OD(in) / Length(m)		Depth In: 2916 m MD Out: 2943 m MD	
1	FC264RILI	8.5	0.36	2	CORE BARREL 6.5 30.08
3	FLOAT SUB	6.5	0.65	4	DRILL COLLAR STEEL 6.5 17.05
5	STEEL STAB	8.25	1.93	6	DRILL COLLAR STEEL 6.5 35.80
7	JAR	6.5	9.53	8	HWDP 5.0 112.95
9	DRILL PIPE	5.0	2307.55	10	X-OVER 8.0 1.05

Reason pulled: PENETRATION RATE Sum: 2516.95

BHA no. 10:		No. / Element / OD(in) / Length(m)		Depth In: 2943 m MD Out: 2959 m MD	
1	FC264RILI	8.5	0.36	2	CORE BARREL 6.5 30.08
3	FLOAT SUB	6.5	0.65	4	DRILL COLLAR STEEL 6.5 17.05
5	STEEL STAB	8.25	1.93	6	DRILL COLLAR STEEL 6.5 35.80
7	JAR	6.5	9.53	8	HWDP 5.0 112.95
9	DRILL PIPE	5.0	2307.55	10	X-OVER 8.0 1.05

Reason pulled: CORE JAMMED Sum: 2516.95

BHA no. 11:		No. / Element / OD(in) / Length(m)		Depth In: 2959 m MD Out: 2981 m MD	
1	FC284RLI	8.5	0.36	2	CORE BARREL 6.5 30.08
3	FLOAT SUB	6.5	0.65	4	DRILL COLLAR STEEL 6.5 17.05
5	STEEL STAB	8.25	1.93	6	DRILL COLLAR STEEL 6.5 35.80
7	JAR	6.5	9.53	8	HWDP 5.0 112.95
9	DRILL PIPE	5.0	2307.55	10	X-OVER 8.0 1.05

Reason pulled: RUN LOGS Sum: 2516.95

BHA no. 12:		No. / Element / OD(in) / Length(m)		Depth In: 2981 m MD Out: 2989 m MD	
1	FC264RILI	8.5	0.36	2	CORE BARREL 6.5 30.08
3	FLOAT SUB	6.5	0.65	4	DRILL COLLAR STEEL 6.5 17.05
5	STEEL STAB	8.25	1.93	6	DRILL COLLAR STEEL 6.5 35.80
7	JAR	6.5	9.53	8	HWDP 5.0 112.95
9	DRILL PIPE	5.0	2307.55	10	X-OVER 8.0 1.05

Reason pulled: CORE JAMMED Sum: 2516.95

BHA no. 13:		No. / Element / OD(in) / Length(m)		Depth In: 3013 m MD Out: 3175 m MD	
1	MX09DX	8.5	0.24	2	NEAR BIT STAB 8.25 2.01
3	MWD	6.75	16.96	4	STEEL STAB 8.25 1.93
5	DRILL COLLAR STEEL	6.5	25.86	6	JAR 6.5 9.53
7	DRILL COLLAR STEEL	6.5	26.99	8	HWDP 5.0 112.95
9	DRILL PIPE	5.0	2307.55	10	X-OVER 0.0 0.00

Reason pulled: TOTAL DEPTH/CASING DEPT Sum: 2504.02

**BOTTOM HOLE ASSEMBLIES USED ON WELL 6305/8-1 PO: 1**

BHA no. 14:		No. / Element / OD(in) / Length(m)		Depth In: 3175 m MD Out: 3175 m MD	
1	SPEAR	3.5	9.03	2	DRILL PIPE 3.5 18.89
3	X-OVER	4.75	0.93	4	DRILL COLLAR STEEL 6.5 25.86
5	JAR	6.5	9.53	6	DRILL COLLAR STEEL 6.5 26.99
7	HWDP	5.0	112.95		

Reason pulled: Sum: 204.18

BHA no. 15:		No. / Element / OD(in) / Length(m)		Depth In: 3175 m MD Out: 3175 m MD	
1	OVER SHOT	5.75	1.86	2	CIRCULATING SUB 4.75 0.56
3	X-OVER	6.5	0.93	4	STEEL STAB 8.25 1.93
5	BUMPER SUB	6.5	4.42	6	DRILL COLLAR STEEL 6.5 52.85
7	JAR	6.5	9.53	8	HWDP 5.0 112.95

Reason pulled: Sum: 185.03

**CEMENT SLURRY REPORT ON WELL 6305/8-1**

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [./100 kg Cement]	Additives [./m3 Slurry]		
2000-04-06	20"	CASING CEMENTING	SPACER	3.20	1.00	17.00							
			TAIL SLURRY	232.00	1.60	17.00	127.70	R-12L	l	1.20			
								CD-33L	l	0.65			
								MICRO	l	20.00			
								FP-14L	l	0.40			
			DISPLACEMENT	3.20	1.00	17.00							
			DISPLACEMENT			17.00							
2000-07-15	30"	CASING CEMENTING	SPACER	3.20	1.03	4.00	0.00						
			TAIL SLURRY	50.00	1.45	4.00	175.32	CD-33L	l	4.00			
								A-3L	l	3.55			
								MICRO	l	25.00			
								FP-14L	l	0.40			
								BA-10	l	1.10			
								A-7L	l	5.00			
								W-6	kg	14.00			
						DISPLACEMENT	20.00	1.03	4.00				
						DISPLACEMENT			4.00				
					GROUT	TAIL SLURRY	14.00	1.45	4.00	175.32	A-3L	l	3.55
										A-7L	l	5.00	
										BA-10	l	1.10	
							CD-33L	l	4.00				
							FP-14L	l	0.40				
							MICRO	l	25.00				
							W-6	kg	14.00				
			DISPLACEMENT	15.00	1.03	4.00	0.00						
			DISPLACEMENT			4.00							
2000-07-30	9 5/8"	CASING CEMENTING	MCS-G SPACER		1.60	57.00		BARITC	kg		758.00		
							FP-14L	l		6.00			
							GEL	kg		30.00			
							MCS-G	l		52.00			
							NAOHL	l		1.00			

**CEMENT SLURRY REPORT ON WELL 6305/8-1**

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [./100 kg Cement]	Additives [./m3 Slurry]		
2000-07-30	9 5/8"	CASING CEMENTING	TAIL SLURRY	13.40	1.90	57.00	80.54	CD-31L	I	0.50			
								FL-45L	I	4.00			
								FP-14L	I	0.40			
								MICRO	I	8.00			
								R-12L	I	0.75			
2000-09-01	9 5/8"	PLUG IN CASED TO OPEN HOLE	DISPLACEMENT			57.00							
			DISPLACEMENT			57.00							
			SPACER		1.00	78.00							
			LEAD	10.00	1.90	78.00	82.11	CD-31L	I	1.00			
								FL-45L	I	7.00			
								FP-14L	I	0.40			
								MICRO	I	11.00			
								R-12L	I	0.90			
						10.00	1.90	78.00	82.08	CD-31L	I	1.00	
									FL-45L	I	7.00		
						FP-14L	I	0.40					
							MICRO	I	11.00				
							R-12L	I	0.75				
2000-09-02	9 5/8"	PLUG IN CASED TO OPEN HOLE	DISPLACEMENT			1.30	78.00						
			DISPLACEMENT				78.00						
			SPACER		1.00	78.00							
			TAIL SLURRY	5.00	1.90	78.00	82.08	FL-45L	I	7.00			
									FP-14L	I	0.40		



**CEMENT SLURRY REPORT ON WELL 6305/8-1**

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [./100 kg Cement]	Additives [./m3 Slurry]
2000-09-02	9 5/8"	PLUG IN CASED TO OPEN HOLE	TAIL SLURRY	5.00	1.90	78.00	82.08	FP-9L	I	0.20	
								MICRO	I	11.00	
								CD-31L	I	1.00	
								R-12L	I	0.75	
			SPACER		1.00	78.00					
			DISPLACEMENT			78.00					
2000-09-04	20"	PLUG IN CASED TO OPEN HOLE	SPACER		1.00	22.00					
			TAIL SLURRY	44.00	1.75	22.00	90.77	R-12L	I	0.70	
								FP-14L	I	0.20	
			SPACER		1.00	22.00					
			DISPLACEMENT			22.00					
2000-09-05	20"	PLUG IN CASED TO OPEN HOLE	SPACER		1.03	6.00					
			TAIL SLURRY	23.50	1.75	6.00	92.61	FP-14L	I	0.20	
			SPACER		1.03	6.00					
			DISPLACEMENT			6.00					

## CEMENT CONSUMPTION PER JOB ON WELL 6305/8-1

Date	CsgSize	Job Type	Cement/ Additive	Description	Unit	Actual Amount Used
2000-04-06	20"	CASING CEMENTING	CD-33L	DISPERSANT: CD-33L LIQUID	l	1221
			D-19LG	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEC	l	11100
			FP14L	FP-14L	l	832
			G	API CLASS G	MT	86
			MICRO	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGF	l	37625
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 [	l	2257
2000-07-15	30"	CASING CEMENTING	A-3L	EXTENDER: LIQUID LODENSE	l	2011
			A-7L	ACCELERATOR: LIQUID CACL2	l	1474
			BA-10	EXTENDER: MATRIX FLOW CONTROL AGENT	l	341
			CD-33L	DISPERSANT: CD-33L LIQUID	l	1291
			FP-14L	SPECIAL ADDITIVE: DEFOAMER FP-14L	l	332
			G	API CLASS G	MT	30
			MICRO	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGF	l	9931
			W-6	EXTENDER	kg	4355
			30"	GROUT	A-3L	EXTENDER: LIQUID LODENSE
	MICRO	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGF			l	2585
	W-6	EXTENDER			kg	1748
	G	API CLASS G			MT	7
	A-7L	ACCELERATOR: LIQUID CACL2			l	491
	BA-10	EXTENDER: MATRIX FLOW CONTROL AGENT			l	137
	2000-07-30	9 5/8"	CASING CEMENTING	FP-14L	SPECIAL ADDITIVE: DEFOAMER FP-14L	l
CD-33L				DISPERSANT: CD-33L LIQUID	l	459
CD-31L				DISPERSANT: CD-31L LIQUID	l	89
FL-45L				FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEC	l	712
FP-14L				SPECIAL ADDITIVE: DEFOAMER FP-14L	l	220
G				API CLASS G	MT	17
GEL				EXTENDER: BENTONITE	kg	390
MCS-G				SPACER ADDITIVE: MCS-G	l	676
MICRO				SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGF	l	1425
NAOHL				SPACER ADDITIVE: CAUSTIC SODA LIQUID	l	10
R-12L				RETARDER: LIQUID LIGNOSULFONATE UP TO 93 [	l	134
2000-09-01				9 5/8"	PLUG IN CASED TO OPEN HOLE	CD-31L
	FL-45L	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEC	l			1688
	FP-14L	SPECIAL ADDITIVE: DEFOAMER FP-14L	l			120
	G	API CLASS G	MT			29
	MICRO	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGF	l			2877
	R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 [	l			210
2000-09-02	9 5/8"	PLUG IN CASED TO OPEN HOLE	CD-31L	DISPERSANT: CD-31L LIQUID	l	73
			FL-45L	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEC	l	508
			FP-14L	SPECIAL ADDITIVE: DEFOAMER FP-14L	l	29
			FP-9L	SPECIAL ADDITIVE: DEFOAMER	l	16
			G	API CLASS G	MT	8
			MICRO	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGF	l	799
2000-09-04	20"	PLUG IN CASED TO OPEN HOLE	R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 [	l	54
			FP-14L	SPECIAL ADDITIVE: DEFOAMER FP-14L	l	676
2000-09-05	20"	PLUG IN CASED TO OPEN HOLE	R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 [	l	310
			FP-14L	SPECIAL ADDITIVE: DEFOAMER FP-14L	l	50
			G	API CLASS G	MT	28

**TOTAL CONSUMPTION OF CEMENT ADDITIVES ON WELL 6305/8-1**

<b>Section</b>	<b>Cement/Additive</b>	<b>Unit</b>	<b>Total Amount Used</b>
36"	ACCELERATOR: LIQUID CACL2		1965.00
	EXTENDER	kg	6103.00
	EXTENDER: MATRIX FLOW CONTROL AGENT		478.00
	API CLASS G	MT	37.00
	DISPERSANT: CD-33L LIQUID		1750.00
	EXTENDER: LIQUID LODENSE		2350.00
	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGRATION		12516.00
	SPECIAL ADDITIVE: DEFOAMER FP-14L		442.00
26"	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC		2257.00
	FP-14L		832.00
	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGRATION		37625.00
	API CLASS G	MT	85.50
	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC		11100.00
	DISPERSANT: CD-33L LIQUID		1221.00
20"	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC		310.00
	SPECIAL ADDITIVE: DEFOAMER FP-14L		726.00
	API CLASS G	MT	28.00
12"	API CLASS G	MT	16.70
	SPACER ADDITIVE: CAUSTIC SODA LIQUID		10.00
	DISPERSANT: CD-31L LIQUID		89.00
	EXTENDER: BENTONITE	kg	390.00
	SPECIAL ADDITIVE: DEFOAMER FP-14L		220.00
	SPACER ADDITIVE: MCS-G		676.00
	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC		712.00
	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGRATION		1425.00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC		134.00
9 5/8"	SPECIAL ADDITIVE: DEFOAMER		16.00
	API CLASS G	MT	8.00
	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGRATION		799.00
	SPECIAL ADDITIVE: DEFOAMER FP-14L		29.00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC		54.00
	DISPERSANT: CD-31L LIQUID		73.00
	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC		508.00
8 1/2"	DISPERSANT: CD-31L LIQUID		252.00
	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC		1688.00
	SPECIAL ADDITIVE: DEFOAMER FP-14L		120.00
	API CLASS G	MT	29.00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC		210.00
	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGRATION		2877.00

**DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 6305/8-1 PO: 1**

Hole section : 0.0			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-07-10	867	867	BENTONITE MUD		1.30						0	0							
2000-07-11	867	867	BENTONITE MUD		1.30						0	0							
2000-07-12	867	867	BENTONITE MUD		1.30						0	0							
Hole section : 36"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-07-13 22:00	890	890	BENTONITE MUD		1.30						0	0							
2000-07-14 22:00	942	942	BENTONITE MUD	0.0	1.50		0	0	0	0	0	0	0	0	50.0				
2000-07-15 22:00	942	942	BENTONITE MUD	0.0	1.50		0	0	0	0	0	0	0	0	50.0				
Hole section : 26"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-07-16 22:00	942	942	BENTONITE MUD	0.0	1.50		0	0	0	0	0	0	0	0	50.0				
2000-07-17 22:00	942	942	BENTONITE MUD	0.0	1.30		0	0	0	0	0	0	0	0	50.0				
2000-07-18 22:00	942	942	BENTONITE MUD	0.0	1.30		0	0	0	0	0	0	0	0	50.0				
2000-07-22 18:00	1550	1550	NACL BRINE	65.0	1.30	17.0	66	46	37	26	0	0	10	8	50.0	20.0	13.0	4.0	5.0
Hole section : 17 1/2"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-07-23 20:00	1553	1553	NACL BRINE	63.0	1.30	18.0	67	47	38	27	0	0	10	9	50.0	20.0	13.5	5.0	8.0
Hole section : 12 1/4"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-07-24 22:00	1850	1850	NACL BRINE	55.0	1.30	14.0	63	38	31	23	0	0	8	7	50.0	25.0	6.5	4.0	5.0
2000-07-25 22:00	1850	1850	NACL BRINE	63.0	1.30	15.0	62	46	34	25	0	0	10	9	50.0	16.0	15.0	5.0	8.0

## DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 6305/8-1 PO: 1

Hole section : 12 1/4"		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-07-26 22:30	2120	2120	NACL BRINE	60.0	1.30	13.0	55	41	35	25	0	0	10	9	50.0	14.0	13.5	5.0	8.0
2000-07-27 22:30	2836	2836	NACL BRINE	65.0	1.30	14.0	61	47	39	30	0	0	12	10	50.0	14.0	16.5	5.0	7.0
2000-07-28 22:30	2857	2857	NACL BRINE	67.0	1.30	1.3	60	46	38	30	0	0	12	10	50.0	14.0	16.0	5.0	7.0
2000-07-29 22:30	2857	2857	NACL BRINE	67.0	1.30	16.0	60	46	38	30	0	0	12	10	50.0	14.0	16.0	5.0	7.0

Hole section : 8 1/2"		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-07-30 22:30	2857	2857	NACL BRINE	67.0	1.30	18.0	60	46	38	30	0	0	12	10	50.0	14.0	16.0	5.0	7.0
2000-07-31 22:30	2862	2862	NACL BRINE	67.0	1.30	16.0	59	44	37	29	0	0	11	9	50.0	15.0	14.5	5.0	7.0
2000-08-01 22:00	2862	2862	NACL BRINE	67.0	1.30	16.0	59	44	37	29	0	0	11	9	50.0	15.0	14.5	5.0	7.0
2000-08-02 20:45	2868	2868	NACL BRINE	59.0	1.30	24.0	56	42	35	27	0	0	10	9	50.0	14.0	14.0	7.0	12.0

Hole section : 12 1/4"		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-08-03 22:30	2840	2840	NACL BRINE	58.0	1.30	18.0	66	50	42	32	0	0	12	10	50.0	16.0	17.0	8.0	13.0

Hole section : 8 1/2"		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-08-04 23:00	2895	2895	NACL BRINE	58.0	1.30	1.3	66	50	42	32	0	0	11	9	50.0	16.0	17.0	8.0	13.0

Hole section : 26"		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-08-05 21:00	1500	1500	NACL BRINE	59.0	1.30	14.0	71	52	44	33	0	0	10	8	50.0	19.0	16.5	4.0	6.0

**DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 6305/8-1 PO: 1**

Hole section : 8 1/2"		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-08-06 21:00	2943	2943	NACL BRINE	59.0	1.30	12.0	64	48	40	30	0	0	10	8	50.0	16.0	16.0	4.0	8.0
2000-08-07 21:00	2970	2970	NACL BRINE	59.0	1.30	13.0	70	51	43	33	0	0	10	8	50.0	19.0	16.0	4.0	6.0
2000-08-08 21:00	2982	2982	NACL BRINE	59.0	1.30	12.0	66	48	41	31	0	0	10	8	50.0	18.0	15.0	4.0	6.0
2000-08-09 21:00	2982	2982	NACL BRINE	59.0	1.30	12.0	66	48	41	31	0	0	10	8	50.0	18.0	15.0	4.0	6.0
2000-08-10 21:00	2982	2982	NACL BRINE	59.0	1.30	12.0	66	48	41	31	0	0	10	8	50.0	18.0	15.0	4.0	6.0
2000-08-11 21:00	2982	2982	NACL BRINE	59.0	1.30	12.0	66	48	41	31	0	0	10	8	50.0	18.0	15.0	4.0	6.0
2000-08-12 21:00	2982	2982	NACL BRINE	59.0	1.30	12.0	66	48	41	31	0	0	10	8	50.0	18.0	15.0	4.0	6.0
2000-08-13 21:00	2981	2981	NACL BRINE	72.0	1.30	7.5	70	51	43	32	0	0	10	8	50.0	19.0	16.0	4.0	6.0
2000-08-14 21:30	2981	2981	NACL BRINE	78.0	1.30	8.0	68	49	42	32	0	0	11	9	50.0	19.0	15.0	4.0	6.0
2000-08-15 22:00	2989	2989	NACL BRINE	89.0	1.30	11.0	70	52	44	33	0	0	11	9	50.0	18.0	17.0	4.0	6.0
2000-08-16 22:30	3013	3013	NACL BRINE	89.0	1.30	16.0	71	52	44	33	0	0	10	8	50.0	19.0	16.5	4.0	6.0
2000-08-17 22:00	3175	3175	NACL BRINE	79.0	1.30	1.3	76	53	44	33	0	0	10	8	50.0	23.0	15.0	4.0	6.0
2000-08-18 22:00	3175	3175	NACL BRINE	83.0	1.30	16.0	76	53	44	33	0	0	10	8	50.0	23.0	15.0	4.0	6.0
2000-08-19 21:00	3175	3175	NACL BRINE	82.0	1.30	14.0	76	53	44	33	0	0	10	8	50.0	23.0	15.0	4.0	6.0
2000-08-20 21:30	3175	3175	NACL BRINE	82.0	1.30	1.3	76	53	44	33	0	0	10	8	50.0	23.0	15.0	4.0	6.0
2000-08-21 22:00	3175	3175	NACL BRINE	82.0	1.30	14.0	76	53	44	33	0	0	10	8	50.0	23.0	15.0	4.0	6.0

**DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 6305/8-1 PO: 1**

Hole section : 0.0		WATER BASED SYSTEM																							
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-07-10	867	867	BENTONITE MUD	1.30					/																
2000-07-11	867	867	BENTONITE MUD	1.30					/																
2000-07-12	867	867	BENTONITE MUD	1.30					/																
Hole section : 36"		WATER BASED SYSTEM																							
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-07-13 22:00	890	890	BENTONITE MUD	1.30					/																
2000-07-14 22:00	942	942	BENTONITE MUD	1.50					500/ 121																
2000-07-15 22:00	942	942	BENTONITE MUD	1.50					500/ 121																
Hole section : 26"		WATER BASED SYSTEM																							
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-07-16 22:00	942	942	BENTONITE MUD	1.50					500/ 121																
2000-07-17 22:00	942	942	BENTONITE MUD	1.30					500/ 121																
2000-07-18 22:00	942	942	BENTONITE MUD	1.30					500/ 121																
2000-07-22 18:00	1550	1550	NACL BRINE	1.30	3.0	5.8	1	2	500/ 121	8.7	11.0				155000	120			17.0	0.0		0	4.0	19	
Hole section : 17 1/2"		WATER BASED SYSTEM																							
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-07-23 20:00	1553	1553	NACL BRINE	1.30	3.0	5.8	1	2	34/ 121	8.5	0.0	0.0	1.2	40000	204000	240			240	14.0	20.0	0.1	15	3.5	53
Hole section : 12 1/4"		WATER BASED SYSTEM																							
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-07-24 22:00	1850	1850	NACL BRINE	1.30	2.4	4.8	1	1	34/ 121	8.5		0.1	0.7	29000	148000	120			120	13.4	15.3	0.2	7	3.4	77
2000-07-25 22:00	1850	1850	NACL BRINE	1.30	3.0	5.7	1	1	/ 121	8.5	0.8	0.1	7.0	29000	151000	160	40	160	15.5		0.3		7	3.1	126
2000-07-26 22:30	2120	2120	NACL BRINE	1.30	2.3	5.7	1	1	/ 121	8.4		0.1	0.7	29000	157000	120		120	15.0	13.5	0.3		9	3.0	141
2000-07-27 22:30	2836	2836	NACL BRINE	1.30	2.7	5.5	1	1	500/ 121	8.5		0.1	0.8	29000	151000	320		320	15.5	14.0	0.3		7	2.9	176

## DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 6305/8-1 PO: 1

Hole section : 12 1/4"		WATER BASED SYSTEM																						
Date	Depth [m]		Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD		API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							Oil [%]	Sand [%]	Sand [%]			
2000-07-28 22:30	2857	2857	1.30	2.6	5.6	1	1	500/ 121	8.4		0.1	0.8	29000	150000	280	80	280	15.0	13.6	0.3	10	3.0	150	
2000-07-29 22:30	2857	2857	1.30	2.6	5.6	1	1	500/ 121	8.4		0.1	0.8	29000	150000	280	80	280	15.0	13.6	0.3	10	3.0	150	
Hole section : 8 1/2"		WATER BASED SYSTEM																						
Date	Depth [m]		Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD		API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							Oil [%]	Sand [%]	Sand [%]			
2000-07-30 22:30	2857	2857	1.30	2.6	5.6	1	1	500/ 121	8.4		0.1	0.8	29000	150000	280	80	280	15.0	13.6	0.3	10	3.0	150	
2000-07-31 22:30	2862	2862	1.30	2.5	5.1	1	1	500/ 121	8.7		0.1	0.8	29000	149000	160	60	160	15.0	14.0	0.3	10	3.0	153	
2000-08-01 22:00	2862	2862	1.30	2.5	5.1	1	1	500/ 121	8.7		0.1	0.8	29000	149000	160	80	160	14.8	14.0	0.3	12	3.0	143	
2000-08-02 20:45	2868	2868	1.30	2.9	5.8	1	1	121/ 121	10.2	1.8	0.0	1.0	29000	151000	80	120	80	15.0	14.2	0.2	12	3.0	151	
Hole section : 12 1/4"		WATER BASED SYSTEM																						
Date	Depth [m]		Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD		API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							Oil [%]	Sand [%]	Sand [%]			
2000-08-03 22:30	2840	2840	1.30	2.2	4.8	1	1	121/ 121	9.6	1.2	0.0	0.3	29000	151000	40	160	40	15.0	14.0	0.3	12	3.0	150	
Hole section : 8 1/2"		WATER BASED SYSTEM																						
Date	Depth [m]		Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD		API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							Oil [%]	Sand [%]	Sand [%]			
2000-08-04 23:00	2895	2895	1.30	2.0	4.5	1	1	121/ 121	9.9	1.2	0.0	0.3	29000	151000	200	160	200	15.0	14.0	0.3	12	3.0	150	
Hole section : 26"		WATER BASED SYSTEM																						
Date	Depth [m]		Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD		API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							Oil [%]	Sand [%]	Sand [%]			
2000-08-05 21:00	1500	1500	1.30	1.6	4.0	1	1	121/ 121	9.7	1.0	0.0	0.3	29000	151000	40	120	40	15.0	14.0	0.3	12	3.0	150	
Hole section : 8 1/2"		WATER BASED SYSTEM																						
Date	Depth [m]		Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD		API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							Oil [%]	Sand [%]	Sand [%]			
2000-08-06 21:00	2943	2943	1.30	1.7	6.0	1	1	500/ 121	9.7	1.0	0.1	0.9	29000	147500	40	40	40	15.0	14.0	0.3	12	3.0	154	
2000-08-07 21:00	2970	2970	1.30	1.8	6.0	1	1	6/ 121	9.7	1.0	0.1	0.9	29000	147500	40	40	40	15.0	13.8	0.3	12	3.0	154	



**DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 6305/8-1 PO: 1**

Hole section : 8 1/2"			WATER BASED SYSTEM																							
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT		pH	Alcalinity			Inhib Chem	K+	CL-	Ca++	Mg++	Tot hard	Percentage			CEC	ASG	LGS
	MD	TVD			API	HPHT	API	HPHT	Press/Temp	Pm		Pf	Mf	[mg/l]							[mg/l]	[mg/l]	[mg/l]			
2000-08-08 21:00	2982	2982	NACL BRINE	1.30	1.6	6.0	1	1	34/ 121	9.9	1.0	0.1	0.9	29000	147500	80	160	80	16.5	14.2	0.3	12	2.7	231		
2000-08-09 21:00	2982	2982	NACL BRINE	1.30	1.6	6.0	1	1	/ 121	9.9	1.0	0.1	0.3	29000	147500	80	160	80	16.0		0.3	12	2.9	157		
2000-08-10 21:00	2982	2982	NACL BRINE	1.30	1.6	6.0	1	1	34/ 121	9.9	1.0	0.1	0.3	29000	148000	80	160	80	16.0	0.0	0.3	12	2.9	156		
2000-08-11 21:00	2982	2982	NACL BRINE	1.30	1.6	6.0	1	1	34/ 121	9.9	0.9	0.1	0.3	29000	148000	80	60	80	16.0	0.0	0.3	12	2.9	156		
2000-08-12 21:00	2982	2982	NACL BRINE	1.30	1.6	6.0	1	1	34/ 121	9.9	0.9	0.1	0.3	29000	144000	20	60	20	16.5	0.0	0.3	12	2.8	187		
2000-08-13 21:00	2981	2981	NACL BRINE	1.30	1.8	6.0	1	1	34/ 121	9.8	0.9	0.1	0.3	29000	138000	80	60	80	16.0	0.0	0.3	12	2.9	170		
2000-08-14 21:30	2981	2981	NACL BRINE	1.30	1.8	6.0	1	1	34/ 121	9.9	0.9	0.1	0.3	29000	139000	80	60	80	16.0	0.0	0.3	12	2.9	169		
2000-08-15 22:00	2989	2989	NACL BRINE	1.30	1.9	6.0	1	1	34/ 121	9.3	0.9	0.1	0.3	29000	133000	80	60	80	15.5	0.0	0.3	12	3.0	150		
2000-08-16 22:30	3013	3013	NACL BRINE	1.30	1.5	5.4	1	1	34/ 121	9.2		0.1	0.3	29000	130000	200	40	200	15.6	0.0	0.3	11	3.0	161		
2000-08-17 22:00	3175	3175	NACL BRINE	1.30	1.6	5.2	1	1	500/ 121	8.5		0.1	0.5	33550	152000	360	40	360	16.2	0.0	0.3	11	2.9	159		
2000-08-18 22:00	3175	3175	NACL BRINE	1.30	1.6	5.2	1	1	500/ 121	8.5		0.0	0.3	33550	152000	360	40	360	15.5	0.0	0.3	11	3.1	123		
2000-08-19 21:00	3175	3175	NACL BRINE	1.30	1.6	5.2	1	1	500/ 121	8.5		0.1	0.3	33550	152000	360	40	360	15.5	0.0	0.3	11	3.1	123		
2000-08-20 21:30	3175	3175	NACL BRINE	1.30	1.6	5.2	1	1	500/ 50	8.5		0.0	0.3	33550	152000	360	40	360	15.5	0.0	0.3	11	3.1	123		
2000-08-21 22:00	3175	3175	NACL BRINE	1.30	1.6	5.2	1	1	500/ 50	8.5		0.0	0.3	33550	152000	360	40	360	15.5	0.0	0.3	11	3.1	123		

**TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 6305/8-1**

Section	Product/ Additive	Unit	Total Amount Used
36"	LIME	kg	125.00
	M-I BAR	kg	111000.00
	SODA ASH	kg	50.00
	WYOMING BENTONITE	kg	24000.00
26"	BARITE	kg	16000.00
	BENTONITE	kg	7000.00
	CMC EHV	kg	400.00
	M-I BAR	kg	143000.00
	SODA ASH	kg	725.00
	WYOMING BENTONITE	kg	33000.00
12 1/4"	BARITE	kg	110000.00
	CELPOL ESL	kg	3125.00
	CITRIC ACID	kg	100.00
	FLO-TROL	kg	5450.00
	GLYDRIL MC	l	52856.00
	KCL	kg	9000.00
	KCL BRINE	l	152993.00
	M-I BAR	kg	75000.00
	METHANOL	l	62000.00
	NACL BRINE	l	565974.00
	RHODOPOL 23P	kg	4125.00
	SODA ASH	kg	700.00
	SODIUM BICARBONATE	kg	300.00
8 1/2"	BACL2	l	980.00
	BARITE	kg	96000.00
	CELPOL ESL	kg	675.00
	CITRIC ACID	kg	1800.00
	FLO-TROL	kg	2600.00
	GLYCOL	l	2000.00
	GLYDRIL MC	l	3000.00
	KCL	kg	2050.00
	KCL BRINE	l	6000.00
	KCL POWDER	kg	2100.00
	METHANOL	l	5.00
	NACL BRINE	l	25998.00
	PREMPAC EX	kg	1075.00
	RHODOPOL 23P	kg	950.00
	SODA ASH	kg	350.00
	SODIUM BICARBONATE	kg	1375.00
SODIUM CHLORIDE	kg	6250.00	
VACUUM SALT	kg	8000.00	
INDEFINIE	BARITE	kg	125000.00
	SODA ASH	kg	350.00
	WYOMING BENTONITE	kg	56000.00



# Well 6305/8-1

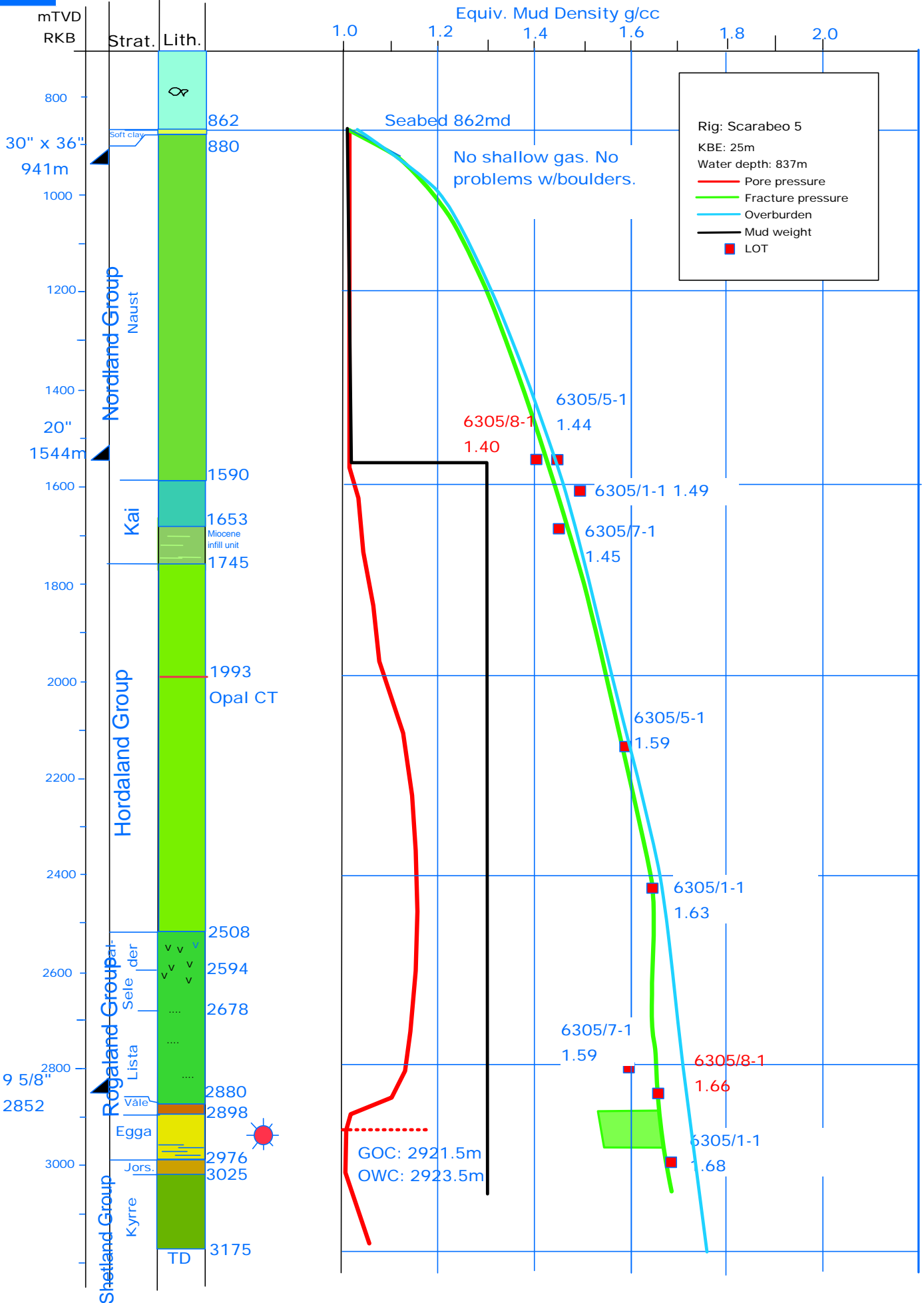


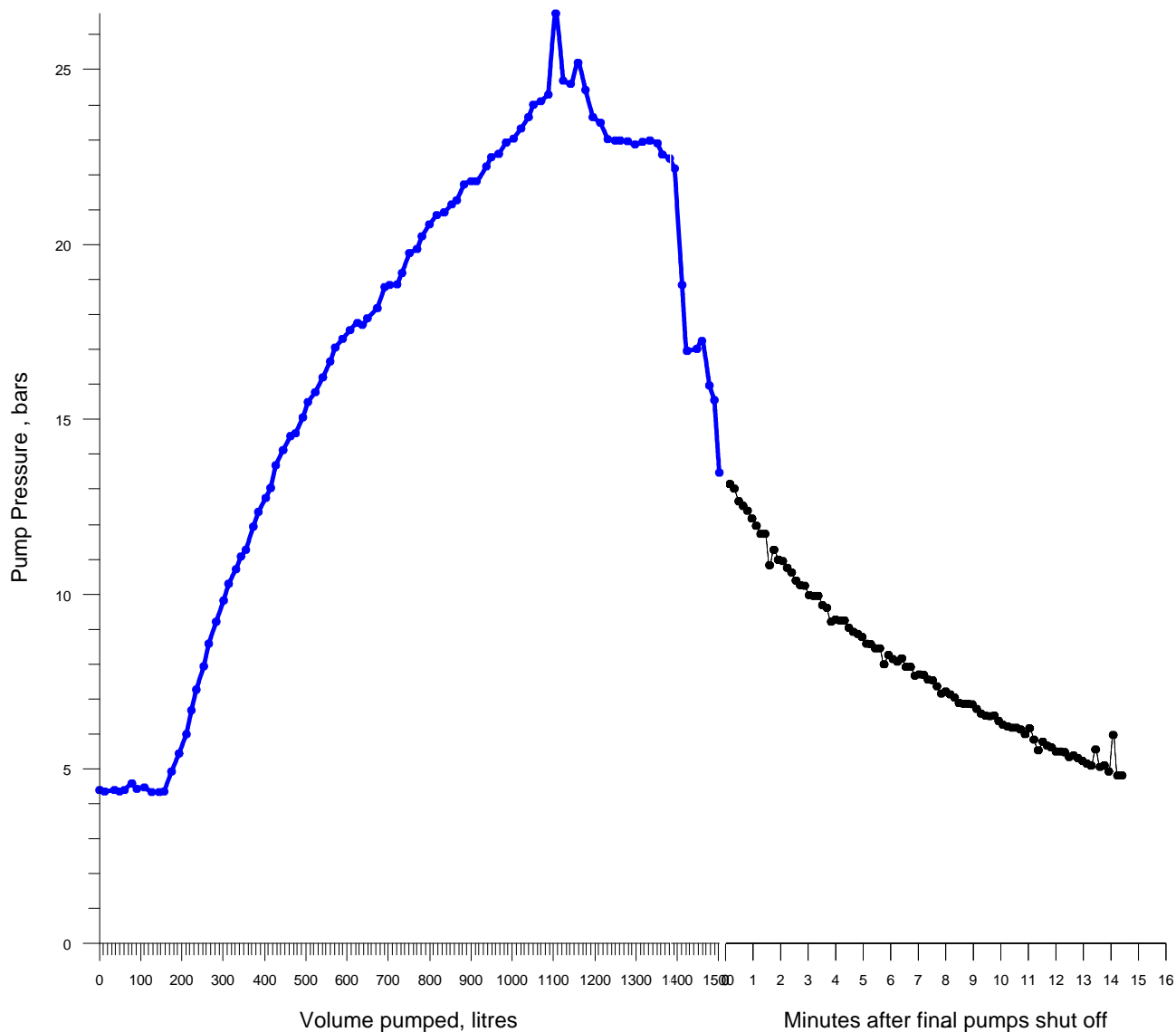
Fig. B.1 Pore pressure summary Well 6305/8-1

Figure B-2: Formation Temperature

See Figure A-7.1

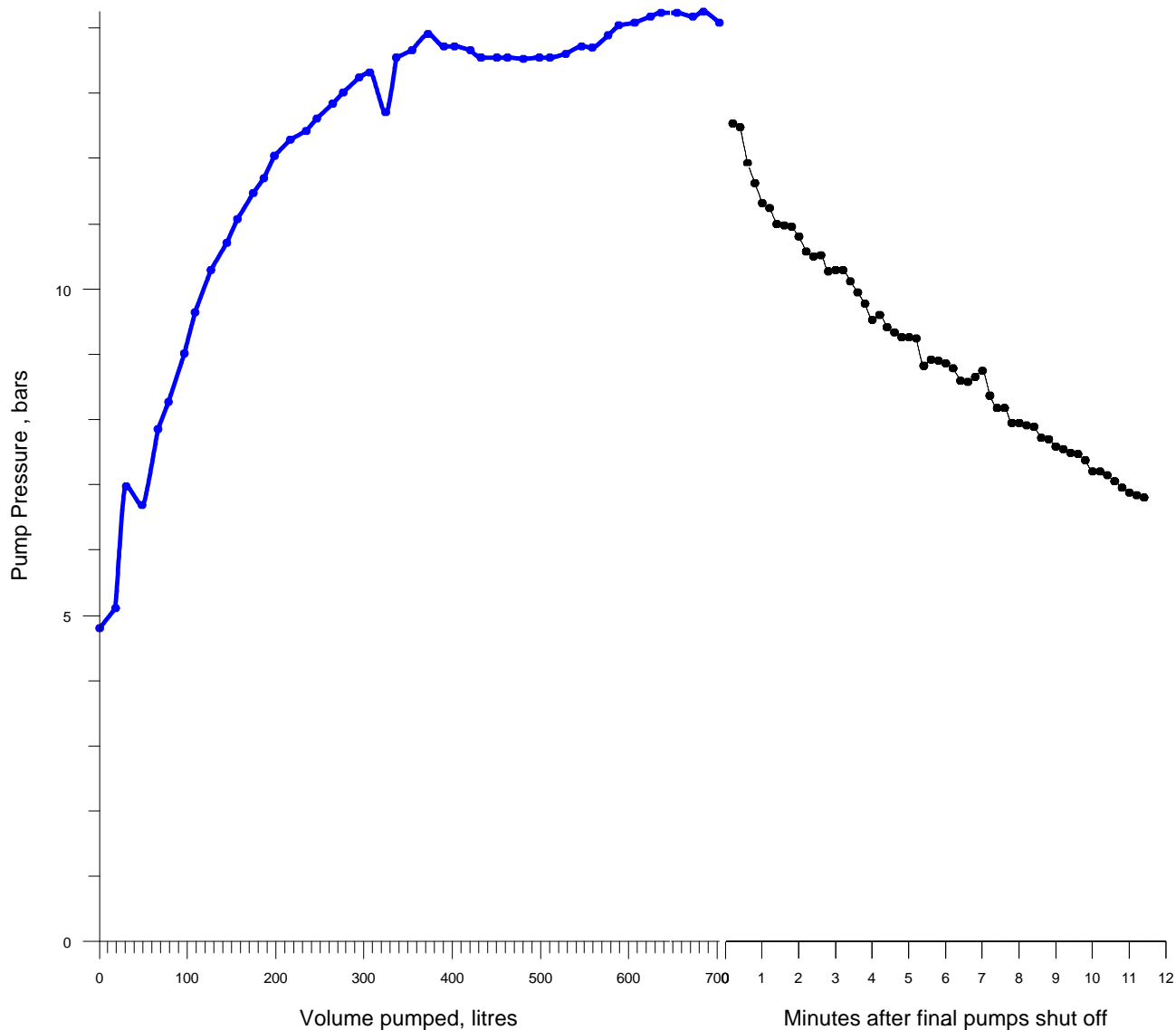
Well <b>6305/8-1</b>		Test type : <b>ELOT</b>		Test date : 2000-07-23	
Rig SCARABEO 5	Airgap (m) 25.00	Water depth (m) 837.00	CsgOd" 20.000	Hole angle (deg) 0	
Csg Shoe (mMD/mTVD)	1544.00 / 1543.90	OH depth (mMD/mTVD) 1553.00 / 1552.90	Lithology : Clst		
Dens 1.30	API WL(ml/30min) 3.00	PV (cp) 20.00	YP (Pa) 13.50	Gel0/Gel10 5.00 / 8.00	
Pump Rate (l/min)	90.00	Vol pumped (L) 2200.00	Vol bled back (L) 475.00		
Leakoff Pressure (bar)	14.78	Max pressure (bar) 21.00	Propagation press (bar) 13.50		
Test result (sg EMD)	1.40	Shut-in pressure			

Comments Corrected pressures (RKB-Cem.Unit)



End of Well Report <b>6305/8-1</b>	Fig.:  <b>B-3</b>	<b>ELOT 9 5/8" casing</b>	<b>HYDRO</b>
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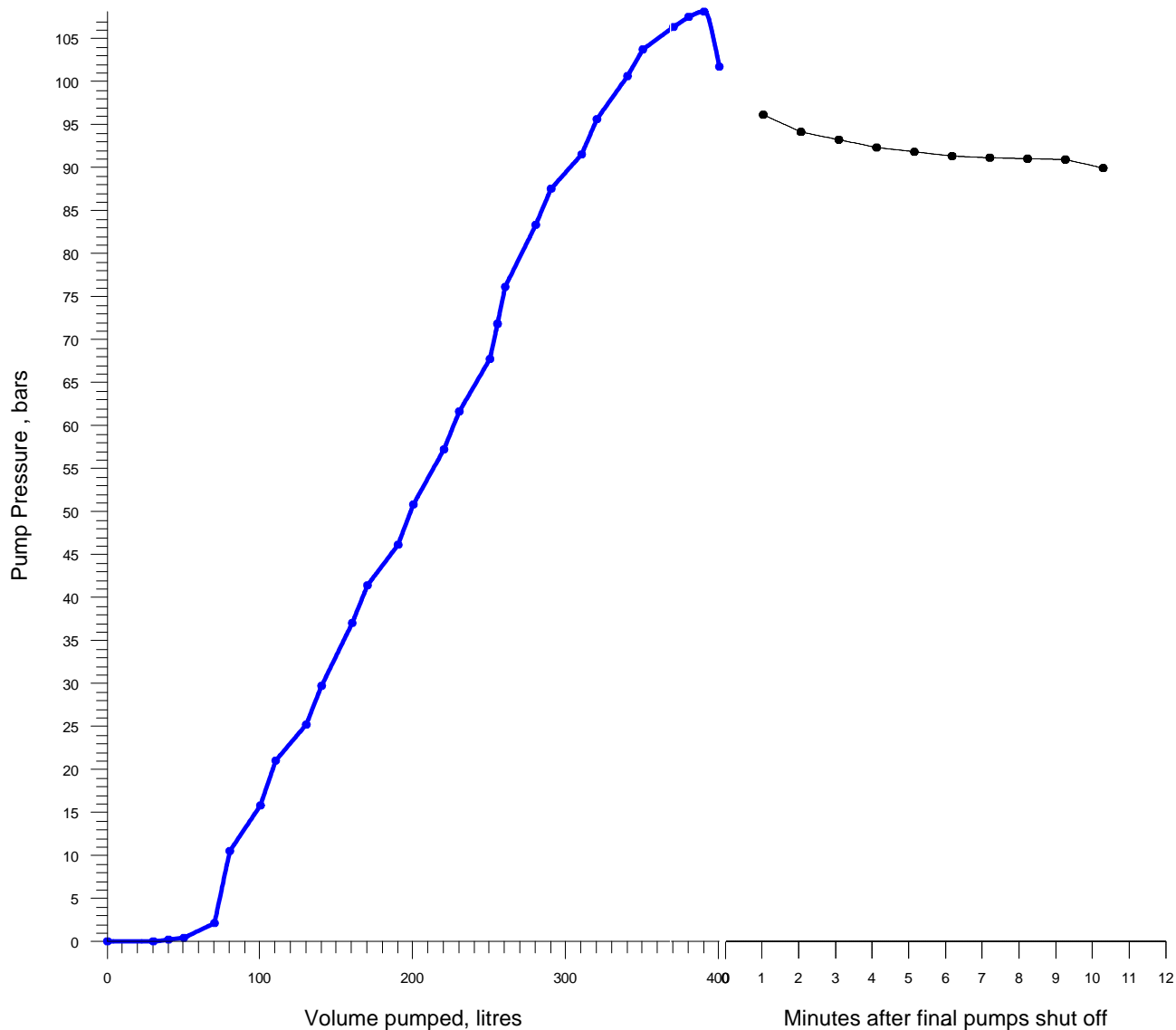
Well <b>6305/8-1</b>		Test type : <b>ELOT</b>		Test date : 2001-05-15	
Rig SCARABEO 5	Airgap (m) 25.00	Water depth (m) 837.00	CsgOd" 20.000	Hole angle (deg) 0	
Csg Shoe (mMD/mTVD)	1544.00 / 1543.90	OH depth (mMD/mTVD) 1553.10 / 1553.00	Lithology : Clst		
Dens 1.30	API WL(ml/30min) 3.00	PV (cp) 20.00	YP (Pa) 13.50	Gel0/Gel10 5.00 / 8.00	
Pump Rate (l/min)	100.00	Vol pumped (L) 1500.00	Vol bled back (L) .00		
Leakoff Pressure (bar)	9.90	Max pressure (bar)	Propagation press (bar)		
Test result (sg EMD)	1.37	Shut-in pressure			
Comments 2nd Cycle of ELOT. Corrected for RKB/CU					



End of Well Report <b>6305/8-1</b>	Fig.:  <b>B-4</b>	<b>ELOT 20" casing</b>	<b>HYDRO</b>
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Well <b>6305/8-1</b>		Test type : <b>LOT</b>		Test date : 2000-07-31	
Rig SCARABEO 5	Airgap (m) 25.00	Water depth (m) 837.00	CsgOd" 9.625	Hole angle (deg) 1	
Csg Shoe (mMD/mTVD)	2852.12 / 2852.01	OH depth (mMD/mTVD) 2860.00 / 2859.88	Lithology : Clst		
Dens 1.30	API WL(ml/30min)	PV (cp) 15.00	YP (Pa) 14.50	Gel0/Gel10 5.00 / 7.00	
Pump Rate (l/min)	90.00	Vol pumped (L) 380.00	Vol bled back (L) 380.00		
Leakoff Pressure (bar)	100.60	Max pressure (bar) 108.00	Propagation press (bar)		
Test result (sg EMD)	1.66	Shut-in pressure			

Comments



End of Well  
Report  
**6305/8-1**

Fig.:  
**B-5**

LOT 9 5/8" casing

**HYDRO**

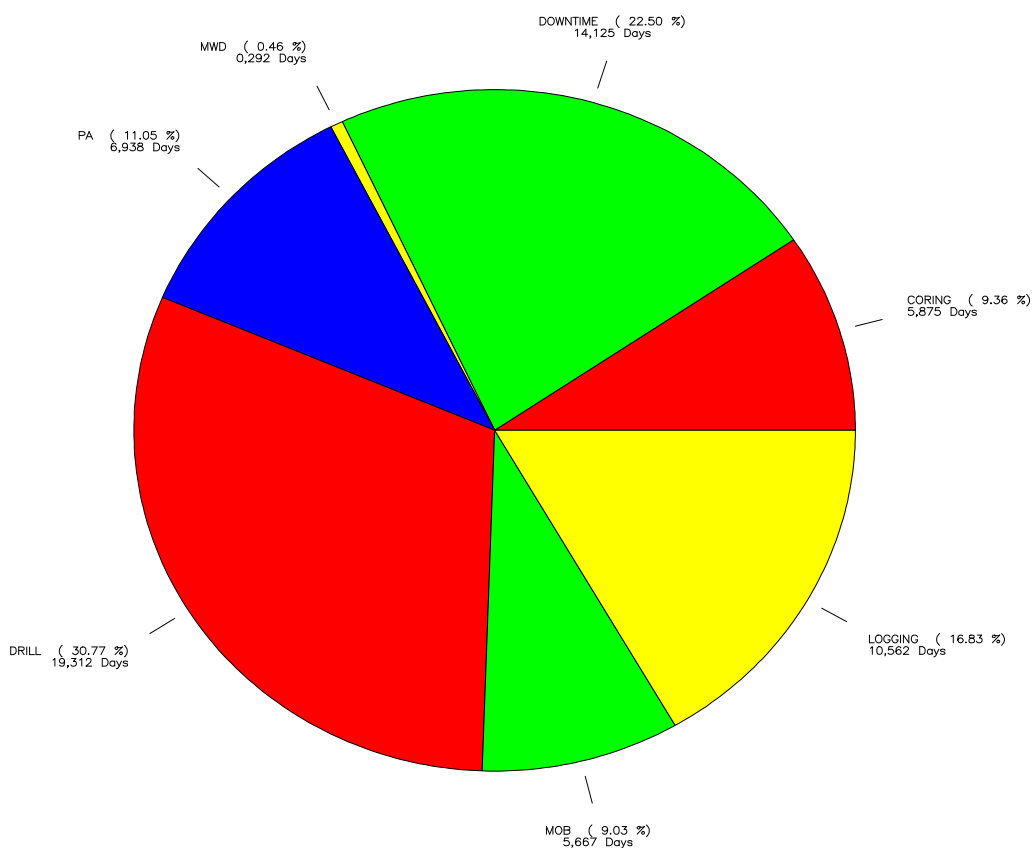


Figure 6	Time Distribution 6305/8-1	<b>HYDRO</b>
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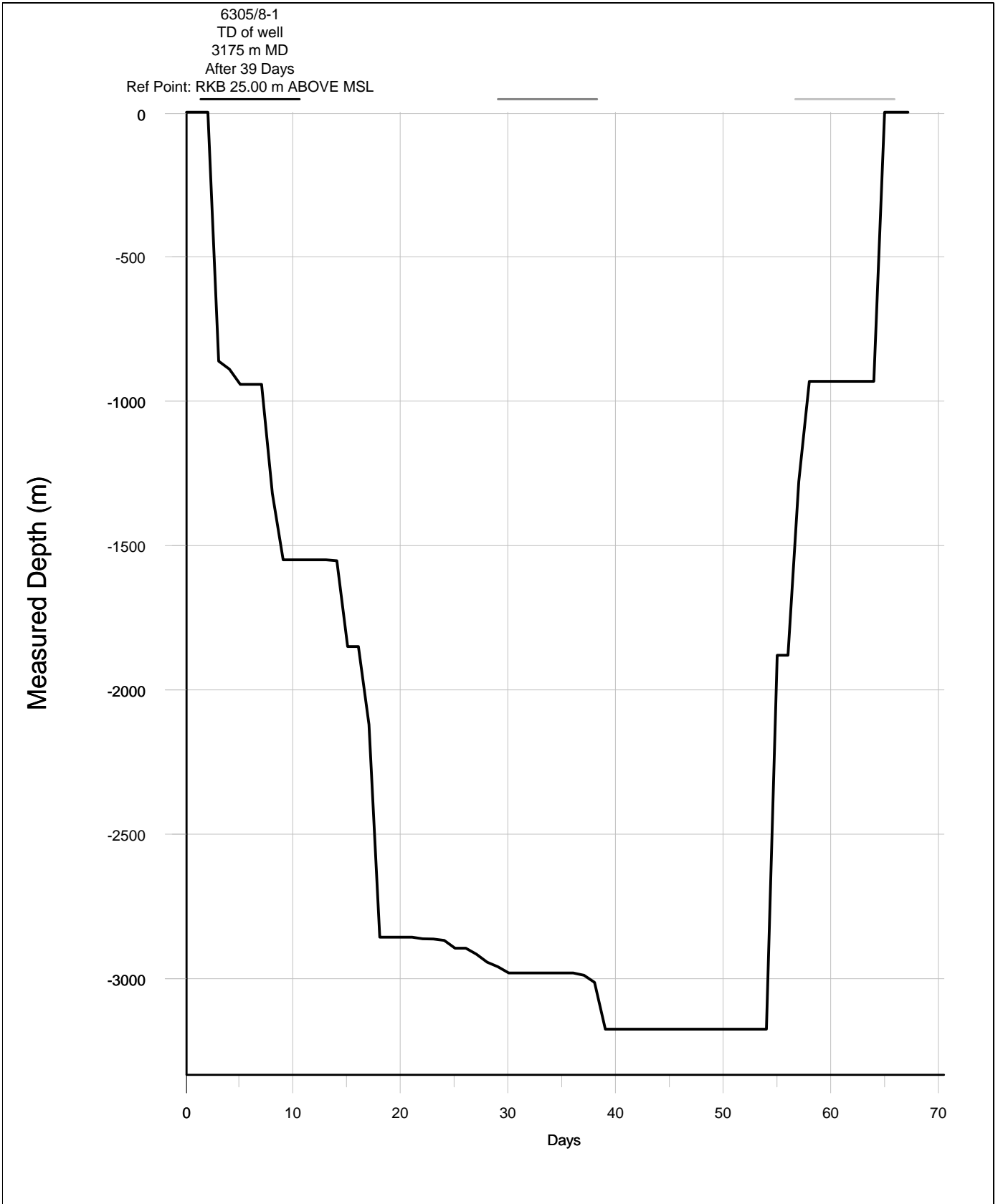


Figure 7

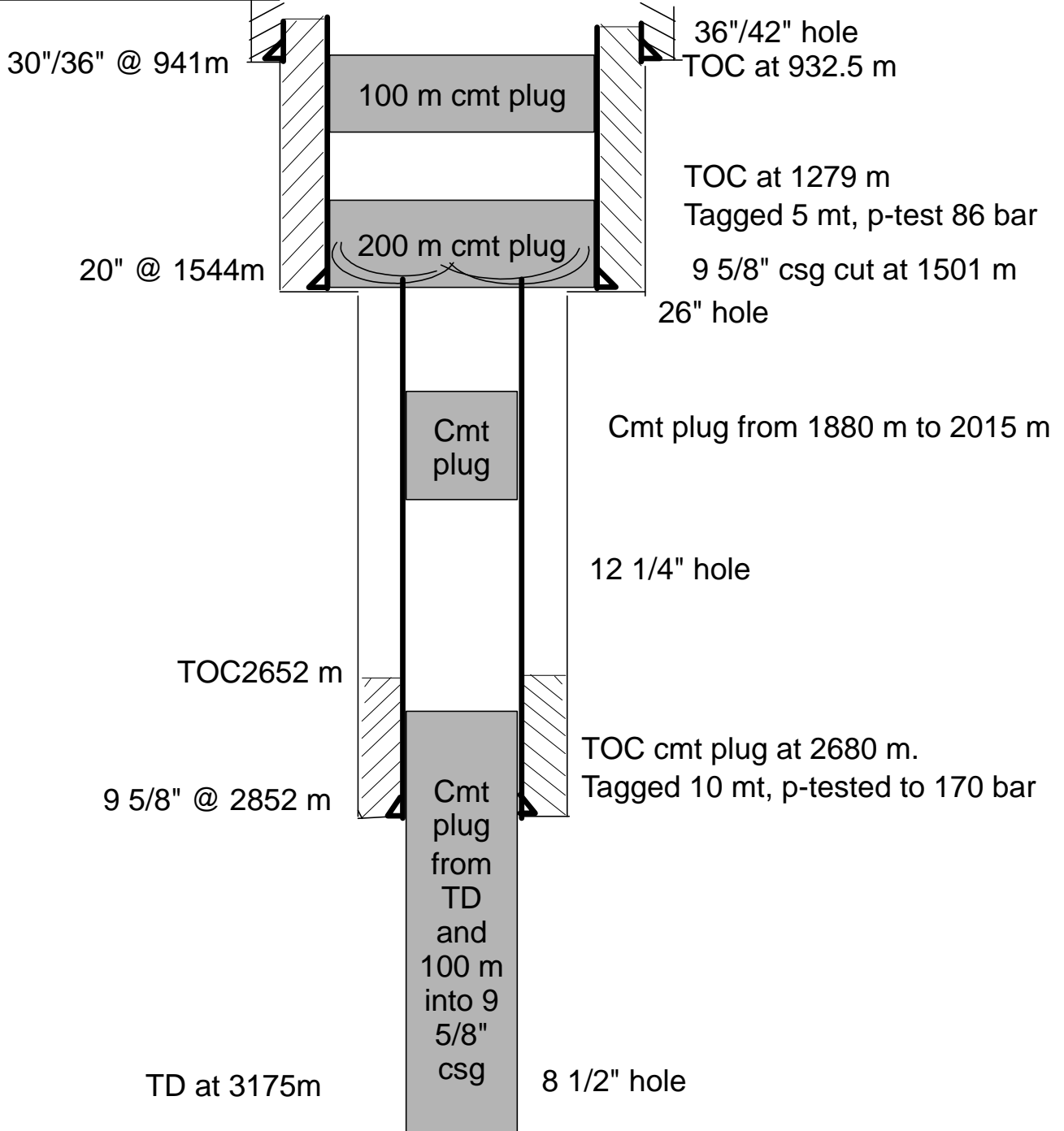
MD Drilling Curve

**HYDRO**

RKB - MSL : 25m

Seabed at 862 m

Cut and pulled WH  
5 m below seabed @ 867 m



All depths TVD - RKB

Well 6305/8-1 PL 250 AFTER P&A	Final Well Report Fig B-8 Permanent P&A	Hydro Scarabeo 5
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## **SECTION C**

## **ATTACHMENTS**

**List of contents**

- 1- POST SITE SURVEY FOR WELL 6305/8-1
- 2- LITHOLOG FOR WELL 6305/8-1
- 3- COMPOSITE LOG FOR WELL 6305/8-1